

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)

Report No.: RFBCKS-WTW-P23040515-1

FCC ID: 2AWHPR231

Product: Starlink Router

Brand: SPACEX



Model No.: UTR-231

Received Date: 2023/4/25

Test Date: 2023/6/6 ~ 2023/6/16

Issued Date: 2023/7/4

Applicant: Space Exploration Technologies Corp. (SPACEX)

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

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Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan

FCC Registration / 723255 / TW2022

Designation Number:

Approved by:  _____, **Date:** 2023/7/4
May Chen / Manager

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Prepared by : Vito Lung / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBCKS-WTW-P23040515-1	Original release.	2023/7/4

1 Certificate

Product: Starlink Router

Brand: SPACEX



Test Model: UTR-231

Sample Status: Engineering sample

Applicant: Space Exploration Technologies Corp. (SPACEX)

Test Date: 2023/6/6 ~ 2023/6/16

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)

Measurement ANSI C63.10-2013

procedure: KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

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 RF characteristics under the conditions specified in this report.

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(2)	26 dB Bandwidth	-	For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.
15.407(a)(1) 15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1) 15.407(a)(3)	Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
---	Occupied Bandwidth	-	Reference only.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -8.53 dB at 0.50156 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -3.1 dB at 44.89 MHz
15.407(b) (1/10) 15.407(b) (4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.3 dB at 5138.10, 5150.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.5 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.1 dB
	18 GHz ~ 40 GHz	5.3 dB


The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Starlink Router
Brand	SPACEEX 
Test Model	UTR-231
Status of EUT	Engineering sample
Power Supply Rating	Refer to Note
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 600 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2401.9 Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 9 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 4 802.11ac (VHT80), 802.11ax (HE80): 2
Output Power	CDD Mode: 5.18 GHz ~ 5.24 GHz: 969.319 mW (29.86 dBm) 5.745 GHz ~ 5.825 GHz: 961.078 mW (29.83 dBm) Beamforming Mode: 5.18 GHz ~ 5.24 GHz: 947.638 mW (29.77 dBm) 5.745 GHz ~ 5.825 GHz: 961.078 mW (29.83 dBm)
EUT Category	Indoor Access Point

Note:

1. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3
WLAN (2.4GHz)	WLAN 5GHz (Low)	WLAN 5GHz (High)

2. Simultaneously transmission condition.

Condition	Technology		
1	WLAN 2.4GHz	WLAN 5GHz (Low)	WLAN 5GHz (High)

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

3. The EUT uses following accessories.

AC Adapter 1		
Brand	Model	Specification
STARLINK	UTP-231L	AC Input : 100-240V~1.6A 50/60Hz DC Output : 30V-2.0A(Total Max 60W)LPS DC Output Cable : 1.5M, No core no shielded Plug : FCC

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna NO.	RF Chain NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
2G1	Ant1	SPACEEX	UTR-231	4.26	2.4~2.4835GHz	PIFA	ipex(MHF)
2G2	Ant2			4.13	2.4~2.4835GHz	PIFA	ipex(MHF)
2G3	Ant3			3.14	2.4~2.4835GHz	PIFA	ipex(MHF)
2G4	Ant4			3.92	2.4~2.4835GHz	PIFA	ipex(MHF)
5L1	Ant1	SPACEEX	UTR-231	2.86	5.15~5.25GHz	PIFA	ipex(MHF)
				4.20	5.25~5.35GHz		
5L2	Ant2			2.28	5.15~5.25GHz	PIFA	ipex(MHF)
				1.04	5.25~5.35GHz		
5L3	Ant3			1.29	5.15~5.25GHz	PIFA	ipex(MHF)
				1.68	5.25~5.35GHz		
5L4	Ant4			1.53	5.15~5.25GHz	PIFA	ipex(MHF)
				1.51	5.25~5.35GHz		
5H1	Ant1	SPACEEX	UTR-231	4.02	5.47~5.725GHz	PIFA	ipex(MHF)
				4.23	5.725~5.85GHz		
5H2	Ant2			4.02	5.47~5.725GHz	PIFA	ipex(MHF)
				3.72	5.725~5.85GHz		
5H3	Ant3			3.04	5.47~5.725GHz	PIFA	ipex(MHF)
				3.93	5.725~5.85GHz		
5H4	Ant4			4.90	5.47~5.725GHz	PIFA	ipex(MHF)
				3.27	5.725~5.85GHz		

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The EUT incorporates a MIMO function:

5 GHz 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:

- All of modulation mode support beamforming function except 802.11a modulation mode.
- 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.
- The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), 802.11ac mode for 20 MHz (40 MHz, 80 MHz, 160 MHz), 802.11ax mode for 20 MHz (40 MHz, 80 MHz, 160 MHz) therefore the manufacturer will control the power for 802.11n/ac mode is same as the 802.11ax mode or more lower than it and investigated worst case to representative mode in test report.

3.3 Channel List

FOR 5180 ~ 5240 MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

Channel	Frequency
42	5210 MHz

FOR 5745 ~ 5825 MHz:

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

Channel	Frequency	Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

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

Channel	Frequency
155	5775 MHz

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition. 2. 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).
Worst Case:	1. X-axis/ Y-axis/ Z-axis Worst Condition: Z-axis

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

Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	A	802.11a	CDD	36, 40, 48	BPSK	6Mb/s
		802.11ac (VHT20)	CDD & Beamforming	36, 40, 48	BPSK	MCS0
		802.11ac (VHT40)	CDD & Beamforming	38, 46	BPSK	MCS0
		802.11ac (VHT80)	CDD & Beamforming	42	BPSK	MCS0
		802.11ax (HE20)	CDD & Beamforming	36, 40, 48	BPSK	MCS0
		802.11ax (HE40)	CDD & Beamforming	38, 46	BPSK	MCS0
		802.11ax (HE80)	CDD & Beamforming	42	BPSK	MCS0
	B	802.11a	CDD	149, 157, 165	BPSK	6Mb/s
		802.11ac (VHT20)	CDD & Beamforming	149, 157, 165	BPSK	MCS0
		802.11ac (VHT40)	CDD & Beamforming	151, 159	BPSK	MCS0
		802.11ac (VHT80)	CDD & Beamforming	155	BPSK	MCS0
		802.11ax (HE20)	CDD & Beamforming	149, 157, 165	BPSK	MCS0
		802.11ax (HE40)	CDD & Beamforming	151, 159	BPSK	MCS0
		802.11ax (HE80)	CDD & Beamforming	155	BPSK	MCS0

6 dB Bandwidth	B	802.11a	CDD	149, 157, 165	BPSK	6Mb/s
		802.11ax (HE20)	CDD	149, 157, 165	BPSK	MCS0
		802.11ax (HE40)	CDD	151, 159	BPSK	MCS0
		802.11ax (HE80)	CDD	155	BPSK	MCS0
Power Spectral Density / Occupied Bandwidth	A	802.11a	CDD	36, 40, 48	BPSK	6Mb/s
		802.11ax (HE20)	CDD	36, 40, 48	BPSK	MCS0
		802.11ax (HE40)	CDD	38, 46	BPSK	MCS0
		802.11ax (HE80)	CDD	42	BPSK	MCS0
	B	802.11a	CDD	149, 157, 165	BPSK	6Mb/s
		802.11ax (HE20)	CDD	149, 157, 165	BPSK	MCS0
		802.11ax (HE40)	CDD	151, 159	BPSK	MCS0
		802.11ax (HE80)	CDD	155	BPSK	MCS0
Frequency Stability	A	802.11a	-	36	unmodulated	-
	B	802.11a	-	149	unmodulated	-
AC Power Conducted Emissions	A	802.11ax (HE20)	CDD	40	BPSK	MCS0
	B	802.11ax (HE40)	CDD	151	BPSK	MCS0
Unwanted Emissions below 1 GHz	A	802.11ax (HE20)	CDD	40	BPSK	MCS0
	B	802.11ax (HE40)	CDD	151	BPSK	MCS0

Unwanted Emissions above 1 GHz	A	802.11a	CDD	36, 40, 48	BPSK	6Mb/s
		802.11ax (HE20)	CDD	36, 40, 48	BPSK	MCS0
		802.11ax (HE40)	CDD	38, 46	BPSK	MCS0
		802.11ax (HE80)	CDD	42	BPSK	MCS0
	B	802.11a	CDD	149, 157, 165	BPSK	6Mb/s
		802.11ax (HE20)	CDD	149, 157, 165	BPSK	MCS0
		802.11ax (HE40)	CDD	151, 159	BPSK	MCS0
		802.11ax (HE80)	CDD	155	BPSK	MCS0
EUT Configure Mode:	A	5G Low: MT7976A				
	B	5G High: MT7975AN				
Note: Partial RU (resource unit) mechanism is not supported.						

3.5 Duty Cycle of Test Signal

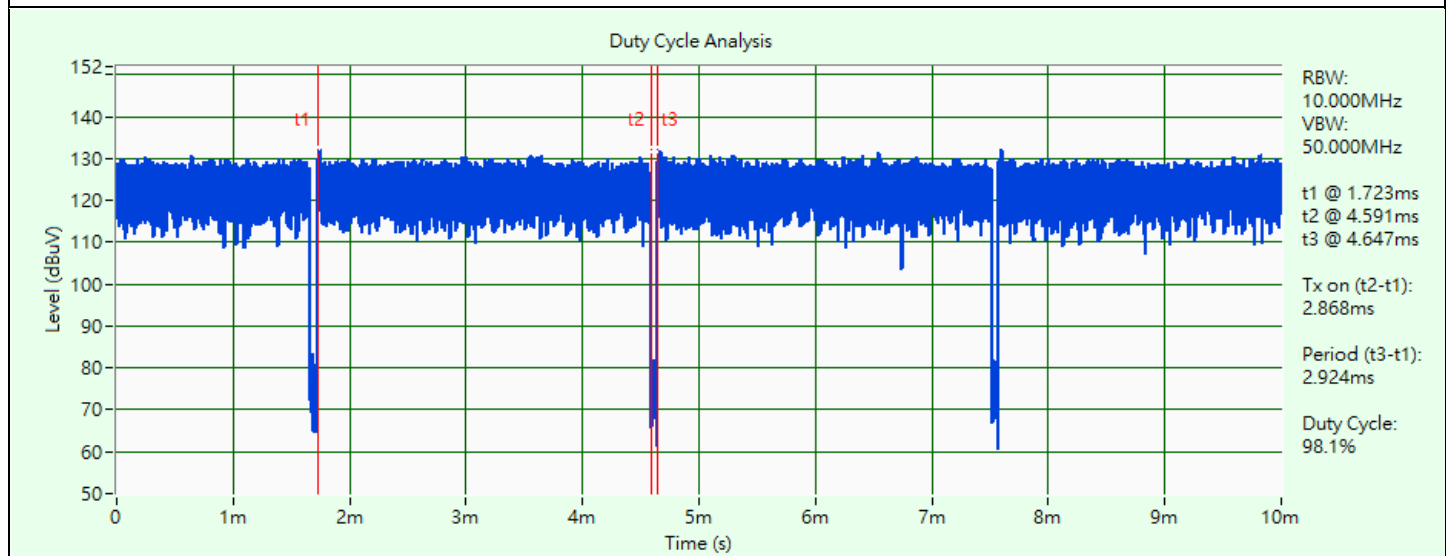
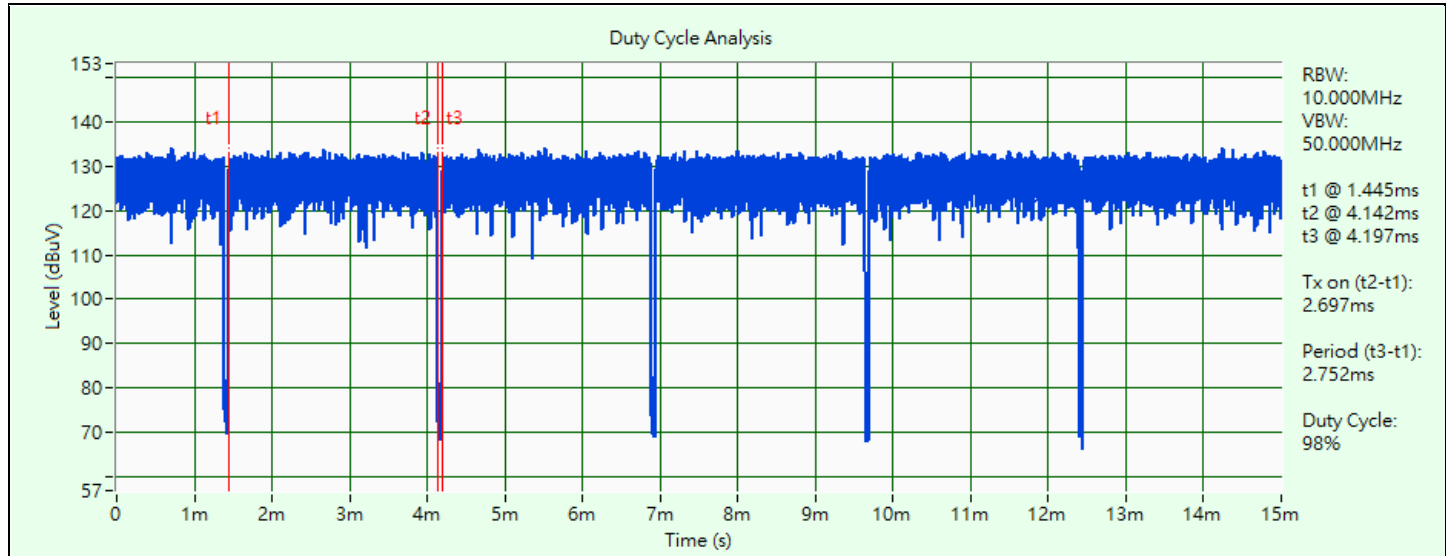
Mode A

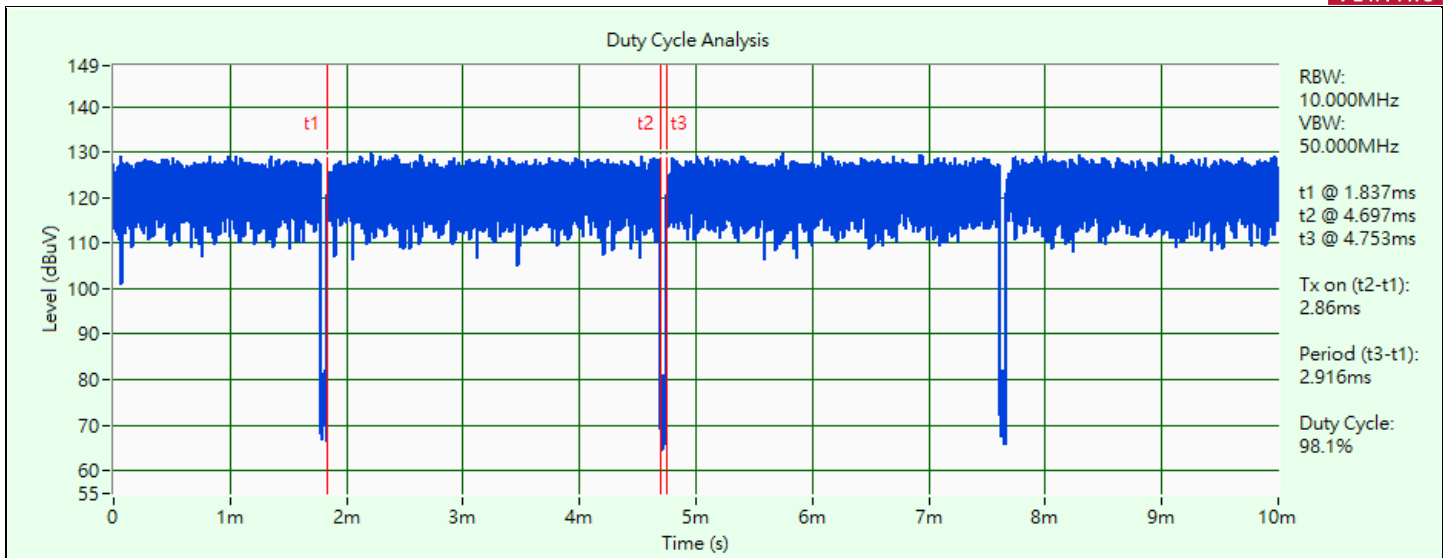
802.11a: Duty cycle = 2.697 ms / 2.752 ms x 100% = 98.0%

802.11ax (HE20): Duty cycle = 2.868 ms / 2.924 ms x 100% = 98.1%

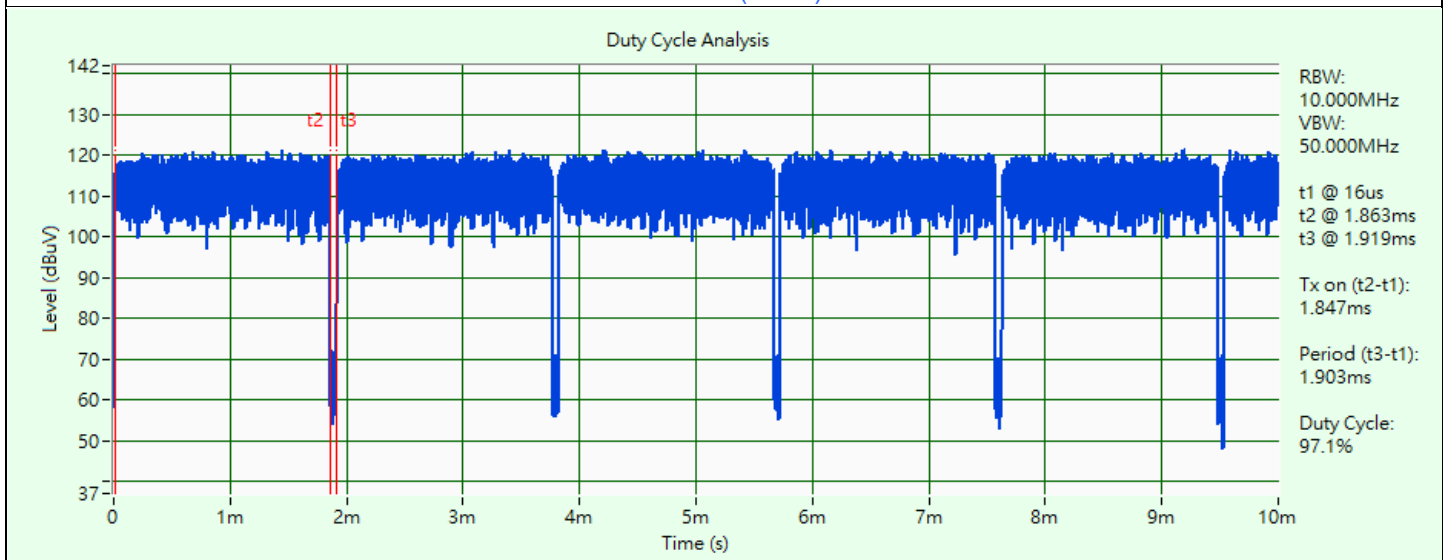
802.11ax (HE40): Duty cycle = 2.86 ms / 2.916 ms x 100% = 98.1%

802.11ax (HE80): Duty cycle = 1.847 ms / 1.903 ms x 100% = 97.1%, duty factor = 10 * log (1/Duty cycle) = 0.13 dB





802.11ax (HE40)



802.11ax (HE80)



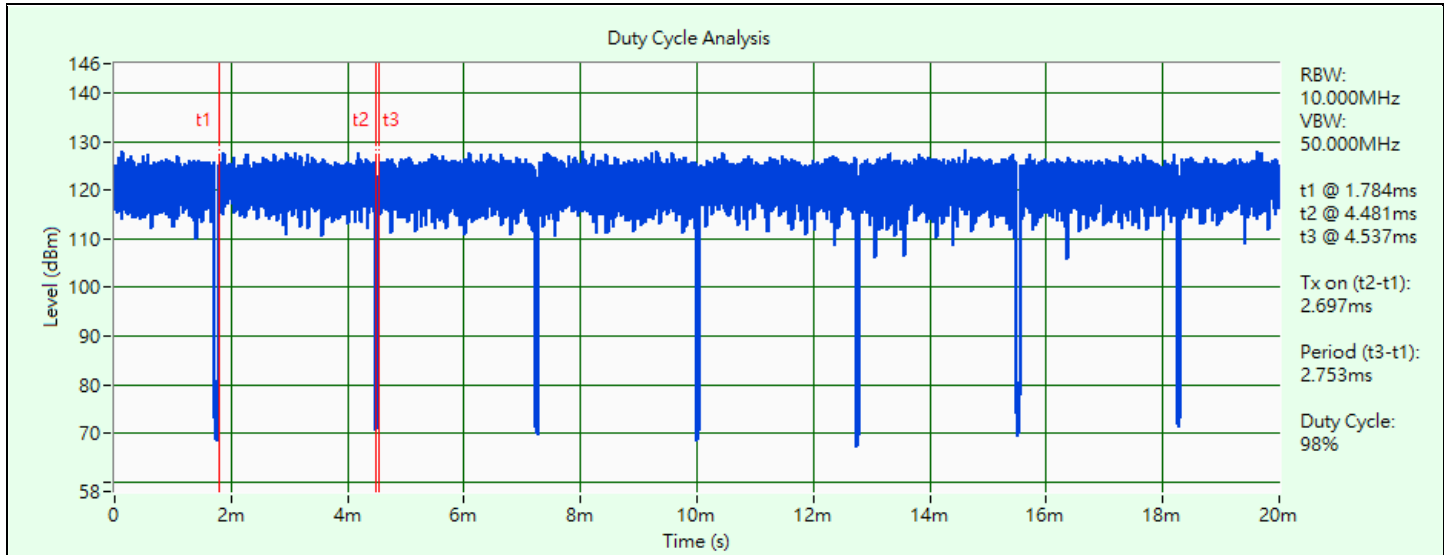
Mode B

802.11a: Duty cycle = 2.697 ms / 2.753 ms x 100% = 98.0%

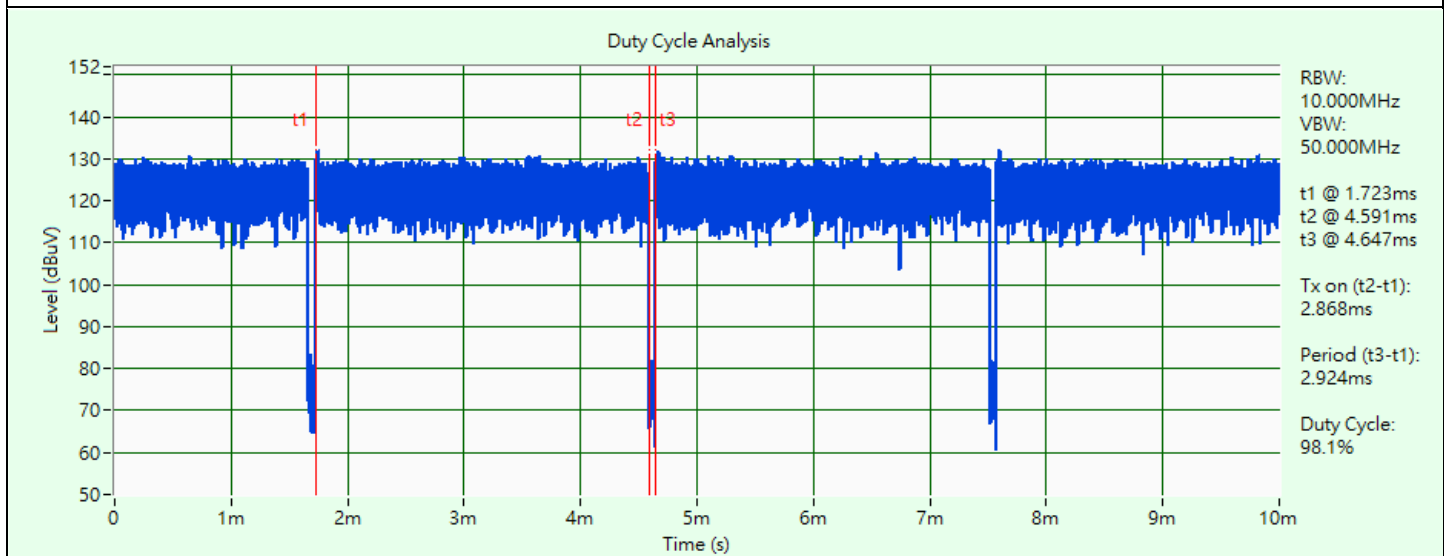
802.11ax (HE20): Duty cycle = 2.868 ms / 2.924 ms x 100% = 98.1%

802.11ax (HE40): Duty cycle = 2.859 ms / 2.916 ms x 100% = 98.0%

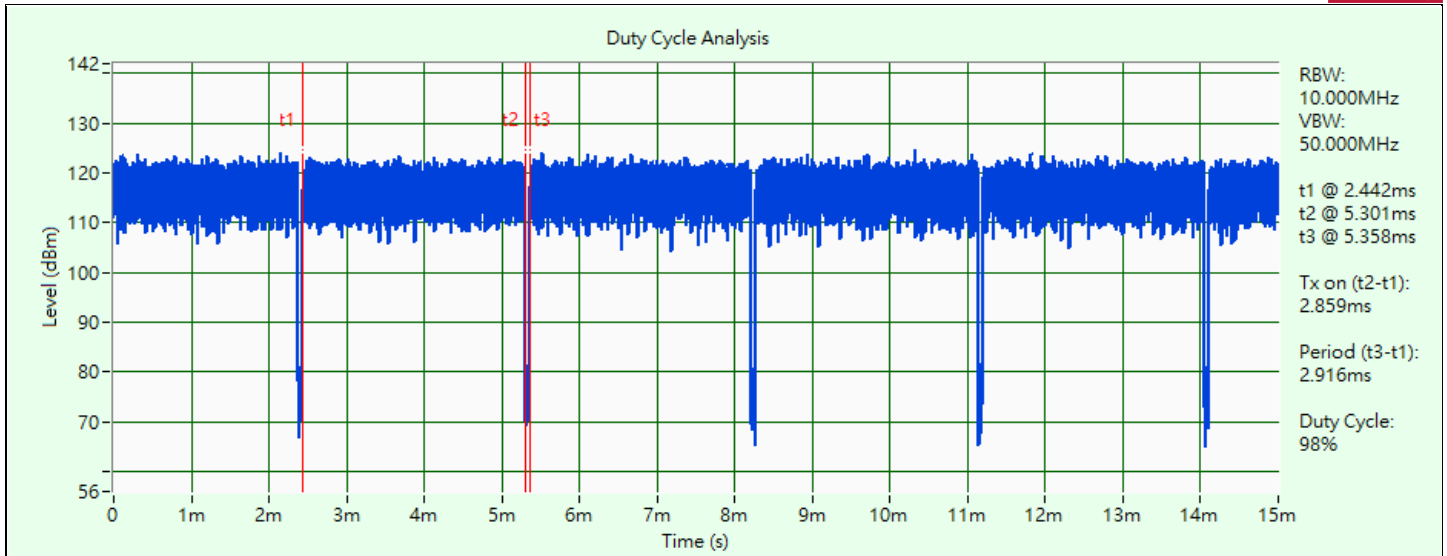
802.11ax (HE80): Duty cycle = 1.848 ms / 1.904 ms x 100% = 97.1%, duty factor = $10 * \log (1/\text{Duty cycle}) = 0.13 \text{ dB}$



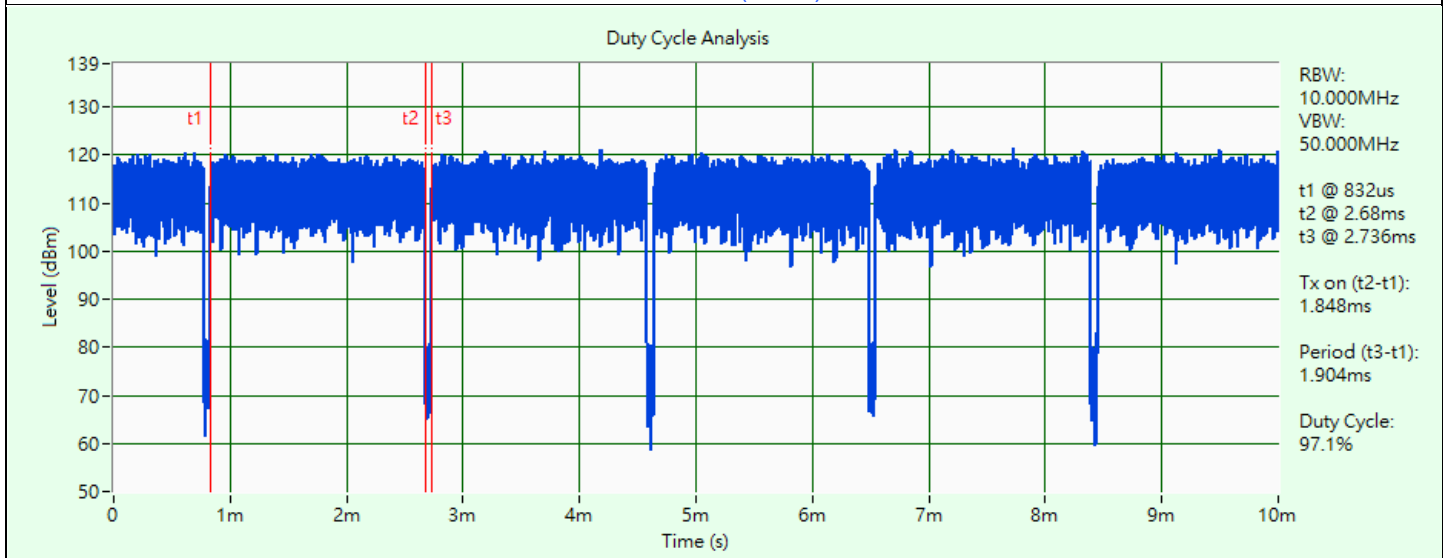
802.11a



802.11ax (HE20)



802.11ax (HE40)

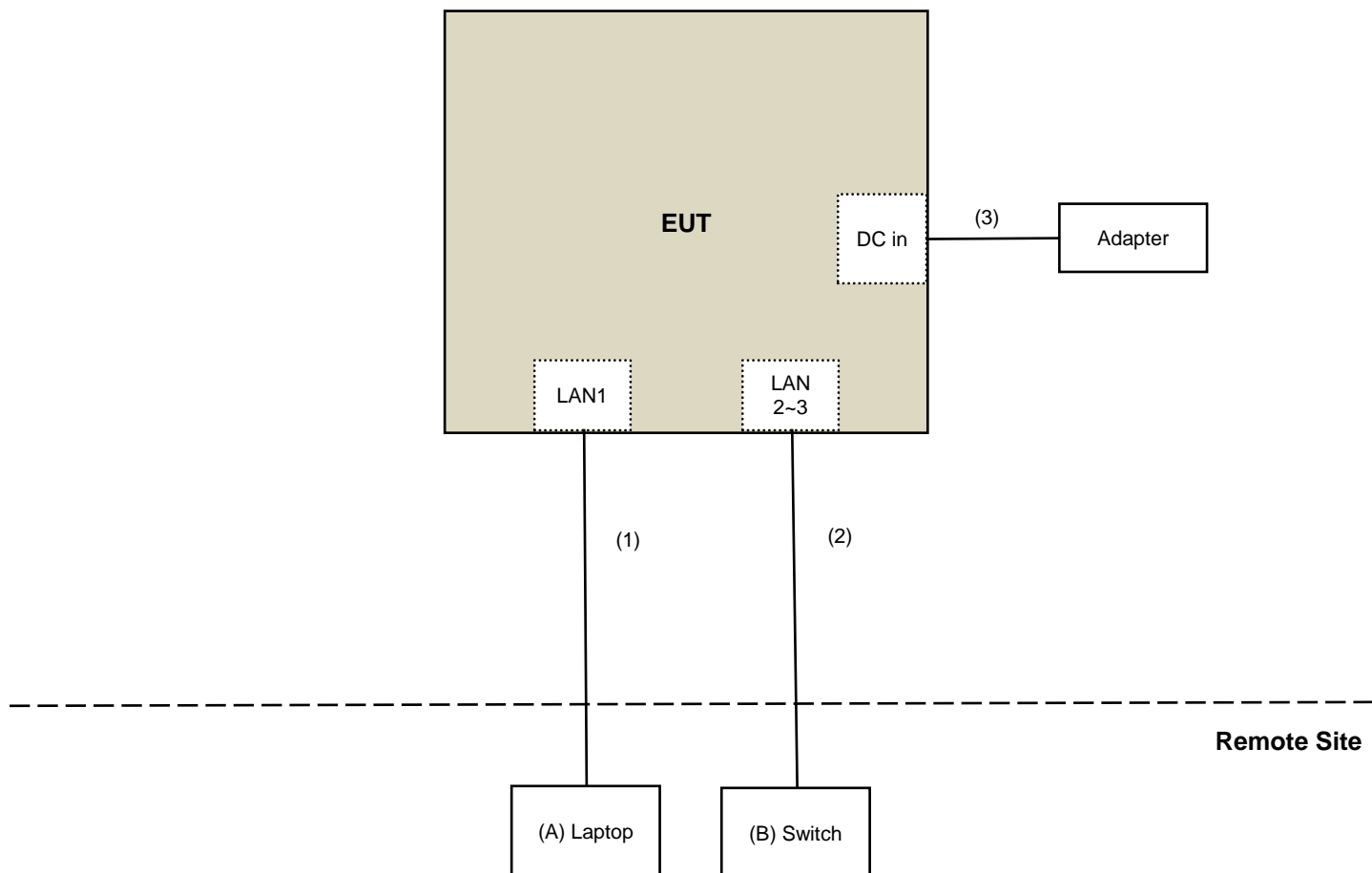


802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

Controlling software (QATool_Ulv2.88_DLLv6.93_ap_2022.01.04(V14)c) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
B	Switch	D-Link	DGS-1005D	DR8WC92000523	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ45 Cable	1	10	No	0	Provided by Lab
2	RJ45 Cable	2	10	No	0	Provided by Lab
3	DC Cable	1	1.5	No	0	Supplied by applicant

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/6/6

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/6/6

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.2 to get information of the instruments.

