

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)

Report No.: RFBEZH-WTW-P23010321

FCC ID: EROM202215001

Product: 10.1 in. Wireless Touch Screen

Brand: Crestron Electronics, Inc.

Model No.: M202215001

Series Model: TST-1080

Received Date: 2023/3/2

Test Date: 2023/3/28 ~ 2023/5/5

Issued Date: 2023/5/29

Applicant: Crestron Electronics, Inc.

Address: 15 Volvo Drive, Rockleigh, NJ 07647

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

FCC Registration / 198487 / TW2021

Designation Number:

Approved by: Jeremy Lin, **Date:** 2023/5/29
Jeremy Lin / Project Engineer

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Prepared by : Annie Chang / Senior Specialist

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Table of Contents

Release Control Record	4
1 Certificate.....	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Supplementary Information	6
3 General Information	7
3.1 General Description	7
3.2 Antenna Description of EUT	8
3.3 Channel List	9
3.4 Test Mode Applicability and Tested Channel Detail	10
3.5 Duty Cycle of Test Signal	12
3.6 Test Program Used and Operation Descriptions	14
3.7 Connection Diagram of EUT and Peripheral Devices	14
3.8 Configuration of Peripheral Devices and Cable Connections	15
4 Test Instruments	16
4.1 RF Output Power	16
4.2 Power Spectral Density	16
4.3 6 dB Bandwidth	16
4.4 Conducted Out of Band Emissions	16
4.5 AC Power Conducted Emissions	17
4.6 Unwanted Emissions below 1 GHz	18
4.7 Unwanted Emissions above 1 GHz	19
5 Limits of Test Items.....	20
5.1 RF Output Power	20
5.2 Power Spectral Density	20
5.3 6 dB Bandwidth	20
5.4 Conducted Out of Band Emissions	20
5.5 AC Power Conducted Emissions	20
5.6 Unwanted Emissions below 1 GHz	21
5.7 Unwanted Emissions above 1 GHz	21
6 Test Arrangements	22
6.1 RF Output Power	22
6.1.1 Test Setup	22
6.1.2 Test Procedure	22
6.2 Power Spectral Density	22
6.2.1 Test Setup	22
6.2.2 Test Procedure	22
6.3 6 dB Bandwidth	23
6.3.1 Test Setup	23
6.3.2 Test Procedure	23
6.4 Conducted Out of Band Emissions	23
6.4.1 Test Setup	23
6.4.2 Test Procedure	23
6.5 AC Power Conducted Emissions	24
6.5.1 Test Setup	24
6.5.2 Test Procedure	24
6.6 Unwanted Emissions below 1 GHz	25
6.6.1 Test Setup	25
6.6.2 Test Procedure	26
6.7 Unwanted Emissions above 1 GHz	27
6.7.1 Test Setup	27
6.7.2 Test Procedure	27
7 Test Results of Test Item	28

7.1	RF Output Power	28
7.2	Power Spectral Density	33
7.3	6 dB Bandwidth	37
7.4	Conducted Out of Band Emissions	40
7.5	AC Power Conducted Emissions	48
7.6	Unwanted Emissions below 1 GHz	56
7.7	Unwanted Emissions above 1 GHz	58
8	Pictures of Test Arrangements	86
9	Information of the Testing Laboratories	87

Release Control Record

Issue No.	Description	Date Issued
RFBEZH-WTW-P23010321	Original release.	2023/5/29

1 Certificate

Product: 10.1 in. Wireless Touch Screen

Brand: Crestron Electronics, Inc.

Test Model: M202215001

Series Model: TST-1080

Sample Status: Engineering sample

Applicant: Crestron Electronics, Inc.

Test Date: 2023/3/28 ~ 2023/5/5

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)

Measurement procedure: ANSI C63.10-2013
KDB 558074 D01 15.247 Meas Guidance v05r02
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 C (Section 15.247)			
Standard / Clause	Test Item	Result	Remark
15.247(b)	RF Output Power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.247(a)(2)	6 dB Bandwidth	Pass	Meet the requirement of limit.
15.247(d)	Conducted Out of Band Emissions	Pass	Meet the requirement of limit.
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -5.81 dB at 0.15399 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -6.2 dB at 509.81 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -2.4 dB at 2483.50 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex 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) (±)
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.63 dB
AC Power Conducted Emissions	150 kHz ~ 30 MHz	3.00 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.38 dB
	30 MHz ~ 1 GHz	5.7 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 6 GHz	4.83 dB
	6 GHz ~ 18 GHz	5.37 dB
	18 GHz ~ 40 GHz	5.24 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

Product	10.1 in. Wireless Touch Screen
Brand	Crestron Electronics, Inc.
Test Model	M202215001
Series Model	TST-1080
Model Difference	Marketing Differentiation
Status of EUT	Engineering sample
Power Supply Rating	3.1 ~ 4.35Vdc from battery or 9Vdc, 3A from USB type C port or 24Vdc, 1.25A from Wall dock or 24Vdc, 1.25A from Table dock
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in VHT mode 1024QAM for OFDMA in 11ax mode only
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	Up to 573.5 Mbps
Operating Frequency	2.412 GHz ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20): 11 802.11n (HT40), VHT40, 802.11ax (HE40): 7
Resource Unit (RU)	Single RU: 26-tone, 52-tone, 106-tone, 242-tone, 484-tone
Output Power	367.786 mW (25.66 dBm)

Note:

1. The EUT use following accessories:

Item	Brand	Model (Part Number)	Spec.
Wall Dock	Crestron	TST-1080-DSW	Adapter:NBS30G240125D5 AC Input : 100-240V, 50~60Hz, 0.6A DC Output : 24V 1.25A
Table Dock	Crestron	TST-1080-DS	Adapter:NBS30G240125D5 AC Input : 100-240V, 50~60Hz, 0.6A DC Output : 24V 1.25A

2. The EUT use following Adapters (Support unit) for test:

Adapter	Brand	Model No.	Spec.
Adapter 1	Innergie	ADP-30KW B	AC Input: 100-240V, 50~60Hz, 1.0A DC Output: 5V 3A or 9V 3A or 12V 2.5A or 15V 2A or 20V 1.5A
Adapter 2	Crestron	NBS30G240125D5	AC input: 100-240V, 50/60Hz, 0.6A DC output: 30.0W, 24.0V, 1.25A

3. There are Bluetooth and WLAN (2.4 GHz & 5 GHz & 6 GHz) technology used for the EUT.

4. WLAN 2.4 GHz & WLAN 5 GHz & WLAN 6 GHz & Bluetooth technology cannot transmit at same time.

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer 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.	Gain (dBi)			Antenna Type	Connector Type
	2412MHz	2437MHz	2462MHz		
1	2.78	2.52	2.11	FPC dipole	ipex(MHF)
2	-0.68	-0.33	0.08	FPC dipole	ipex(MHF)

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

2. The EUT incorporates a MIMO function:

2.4 GHz Band		
Modulation Mode	TX & RX Configuration	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
802.11ax (HE20) (RU26/52/106/242)	2TX	2RX
802.11ax (HE40) (RU26/52/106/242/484)	2TX	2RX

Note:

1. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), VHT mode for 20 MHz (40 MHz) and 802.11ax mode for 20 MHz (40 MHz) therefore the manufacturer will control the power for 802.11n/VHT mode is same as the 802.11ax mode or more lower than it and investigated worst case to representative mode in test report.
2. The EUT support OFDMA and Partial RU mode, therefore partial RU combination were investigated and the worst case scenario was identified, only chosen the worst case to representative mode in test report. (please refer to section 3.4 for more details)

3.3 Channel List

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

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

Channel	Frequency	Channel	Frequency
3	2422 MHz	7	2442 MHz
4	2427 MHz	8	2447 MHz
5	2432 MHz	9	2452 MHz
6	2437 MHz		

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. EUT can be used in the following ways: XYZ 3-axis. Pre-scan in these ways and find the worst case as a representative test condition. 2. For Unwanted Emission below/ above 1 GHz has Battery / EUT with wall dock / EUT with table dock / EUT with USB cable(Adapter) / EUT with USB cable(Laptop) of power supply . Pre-scan these modes and find the worst case as a representative test condition.
Worst Case:	1. X/ Y/ Z Worst Condition: Y Axis for Unwanted Emission above 1GHz and Unwanted Emission below 1GHz. 2. For Unwanted Emission below/ above 1 GHz EUT with wall dock mode is the worst case of power supply.

