FCC Test Report (DFS Band)

Report No.:	RF191105E04A-1
FCC ID:	XCNUBC1326
Test Model:	UBC1326
Received Date:	July 21, 2020
Test Date:	Aug. 05 to 08, 2020
Issued Date:	Aug. 25, 2020
Applicant:	Ubee Interactive Corp.
Address:	10F-1, No. 5, Taiyuan 1st St. Zhubei City, Hsinchu County 302, Taiwan , R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
RF191105E04A-1	Original release.	Aug. 25, 2020

1 Certificate of Conformity

Product:	Wireless eMTA
Brand:	Ubee
Test Model:	UBC1326
Applicant:	Ubee Interactive Corp.
Test Date:	Aug. 05 to 08, 2020
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10: 2013

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

Prepared by : Phoenix Huang , **Date:** Aug. 25, 2020

Phoenix Huang / Specialist

Approved by : , **Date:** Aug. 25, 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 -15.89 dB at 0.32188 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1 dB at 5350.00 MHz, 5352.69 MHz, 5468.17 MHz and 5469.85 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex (MHF) not a standard connector.

Note:
1. For U-NII-2A, U-NII-2C band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.5 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.1 dB
	18GHz ~ 40GHz	5.3 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 eMTA
Brand	Ubee
Test Model	UBC1326
Power Supply Rating	12Vdc from adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only 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 1733.3Mbps 802.11ax: up to 2401.9Mbps
Operating Frequency	5.25 ~ 5.32 GHz, 5.50 ~ 5.72 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 16 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 8 802.11ac (VHT80), 802.11ax (HE80): 4 802.11ac (VHT160), 802.11ax (HE160): 2
Output Power	**CDD Mode** **5.25 ~ 5.32 GHz:** 187.652 mW **5.5 ~ 5.72 GHz:** 249.634 mW **Beamforming Mode** **5.25 ~ 5.32 GHz:** 94.886 mW **5.5 ~ 5.72 GHz:** 95.381 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC class II change. The difference compared with the Report No.: RF191105E04-1 as the following:
   - Add DFS band <5250~5350 MHz & 5470~5725 MHz> by software.
   - Indicate enabling 160 MHz modes.
2. According to above conditions, for DFS band all of test items need to be performed and all data was verified to meet the requirements.
3. Simultaneously transmission condition.

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

4. The EUT power needs to be supplied from a power adapter, the information is as below table:

No.	Brand	Model No.	Spec.
1	APD	WA-36N12FU	Input: 100-240Vac, 0.9A, 50-60Hz Output: 12Vdc, 3A DC Output Cable: Unshielded, 1.8m

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

Antenna No.	RF Chain No.	Antenna Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type	Cable Length (mm)
WiFi 1	Chain1/2	3.9/4.14	2.4GHz/5GHz	PCB	i-pex(MHF)	155
WiFi 2	Chain2/1	3.97/4.84	2.4GHz/5GHz	PCB	i-pex(MHF)	87
WiFi 3	Chain0/3	3.9/3.85	2.4GHz/5GHz	PCB	i-pex(MHF)	75
WiFi 4	Chain3/0	3.08/3.59	2.4GHz/5GHz	PCB	i-pex(MHF)	100

6. The EUT incorporates a MIMO function.

2.4GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11b	4TX	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 CDD 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/ac mode is the same as the 802.11ax or more lower than it and investigated worst case to representative mode in test report. (Final test mode refer to section 3.2.1)

7. 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.
8. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

FOR 5250 ~ 5320MHz

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

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

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

Channel	Frequency
58	5290 MHz

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

Channel	Frequency
114	5570 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

Radiated Emission Test (Above 1GHz):

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

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

Radiated Emission Test (Below 1GHz):

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

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE80)	5250-5320, 5500-5720	58, 106 to 138	122	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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE80)	5250-5320, 5500-5720	58, 106 to 138	122	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.

CDD Mode						
Mode	**FREQ. Band (MHz)**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Modulation Type**	**Data Rate Parameter**
802.11a	5250-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (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)		114	114	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)	5250-5320	52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80)		58	58	OFDM	BPSK	MCS0
802.11ac (VHT160)		50	50	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)		114	114	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

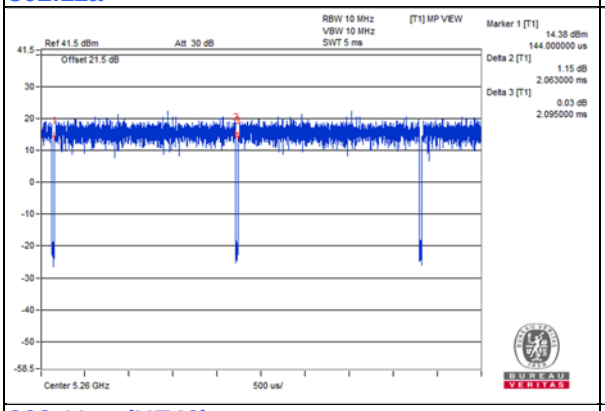
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	24deg. C, 57%RH	120Vac, 60Hz	Ryan Du
RE<1G	24deg. C, 57%RH	120Vac, 60Hz	Ryan Du
PLC	25deg. C, 75%RH	120Vac, 60Hz	Kevin Ko
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

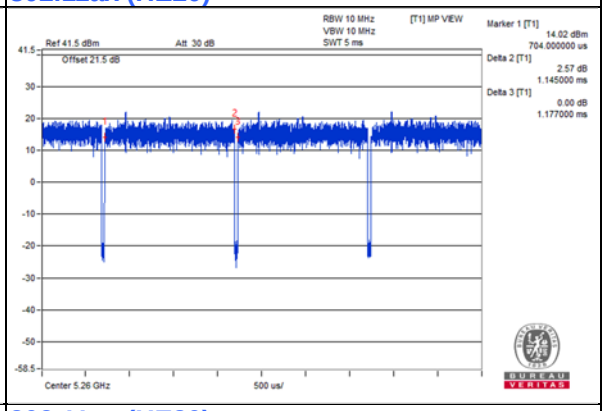
3.3 Duty Cycle of Test Signal

If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.
802.11a: Duty cycle = 2.063 ms/2.095 ms = 0.985
802.11ax (HE20): Duty cycle = 1.145 ms/1.177 ms = 0.973, Duty factor = 10 * log(1/Duty cycle) = 0.12 dB
802.11ax (HE40): Duty cycle = 0.772 ms/0.803 ms = 0.961, Duty factor = 10 * log(1/Duty cycle) = 0.17 dB
802.11ax (HE80): Duty cycle = 0.401 ms/0.433 ms = 0.926, Duty factor = 10 * log(1/Duty cycle) = 0.33 dB
802.11ax (HE160): Duty cycle = 0.232 ms/0.264 ms = 0.879, Duty factor = 10 * log(1/Duty cycle) = 0.56 dB

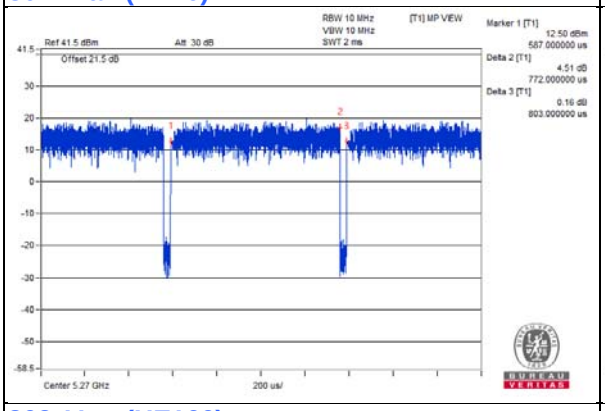
802.11a



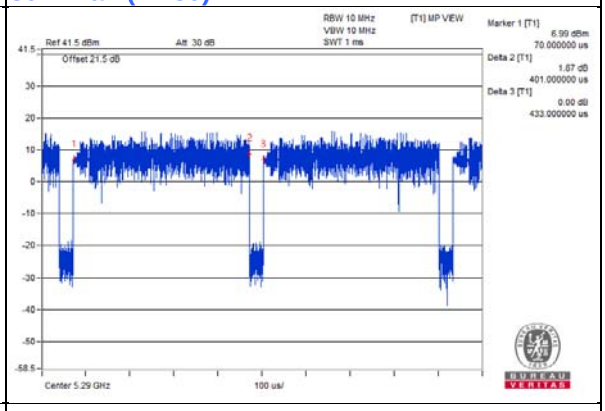
802.11ax (HE20)



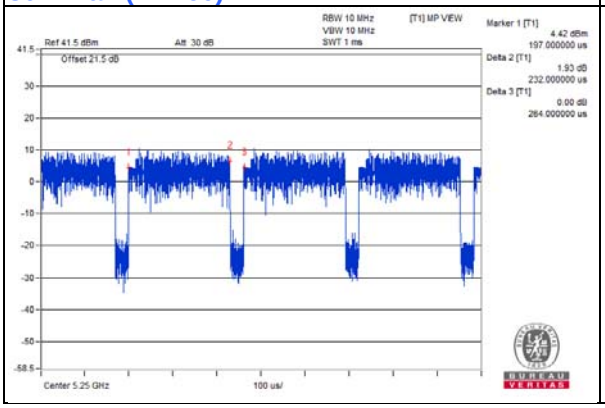
802.11ax (HE40)



802.11ax (HE80)



802.11ax (HE160)



3.4 Description of Support Units

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

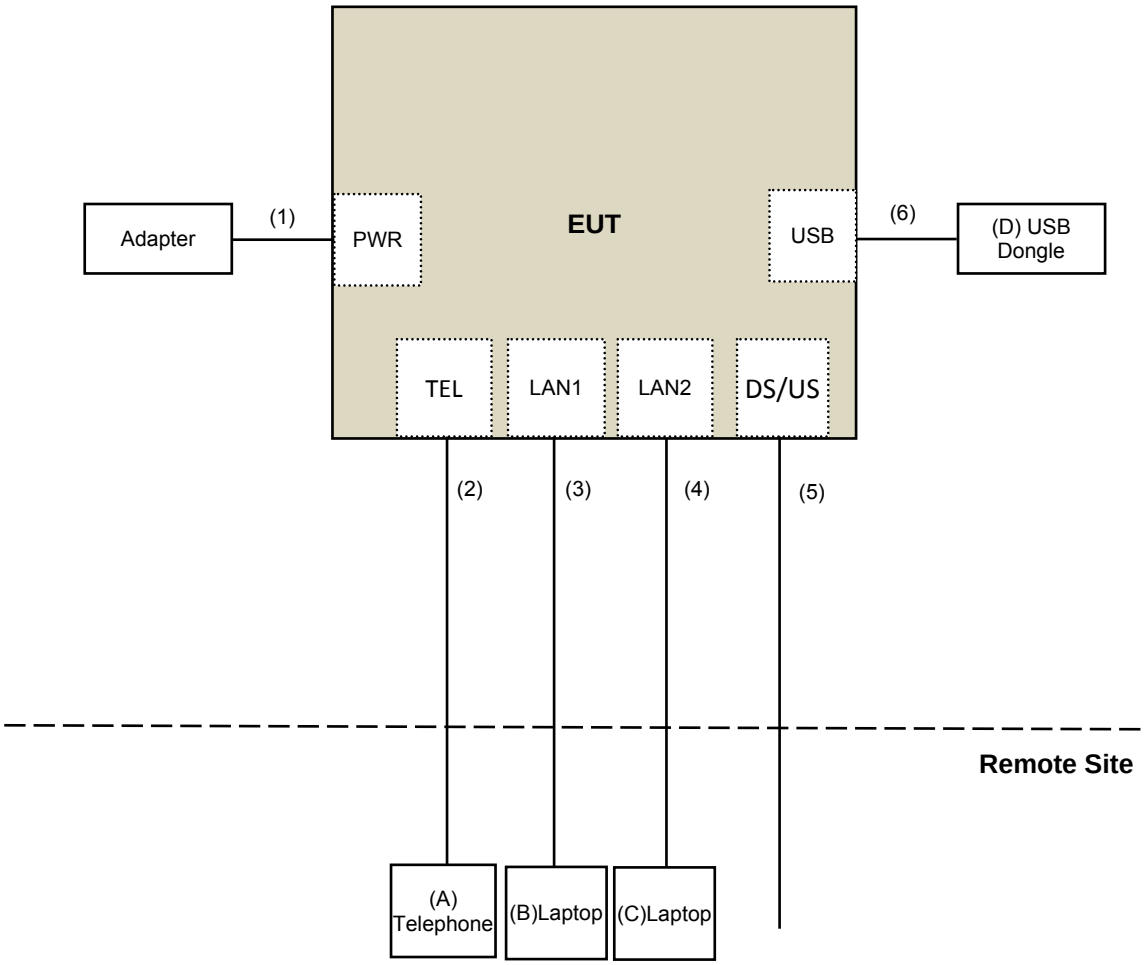
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Telephone	WONDER	WD-303	7C17KA04011	NA	Provided by Lab
B.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
C.	Laptop	Lenovo	81A4	YD02YN22	PD93165NGU	Provided by Lab
D.	USB Dongle	Sandisk	64GB	NA	NA	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.8	No	0	Supplied by client
2.	RJ-11 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	RJ-45 Cable	1	10	No	0	Provided by Lab
5.	Coaxial Cable	1	10	Yes	0	Provided by Lab
6.	Type C to Type A USB Cable	1	0.06	Yes	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard and References

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

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

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

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

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

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

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

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

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

Note:

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

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

4.1.2 Test Instruments

For Radiated Emission and Bandedge test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210202	Dec. 13, 2019	Dec. 12, 2020
Pre-Amplifier EMCI	EMC001340	980142	May 25, 2020	May 24, 2021
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
RF Cable	NA	LOOPCAB-001	Jan. 08, 2020	Jan. 07, 2021
RF Cable	NA	LOOPCAB-002	Jan. 08, 2020	Jan. 07, 2021
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. 18, 2020	Mar. 17, 2021
RF Cable	8D	966-4-2	Mar. 18, 2020	Mar. 17, 2021
RF Cable	8D	966-4-3	Mar. 18, 2020	Mar. 17, 2021
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. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180502	Apr. 29, 2020	Apr. 28, 2021
RF Cable	EMC104-SM-SM-6000	180418	Apr. 29, 2020	Apr. 28, 2021
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. Tested Date: Aug. 05 to 07, 2020

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 16, 2020	Jan. 15, 2021
True RMS Clamp Meter FLUKE	325	31130711WS	June 06, 2020	June 05, 2021
Voltage Meter FLUKE	179	89610322	Sep. 25, 2019	Sep. 24, 2020
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

NOTE: 1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Aug. 08, 2020

4.1.3 Test Procedure

For Radiated emission below 30MHz

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

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

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

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

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

Note:

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

For Radiated emission above 30MHz

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

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

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

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

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

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

Note:

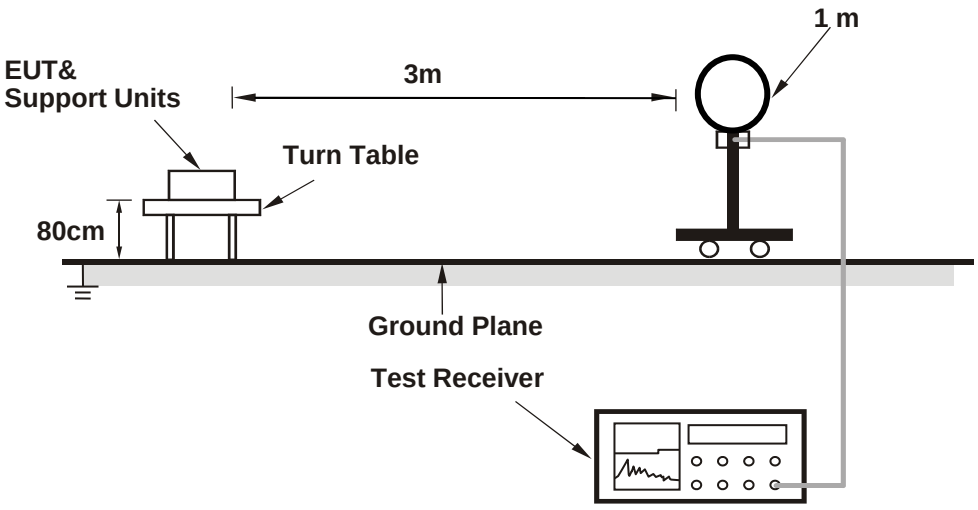
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

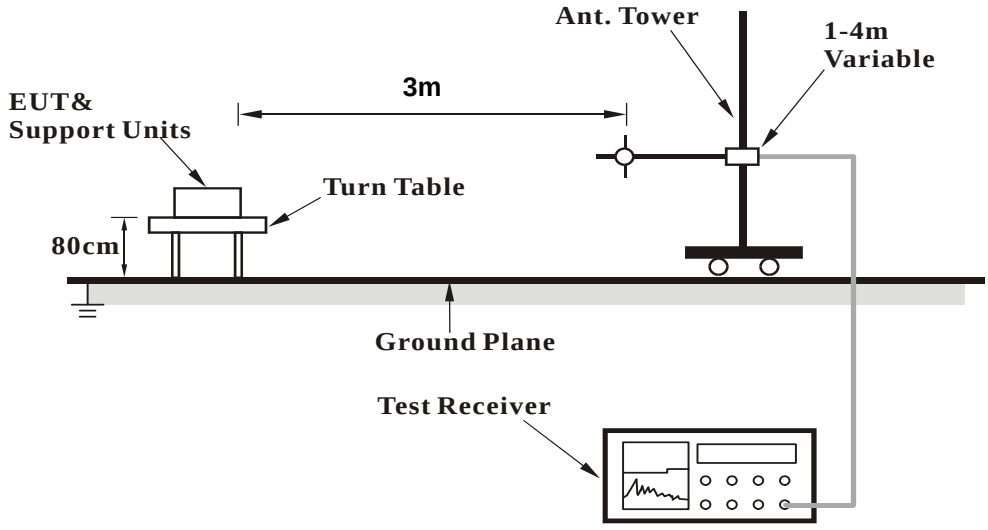
No deviation.

4.1.5 Test Setup

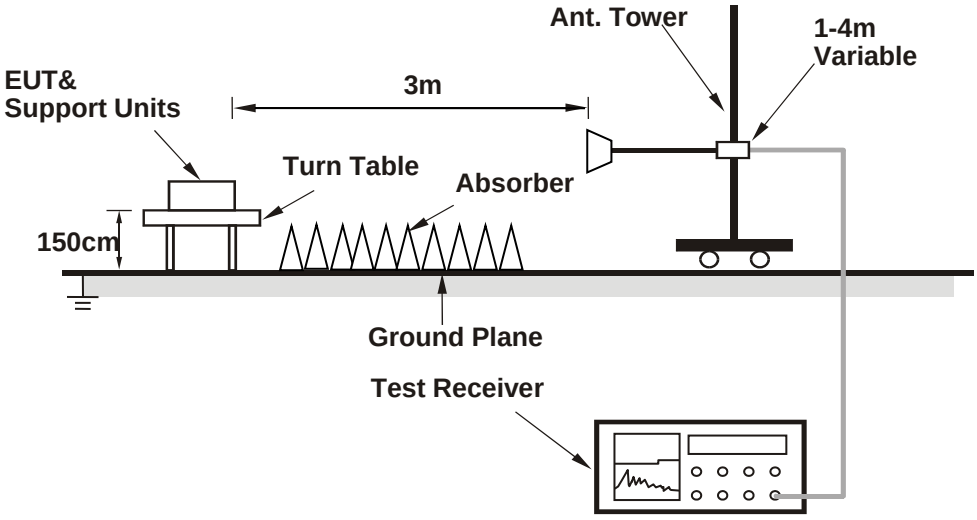
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

a. Placed the EUT on the testing table.
b. Controlling software (Mtool v3.1.0.1) 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) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*5260.00	119.8 PK			1.76 H	332	117.0	2.8
2	*5260.00	110.4 AV			1.76 H	332	107.6	2.8
3	5425.25	56.5 PK	74.0	-17.5	1.76 H	332	53.3	3.2
4	5425.25	45.2 AV	54.0	-8.8	1.76 H	332	42.0	3.2
5	#10520.00	44.4 PK	68.2	-23.8	1.26 H	77	30.8	13.6
6	15780.00	46.4 PK	74.0	-27.6	1.43 H	199	33.3	13.1
7	15780.00	35.9 AV	54.0	-18.1	1.43 H	199	22.8	13.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*5260.00	113.7 PK			3.39 V	234	110.9	2.8
2	*5260.00	104.1 AV			3.39 V	234	101.3	2.8
3	5369.78	52.2 PK	74.0	-21.8	3.39 V	234	49.1	3.1
4	5369.78	41.8 AV	54.0	-12.2	3.39 V	234	38.7	3.1
5	#10520.00	44.3 PK	68.2	-23.9	1.67 V	250	30.7	13.6
6	15780.00	47.0 PK	74.0	-27.0	1.46 V	66	33.9	13.1
7	15780.00	36.3 AV	54.0	-17.7	1.46 V	66	23.2	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.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 60	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	119.5 PK			1.73 H	336	116.6	2.9
2	*5300.00	110.2 AV			1.73 H	336	107.3	2.9
3	10600.00	46.3 PK	74.0	-27.7	1.50 H	17	33.1	13.2
4	10600.00	34.6 AV	54.0	-19.4	1.50 H	17	21.4	13.2
5	15900.00	47.8 PK	74.0	-26.2	2.30 H	69	34.7	13.1
6	15900.00	35.8 AV	54.0	-18.2	2.30 H	69	22.7	13.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	113.6 PK			3.38 V	239	110.7	2.9
2	*5300.00	104.1 AV			3.38 V	239	101.2	2.9
3	10600.00	46.5 PK	74.0	-27.5	1.65 V	266	33.3	13.2
4	10600.00	36.0 AV	54.0	-18.0	1.65 V	266	22.8	13.2
5	15900.00	46.8 PK	74.0	-27.2	1.49 V	67	33.7	13.1
6	15900.00	35.1 AV	54.0	-18.9	1.49 V	67	22.0	13.1

Remarks:

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

Channel	TX Channel 64	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	119.8 PK			2.92 H	270	116.9	2.9
2	*5320.00	110.5 AV			2.92 H	270	107.6	2.9
3	5350.00	72.6 PK	74.0	-1.4	2.92 H	270	69.6	3.0
4	5350.00	53.6 AV	54.0	-0.4	2.92 H	270	50.6	3.0
5	10640.00	46.0 PK	74.0	-28.0	1.44 H	6	32.7	13.3
6	10640.00	35.4 AV	54.0	-18.6	1.44 H	6	22.1	13.3
7	15960.00	45.6 PK	74.0	-28.4	2.27 H	56	32.2	13.4
8	15960.00	34.5 AV	54.0	-19.5	2.27 H	56	21.1	13.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	113.6 PK			3.43 V	240	110.7	2.9
2	*5320.00	104.3 AV			3.43 V	240	101.4	2.9
3	5350.00	64.2 PK	74.0	-9.8	3.43 V	240	61.2	3.0
4	5350.00	47.4 AV	54.0	-6.6	3.43 V	240	44.4	3.0
5	10640.00	46.0 PK	74.0	-28.0	1.60 V	257	32.7	13.3
6	10640.00	35.1 AV	54.0	-18.9	1.60 V	257	21.8	13.3
7	15960.00	46.0 PK	74.0	-28.0	1.54 V	81	32.6	13.4
8	15960.00	34.2 AV	54.0	-19.8	1.54 V	81	20.8	13.4

Remarks:

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

Channel	TX Channel 100	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	65.0 PK	74.0	-9.0	1.88 H	353	61.8	3.2
2	5460.00	47.9 AV	54.0	-6.1	1.88 H	353	44.7	3.2
3	#5470.00	67.8 PK	68.2	-0.4	1.88 H	353	64.6	3.2
4	*5500.00	120.3 PK			1.88 H	353	117.0	3.3
5	*5500.00	111.8 AV			1.88 H	353	108.5	3.3
6	11000.00	44.2 PK	74.0	-29.8	1.51 H	5	30.2	14.0
7	11000.00	33.3 AV	54.0	-20.7	1.51 H	5	19.3	14.0
8	#16500.00	44.5 PK	68.2	-23.7	2.34 H	64	29.0	15.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	59.3 PK	74.0	-14.7	3.39 V	225	56.1	3.2
2	5460.00	43.4 AV	54.0	-10.6	3.39 V	225	40.2	3.2
3	#5467.70	62.4 PK	68.2	-5.8	3.39 V	225	59.2	3.2
4	*5500.00	114.1 PK			3.39 V	225	110.8	3.3
5	*5500.00	105.6 AV			3.39 V	225	102.3	3.3
6	11000.00	44.4 PK	74.0	-29.6	1.61 V	276	30.4	14.0
7	11000.00	32.8 AV	54.0	-21.2	1.61 V	276	18.8	14.0
8	#16500.00	44.5 PK	68.2	-23.7	1.47 V	64	29.0	15.5

Remarks:

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

Channel	TX Channel 116	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	122.8 PK			1.77 H	349	119.5	3.3
2	*5580.00	114.2 AV			1.77 H	349	110.9	3.3
3	11160.00	45.9 PK	74.0	-28.1	1.52 H	9	32.5	13.4
4	11160.00	34.2 AV	54.0	-19.8	1.52 H	9	20.8	13.4
5	#16740.00	47.9 PK	68.2	-20.3	2.33 H	64	31.3	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	116.9 PK			3.35 V	240	113.6	3.3
2	*5580.00	109.1 AV			3.35 V	240	105.8	3.3
3	11160.00	46.4 PK	74.0	-27.6	1.68 V	282	33.0	13.4
4	11160.00	34.3 AV	54.0	-19.7	1.68 V	282	20.9	13.4
5	#16740.00	48.1 PK	68.2	-20.1	1.51 V	64	31.5	16.6

Remarks:

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

Channel	TX Channel 140	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	120.3 PK			1.67 H	352	116.5	3.8
2	*5700.00	111.2 AV			1.67 H	352	107.4	3.8
3	#5725.00	67.9 PK	68.2	-0.3	1.67 H	352	64.1	3.8
4	11400.00	44.3 PK	74.0	-29.7	1.27 H	314	30.1	14.2
5	11400.00	33.6 AV	54.0	-20.4	1.27 H	314	19.4	14.2
6	#17100.00	44.3 PK	68.2	-23.9	1.52 H	291	26.8	17.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	114.2 PK			3.46 V	242	110.4	3.8
2	*5700.00	104.7 AV			3.46 V	242	100.9	3.8
3	#5725.00	62.3 PK	68.2	-5.9	3.46 V	242	58.5	3.8
4	11400.00	44.2 PK	74.0	-29.8	2.94 V	274	30.0	14.2
5	11400.00	33.3 AV	54.0	-20.7	2.94 V	274	19.1	14.2
6	#17100.00	44.7 PK	68.2	-23.5	1.53 V	259	27.2	17.5

Remarks:

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

Channel	TX Channel 144	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	66.3 PK	68.2	-1.9	1.60 H	343	63.1	3.2
2	*5720.00	114.7 PK			1.60 H	343	110.9	3.8
3	*5720.00	105.2 AV			1.60 H	343	101.4	3.8
4	#5850.00	56.3 PK	68.2	-11.9	1.60 H	343	52.1	4.2
5	11440.00	44.1 PK	74.0	-29.9	1.31 H	329	30.0	14.1
6	11440.00	33.1 AV	54.0	-20.9	1.31 H	329	19.0	14.1
7	#17160.00	44.9 PK	68.2	-23.3	1.55 H	284	27.9	17.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	62.6 PK	68.2	-5.6	3.44 V	258	59.4	3.2
2	*5720.00	107.1 PK			3.44 V	258	103.3	3.8
3	*5720.00	97.5 AV			3.44 V	258	93.7	3.8
4	#5850.00	57.2 PK	68.2	-11.0	3.44 V	258	53.0	4.2
5	11440.00	43.8 PK	74.0	-30.2	2.93 V	268	29.7	14.1
6	11440.00	32.9 AV	54.0	-21.1	2.93 V	268	18.8	14.1
7	#17160.00	44.9 PK	68.2	-23.3	1.54 V	268	27.9	17.0

Remarks:

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

802.11ax (HE20)

Channel	TX Channel 52	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	3.43 H	270	50.7	3.0
2	5150.00	43.6 AV	54.0	-10.4	3.43 H	270	40.6	3.0
3	*5260.00	119.8 PK			3.43 H	270	117.0	2.8
4	*5260.00	111.3 AV			3.43 H	270	108.5	2.8
5	#10520.00	47.2 PK	68.2	-21.0	1.29 H	329	33.6	13.6
6	15780.00	46.5 PK	74.0	-27.5	1.50 H	312	33.4	13.1
7	15780.00	35.7 AV	54.0	-18.3	1.50 H	312	22.6	13.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	51.5 PK	74.0	-22.5	3.37 V	242	48.5	3.0
2	5150.00	41.2 AV	54.0	-12.8	3.37 V	242	38.2	3.0
3	*5260.00	114.2 PK			3.37 V	242	111.4	2.8
4	*5260.00	105.2 AV			3.37 V	242	102.4	2.8
5	#10520.00	46.6 PK	68.2	-21.6	1.67 V	258	33.0	13.6
6	15780.00	46.1 PK	74.0	-27.9	1.47 V	55	33.0	13.1
7	15780.00	35.9 AV	54.0	-18.1	1.47 V	55	22.8	13.1

Remarks:

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

Channel	TX Channel 60	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	119.6 PK			3.40 H	273	116.7	2.9
2	*5300.00	110.7 AV			3.40 H	273	107.8	2.9
3	10600.00	46.6 PK	74.0	-27.4	1.32 H	318	33.4	13.2
4	10600.00	35.7 AV	54.0	-18.3	1.32 H	318	22.5	13.2
5	15900.00	47.2 PK	74.0	-26.8	1.49 H	309	34.1	13.1
6	15900.00	36.1 AV	54.0	-17.9	1.49 H	309	23.0	13.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	113.7 PK			3.40 V	232	110.8	2.9
2	*5300.00	104.4 AV			3.40 V	232	101.5	2.9
3	10600.00	46.9 PK	74.0	-27.1	1.67 V	280	33.7	13.2
4	10600.00	35.6 AV	54.0	-18.4	1.67 V	280	22.4	13.2
5	15900.00	47.0 PK	74.0	-27.0	1.51 V	60	33.9	13.1
6	15900.00	35.6 AV	54.0	-18.4	1.51 V	60	22.5	13.1

Remarks:

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

Channel	TX Channel 64	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	117.9 PK			2.82 H	271	115.0	2.9
2	*5320.00	109.0 AV			2.82 H	271	106.1	2.9
3	5352.69	67.0 PK	74.0	-7.0	2.82 H	271	64.0	3.0
4	**5352.69**	**53.9 AV**	**54.0**	**-0.1**	**2.82 H**	**271**	**50.9**	**3.0**
5	10640.00	45.5 PK	74.0	-28.5	1.37 H	321	32.2	13.3
6	10640.00	34.4 AV	54.0	-19.6	1.37 H	321	21.1	13.3
7	15960.00	45.0 PK	74.0	-29.0	1.53 H	296	31.6	13.4
8	15960.00	34.7 AV	54.0	-19.3	1.53 H	296	21.3	13.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	112.0 PK			3.42 V	237	109.1	2.9
2	*5320.00	103.1 AV			3.42 V	237	100.2	2.9
3	5350.00	65.3 PK	74.0	-8.7	3.42 V	237	62.3	3.0
4	5350.00	51.6 AV	54.0	-2.4	3.42 V	237	48.6	3.0
5	10640.00	45.6 PK	74.0	-28.4	1.61 V	256	32.3	13.3
6	10640.00	34.1 AV	54.0	-19.9	1.61 V	256	20.8	13.3
7	15960.00	45.5 PK	74.0	-28.5	1.54 V	52	32.1	13.4
8	15960.00	34.7 AV	54.0	-19.3	1.54 V	52	21.3	13.4

Remarks:

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

Channel	TX Channel 100	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5457.70	61.8 PK	74.0	-12.2	1.76 H	351	58.6	3.2
2	5457.70	45.8 AV	54.0	-8.2	1.76 H	351	42.6	3.2
3	**#5468.17**	**68.1 PK**	**68.2**	**-0.1**	**1.76 H**	**351**	**64.9**	**3.2**
4	*5500.00	117.7 PK			1.76 H	351	114.4	3.3
5	*5500.00	108.4 AV			1.76 H	351	105.1	3.3
6	11000.00	46.7 PK	74.0	-27.3	1.35 H	318	32.7	14.0
7	11000.00	35.0 AV	54.0	-19.0	1.35 H	318	21.0	14.0
8	#16500.00	46.2 PK	68.2	-22.0	1.49 H	284	30.7	15.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5460.00	59.0 PK	74.0	-15.0	3.36 V	236	55.8	3.2
2	5460.00	44.2 AV	54.0	-9.8	3.36 V	236	41.0	3.2
3	#5470.00	64.9 PK	68.2	-3.3	3.36 V	236	61.7	3.2
4	*5500.00	112.5 PK			3.36 V	236	109.2	3.3
5	*5500.00	102.4 AV			3.36 V	236	99.1	3.3
6	11000.00	46.5 PK	74.0	-27.5	1.68 V	252	32.5	14.0
7	11000.00	34.6 AV	54.0	-19.4	1.68 V	252	20.6	14.0
8	#16500.00	46.7 PK	68.2	-21.5	1.47 V	65	31.2	15.5

Remarks:

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

Channel	TX Channel 116	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	121.3 PK			1.64 H	344	118.0	3.3
2	*5580.00	112.2 AV			1.64 H	344	108.9	3.3
3	11160.00	47.1 PK	74.0	-26.9	1.37 H	337	33.7	13.4
4	11160.00	35.7 AV	54.0	-18.3	1.37 H	337	22.3	13.4
5	#16740.00	47.5 PK	68.2	-20.7	1.52 H	287	30.9	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	115.4 PK			3.41 V	254	112.1	3.3
2	*5580.00	106.1 AV			3.41 V	254	102.8	3.3
3	11160.00	45.9 PK	74.0	-28.1	1.66 V	265	32.5	13.4
4	11160.00	35.7 AV	54.0	-18.3	1.66 V	265	22.3	13.4
5	#16740.00	47.7 PK	68.2	-20.5	1.47 V	63	31.1	16.6