4.5 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Source GOOD WILL	6905S	1991551	N/A	N/A
Fixed Attenuator Woken	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2022/12/26	2023/12/25
True RMS Clamp Meter Fluke	325	31130711WS	2022/6/9	2023/6/8

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/6/6

4.6 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance	N/A	EMC-01	2022/9/27	2023/9/26
EMI Test Receiver R&S	ESCS 30	847124/029	2022/10/14	2023/10/13
Fixed Attenuator STI	STI02-2200-10	005	2022/8/24	2023/8/23
LISN R&S	ESH3-Z5	848773/004	2022/10/18	2023/10/17
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2022/8/24	2023/8/23
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2023/6/16

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-406	2022/10/21	2023/10/20
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-03	2022/12/28	2023/12/27
Loop Antenna Electro-Metrics	EM-6879	264	2023/2/21	2024/2/20
MXE EMI Receiver Keysight	N9038A	MY54450088	2022/7/11	2023/7/10
Preamplifier Agilent	8447D	2944A10636	2023/3/12	2024/3/11
Preamplifier EMCI	EMC330N	980701	2023/2/18	2024/2/17
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/12/19	2023/12/18
		LOOPCAB-002	2022/12/19	2023/12/18
RF Coaxial Cable PEWC	8D	966-4-1	2023/2/18	2024/2/17
		966-4-2	2023/2/18	2024/2/17
		966-4-3	2023/2/18	2024/2/17
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2023/6/15

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-783	2022/11/13	2023/11/12
	BBHA 9170	9170-739	2022/11/13	2023/11/12
MXE EMI Receiver Keysight	N9038A	MY54450088	2022/7/11	2023/7/10
Preamplifier EMCI	EMC12630SE	980688	2022/10/4	2023/10/3
	EMC184045SE	980387	2022/12/28	2023/12/27
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2023/2/20	2024/2/19
	EMC102-KM-KM-1200	160924	2022/12/28	2023/12/27
	EMC104-SM-SM-1200	160922	2022/12/15	2023/12/14
	EMC104-SM-SM-2000	180502	2023/3/27	2024/3/26
	EMC104-SM-SM-6000	210704	2022/11/4	2023/11/3
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2023/6/8 ~ 2023/6/16

5 Limits of Test Items

5.1 RF Output Power

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	Fixed point-to-point Access Point	1 Watt (30 dBm)
	Indoor Access Point	1 Watt (30 dBm)
	Mobile and Portable client device	250mW (24 dBm)

Operation Band	Limit
U-NII-3	1 Watt (30 dBm)

Per KDB 662911 D01 Multiple Transmitter Output 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.

5.2 Power Spectral Density

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	17 dBm/MHz
	Fixed point-to-point Access Point	
	Indoor Access Point	
	Mobile and Portable client device	11 dBm/MHz

Operation Band	Limit
U-NII-3	30 dBm/500 kHz

5.3 6 dB Bandwidth

Within the 5.725-5.850 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.4 Occupied Bandwidth

The results are for reference only.

5.5 Frequency Stability

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

5.6 AC Power Conducted Emissions

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

Notes:

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 0.50 MHz.

5.7 Unwanted Emissions below 1 GHz

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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.8 Unwanted Emissions above 1 GHz

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)
Above 960	500	3

Notes:

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 1000 MHz, 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 20 dB 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 3 m	
	PK: 74 (dBµV/m)	AV: 54 (dBµV/m)

For transmitters operating in the 5.15-5.25 GHz band:

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)

For transmitters operating in the 5.725-5.850 GHz band:

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
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.

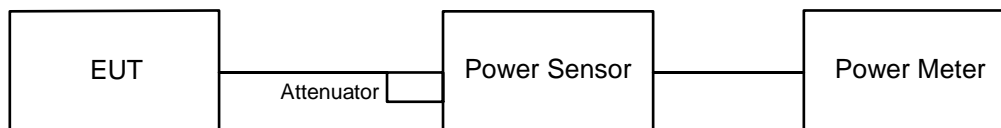
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

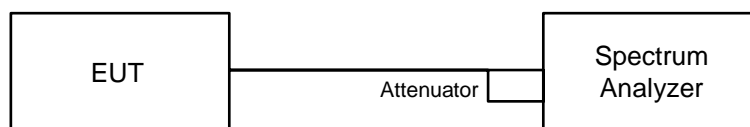


6.1.2 Test Procedure

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 and set the detector to average. Duty factor is not added to measured value.

6.2 Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

For specified measurement bandwidth 1 MHz:

Method SA-1

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- Sweep points \geq $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing \leq RBW / 2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Record the max value

For specified measurement bandwidth 1 MHz:

Method SA-2

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- Sweep points \geq $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing \leq RBW / 2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- Record the max value and add $10 \log (1/\text{duty cycle})$.

For specified measurement bandwidth 500 kHz:

Method SA-1

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
- 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 $\text{BWCF} = 10 \log(500 \text{ kHz}/300 \text{ kHz})$
- Sweep points \geq $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing \leq RBW / 2, so that narrowband signals are not

- lost between frequency bins.)
- Sweep time = auto, trigger set to “free run”.
 - Trace average at least 100 traces in power averaging mode.
 - Record the max value

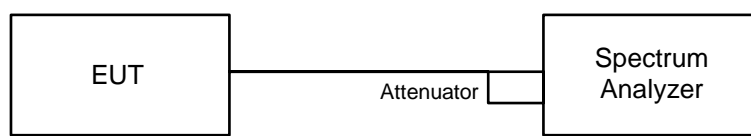
For specified measurement bandwidth 500 kHz:

Method SA-2

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
- 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 $BWCF = 10\log(500 \text{ kHz}/300 \text{ kHz})$
- Sweep points $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to “free run”.
- Trace average at least 100 traces in power averaging mode.
- Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- Record the max value and add $10 \log (1/\text{duty cycle})$.

6.3 6 dB Bandwidth

6.3.1 Test Setup

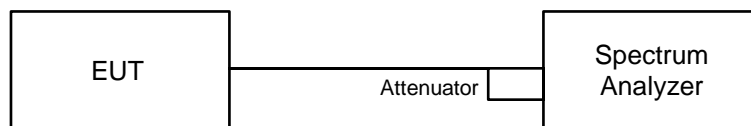


6.3.2 Test Procedure

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

6.4 Occupied Bandwidth

6.4.1 Test Setup

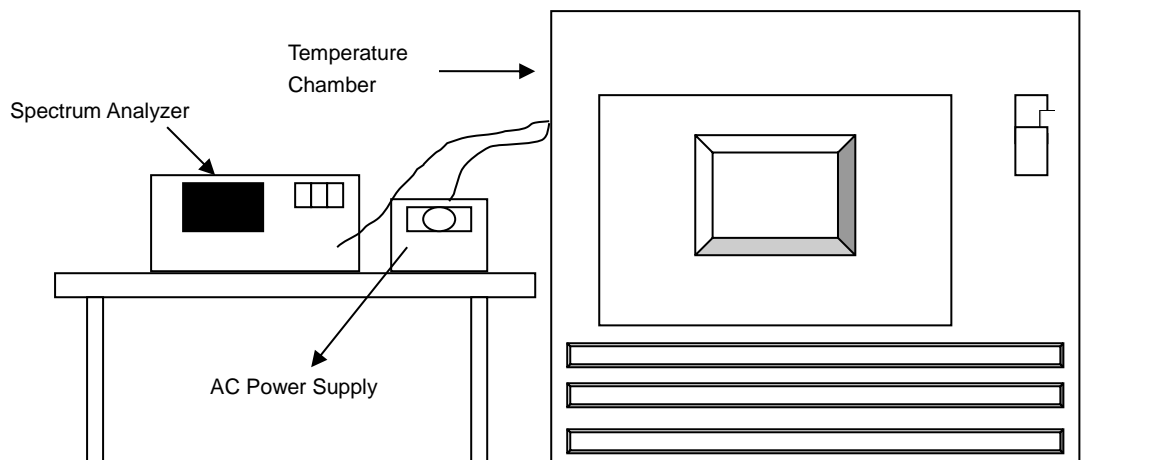


6.4.2 Test Procedure

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 Sampling. 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.

6.5 Frequency Stability

6.5.1 Test Setup

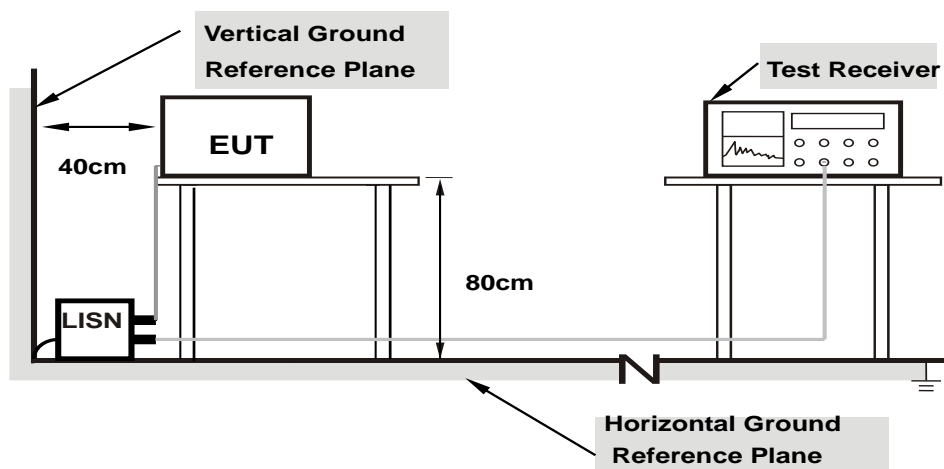


6.5.2 Test Procedure

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

6.6 AC Power Conducted Emissions

6.6.1 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).

6.6.2 Test Procedure

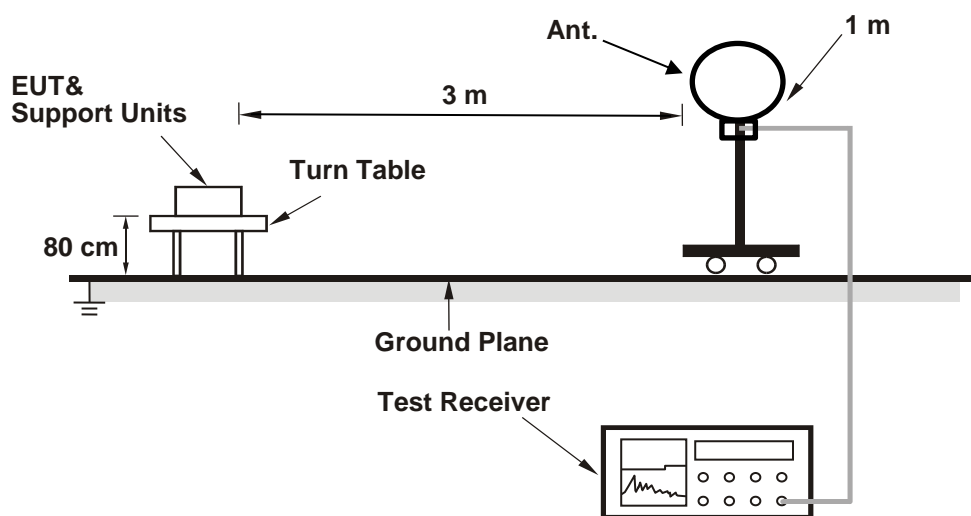
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz-30 MHz.

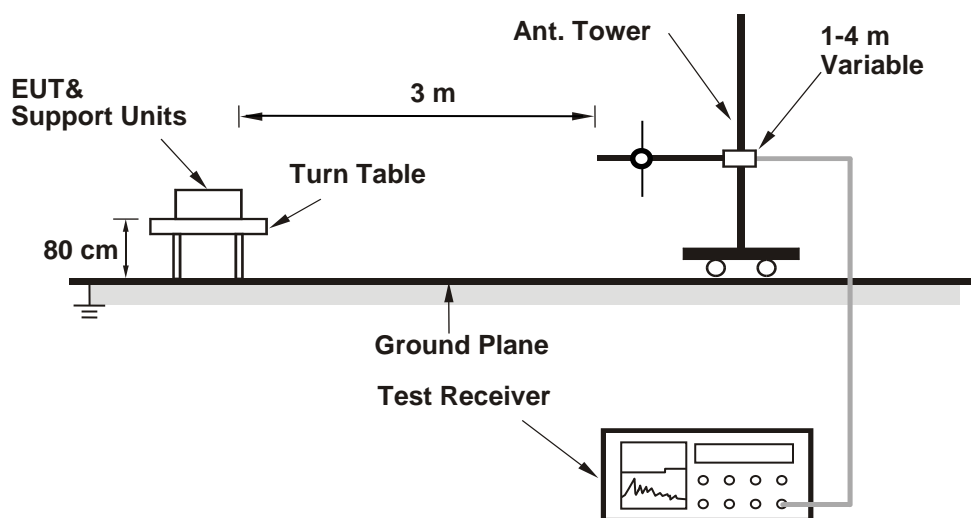
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.7.2 Test Procedure

For Radiated emission below 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters 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. 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, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

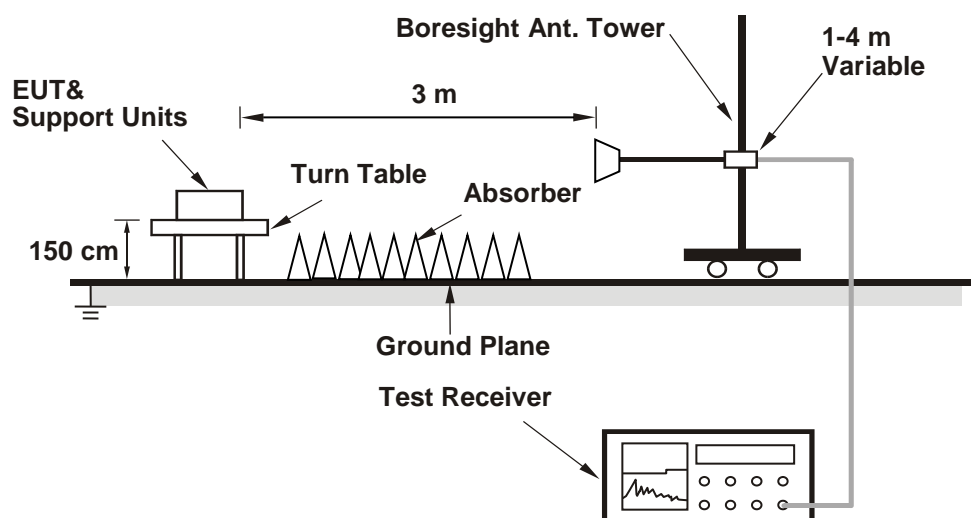
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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(QP) detect function, Average(AV) detect function, Peak(PK) detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP), Average detection (AV), Peak detection (PK) at frequency (30MHz to 1 GHz).
2. All modes of operation were investigated and the worst-case emissions are reported.

6.8 Unwanted Emissions above 1 GHz

6.8.1 Test Setup



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

6.8.2 Test Procedure

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- 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.

Notes:

- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
- For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
- All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	24.05	23.37	23.97	23.04	922.199	29.65	30	Pass
40	5200	24.05	23.46	23.96	22.93	921.139	29.64	30	Pass
48	5240	23.96	23.41	23.77	22.95	903.64	29.56	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the directional gain is 2.86 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	21.89	21.76	21.90	20.70	576.865	27.61	30	Pass
40	5200	23.88	23.76	23.79	22.85	914.111	29.61	30	Pass
48	5240	23.81	23.84	23.82	22.80	914.076	29.61	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the directional gain is 2.86 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.20	17.83	18.36	17.20	247.773	23.94	30	Pass
46	5230	23.92	23.33	23.73	22.99	896.997	29.53	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 2.86 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	16.53	16.64	16.58	15.44	171.603	22.35	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.

2. For U-NII-1, the maximum gain is 2.86 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	22.11	22.04	22.15	20.97	611.596	27.86	30	Pass
40	5200	24.13	24.04	24.06	23.06	969.319	29.86	30	Pass
48	5240	24.01	24.05	24.04	23.07	962.146	29.83	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the directional gain is 2.86 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.47	18.12	18.61	17.48	263.757	24.21	30	Pass
46	5230	24.14	23.61	23.94	23.24	947.638	29.77	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 2.86 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	16.81	16.86	16.79	15.73	181.666	22.59	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 2.86 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	21.89	21.76	21.90	20.70	576.865	27.61	29.79	Pass
40	5200	23.55	23.46	23.43	22.64	852.231	29.31	29.79	Pass
48	5240	23.48	23.42	23.45	22.54	843.412	29.26	29.79	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-1, the directional gain is 6.21 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.21 - 6) = 29.79$ dBm.

802.11ac (VHT40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.20	17.83	18.36	17.20	247.773	23.94	29.79	Pass
46	5230	23.92	23.33	23.73	22.99	896.997	29.53	29.79	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-1, the directional gain is 6.21 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.21 - 6) = 29.79$ dBm.

802.11ac (VHT80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	16.53	16.64	16.58	15.44	171.603	22.35	29.79	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-1, the directional gain is 6.21 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.21 - 6) = 29.79$ dBm.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	22.11	22.04	22.15	20.97	611.596	27.86	29.79	Pass
40	5200	23.77	23.69	23.66	22.87	898.032	29.53	29.79	Pass
48	5240	23.72	23.66	23.67	22.78	890.258	29.50	29.79	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-1, the directional gain is 6.21 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.21 - 6) = 29.79$ dBm.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.47	18.12	18.61	17.48	263.757	24.21	29.79	Pass
46	5230	24.14	23.61	23.94	23.24	947.638	29.77	29.79	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-1, the directional gain is 6.21 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.21 - 6) = 29.79$ dBm.

802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	16.81	16.86	16.79	15.73	181.666	22.59	29.79	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-1, the directional gain is 6.21 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.21 - 6) = 29.79$ dBm.

Mode B

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	23.59	23.05	24.43	23.77	945.96	29.76	30	Pass
157	5785	23.05	22.91	24.22	23.17	869.003	29.39	30	Pass
165	5825	23.49	23.94	24.33	23.21	951.53	29.78	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3, the directional gain is 4.23 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	23.31	22.61	23.89	23.29	854.889	29.32	30	Pass
157	5785	22.63	22.47	23.55	22.95	783.542	28.94	30	Pass
165	5825	23.06	23.49	24.10	22.92	878.583	29.44	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3, the directional gain is 4.23 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	23.55	23.19	23.96	23.56	910.786	29.59	30	Pass
159	5795	22.82	22.88	23.59	22.91	809.508	29.08	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3, the maximum gain is 4.23 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	20.89	20.66	21.52	20.79	501.012	27.00	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3, the maximum gain is 4.23 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	23.55	22.88	24.12	23.53	904.203	29.56	30	Pass
157	5785	22.87	22.72	23.82	23.16	828.715	29.18	30	Pass
165	5825	23.31	23.76	24.32	23.17	929.86	29.68	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3, the directional gain is 4.23 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	23.77	23.40	24.21	23.81	961.078	29.83	30	Pass
159	5795	23.06	23.09	23.84	23.16	855.123	29.32	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3, the maximum gain is 4.23 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	21.15	20.95	21.76	21.05	532.087	27.26	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3, the maximum gain is 4.23 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	23.31	22.61	23.89	23.29	854.889	29.32	29.86	Pass
157	5785	22.63	22.47	23.55	22.95	783.542	28.94	29.86	Pass
165	5825	23.06	23.49	24.10	22.92	878.583	29.44	29.86	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.14 - 6) = 29.86$ dBm.

802.11ac (VHT40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	23.55	23.19	23.96	23.56	910.786	29.59	29.86	Pass
159	5795	22.82	22.88	23.59	22.91	809.508	29.08	29.86	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.14 - 6) = 29.86$ dBm.

802.11ac (VHT80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	20.89	20.66	21.52	20.79	501.012	27.00	29.86	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.14 - 6) = 29.86$ dBm.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	23.55	22.88	24.12	23.53	904.203	29.56	29.86	Pass
157	5785	22.87	22.72	23.82	23.16	828.715	29.18	29.86	Pass
165	5825	23.31	23.76	24.32	23.17	929.86	29.68	29.86	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.14 - 6) = 29.86$ dBm.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	23.77	23.40	24.21	23.81	961.078	29.83	29.86	Pass
159	5795	23.06	23.09	23.84	23.16	855.123	29.32	29.86	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.14 - 6) = 29.86$ dBm.

802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	21.15	20.95	21.76	21.05	532.087	27.26	29.86	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.14 - 6) = 29.86$ dBm.

7.2 Power Spectral Density

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	10.05	11.36	10.15	9.33	16.31	16.79	Pass
40	5200	10.15	11.35	10.23	9.34	16.35	16.79	Pass
48	5240	9.84	10.92	9.94	9.71	16.15	16.79	Pass

Notes:

- Method E) 2) 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.
- Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
- For U-NII-1, the directional gain is 6.21 dBi > 6dBi, so the power density limit shall be reduced to $17-(6.21-6) = 16.79$ dBm/MHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	9.76	9.70	9.72	8.86	15.55	16.79	Pass
40	5200	10.52	10.88	10.53	9.80	16.47	16.79	Pass
48	5240	10.42	10.63	10.45	10.11	16.43	16.79	Pass

Notes:

- Method E) 2) 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.
- Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
- For U-NII-1, the directional gain is 6.21 dBi > 6dBi, so the power density limit shall be reduced to $17-(6.21-6) = 16.79$ dBm/MHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
38	5190	4.07	5.07	4.35	3.31	10.27	16.79	Pass
46	5230	9.90	10.85	9.51	9.23	15.94	16.79	Pass

Notes:

1. Method E) 2) 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. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-1, the directional gain is 6.21 dBi > 6dBi, so the power density limit shall be reduced to $17-(6.21-6) = 16.79$ dBm/MHz.

802.11ax (HE80)

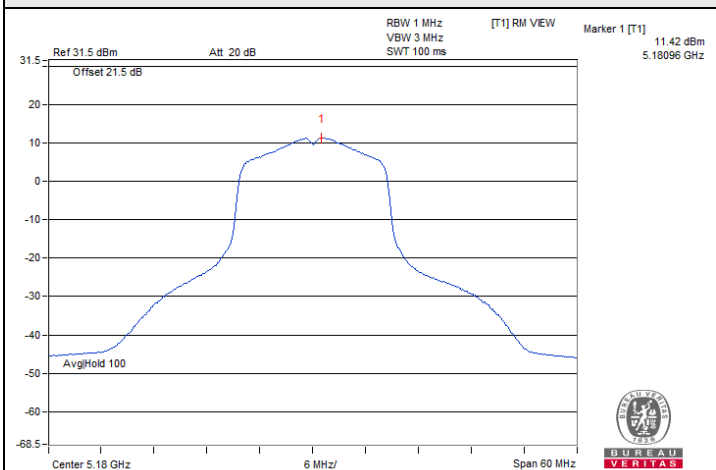
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	-0.52	0.40	-0.35	-1.22	0.13	5.77	16.79	Pass

Notes:

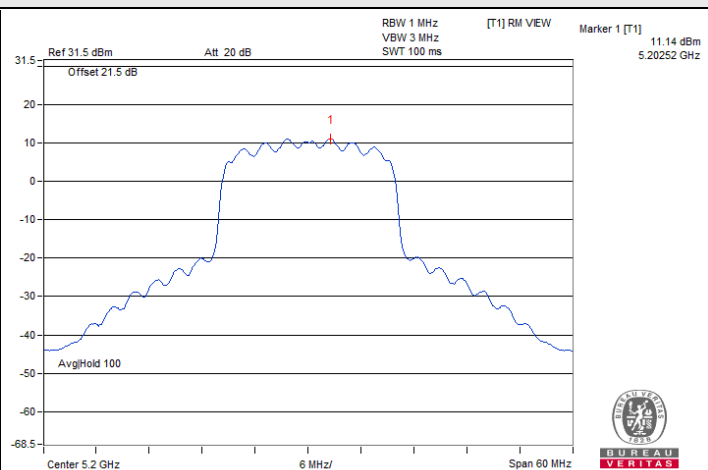
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-1, the directional gain is 6.21 dBi > 6dBi, so the power density limit shall be reduced to $17-(6.21-6) = 16.79$ dBm/MHz.



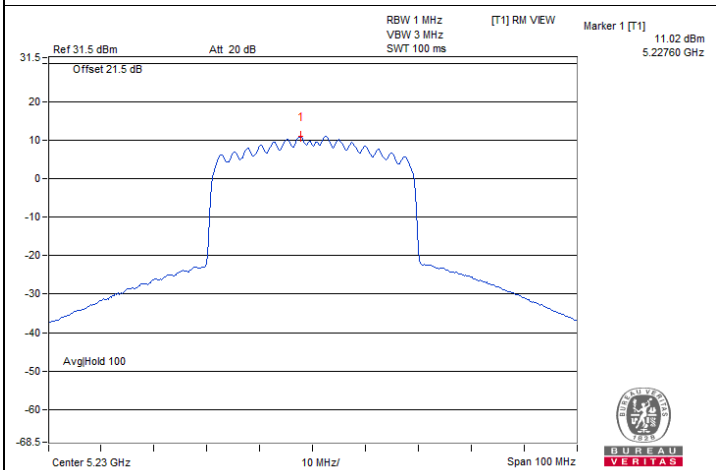
Spectrum Plot of Maximum Value



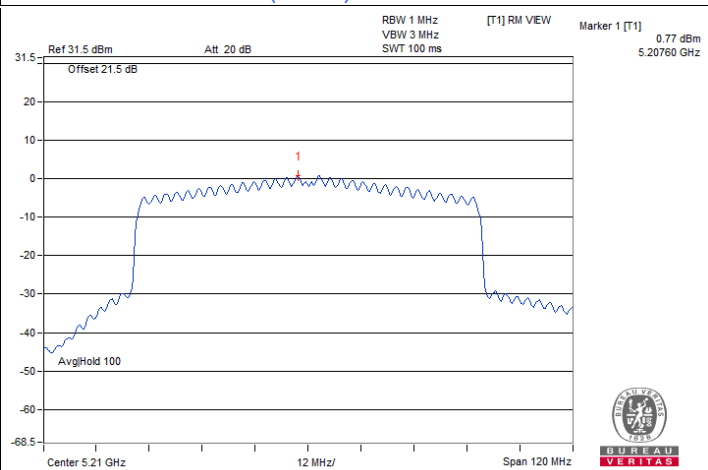
802.11a / Chain 1 : CH 36



802.11ax (HE20) / Chain 1 : CH 40



802.11ax (HE40) / Chain 1 : CH 46



802.11ax (HE80) / Chain 1 : CH 42

Mode B

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	7.93	7.81	8.66	7.88	14.1	16.32	29.86	Pass
157	5785	7.32	6.90	8.10	7.90	13.6	15.82	29.86	Pass
165	5825	7.68	8.10	8.84	7.58	14.1	16.32	29.86	Pass

Notes:

- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
- For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the power density limit shall be reduced to $30-(6.14-6) = 29.86$ dBm/500kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	7.17	6.72	7.69	7.45	13.29	15.51	29.86	Pass
157	5785	6.42	5.91	7.18	6.57	12.56	14.78	29.86	Pass
165	5825	6.74	7.03	7.80	7.15	13.22	15.44	29.86	Pass

Notes:

- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
- For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the power density limit shall be reduced to $30-(6.14-6) = 29.86$ dBm/500kHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)				Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	4.48	4.55	5.08	5.18	10.85	13.07	29.86	Pass
159	5795	3.82	3.55	4.42	4.52	10.12	12.34	29.86	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (6.14 - 6) = 29.86$ dBm/500kHz.