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	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		VHT20	CDD	1, 6, 11	BPSK	MCS0
		VHT40	CDD	3, 6, 9	BPSK	MCS0
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
		802.11ax (HE20) 26-tone RU	CDD	1(26/0), 6(26/0), 11(26/8)	BPSK	MCS0
		802.11ax (HE20) 52-tone RU	CDD	1(52/37), 6(52/37), 11(52/40)	BPSK	MCS0
		802.11ax (HE20) 106-tone RU	CDD	1(106/53), 6(106/53), 11(106/54)	BPSK	MCS0
Power Spectral Density / 6 dB Bandwidth	A	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
		802.11ax (HE20) 26-tone RU	CDD	1(26/0), 6(26/0), 11(26/8)	BPSK	MCS0
		802.11ax (HE20) 52-tone RU	CDD	1(52/37), 6(52/37), 11(52/40)	BPSK	MCS0
		802.11ax (HE20) 106-tone RU	CDD	1(106/53), 6(106/53), 11(106/54)	BPSK	MCS0
Conducted Out of Band Emissions	A	802.11b	CDD	1, 6, 11	BPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
AC Power Conducted Emissions	A	802.11ax (HE40)	CDD	9	BPSK	MCS0
	B	802.11ax (HE40)	CDD	9	BPSK	MCS0
	C	802.11ax (HE40)	CDD	9	BPSK	MCS0
	D	802.11ax (HE40)	CDD	9	BPSK	MCS0

Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
Unwanted Emissions below 1 GHz	A	802.11ax (HE40)	CDD	9	BPSK	MCS0
Unwanted Emissions above 1 GHz	A	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
		802.11ax (HE20) 26-tone RU	CDD	1(26/0), 6(26/0), 11(26/8)	BPSK	MCS0
		802.11ax (HE20) 52-tone RU	CDD	1(52/37), 6(52/37), 11(52/40)	BPSK	MCS0
		802.11ax (HE20) 106-tone RU	CDD	1(106/53), 6(106/53), 11(106/54)	BPSK	MCS0
EUT Configure Mode:	A	EUT with wall dock				
	B	EUT with table dock				
	C	EUT with USB cable(Adapter)				
	D	EUT with USB cable(Laptop)				

3.5 Duty Cycle of Test Signal

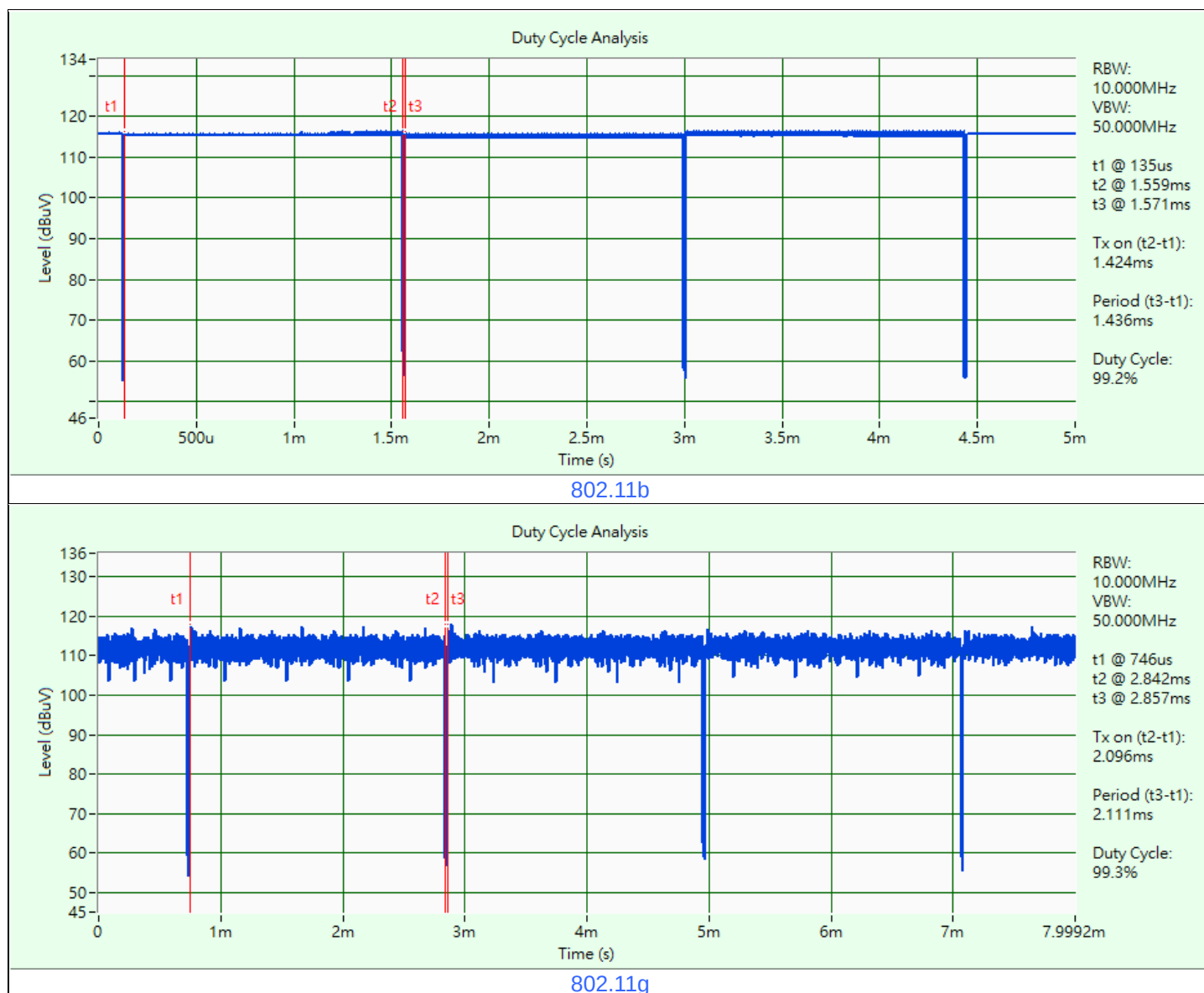
Mode A

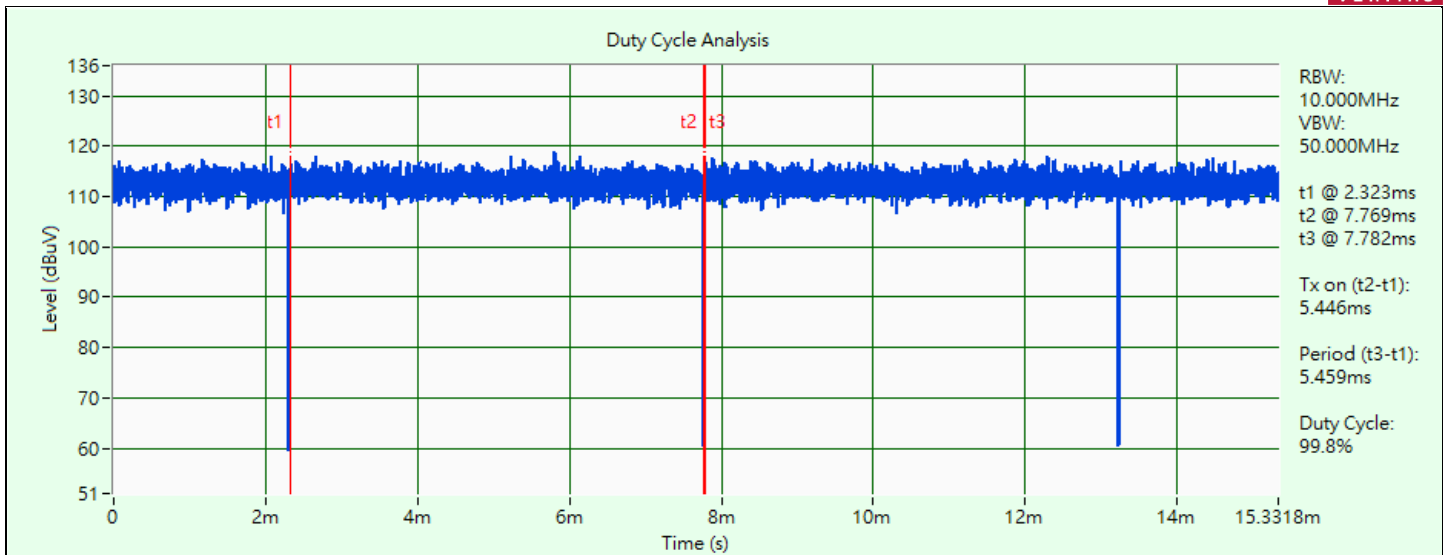
802.11b: Duty cycle = 1.424 ms / 1.436 ms x 100% = 99.2%