Remarks:

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

Channel	TX Channel 140	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	116.8 PK			1.66 H	351	113.0	3.8
2	*5700.00	106.7 AV			1.66 H	351	102.9	3.8
3	#5725.00	67.6 PK	68.2	-0.6	1.66 H	351	63.8	3.8
4	11400.00	45.5 PK	74.0	-28.5	1.31 H	333	31.3	14.2
5	11400.00	33.7 AV	54.0	-20.3	1.31 H	333	19.5	14.2
6	#17100.00	45.3 PK	68.2	-22.9	1.47 H	299	27.8	17.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	110.1 PK			3.44 V	232	106.3	3.8
2	*5700.00	100.9 AV			3.44 V	232	97.1	3.8
3	#5725.00	61.4 PK	68.2	-6.8	3.44 V	232	57.6	3.8
4	11400.00	45.2 PK	74.0	-28.8	1.69 V	269	31.0	14.2
5	11400.00	34.0 AV	54.0	-20.0	1.69 V	269	19.8	14.2
6	#17100.00	44.6 PK	68.2	-23.6	1.43 V	60	27.1	17.5

Remarks:

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

Channel	TX Channel 144	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	67.0 PK	68.2	-1.2	1.56 H	334	63.8	3.2
2	*5720.00	114.5 PK			1.56 H	334	110.7	3.8
3	*5720.00	104.8 AV			1.56 H	334	101.0	3.8
4	#5850.00	56.0 PK	68.2	-12.2	1.56 H	334	51.8	4.2
5	11440.00	43.5 PK	74.0	-30.5	1.33 H	343	29.4	14.1
6	11440.00	32.7 AV	54.0	-21.3	1.33 H	343	18.6	14.1
7	#17160.00	45.3 PK	68.2	-22.9	1.50 H	292	28.3	17.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	62.4 PK	68.2	-5.8	3.41 V	264	59.2	3.2
2	*5720.00	107.8 PK			3.41 V	264	104.0	3.8
3	*5720.00	98.0 AV			3.41 V	264	94.2	3.8
4	#5850.00	57.0 PK	68.2	-11.2	3.41 V	264	52.8	4.2
5	11440.00	43.6 PK	74.0	-30.4	2.89 V	262	29.5	14.1
6	11440.00	32.5 AV	54.0	-21.5	2.89 V	262	18.4	14.1
7	#17160.00	45.1 PK	68.2	-23.1	1.56 V	283	28.1	17.0

Remarks:

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

802.11ax (HE40)

Channel	TX Channel 54	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5270.00	115.6 PK			3.45 H	273	112.8	2.8
2	*5270.00	106.4 AV			3.45 H	273	103.6	2.8
3	5352.14	62.7 PK	74.0	-11.3	3.45 H	273	59.7	3.0
4	5352.14	52.4 AV	54.0	-1.6	3.45 H	273	49.4	3.0
5	#10540.00	46.6 PK	68.2	-21.6	1.38 H	338	33.2	13.4
6	15810.00	47.9 PK	74.0	-26.1	1.47 H	310	35.0	12.9
7	15810.00	35.3 AV	54.0	-18.7	1.47 H	310	22.4	12.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5270.00	110.1 PK			3.39 V	239	107.3	2.8
2	*5270.00	100.9 AV			3.39 V	239	98.1	2.8
3	5350.00	61.3 PK	74.0	-12.7	3.39 V	239	58.3	3.0
4	5350.00	49.8 AV	54.0	-4.2	3.39 V	239	46.8	3.0
5	#10540.00	46.3 PK	68.2	-21.9	1.64 V	270	32.9	13.4
6	15810.00	48.0 PK	74.0	-26.0	1.46 V	61	35.1	12.9
7	15810.00	34.8 AV	54.0	-19.2	1.46 V	61	21.9	12.9

Remarks:

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

Channel	TX Channel 62	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	108.8 PK			3.43 H	285	105.9	2.9
2	*5310.00	100.1 AV			3.43 H	285	97.2	2.9
3	5350.00	64.8 PK	74.0	-9.2	3.43 H	285	61.8	3.0
4	**5350.00**	**53.9 AV**	**54.0**	**-0.1**	**3.43 H**	**285**	**50.9**	**3.0**
5	10620.00	44.9 PK	74.0	-29.1	1.32 H	333	31.6	13.3
6	10620.00	33.5 AV	54.0	-20.5	1.32 H	333	20.2	13.3
7	15930.00	44.3 PK	74.0	-29.7	1.52 H	312	31.0	13.3
8	15930.00	33.6 AV	54.0	-20.4	1.52 H	312	20.3	13.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	102.6 PK			3.37 V	237	99.7	2.9
2	*5310.00	94.0 AV			3.37 V	237	91.1	2.9
3	5350.00	62.7 PK	74.0	-11.3	3.37 V	237	59.7	3.0
4	5350.00	48.0 AV	54.0	-6.0	3.37 V	237	45.0	3.0
5	10620.00	44.6 PK	74.0	-29.4	1.71 V	261	31.3	13.3
6	10620.00	33.5 AV	54.0	-20.5	1.71 V	261	20.2	13.3
7	15930.00	44.1 PK	74.0	-29.9	1.46 V	76	30.8	13.3
8	15930.00	33.2 AV	54.0	-20.8	1.46 V	76	19.9	13.3

Remarks:

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

Channel	TX Channel 102	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	62.5 PK	74.0	-11.5	1.72 H	341	59.3	3.2
2	5460.00	50.0 AV	54.0	-4.0	1.72 H	341	46.8	3.2
3	**#5469.85**	**68.1 PK**	**68.2**	**-0.1**	**1.72 H**	**341**	**64.9**	**3.2**
4	*5510.00	111.3 PK			1.72 H	341	108.1	3.2
5	*5510.00	104.1 AV			1.72 H	341	100.9	3.2
6	11020.00	44.6 PK	74.0	-29.4	1.28 H	325	30.8	13.8
7	11020.00	33.1 AV	54.0	-20.9	1.28 H	325	19.3	13.8
8	#16530.00	43.6 PK	68.2	-24.6	1.53 H	287	27.9	15.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	3.41 V	238	55.3	3.2
2	5460.00	45.5 AV	54.0	-8.5	3.41 V	238	42.3	3.2
3	#5468.04	63.3 PK	68.2	-4.9	3.41 V	238	60.1	3.2
4	*5510.00	105.1 PK			3.41 V	238	101.9	3.2
5	*5510.00	97.9 AV			3.41 V	238	94.7	3.2
6	11020.00	44.4 PK	74.0	-29.6	1.65 V	254	30.6	13.8
7	11020.00	33.1 AV	54.0	-20.9	1.65 V	254	19.3	13.8
8	#16530.00	43.6 PK	68.2	-24.6	1.48 V	56	27.9	15.7

Remarks:

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

Channel	TX Channel 110	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	61.1 PK	74.0	-12.9	1.76 H	353	57.9	3.2
2	5460.00	48.8 AV	54.0	-5.2	1.76 H	353	45.6	3.2
3	#5470.00	66.4 PK	68.2	-1.8	1.76 H	353	63.2	3.2
4	*5550.00	117.5 PK			1.76 H	353	114.2	3.3
5	*5550.00	108.3 AV			1.76 H	353	105.0	3.3
6	11100.00	46.1 PK	74.0	-27.9	1.34 H	333	32.8	13.3
7	11100.00	34.8 AV	54.0	-19.2	1.34 H	333	21.5	13.3
8	#16650.00	47.9 PK	68.2	-20.3	1.47 H	311	31.3	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.5 PK	74.0	-17.5	3.41 V	230	53.3	3.2
2	5460.00	42.8 AV	54.0	-11.2	3.41 V	230	39.6	3.2
3	#5470.00	61.0 PK	68.2	-7.2	3.41 V	230	57.8	3.2
4	*5550.00	108.9 PK			3.41 V	230	105.6	3.3
5	*5550.00	100.1 AV			3.41 V	230	96.8	3.3
6	11100.00	46.9 PK	74.0	-27.1	1.67 V	266	33.6	13.3
7	11100.00	34.7 AV	54.0	-19.3	1.67 V	266	21.4	13.3
8	#16650.00	47.9 PK	68.2	-20.3	1.54 V	72	31.3	16.6

Remarks:

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

Channel	TX Channel 134	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	115.2 PK			1.75 H	344	111.6	3.6
2	*5670.00	106.2 AV			1.75 H	344	102.6	3.6
3	#5725.00	67.8 PK	68.2	-0.4	1.75 H	344	64.0	3.8
4	11340.00	44.3 PK	74.0	-29.7	1.31 H	336	30.2	14.1
5	11340.00	33.3 AV	54.0	-20.7	1.31 H	336	19.2	14.1
6	#17010.00	43.7 PK	68.2	-24.5	1.48 H	307	25.9	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	109.9 PK			3.42 V	230	106.3	3.6
2	*5670.00	100.7 AV			3.42 V	230	97.1	3.6
3	#5725.00	65.3 PK	68.2	-2.9	3.42 V	230	61.5	3.8
4	11340.00	44.3 PK	74.0	-29.7	1.65 V	253	30.2	14.1
5	11340.00	33.6 AV	54.0	-20.4	1.65 V	253	19.5	14.1
6	#17010.00	43.2 PK	68.2	-25.0	1.47 V	76	25.4	17.8

Remarks:

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

Channel	TX Channel 142	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	67.2 PK	68.2	-1.0	1.76 H	360	64.0	3.2
2	*5710.00	108.3 PK			1.76 H	360	104.5	3.8
3	*5710.00	99.8 AV			1.76 H	360	96.0	3.8
4	#5850.00	55.4 PK	68.2	-12.8	1.76 H	360	51.2	4.2
5	11420.00	44.7 PK	74.0	-29.3	1.29 H	352	30.6	14.1
6	11420.00	33.7 AV	54.0	-20.3	1.29 H	352	19.6	14.1
7	#17130.00	43.2 PK	68.2	-25.0	1.49 H	318	26.0	17.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	65.3 PK	68.2	-2.9	3.37 V	237	62.1	3.2
2	*5710.00	103.8 PK			3.37 V	237	100.0	3.8
3	*5710.00	94.2 AV			3.37 V	237	90.4	3.8
4	#5850.00	53.2 PK	68.2	-15.0	3.37 V	237	49.0	4.2
5	11420.00	44.9 PK	74.0	-29.1	1.60 V	261	30.8	14.1
6	11420.00	33.9 AV	54.0	-20.1	1.60 V	261	19.8	14.1
7	#17130.00	43.8 PK	68.2	-24.4	1.45 V	69	26.6	17.2

Remarks:

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

802.11ax (HE80)

Channel	TX Channel 58	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5290.00	107.1 PK			3.24 H	265	104.2	2.9
2	*5290.00	97.1 AV			3.24 H	265	94.2	2.9
3	5350.00	65.4 PK	74.0	-8.6	3.24 H	265	62.4	3.0
4	5350.00	53.6 AV	54.0	-0.4	3.24 H	265	50.6	3.0
5	#10580.00	44.1 PK	68.2	-24.1	1.37 H	319	30.8	13.3
6	15870.00	43.3 PK	74.0	-30.7	1.51 H	289	30.2	13.1
7	15870.00	33.2 AV	54.0	-20.8	1.51 H	289	20.1	13.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5290.00	100.8 PK			3.39 V	243	97.9	2.9
2	*5290.00	91.3 AV			3.39 V	243	88.4	2.9
3	5350.00	56.8 PK	74.0	-17.2	3.39 V	243	53.8	3.0
4	5350.00	46.4 AV	54.0	-7.6	3.39 V	243	43.4	3.0
5	#10580.00	44.8 PK	68.2	-23.4	1.60 V	280	31.5	13.3
6	15870.00	43.4 PK	74.0	-30.6	1.45 V	70	30.3	13.1
7	15870.00	33.2 AV	54.0	-20.8	1.45 V	70	20.1	13.1

Remarks:

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

Channel	TX Channel 106	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	63.7 PK	74.0	-10.3	1.79 H	344	60.5	3.2
2	5460.00	53.7 AV	54.0	-0.3	1.79 H	344	50.5	3.2
3	#5470.00	66.0 PK	68.2	-2.2	1.79 H	344	62.8	3.2
4	*5530.00	108.3 PK			1.79 H	344	105.0	3.3
5	*5530.00	99.4 AV			1.79 H	344	96.1	3.3
6	11060.00	44.1 PK	74.0	-29.9	1.36 H	323	30.5	13.6
7	11060.00	33.2 AV	54.0	-20.8	1.36 H	323	19.6	13.6
8	#16590.00	43.1 PK	68.2	-25.1	1.53 H	308	26.8	16.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	57.9 PK	74.0	-16.1	3.40 V	227	54.7	3.2
2	5460.00	47.0 AV	54.0	-7.0	3.40 V	227	43.8	3.2
3	#5470.00	59.2 PK	68.2	-9.0	3.40 V	227	56.0	3.2
4	*5530.00	102.1 PK			3.40 V	227	98.8	3.3
5	*5530.00	93.5 AV			3.40 V	227	90.2	3.3
6	11060.00	44.9 PK	74.0	-29.1	1.62 V	279	31.3	13.6
7	11060.00	33.2 AV	54.0	-20.8	1.62 V	279	19.6	13.6
8	#16590.00	43.1 PK	68.2	-25.1	1.48 V	74	26.8	16.3

Remarks:

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

Channel	TX Channel 122	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	62.2 PK	74.0	-11.8	1.61 H	351	59.0	3.2
2	5460.00	50.8 AV	54.0	-3.2	1.61 H	351	47.6	3.2
3	#5470.00	63.5 PK	68.2	-4.7	1.61 H	351	60.3	3.2
4	*5610.00	113.8 PK			1.61 H	351	110.4	3.4
5	*5610.00	105.1 AV			1.61 H	351	101.7	3.4
6	#5725.00	67.9 PK	68.2	-0.3	1.61 H	351	64.1	3.8
7	11220.00	44.4 PK	74.0	-29.6	1.36 H	330	31.0	13.4
8	11220.00	33.2 AV	54.0	-20.8	1.36 H	330	19.8	13.4
9	#16830.00	43.1 PK	68.2	-25.1	1.47 H	305	26.4	16.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.5 PK	74.0	-17.5	3.41 V	250	53.3	3.2
2	5460.00	44.8 AV	54.0	-9.2	3.41 V	250	41.6	3.2
3	#5470.00	57.6 PK	68.2	-10.6	3.41 V	250	54.4	3.2
4	*5610.00	107.2 PK			3.41 V	250	103.8	3.4
5	*5610.00	98.7 AV			3.41 V	250	95.3	3.4
6	#5725.00	61.6 PK	68.2	-6.6	3.41 V	250	57.8	3.8
7	11220.00	44.8 PK	74.0	-29.2	1.69 V	268	31.4	13.4
8	11220.00	33.2 AV	54.0	-20.8	1.69 V	268	19.8	13.4
9	#16830.00	43.6 PK	68.2	-24.6	1.54 V	79	26.9	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 138	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	66.8 PK	68.2	-1.4	1.56 H	335	63.6	3.2
2	*5690.00	111.0 PK			1.56 H	335	107.2	3.8
3	*5690.00	102.3 AV			1.56 H	335	98.5	3.8
4	#5850.00	58.4 PK	68.2	-9.8	1.56 H	335	54.2	4.2
5	11380.00	44.0 PK	74.0	-30.0	1.37 H	336	29.9	14.1
6	11380.00	32.9 AV	54.0	-21.1	1.37 H	336	18.8	14.1
7	#17070.00	43.3 PK	68.2	-24.9	1.46 H	292	25.7	17.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	61.9 PK	68.2	-6.3	3.38 V	264	58.7	3.2
2	*5690.00	105.3 PK			3.38 V	264	101.5	3.8
3	*5690.00	96.2 AV			3.38 V	264	92.4	3.8
4	#5850.00	59.1 PK	68.2	-9.1	3.38 V	264	54.9	4.2
5	11380.00	45.2 PK	74.0	-28.8	1.64 V	276	31.1	14.1
6	11380.00	33.5 AV	54.0	-20.5	1.64 V	276	19.4	14.1
7	#17070.00	43.5 PK	68.2	-24.7	1.60 V	88	25.9	17.6

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.

802.11ax (HE160)

Channel	TX Channel 50	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	61.7 PK	74.0	-12.3	3.48 H	266	58.7	3.0
2	5150.00	53.8 AV	54.0	-0.2	3.48 H	266	50.8	3.0
3	*5250.00	102.9 PK			3.48 H	266	100.1	2.8
4	*5250.00	93.4 AV			3.48 H	266	90.6	2.8
5	#10500.00	44.4 PK	68.2	-23.8	1.35 H	310	30.8	13.6
6	15750.00	43.9 PK	74.0	-30.1	1.56 H	289	30.7	13.2
7	15750.00	33.2 AV	54.0	-20.8	1.56 H	289	20.0	13.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	55.9 PK	74.0	-18.1	3.37 V	227	52.9	3.0
2	5150.00	46.4 AV	54.0	-7.6	3.37 V	227	43.4	3.0
3	*5250.00	97.0 PK			3.37 V	227	94.2	2.8
4	*5250.00	87.2 AV			3.37 V	227	84.4	2.8
5	#10500.00	44.5 PK	68.2	-23.7	1.66 V	256	30.9	13.6
6	15750.00	42.7 PK	74.0	-31.3	1.50 V	57	29.5	13.2
7	15750.00	33.2 AV	54.0	-20.8	1.50 V	57	20.0	13.2

Remarks:

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

Channel	TX Channel 114	Detector Function	Peak (PK) Average (AV)
Frequency Range	1GHz ~ 40GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	66.1 PK	74.0	-7.9	1.54 H	345	62.9	3.2
2	5460.00	53.7 AV	54.0	-0.3	1.54 H	345	50.5	3.2
3	#5465.38	66.8 PK	68.2	-1.4	1.54 H	345	63.6	3.2
4	*5570.00	104.7 PK			1.54 H	345	101.4	3.3
5	*5570.00	96.3 AV			1.54 H	345	93.0	3.3
6	11140.00	44.7 PK	74.0	-29.3	1.29 H	333	31.4	13.3
7	11140.00	33.2 AV	54.0	-20.8	1.29 H	333	19.9	13.3
8	#16710.00	43.9 PK	68.2	-24.3	1.49 H	295	27.3	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5458.48	60.2 PK	74.0	-13.8	3.34 V	238	57.0	3.2
2	5458.48	48.4 AV	54.0	-5.6	3.34 V	238	45.2	3.2
3	#5464.15	60.4 PK	68.2	-7.8	3.34 V	238	57.2	3.2
4	*5570.00	98.5 PK			3.34 V	238	95.2	3.3
5	*5570.00	90.0 AV			3.34 V	238	86.7	3.3
6	11140.00	44.9 PK	74.0	-29.1	1.70 V	262	31.6	13.3
7	11140.00	33.2 AV	54.0	-20.8	1.70 V	262	19.9	13.3
8	#16710.00	43.3 PK	68.2	-24.9	1.45 V	69	26.7	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.

Below 1GHz Data:

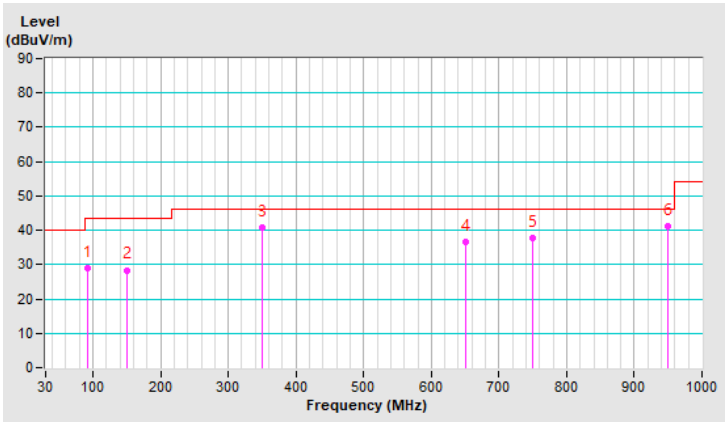
802.11ax (HE80)

Channel	TX Channel 122	Detector Function	Quasi-Peak (QP)
Frequency Range	9kHz ~ 1GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	92.96	28.8 QP	43.5	-14.7	2.00 H	251	41.7	-12.9
2	149.99	28.4 QP	43.5	-15.1	1.50 H	248	36.2	-7.8
3	349.97	40.6 QP	46.0	-5.4	1.00 H	232	46.5	-5.9
4	650.01	36.7 QP	46.0	-9.3	1.00 H	201	35.2	1.5
5	750.02	37.7 QP	46.0	-8.3	1.00 H	282	33.9	3.8
6	949.99	41.0 QP	46.0	-5.0	1.50 H	236	34.1	6.9

Remarks:

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

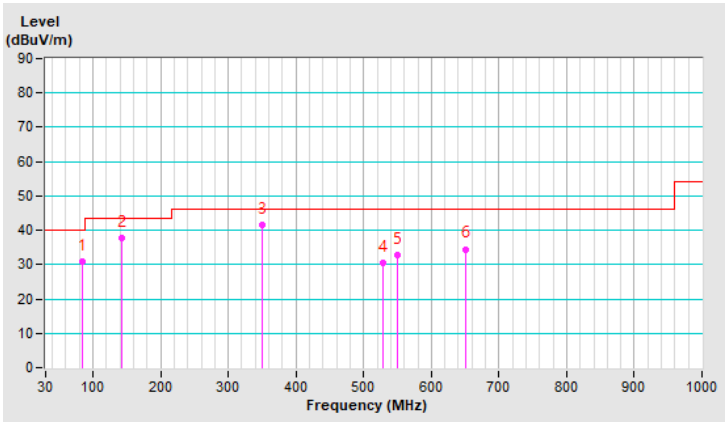


Channel	TX Channel 122	Detector Function	Quasi-Peak (QP)
Frequency Range	9kHz ~ 1GHz		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	85.10	31.0 QP	40.0	-9.0	1.50 V	360	44.4	-13.4
2	141.99	37.9 QP	43.5	-5.6	2.00 V	1	45.9	-8.0
3	349.97	41.4 QP	46.0	-4.6	1.50 V	274	47.3	-5.9
4	528.12	30.6 QP	46.0	-15.4	1.00 V	267	31.8	-1.2
5	549.99	32.9 QP	46.0	-13.1	1.50 V	341	33.8	-0.9
6	650.01	34.5 QP	46.0	-11.5	1.00 V	243	33.0	1.5

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 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. 19, 2020	Mar. 18, 2021
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	005	Aug. 30, 2019	Aug. 29, 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: Aug. 07, 2020

4.2.3 Test Procedure

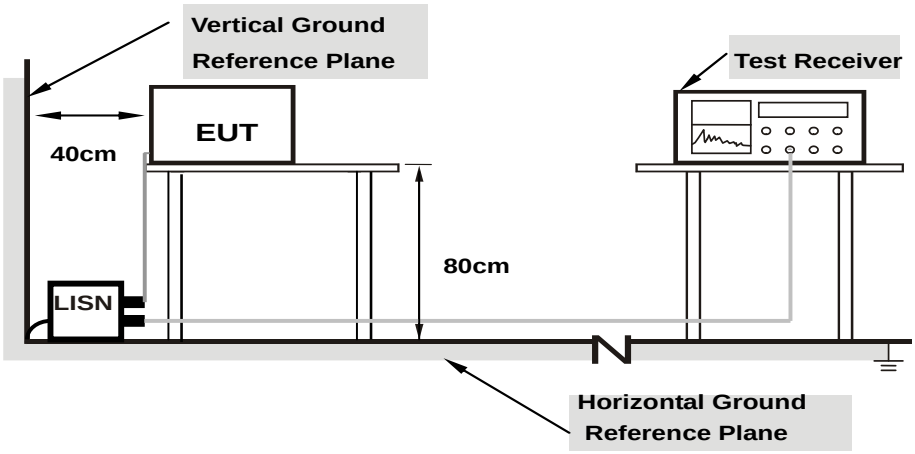
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

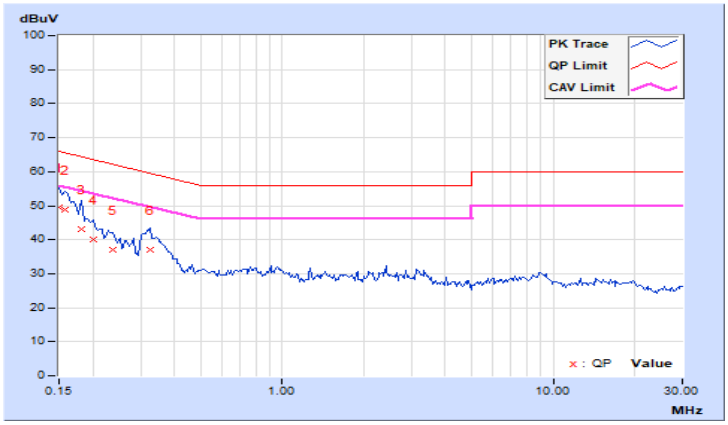
4.2.7 Test Results

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.98	39.48	26.63	49.46	36.61	66.00	56.00	-16.54	-19.39
2	0.15781	9.98	38.73	25.81	48.71	35.79	65.58	55.58	-16.87	-19.79
3	0.18125	9.99	33.10	22.38	43.09	32.37	64.43	54.43	-21.34	-22.06
4	0.20078	9.99	30.21	20.11	40.20	30.10	63.58	53.58	-23.38	-23.48
5	0.23594	9.99	27.12	16.05	37.11	26.04	62.24	52.24	-25.13	-26.20
6	0.32578	10.00	27.10	13.02	37.10	23.02	59.56	49.56	-22.46	-26.54

Remarks:

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

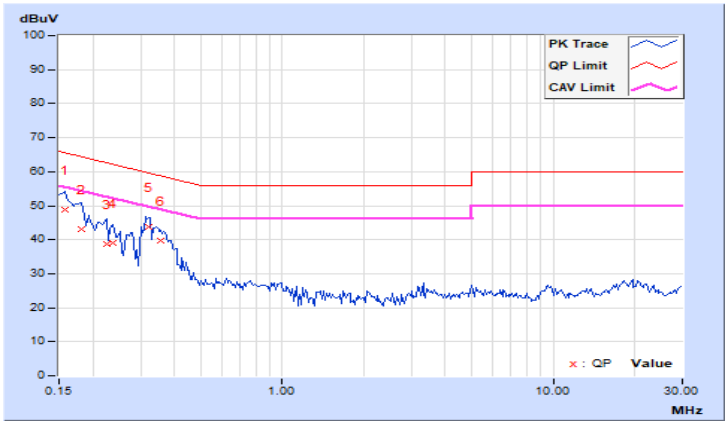


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.99	38.77	24.86	48.76	34.85	65.58	55.58	-16.82	-20.73
2	0.18125	10.00	33.24	21.02	43.24	31.02	64.43	54.43	-21.19	-23.41
3	0.22422	10.00	28.61	18.18	38.61	28.18	62.66	52.66	-24.05	-24.48
4	0.23594	10.01	29.09	19.50	39.10	29.51	62.24	52.24	-23.14	-22.73
5	**0.32188**	**10.02**	**33.75**	**20.76**	**43.77**	**30.78**	**59.66**	**49.66**	**-15.89**	**-18.88**
6	0.35703	10.02	29.56	20.59	39.58	30.61	58.80	48.80	-19.22	-18.19

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

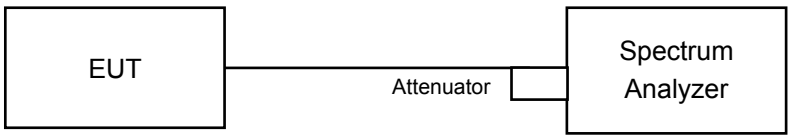
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.3.2 Test Setup

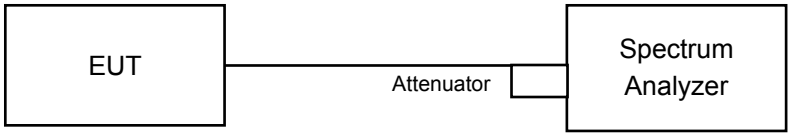
FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz:



For other channels:

FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz or 5250MHz:

For 802.11a

Follow FCC KDB 789033 UNII test procedure:

Method SA-1

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

For other modulation mode

Follow FCC KDB 789033 UNII test procedure:

Method SA-2

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

For other channels:

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

FOR 26dB OCCUPIED BANDWIDTH

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Results

CDD Mode

POWER OUTPUT

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	13.11	14.28	14.04	13.62	95.622	19.81	24.00	Pass
60	5300	13.13	14.29	13.92	13.32	93.551	19.71	24.00	Pass
64	5320	13.32	14.09	13.91	13.50	94.114	19.74	24.00	Pass
100	5500	13.69	14.05	13.82	13.64	96.018	19.82	24.00	Pass
116	5580	13.31	13.98	14.01	13.84	95.819	19.81	24.00	Pass
140	5700	13.37	14.20	14.34	13.16	95.895	19.82	24.00	Pass
*144 (U-NII-2C Band)	5720	11.31	12.13	12.41	11.09	60.122	17.79	22.99	Pass
*144 (U-NII-3 Band)	5720	4.97	6.17	5.83	4.67	14.04	11.47	30.00	Pass

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	74.162	18.70	13.38	14.17	14.28	13.15	95.344	19.79

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.74	24.37 > 24
60	5300	21.7	24.36 > 24
64	5320	21.73	24.37 > 24
100	5500	21.65	24.35 > 24
116	5580	21.7	24.36 > 24
140	5700	21.72	24.36 > 24
144 (U-NII-2C Band)	5720	15.83	22.99 < 24

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

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	13.16	13.80	13.99	13.24	90.837	19.58	24.00	Pass
60	5300	12.97	14.05	14.07	13.23	91.79	19.63	24.00	Pass
64	5320	13.18	13.92	13.93	13.14	90.781	19.58	24.00	Pass
100	5500	13.58	14.06	13.75	13.27	93.218	19.69	24.00	Pass
116	5580	13.35	13.62	13.86	13.81	93.007	19.69	24.00	Pass
140	5700	13.34	14.23	14.11	12.94	93.505	19.71	24.00	Pass
*144 (U-NII-2C Band)	5720	10.77	11.60	11.21	10.00	50.994	17.08	23.00	Pass
*144 (U-NII-3 Band)	5720	5.23	5.94	5.75	5.32	14.826	11.71	30.00	Pass

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	65.82	18.18	13.26	14.18	14.05	13.00	92.728	19.67

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.81	24.38 > 24
60	5300	21.75	24.37 > 24
64	5320	21.66	24.35 > 24
100	5500	21.83	24.39 > 24
116	5580	21.83	24.39 > 24
140	5700	21.72	24.36 > 24
144 (U-NII-2C Band)	5720	15.88	23 < 24

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

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	15.85	16.99	16.99	16.66	184.811	22.67	24.00	Pass
62	5310	15.96	16.98	16.98	16.78	186.866	22.72	24.00	Pass
102	5510	14.96	15.18	15.18	14.25	123.862	20.93	24.00	Pass
110	5550	16.43	16.81	16.81	16.94	189.332	22.77	24.00	Pass
134	5670	16.10	17.01	17.01	16.52	186.081	22.70	24.00	Pass
*142 (U-NII-2C Band)	5710	12.57	14.21	13.77	13.47	94.125	19.74	24.00	Pass
*142 (U-NII-3 Band)	5710	1.59	3.80	3.29	2.54	8.081	9.07	30.00	Pass

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
142	5710	102.206	20.09	16.13	16.98	16.72	16.55	183.084	22.63

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	40.78	27.1 > 24
62	5310	41.28	27.15 > 24
102	5510	41.28	27.15 > 24
110	5550	41.22	27.15 > 24
134	5670	41.28	27.15 > 24
142 (U-NII-2C Band)	5710	35.6	26.51 > 24

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

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	14.56	15.13	15.38	14.52	123.988	20.93	24.00	Pass
106	5530	13.15	13.58	13.45	13.47	87.821	19.44	24.00	Pass
122	5610	17.33	18.09	17.52	18.42	244.488	23.88	24.00	Pass
*138 (U-NII-2C Band)	5690	13.37	13.66	13.90	14.54	105.762	20.24	24.00	Pass
*138 (U-NII-3 Band)	5690	-0.79	1.32	-1.35	1.23	4.5882	6.62	30.00	Pass

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
138	5690	110.3502	20.43	17.24	18.03	17.66	18.25	241.678	23.83

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	82.54	30.16 > 24
106	5530	82.51	30.16 > 24
122	5610	82.56	30.16 > 24
138 (U-NII-2C Band)	5690	76.38	29.82 > 24

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

802.11ac (VHT160)

Chan.	Chan. Freq. (MHz)	Average 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	5.62	6.01	5.54	4.55	16.01	12.04	30.00	Pass
*50 (U-NII-2A Band)	5250	5.21	6.08	6.01	4.25	15.959	12.03	24.00	Pass
114	5570	12.32	13.15	13.50	12.82	79.244	18.99	24.00	Pass

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
50	5250	31.969	15.05	12.65	12.30	13.40	12.24	74.017	18.69

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
50 (U-NII-2A Band)	5250	81.72	30.12 > 24
114	5570	163.1	33.12 > 24

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

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	13.24	13.93	14.06	13.28	92.553	19.66	24.00	Pass
60	5300	13.17	14.08	14.11	13.28	93.38	19.70	24.00	Pass
64	5320	13.27	14.06	14.02	13.20	92.829	19.68	24.00	Pass
100	5500	13.69	14.09	13.78	13.41	94.839	19.77	24.00	Pass
116	5580	13.37	13.80	13.99	13.88	95.211	19.79	24.00	Pass
140	5700	13.42	14.31	14.12	13.01	94.777	19.77	24.00	Pass
*144 (U-NII-2C Band)	5720	11.00	11.91	11.31	10.20	53.561	17.29	23.00	Pass
*144 (U-NII-3 Band)	5720	5.45	6.22	5.89	5.62	15.65	11.95	30.00	Pass

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	69.211	18.40	13.36	14.33	14.15	13.00	94.733	19.77

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.81	24.38 > 24
60	5300	21.75	24.37 > 24
64	5320	21.66	24.35 > 24
100	5500	21.83	24.39 > 24
116	5580	21.83	24.39 > 24
140	5700	21.72	24.36 > 24
144 (U-NII-2C Band)	5720	15.88	23 < 24