802.11ax (HE80)

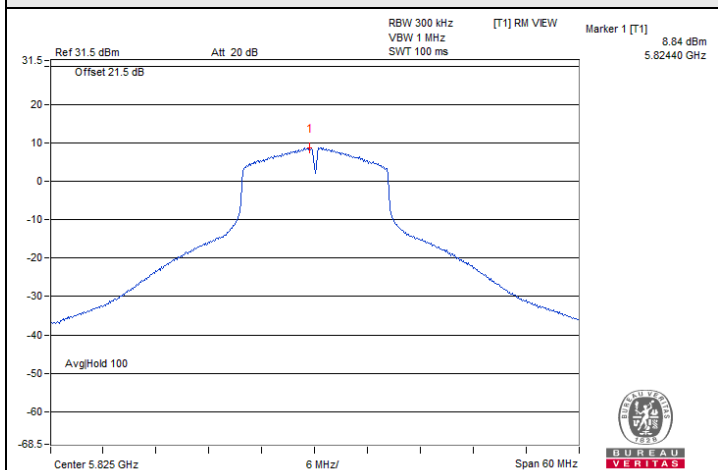
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3					
155	5775	-0.96	-1.10	-0.24	-0.26	5.4	0.13	7.75	29.86	Pass

Notes:

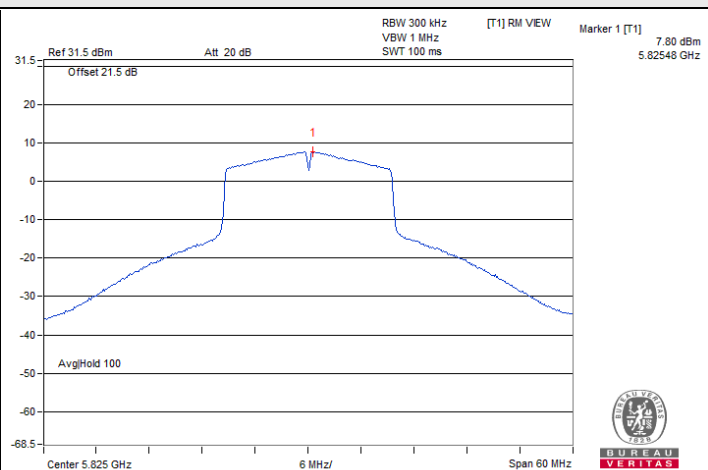
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-3, the directional gain is 6.14 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (6.14 - 6) = 29.86$ dBm/500kHz.



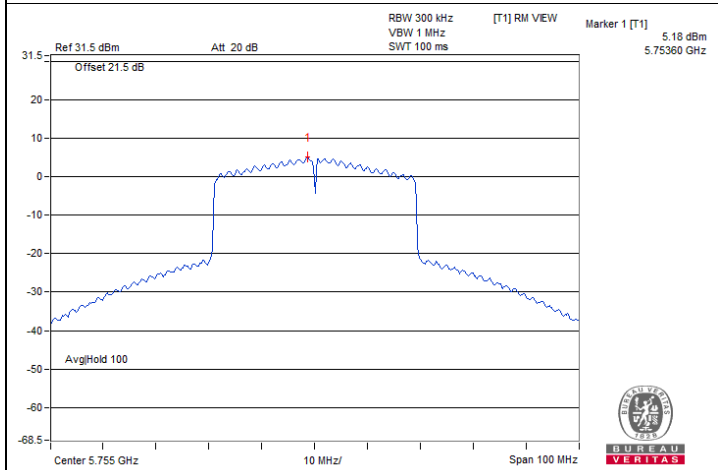
Spectrum Plot of Maximum Value



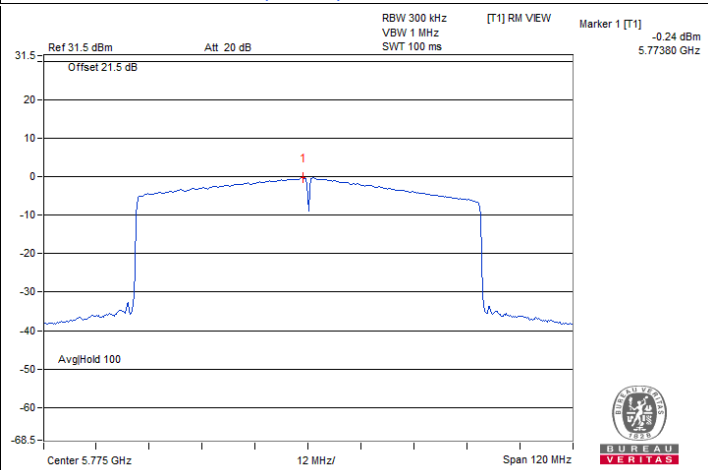
802.11a / Chain 2 : CH 165



802.11ax (HE20) / Chain 2 : CH 165



802.11ax (HE40) / Chain 3 : CH 151



802.11ax (HE80) / Chain 2 : CH 155

7.3 6 dB Bandwidth

Mode B

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	15.05	15.24	13.13	15.06	0.5	Pass
157	5785	12.36	15.01	15.69	13.70	0.5	Pass
165	5825	14.41	13.13	15.00	15.07	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	17.85	17.84	17.73	17.07	0.5	Pass
157	5785	18.29	16.61	16.34	15.87	0.5	Pass
165	5825	18.19	16.91	18.18	16.71	0.5	Pass

802.11ax (HE40)

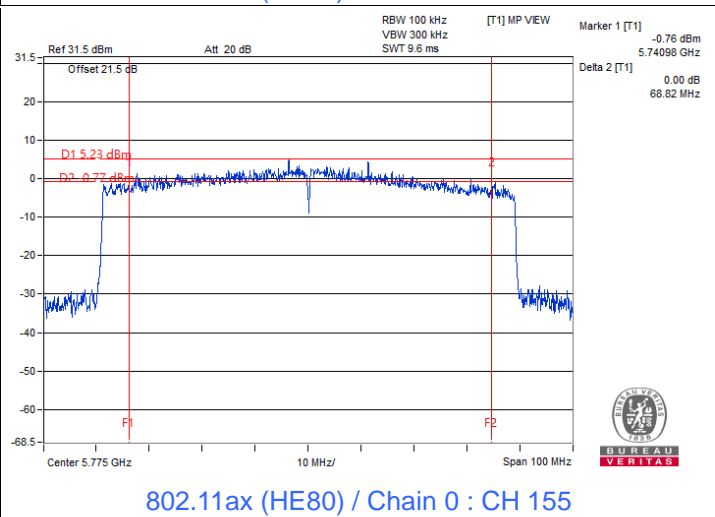
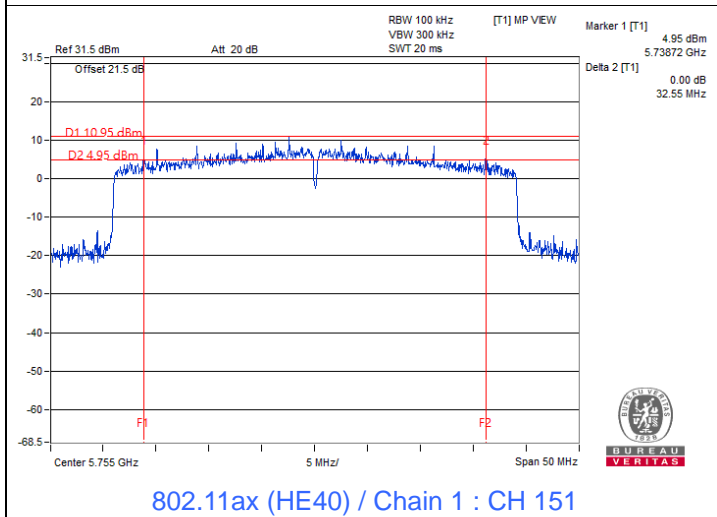
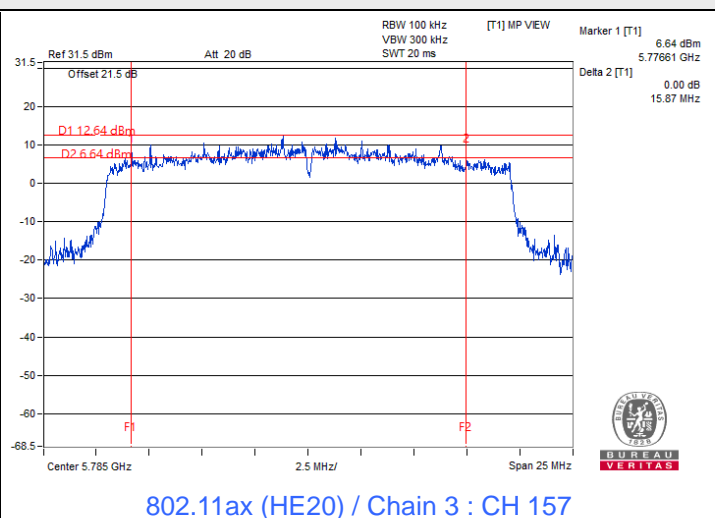
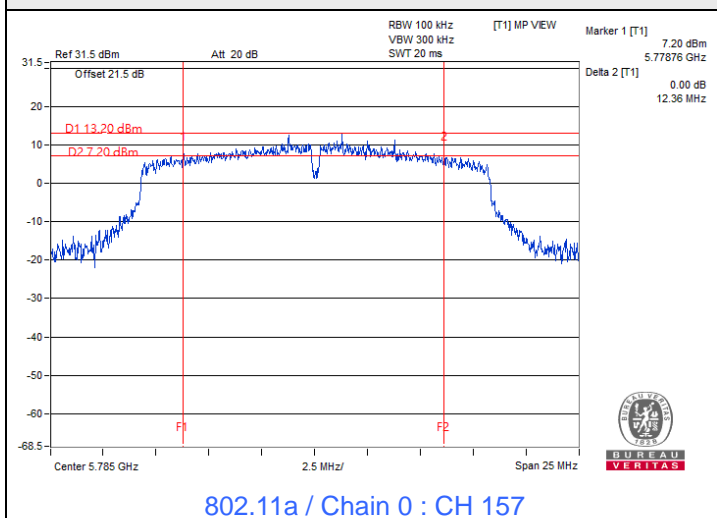
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	33.43	32.55	33.87	35.27	0.5	Pass
159	5795	36.28	34.97	33.80	32.56	0.5	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	68.82	72.69	72.73	70.63	0.5	Pass



Spectrum Plot of Minimum Value



7.4 Occupied Bandwidth

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	16.38	16.68	16.56	16.50
40	5200	16.38	16.80	16.50	16.50
48	5240	16.44	16.62	16.56	16.50

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	18.90	18.90	18.90	18.84
40	5200	18.84	18.84	18.90	18.84
48	5240	18.78	18.84	18.84	18.84

802.11ax (HE40)

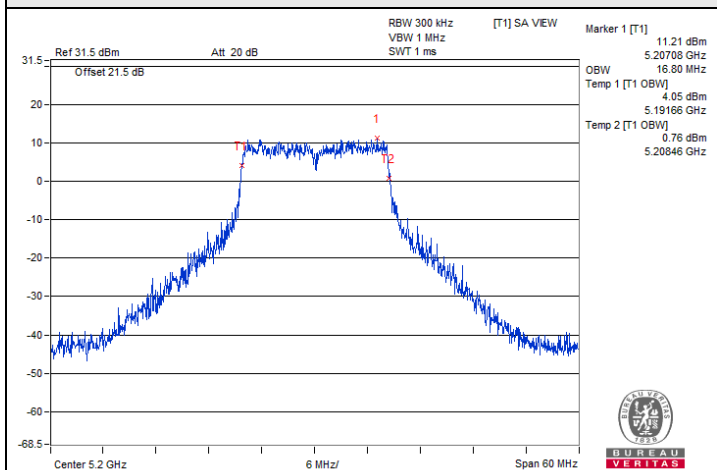
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	37.44	37.80	37.68	37.44
46	5230	37.56	37.68	37.56	37.44

802.11ax (HE80)

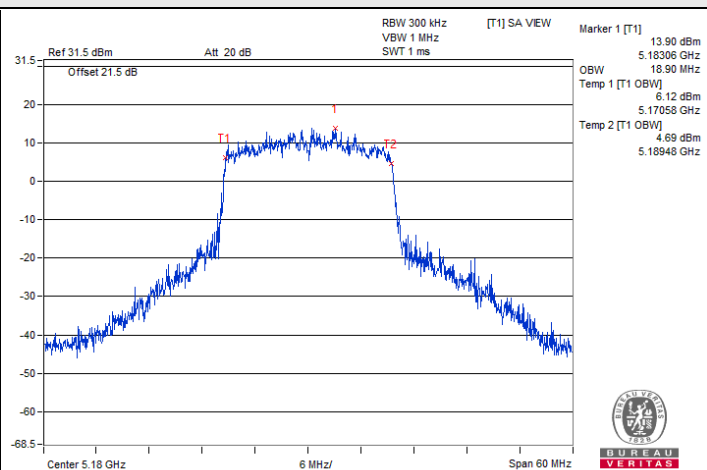
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	76.56	76.56	76.80	76.56



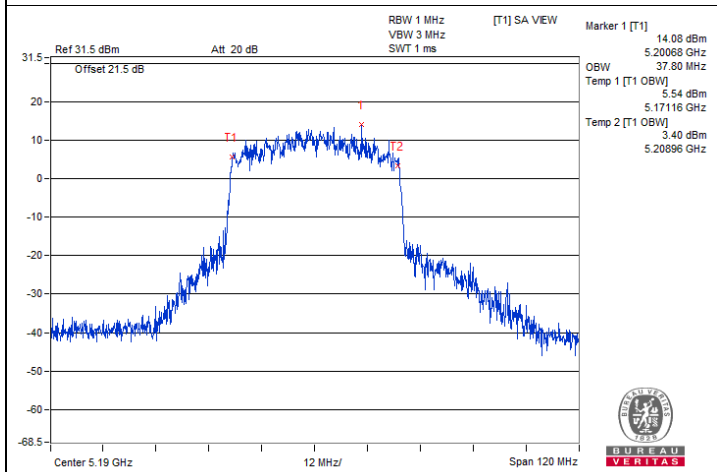
Spectrum Plot of Maximum Value



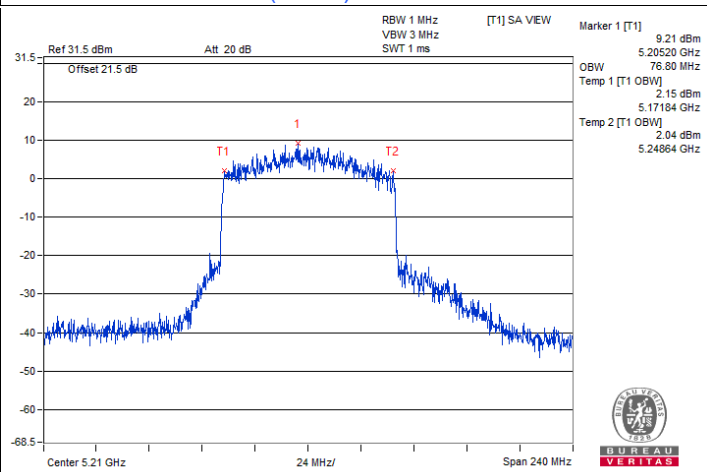
802.11a / Chain 1 : CH 40



802.11ax (HE20) / Chain 0 : CH 36

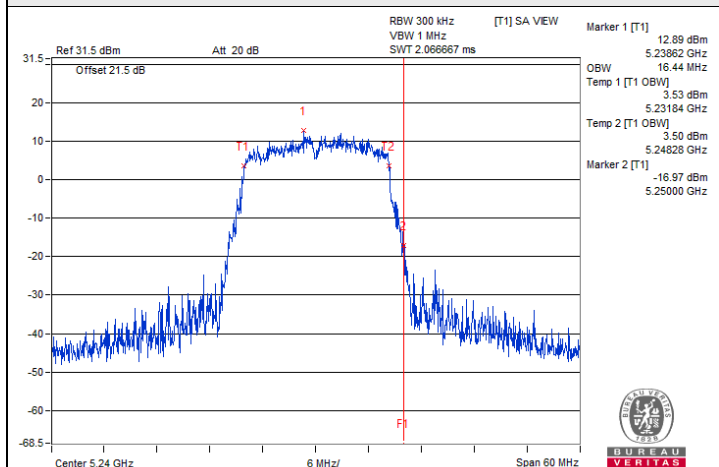
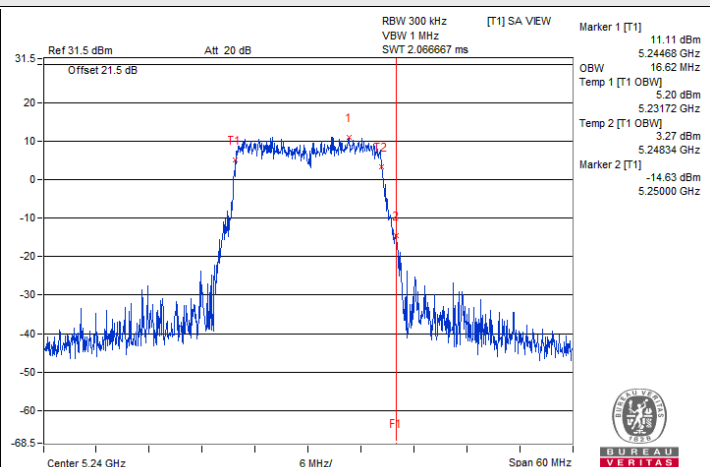
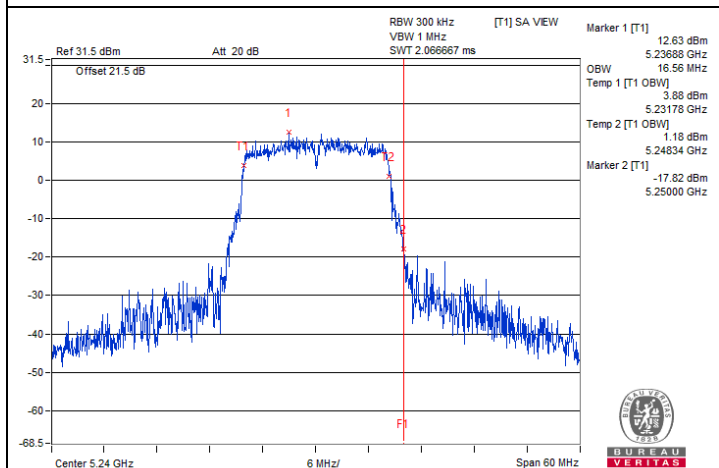
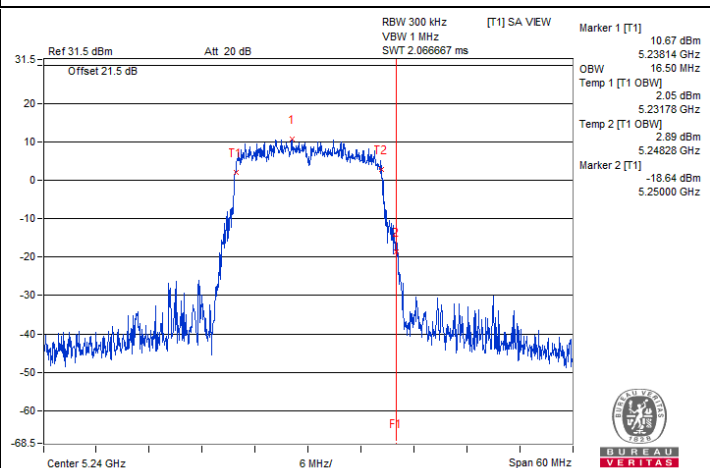
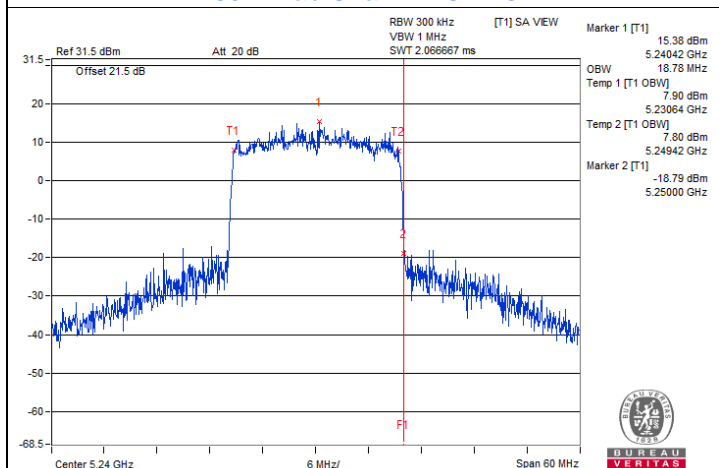
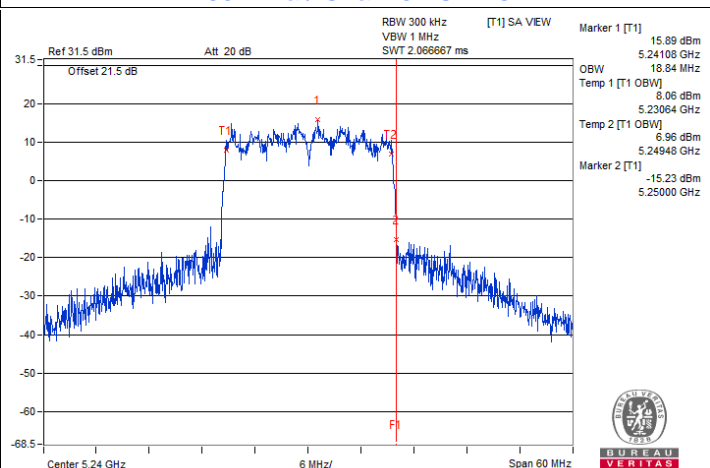


802.11ax (HE40) / Chain 1 : CH 38



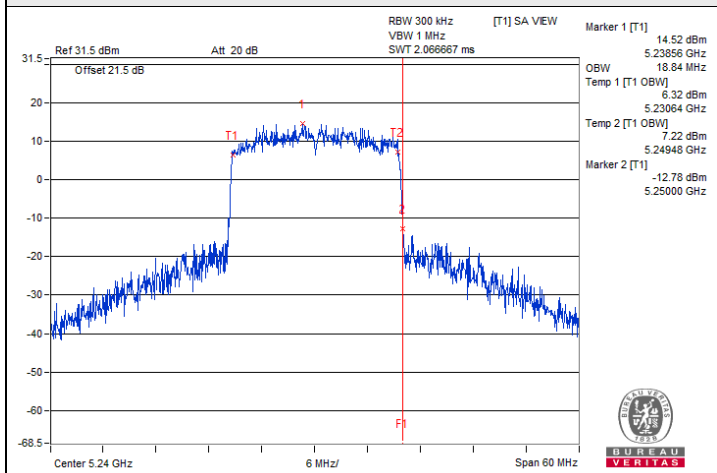
802.11ax (HE80) / Chain 2 : CH 42

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

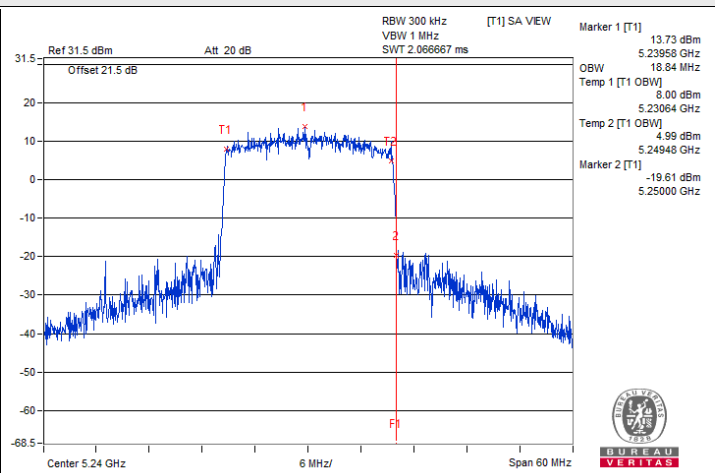
**802.11a / Chain 0 : CH 48****802.11a / Chain 1 : CH 48****802.11a / Chain 2 : CH 48****802.11a / Chain 3 : CH 48****802.11ax (HE20) / Chain 0 : CH 48****802.11ax (HE20) / Chain 1 : CH 48**



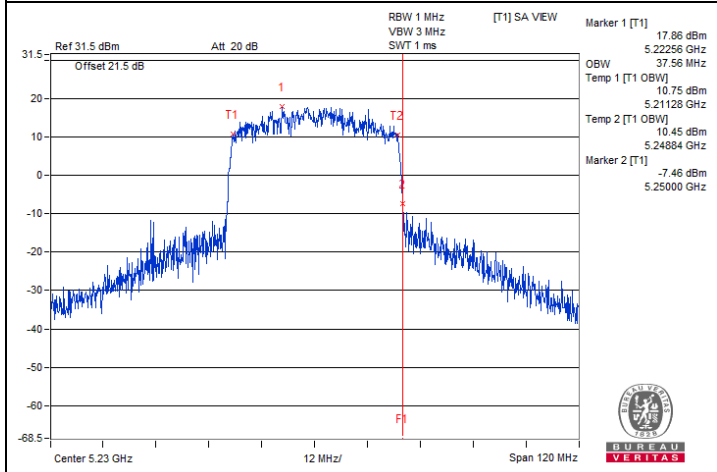
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



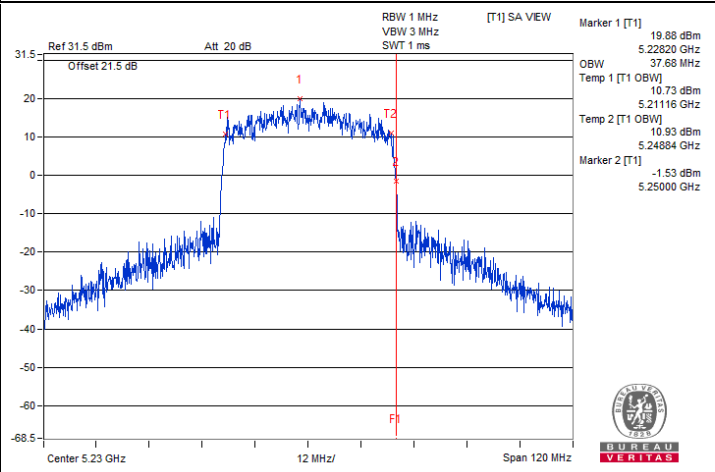
802.11ax (HE20) / Chain 2 : CH 48



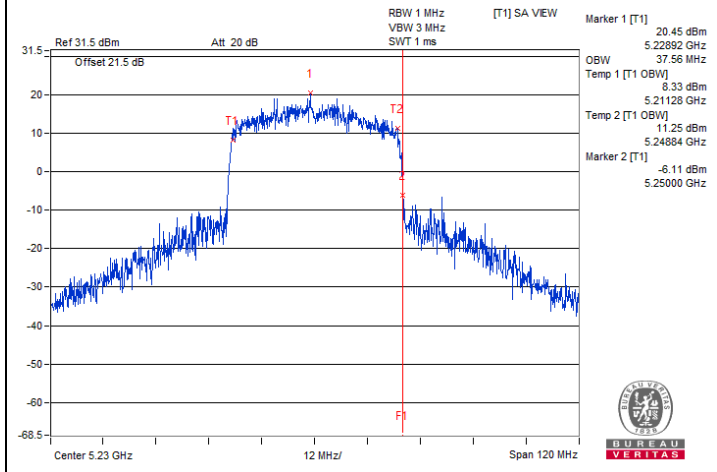
802.11ax (HE20) / Chain 3 : CH 48



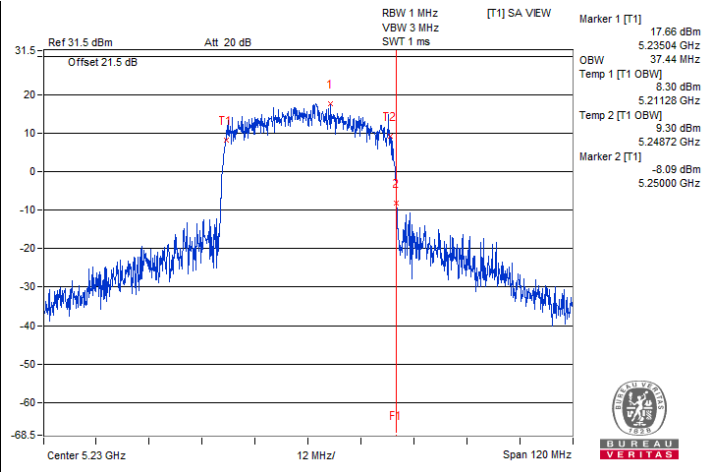
802.11ax (HE40) / Chain 0 : CH 46



802.11ax (HE40) / Chain 1 : CH 46

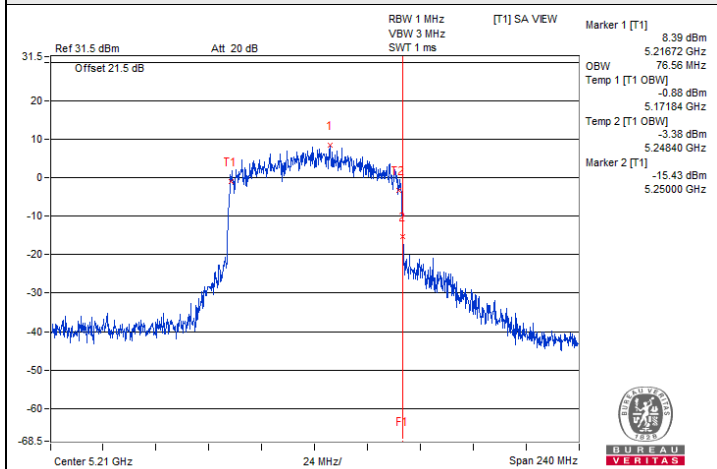


802.11ax (HE40) / Chain 2 : CH 46

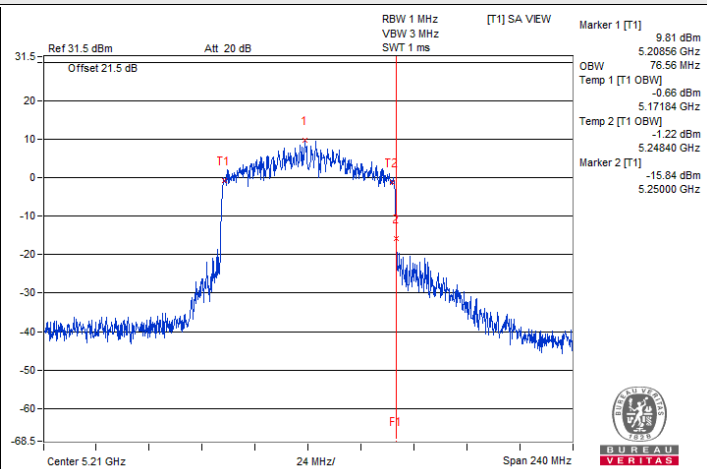


802.11ax (HE40) / Chain 3 : CH 46

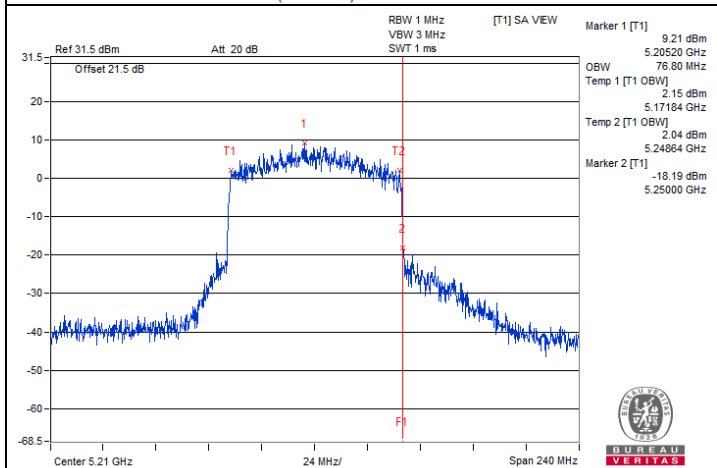
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