802.11g: Duty cycle = 2.096 ms / 2.111 ms x 100% = 99.3%

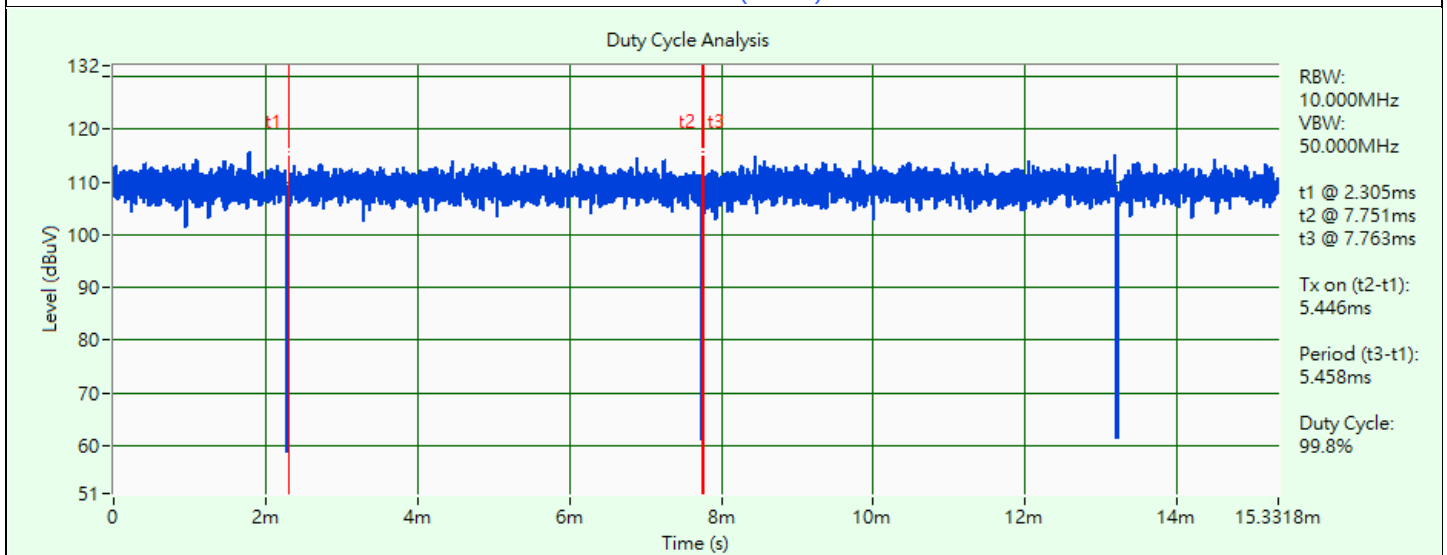
802.11ax (HE20): Duty cycle = 5.446 ms / 5.459 ms x 100% = 99.8%

802.11ax (HE40): Duty cycle = 5.446 ms / 5.458 ms x 100% = 99.8%





802.11ax (HE20)



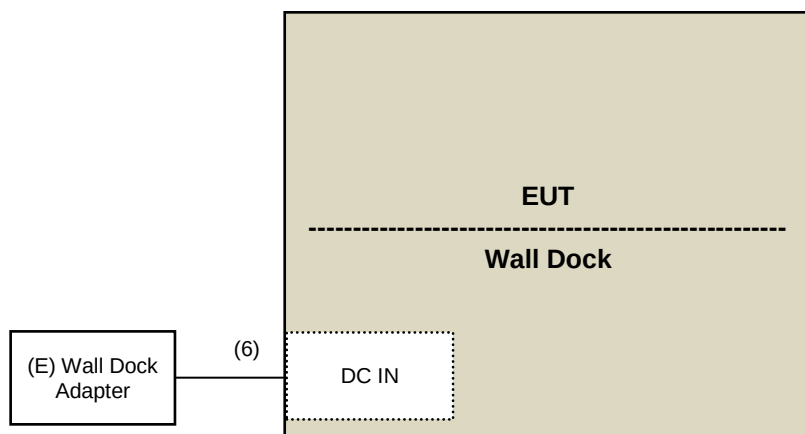
802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

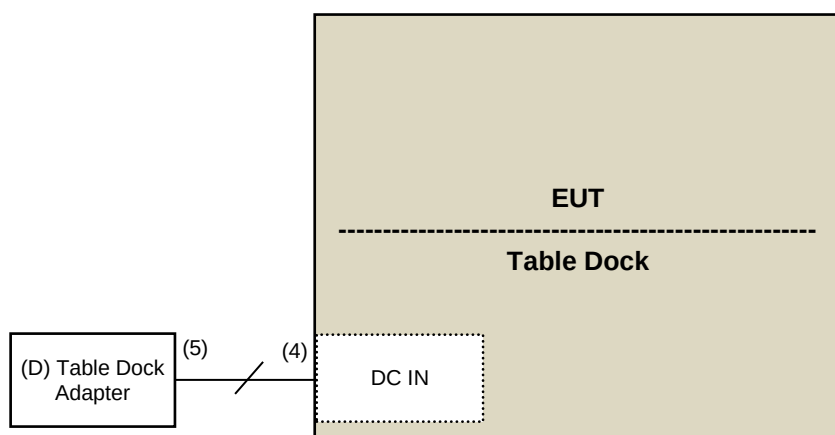
Controlling software (QRCT V4.0) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

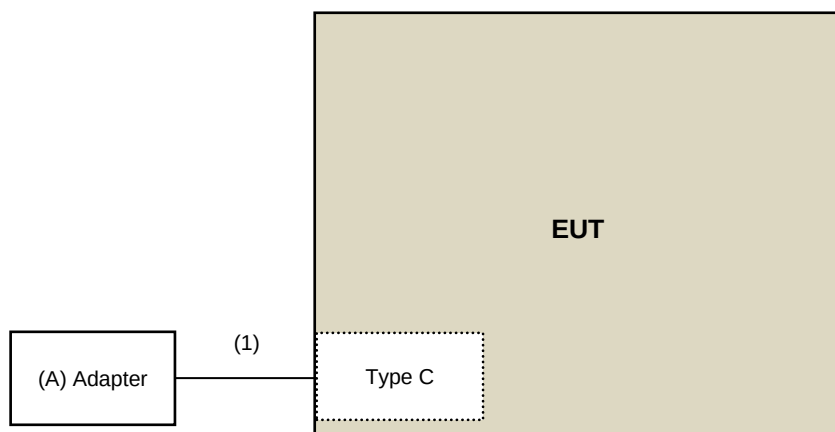
Mode A



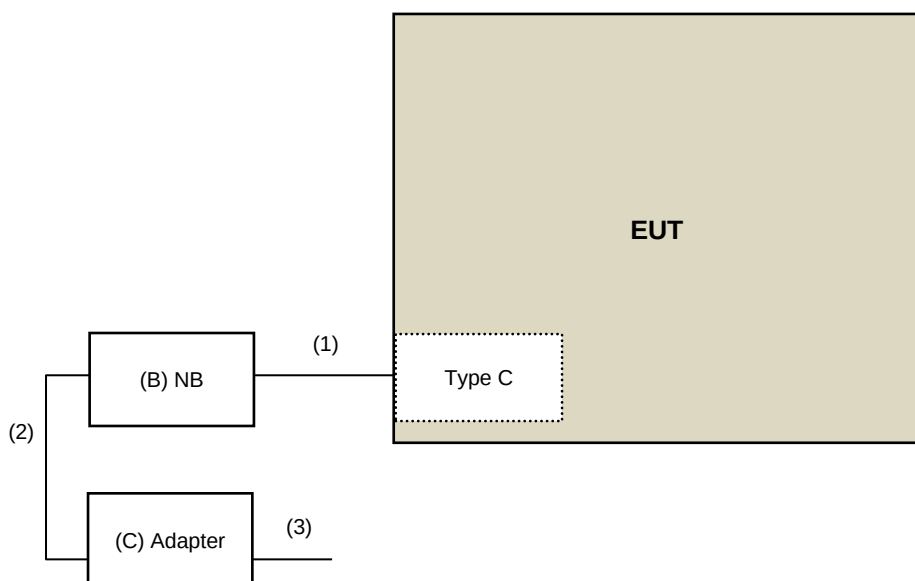
Mode B



Mode C



Mode D



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	Innergie	ADP-30KW B	N/A	N/A	Supplied by applicant
B	NB	DELL	P90F	N/A	N/A	Provided by Lab
C	Adapter	DELL	LA65NS2-01	N/A	N/A	Provided by Lab
D	Table Dock Adapter	Crestron	NBS30G240125D5	N/A	N/A	Supplied by applicant
E	Wall Dock Adapter	Crestron	NBS30G240125D5	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	Type C to C Cable	1	2	Y	0	Supplied by applicant
2	DC Cable	1	1.7	Y	0	Provided by Lab
3	AC Cable	1	0.9	N	0	Provided by Lab
4	DC Cable	1	1.7	Y	0	Supplied by applicant
5	DC Cable	1	1.8	Y	0	Supplied by applicant
6	DC Cable	1	1.8	Y	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
MIMO Power measurement Test set (4X4) KEYSIGHT	U2021XA	U2021XA_001	2022/6/13	2023/6/12
MXG Vector Signal Generator KEYSIGHT	N5182B	MY53052658	2022/5/9	2023/5/8
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1339443	2022/5/29	2023/5/28
Spectrum Analyzer KEYSIGHT	N9030A	MY54490260	2022/7/14	2023/7/13
Spectrum Analyzer R&S	FSV40	101042	2022/9/5	2023/9/4
		101544	2022/5/9	2023/5/8
Temperature & Humidity Chamber TERCHY	MHU-225AU	920409	2022/6/27	2023/6/26
Voltage Meter FLUKE	179	89610322	2022/10/3	2023/10/2

Notes:

1. The test was performed in LK - Oven
2. Tested Date: 2023/4/24 ~ 2023/5/5

4.2 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.3 6 dB Bandwidth

Refer to section 4.1 to get information of the instruments.

4.4 Conducted Out of Band Emissions

Refer to section 4.1 to get information of the instruments.