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

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	16.00	17.19	16.76	16.74	186.801	22.71	24.00	Pass
62	5310	16.13	17.02	16.79	16.86	187.652	22.73	24.00	Pass
102	5510	14.99	15.24	15.13	14.30	124.469	20.95	24.00	Pass
110	5550	16.58	16.93	16.82	16.99	192.904	22.85	24.00	Pass
134	5670	16.22	17.06	16.78	16.67	186.79	22.71	24.00	Pass
*142 (U-NII-2C Band)	5710	12.89	14.34	14.01	13.77	99.458	19.98	24.00	Pass
*142 (U-NII-3 Band)	5710	1.76	4.07	3.56	2.87	8.59	9.34	30.00	Pass

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
142	5710	108.048	20.34	16.26	17.12	16.77	16.68	187.882	22.74

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	40.78	27.1 > 24
62	5310	41.28	27.15 > 24
102	5510	41.28	27.15 > 24
110	5550	41.22	27.15 > 24
134	5670	41.28	27.15 > 24
142 (U-NII-2C Band)	5710	35.6	26.51 > 24

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

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	14.75	15.24	15.39	14.66	127.109	21.04	24.00	Pass
106	5530	13.33	13.64	13.60	13.62	90.572	19.57	24.00	Pass
122	5610	17.33	18.20	17.71	18.48	249.634	23.97	24.00	Pass
*138 (U-NII-2C Band)	5690	13.57	14.00	14.18	14.71	111.902	20.49	24.00	Pass
*138 (U-NII-3 Band)	5690	-0.55	1.65	-1.06	1.50	4.9014	6.90	30.00	Pass

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
138	5690	116.8034	20.67	17.30	18.15	17.75	18.44	248.406	23.95

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	82.54	30.16 > 24
106	5530	82.51	30.16 > 24
122	5610	82.56	30.16 > 24
138 (U-NII-2C Band)	5690	76.38	29.82 > 24

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

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Average 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	5.86	6.38	5.66	4.80	16.956	12.29	30.00	Pass
*50 (U-NII-2A Band)	5250	5.28	6.26	6.12	4.44	16.468	12.17	24.00	Pass
114	5570	12.39	13.19	13.53	12.85	80.001	19.03	24.00	Pass

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
50	5250	33.424	15.24	12.69	13.32	13.42	12.29	78.978	18.98

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
50 (U-NII-2A Band)	5250	81.72	30.12 > 24
114	5570	163.1	33.12 > 24

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

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	13.16	13.80	13.99	13.24	90.837	19.58	19.86	Pass
60	5300	12.97	14.05	14.07	13.23	91.79	19.63	19.86	Pass
64	5320	13.18	13.92	13.93	13.14	90.781	19.58	19.86	Pass
100	5500	13.58	14.06	13.75	13.27	93.218	19.69	19.86	Pass
116	5580	13.35	13.62	13.86	13.81	93.007	19.69	19.86	Pass
140	5700	13.34	14.23	14.11	12.94	93.505	19.71	19.86	Pass
*144 (U-NII-2C Band)	5720	10.78	11.83	11.12	10.20	52.036	17.16	18.86	Pass
*144 (U-NII-3 Band)	5720	5.08	5.97	5.74	5.62	14.979	11.75	25.86	Pass

Note: 1. For U-NII-2A, U-NII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.14-6)".
2. For U-NII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power limit shall be reduced to 30-(10.14-6) = 25.86 dBm.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	67.015	18.26	13.36	14.33	14.15	13.00	94.733	19.77

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.81	24.38 > 24
60	5300	21.75	24.37 > 24
64	5320	21.66	24.35 > 24
100	5500	21.83	24.39 > 24
116	5580	21.83	24.39 > 24
140	5700	21.72	24.36 > 24
144 (U-NII-2C Band)	5720	15.88	23 < 24

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

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	13.17	13.72	14.01	13.24	90.563	19.57	19.86	Pass
62	5310	13.05	13.76	13.95	13.21	89.725	19.53	19.86	Pass
102	5510	13.47	13.83	13.57	13.32	90.617	19.57	19.86	Pass
110	5550	13.37	13.80	13.70	13.85	93.424	19.70	19.86	Pass
134	5670	13.35	14.20	14.01	13.05	93.29	19.70	19.86	Pass
*142 (U-NII-2C Band)	5710	11.24	11.85	11.60	11.92	60.984	17.85	19.86	Pass
*142 (U-NII-3 Band)	5710	0.33	0.95	1.76	0.94	5.268	7.22	25.86	Pass

Note: 1. For U-NII-2A, U-NII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.14-6)".
2. For U-NII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power limit shall be reduced to 30-(10.14-6) = 25.86 dBm.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
142	5710	66.252	18.21	13.30	14.22	14.06	13.10	93.689	19.72

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	40.78	27.1 > 24
62	5310	41.28	27.15 > 24
102	5510	41.28	27.15 > 24
110	5550	41.22	27.15 > 24
134	5670	41.28	27.15 > 24
142 (U-NII-2C Band)	5710	35.6	26.51 > 24

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

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	13.32	13.65	13.84	13.75	92.576	19.66	19.86	Pass
106	5530	13.15	13.58	13.45	13.47	87.821	19.44	19.86	Pass
122	5610	13.42	13.65	13.56	13.49	90.187	19.55	19.86	Pass
*138 (U-NII-2C Band)	5690	11.05	12.33	11.13	10.94	59.63	17.75	19.86	Pass
*138 (U-NII-3 Band)	5690	-3.93	-1.90	-2.63	-2.76	2.2953	3.61	25.86	Pass

Note: 1. For U-NII-2A, U-NII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.14-6)".
2. For U-NII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power limit shall be reduced to 30-(10.14-6) = 25.86 dBm.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
138	5690	61.9253	17.92	13.43	13.65	13.56	13.42	89.88	19.54

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	82.54	30.16 > 24
106	5530	82.51	30.16 > 24
122	5610	82.56	30.16 > 24
138 (U-NII-2C Band)	5690	76.38	29.82 > 24

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

802.11ac (VHT160)

Chan.	Chan. Freq. (MHz)	Average 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	5.86	6.38	5.66	4.80	16.956	12.29	25.86	Pass
*50 (U-NII-2A Band)	5250	5.28	6.26	6.12	4.44	16.468	12.17	19.86	Pass
114	5570	12.32	13.15	13.50	12.82	79.244	18.99	19.86	Pass

Note: 1. For U-NII-1: The directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$ + $10^{G4/20}$)^2 / 4] = 10.14 dBi > 6dBi, so the power limit shall be reduced to 30-(10.14-6) = 25.86 dBm.
2. For U-NII-2A, U-NII-2C: The directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$ + $10^{G4/20}$)^2 / 4] = 10.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.14-6)".

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
50	5250	33.424	15.24	12.65	12.30	13.40	12.24	74.017	18.69

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
50 (U-NII-2A Band)	5250	81.72	30.12 > 24
114	5570	163.1	33.12 > 24

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

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	13.24	13.93	14.06	13.28	92.553	19.66	19.86	Pass
60	5300	13.17	14.08	14.11	13.28	93.38	19.70	19.86	Pass
64	5320	13.27	14.06	14.02	13.20	92.829	19.68	19.86	Pass
100	5500	13.69	14.09	13.78	13.41	94.839	19.77	19.86	Pass
116	5580	13.37	13.80	13.99	13.88	95.211	19.79	19.86	Pass
140	5700	13.42	14.31	14.12	13.01	94.777	19.77	19.86	Pass
*144 (U-NII-2C Band)	5720	10.82	11.49	11.04	10.20	50.727	17.05	18.86	Pass
*144 (U-NII-3 Band)	5720	5.36	6.03	5.52	5.62	15.066	11.78	25.86	Pass

Note: 1. For U-NII-2A, U-NII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.14-6)".
2. For U-NII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power limit shall be reduced to 30-(10.14-6) = 25.86 dBm.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	65.793	18.18	13.40	14.30	14.16	13.05	95.038	19.78

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.81	24.38 > 24
60	5300	21.75	24.37 > 24
64	5320	21.66	24.35 > 24
100	5500	21.83	24.39 > 24
116	5580	21.83	24.39 > 24
140	5700	21.72	24.36 > 24
144 (U-NII-2C Band)	5720	15.88	23 < 24

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

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	13.22	13.90	14.02	13.25	91.906	19.63	19.86	Pass
62	5310	13.23	13.89	14.01	13.26	91.889	19.63	19.86	Pass
102	5510	13.66	14.02	13.72	13.41	93.941	19.73	19.86	Pass
110	5550	13.38	13.85	13.89	13.85	94.8	19.77	19.86	Pass
134	5670	13.44	14.25	14.10	13.22	95.381	19.79	19.86	Pass
*142 (U-NII-2C Band)	5710	10.82	11.55	11.52	13.77	66.966	18.26	19.86	Pass
*142 (U-NII-3 Band)	5710	0.73	2.39	0.63	2.87	6.251	7.96	25.86	Pass

Note: 1. For U-NII-2A, U-NII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.14-6)".
2. For U-NII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power limit shall be reduced to 30-(10.14-6) = 25.86 dBm.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
142	5710	73.217	18.65	13.42	14.22	14.09	13.26	95.231	19.79

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	40.78	27.1 > 24
62	5310	41.28	27.15 > 24
102	5510	41.28	27.15 > 24
110	5550	41.22	27.15 > 24
134	5670	41.28	27.15 > 24
142 (U-NII-2C Band)	5710	35.6	26.51 > 24

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

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	13.35	13.82	13.99	13.82	94.886	19.77	19.86	Pass
106	5530	13.33	13.64	13.60	13.62	90.572	19.57	19.86	Pass
122	5610	13.44	13.66	13.62	13.50	90.709	19.58	19.86	Pass
*138 (U-NII-2C Band)	5690	10.30	10.34	10.52	14.71	67.36	18.28	19.86	Pass
*138 (U-NII-3 Band)	5690	-3.85	-3.13	-3.14	1.50	3.0195	4.80	25.86	Pass

Note: 1. For U-NII-2A, U-NII-2C: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.14-6)".
2. For U-NII-3: The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power limit shall be reduced to 30-(10.14-6) = 25.86 dBm.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
138	5690	70.3795	18.47	13.49	13.56	13.60	13.48	90.227	19.55

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	82.54	30.16 > 24
106	5530	82.51	30.16 > 24
122	5610	82.56	30.16 > 24
138 (U-NII-2C Band)	5690	76.38	29.82 > 24

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

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	Average 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	5.86	6.38	5.66	4.80	16.956	12.29	25.86	Pass
*50 (U-NII-2A Band)	5250	5.28	6.26	6.12	4.44	16.468	12.17	19.86	Pass
114	5570	12.39	13.19	13.53	12.85	80.001	19.03	19.86	Pass

Note: 1. For U-NII-1: The directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$ + $10^{G4/20}$)^2 / 4] = 10.14 dBi > 6dBi, so the power limit shall be reduced to 30-(10.14-6) = 25.86 dBm.
2. For U-NII-2A, U-NII-2C: The directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$ + $10^{G4/20}$)^2 / 4] = 10.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.14-6)".

The Total Power for the straddle channel and power meter value for reference only:

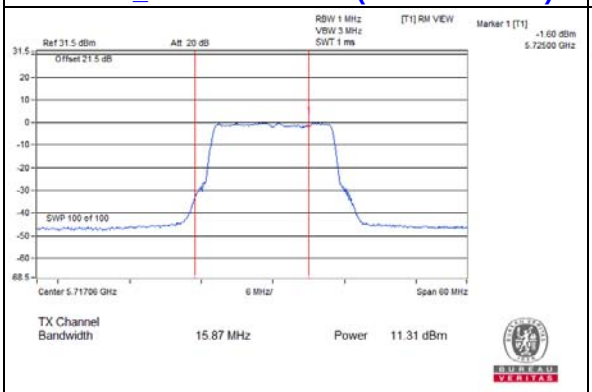
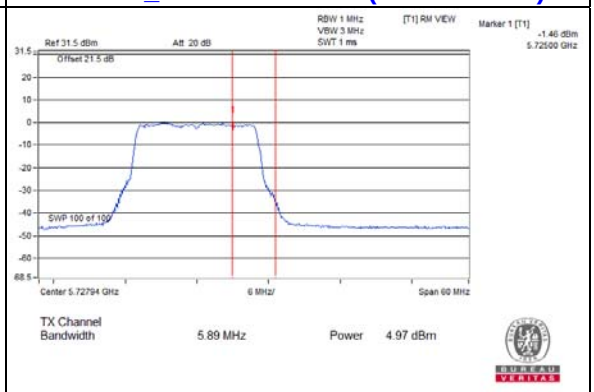
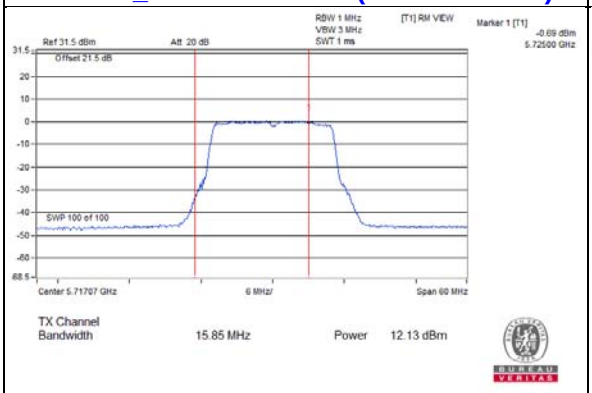
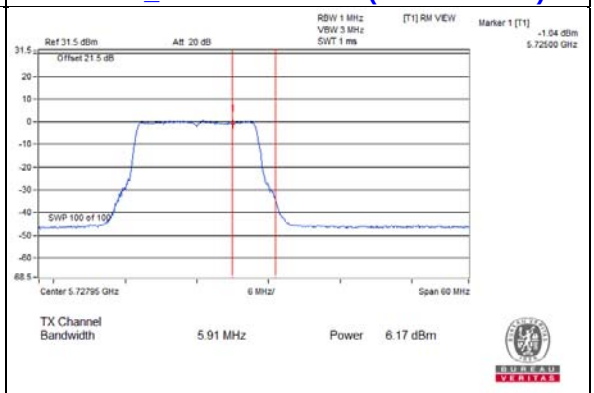
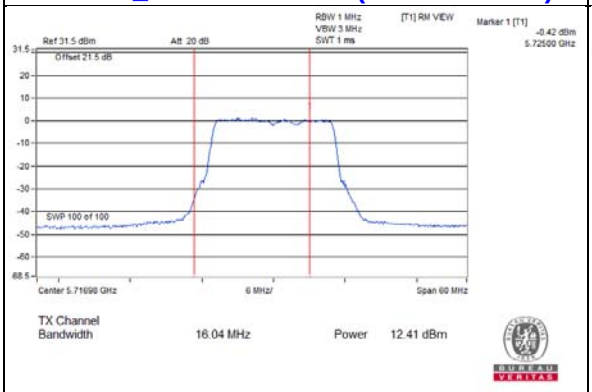
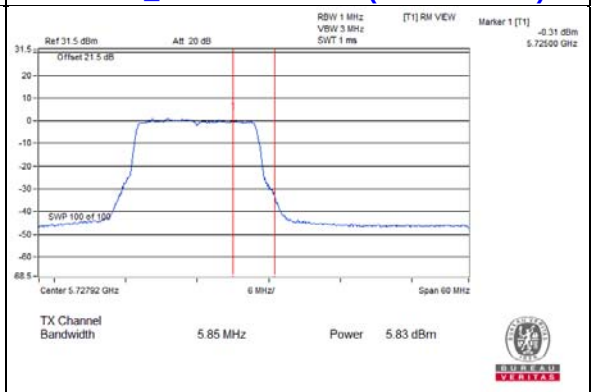
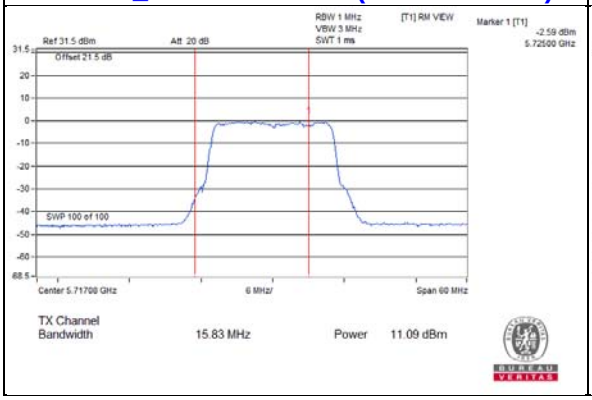
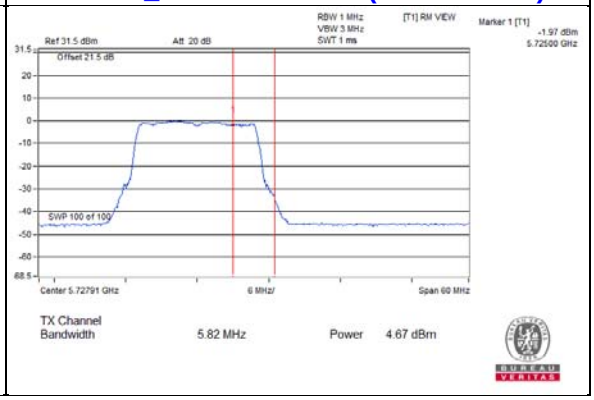
Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
50	5250	33.424	15.24	12.69	13.32	13.42	12.29	78.978	18.98

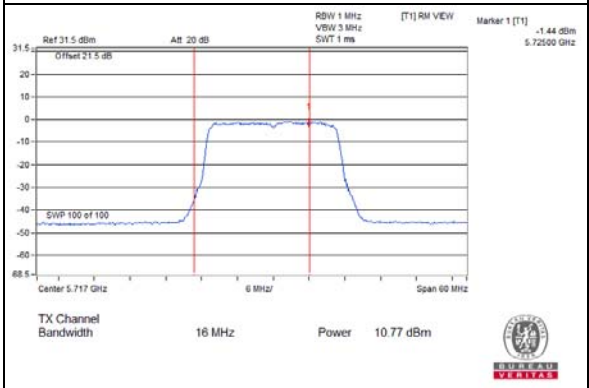
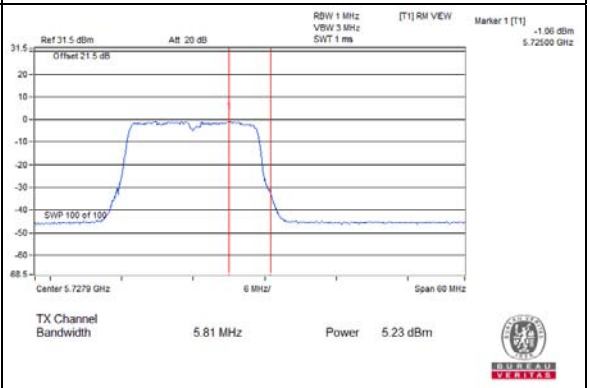
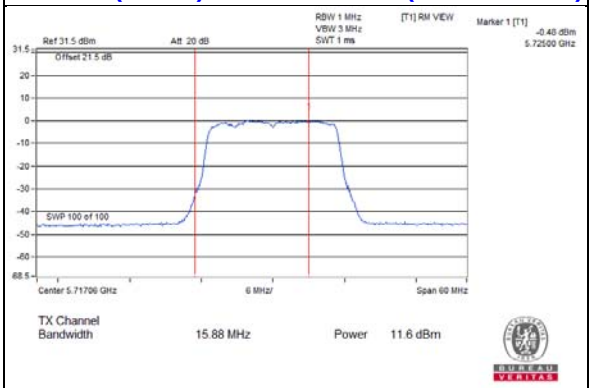
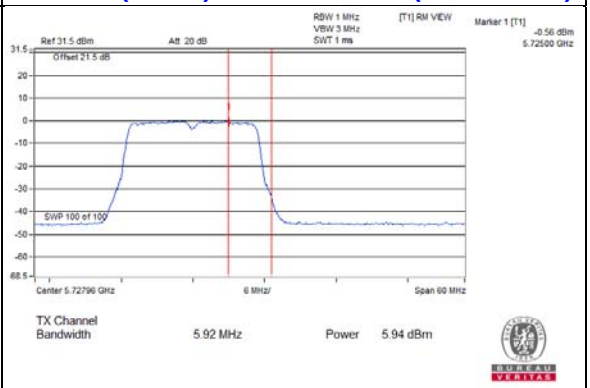
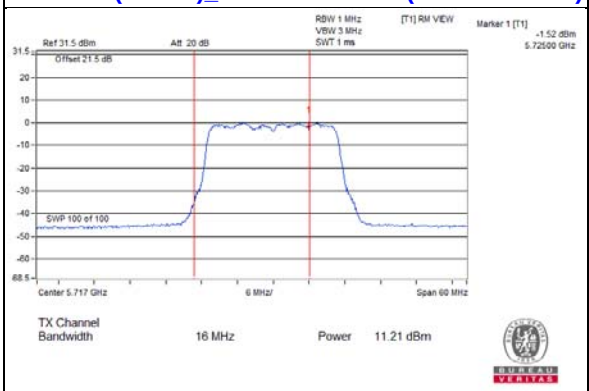
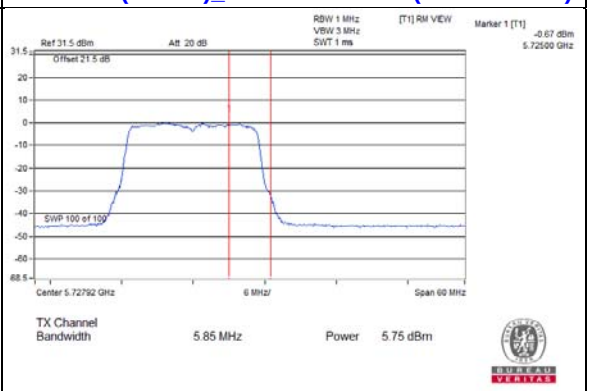
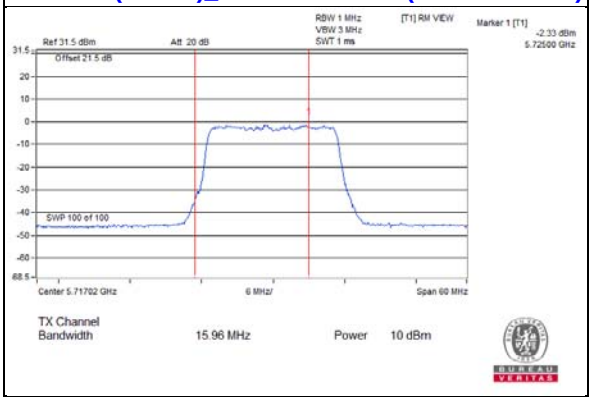
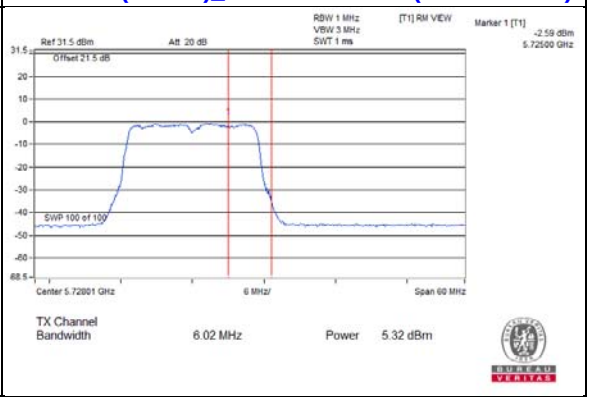
Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
50 (U-NII-2A Band)	5250	81.72	30.12 > 24
114	5570	163.1	33.12 > 24

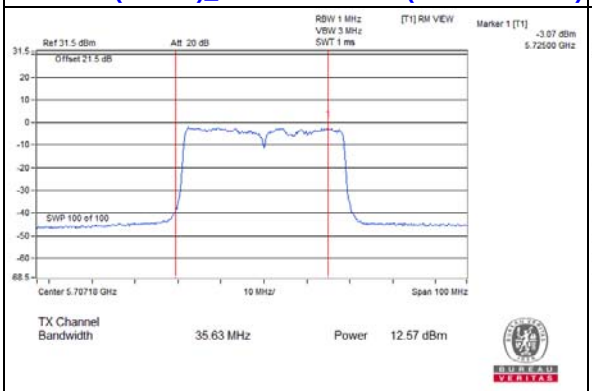
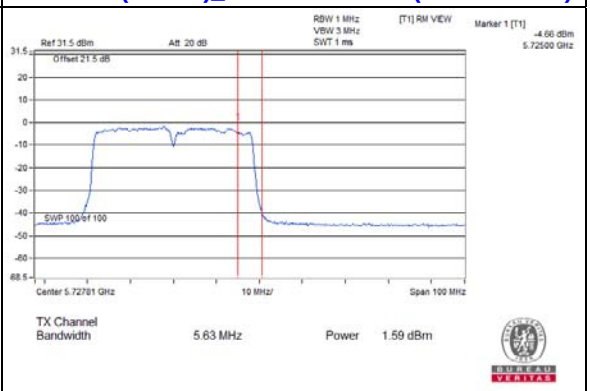
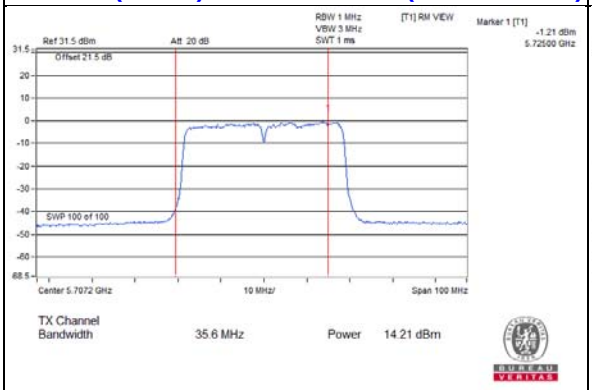
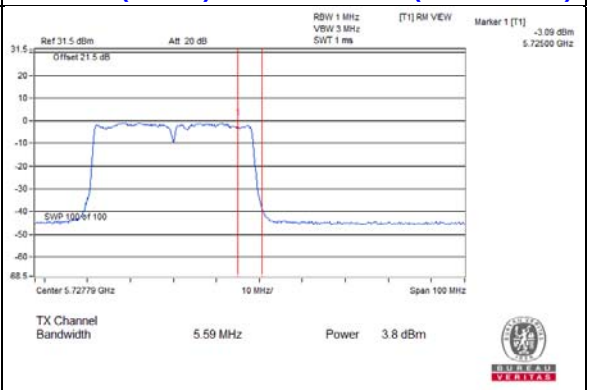
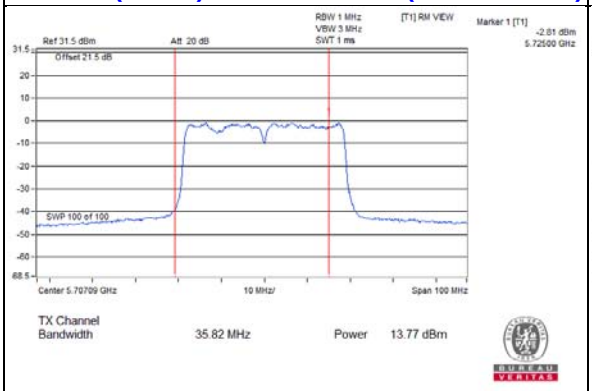
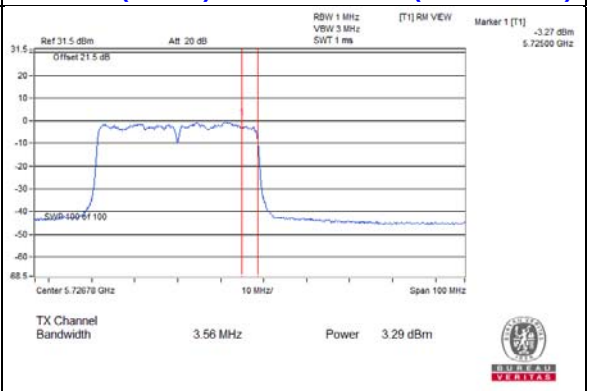
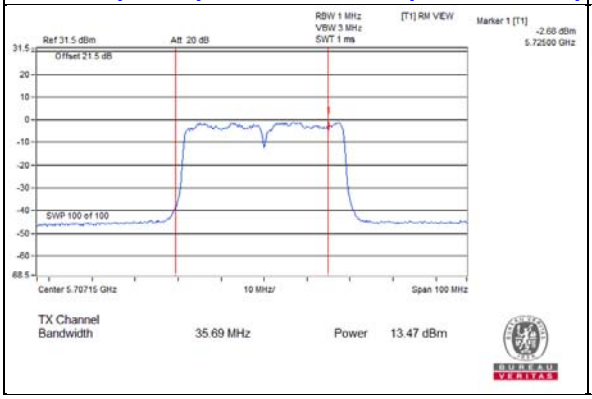
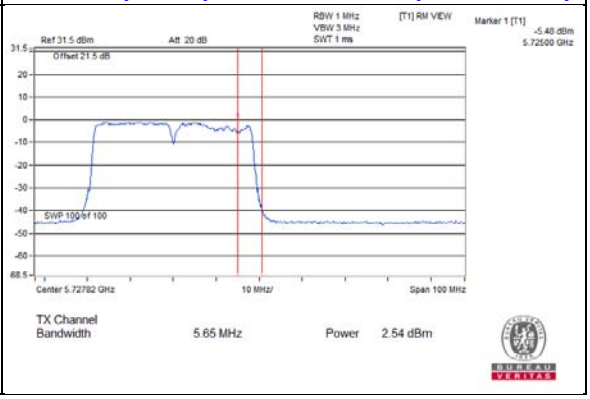
Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

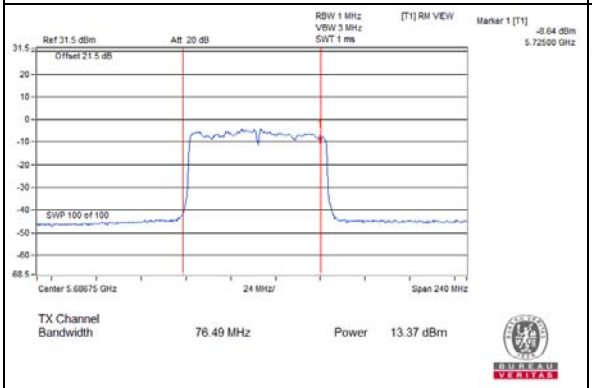
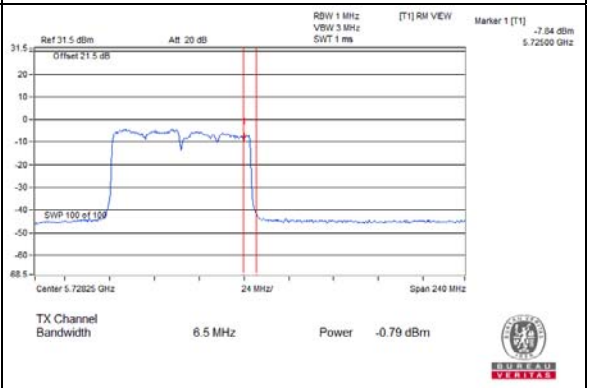
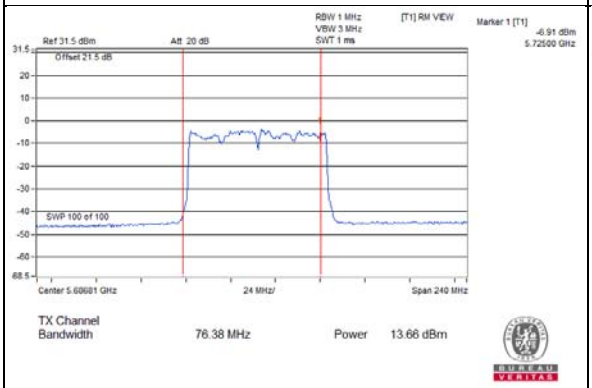
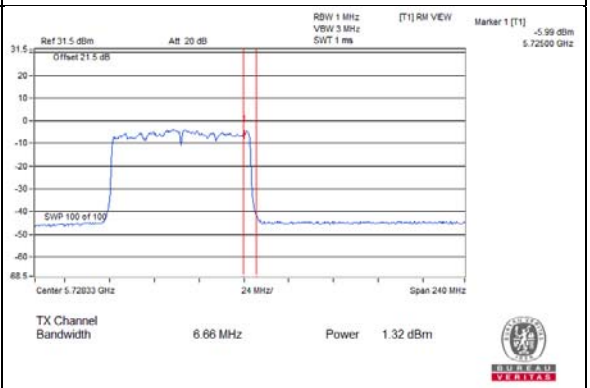
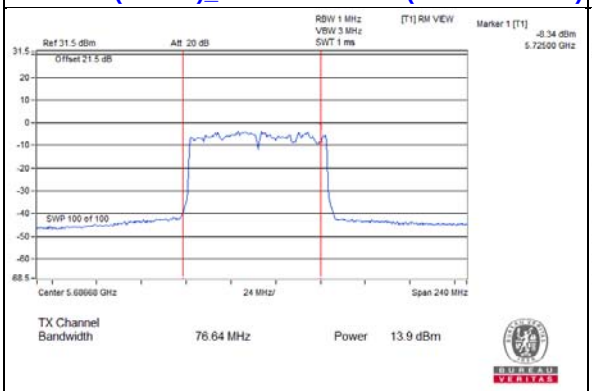
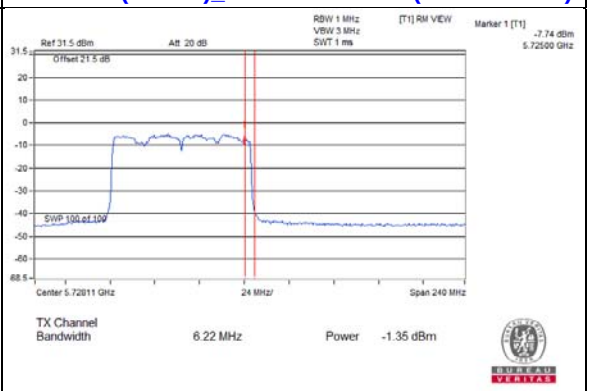
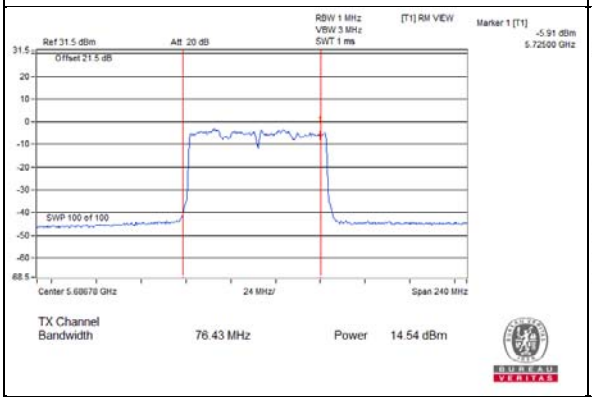
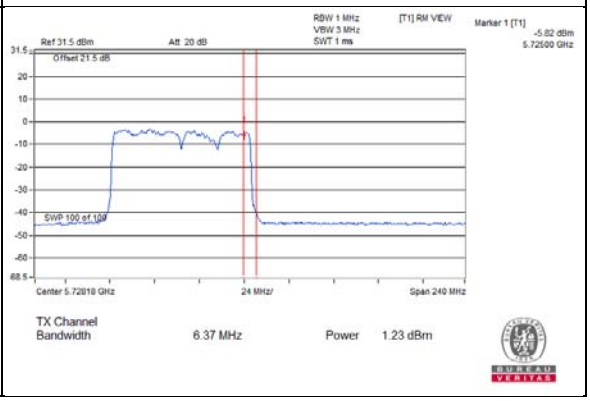
For channel straddling 5725MHz or 5250MHz of Power