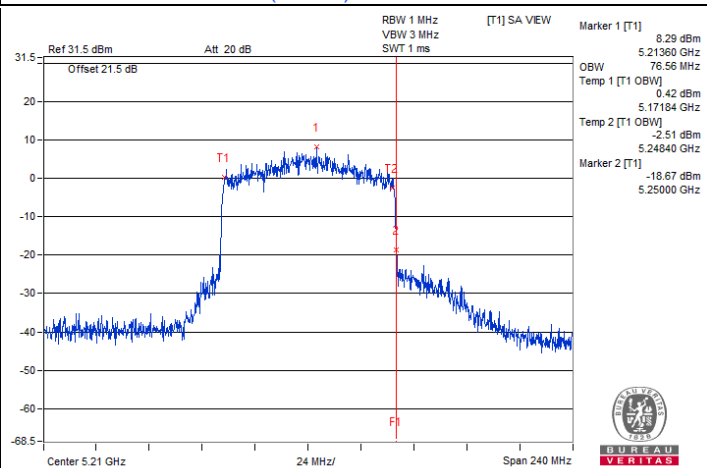
802.11ax (HE80) / Chain 0 : CH 42



802.11ax (HE80) / Chain 1 : CH 42



802.11ax (HE80) / Chain 2 : CH 42



802.11ax (HE80) / Chain 3 : CH 42

Mode B

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
149	5745	16.50	16.38	16.56	16.44
157	5785	16.56	16.50	16.62	16.50
165	5825	16.86	17.70	18.24	16.74

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
149	5745	18.90	18.90	18.96	18.90
157	5785	18.90	18.96	18.90	18.90
165	5825	19.08	19.20	19.26	19.02

802.11ax (HE40)

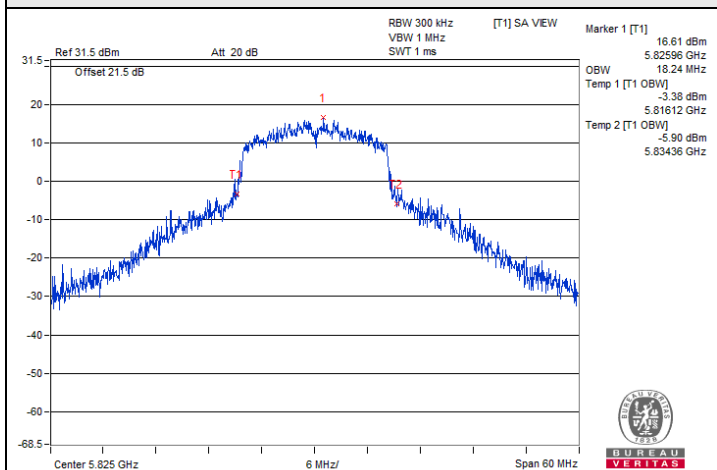
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
151	5755	37.92	37.80	38.04	37.80
159	5795	37.92	37.80	37.92	37.92

802.11ax (HE80)

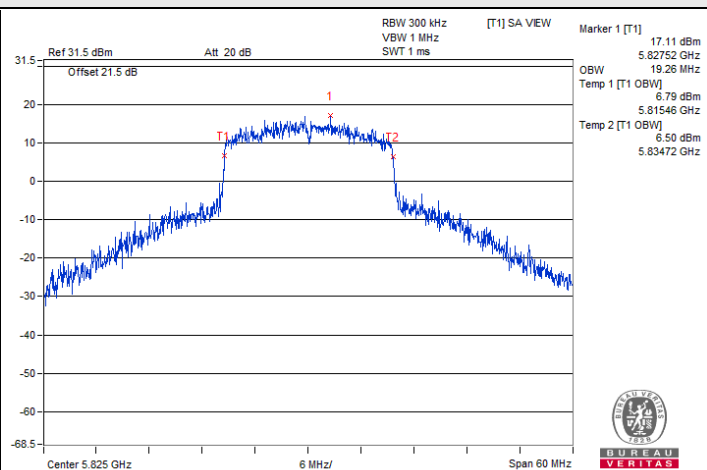
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
155	5775	76.56	76.56	76.80	76.80



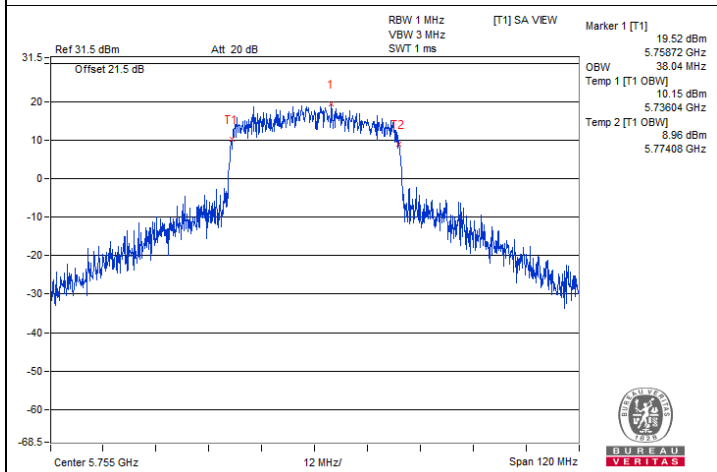
Spectrum Plot of Maximum Value



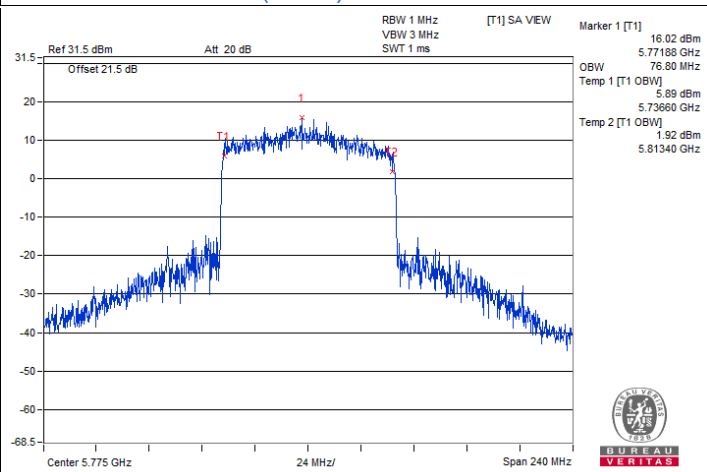
802.11a / Chain 2 : CH 165



802.11ax (HE20) / Chain 2 : CH 165

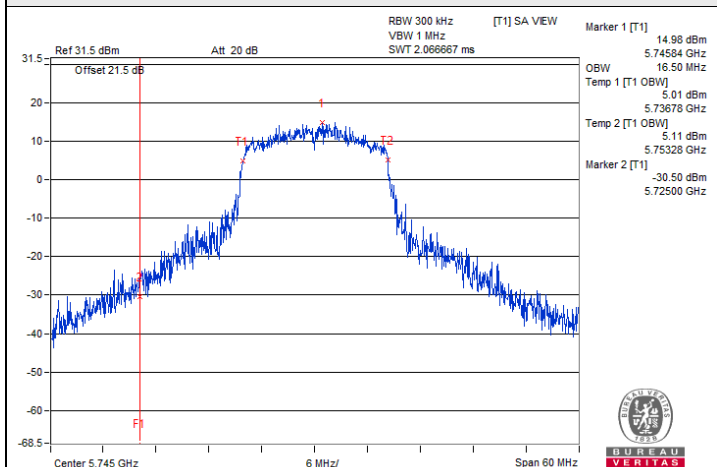
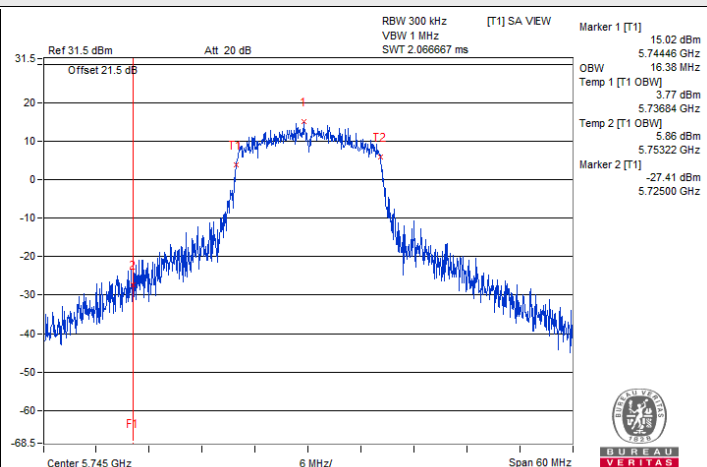
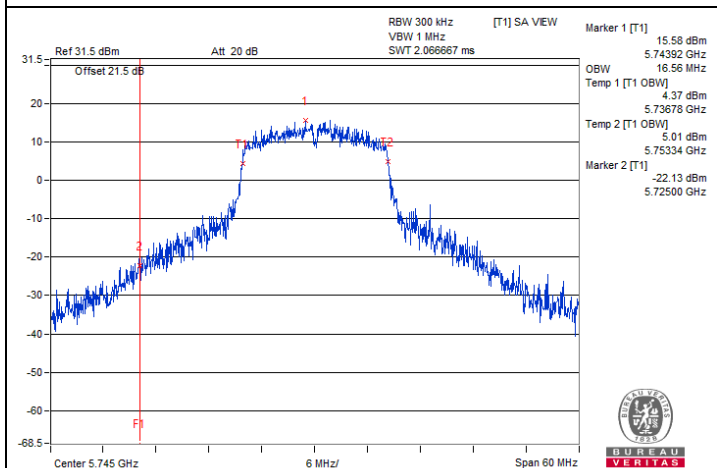
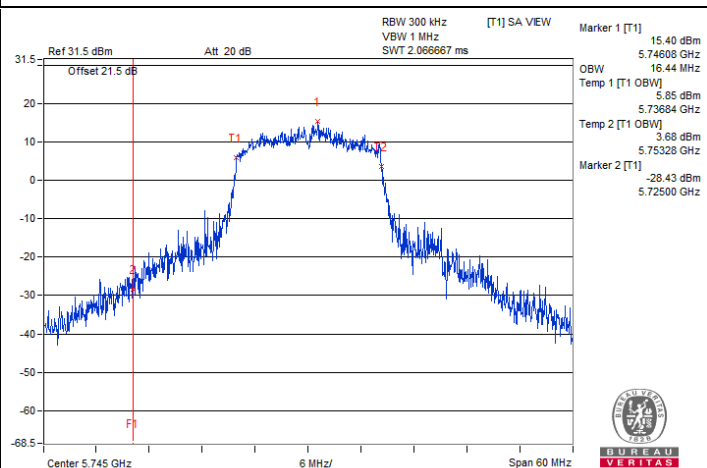
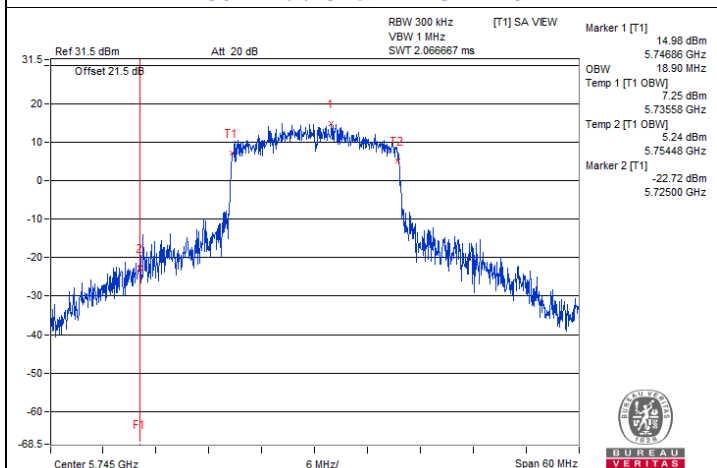
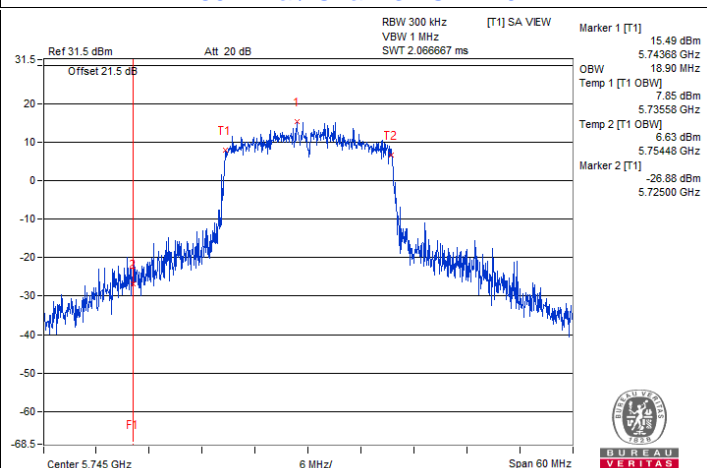


802.11ax (HE40) / Chain 2 : CH 151

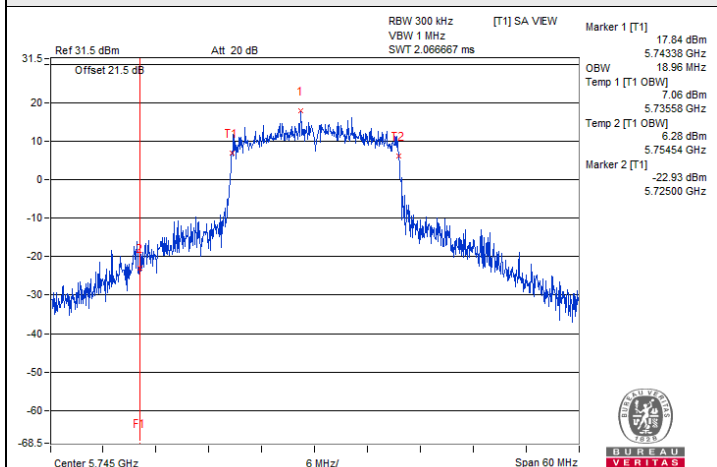
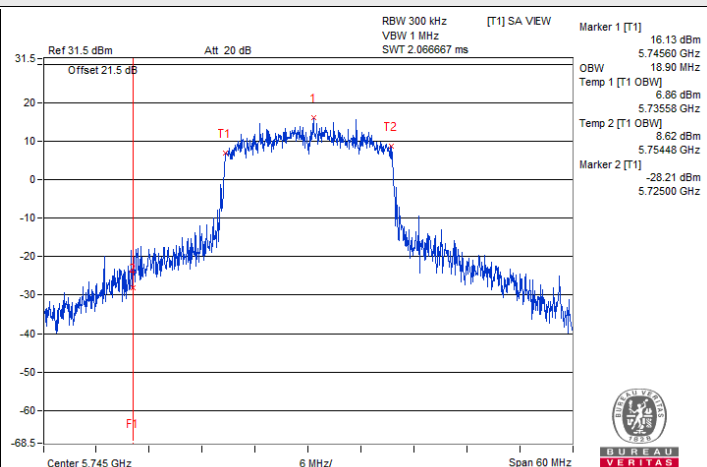
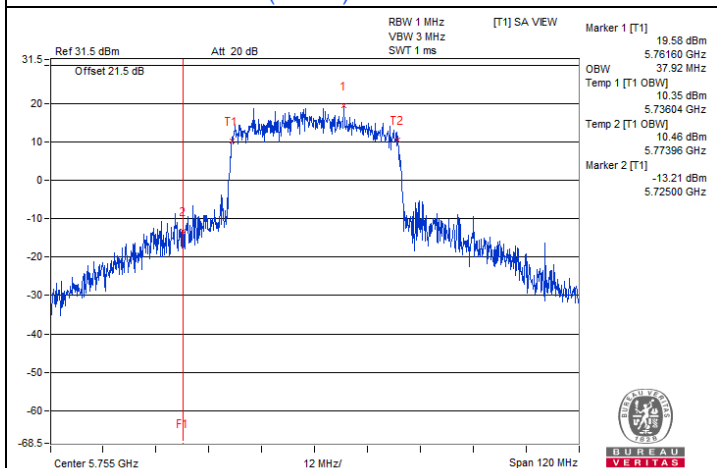
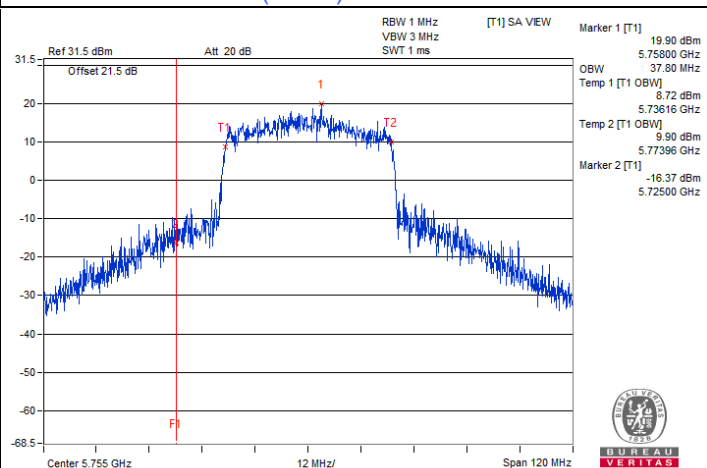
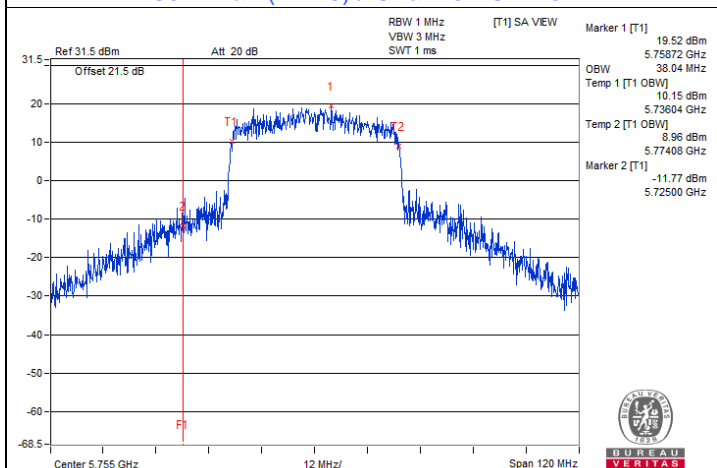
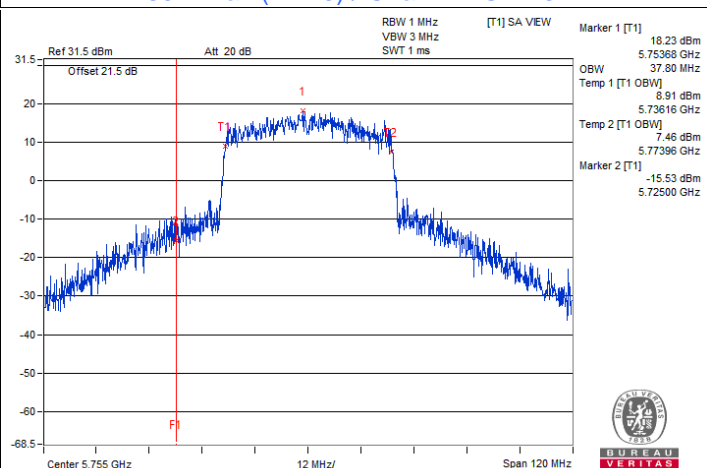


802.11ax (HE80) / Chain 2 : CH 155

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

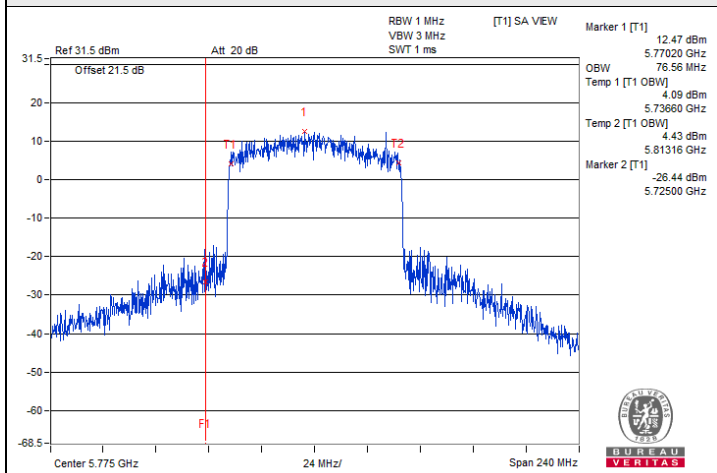
**802.11a / Chain 0 : CH 149****802.11a / Chain 1 : CH 149****802.11a / Chain 2 : CH 149****802.11a / Chain 3 : CH 149****802.11ax (HE20) / Chain 0 : CH 149****802.11ax (HE20) / Chain 1 : CH 149**

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

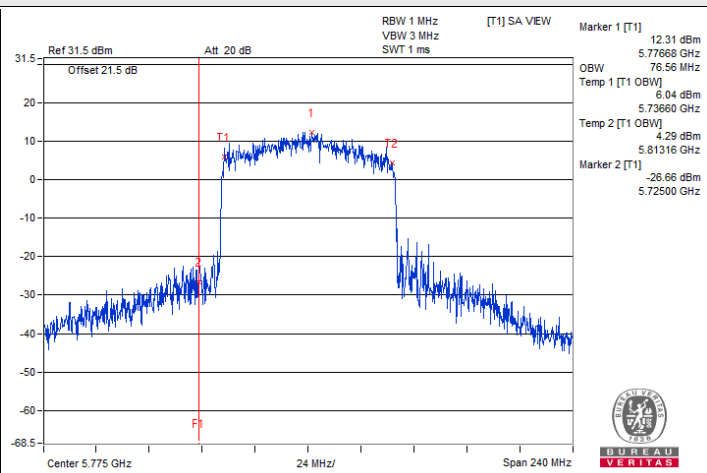
**802.11ax (HE20) / Chain 2 : CH 149****802.11ax (HE20) / Chain 3 : CH 149****802.11ax (HE40) / Chain 0 : CH 151****802.11ax (HE40) / Chain 1 : CH 151****802.11ax (HE40) / Chain 2 : CH 151****802.11ax (HE40) / Chain 3 : CH 151**



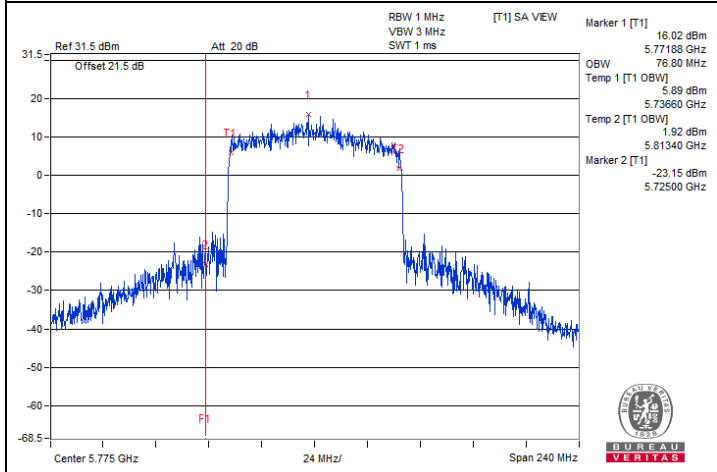
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



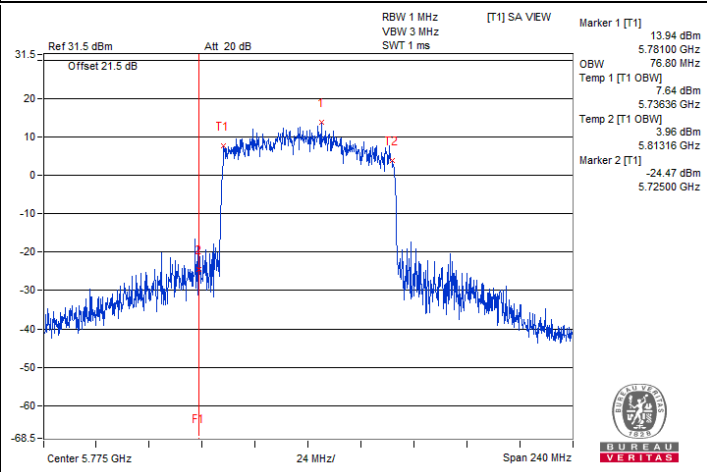
802.11ax (HE80) / Chain 0 : CH 155



802.11ax (HE80) / Chain 1 : CH 155



802.11ax (HE80) / Chain 2 : CH 155



802.11ax (HE80) / Chain 3 : CH 155

7.5 Frequency Stability

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
50	120	5180.0085	Pass	5180.0095	Pass	5180.0062	Pass	5180.0095	Pass
40	120	5180.0211	Pass	5180.0211	Pass	5180.0212	Pass	5180.0219	Pass
30	120	5180.02	Pass	5180.0193	Pass	5180.0202	Pass	5180.0191	Pass
20	120	5180.0115	Pass	5180.01	Pass	5180.0138	Pass	5180.0142	Pass
10	120	5179.9929	Pass	5179.9926	Pass	5179.992	Pass	5179.9938	Pass
0	120	5179.9907	Pass	5179.9877	Pass	5179.9902	Pass	5179.9907	Pass
-10	120	5180.0106	Pass	5180.0109	Pass	5180.0072	Pass	5180.0094	Pass
-20	120	5180.0111	Pass	5180.0069	Pass	5180.0115	Pass	5180.0093	Pass
-30	120	5180.0147	Pass	5180.0167	Pass	5180.0186	Pass	5180.0181	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	138	5180.0126	Pass	5180.0135	Pass	5180.0136	Pass	5180.0134	Pass
	120	5180.0115	Pass	5180.01	Pass	5180.0138	Pass	5180.0142	Pass
	102	5180.0094	Pass	5180.0087	Pass	5180.0094	Pass	5180.0124	Pass

Mode B

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Frequency Stability Versus Temperature									
Operating Frequency: 5745 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
50	120	5745.0059	Pass	5745.0071	Pass	5745.0046	Pass	5745.0059	Pass
40	120	5744.992	Pass	5744.9931	Pass	5744.9912	Pass	5744.9912	Pass
30	120	5744.9872	Pass	5744.9844	Pass	5744.9869	Pass	5744.9826	Pass
20	120	5744.994	Pass	5744.9959	Pass	5744.9944	Pass	5744.9948	Pass
10	120	5745.0128	Pass	5745.0125	Pass	5745.0118	Pass	5745.0138	Pass
0	120	5745.0045	Pass	5745.0069	Pass	5745.0096	Pass	5745.0045	Pass
-10	120	5745.0266	Pass	5745.0269	Pass	5745.0286	Pass	5745.0309	Pass
-20	120	5744.9696	Pass	5744.9707	Pass	5744.9701	Pass	5744.9734	Pass
-30	120	5744.9794	Pass	5744.9816	Pass	5744.978	Pass	5744.9774	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5745 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	138	5745.0046	Pass	5745.0056	Pass	5745.0057	Pass	5745.0055	Pass
	120	5744.994	Pass	5744.9959	Pass	5744.9944	Pass	5744.9948	Pass
	102	5745.0011	Pass	5745.0003	Pass	5745.0011	Pass	5744.9987	Pass

7.6 AC Power Conducted Emissions

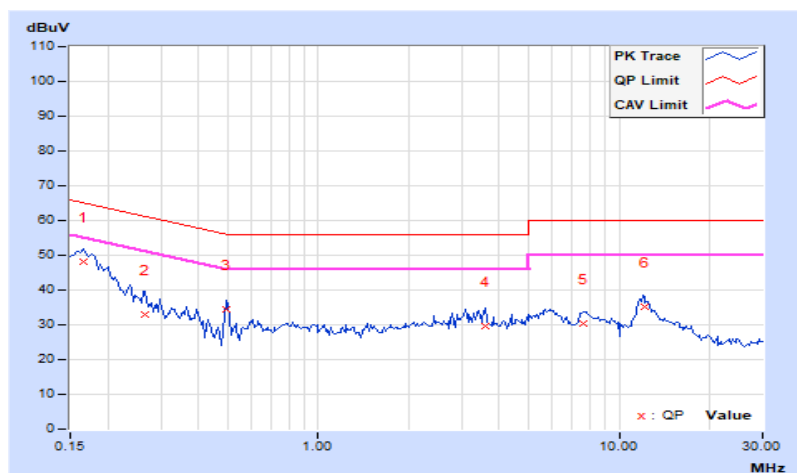
Mode A

RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 68% RH
Tested By	Tom Yang		

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	0.16562	9.94	38.13	25.83	48.07	35.77	65.18	55.18	-17.11	-19.41
2	0.26719	9.95	23.19	14.08	33.14	24.03	61.20	51.20	-28.06	-27.17
3	0.49375	9.96	24.31	20.37	34.27	30.33	56.10	46.10	-21.83	-15.77
4	3.57813	10.16	19.60	8.93	29.76	19.09	56.00	46.00	-26.24	-26.91
5	7.63672	10.44	19.88	12.56	30.32	23.00	60.00	50.00	-29.68	-27.00
6	12.12109	10.73	24.45	18.45	35.18	29.18	60.00	50.00	-24.82	-20.82