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal LYNICS	0900510	E1-011285	2022/9/19	2023/9/18
		E1-011286	2022/9/19	2023/9/18
50 Ohms Terminator LYNICS	0900510	E1-01-305	2023/2/13	2024/2/12
Attenuator STI	STI02-2200-10	NO.4	2022/9/2	2023/9/1
DC LISN R&S	ESH3-Z6	100219	2022/8/2	2023/8/1
		844950/018	2022/8/2	2023/8/1
DC LISN Schwarzbeck	NNLK 8121	8121-808	2022/4/29	2023/4/28
High Voltage Probe Schwarzbeck	TK9420	00982	2022/12/14	2023/12/13
Isolation Transformer Erika Fiedler	D-65396	017	2022/9/8	2023/9/7
LISN R&S	ENV216	101196	2022/5/24	2023/5/23
LISN Schwarzbeck	NNLK 8121	8121-731	2022/5/26	2023/5/25
		8121-00759	2022/8/18	2023/8/17
	NNLK8129	8129229	2022/6/8	2023/6/7
	NSLK 8128	8128-244	2022/11/8	2023/11/7
RF Coaxial Cable Commate	5D-FB	Cable-CO5-01	2023/1/19	2024/1/18
Software BVADT	Cond_V7.3.7.4	N/A	N/A	N/A
Test Receiver R&S	ESR3	102412	2022/12/21	2023/12/20

Notes:

1. The test was performed in Linkou Conduction 5.
2. Tested Date: 2023/3/28

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
* LOOP ANTENNA EMCI	LPA600	270	2021/9/2	2023/9/1
Bi_Log Antenna Schwarzbeck	VULB 9168	137	2022/10/21	2023/10/20
Coupling/Dcoupling Network Schwarzbeck	CDNE-M2	00097	2022/6/1	2023/5/31
	CDNE-M3	00091	2022/6/1	2023/5/31
Pre_Amplifier EMCI	EMC001340	980269	2022/6/28	2023/6/27
Pre_Amplifier HP	8447D	2432A03504	2023/2/16	2024/2/15
RF Coaxial Cable Pacific	8D-FB	Cable-CH6-02	2022/6/30	2023/6/29
Software BVADT	Radiated_V7.7.1.1.1	N/A	N/A	N/A
	Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	101544	2022/5/9	2023/5/8
Test Receiver Agilent	N9038A	MY51210129	2023/3/24	2024/3/23
		MY51210137	2022/6/9	2023/6/8
Tower ADT	AT100	0306	N/A	N/A
Turn Table ADT	TT100	0306	N/A	N/A

Notes:

1. * The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA
2. The test was performed in Linkou 966 Chamber 6 (CH 6).
3. Tested Date: 2023/3/29

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Band Pass Filter MICRO-TRONICS	BRM17690	005	2022/5/26	2023/5/25
Boresight antenna tower fixture BV	BAF-02	6	N/A	N/A
High Pass Filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	2022/5/26	2023/5/25
Horn Antenna EMCO	3115	00028257	2022/11/13	2023/11/12
Horn Antenna ETS-Lindgren	3117-PA	00215857	2023/2/3	2024/2/2
Horn Antenna Schwarzbeck	BBHA 9170	212	2022/10/20	2023/10/19
Notch Filter MICRO-TRONICS	BRC50703-01	010	2022/5/26	2023/5/25
Pre-amplifier HP	8449B	3008A01201	2023/2/16	2024/2/15
Pre-amplifier (18GHz-40GHz) EMCI	EMC184045B	980175	2022/9/3	2023/9/2
Pre_Amplifier EMCI	EMC0126545	980076	2023/2/16	2024/2/15
	EMC184045B	980235	2023/2/16	2024/2/15
RF Coaxial Cable EM	EM102-KMKM-3.5+1M	EM102-KMKM-3.5+1M-01	2022/7/7	2023/7/6
RF Coaxial Cable EMCI	EMC104	190801	2022/9/20	2023/9/19
		190804	2022/9/20	2023/9/19
RF Coaxial Cable HUBER SUHNER	SF-104	Cable-CH6-01	2022/9/20	2023/9/19
Software BVADT	Radiated_V7.7.1.1.1	N/A	N/A	N/A
	Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	101042	2022/9/5	2023/9/4
		101544	2022/5/9	2023/5/8
Test Receiver Agilent	N9038A	MY51210137	2022/6/9	2023/6/8
Tower ADT	AT100	0306	N/A	N/A
Turn Table ADT	TT100	0306	N/A	N/A

Notes:

1. The test was performed in Linkou 966 Chamber 6 (CH 6).
2. Tested Date: 2023/3/30 ~ 2023/4/26

5 Limits of Test Items

5.1 RF Output Power

For systems using digital modulation in the 2400–2483.5 MHz bands: 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

The Maximum of Power Spectral Density Measurement is 8 dBm in any 3 kHz.

5.3 6 dB Bandwidth

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

5.4 Conducted Out of Band Emissions

Below 20 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

5.5 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.

5.6 Unwanted Emissions below 1 GHz

Radiated emissions up to 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

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).

5.7 Unwanted Emissions above 1 GHz

Radiated emissions above 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20 dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

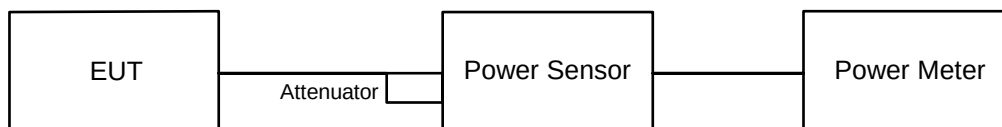
Notes:

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.

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup



6.1.2 Test Procedure

Peak Power:

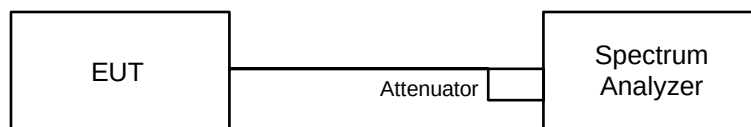
A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Average Power:

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

6.2 Power Spectral Density

6.2.1 Test Setup

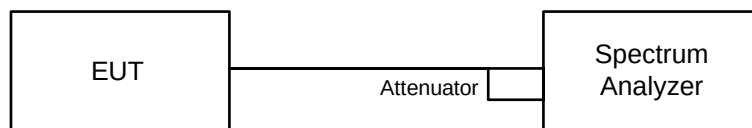


6.2.2 Test Procedure

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: 3 kHz.
- Set the VBW $\geq 3 \times$ RBW.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

6.3 6 dB Bandwidth

6.3.1 Test Setup

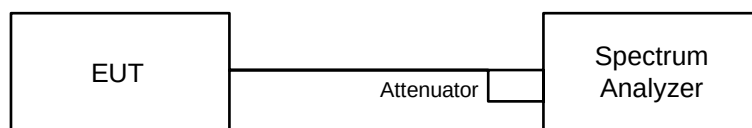


6.3.2 Test Procedure

- Set resolution bandwidth (RBW) = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ 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 Conducted Out of Band Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

MEASUREMENT PROCEDURE REF

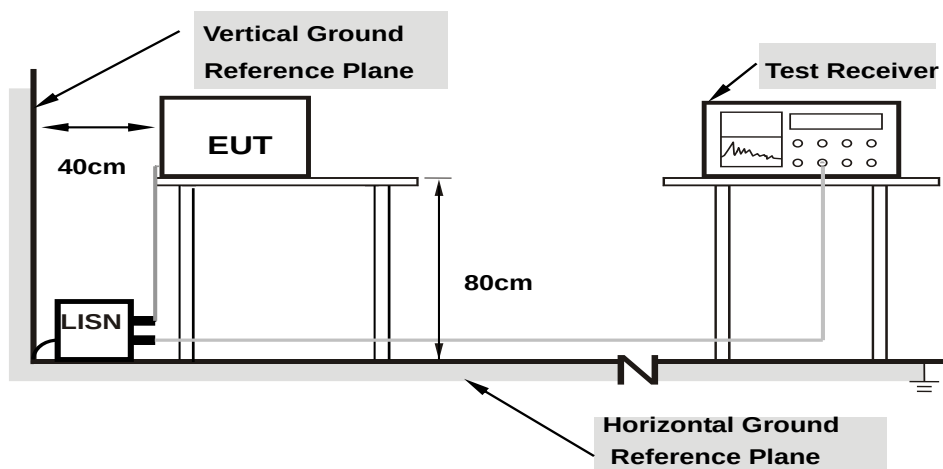
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

- Set RBW = 100 kHz.
- Set VBW ≥ 300 kHz.
- Detector = peak.
- Sweep = auto couple.
- Trace Mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

6.5 AC Power Conducted Emissions

6.5.1 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).