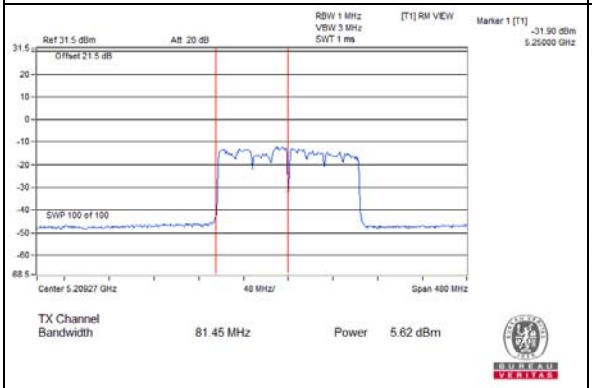
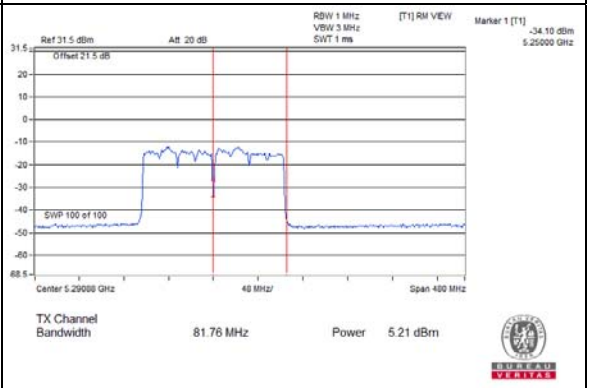
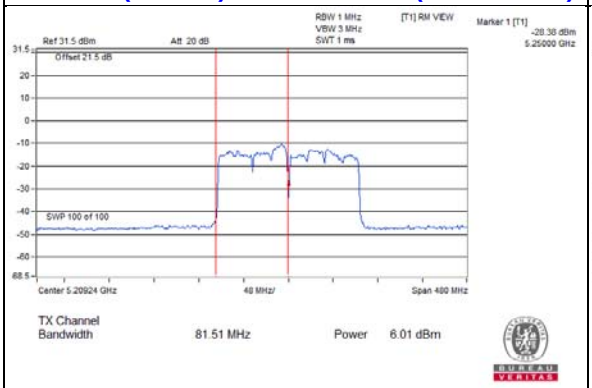
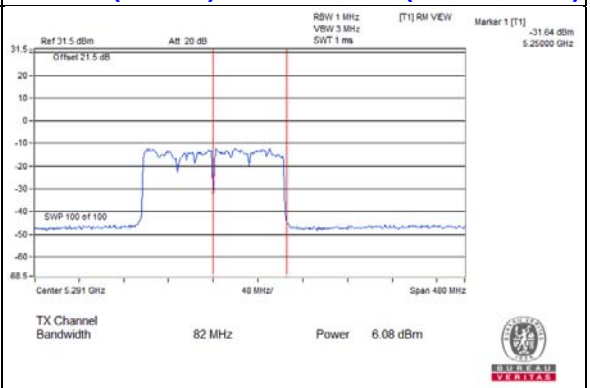
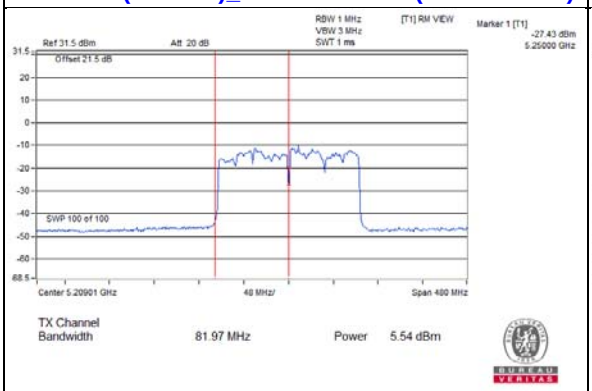
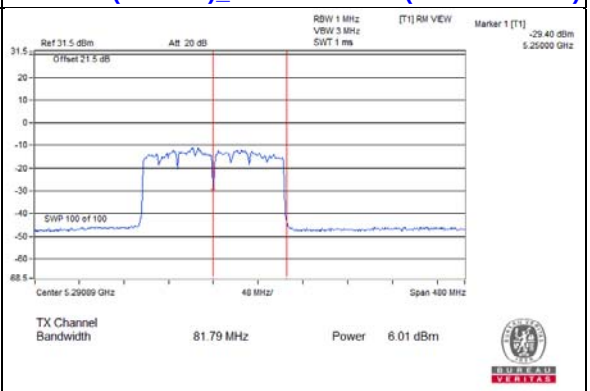
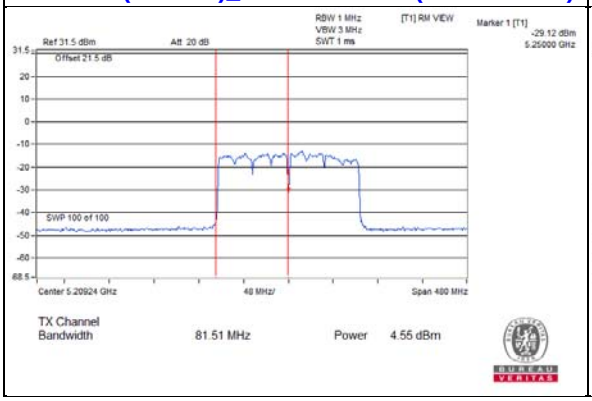
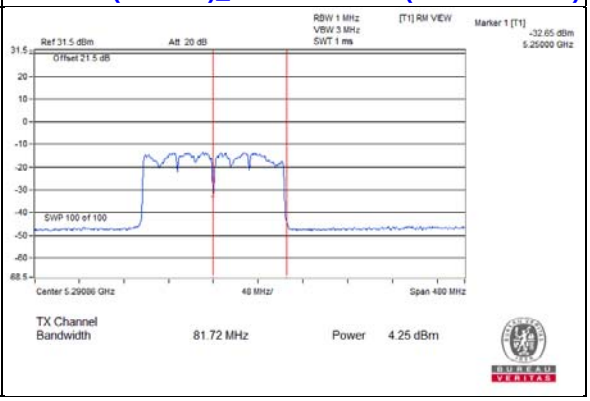
CDD Mode

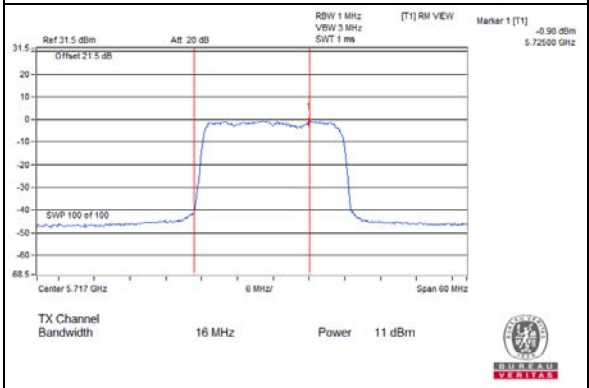
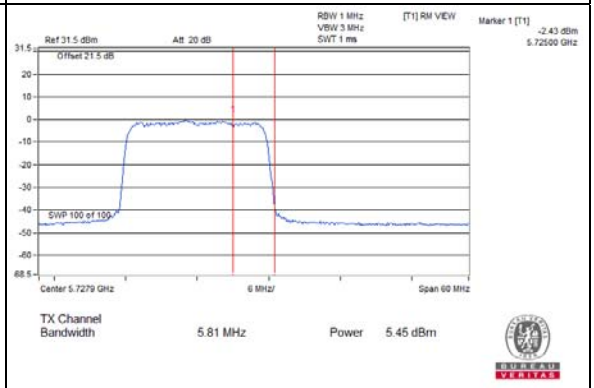
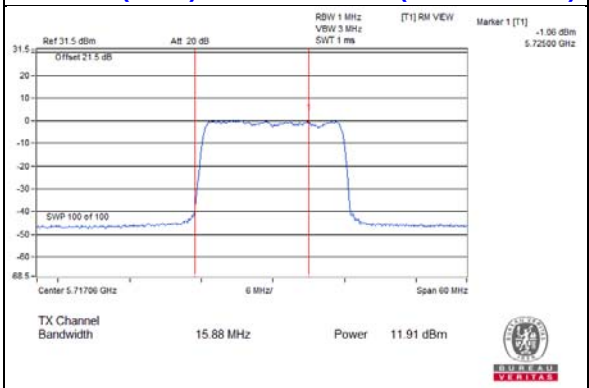
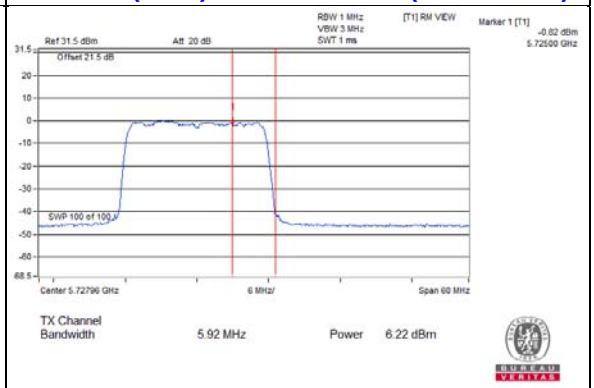
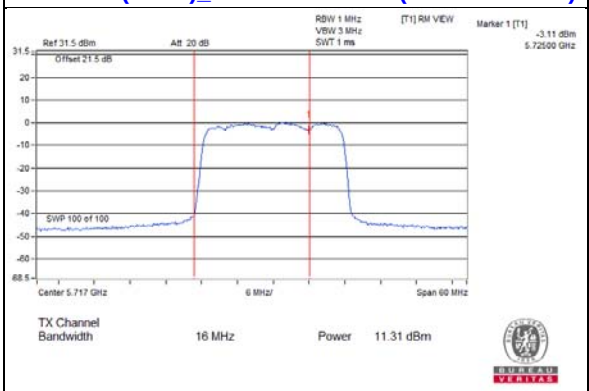
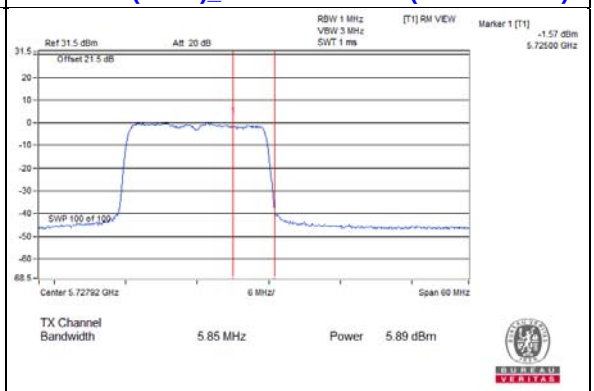
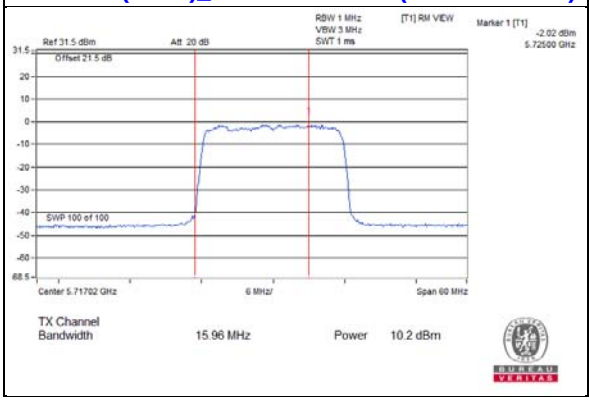
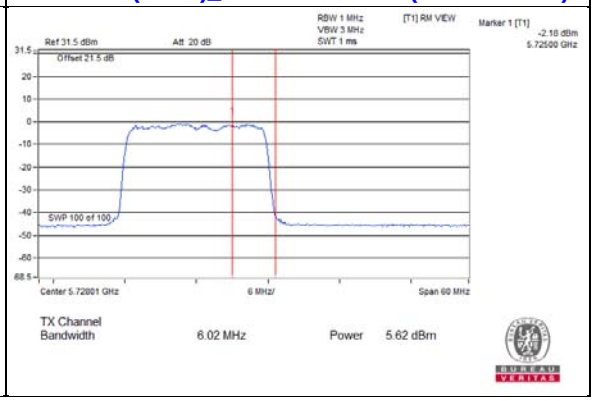
Spectrum Plot Value of Power	
802.11a_Chain 0 / CH144 (U-NII-2C Band)	**802.11a_Chain 0 / CH144 (U-NII-3 Band)**
	
802.11a_Chain 1 / CH144 (U-NII-2C Band)	**802.11a_Chain 1 / CH144 (U-NII-3 Band)**
	
802.11a_Chain 2 / CH144 (U-NII-2C Band)	**802.11a_Chain 2 / CH144 (U-NII-3 Band)**
	
802.11a_Chain 3 / CH144 (U-NII-2C Band)	**802.11a_Chain 3 / CH144 (U-NII-3 Band)**
	

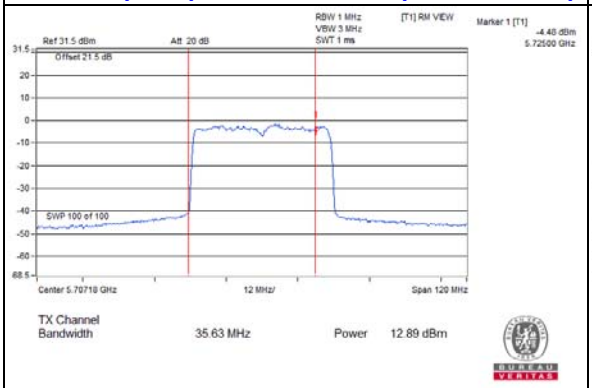
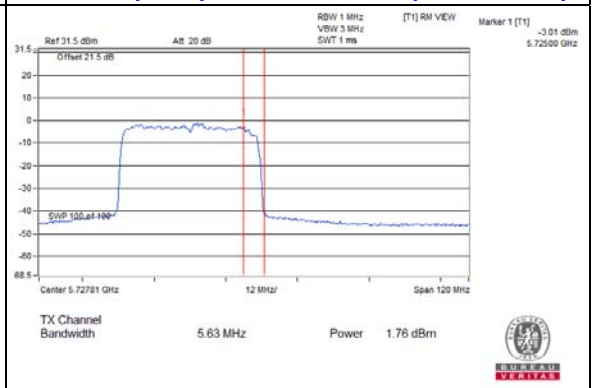
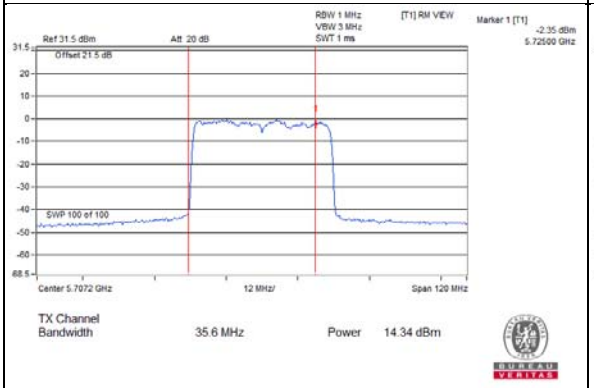
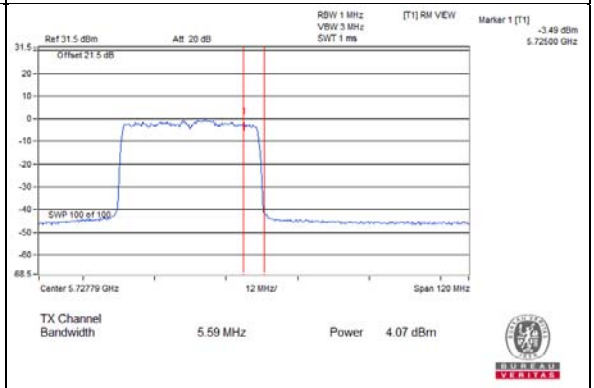
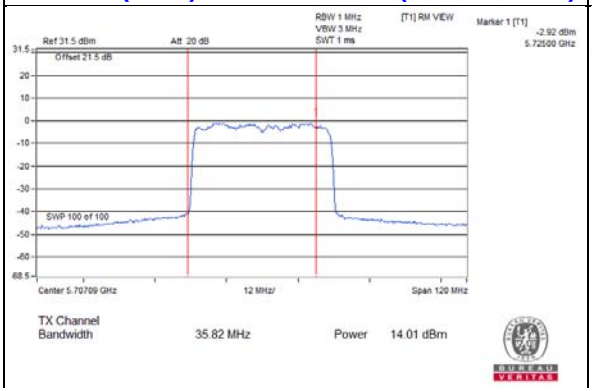
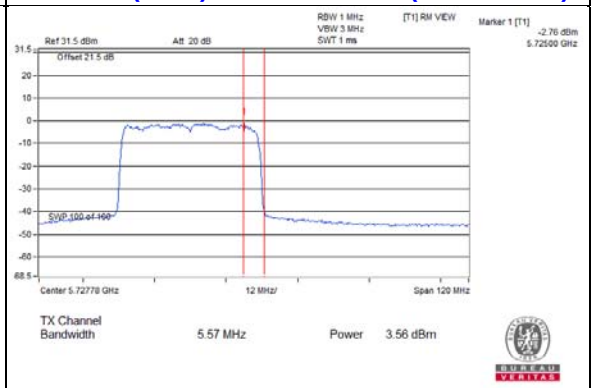
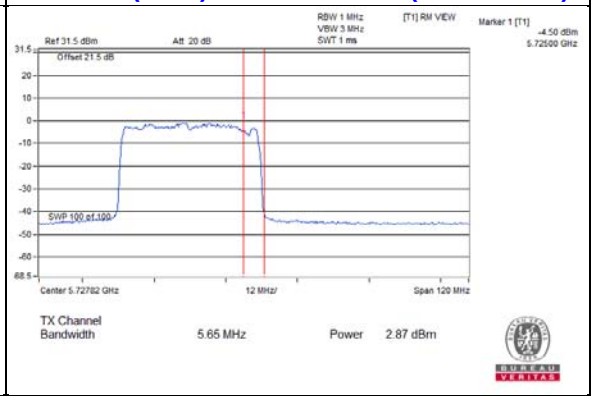
Spectrum Plot Value of Power	
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)**
	
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)**
	
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 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)**
	

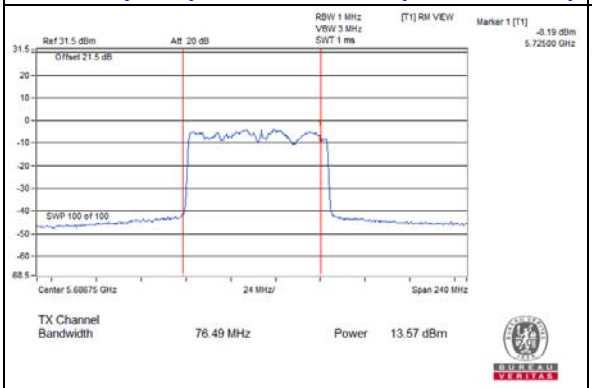
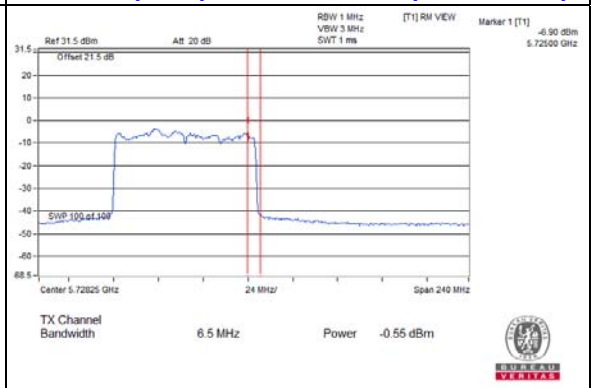
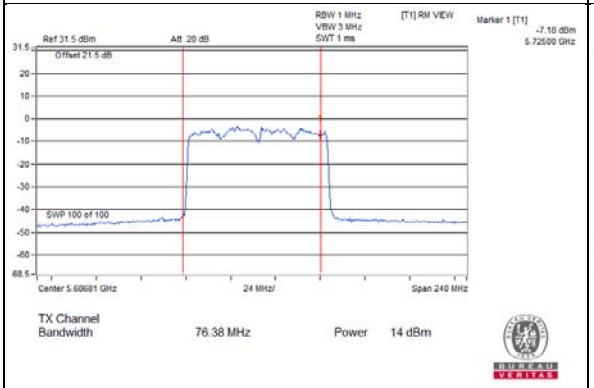
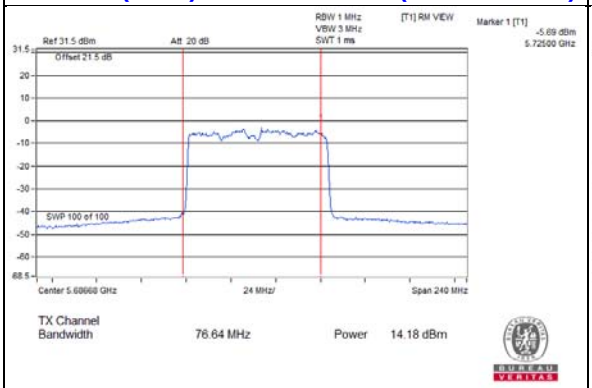
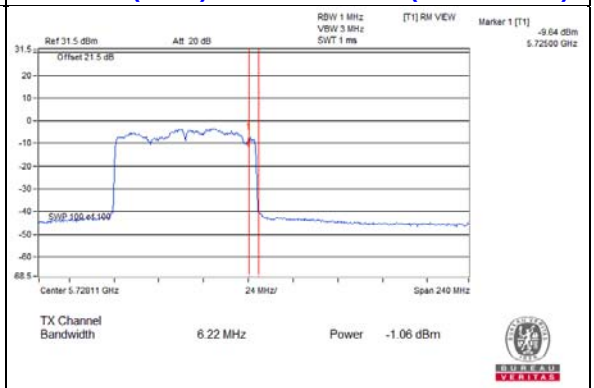
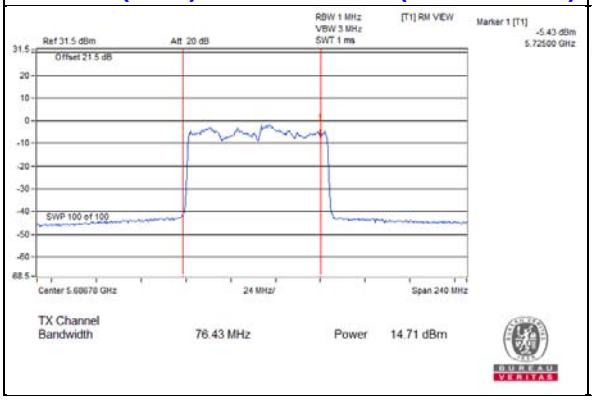
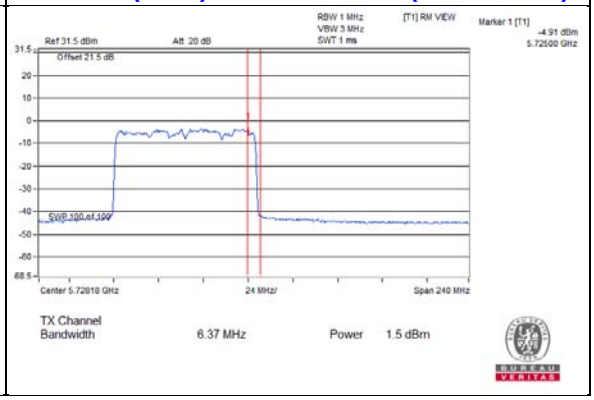
Spectrum Plot Value of Power	
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)**
	
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)**
	
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 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)**
	

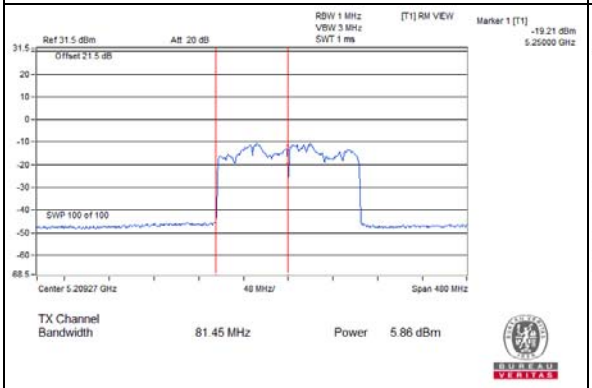
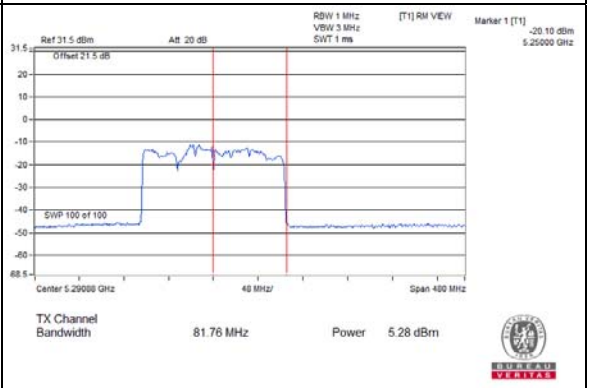
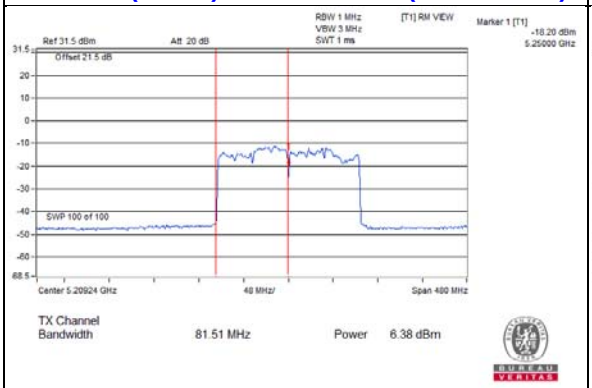
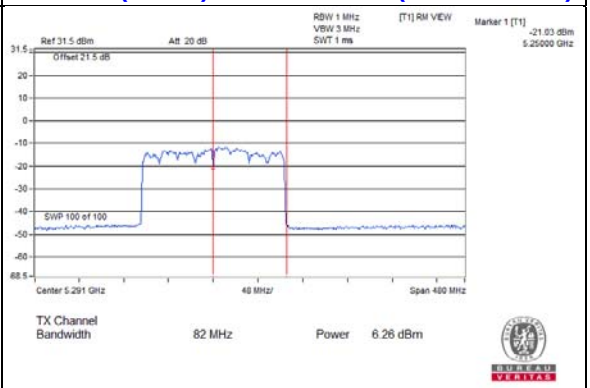
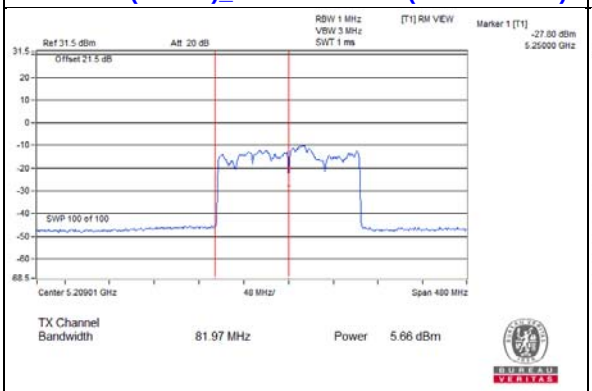
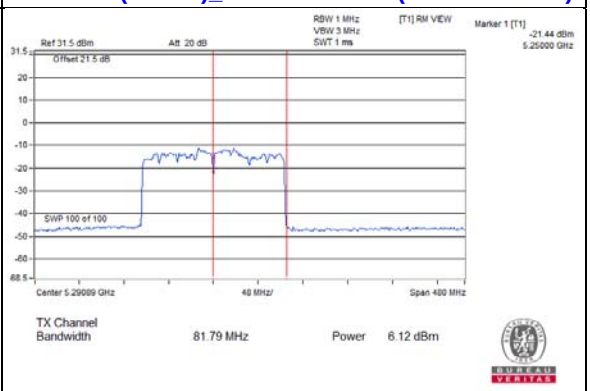
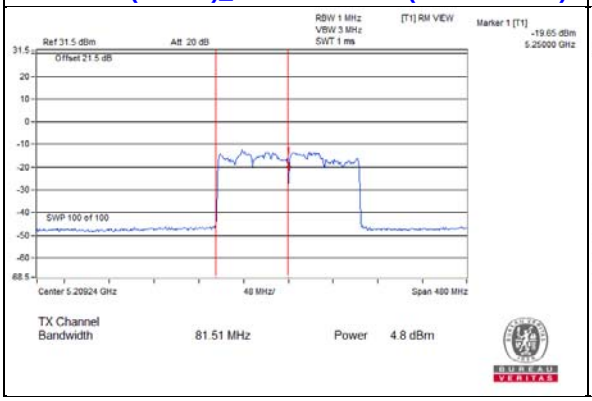
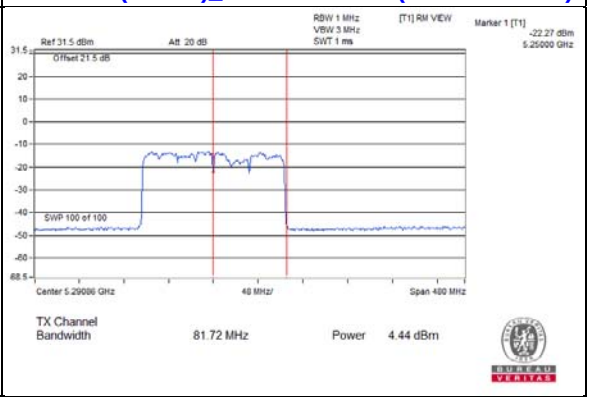
Spectrum Plot Value of Power	
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)**
	
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)**
	
802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 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	
802.11ac (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)**
	