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

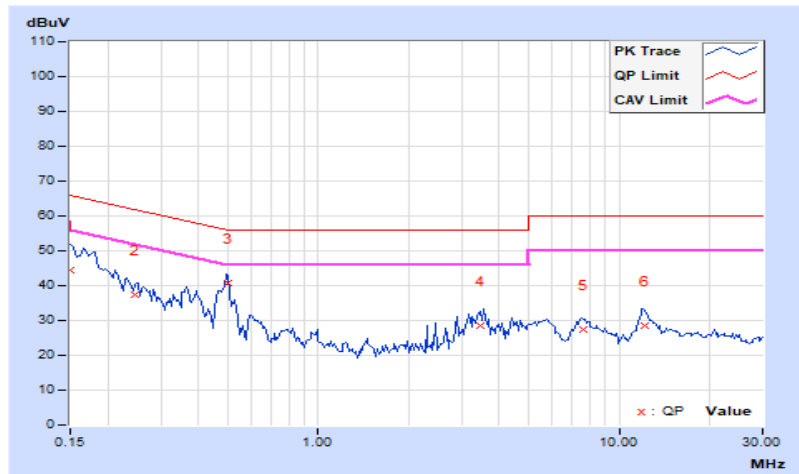


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 68% RH
Tested By	Tom Yang		

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	0.15000	9.97	34.34	18.41	44.31	28.38	66.00	56.00	-21.69	-27.62
2	0.24766	9.97	27.54	19.53	37.51	29.50	61.84	51.84	-24.33	-22.34
3	0.50156	9.99	30.61	27.48	40.60	37.47	56.00	46.00	-15.40	-8.53
4	3.46094	10.16	18.47	3.21	28.63	13.37	56.00	46.00	-27.37	-32.63
5	7.58203	10.40	16.92	9.03	27.32	19.43	60.00	50.00	-32.68	-30.57
6	12.17188	10.64	17.78	12.00	28.42	22.64	60.00	50.00	-31.58	-27.36

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



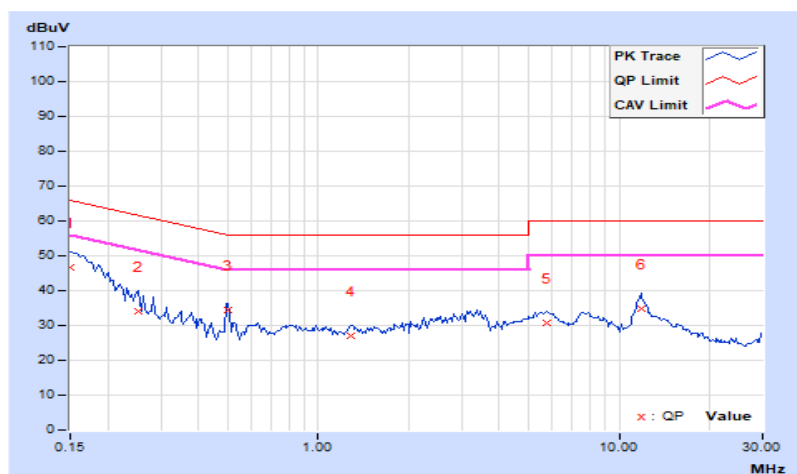
Mode B

RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 68% RH
Tested By	Tom Yang		

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	9.94	36.63	24.21	46.57	34.15	66.00	56.00	-19.43	-21.85
2	0.25156	9.95	24.29	17.17	34.24	27.12	61.71	51.71	-27.47	-24.59
3	0.50156	9.96	24.55	22.68	34.51	32.64	56.00	46.00	-21.49	-13.36
4	1.28516	10.01	16.91	11.79	26.92	21.80	56.00	46.00	-29.08	-24.20
5	5.72656	10.31	20.58	12.78	30.89	23.09	60.00	50.00	-29.11	-26.91
6	11.81250	10.71	24.09	18.09	34.80	28.80	60.00	50.00	-25.20	-21.20

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

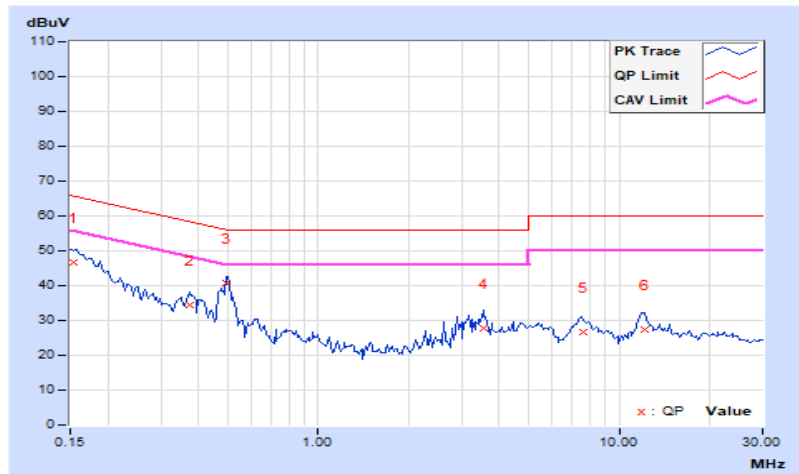


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 68% RH
Tested By	Tom Yang		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.97	36.82	25.11	46.79	35.08	65.79	55.79	-19.00	-20.71
2	0.37266	9.98	24.49	21.28	34.47	31.26	58.44	48.44	-23.97	-17.18
3	0.49375	9.99	30.66	22.63	40.65	32.62	56.10	46.10	-15.45	-13.48
4	3.54688	10.17	17.65	4.27	27.82	14.44	56.00	46.00	-28.18	-31.56
5	7.60547	10.40	16.36	8.51	26.76	18.91	60.00	50.00	-33.24	-31.09
6	12.15234	10.64	16.84	10.23	27.48	20.87	60.00	50.00	-32.52	-29.13

Remarks:

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



7.7 Unwanted Emissions below 1 GHz

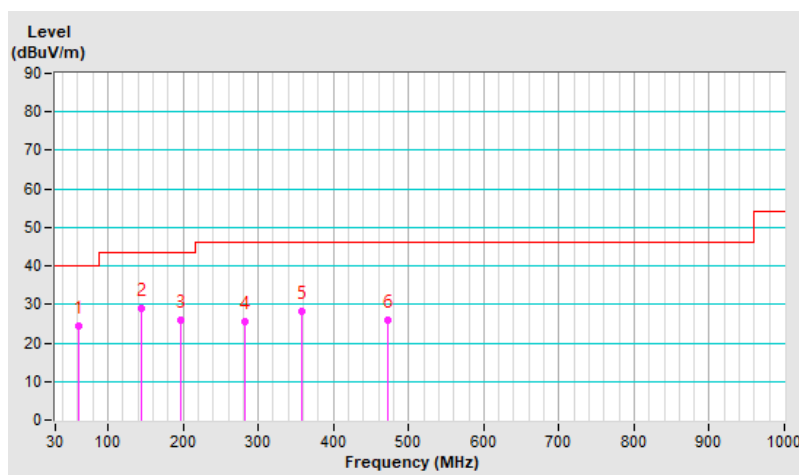
Mode A

RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	Quasi-Peak (QP), RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	26°C, 67% RH
Tested By	Tom Yang		

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	60.99	24.5 QP	40.0	-15.5	1.50 H	209	38.6	-14.1
2	143.95	29.0 QP	43.5	-14.5	2.00 H	262	42.2	-13.2
3	196.11	26.0 QP	43.5	-17.5	1.50 H	6	42.4	-16.4
4	282.35	25.6 QP	46.0	-20.4	1.00 H	142	38.6	-13.0
5	357.86	28.2 QP	46.0	-17.8	1.00 H	134	39.3	-11.1
6	473.02	25.9 QP	46.0	-20.1	2.00 H	154	34.2	-8.3

Remarks:

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

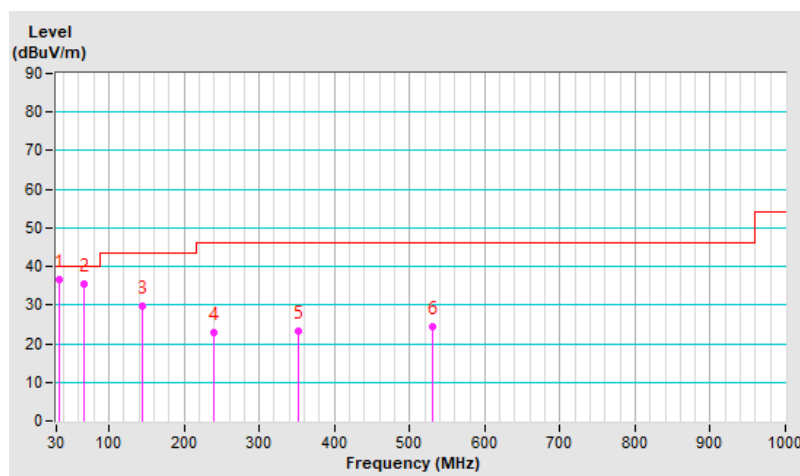


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	Quasi-Peak (QP), RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	26°C, 67% RH
Tested By	Tom Yang		

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	34.75	36.7 QP	40.0	-3.3	1.00 V	356	50.6	-13.9
2	66.64	35.3 QP	40.0	-4.7	1.00 V	19	49.9	-14.6
3	143.95	29.7 QP	43.5	-13.8	1.00 V	208	42.9	-13.2
4	239.50	22.8 QP	46.0	-23.2	1.00 V	142	37.6	-14.8
5	352.77	23.2 QP	46.0	-22.8	3.00 V	263	34.5	-11.3
6	530.08	24.4 QP	46.0	-21.6	2.00 V	2	31.4	-7.0

Remarks:

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



Mode B

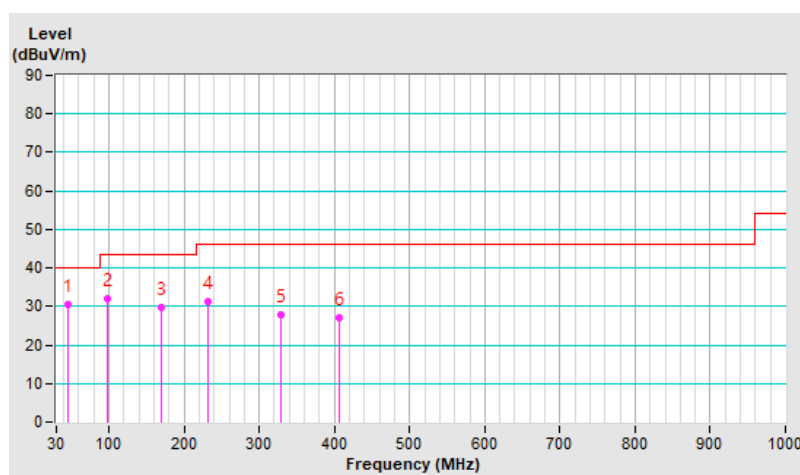
RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	Quasi-Peak (QP), RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	26°C, 67% RH
Tested By	Tom Yang		

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	45.06	30.5 QP	40.0	-9.5	1.00 H	205	43.7	-13.2
2	97.95	32.1 QP	43.5	-11.4	2.00 H	242	49.9	-17.8
3	169.80	29.6 QP	43.5	-13.9	2.00 H	280	43.2	-13.6
4	231.93	31.1 QP	46.0	-14.9	1.00 H	261	46.7	-15.6
5	328.13	27.9 QP	46.0	-18.1	1.00 H	158	39.6	-11.7
6	405.97	26.9 QP	46.0	-19.1	1.00 H	143	36.8	-9.9

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 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

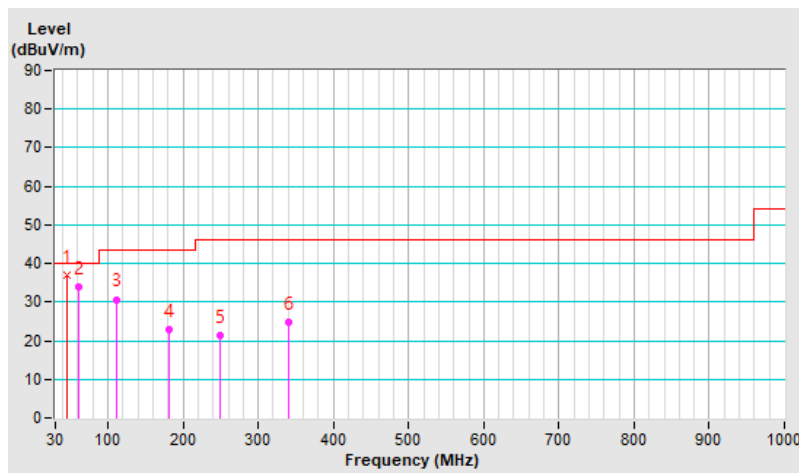


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	Quasi-Peak (QP), RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	26°C, 67% RH
Tested By	Tom Yang		

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	44.89	36.9 QP	40.0	-3.1	1.50 V	360	50.1	-13.2
2	61.04	33.8 QP	40.0	-6.2	1.00 V	305	47.9	-14.1
3	111.67	30.7 QP	43.5	-12.8	1.00 V	194	46.5	-15.8
4	181.42	22.9 QP	43.5	-20.6	1.00 V	332	37.8	-14.9
5	248.76	21.5 QP	46.0	-24.5	1.00 V	160	35.7	-14.2
6	340.86	24.8 QP	46.0	-21.2	1.50 V	199	36.4	-11.6

Remarks:

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



7.8 Unwanted Emissions above 1 GHz

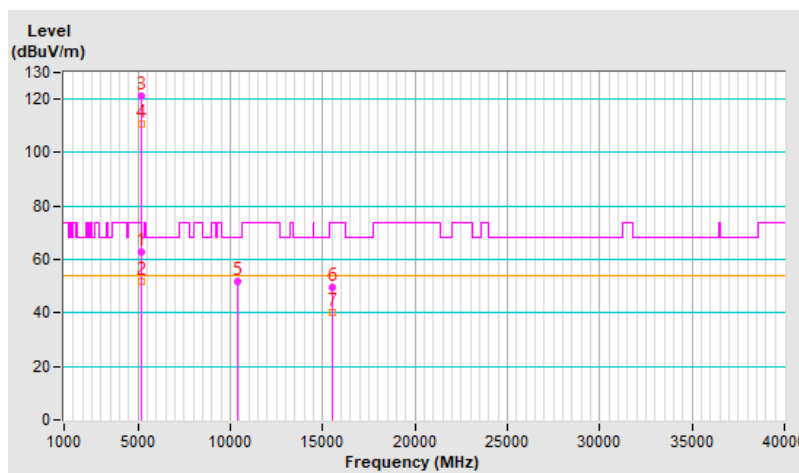
Mode A

RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	62.8 PK	74.0	-11.2	1.02 H	86	57.2	5.6
2	5150.00	51.8 AV	54.0	-2.2	1.02 H	86	46.2	5.6
3	*5180.00	121.2 PK			1.02 H	86	115.6	5.6
4	*5180.00	110.6 AV			1.02 H	86	105.0	5.6
5	#10360.00	51.8 PK	68.2	-16.4	3.67 H	94	36.3	15.5
6	15540.00	49.8 PK	74.0	-24.2	1.67 H	237	33.4	16.4
7	15540.00	40.1 AV	54.0	-13.9	1.67 H	237	23.7	16.4

Remarks:

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

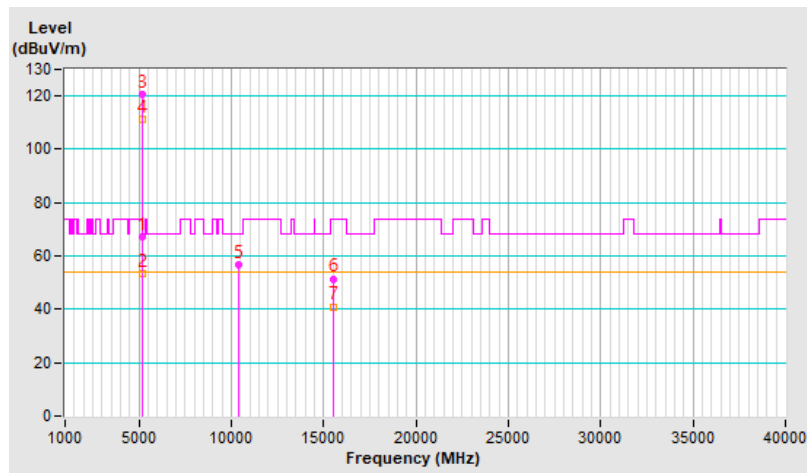


RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	67.4 PK	74.0	-6.6	1.23 V	21	61.8	5.6
2	5150.00	53.6 AV	54.0	-0.4	1.23 V	21	48.0	5.6
3	*5180.00	120.8 PK			1.23 V	21	115.2	5.6
4	*5180.00	111.4 AV			1.23 V	21	105.8	5.6
5	#10360.00	56.6 PK	68.2	-11.6	1.76 V	178	41.1	15.5
6	15540.00	51.5 PK	74.0	-22.5	1.62 V	349	35.1	16.4
7	15540.00	41.0 AV	54.0	-13.0	1.62 V	349	24.6	16.4

Remarks:

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



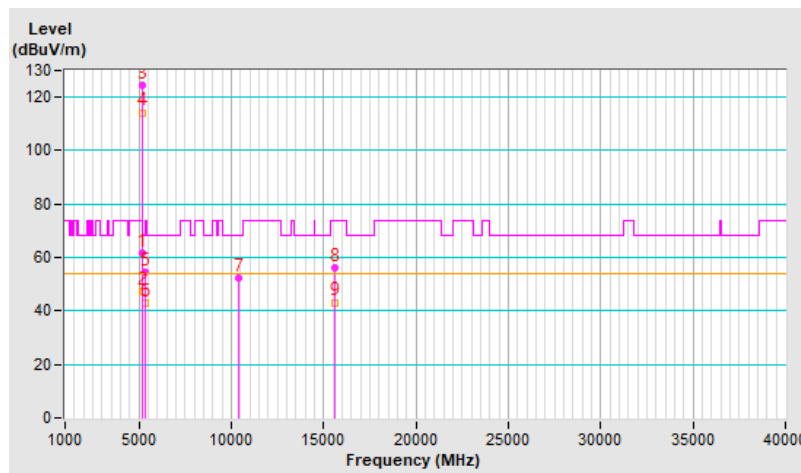
RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	1.99 H	92	56.1	5.6
2	5150.00	47.4 AV	54.0	-6.6	1.99 H	92	41.8	5.6
3	*5200.00	124.6 PK			1.99 H	92	119.1	5.5
4	*5200.00	114.3 AV			1.99 H	92	108.8	5.5
5	5350.00	54.5 PK	74.0	-19.5	1.99 H	92	49.0	5.5
6	5350.00	43.1 AV	54.0	-10.9	1.99 H	92	37.6	5.5
7	#10400.00	52.3 PK	68.2	-15.9	3.73 H	94	36.7	15.6
8	15600.00	56.2 PK	74.0	-17.8	1.62 H	221	39.5	16.7
9	15600.00	43.2 AV	54.0	-10.8	1.62 H	221	26.5	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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

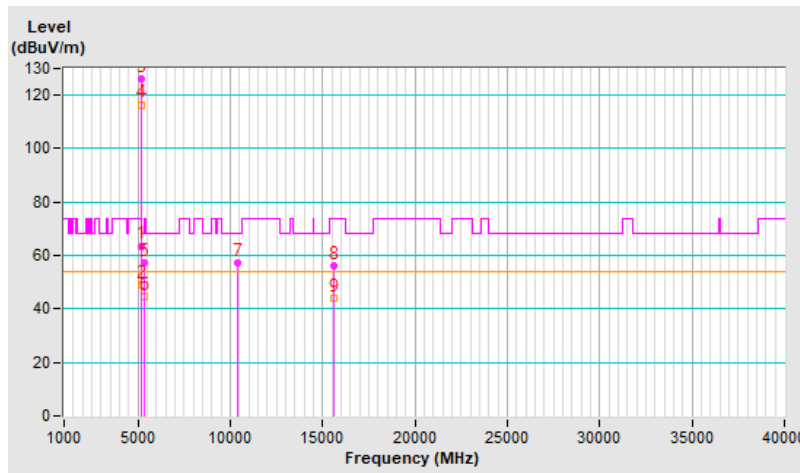


RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	63.6 PK	74.0	-10.4	1.12 V	4	58.0	5.6
2	5150.00	49.0 AV	54.0	-5.0	1.12 V	4	43.4	5.6
3	*5200.00	126.1 PK			1.12 V	4	120.6	5.5
4	*5200.00	116.5 AV			1.12 V	4	111.0	5.5
5	5350.00	57.3 PK	74.0	-16.7	1.12 V	4	51.8	5.5
6	5350.00	44.8 AV	54.0	-9.2	1.12 V	4	39.3	5.5
7	#10400.00	57.2 PK	68.2	-11.0	1.74 V	193	41.6	15.6
8	15600.00	56.3 PK	74.0	-17.7	1.55 V	355	39.6	16.7
9	15600.00	43.8 AV	54.0	-10.2	1.55 V	355	27.1	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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

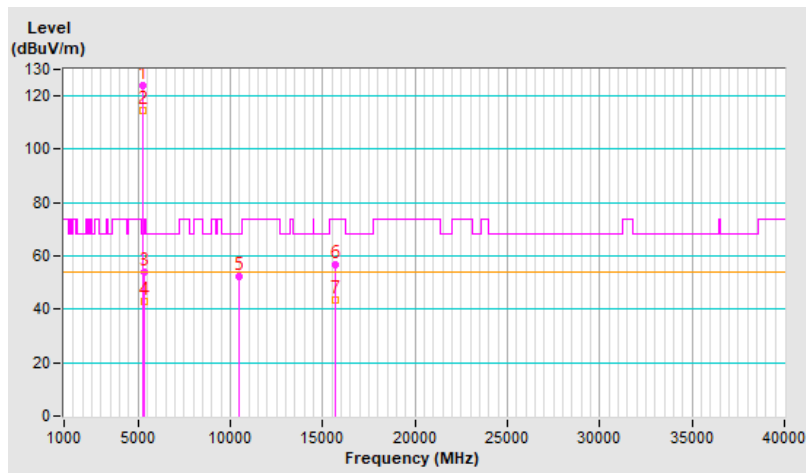


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	*5240.00	123.9 PK			1.97 H	94	118.7	5.2
2	*5240.00	114.5 AV			1.97 H	94	109.3	5.2
3	5350.00	54.2 PK	74.0	-19.8	1.97 H	94	48.7	5.5
4	5350.00	43.0 AV	54.0	-11.0	1.97 H	94	37.5	5.5
5	#10480.00	52.4 PK	68.2	-15.8	3.69 H	92	36.6	15.8
6	15720.00	56.5 PK	74.0	-17.5	1.60 H	205	39.9	16.6
7	15720.00	43.3 AV	54.0	-10.7	1.60 H	205	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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

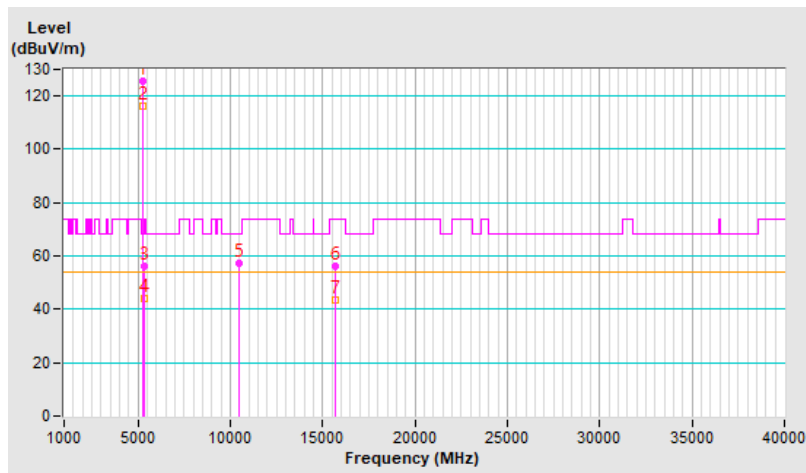


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	*5240.00	125.7 PK			1.10 V	6	120.5	5.2
2	*5240.00	116.2 AV			1.10 V	6	111.0	5.2
3	5350.00	56.0 PK	74.0	-18.0	1.10 V	6	50.5	5.5
4	5350.00	44.3 AV	54.0	-9.7	1.10 V	6	38.8	5.5
5	#10480.00	57.1 PK	68.2	-11.1	1.79 V	196	41.3	15.8
6	15720.00	56.0 PK	74.0	-18.0	1.54 V	359	39.4	16.6
7	15720.00	43.6 AV	54.0	-10.4	1.54 V	359	27.0	16.6

Remarks:

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

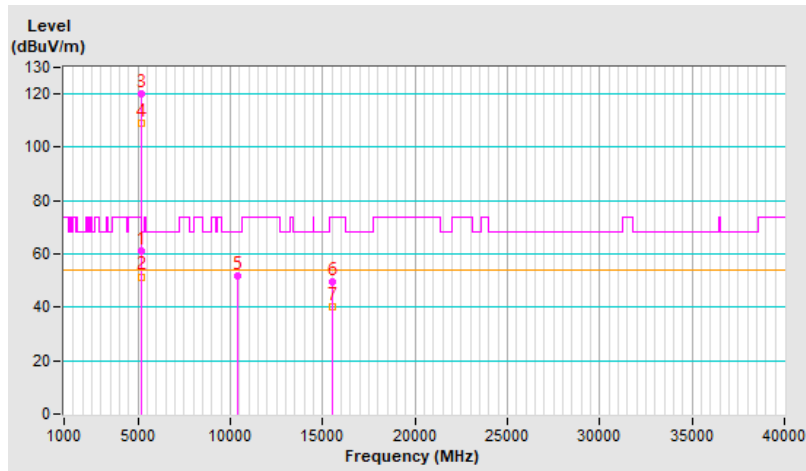


RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	61.2 PK	74.0	-12.8	1.08 H	96	55.6	5.6
2	5150.00	51.5 AV	54.0	-2.5	1.08 H	96	45.9	5.6
3	*5180.00	120.2 PK			1.08 H	96	114.6	5.6
4	*5180.00	109.3 AV			1.08 H	96	103.7	5.6
5	#10360.00	51.7 PK	68.2	-16.5	3.62 H	84	36.2	15.5
6	15540.00	49.8 PK	74.0	-24.2	1.70 H	223	33.4	16.4
7	15540.00	40.0 AV	54.0	-14.0	1.70 H	223	23.6	16.4

Remarks:

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

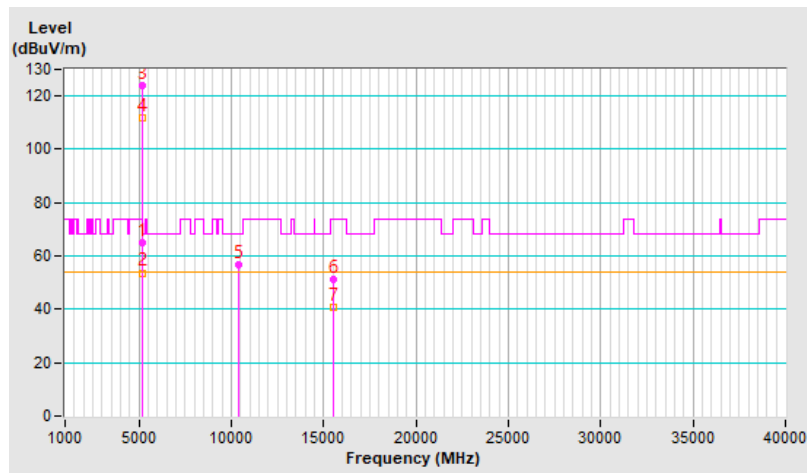


RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	64.8 PK	74.0	-9.2	1.17 V	7	59.2	5.6
2	5150.00	53.7 AV	54.0	-0.3	1.17 V	7	48.1	5.6
3	*5180.00	123.9 PK			1.17 V	7	118.3	5.6
4	*5180.00	112.0 AV			1.17 V	7	106.4	5.6
5	#10360.00	56.6 PK	68.2	-11.6	1.79 V	173	41.1	15.5
6	15540.00	51.4 PK	74.0	-22.6	1.66 V	356	35.0	16.4
7	15540.00	40.8 AV	54.0	-13.2	1.66 V	356	24.4	16.4

Remarks:

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



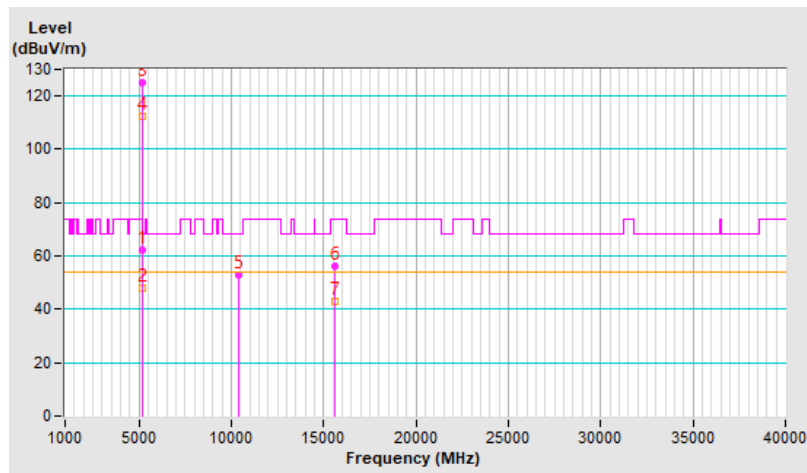
RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	62.4 PK	74.0	-11.6	1.99 H	109	56.8	5.6
2	5150.00	47.8 AV	54.0	-6.2	1.99 H	109	42.2	5.6
3	*5200.00	125.2 PK			1.99 H	109	119.7	5.5
4	*5200.00	112.5 AV			1.99 H	109	107.0	5.5
5	#10400.00	53.1 PK	68.2	-15.1	3.72 H	89	37.5	15.6
6	15600.00	56.2 PK	74.0	-17.8	1.66 H	220	39.5	16.7
7	15600.00	43.0 AV	54.0	-11.0	1.66 H	220	26.3	16.7

Remarks:

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

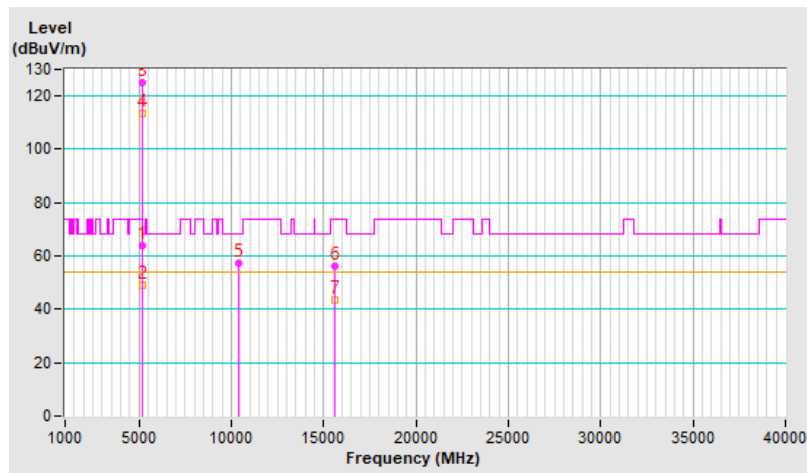


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	63.7 PK	74.0	-10.3	1.20 V	18	58.1	5.6
2	5150.00	48.8 AV	54.0	-5.2	1.20 V	18	43.2	5.6
3	*5200.00	124.8 PK			1.20 V	18	119.3	5.5
4	*5200.00	113.4 AV			1.20 V	18	107.9	5.5
5	#10400.00	57.1 PK	68.2	-11.1	1.70 V	188	41.5	15.6
6	15600.00	56.2 PK	74.0	-17.8	1.57 V	356	39.5	16.7
7	15600.00	43.6 AV	54.0	-10.4	1.57 V	356	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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



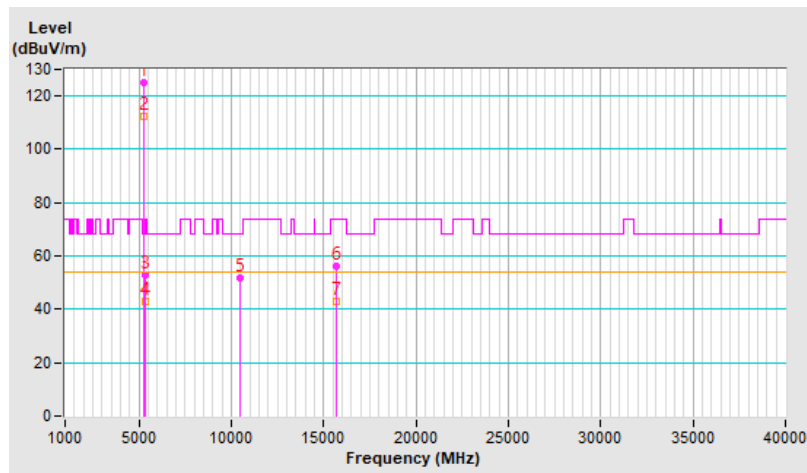
RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	*5240.00	125.1 PK			2.03 H	97	119.9	5.2
2	*5240.00	112.6 AV			2.03 H	97	107.4	5.2
3	5350.00	53.1 PK	74.0	-20.9	2.03 H	97	47.6	5.5
4	5350.00	42.8 AV	54.0	-11.2	2.03 H	97	37.3	5.5
5	#10480.00	51.8 PK	68.2	-16.4	3.73 H	87	36.0	15.8
6	15720.00	56.3 PK	74.0	-17.7	1.54 H	189	39.7	16.6
7	15720.00	43.1 AV	54.0	-10.9	1.54 H	189	26.5	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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

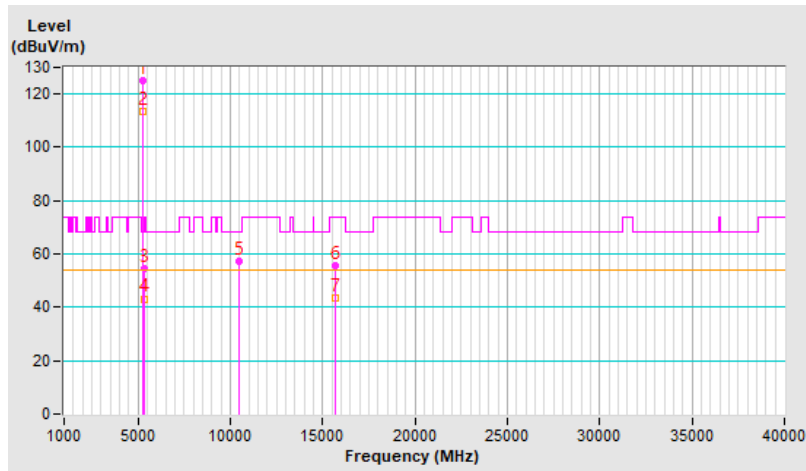


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	*5240.00	124.8 PK			1.35 V	19	119.6	5.2
2	*5240.00	113.5 AV			1.35 V	19	108.3	5.2
3	5350.00	54.4 PK	74.0	-19.6	1.35 V	19	48.9	5.5
4	5350.00	43.2 AV	54.0	-10.8	1.35 V	19	37.7	5.5
5	#10480.00	57.5 PK	68.2	-10.7	1.70 V	190	41.7	15.8
6	15720.00	55.8 PK	74.0	-18.2	1.58 V	357	39.2	16.6
7	15720.00	43.6 AV	54.0	-10.4	1.58 V	357	27.0	16.6

Remarks:

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

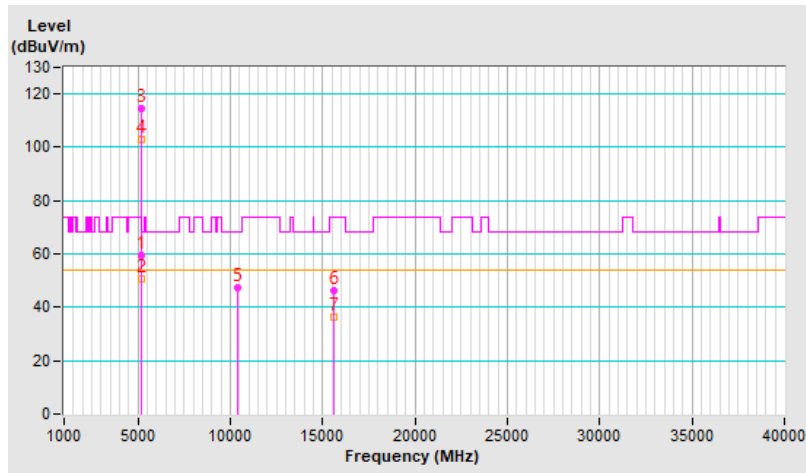


RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	59.6 PK	74.0	-14.4	1.08 H	104	54.0	5.6
2	5150.00	50.9 AV	54.0	-3.1	1.08 H	104	45.3	5.6
3	*5190.00	114.7 PK			1.08 H	104	109.1	5.6
4	*5190.00	103.2 AV			1.08 H	104	97.6	5.6
5	#10380.00	47.2 PK	68.2	-21.0	3.56 H	76	31.6	15.6
6	15570.00	46.3 PK	74.0	-27.7	1.65 H	212	29.8	16.5
7	15570.00	36.1 AV	54.0	-17.9	1.65 H	212	19.6	16.5

Remarks:

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

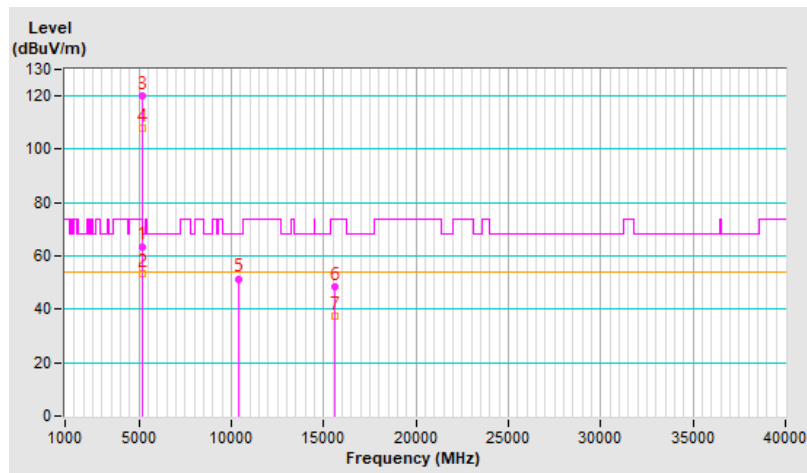


RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	63.6 PK	74.0	-10.4	1.16 V	6	58.0	5.6
2	5150.00	53.5 AV	54.0	-0.5	1.16 V	6	47.9	5.6
3	*5190.00	119.9 PK			1.16 V	6	114.3	5.6
4	*5190.00	107.9 AV			1.16 V	6	102.3	5.6
5	#10380.00	51.5 PK	68.2	-16.7	1.74 V	161	35.9	15.6
6	15570.00	48.2 PK	74.0	-25.8	1.60 V	2	31.7	16.5
7	15570.00	37.3 AV	54.0	-16.7	1.60 V	2	20.8	16.5

Remarks:

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

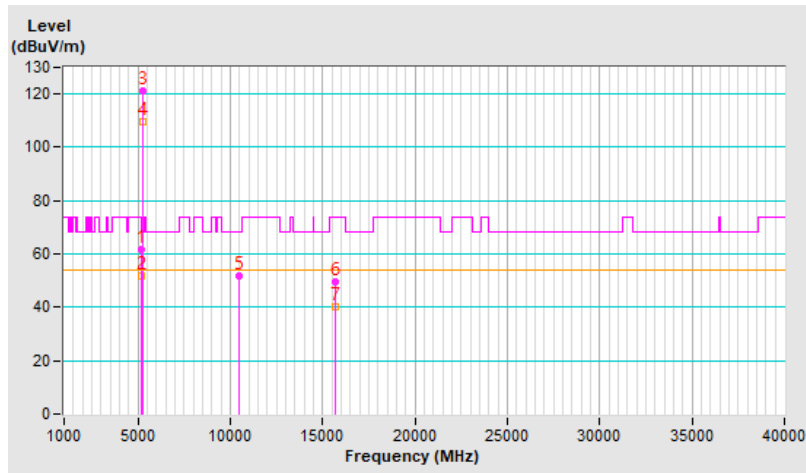


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	61.5 PK	74.0	-12.5	2.04 H	91	55.9	5.6
2	5150.00	51.6 AV	54.0	-2.4	2.04 H	91	46.0	5.6
3	*5230.00	121.0 PK			2.04 H	91	115.6	5.4
4	*5230.00	109.8 AV			2.04 H	91	104.4	5.4
5	#10460.00	52.0 PK	68.2	-16.2	3.58 H	86	36.2	15.8
6	15690.00	49.8 PK	74.0	-24.2	1.67 H	216	33.2	16.6
7	15690.00	40.0 AV	54.0	-14.0	1.67 H	216	23.4	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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

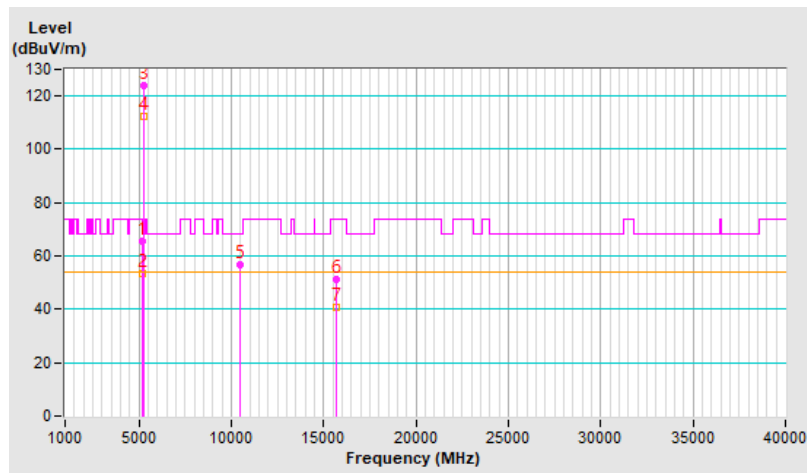


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	5147.60	65.6 PK	74.0	-8.4	1.12 V	3	60.0	5.6
2	5147.60	53.5 AV	54.0	-0.5	1.12 V	3	47.9	5.6
3	*5230.00	123.8 PK			1.12 V	3	118.4	5.4
4	*5230.00	112.5 AV			1.12 V	3	107.1	5.4
5	#10460.00	56.7 PK	68.2	-11.5	1.76 V	165	40.9	15.8
6	15690.00	51.0 PK	74.0	-23.0	1.66 V	350	34.4	16.6
7	15690.00	40.6 AV	54.0	-13.4	1.66 V	350	24.0	16.6

Remarks:

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



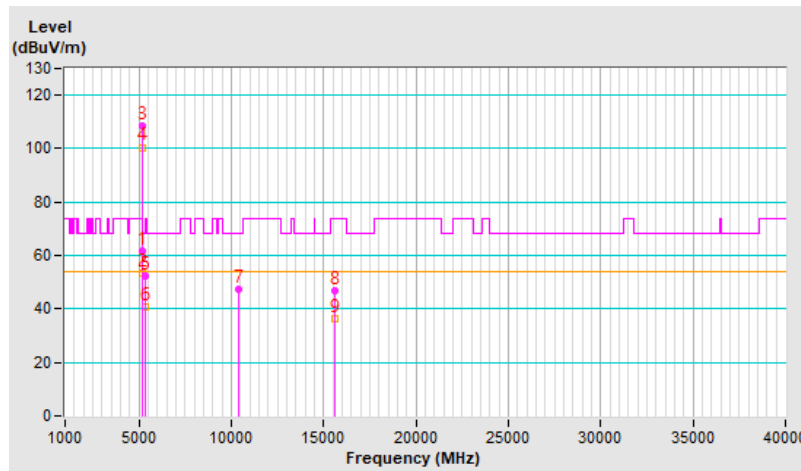
RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	61.9 PK	74.0	-12.1	1.04 H	96	56.3	5.6
2	5150.00	53.5 AV	54.0	-0.5	1.04 H	96	47.9	5.6
3	*5210.00	108.4 PK			1.04 H	96	102.9	5.5
4	*5210.00	100.5 AV			1.04 H	96	95.0	5.5
5	5350.00	52.1 PK	74.0	-21.9	1.04 H	96	46.6	5.5
6	5350.00	40.8 AV	54.0	-13.2	1.04 H	96	35.3	5.5
7	#10420.00	47.4 PK	68.2	-20.8	3.52 H	76	31.7	15.7
8	15630.00	46.9 PK	74.0	-27.1	1.71 H	224	30.3	16.6
9	15630.00	36.5 AV	54.0	-17.5	1.71 H	224	19.9	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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

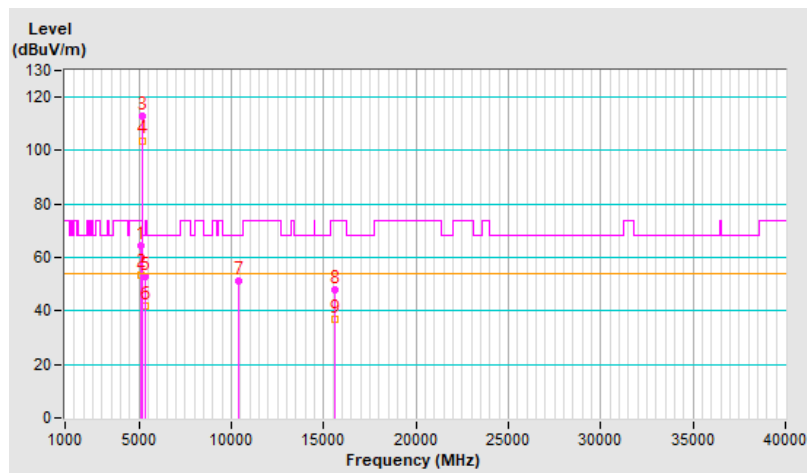


RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	5138.10	64.6 PK	74.0	-9.4	1.26 V	6	59.0	5.6
2	5138.10	53.7 AV	54.0	-0.3	1.26 V	6	48.1	5.6
3	*5210.00	112.7 PK			1.26 V	6	107.2	5.5
4	*5210.00	103.8 AV			1.26 V	6	98.3	5.5
5	5350.00	52.7 PK	74.0	-21.3	1.26 V	6	47.2	5.5
6	5350.00	41.6 AV	54.0	-12.4	1.26 V	6	36.1	5.5
7	#10420.00	51.4 PK	68.2	-16.8	1.71 V	150	35.7	15.7
8	15630.00	47.7 PK	74.0	-26.3	1.59 V	18	31.1	16.6
9	15630.00	37.0 AV	54.0	-17.0	1.59 V	18	20.4	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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



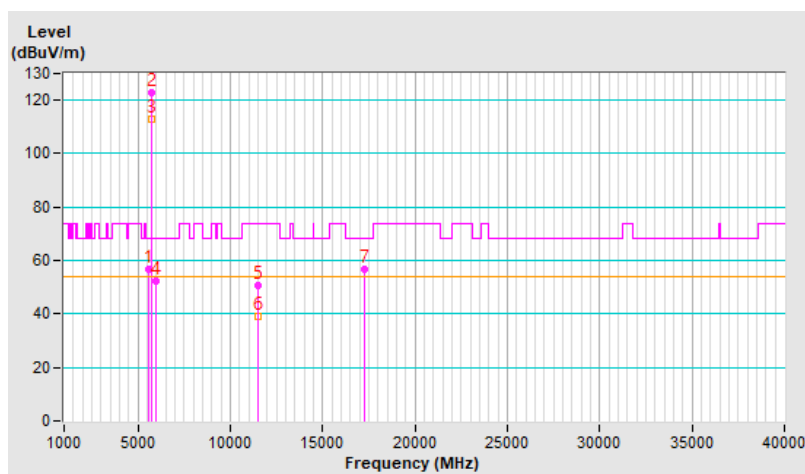
Mode B

RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5592.16	56.9 PK	68.2	-11.3	1.98 H	202	51.4	5.5
2	*5745.00	122.8 PK			1.98 H	202	117.0	5.8
3	*5745.00	113.0 AV			1.98 H	202	107.2	5.8
4	#5973.30	52.4 PK	68.2	-15.8	1.98 H	202	46.1	6.3
5	11490.00	50.5 PK	74.0	-23.5	1.02 H	33	33.6	16.9
6	11490.00	39.0 AV	54.0	-15.0	1.02 H	33	22.1	16.9
7	#17235.00	56.7 PK	68.2	-11.5	1.51 H	168	35.6	21.1

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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

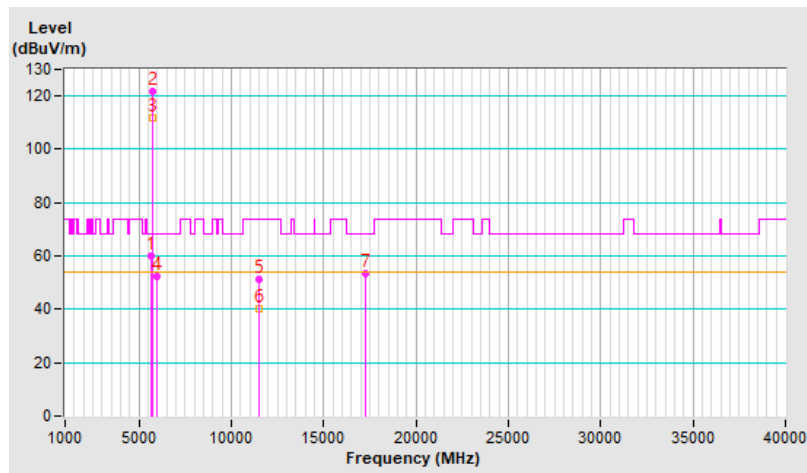


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5624.54	59.9 PK	68.2	-8.3	1.13 V	315	54.1	5.8
2	*5745.00	121.8 PK			1.13 V	315	116.0	5.8
3	*5745.00	111.8 AV			1.13 V	315	106.0	5.8
4	#5988.27	52.5 PK	68.2	-15.7	1.13 V	315	46.2	6.3
5	11490.00	51.3 PK	74.0	-22.7	1.60 V	13	34.4	16.9
6	11490.00	40.3 AV	54.0	-13.7	1.60 V	13	23.4	16.9
7	#17235.00	53.2 PK	68.2	-15.0	1.43 V	134	32.1	21.1

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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

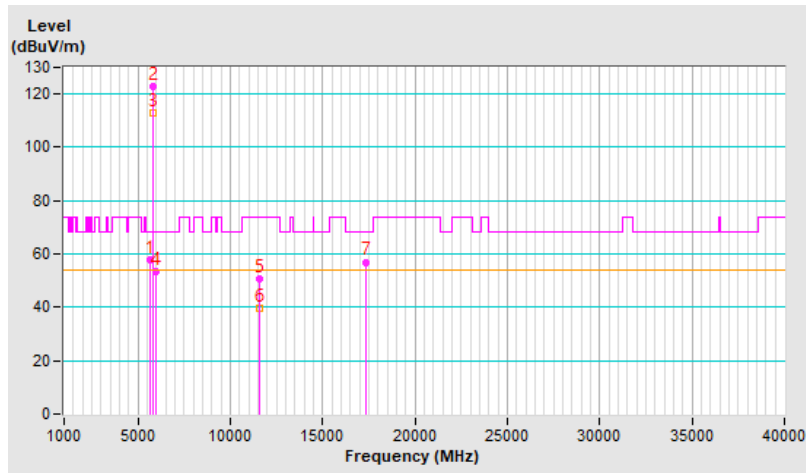


RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5647.61	57.8 PK	68.2	-10.4	2.01 H	204	51.9	5.9
2	*5785.00	122.9 PK			2.01 H	204	116.7	6.2
3	*5785.00	112.9 AV			2.01 H	204	106.7	6.2
4	#5978.63	53.3 PK	68.2	-14.9	2.01 H	204	47.0	6.3
5	11570.00	50.9 PK	74.0	-23.1	1.06 H	38	34.2	16.7
6	11570.00	39.4 AV	54.0	-14.6	1.06 H	38	22.7	16.7
7	#17355.00	57.0 PK	68.2	-11.2	1.49 H	186	35.4	21.6

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

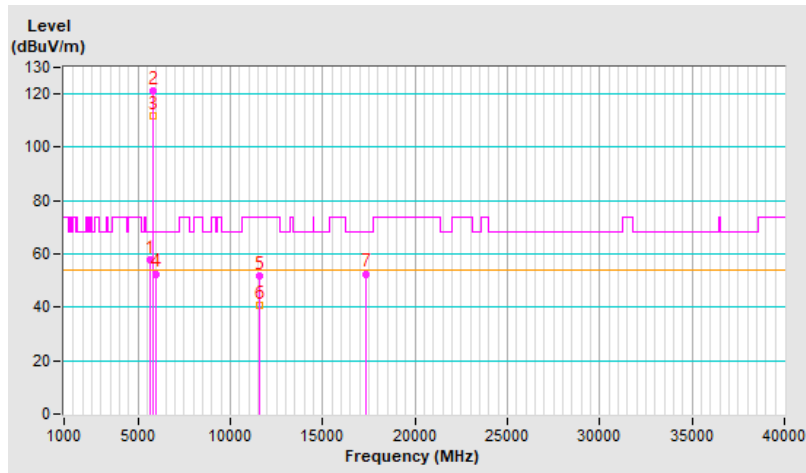


RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5641.51	57.6 PK	68.2	-10.6	1.18 V	316	51.8	5.8
2	*5785.00	121.0 PK			1.18 V	316	114.8	6.2
3	*5785.00	111.6 AV			1.18 V	316	105.4	6.2
4	#5976.73	52.6 PK	68.2	-15.6	1.18 V	316	46.3	6.3
5	11570.00	51.6 PK	74.0	-22.4	1.62 V	6	34.9	16.7
6	11570.00	40.7 AV	54.0	-13.3	1.62 V	6	24.0	16.7
7	#17355.00	52.6 PK	68.2	-15.6	1.43 V	137	31.0	21.6

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.



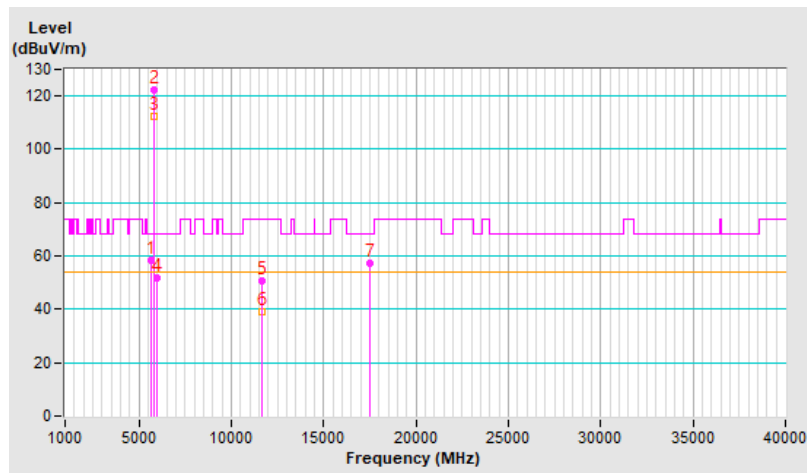
RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5639.35	58.5 PK	68.2	-9.7	2.15 H	67	52.7	5.8
2	*5825.00	122.3 PK			2.15 H	67	115.9	6.4
3	*5825.00	112.1 AV			2.15 H	67	105.7	6.4
4	#5976.27	52.0 PK	68.2	-16.2	2.15 H	67	45.7	6.3
5	11650.00	50.7 PK	74.0	-23.3	1.08 H	29	34.2	16.5
6	11650.00	39.0 AV	54.0	-15.0	1.08 H	29	22.5	16.5
7	#17475.00	57.2 PK	68.2	-11.0	1.52 H	183	35.2	22.0

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

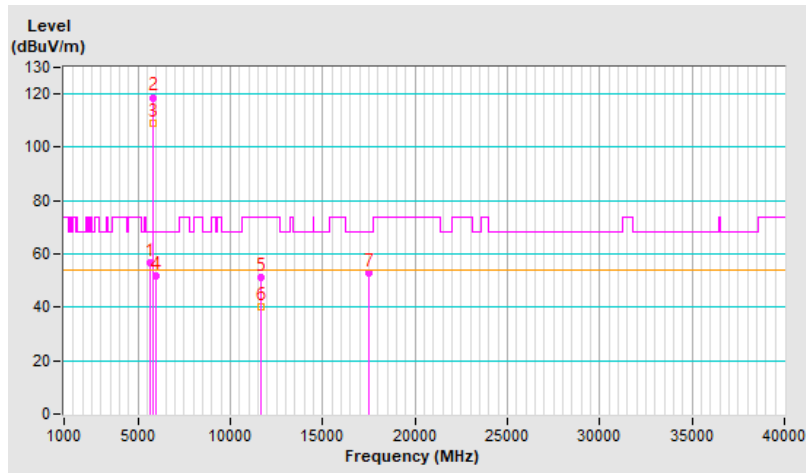


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5625.24	56.7 PK	68.2	-11.5	1.16 V	318	50.9	5.8
2	*5825.00	118.7 PK			1.16 V	318	112.3	6.4
3	*5825.00	109.0 AV			1.16 V	318	102.6	6.4
4	#5968.30	52.0 PK	68.2	-16.2	1.16 V	318	45.7	6.3
5	11650.00	51.1 PK	74.0	-22.9	1.63 V	4	34.6	16.5
6	11650.00	40.2 AV	54.0	-13.8	1.63 V	4	23.7	16.5
7	#17475.00	52.9 PK	68.2	-15.3	1.48 V	153	30.9	22.0

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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

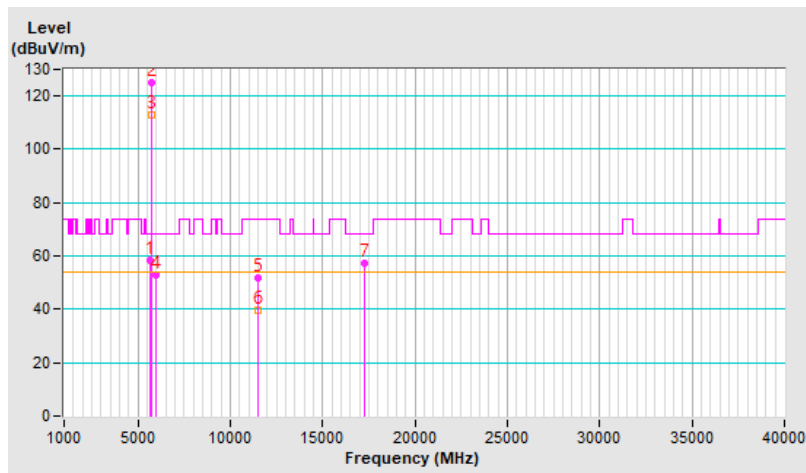


RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5639.64	58.6 PK	68.2	-9.6	2.03 H	130	52.8	5.8
2	*5745.00	124.9 PK			2.03 H	130	119.1	5.8
3	*5745.00	112.7 AV			2.03 H	130	106.9	5.8
4	#5939.71	52.8 PK	68.2	-15.4	2.03 H	130	46.5	6.3
5	11490.00	51.6 PK	74.0	-22.4	1.05 H	50	34.7	16.9
6	11490.00	39.8 AV	54.0	-14.2	1.05 H	50	22.9	16.9
7	#17235.00	57.1 PK	68.2	-11.1	1.44 H	176	36.0	21.1

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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

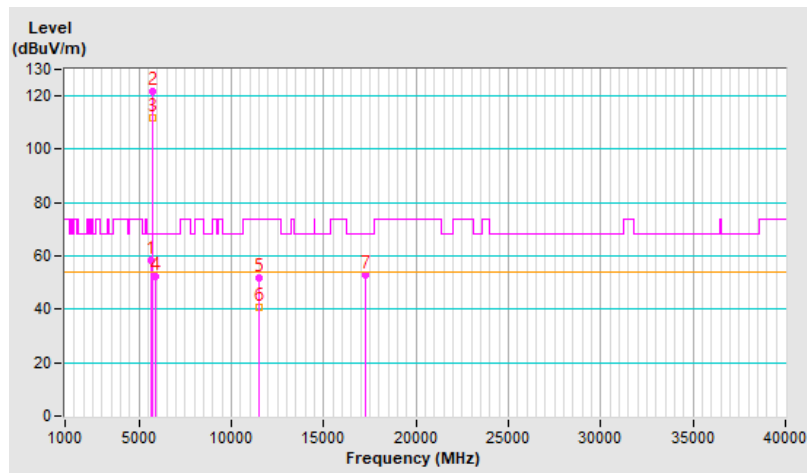


RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5625.70	58.2 PK	68.2	-10.0	1.14 V	317	52.4	5.8
2	*5745.00	121.6 PK			1.14 V	317	115.8	5.8
3	*5745.00	111.9 AV			1.14 V	317	106.1	5.8
4	#5932.91	52.3 PK	68.2	-15.9	1.14 V	317	46.0	6.3
5	11490.00	52.0 PK	74.0	-22.0	1.58 V	12	35.1	16.9
6	11490.00	40.9 AV	54.0	-13.1	1.58 V	12	24.0	16.9
7	#17235.00	52.7 PK	68.2	-15.5	1.48 V	153	31.6	21.1