6.5.2 Test Procedure

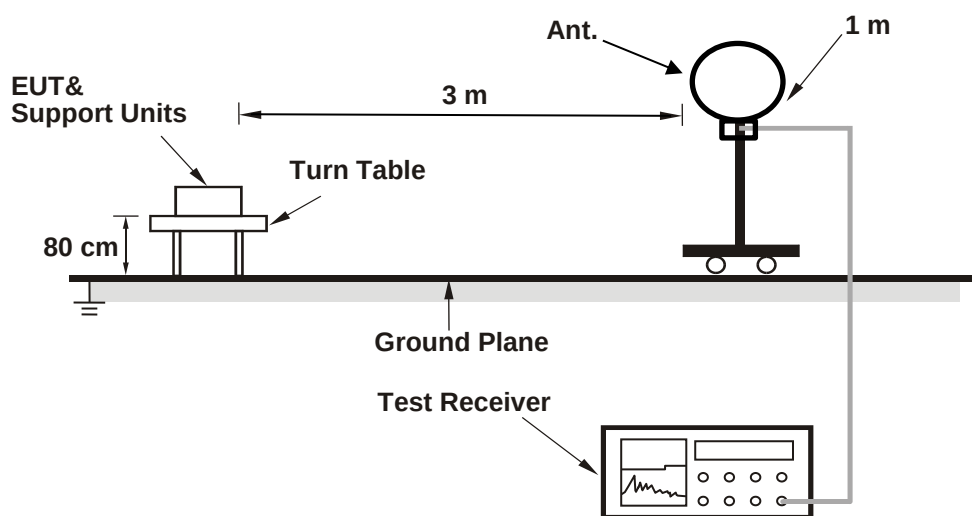
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The 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.

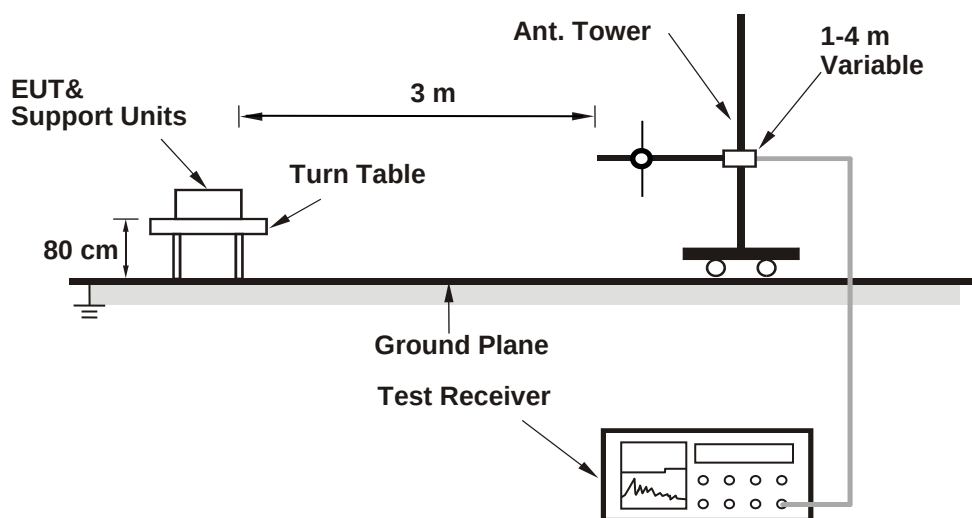
6.6 Unwanted Emissions below 1 GHz

6.6.1 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).

6.6.2 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

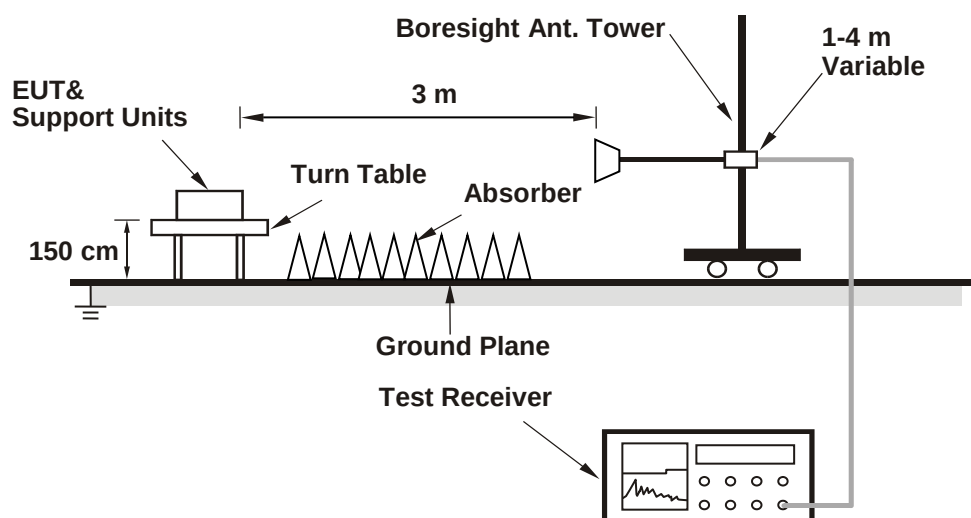
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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 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) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup



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

6.7.2 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

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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Mode A

For Peak Power

802.11b

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	16.02	17.11	91.399	19.61	30	Pass
6	2437	16.28	16.71	89.343	19.51	30	Pass
11	2462	16.48	16.55	89.649	19.53	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.78 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	22.07	22.23	328.174	25.16	30	Pass
6	2437	22.17	22.19	330.393	25.19	30	Pass
11	2462	22.34	22.13	334.701	25.25	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.78 dBi < 6 dBi, so the output power limit shall not be reduced.

VHT20

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	21.69	21.88	301.741	24.80	30	Pass
6	2437	21.82	21.90	306.936	24.87	30	Pass
11	2462	21.67	21.82	298.947	24.76	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.78 dBi < 6 dBi, so the output power limit shall not be reduced.

VHT40

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	22.30	22.37	342.408	25.35	30	Pass
6	2437	22.42	22.43	349.567	25.44	30	Pass
9	2452	22.42	22.59	356.134	25.52	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.78 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	22.84	22.01	351.164	25.46	30	Pass
6	2437	21.95	22.05	317	25.01	30	Pass
11	2462	21.82	21.98	309.816	24.91	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.78 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
3	2422	22.44	22.51	353.626	25.49	30	Pass
6	2437	22.55	22.58	361.021	25.58	30	Pass
9	2452	22.57	22.72	367.786	25.66	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.78 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) 26-tone RU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	12.27	14.31	43.843	16.42	30	Pass
6	2437	12.59	14.28	44.947	16.53	30	Pass
11	2462	12.30	14.22	43.407	16.38	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.78 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) 52-tone RU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	16.01	16.85	88.32	19.46	30	Pass
6	2437	15.84	16.72	85.36	19.31	30	Pass
11	2462	15.97	16.68	86.095	19.35	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.78 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) 106-tone RU

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	18.67	19.32	159.127	22.02	30	Pass
6	2437	18.75	19.03	154.973	21.90	30	Pass
11	2462	18.82	18.94	154.551	21.89	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 2.78 dBi < 6 dBi, so the output power limit shall not be reduced.

For Average Power

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	13.52	14.65	51.665	17.13
6	2437	13.72	14.12	49.373	16.93
11	2462	14.02	14.04	50.586	17.04

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	13.88	14.19	50.676	17.05
6	2437	14.09	14.16	51.706	17.14
11	2462	14.32	14.11	52.803	17.23

VHT20

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	13.64	13.90	47.668	16.78
6	2437	13.70	13.78	47.32	16.75
11	2462	13.60	13.71	46.405	16.67

VHT40

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	13.65	13.79	47.107	16.73
6	2437	13.86	13.88	48.756	16.88
9	2452	13.89	13.98	49.494	16.95

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	13.79	14.03	49.226	16.92
6	2437	13.85	13.91	48.87	16.89
11	2462	13.75	13.87	48.092	16.82

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
3	2422	13.79	13.93	48.65	16.87
6	2437	14.01	14.03	50.47	17.03
9	2452	14.02	14.11	50.998	17.08

802.11ax (HE20) 26-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	3.32	5.45	5.655	7.52
6	2437	3.53	5.36	5.69	7.55
11	2462	3.34	5.29	5.538	7.43

802.11ax (HE20) 52-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	6.91	7.77	10.893	10.37
6	2437	6.73	7.64	10.517	10.22
11	2462	6.89	7.56	10.588	10.25

802.11ax (HE20) 106-tone RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Average Power (mW)	Total Average Power (dBm)
		Chain 0	Chain 1		
1	2412	9.53	10.18	19.397	12.88
6	2437	9.64	9.86	18.887	12.76
11	2462	9.73	9.82	18.991	12.79

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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Mode A

802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-8.64	3.01	-5.63	8	Pass
	6	2437	-8.52	3.01	-5.51	8	Pass
	11	2462	-8.32	3.01	-5.31	8	Pass
Chain 1	1	2412	-7.92	3.01	-4.91	8	Pass
	6	2437	-8.29	3.01	-5.28	8	Pass
	11	2462	-8.27	3.01	-5.26	8	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 4.54 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-12.96	3.01	-9.95	8	Pass
	6	2437	-12.82	3.01	-9.81	8	Pass
	11	2462	-12.54	3.01	-9.53	8	Pass
Chain 1	1	2412	-12.69	3.01	-9.68	8	Pass
	6	2437	-12.65	3.01	-9.64	8	Pass
	11	2462	-12.69	3.01	-9.68	8	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 4.54 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-12.82	3.01	-9.81	8	Pass
	6	2437	-12.9	3.01	-9.89	8	Pass
	11	2462	-12.95	3.01	-9.94	8	Pass
Chain 1	1	2412	-12.54	3.01	-9.53	8	Pass
	6	2437	-12.66	3.01	-9.65	8	Pass
	11	2462	-12.82	3.01	-9.81	8	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2]$
3. The directional gain is 4.54 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	3	2422	-15.17	3.01	-12.16	8	Pass
	6	2437	-14.94	3.01	-11.93	8	Pass
	9	2452	-14.98	3.01	-11.97	8	Pass
Chain 1	3	2422	-15.06	3.01	-12.05	8	Pass
	6	2437	-14.97	3.01	-11.96	8	Pass
	9	2452	-14.85	3.01	-11.84	8	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2]$
3. The directional gain is 4.54 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20) 26-tone RU