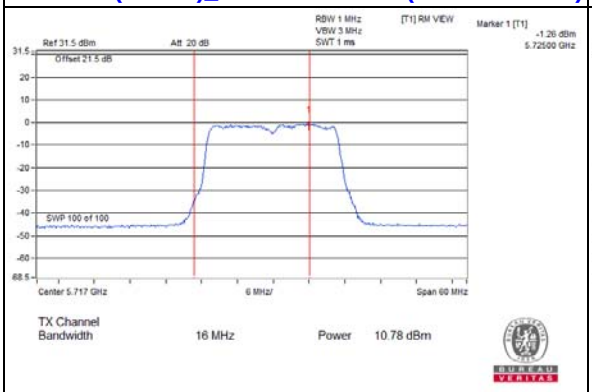
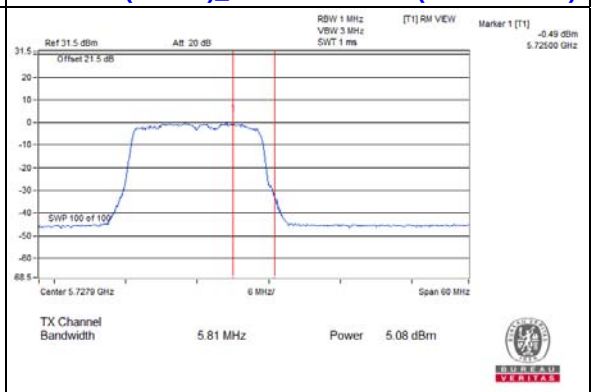
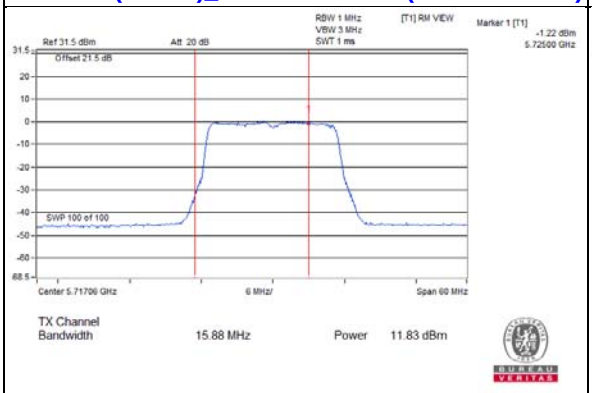
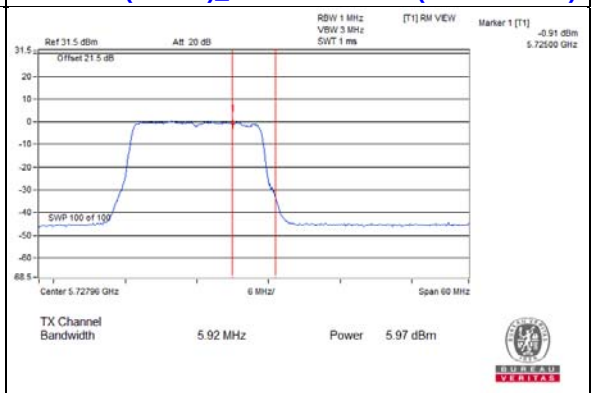
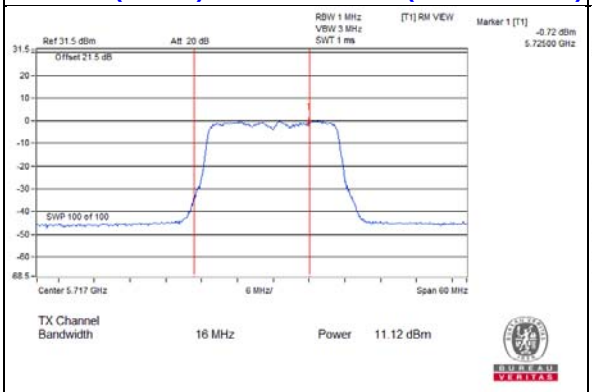
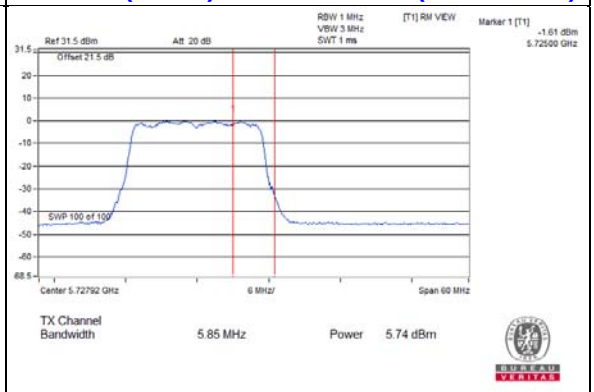
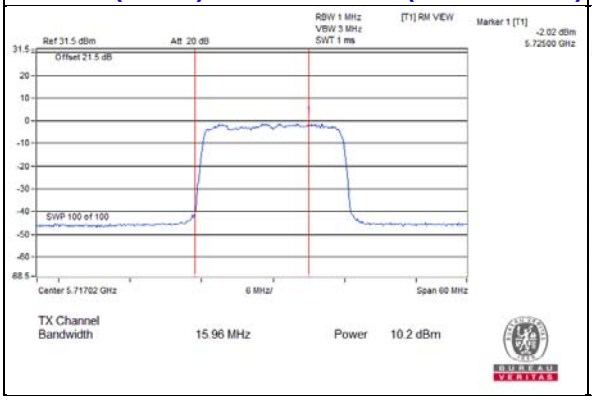
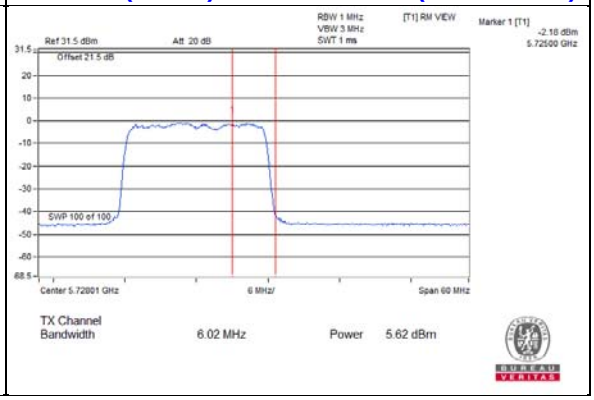
Spectrum Plot Value of Power	
802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)**
	
802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)**
	
802.11ax (HE20)_Chain 2 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 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)**
	

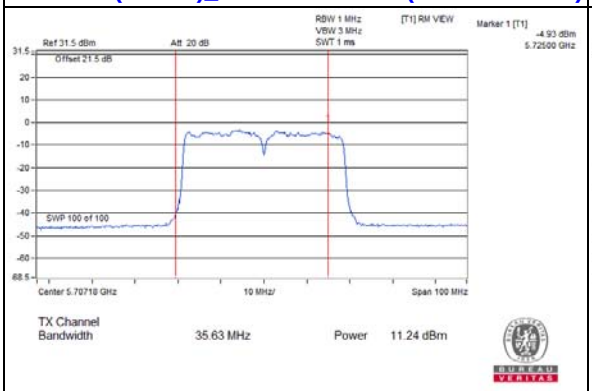
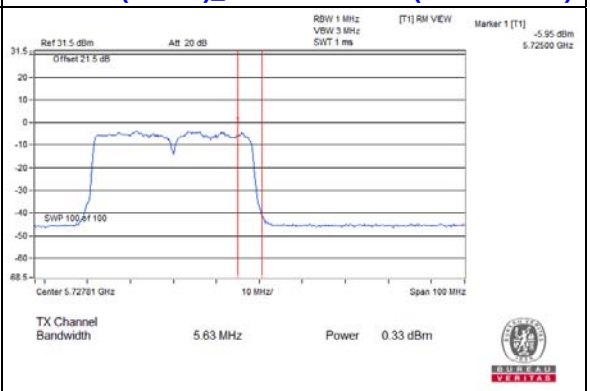
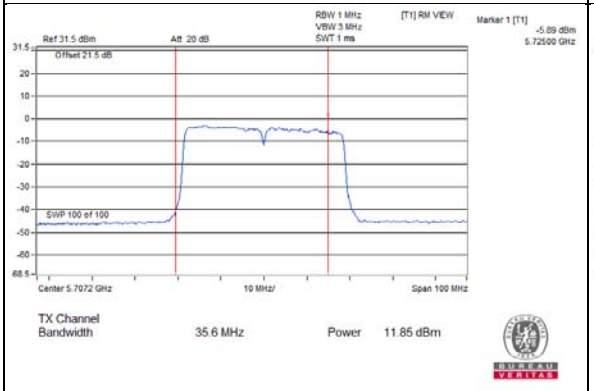
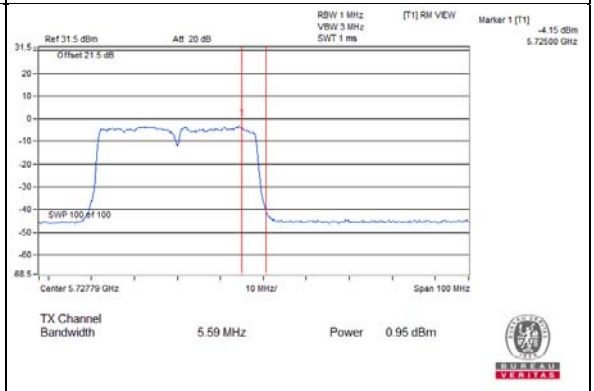
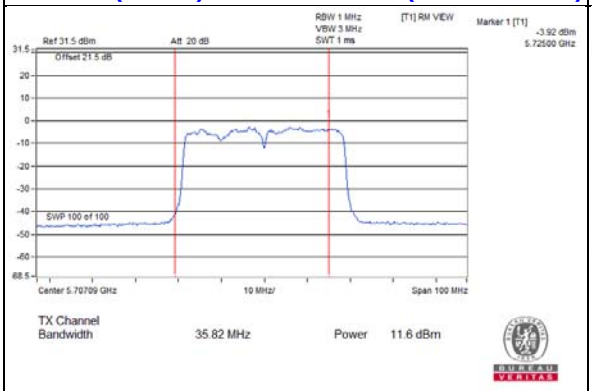
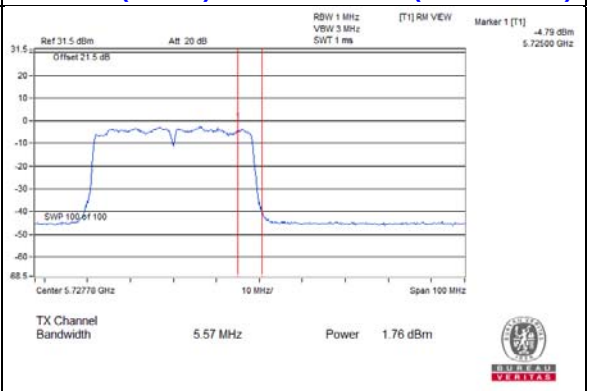
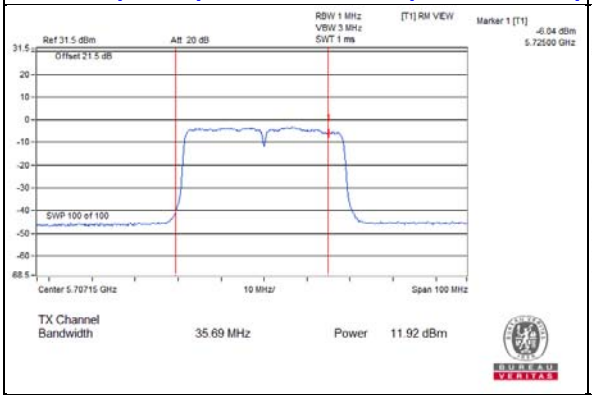
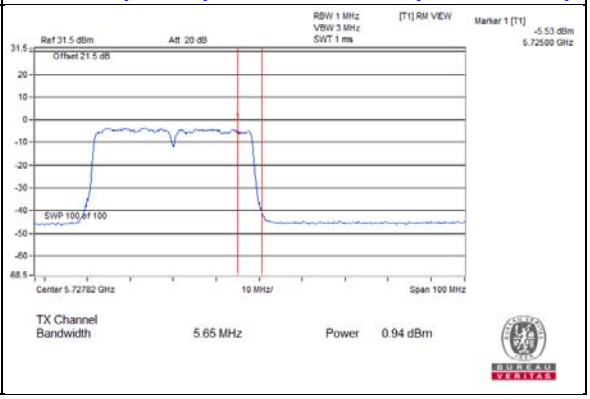
Spectrum Plot Value of Power	
802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)**
	
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)**
	
802.11ax (HE40)_Chain 2 / CH142 (U-NII-2C Band)	**802.11ax (HE40)_Chain 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)**
	

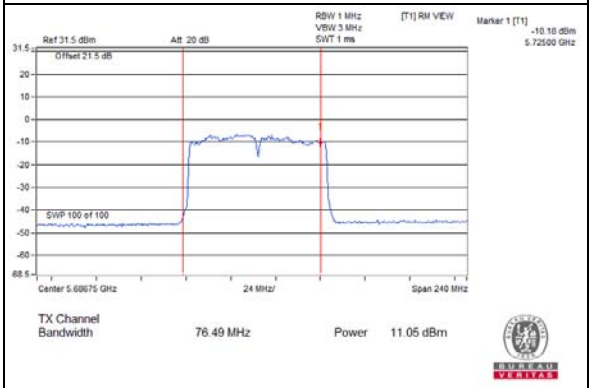
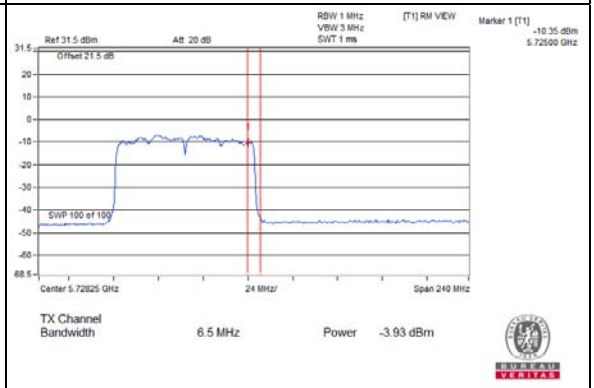
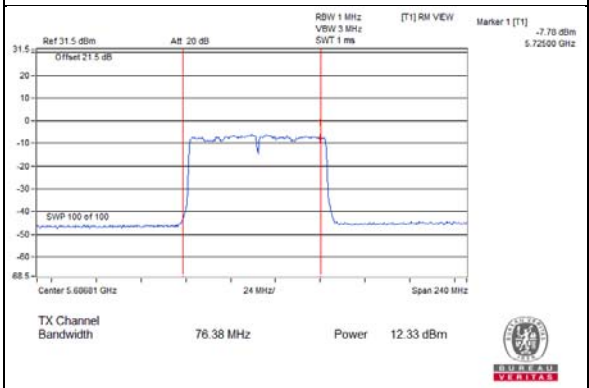
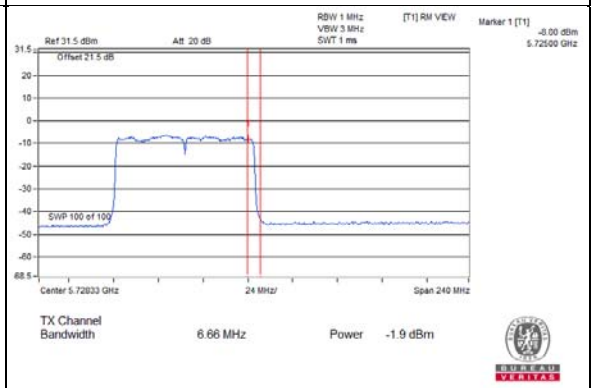
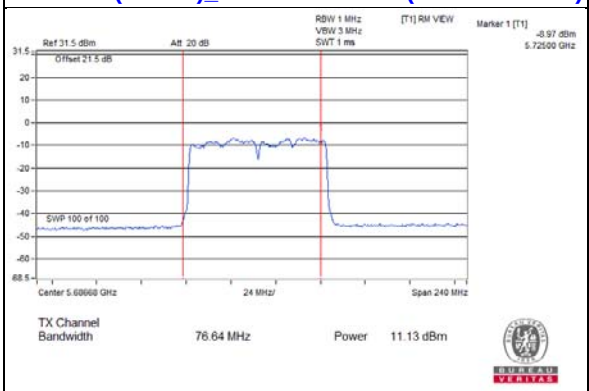
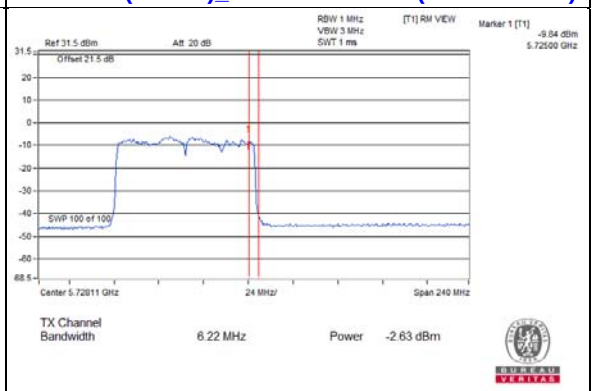
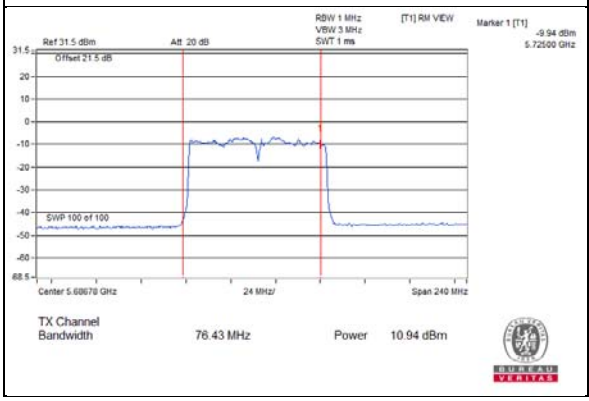
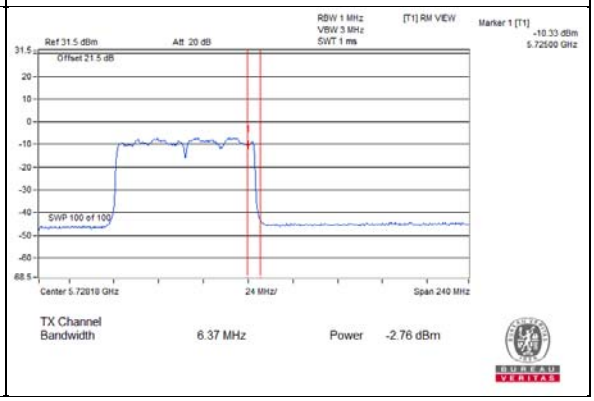
Spectrum Plot Value of Power	
802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)	**802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)**
	
802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)	**802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)**
	
802.11ax (HE80)_Chain 2 / CH138 (U-NII-2C Band)	**802.11ax (HE80)_Chain 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)**
	

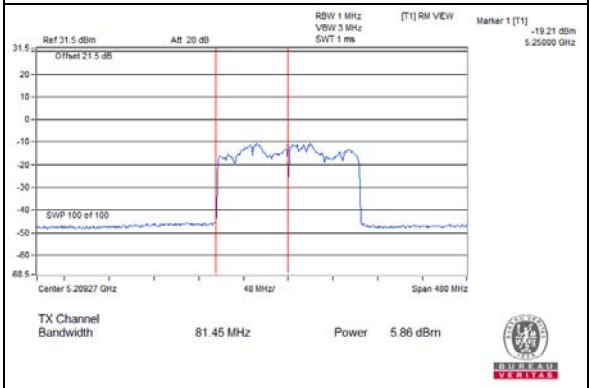
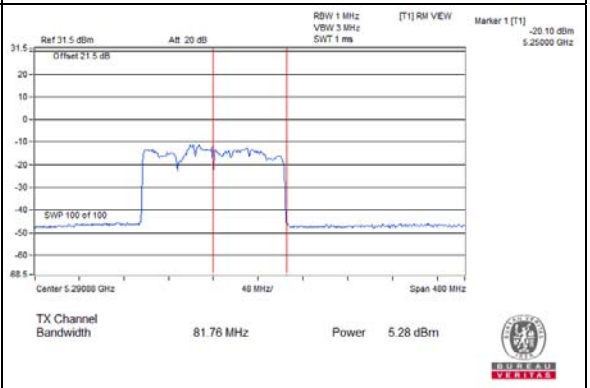
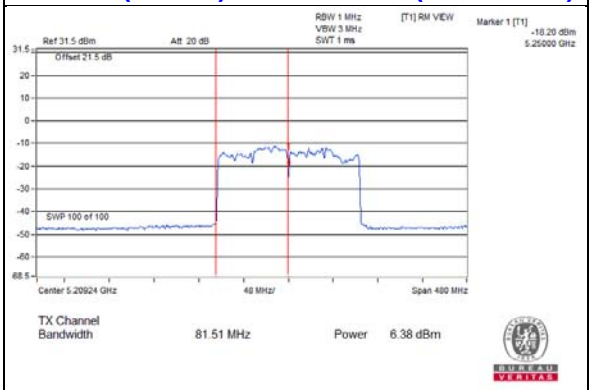
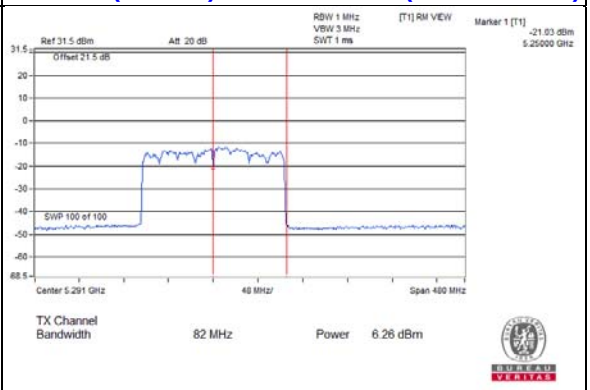
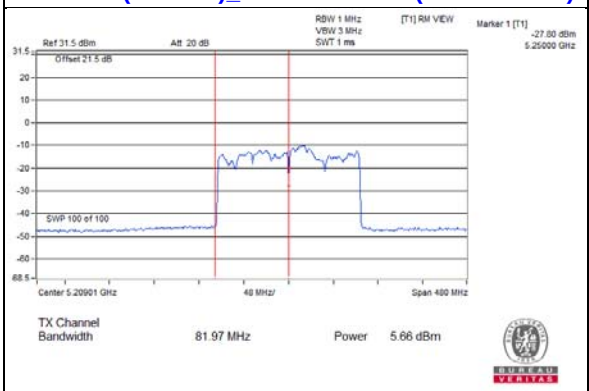
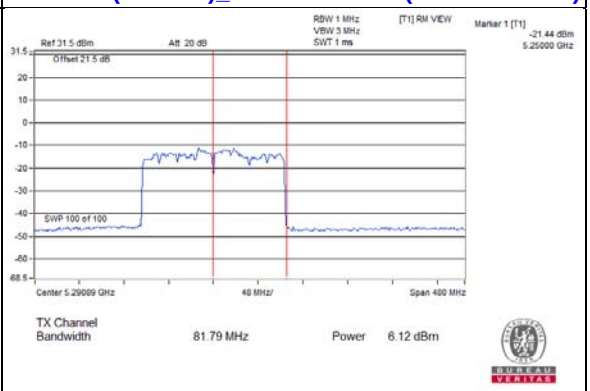
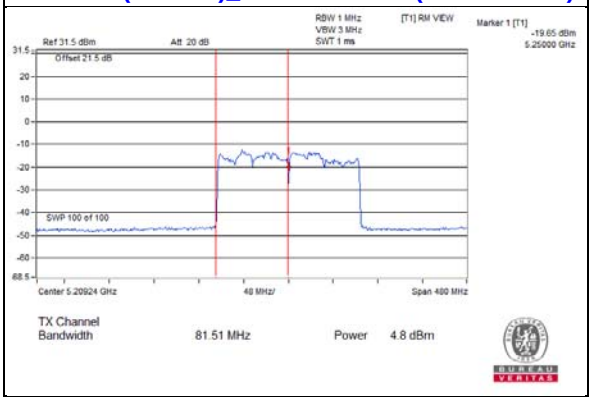
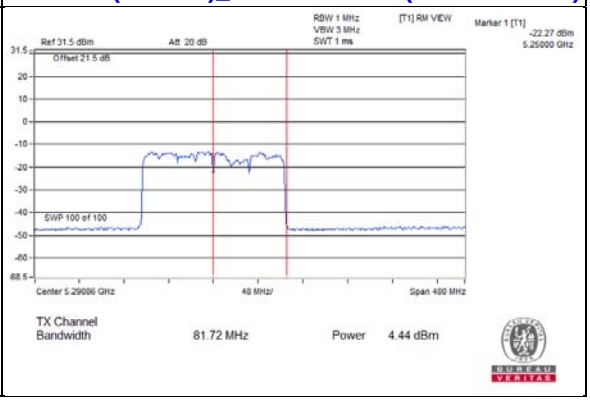
Spectrum Plot Value of Power	
802.11ax (HE160)_Chain 0 / CH50 (U-NII-1 Band)	**802.11ax (HE160)_Chain 0 / CH50 (U-NII-2A Band)**
	
802.11ax (HE160)_Chain 1 / CH50 (U-NII-1 Band)	**802.11ax (HE160)_Chain 1 / CH50 (U-NII-2A Band)**
	
802.11ax (HE160)_Chain 2 / CH50 (U-NII-1 Band)	**802.11ax (HE160)_Chain 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)**
	

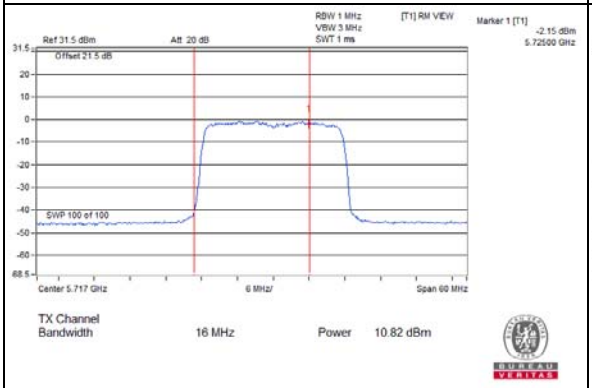
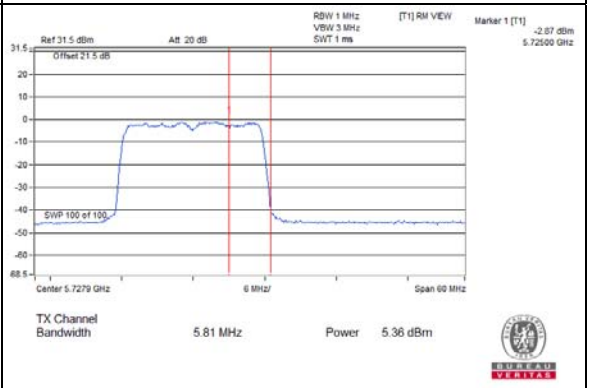
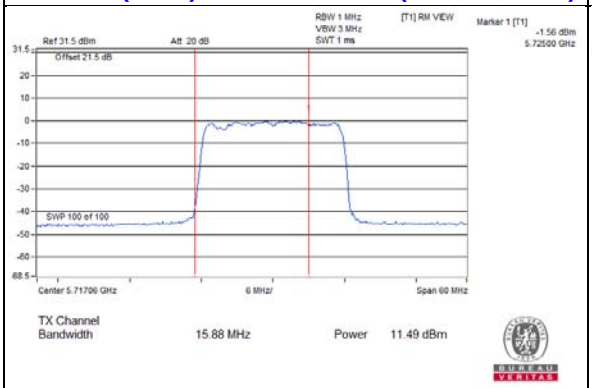
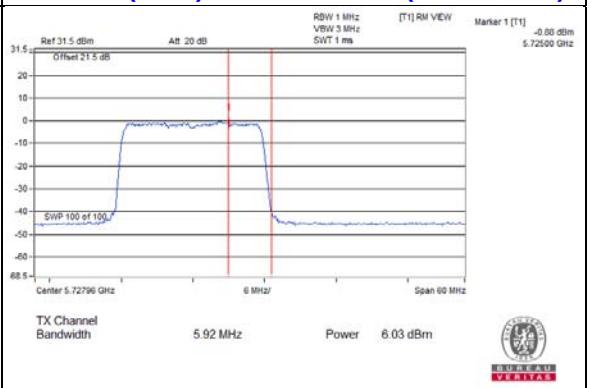
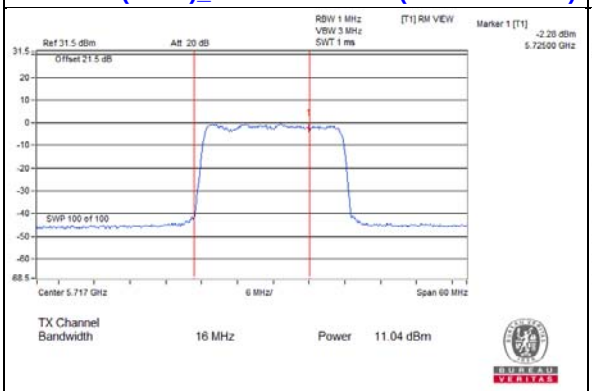
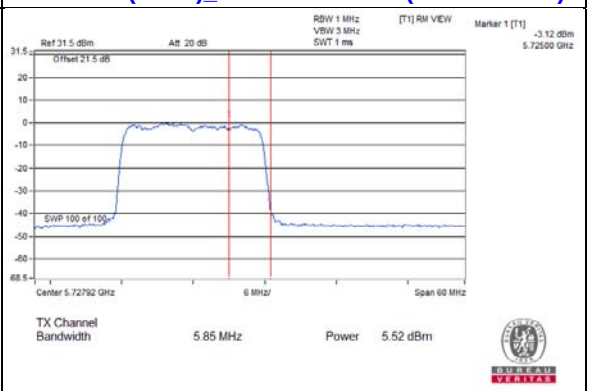
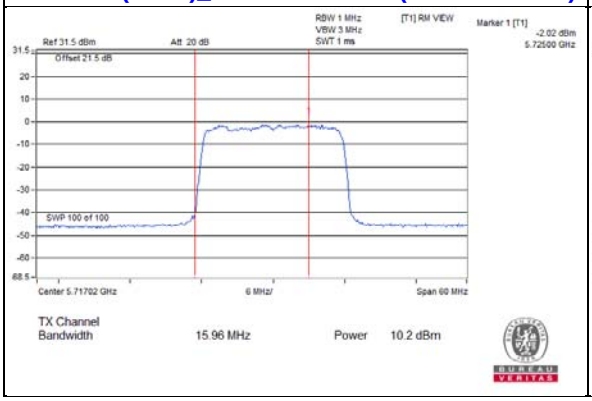
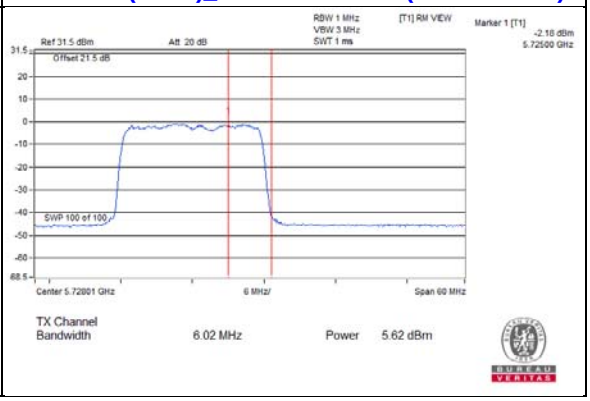
Beamforming Mode

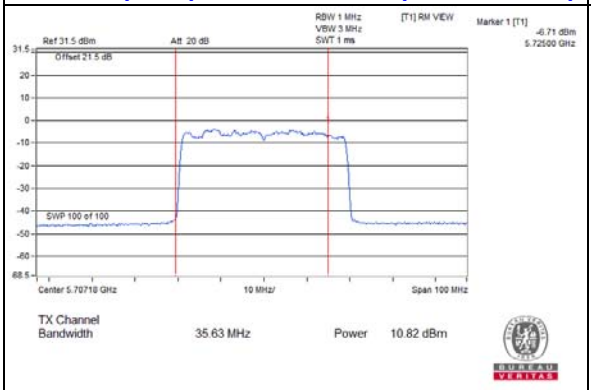
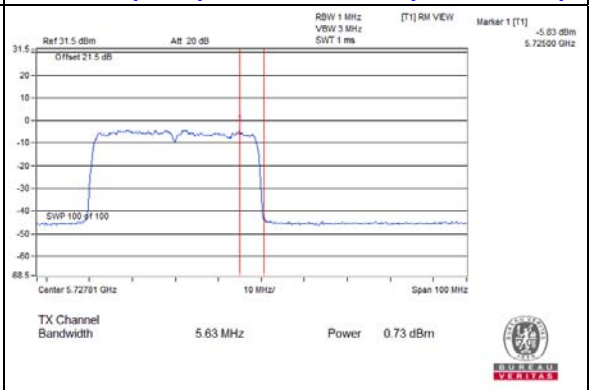
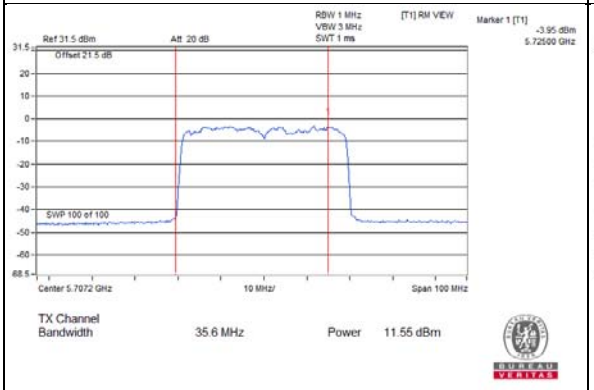
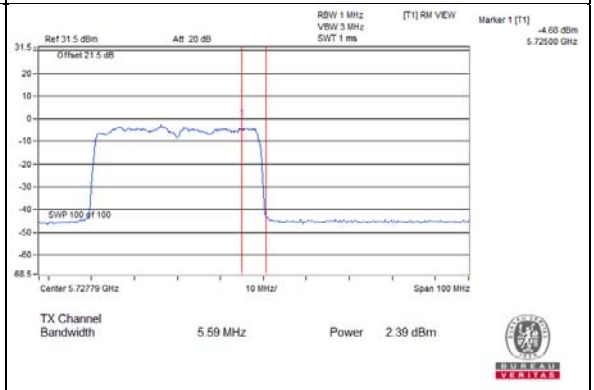
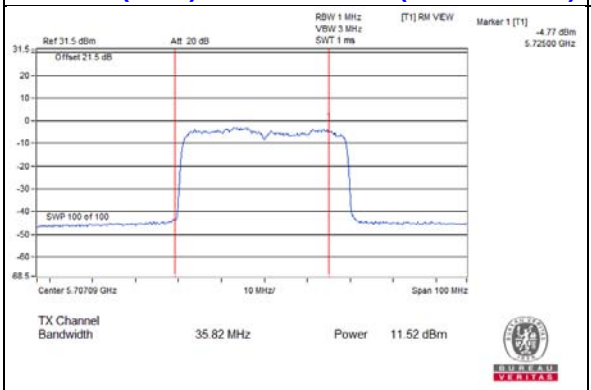
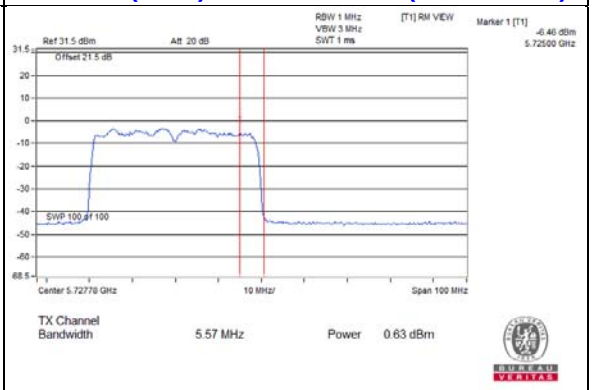
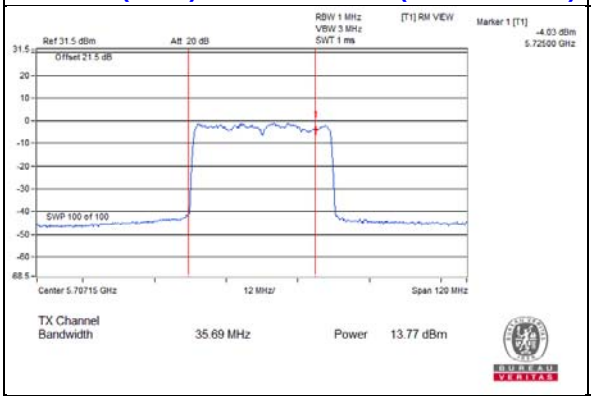
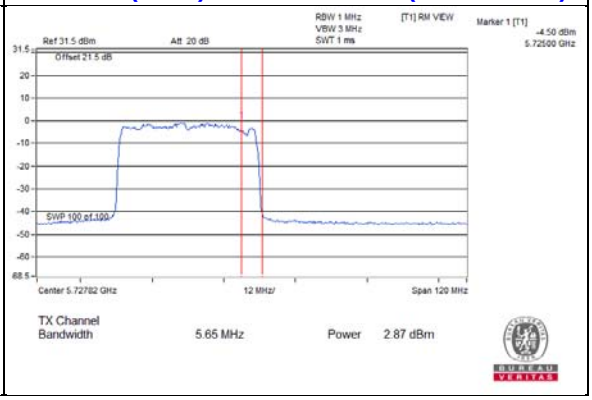
Spectrum Plot Value of Power	
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)**
	