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

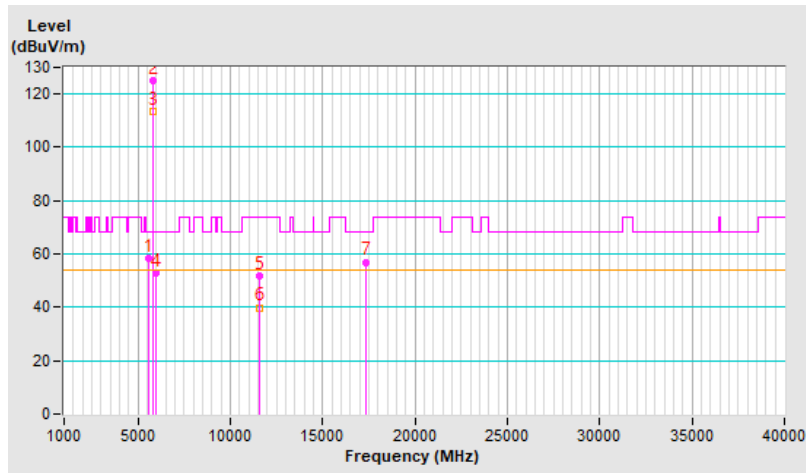


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5605.98	58.4 PK	68.2	-9.8	2.12 H	128	52.8	5.6
2	*5785.00	125.2 PK			2.12 H	128	119.0	6.2
3	*5785.00	113.3 AV			2.12 H	128	107.1	6.2
4	#5938.95	52.8 PK	68.2	-15.4	2.12 H	128	46.5	6.3
5	11570.00	51.7 PK	74.0	-22.3	1.09 H	47	35.0	16.7
6	11570.00	39.9 AV	54.0	-14.1	1.09 H	47	23.2	16.7
7	#17355.00	57.0 PK	68.2	-11.2	1.47 H	193	35.4	21.6

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

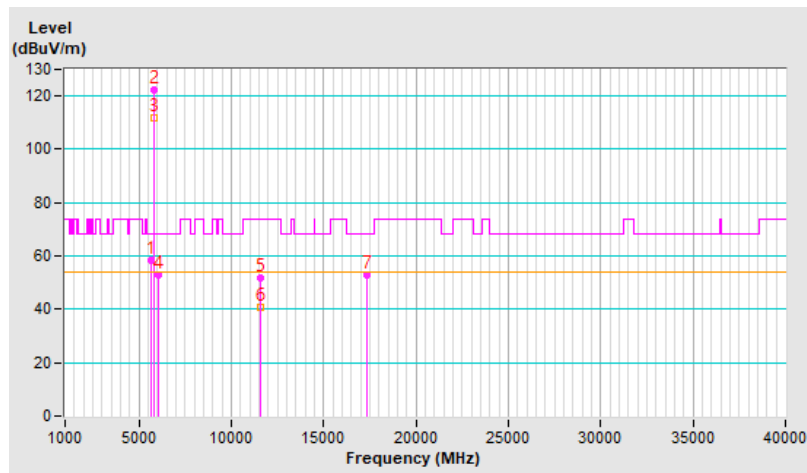


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5647.91	58.6 PK	68.2	-9.6	1.18 V	315	52.7	5.9
2	*5785.00	122.5 PK			1.18 V	315	116.3	6.2
3	*5785.00	112.0 AV			1.18 V	315	105.8	6.2
4	#6024.98	53.0 PK	68.2	-15.2	1.18 V	315	46.6	6.4
5	11570.00	51.8 PK	74.0	-22.2	1.62 V	0	35.1	16.7
6	11570.00	40.7 AV	54.0	-13.3	1.62 V	0	24.0	16.7
7	#17355.00	52.7 PK	68.2	-15.5	1.41 V	129	31.1	21.6

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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

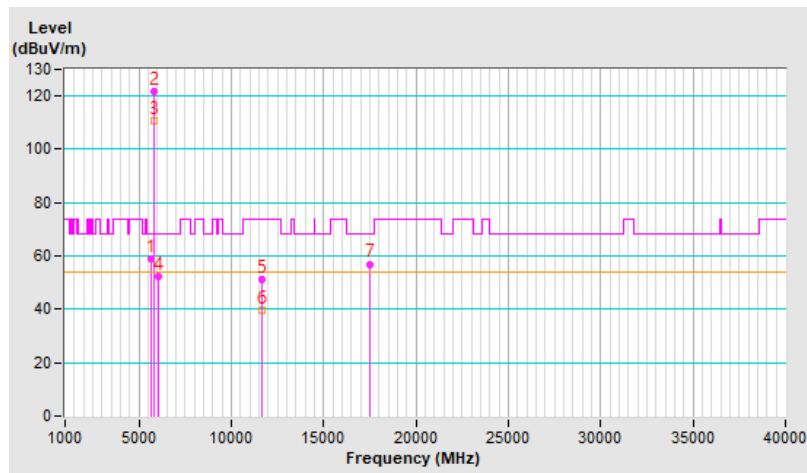


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5644.92	59.0 PK	68.2	-9.2	2.12 H	71	53.1	5.9
2	*5825.00	121.8 PK			2.12 H	71	115.4	6.4
3	*5825.00	110.5 AV			2.12 H	71	104.1	6.4
4	#6016.32	52.1 PK	68.2	-16.1	2.12 H	71	45.7	6.4
5	11650.00	51.4 PK	74.0	-22.6	1.12 H	38	34.9	16.5
6	11650.00	39.7 AV	54.0	-14.3	1.12 H	38	23.2	16.5
7	#17475.00	57.0 PK	68.2	-11.2	1.53 H	185	35.0	22.0

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

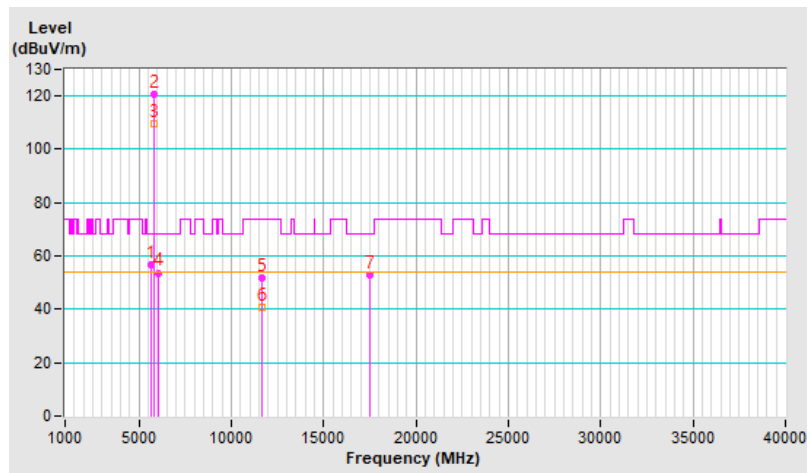


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5644.34	56.8 PK	68.2	-11.4	1.13 V	316	50.9	5.9
2	*5825.00	120.5 PK			1.13 V	316	114.1	6.4
3	*5825.00	109.6 AV			1.13 V	316	103.2	6.4
4	#6019.77	53.7 PK	68.2	-14.5	1.13 V	316	47.3	6.4
5	11650.00	51.8 PK	74.0	-22.2	1.64 V	15	35.3	16.5
6	11650.00	40.7 AV	54.0	-13.3	1.64 V	15	24.2	16.5
7	#17475.00	52.8 PK	68.2	-15.4	1.43 V	151	30.8	22.0

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

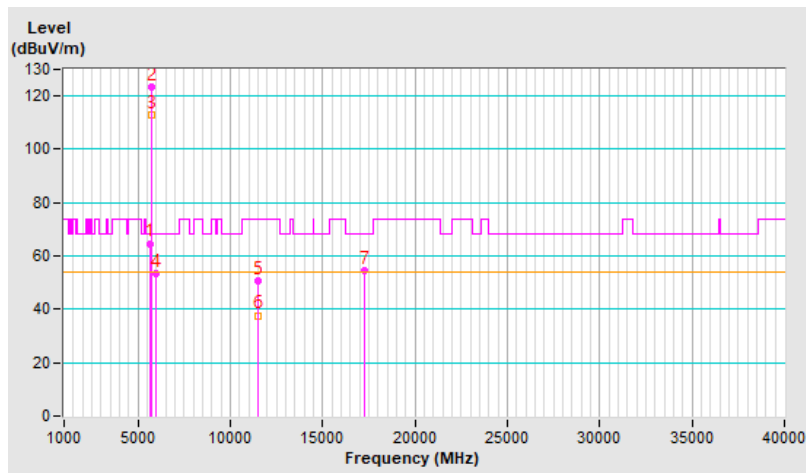


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5649.83	64.7 PK	68.2	-3.5	1.95 H	229	58.8	5.9
2	*5755.00	123.5 PK			1.95 H	229	117.7	5.8
3	*5755.00	113.1 AV			1.95 H	229	107.3	5.8
4	#5968.78	53.6 PK	68.2	-14.6	1.95 H	229	47.3	6.3
5	11510.00	50.9 PK	74.0	-23.1	1.12 H	24	34.0	16.9
6	11510.00	37.7 AV	54.0	-16.3	1.12 H	24	20.8	16.9
7	#17265.00	54.6 PK	68.2	-13.6	1.47 H	180	33.5	21.1

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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

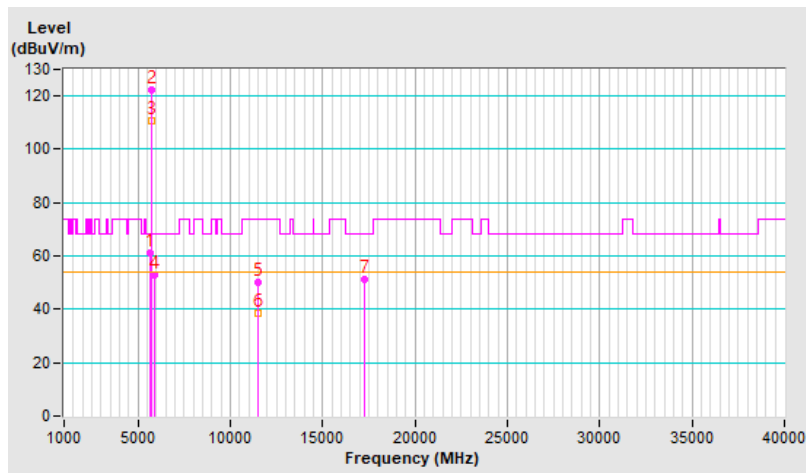


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5630.75	61.2 PK	68.2	-7.0	1.25 V	316	55.4	5.8
2	*5755.00	122.3 PK			1.25 V	316	116.5	5.8
3	*5755.00	110.6 AV			1.25 V	316	104.8	5.8
4	#5929.32	52.7 PK	68.2	-15.5	1.25 V	316	46.4	6.3
5	11510.00	50.3 PK	74.0	-23.7	1.70 V	13	33.4	16.9
6	11510.00	38.6 AV	54.0	-15.4	1.70 V	13	21.7	16.9
7	#17265.00	51.4 PK	68.2	-16.8	1.46 V	142	30.3	21.1

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

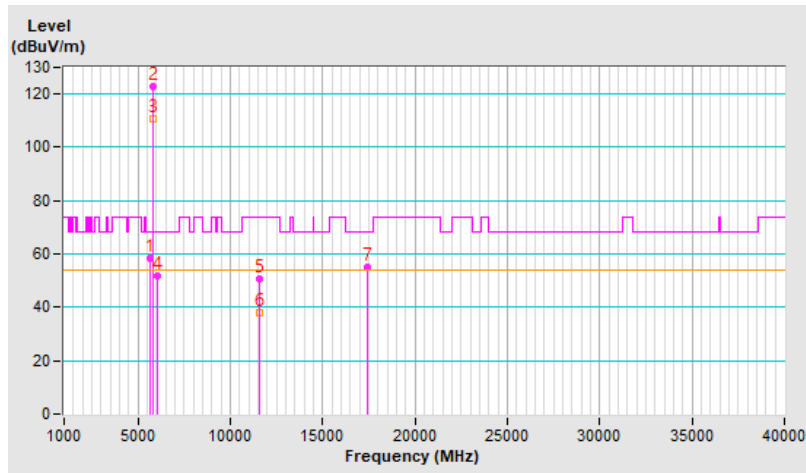


RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5646.60	58.2 PK	68.2	-10.0	1.44 H	133	52.3	5.9
2	*5795.00	122.8 PK			1.44 H	133	116.5	6.3
3	*5795.00	110.7 AV			1.44 H	133	104.4	6.3
4	#6015.76	52.0 PK	68.2	-16.2	1.44 H	133	45.6	6.4
5	11590.00	50.9 PK	74.0	-23.1	1.16 H	31	34.3	16.6
6	11590.00	37.9 AV	54.0	-16.1	1.16 H	31	21.3	16.6
7	#17385.00	55.3 PK	68.2	-12.9	1.46 H	172	33.5	21.8

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

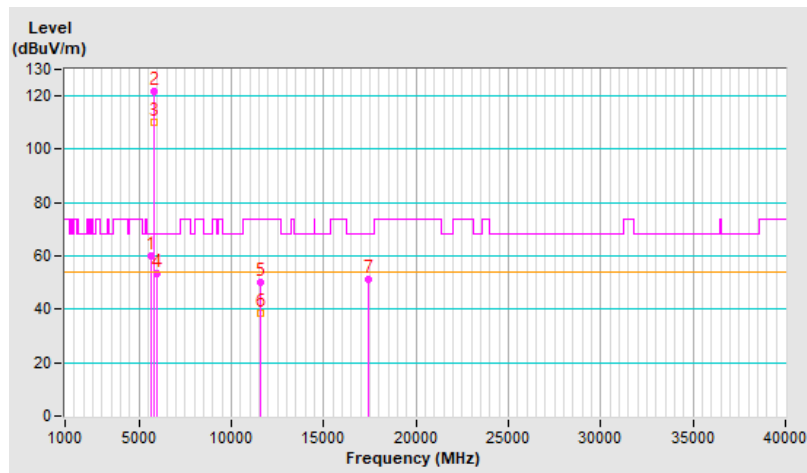


RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5646.39	60.0 PK	68.2	-8.2	1.29 V	317	54.1	5.9
2	*5795.00	121.7 PK			1.29 V	317	115.4	6.3
3	*5795.00	110.2 AV			1.29 V	317	103.9	6.3
4	#5989.81	53.5 PK	68.2	-14.7	1.29 V	317	47.2	6.3
5	11590.00	50.2 PK	74.0	-23.8	1.68 V	19	33.6	16.6
6	11590.00	38.5 AV	54.0	-15.5	1.68 V	19	21.9	16.6
7	#17385.00	51.1 PK	68.2	-17.1	1.50 V	156	29.3	21.8

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

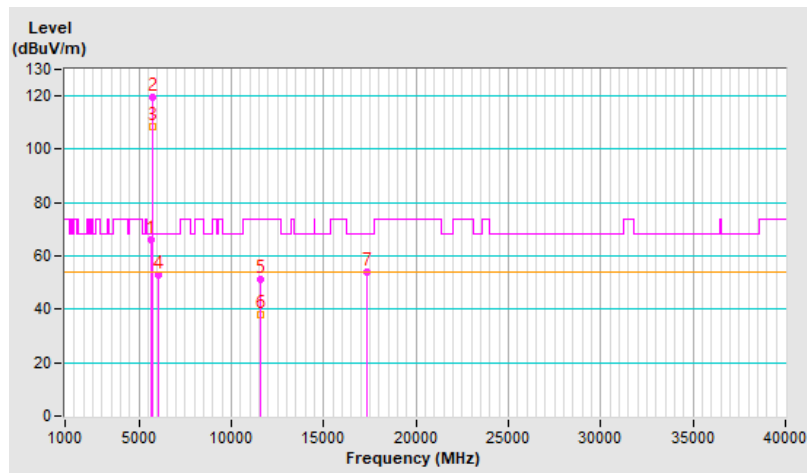


RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5646.33	66.2 PK	68.2	-2.0	2.02 H	223	60.3	5.9
2	*5775.00	119.5 PK			2.02 H	223	113.4	6.1
3	*5775.00	108.3 AV			2.02 H	223	102.2	6.1
4	#6024.22	52.9 PK	68.2	-15.3	2.02 H	223	46.5	6.4
5	11550.00	51.4 PK	74.0	-22.6	1.16 H	9	34.7	16.7
6	11550.00	38.0 AV	54.0	-16.0	1.16 H	9	21.3	16.7
7	#17325.00	54.1 PK	68.2	-14.1	1.44 H	195	32.9	21.2

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.

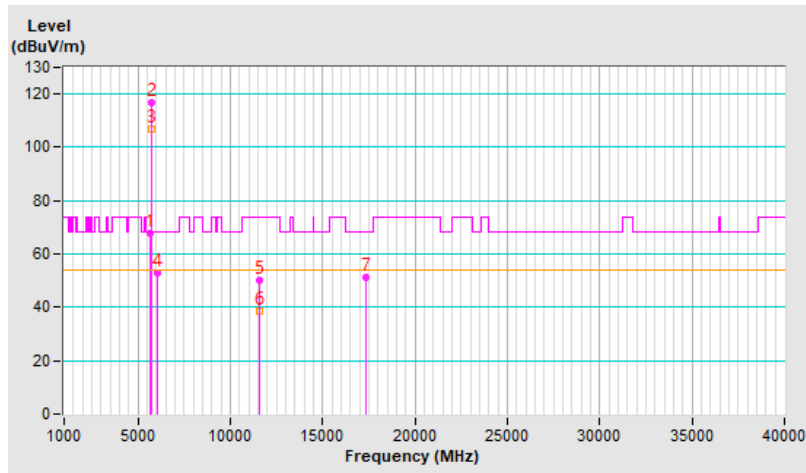


RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Louis Yang		

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	#5646.81	67.6 PK	68.2	-0.6	1.20 V	317	61.7	5.9
2	*5775.00	116.8 PK			1.20 V	317	110.7	6.1
3	*5775.00	106.8 AV			1.20 V	317	100.7	6.1
4	#6023.98	53.1 PK	68.2	-15.1	1.20 V	317	46.7	6.4
5	11550.00	49.9 PK	74.0	-24.1	1.73 V	1	33.2	16.7
6	11550.00	38.4 AV	54.0	-15.6	1.73 V	1	21.7	16.7
7	#17325.00	51.1 PK	68.2	-17.1	1.50 V	136	29.9	21.2

Remarks:

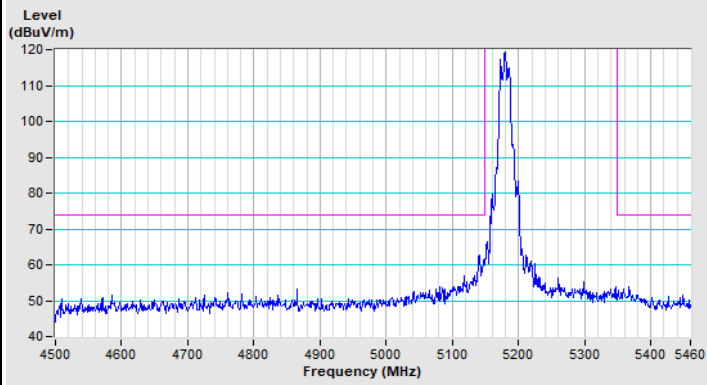
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency,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



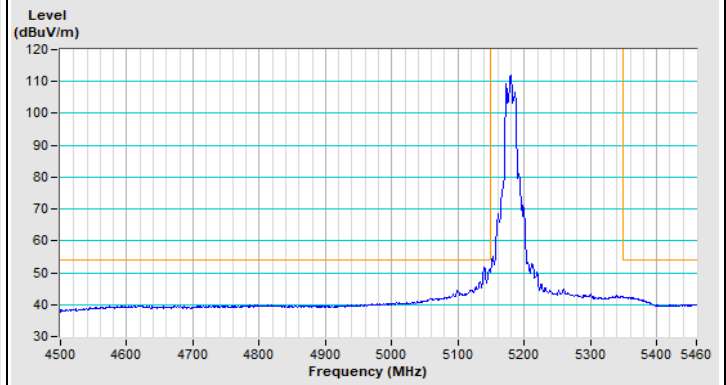


Plot of Band Edge_Mode A

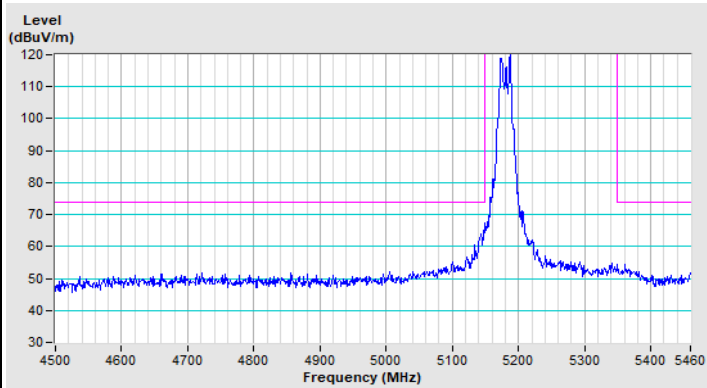
802.11a Channel 36



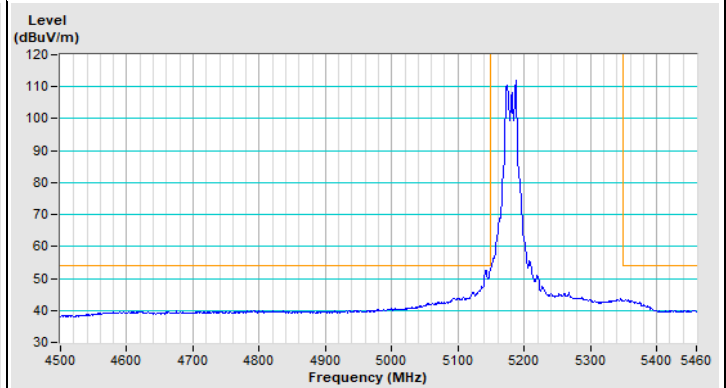
Horizontal (Peak)



Horizontal (Average)

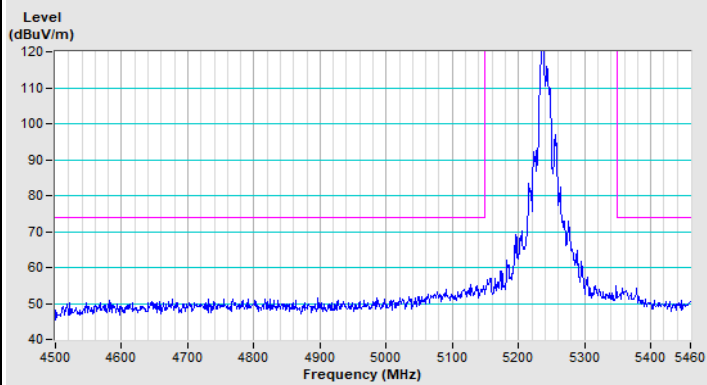


Vertical (Peak)

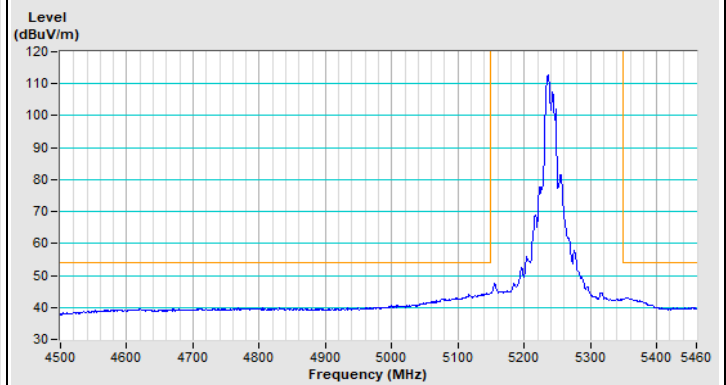


Vertical (Average)

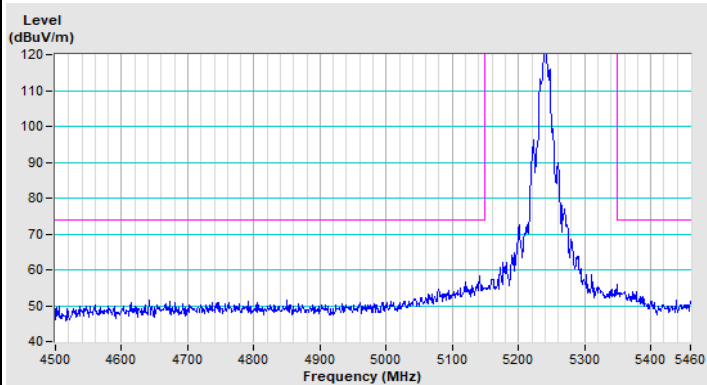
802.11a Channel 48



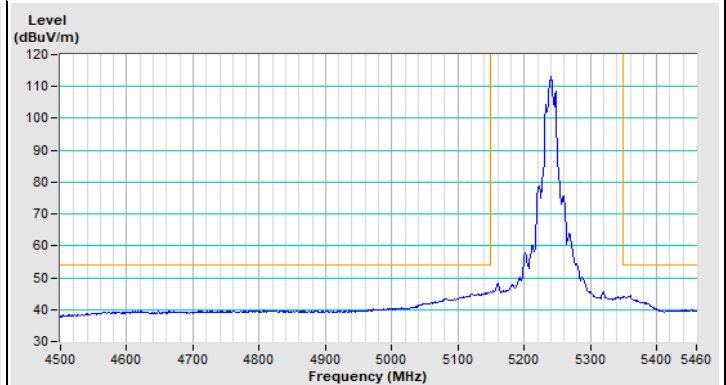
Horizontal (Peak)



Horizontal (Average)

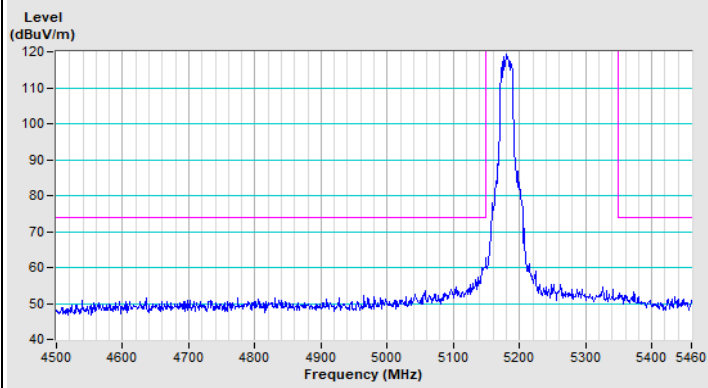


Vertical (Peak)

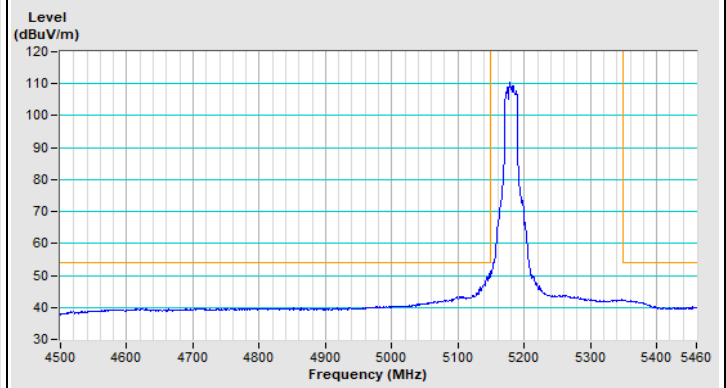


Vertical (Average)

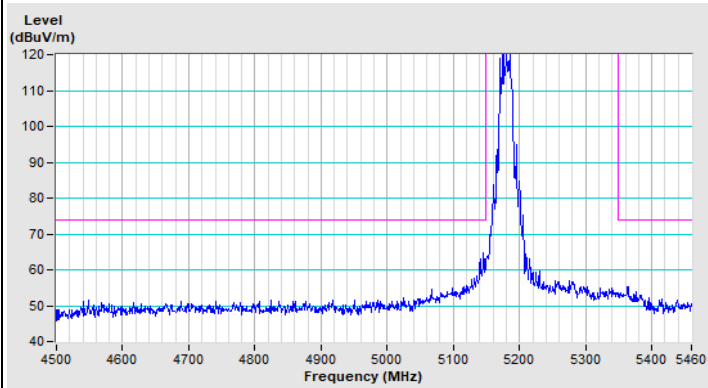
802.11ax (HE20) Channel 36



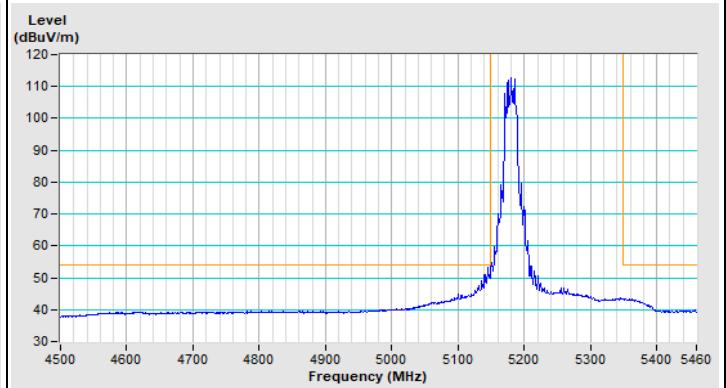
Horizontal (Peak)



Horizontal (Average)

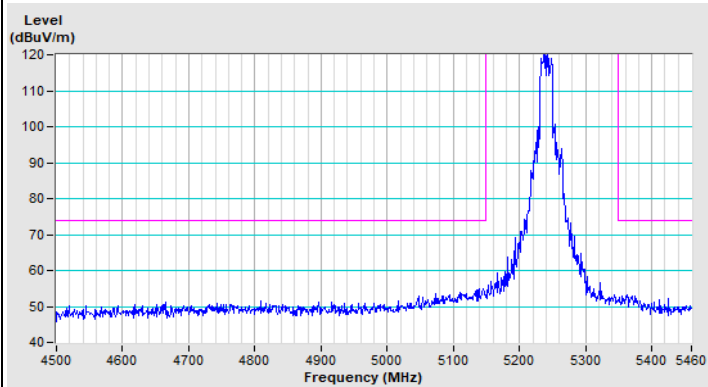


Vertical (Peak)