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-13.77	3.01	-10.76	8	Pass
	6	2437	-13.96	3.01	-10.95	8	Pass
	11	2462	-14.04	3.01	-11.03	8	Pass
Chain 1	1	2412	-12	3.01	-8.99	8	Pass
	6	2437	-12.22	3.01	-9.21	8	Pass
	11	2462	-12.45	3.01	-9.44	8	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2]$
3. The directional gain is 4.54 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20) 52-tone RU

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-13.53	3.01	-10.52	8	Pass
	6	2437	-13.73	3.01	-10.72	8	Pass
	11	2462	-13.41	3.01	-10.4	8	Pass
Chain 1	1	2412	-12.4	3.01	-9.39	8	Pass
	6	2437	-12.66	3.01	-9.65	8	Pass
	11	2462	-13.03	3.01	-10.02	8	Pass

Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 4.54 dBi < 6 dBi, so the power density limit shall not be reduced.

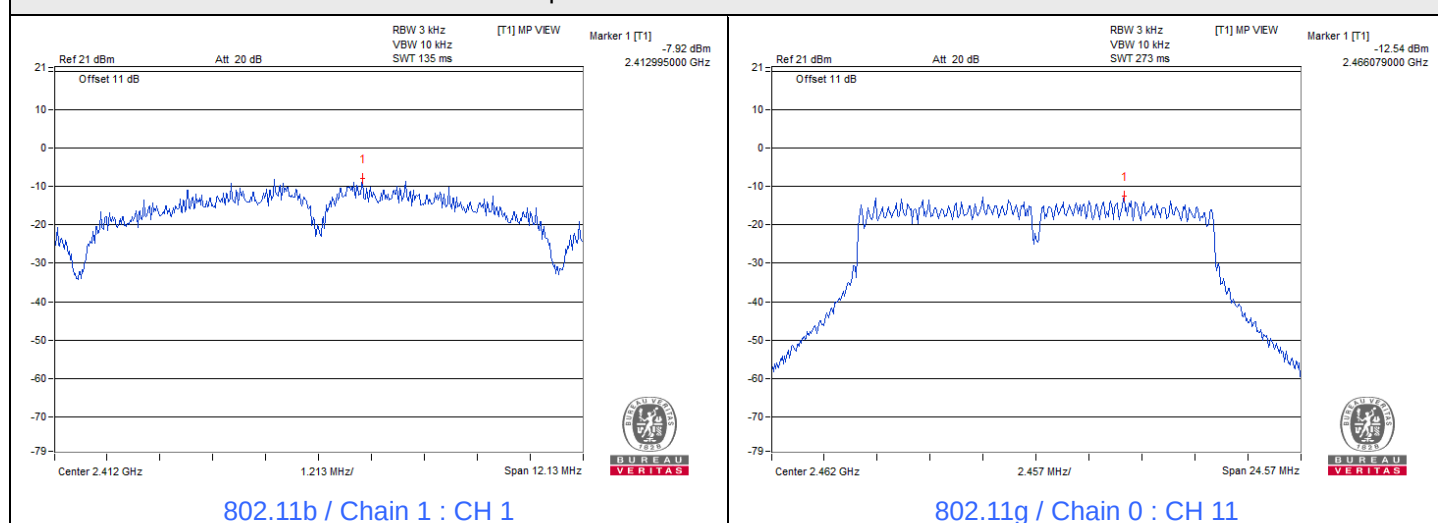
802.11ax (HE20) 106-tone RU

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Pass / Fail
Chain 0	1	2412	-13.16	3.01	-10.15	8	Pass
	6	2437	-12.94	3.01	-9.93	8	Pass
	11	2462	-13.38	3.01	-10.37	8	Pass
Chain 1	1	2412	-12.5	3.01	-9.49	8	Pass
	6	2437	-12.8	3.01	-9.79	8	Pass
	11	2462	-13.27	3.01	-10.26	8	Pass

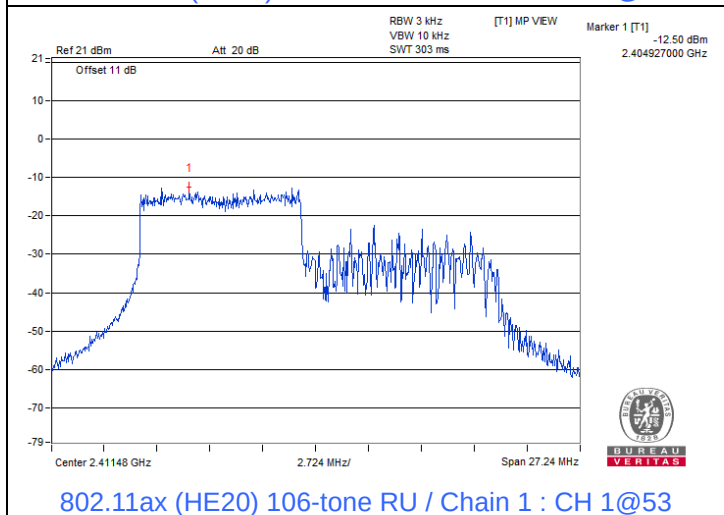
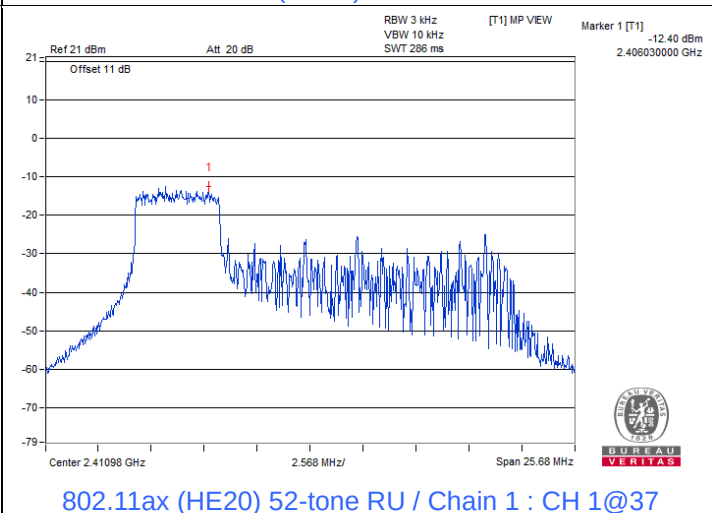
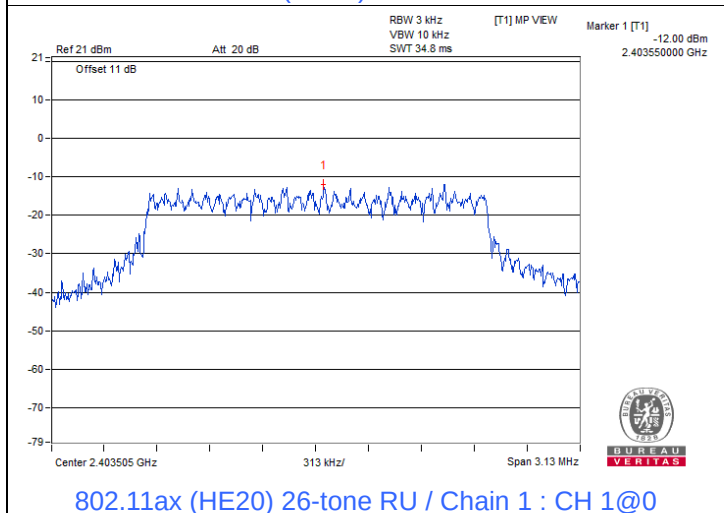
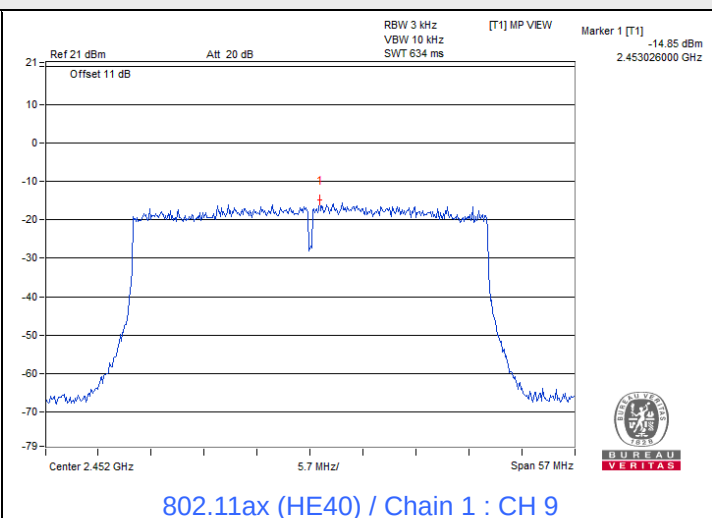
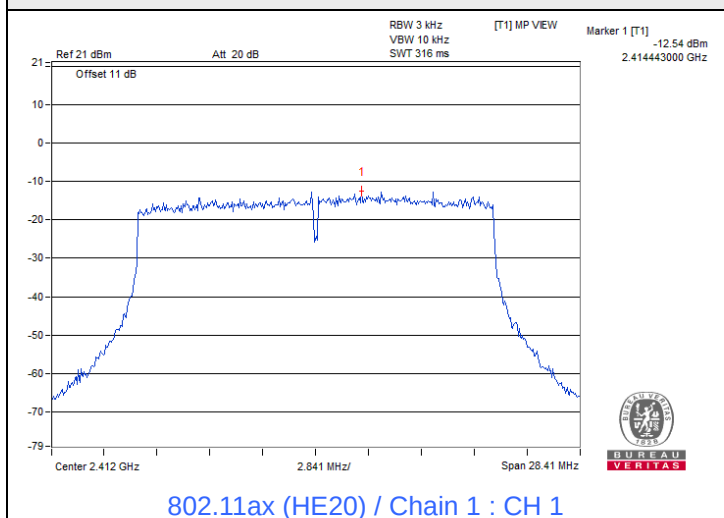
Notes:

1. Method E) 2) c) Measure and add 10 log(NANT) dB of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 4.54 dBi < 6 dBi, so the power density limit shall not be reduced.

Spectrum Plot of Maximum Value



Spectrum Plot of Maximum Value



7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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Mode A

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	8.13	8.09	0.5	Pass
6	2437	8.10	8.12	0.5	Pass
11	2462	8.11	8.10	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	16.40	16.00	0.5	Pass
6	2437	16.36	16.40	0.5	Pass
11	2462	16.38	16.38	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.86	18.94	0.5	Pass
6	2437	18.77	19.06	0.5	Pass
11	2462	18.83	18.78	0.5	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
3	2422	38.04	37.83	0.5	Pass
6	2437	37.75	38.24	0.5	Pass
9	2452	37.96	38.00	0.5	Pass

802.11ax (HE20) 26-tone RU

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	17.08	2.09	0.5	Pass
6	2437	2.13	2.13	0.5	Pass
11	2462	2.11	2.14	0.5	Pass

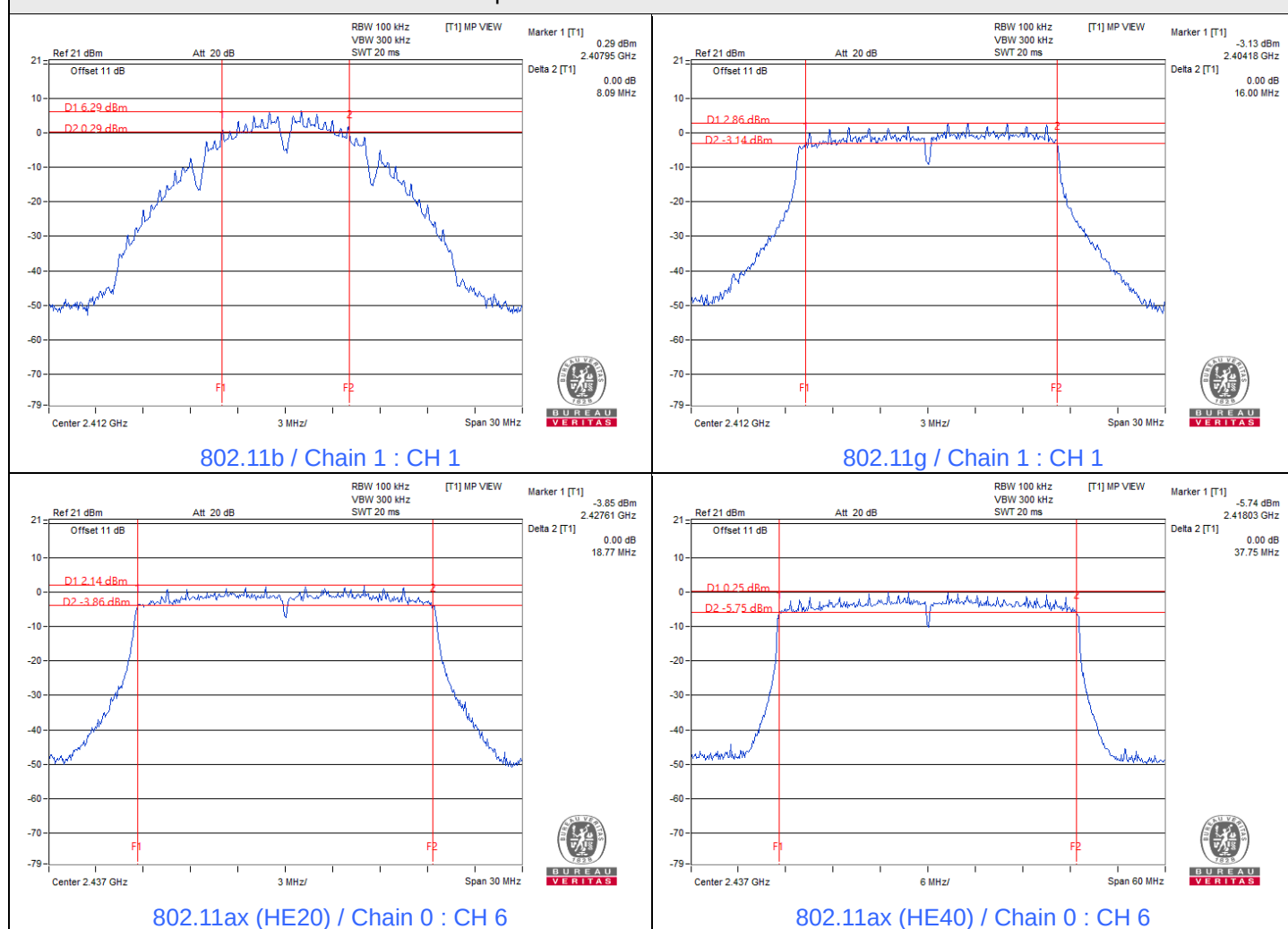
802.11ax (HE20) 52-tone RU

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	17.05	17.12	0.5	Pass
6	2437	17.05	4.08	0.5	Pass
11	2462	17.11	17.11	0.5	Pass

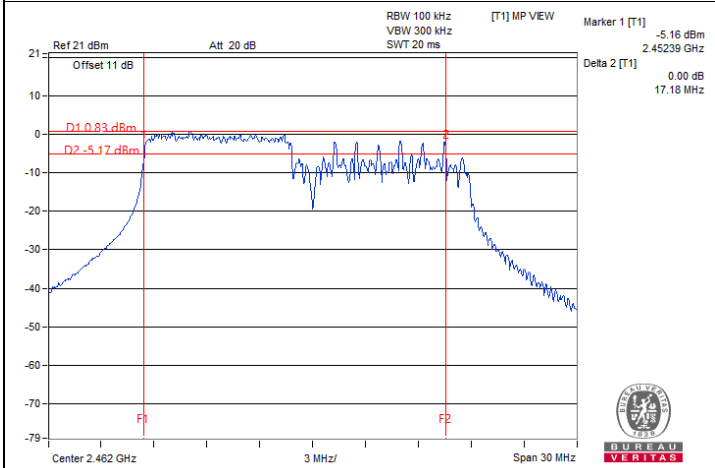
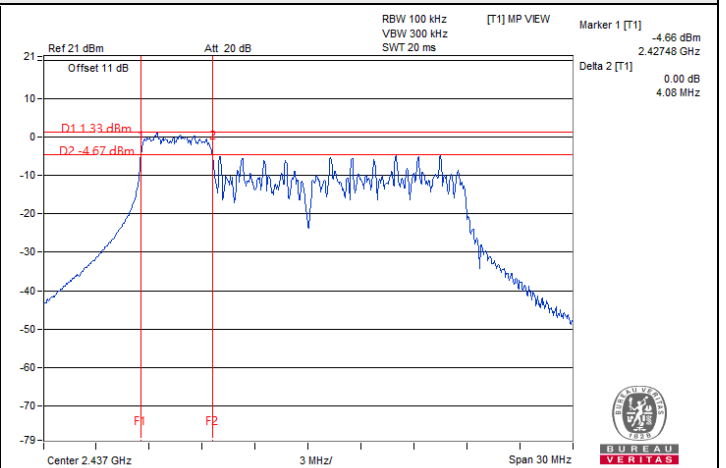
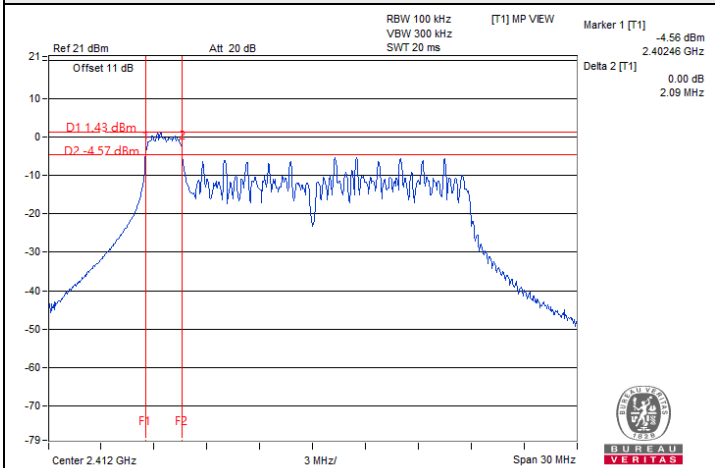
802.11ax (HE20) 106-tone RU