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)**
	
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 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)**
	

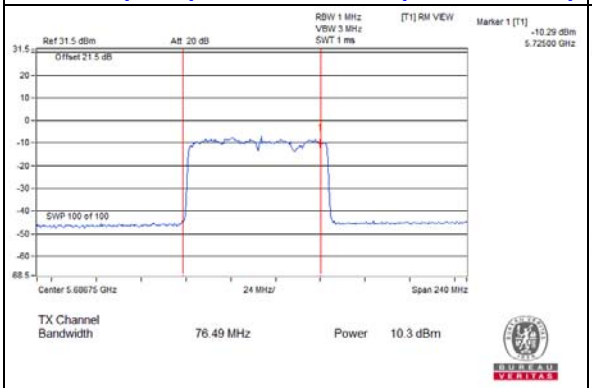
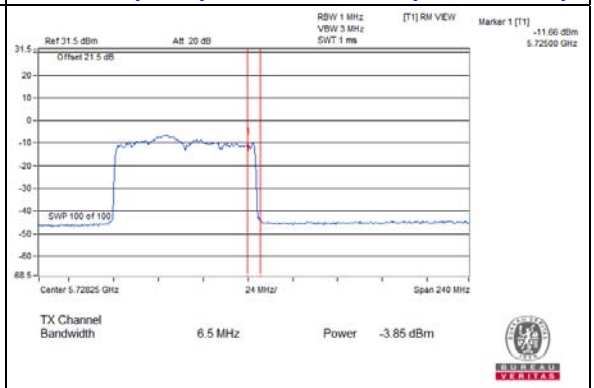
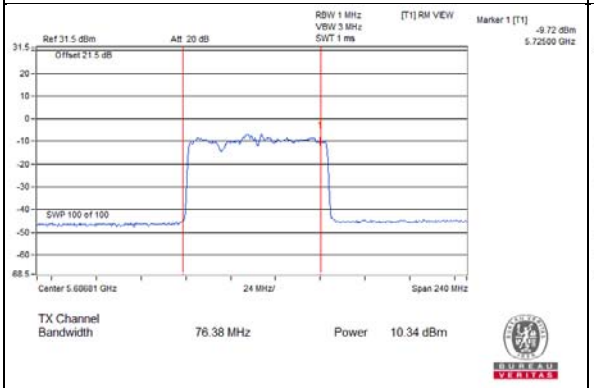
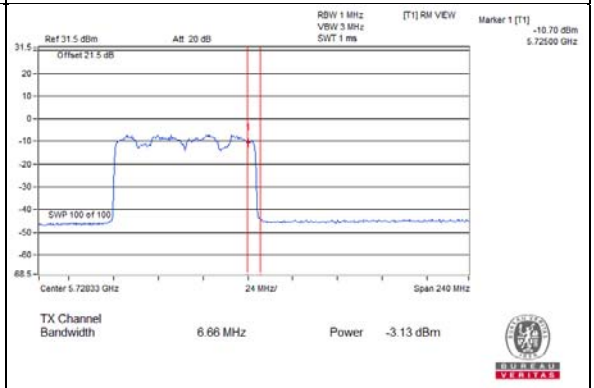
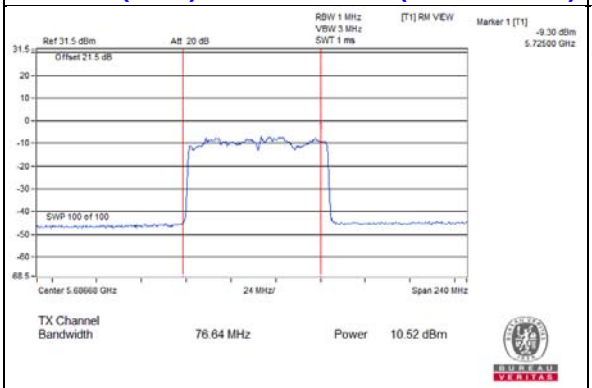
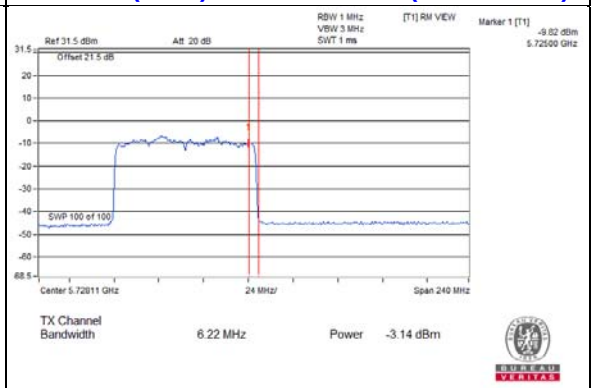
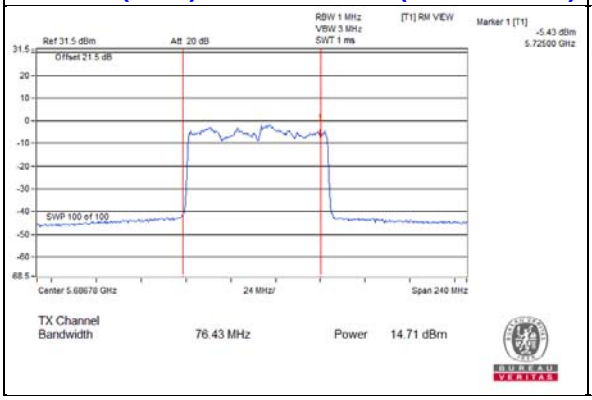
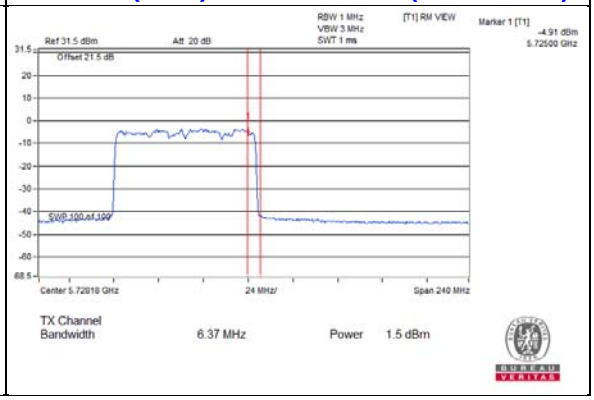
Spectrum Plot Value of Power	
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)**
	
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)**
	
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 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)**
	

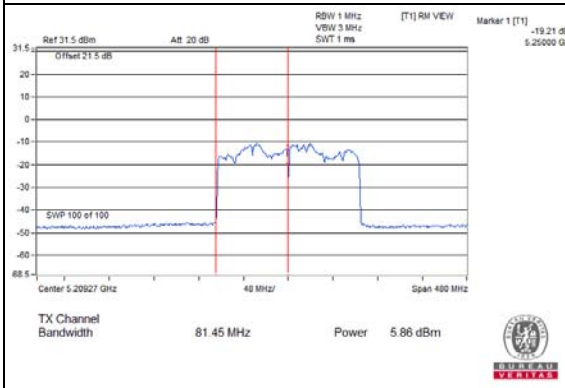
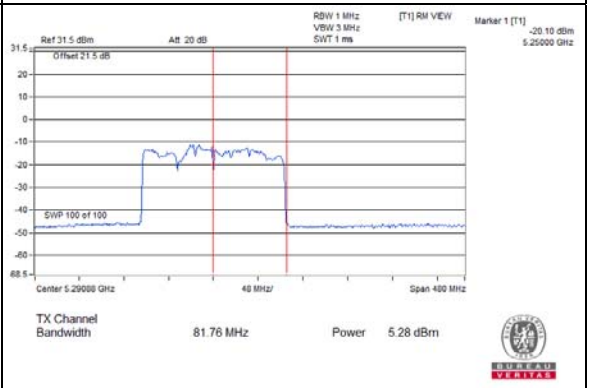
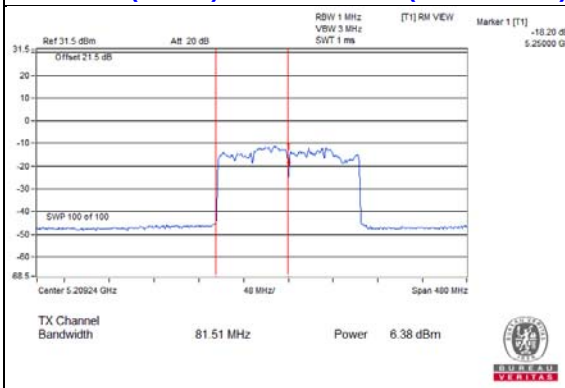
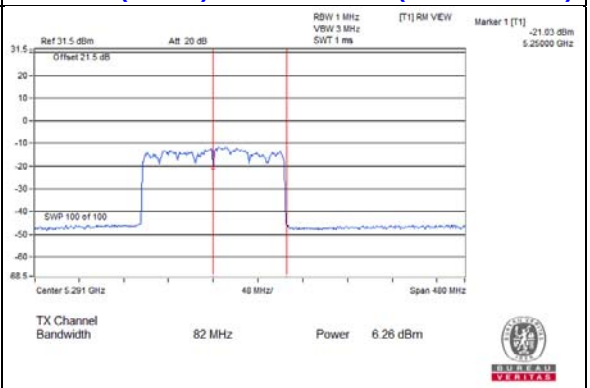
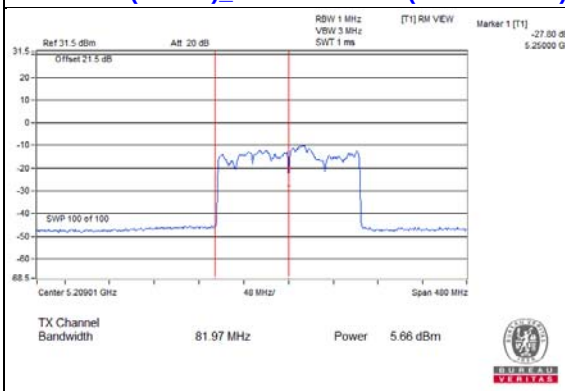
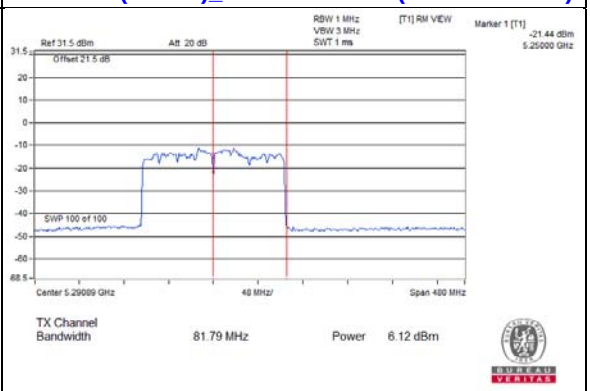
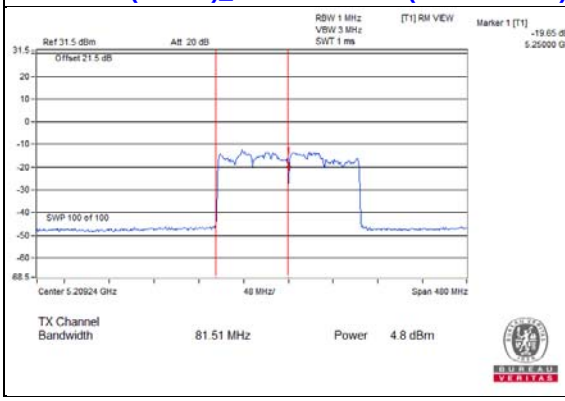
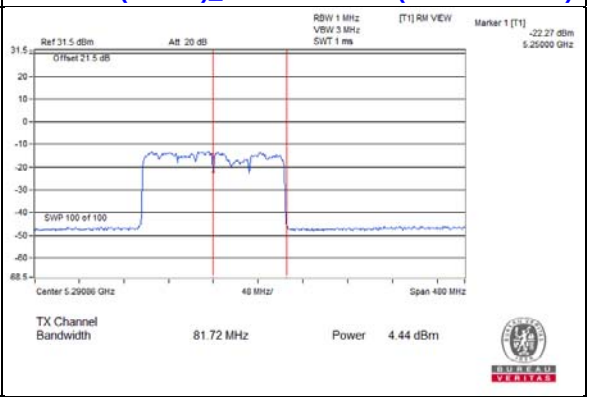
Spectrum Plot Value of Power	
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)**
	
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)**
	
802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 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	
802.11ac (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 (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)**
	

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

CDD Mode

802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	21.74	21.83	21.87	21.76
60	5300	21.75	21.84	21.84	21.7
64	5320	21.73	21.79	21.88	21.75
100	5500	21.72	21.74	21.83	21.65
116	5580	21.74	21.84	21.95	21.7
140	5700	21.74	21.86	21.92	21.72
144 (U-NII-2C Band)	5720	15.87	15.85	16.04	15.83

802.11ax (HE20)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	21.87	21.81	21.94	22.06
60	5300	21.75	21.77	22.03	22
64	5320	21.66	21.78	21.99	21.78
100	5500	21.83	21.98	22	21.87
116	5580	22.06	21.83	21.96	21.88
140	5700	21.72	21.83	21.92	21.99
144 (U-NII-2C Band)	5720	16	15.88	16	15.96

802.11ax (HE40)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	41.37	41.32	41.4	40.78
62	5310	41.28	41.32	41.41	41.41
102	5510	41.35	41.35	41.37	41.28
110	5550	41.22	41.22	41.36	41.34
134	5670	41.36	41.28	41.44	41.38
142 (U-NII-2C Band)	5710	35.63	35.6	35.82	35.69

802.11ax (HE80)

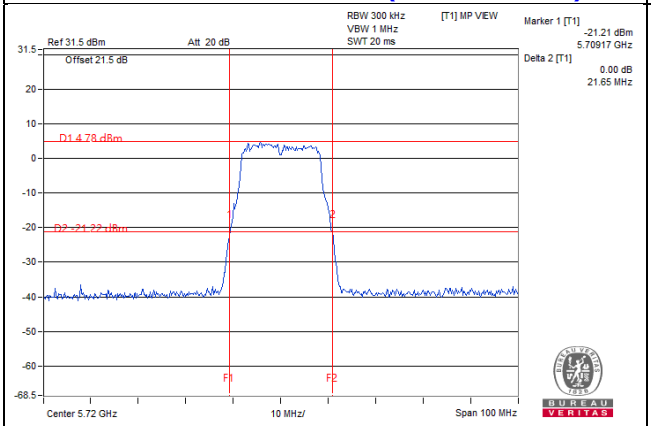
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	82.95	83.07	82.7	82.54
106	5530	82.99	83.21	82.51	82.8
122	5610	82.86	83.03	82.79	82.56
138 (U-NII-2C Band)	5690	76.49	76.38	76.64	76.43

802.11ax (HE160)

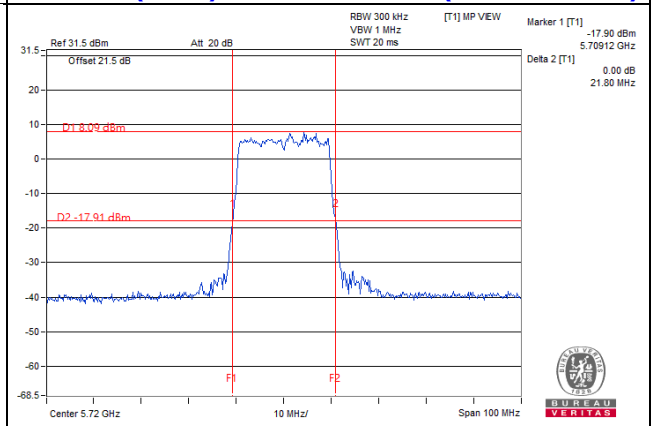
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
50 (U-NII-2A Band)	5250	81.76	82	81.79	81.72
114	5570	163.27	163.13	163.58	163.67

Spectrum Plot of Worst Value

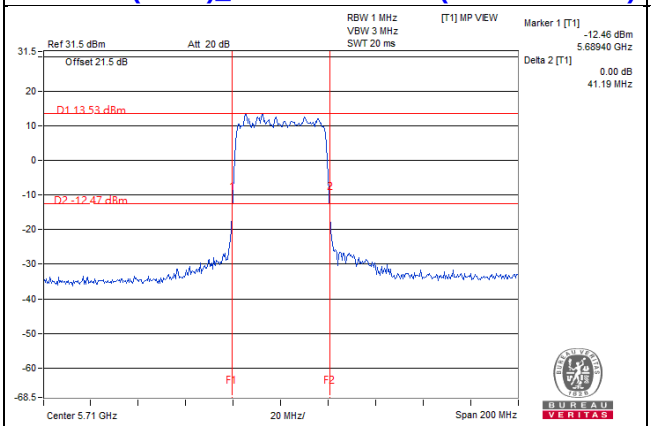
802.11a_Chain 3 / CH144 (U-NII-2C Band)



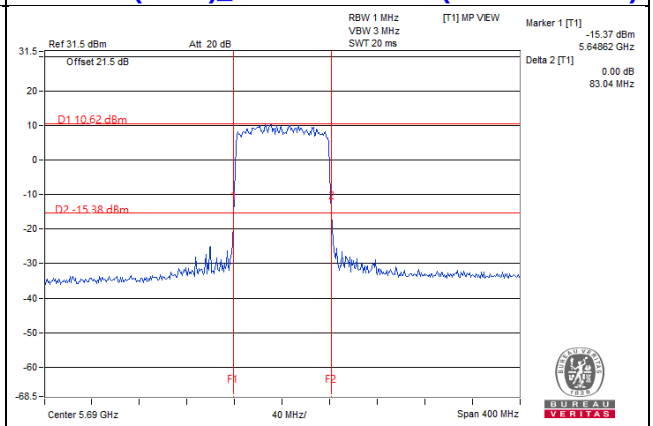
802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)



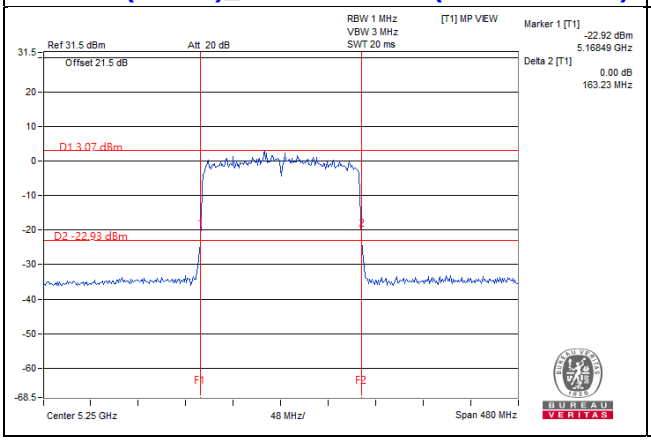
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)



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



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

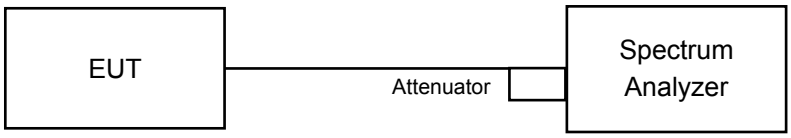


Note:

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) = Delta 2 - (5250MHz - 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

CDD Mode

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	17.04	17.13	16.95	16.95
60	5300	17.04	17.04	16.95	16.86
64	5320	16.92	17.04	17.04	16.86
100	5500	16.92	17.04	16.95	16.86
116	5580	17.04	17.04	17.04	16.92
140	5700	17.04	17.16	16.92	16.92
144 (U-NII-2C Band)	5720	13.52	13.64	13.64	13.52
144 (U-NII-3 Band)	5720	3.52	3.52	3.4	3.4

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	19.08	19.2	19.32	19.2
60	5300	19.08	19.2	19.08	19.2
64	5320	19.2	19.2	19.08	17.88
100	5500	19.08	19.2	19.08	19.2
116	5580	18.12	19.2	19.2	19.2
140	5700	19.2	19.08	19.2	19.2
144 (U-NII-2C Band)	5720	14.6	14.6	14.6	14.6
144 (U-NII-3 Band)	5720	4.48	4.6	4.48	4.6

802.11ax (HE40)

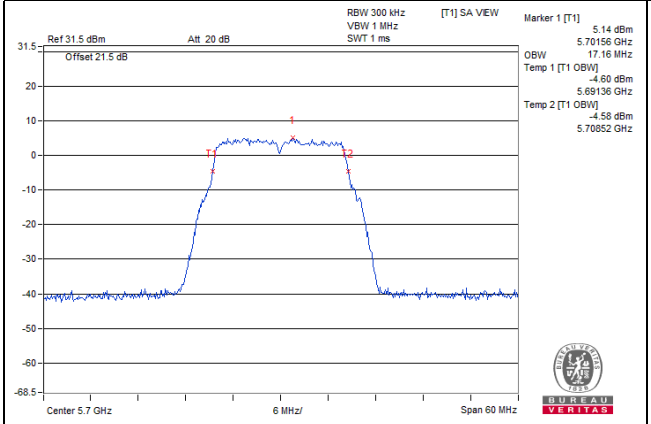
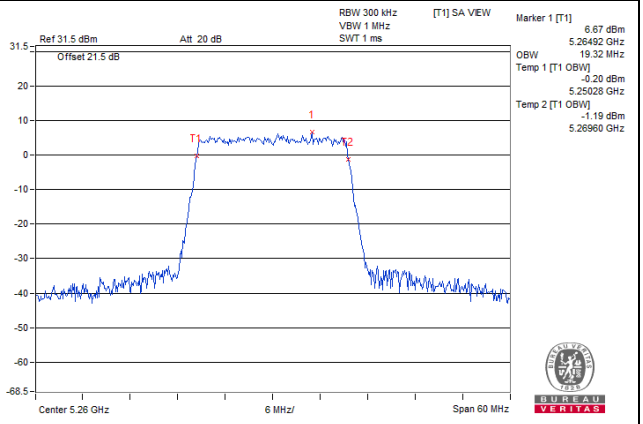
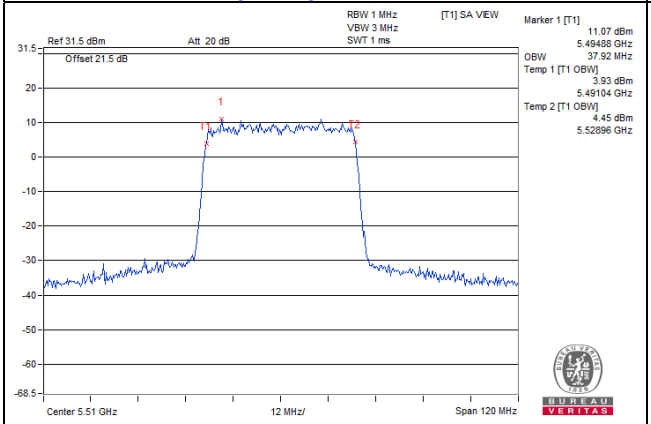
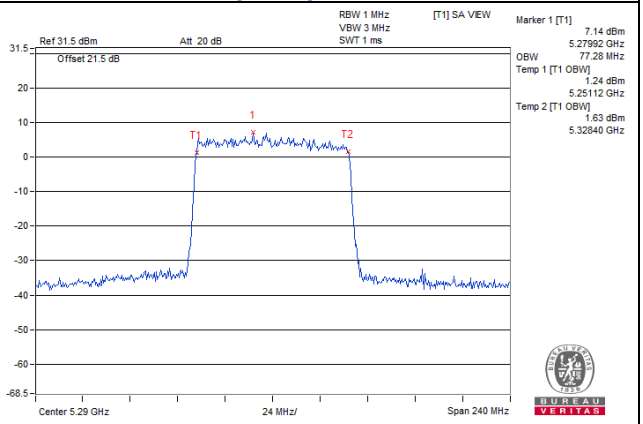
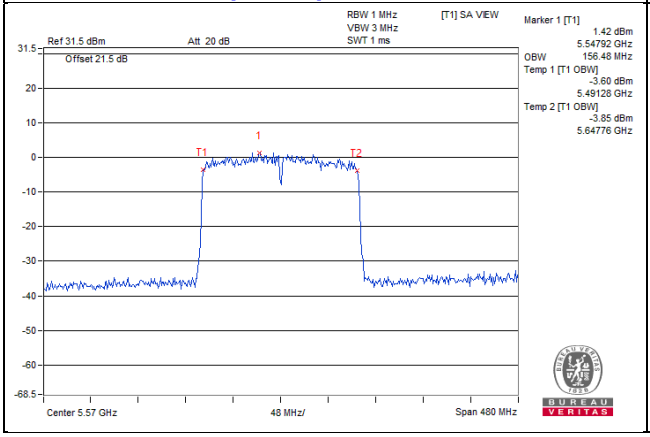
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	37.68	37.68	37.68	36.72
62	5310	37.68	37.68	37.68	37.68
102	5510	37.68	37.68	37.92	37.68
110	5550	37.68	37.68	37.68	37.68
134	5670	37.68	36.72	37.68	37.68
142 (U-NII-2C Band)	5710	33.96	33.96	33.96	33.96
142 (U-NII-3 Band)	5710	3.72	3.72	3.72	3.72

802.11ax (HE80)

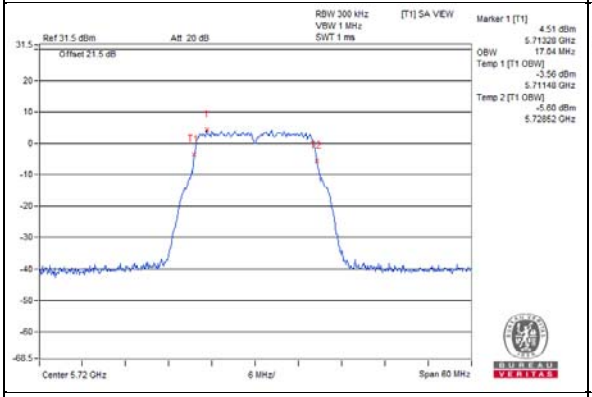
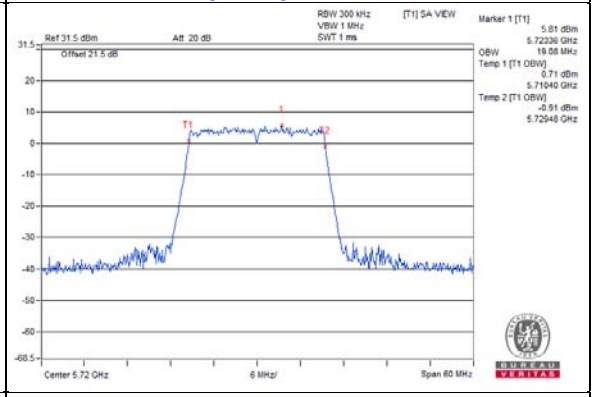
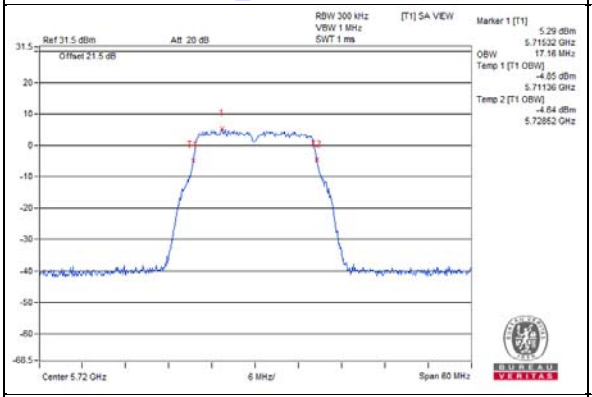
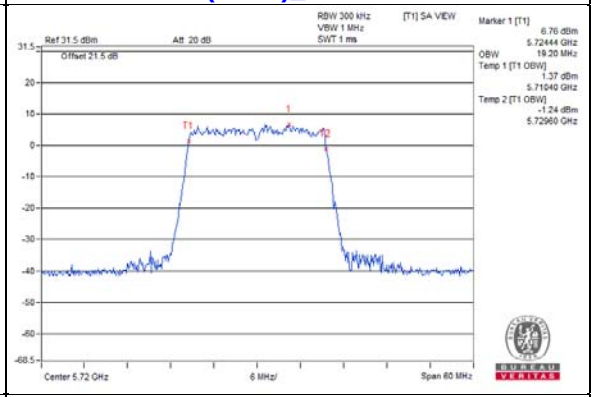
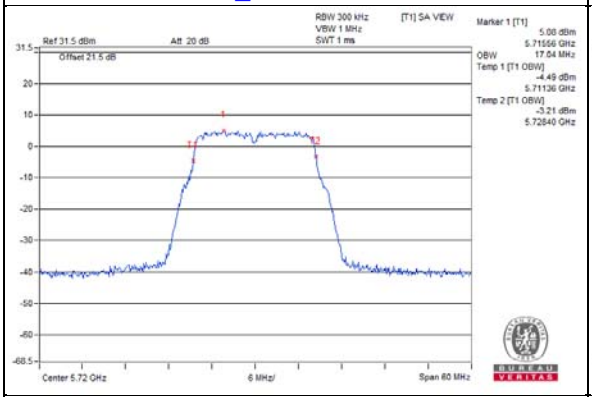
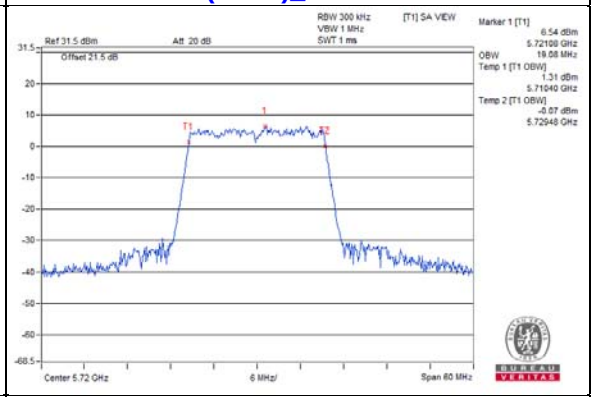
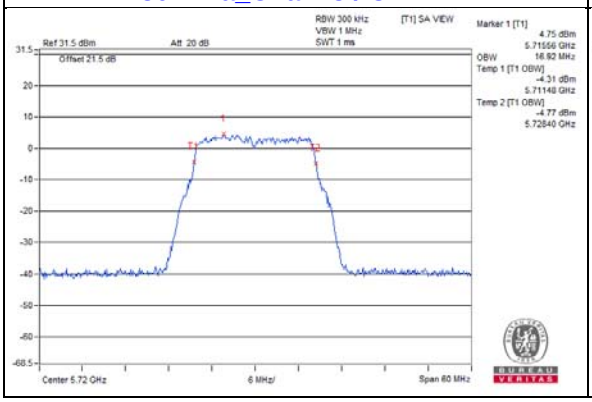
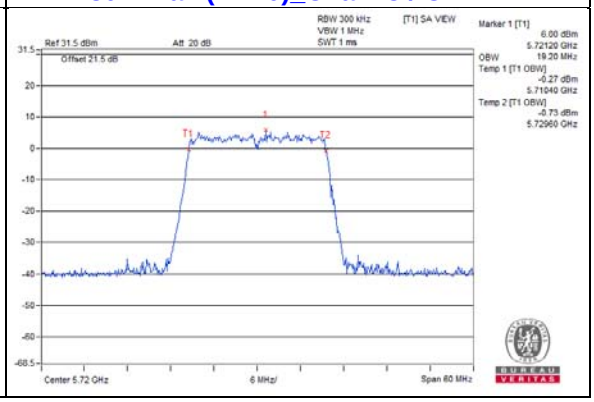
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	77.28	77.28	77.28	77.28
106	5530	77.28	77.28	77.28	77.28
122	5610	77.28	77.28	77.28	77.28
138 (U-NII-2C Band)	5690	73.88	73.88	73.88	73.88
138 (U-NII-3 Band)	5690	3.4	3.4	3.4	3.4

802.11ax (HE160)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
50 (U-NII-1 Band)	5250	78.72	77.76	77.76	77.76
50 (U-NII-2A Band)	5250	77.76	77.76	77.76	77.76
114	5570	155.52	155.52	155.52	156.48

Spectrum Plot of Max. Value	
802.11a_Chain 1 / CH140	**802.11ax (HE20)_Chain 2 / CH52**
	