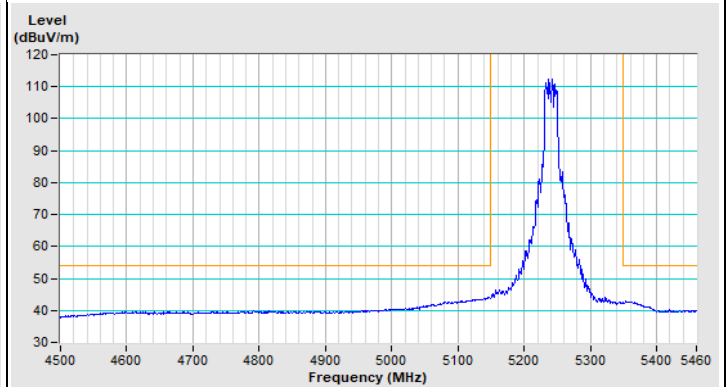


Vertical (Average)

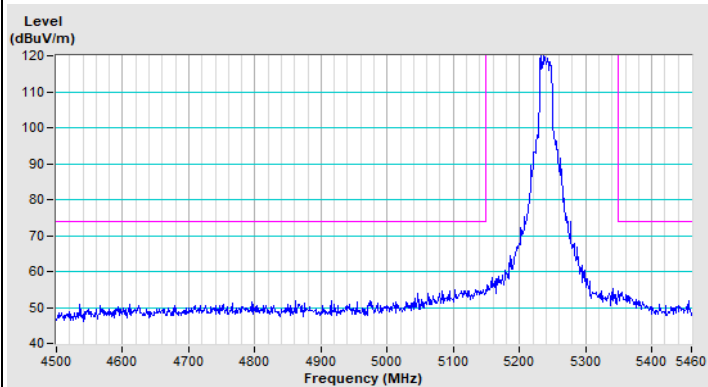
802.11ax (HE20) Channel 48



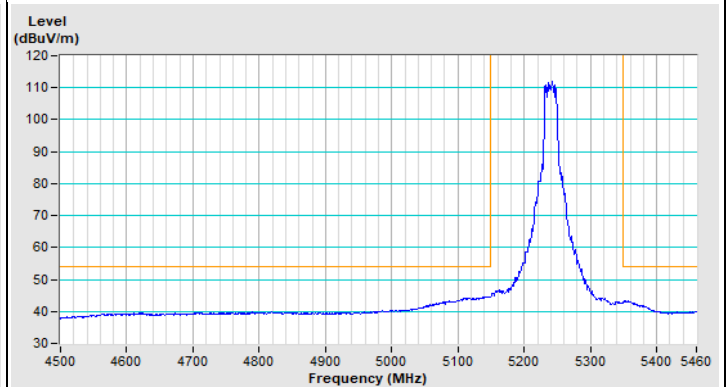
Horizontal (Peak)



Horizontal (Average)

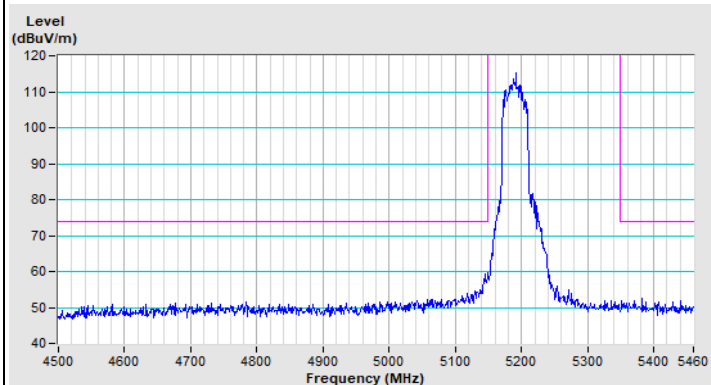


Vertical (Peak)

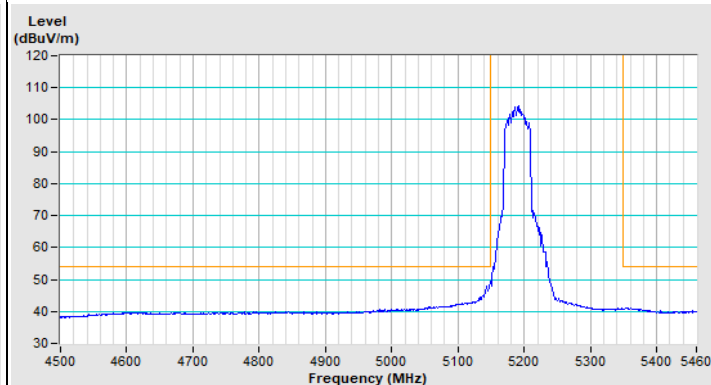


Vertical (Average)

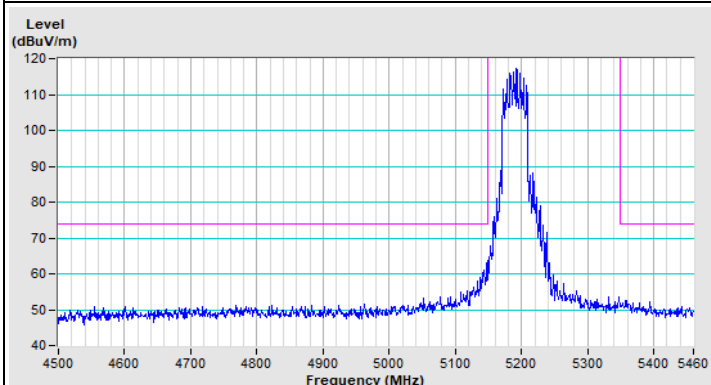
802.11ax (HE40) Channel 38



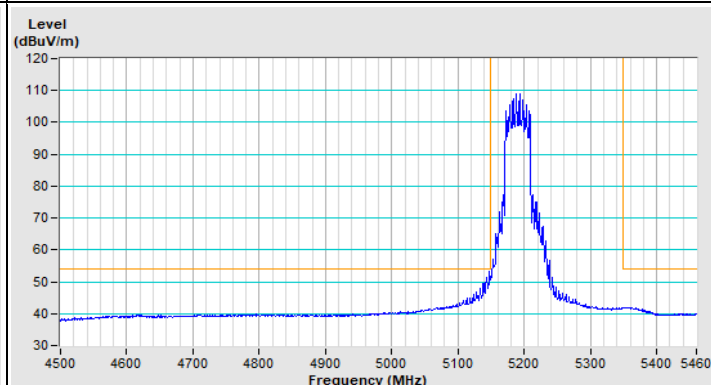
Horizontal (Peak)



Horizontal (Average)

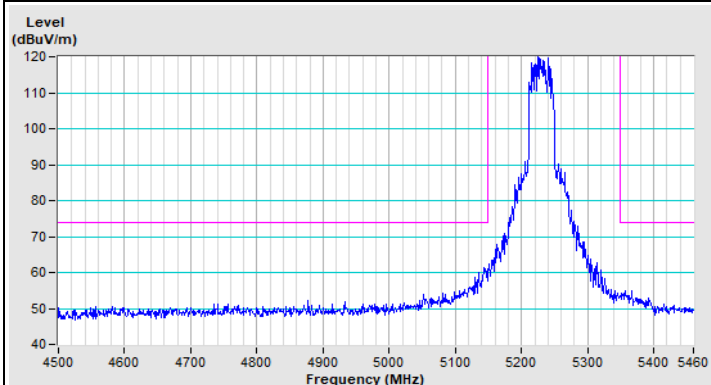


Vertical (Peak)

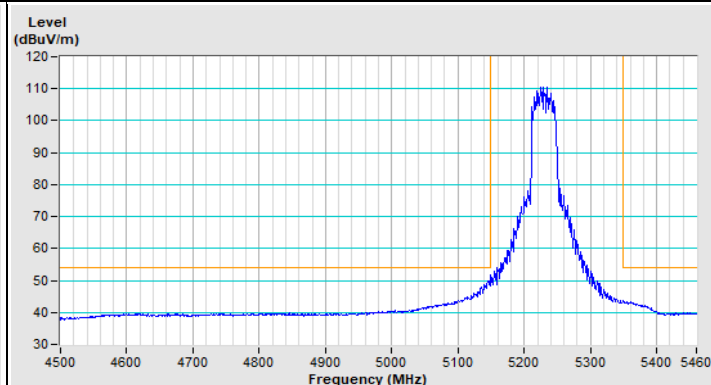


Vertical (Average)

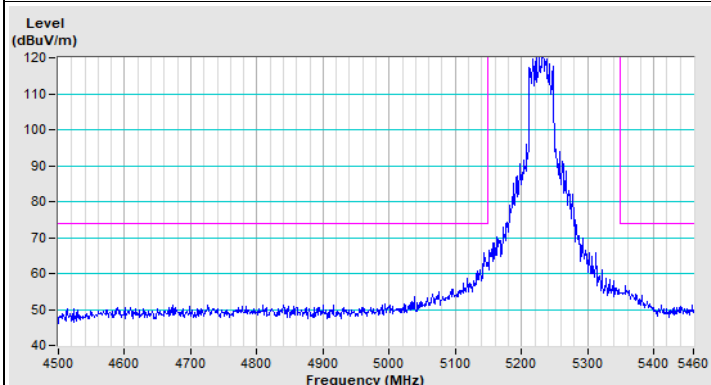
802.11ax (HE40) Channel 46



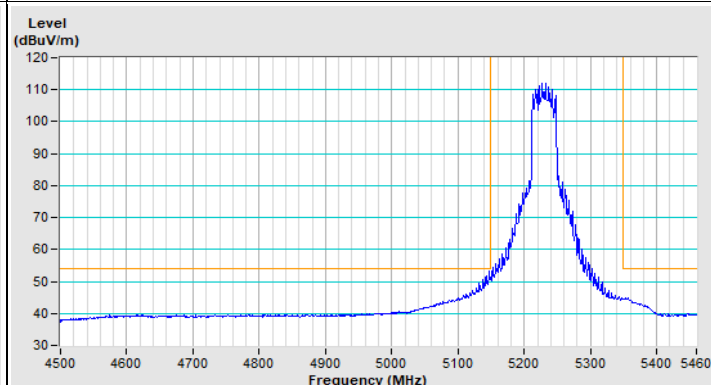
Horizontal (Peak)



Horizontal (Average)

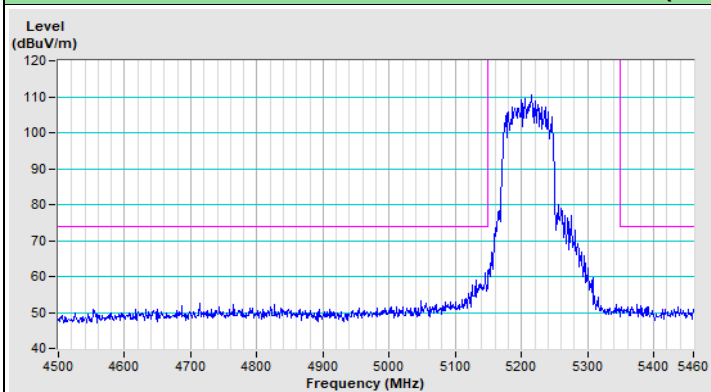


Vertical (Peak)

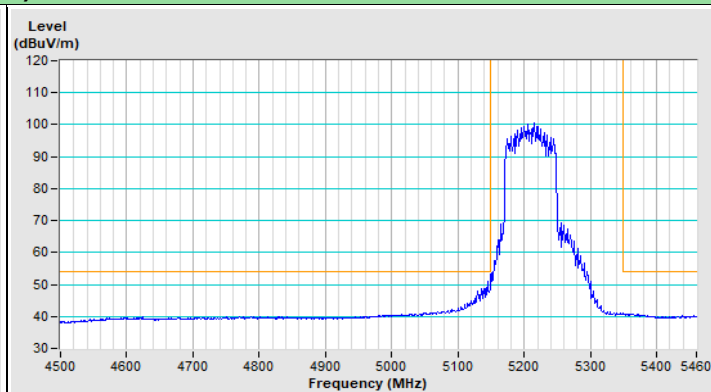


Vertical (Average)

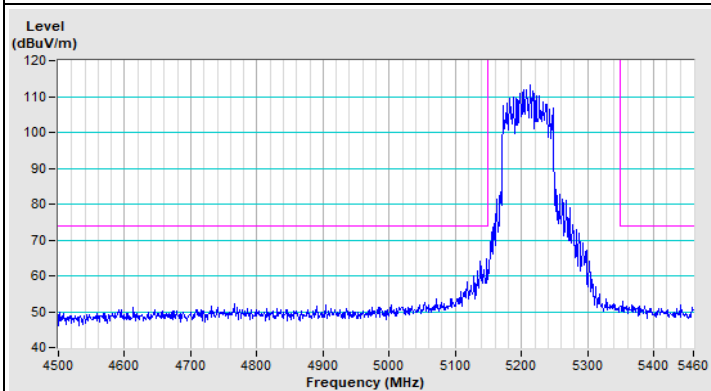
802.11ax (HE80) Channel 42



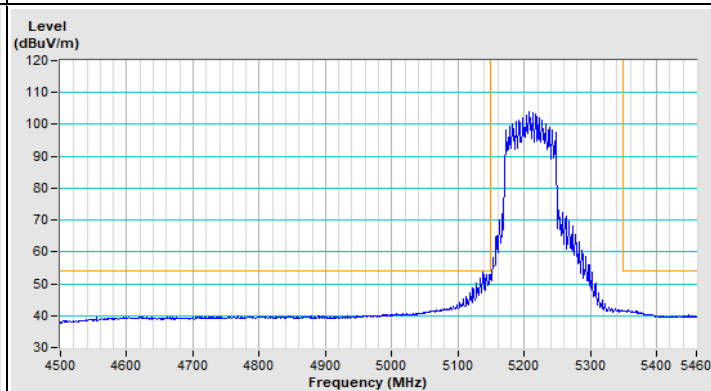
Horizontal (Peak)



Horizontal (Average)



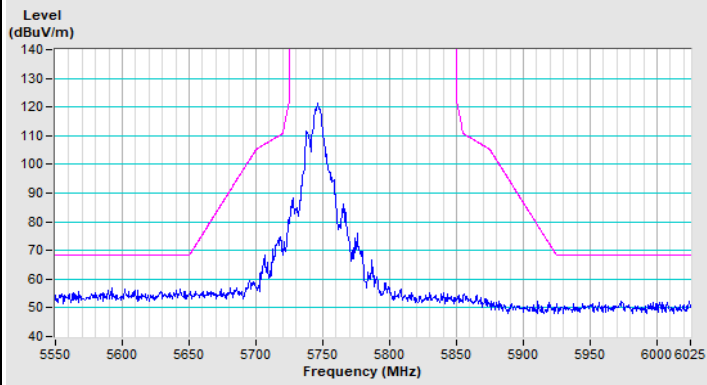
Vertical (Peak)



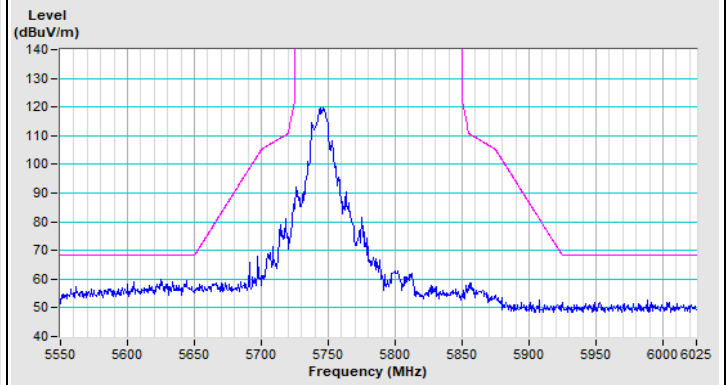
Vertical (Average)

Plot of Band Edge_Mode B

802.11a Channel 149

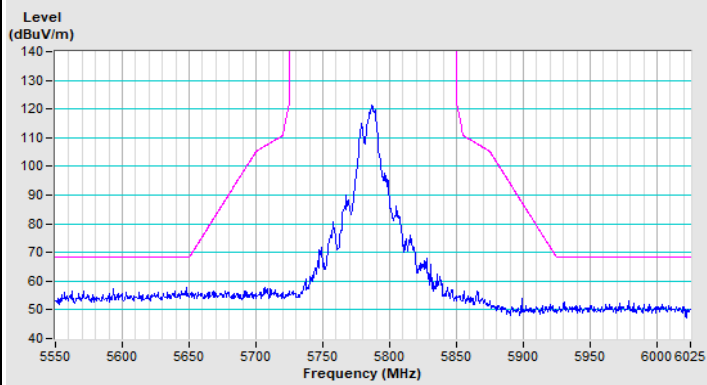


Horizontal (Peak)

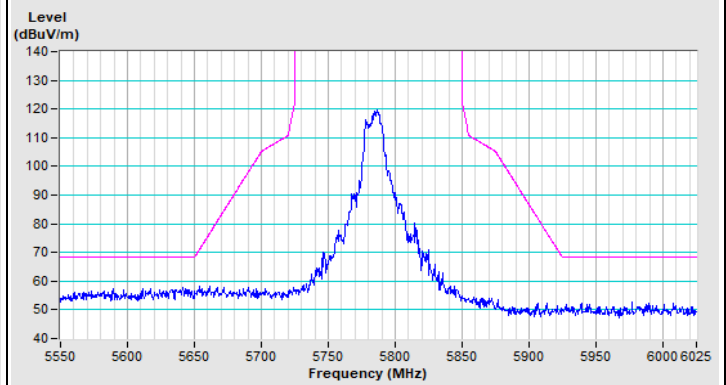


Vertical (Peak)

802.11a Channel 157

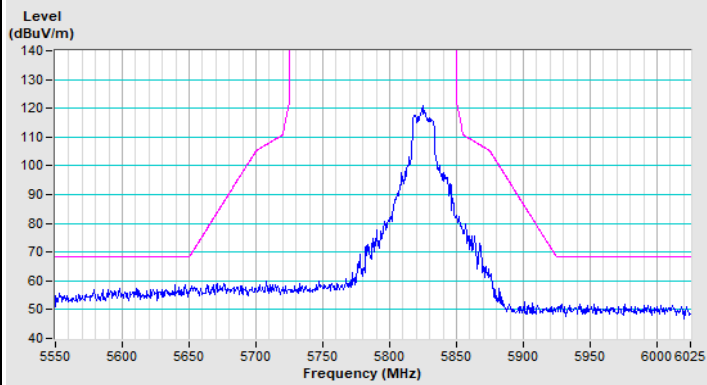


Horizontal (Peak)

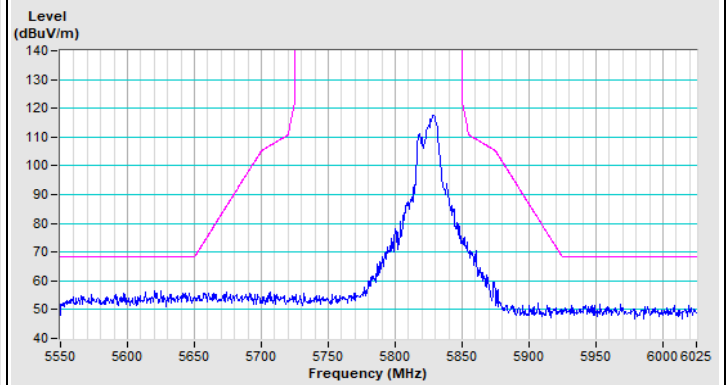


Vertical (Peak)

802.11a Channel 165

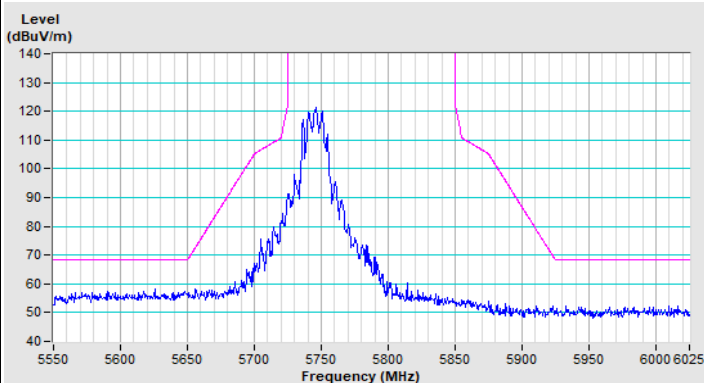
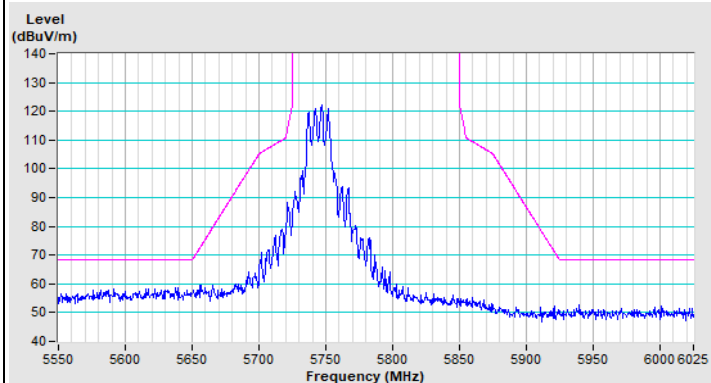


Horizontal (Peak)

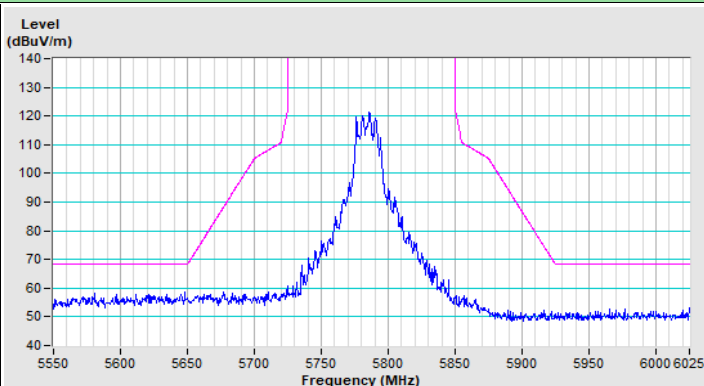
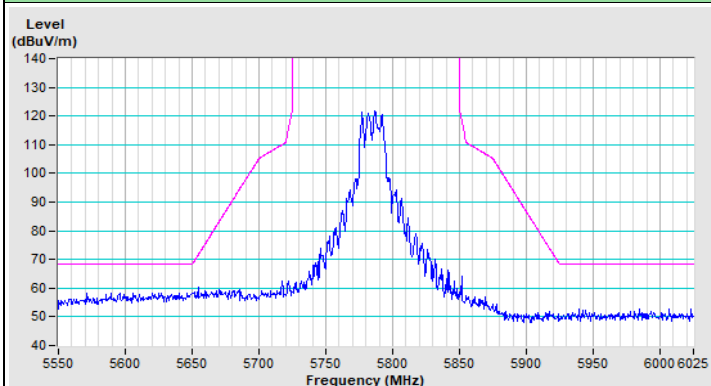


Vertical (Peak)

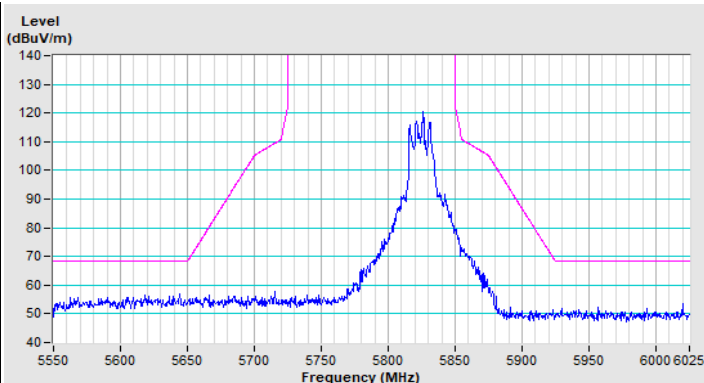
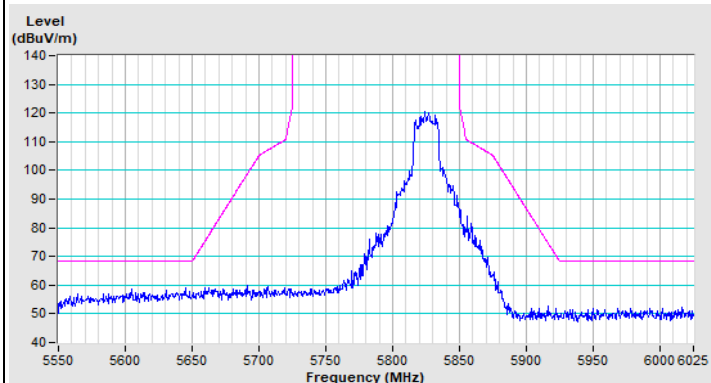
802.11ax (HE20) Channel 149



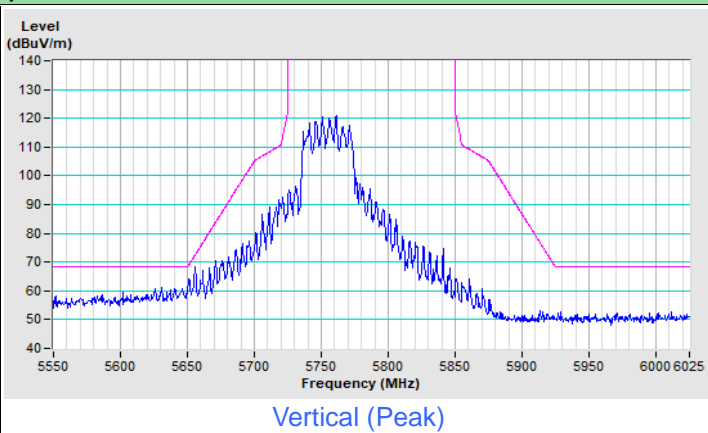
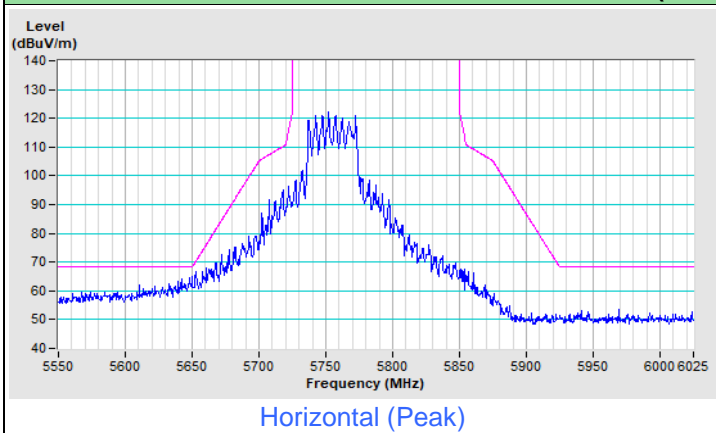
802.11ax (HE20) Channel 157



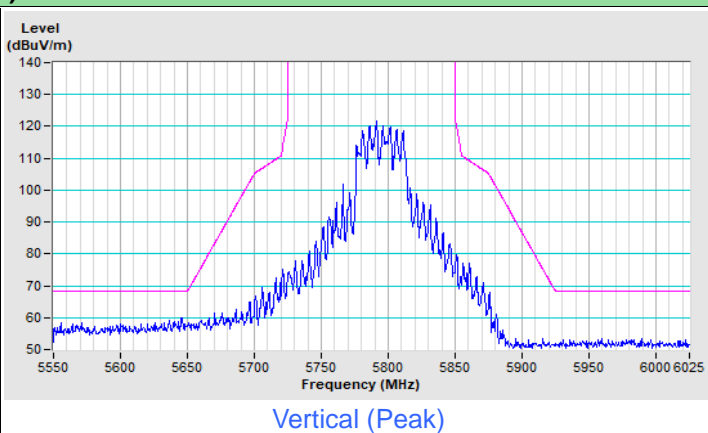
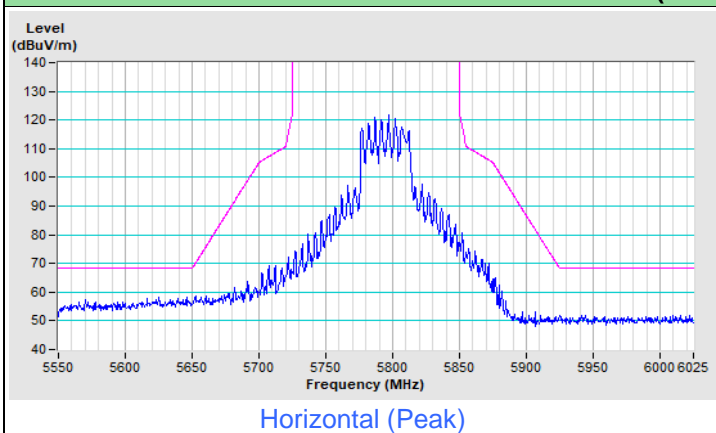
802.11ax (HE20) Channel 165



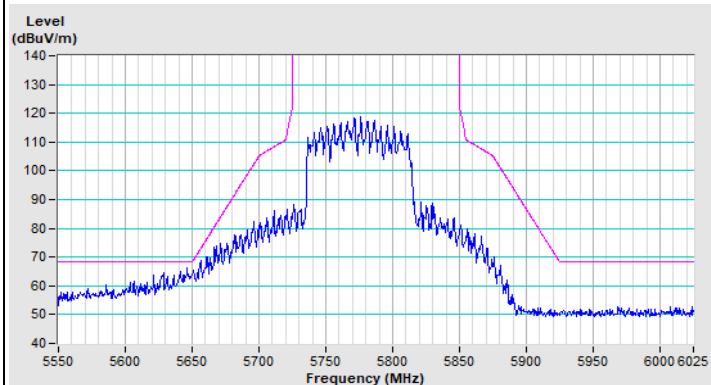
802.11ax (HE40) Channel 151



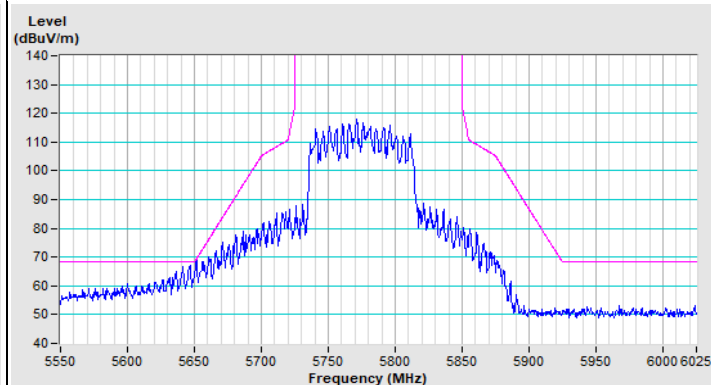
802.11ax (HE40) Channel 159



802.11ax (HE80) Channel 155



Horizontal (Peak)



Vertical (Peak)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

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

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

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Email: service.adt@bureauveritas.com

Web Site: <http://ee.bureauveritas.com.tw>

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

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