802.11ax (HE40)_Chain 2 / CH102	**802.11ax (HE80)_Chain 0 / CH58**
	
802.11ax (HE160)_Chain 0 / CH114	
	

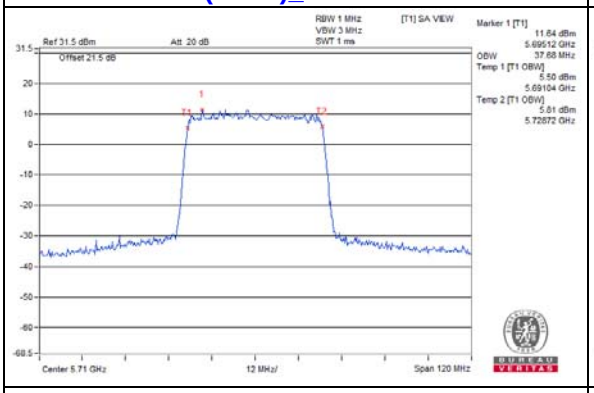
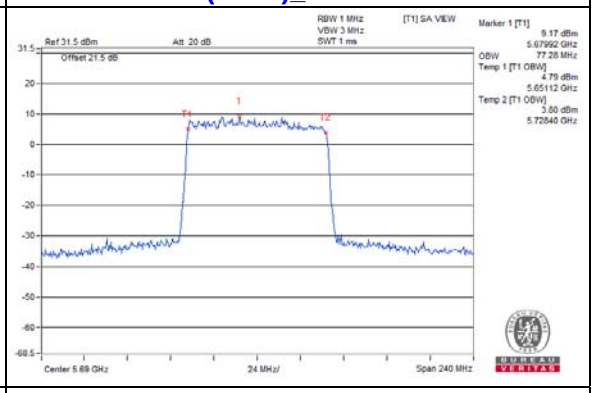
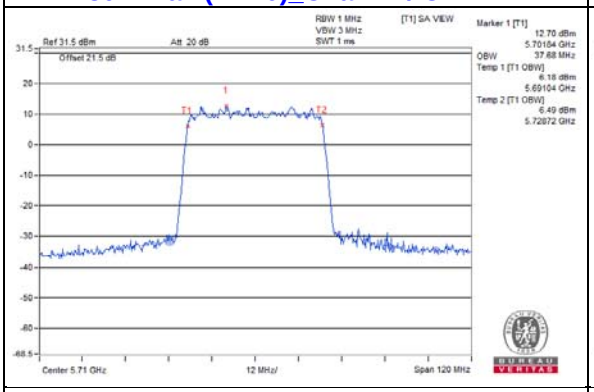
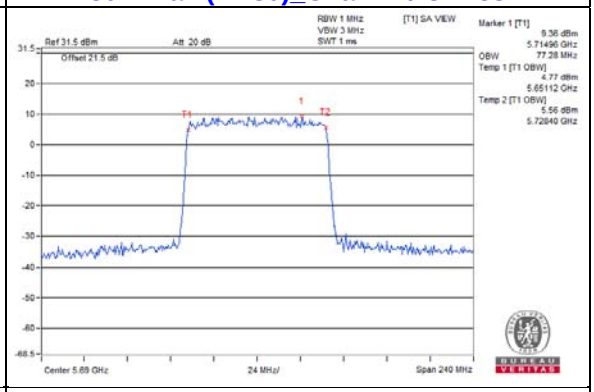
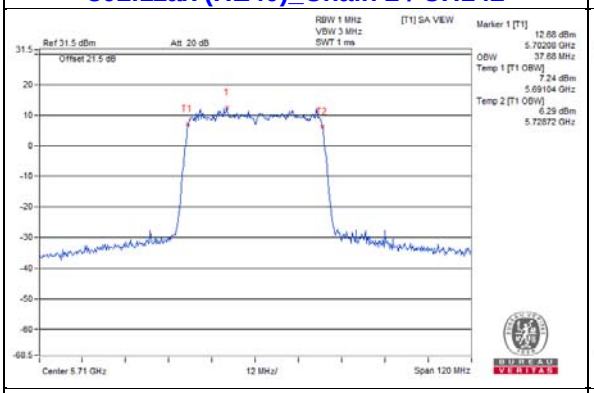
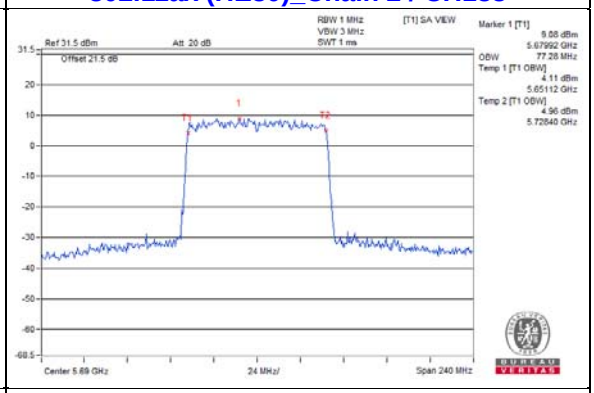
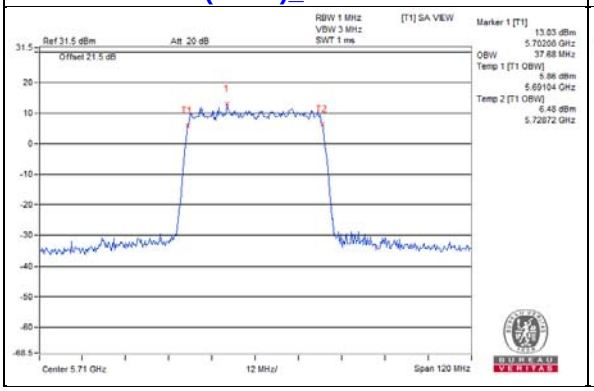
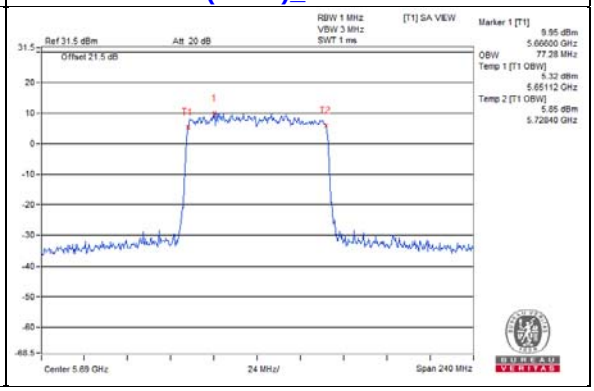
For channel straddling 5725MHz or 5250MHz of OCP99% BW

Spectrum Plot Value of OCP99% BW	
802.11a_Chain 0 / CH144	**802.11ax (HE20)_Chain 0 / CH144**
	
802.11a_Chain 1 / CH144	**802.11ax (HE20)_Chain 1 / CH144**
	
802.11a_Chain 2 / CH144	**802.11ax (HE20)_Chain 2 / CH144**
	
802.11a_Chain 3 / CH144	**802.11ax (HE20)_Chain 3 / CH144**
	

Note:

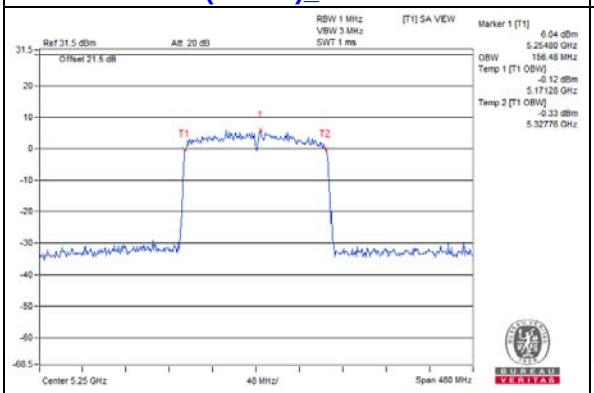
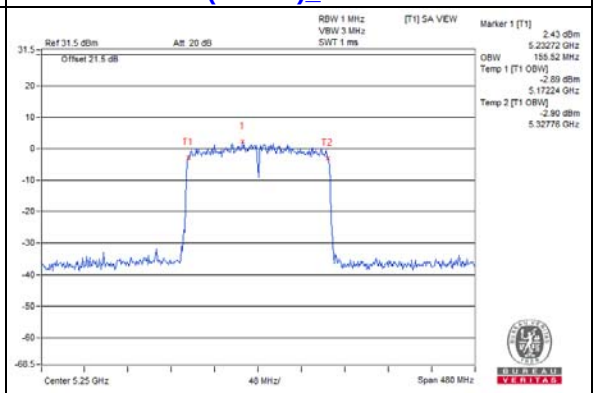
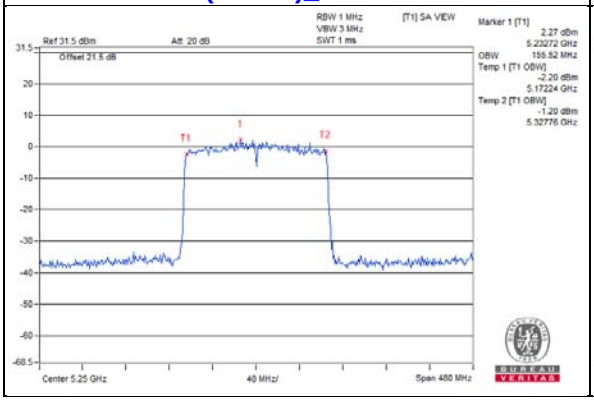
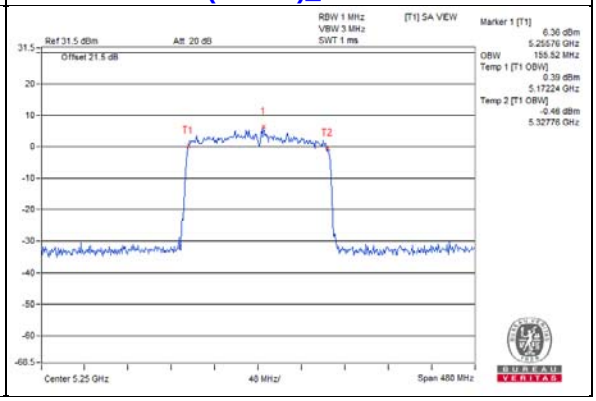
For CH144 (U-NII-2C) = 5725MHz - Temp 1

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

Spectrum Plot Value of OCP99% BW	
802.11ax (HE40)_Chain 0 / CH142	**802.11ax (HE80)_Chain 0 / CH138**
	
802.11ax (HE40)_Chain 1 / CH142	**802.11ax (HE80)_Chain 1 / CH138**
	
802.11ax (HE40)_Chain 2 / CH142	**802.11ax (HE80)_Chain 2 / CH138**
	
802.11ax (HE40)_Chain 3 / CH142	**802.11ax (HE80)_Chain 3 / CH138**
	

Note:

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

Spectrum Plot Value of OCP99% BW	
802.11ax (HE160)_Chain 0 / CH50	**802.11ax (HE160)_Chain 2 / CH50**
	
802.11ax (HE160)_Chain 1 / CH50	**802.11ax (HE160)_Chain 3 / CH50**
	

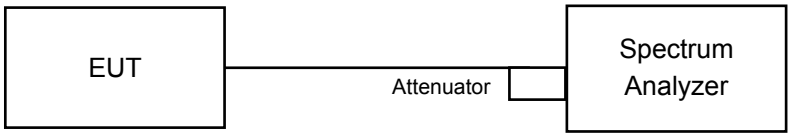
Note: For CH50 (U-NII-2A) = Temp 2 – 5250MHz
For CH50 (U-NII-1) = 5250MHz – Temp 1

4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

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

For 802.11a

Using method SA-1

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

For other modulation mode

Using method SA-2

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

For U-NII-3 band:

For 802.11a

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

For other modulation mode

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-2A, U-NII-2C Band

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
52	5260	0.02	0.69	0.88	0.37	6.52	6.86	Pass
60	5300	0.06	1.09	0.77	0.04	6.53	6.86	Pass
64	5320	0.23	0.94	0.65	0.03	6.50	6.86	Pass
100	5500	0.50	0.79	0.82	0.36	6.64	6.86	Pass
116	5580	0.03	0.88	0.45	0.38	6.47	6.86	Pass
140	5700	0.22	0.94	1.04	0.03	6.60	6.86	Pass
144 (U-NII-2C Band)	5720	0.16	0.84	1.18	0.84	6.79	6.86	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. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power density limit shall be reduced to 11-(10.14-6) = 6.86 dB/MHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	0.24	0.33	1.21	0.36	0.12	6.69	6.86	Pass
60	5300	-0.66	1.15	1.58	-0.58	0.12	6.63	6.86	Pass
64	5320	-0.48	1.21	1.01	-0.56	0.12	6.51	6.86	Pass
100	5500	0.13	1.27	0.88	0.33	0.12	6.82	6.86	Pass
116	5580	-0.39	0.97	1.04	-0.04	0.12	6.58	6.86	Pass
140	5700	-0.46	1.36	0.99	-0.69	0.12	6.53	6.86	Pass
144 (U-NII-2C Band)	5720	-0.21	0.83	0.83	-0.26	0.12	6.47	6.86	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. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power density limit shall be reduced to 11-(10.14-6) = 6.86 dB/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	-0.12	0.71	0.46	0.00	0.17	6.47	6.86	Pass
62	5310	-0.68	0.41	-0.19	-0.10	0.17	6.07	6.86	Pass
102	5510	-1.75	-1.63	-1.16	-2.54	0.17	4.45	6.86	Pass
110	5550	0.18	0.82	0.54	-0.13	0.17	6.56	6.86	Pass
134	5670	0.19	0.56	0.63	0.17	0.17	6.58	6.86	Pass
142 (U-NII-2C Band)	5710	-0.30	0.93	0.40	-0.27	0.17	6.41	6.86	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. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power density limit shall be reduced to 11-(10.14-6) = 6.86 dB/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

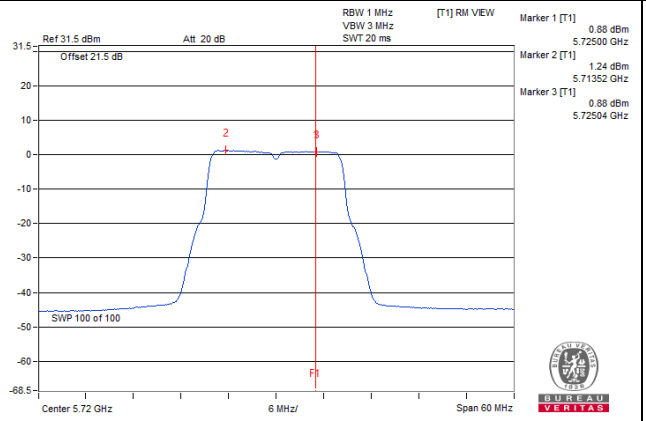
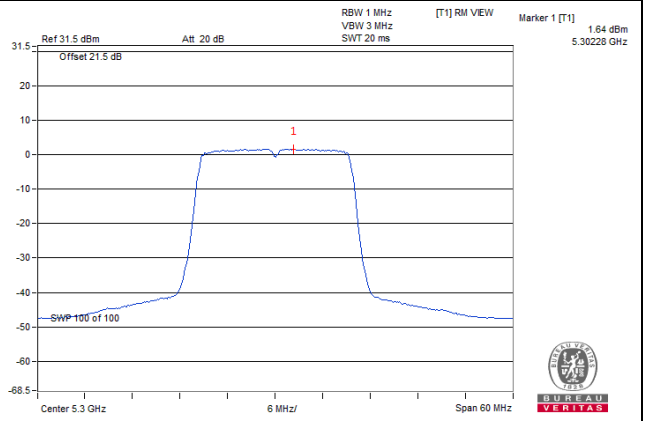
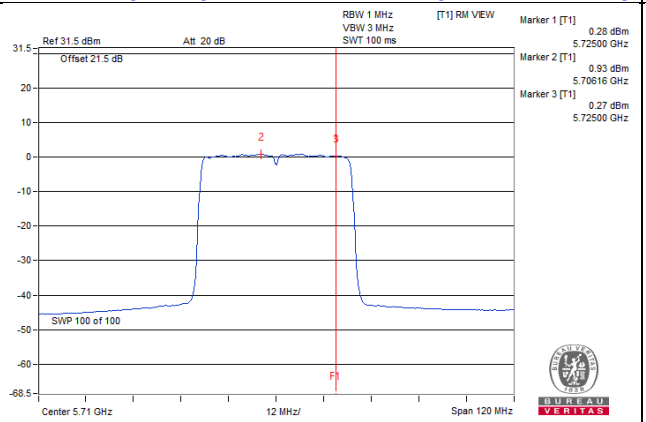
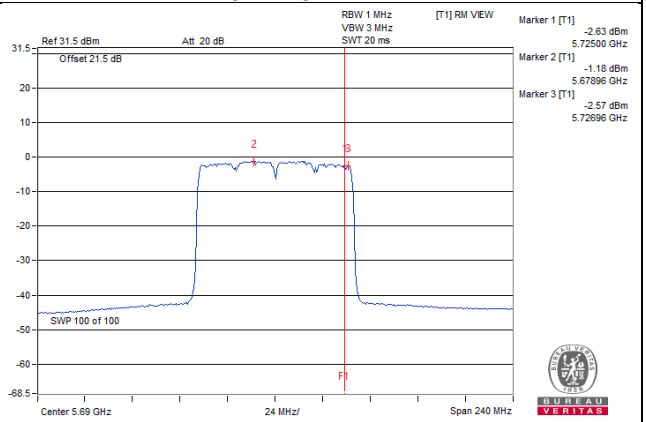
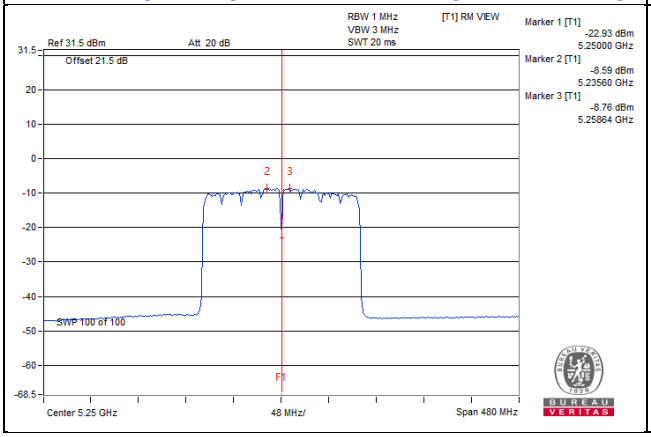
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	-4.89	-4.23	-3.99	-4.95	0.33	1.86	6.86	Pass
106	5530	-6.46	-5.65	-5.53	-6.21	0.33	0.41	6.86	Pass
122	5610	-2.30	-1.81	-1.79	-0.89	0.33	4.68	6.86	Pass
138 (U-NII-2C Band)	5690	-2.12	-1.91	-2.14	-1.28	0.33	4.50	6.86	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. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power density limit shall be reduced to 11-(10.14-6) = 6.86 dB/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE160)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
50 (U-NII-1 Band)	5250	-9.15	-9.03	-8.59	-10.09	0.56	-2.60	12.86	Pass
50 (U-NII-2A Band)	5250	-9.36	-8.88	-8.95	-10.02	0.56	-2.70	6.86	Pass
114	5570	-9.57	-9.09	-8.73	-9.33	0.56	-2.59	6.86	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. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power density limit shall be reduced to 11-(10.14-6) = 6.86 dB/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a_Chain 2 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 2 / CH60**
	
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ax (HE80)_Chain 3 / CH122**
	
802.11ax (HE160)_Chain 2 / CH50 (U-NII-1 Band)	
	

For U-NII-3 Band

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
144 (U-NII-3 Band)	5720	-8.48	-7.96	-7.55	-8.34	-2.05	0.17	25.86	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power density limit shall be reduced to 30-(10.14-6) = 25.86 dB/500kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
144 (U-NII-3 Band)	5720	-9.47	-8.00	-8.70	-9.35	0.12	-2.70	-0.48	25.86	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power density limit shall be reduced to 30-(10.14-6) = 25.86 dB/500kHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
142 (U-NII-3 Band)	5710	-10.24	-8.88	-9.14	-9.64	0.17	-3.25	-1.03	25.86	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2$ / 4] = 10.14 dBi > 6dBi, so the power density limit shall be reduced to 30-(10.14-6) = 25.86 dB/500kHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

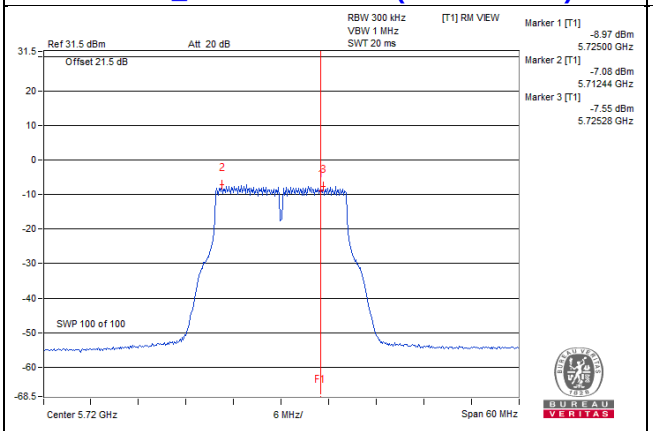
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
138 (U-NII-3 Band)	5690	-13.37	-11.86	-11.73	-11.21	0.33	-5.62	-3.40	25.86	Pass

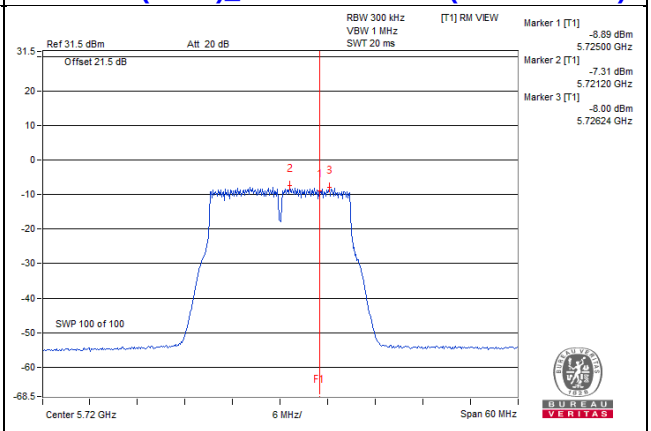
Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$ + $10^{G4/20}$)^2 / 4] = 10.14 dBi > 6dBi, so the power density limit shall be reduced to 30-(10.14-6) = 25.86 dB/500kHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

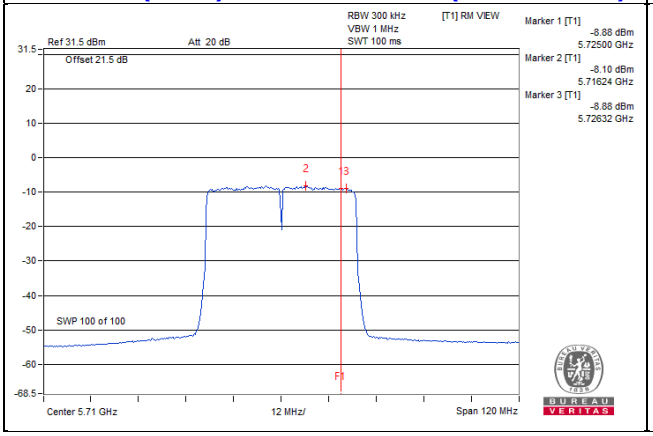
802.11a_Chain 2 / CH144 (U-NII-3 Band)



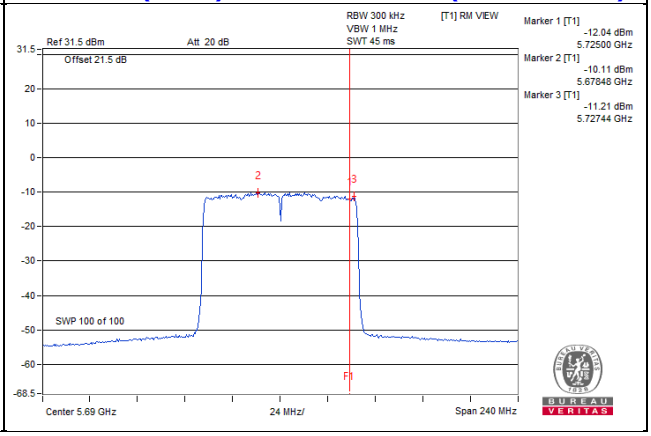
802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)



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



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

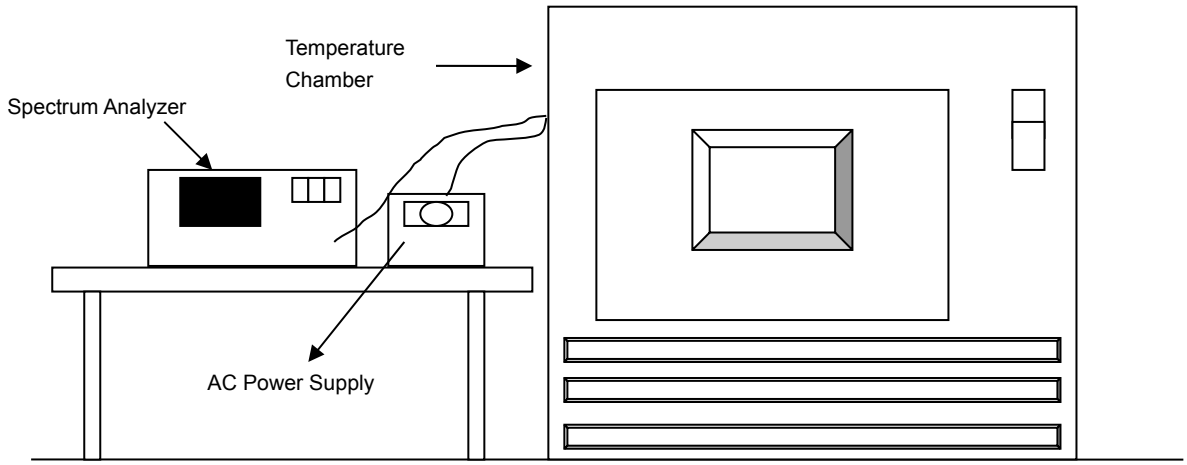


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.

e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5260 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
40	120	5259.9803	Pass	5259.9821	Pass	5259.9822	Pass	5259.9796	Pass
30	120	5260.0124	Pass	5260.0133	Pass	5260.0146	Pass	5260.0145	Pass
20	120	5260.0063	Pass	5260.0071	Pass	5260.0098	Pass	5260.0087	Pass
10	120	5260.0188	Pass	5260.0167	Pass	5260.0198	Pass	5260.0173	Pass
0	120	5259.9979	Pass	5259.9986	Pass	5259.9996	Pass	5260.0016	Pass

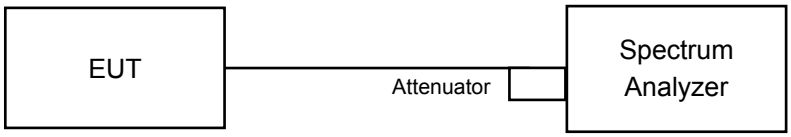
Frequency Stability Versus Voltage									
Operating Frequency: 5260 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5260.0069	Pass	5260.0071	Pass	5260.0096	Pass	5260.0093	Pass
	120	5260.0063	Pass	5260.0071	Pass	5260.0098	Pass	5260.0087	Pass
	102	5260.0064	Pass	5260.0077	Pass	5260.009	Pass	5260.0077	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

CDD Mode

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	3.17	3.17	3.17	3.16	0.5	Pass

802.11ax (HE20)

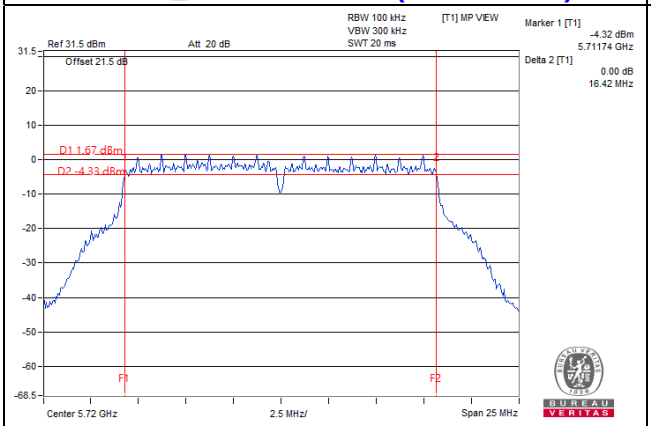
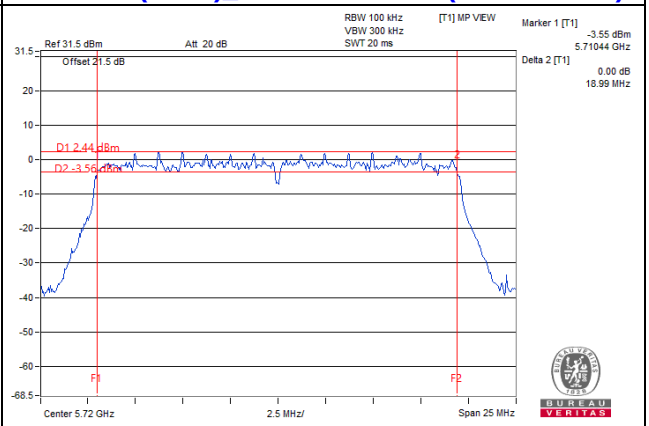
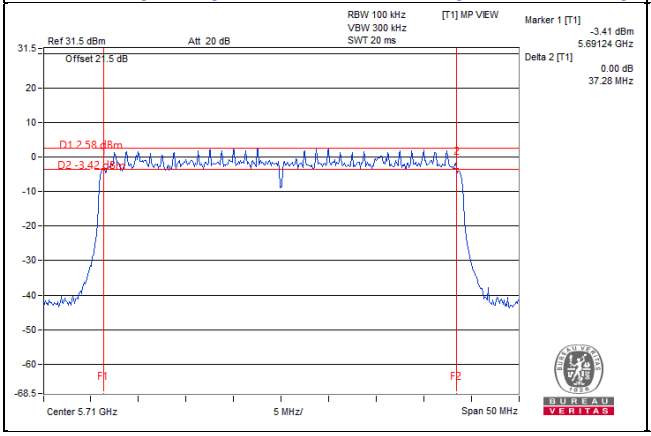
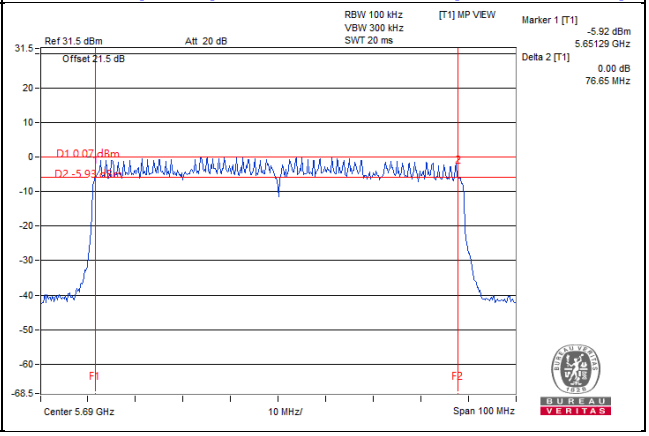
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
144 (U-NII-3 Band)	5720	4.46	4.48	4.43	4.55	0.5	Pass

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	3.77	3.52	3.72	3.55	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	2.94	3.86	3.11	2.94	0.5	Pass

Spectrum Plot of Worst Value	
802.11a_Chain 3 / CH144 (U-NII-3 Band)	**802.11ax (HE20)_Chain 2 / CH144 (U-NII-3 Band)**
	
802.11ax (HE40) _Chain 1 / CH142 (U-NII-3 Band)	**802.11ax (HE80) _Chain 0 / CH138 (U-NII-3 Band)**
	

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

5 Pictures of Test Arrangements

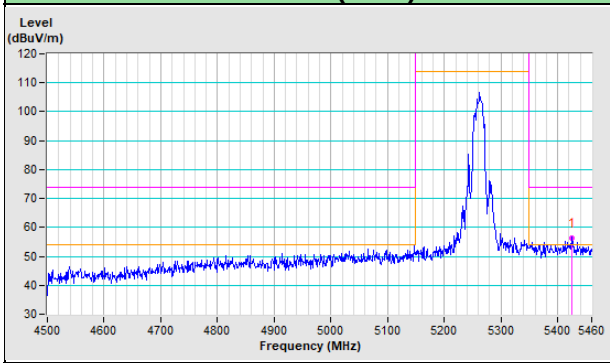
Please refer to the attached file (Test Setup Photo).

Annex A - Band-Edge Measurement (For U-NII-2A, U-NII-2C band)

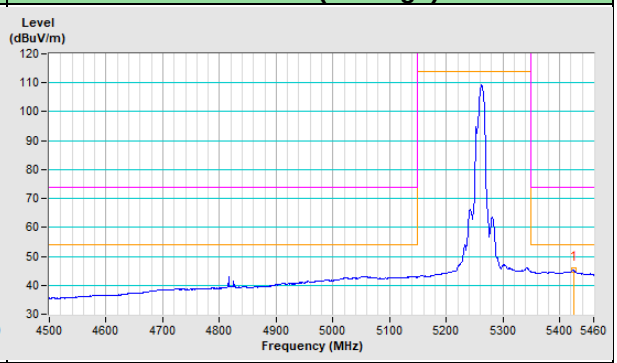
802.11a

Channel 52

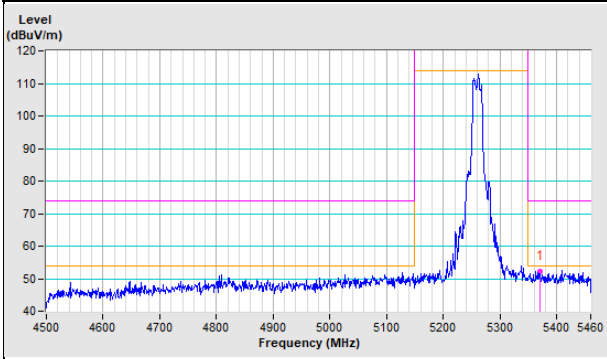
Horizontal (Peak)



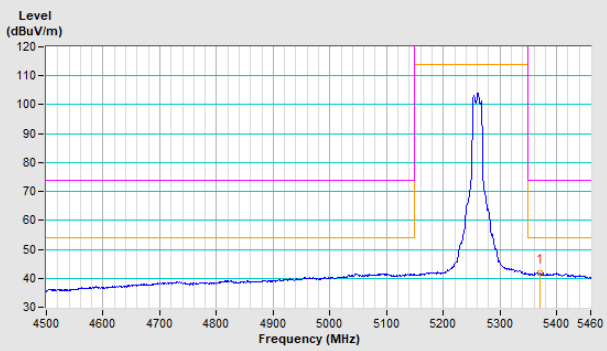
Horizontal (Average)



Vertical (Peak)

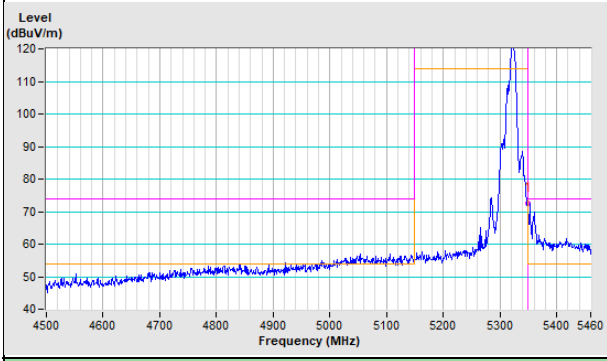


Vertical (Average)

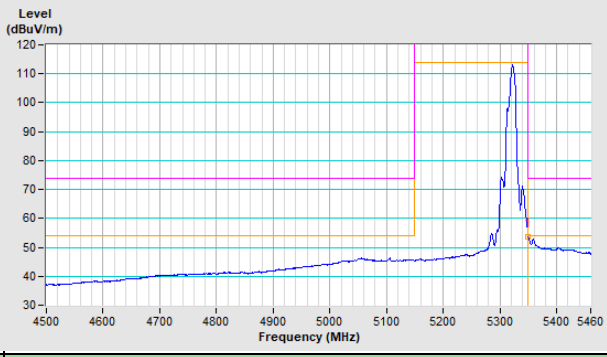


Channel 64

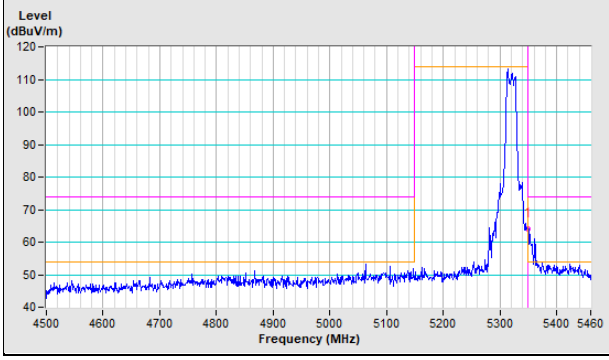
Horizontal (Peak)



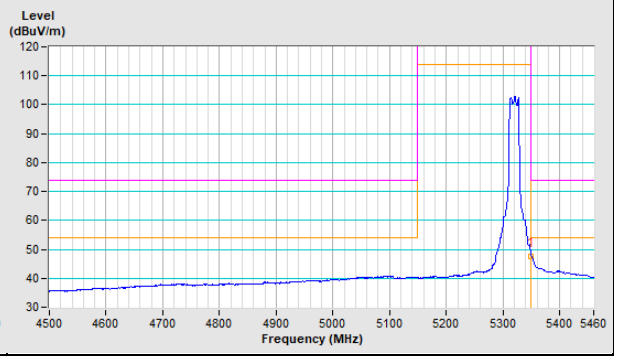
Horizontal (Average)

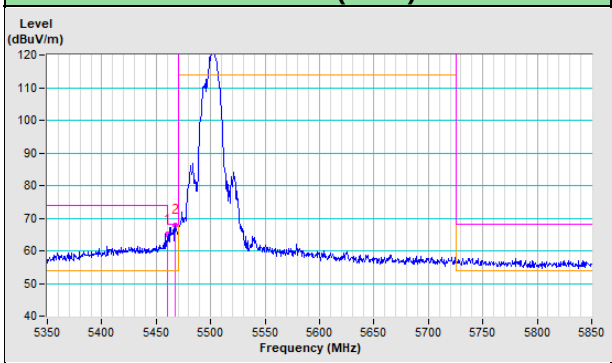
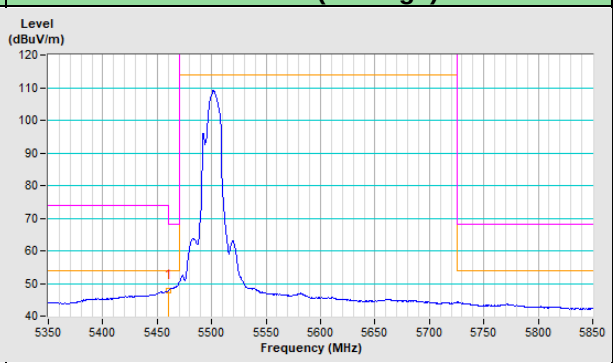
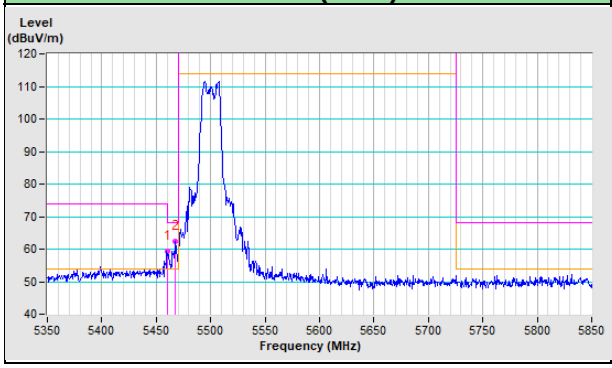
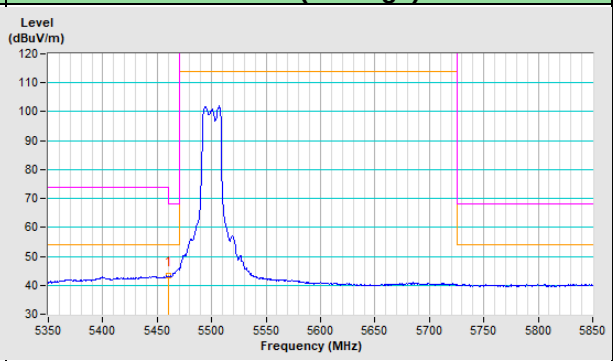


Vertical (Peak)



Vertical (Average)

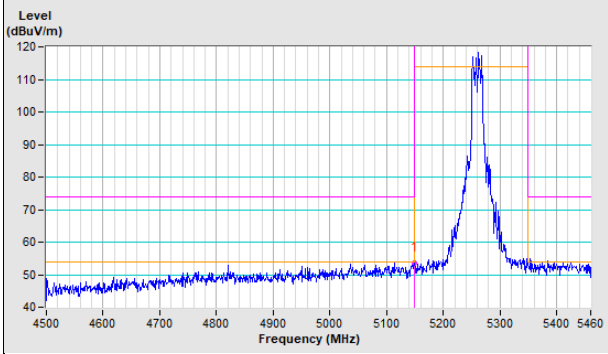


Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

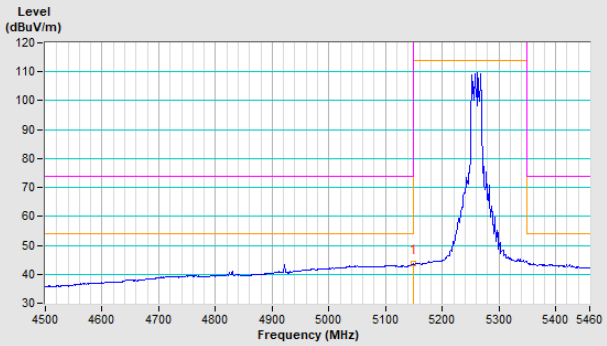
802.11ax (HE20)

Channel 52

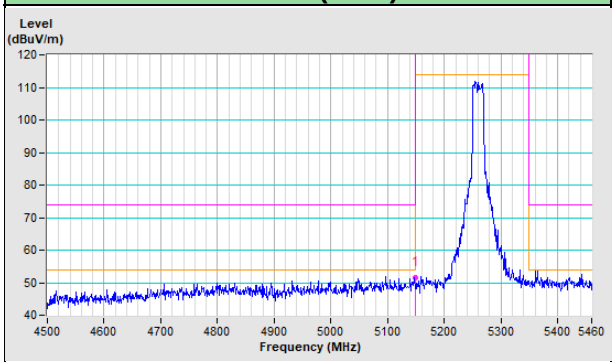
Horizontal (Peak)



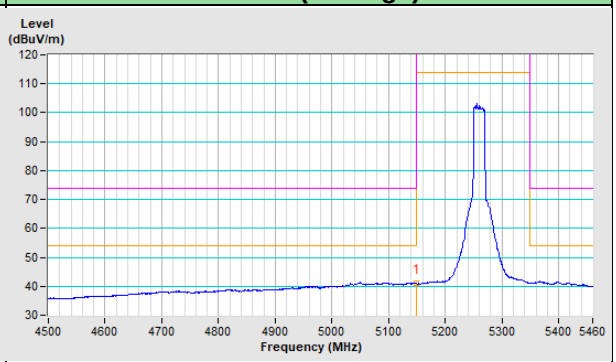
Horizontal (Average)



Vertical (Peak)

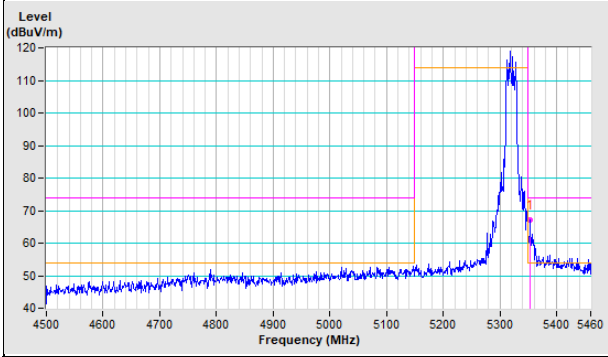


Vertical (Average)

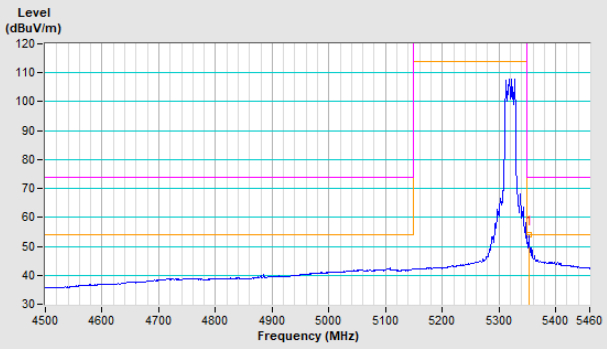


Channel 64

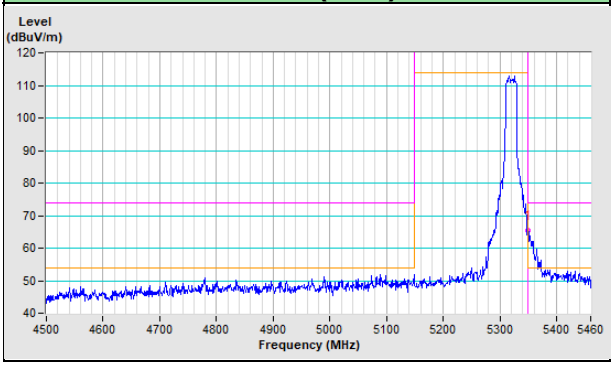
Horizontal (Peak)



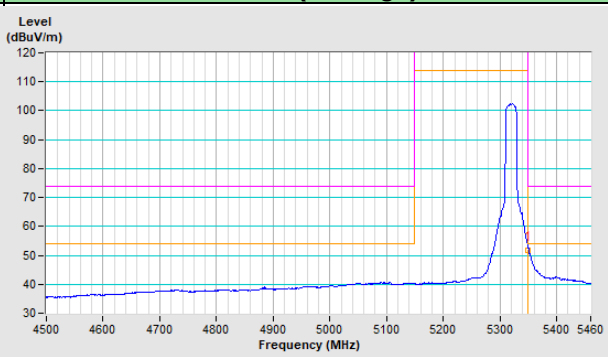
Horizontal (Average)

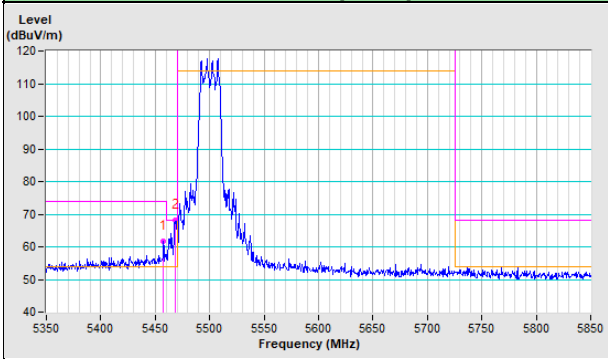
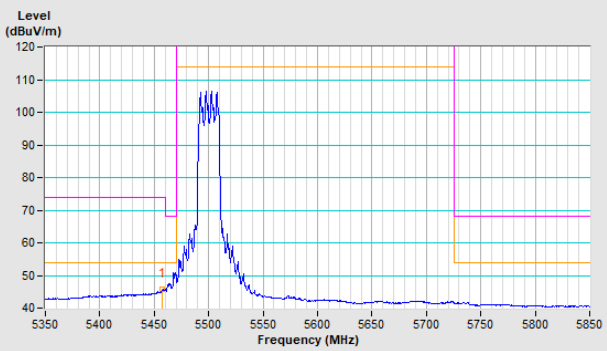
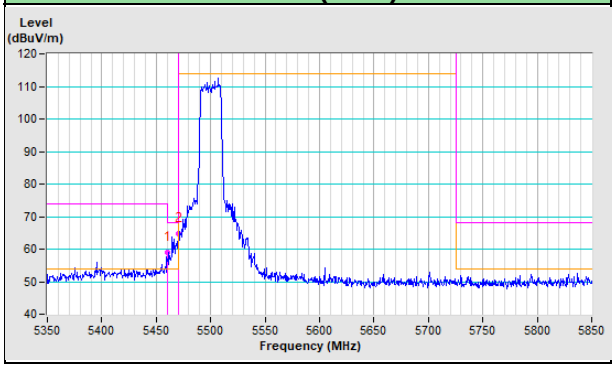
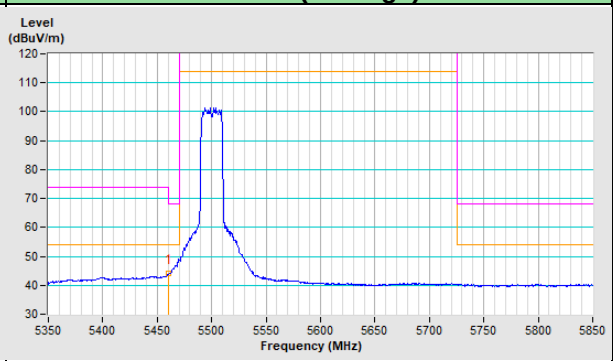


Vertical (Peak)



Vertical (Average)

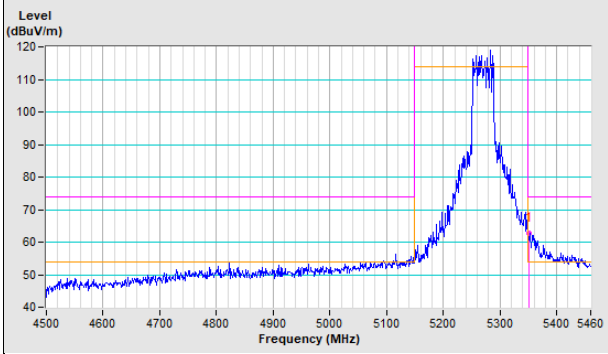


Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

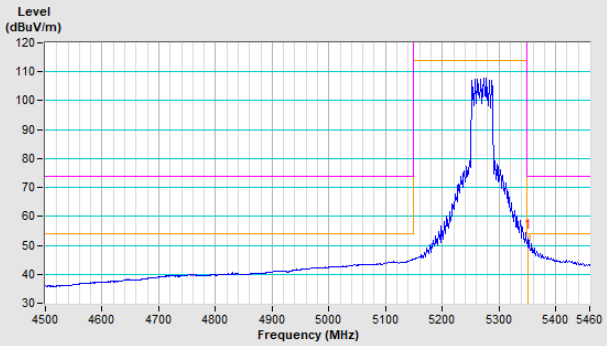
802.11ax (HE40)

Channel 54

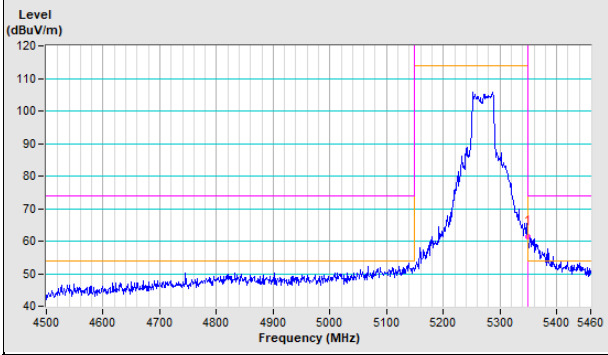
Horizontal (Peak)



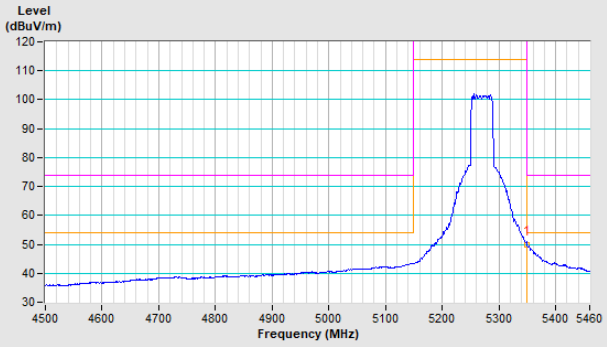
Horizontal (Average)



Vertical (Peak)

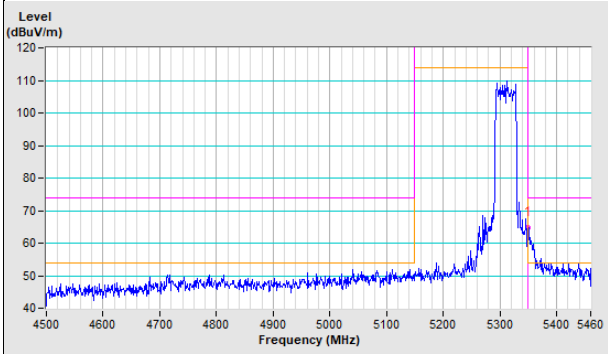


Vertical (Average)

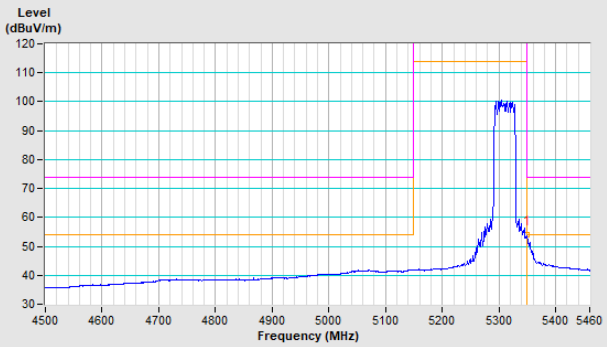


Channel 62

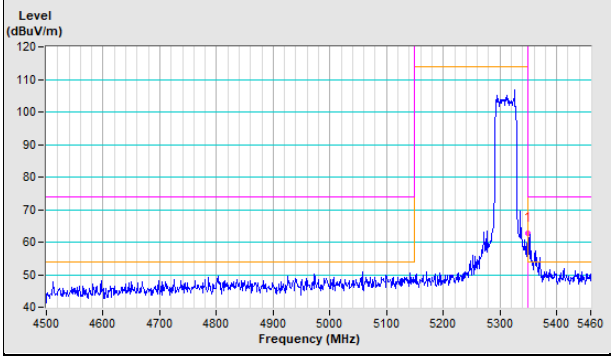
Horizontal (Peak)



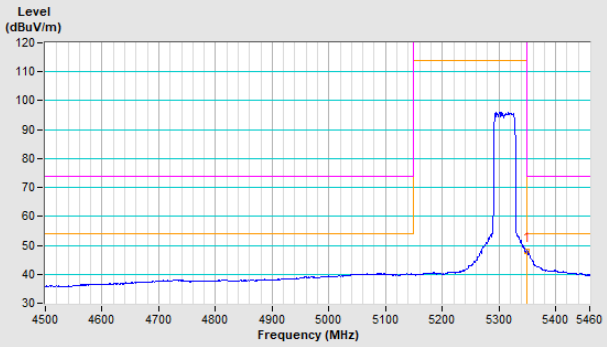
Horizontal (Average)

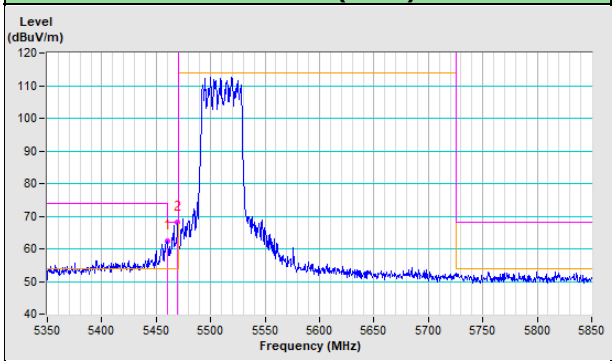
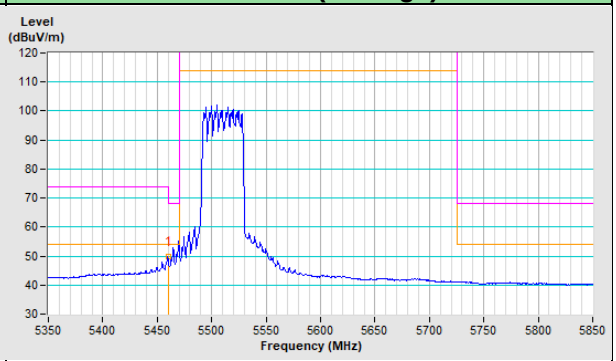
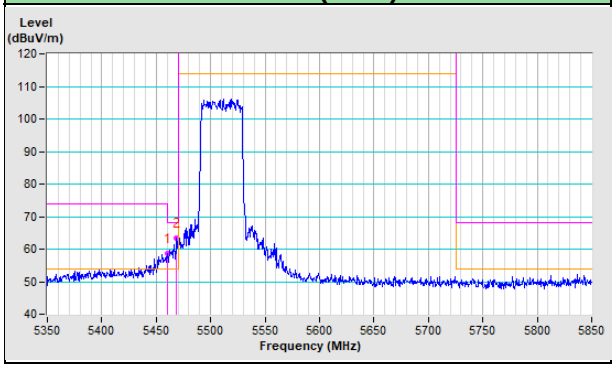
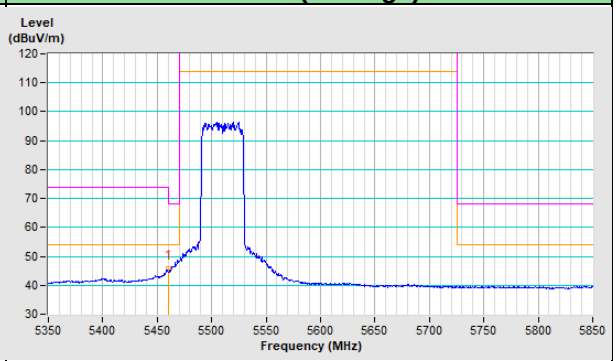


Vertical (Peak)



Vertical (Average)

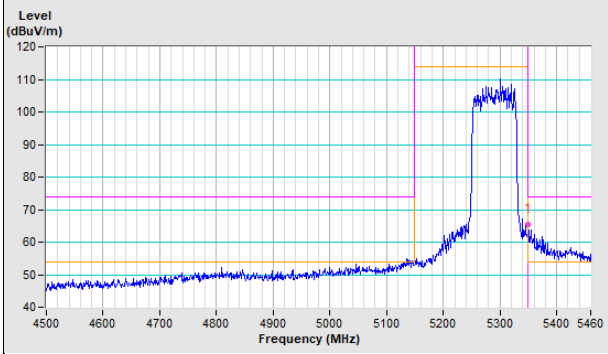


Channel 102	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

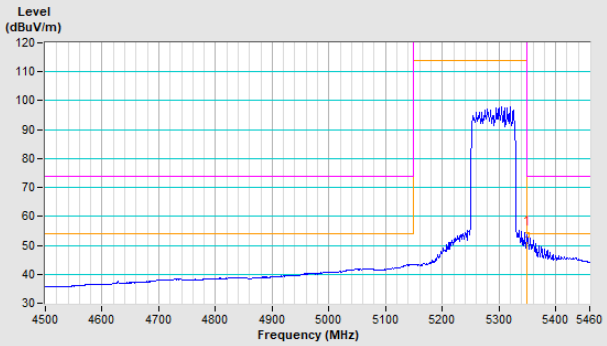
802.11ax (HE80)

Channel 58

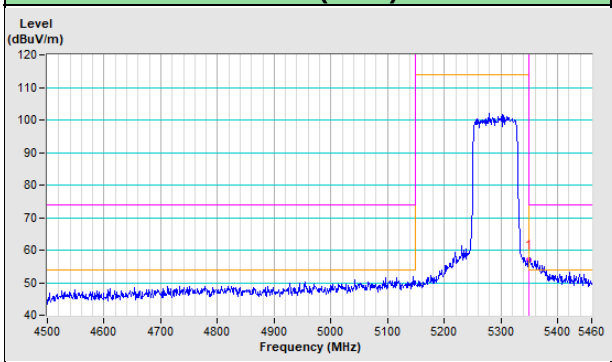
Horizontal (Peak)



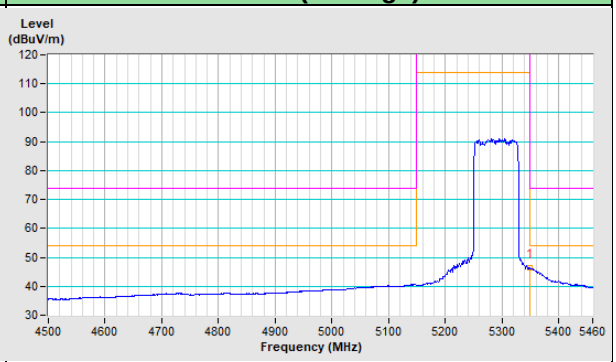
Horizontal (Average)



Vertical (Peak)

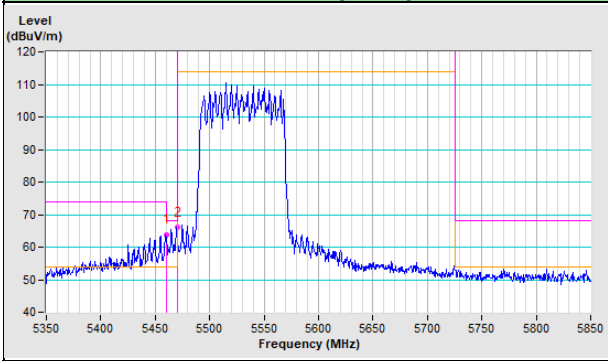


Vertical (Average)

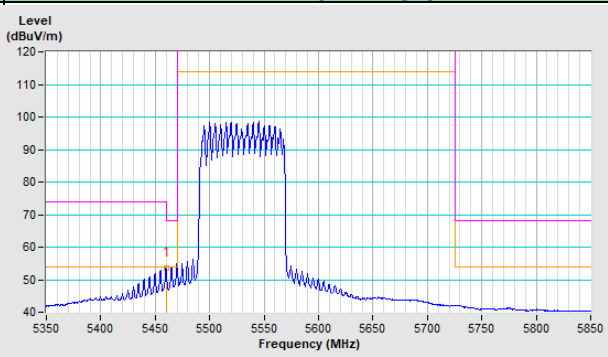


Channel 106

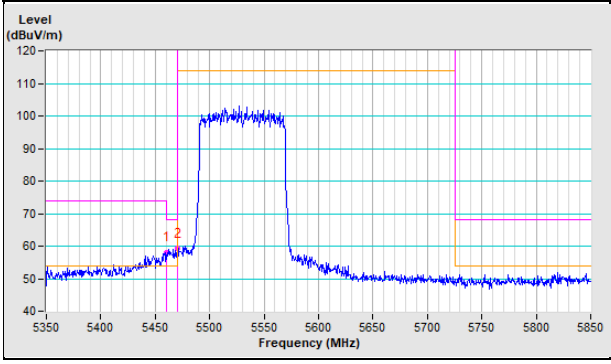
Horizontal (Peak)



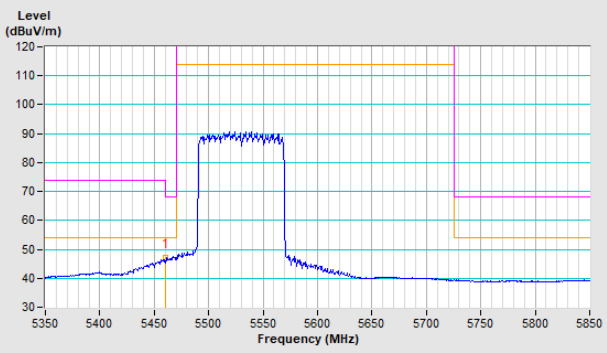
Horizontal (Average)



Vertical (Peak)



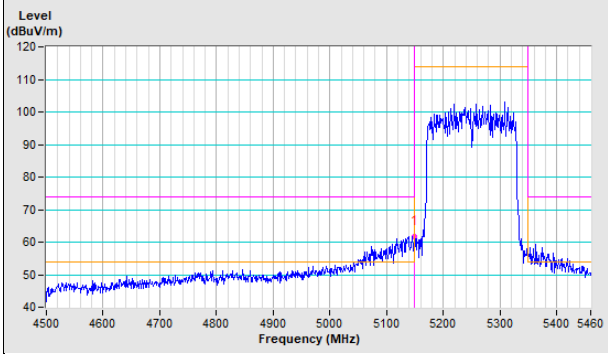
Vertical (Average)



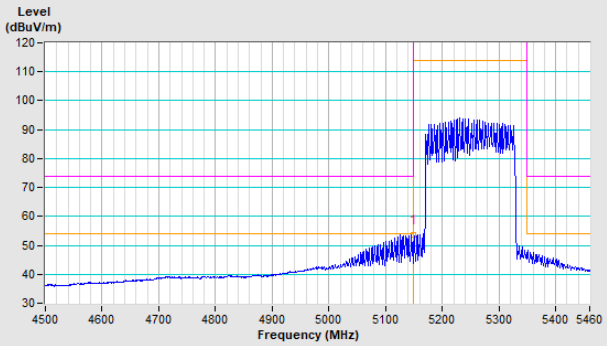
802.11ax (HE160)

Channel 50

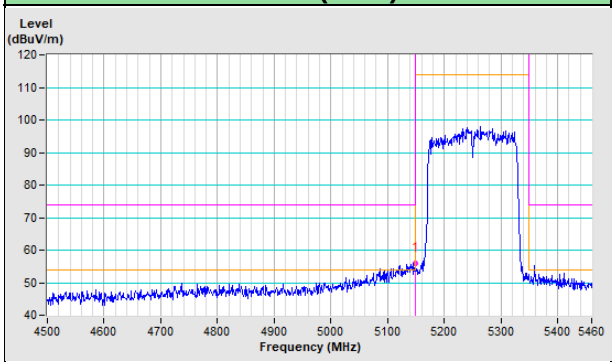
Horizontal (Peak)



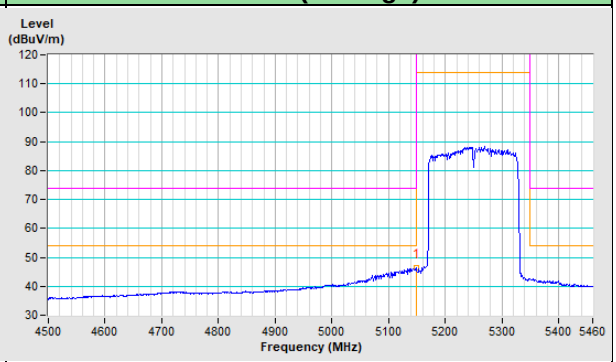
Horizontal (Average)



Vertical (Peak)

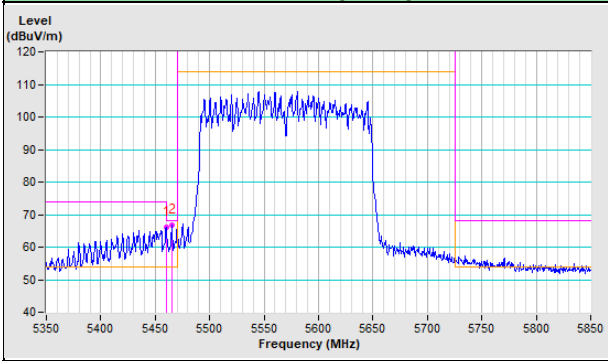


Vertical (Average)

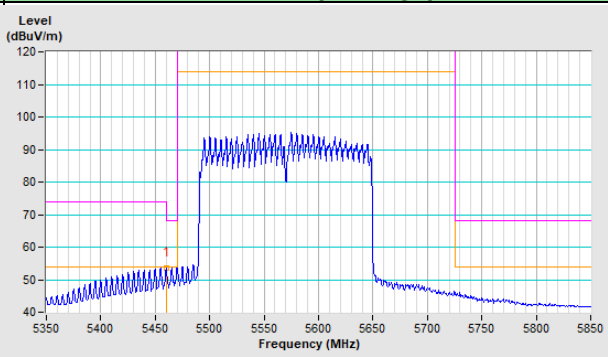


Channel 114

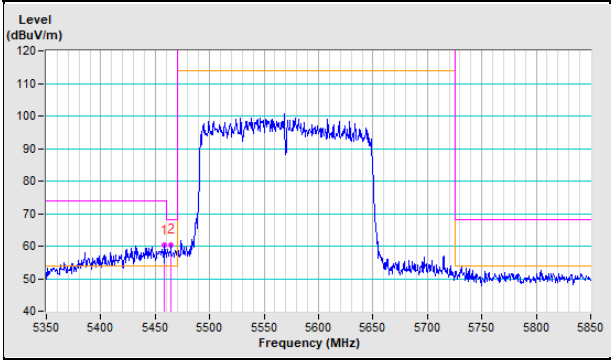
Horizontal (Peak)



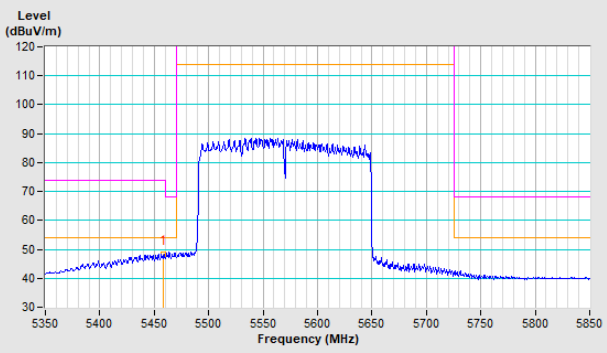
Horizontal (Average)



Vertical (Peak)



Vertical (Average)



Appendix – Information of the Testing Laboratories

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

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Web Site: www.bureauveritas-adt.com

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

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