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.11	18.16	0.5	Pass
6	2437	18.15	17.20	0.5	Pass
11	2462	17.41	17.18	0.5	Pass

Spectrum Plot of Minimum Value



Spectrum Plot of Minimum Value

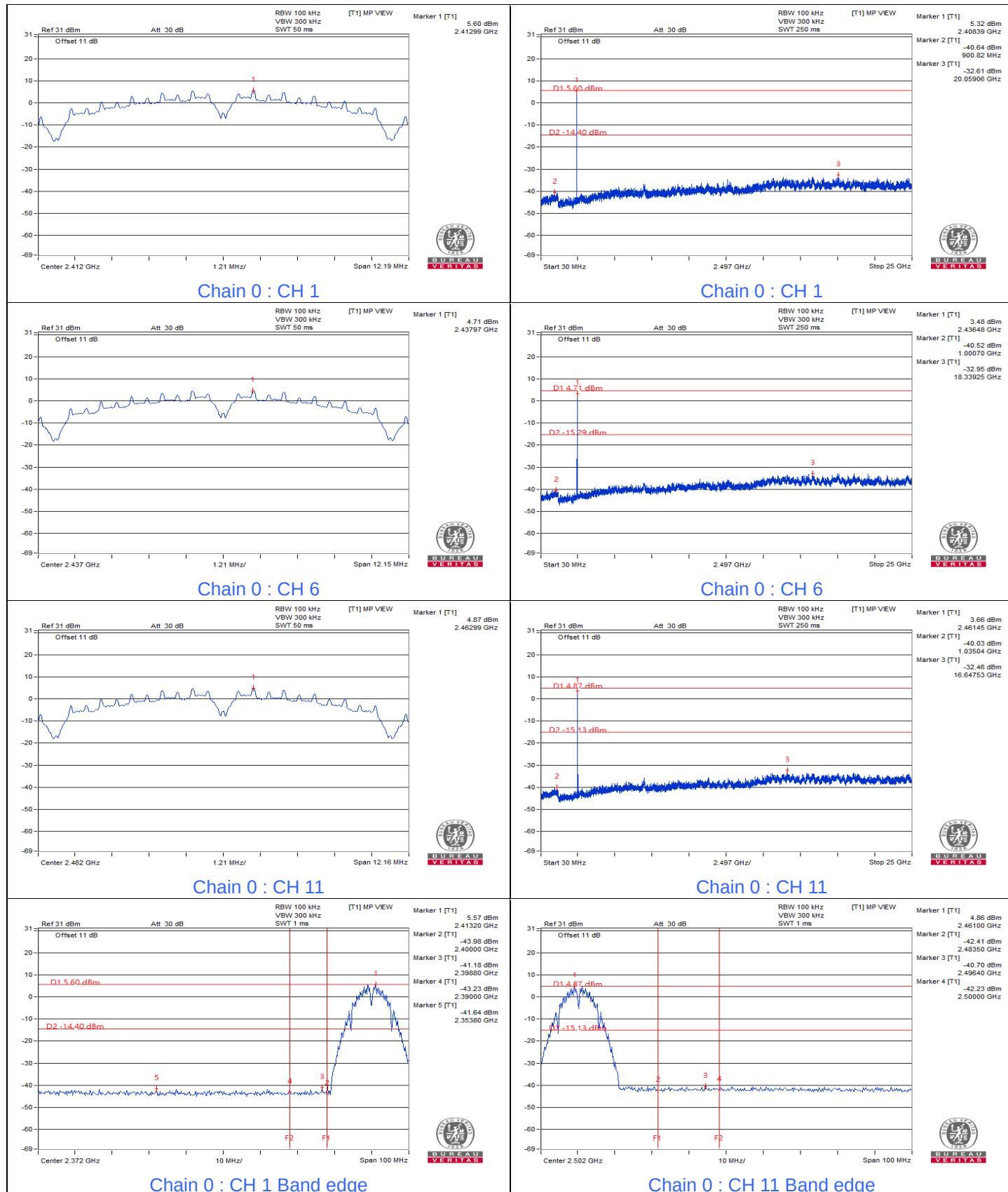


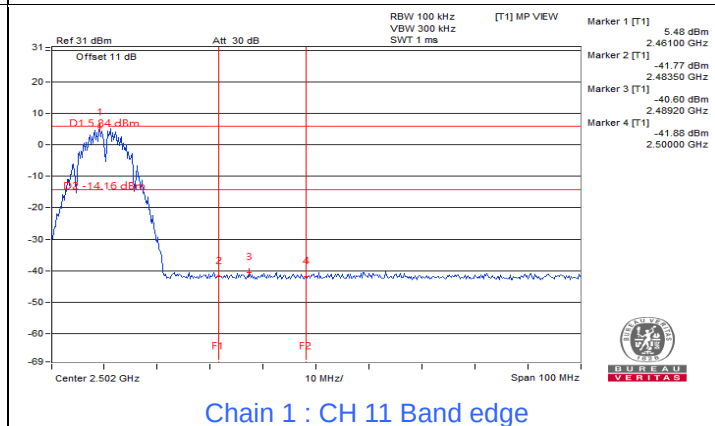
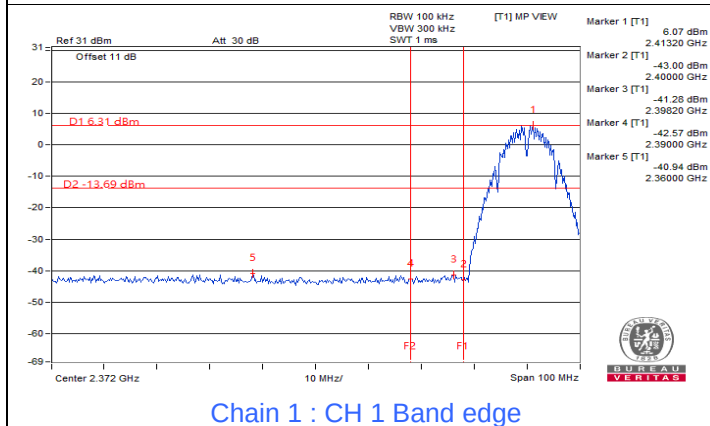
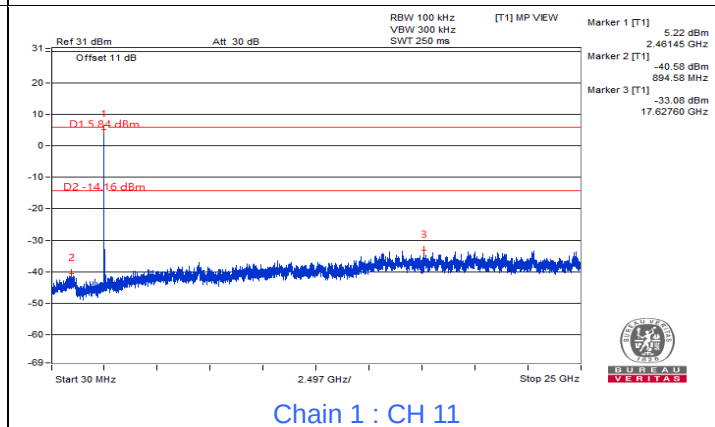
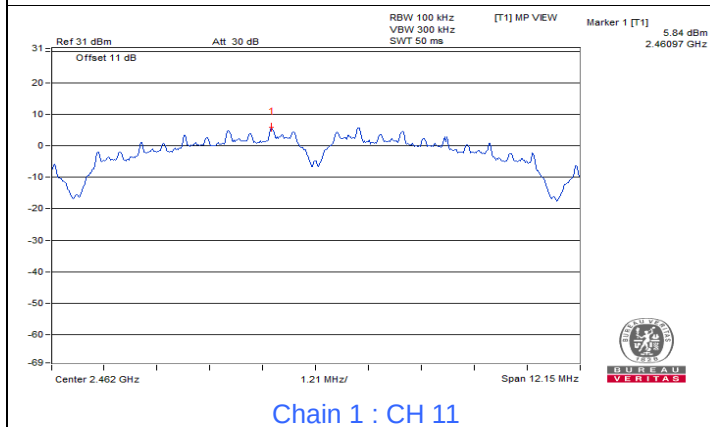
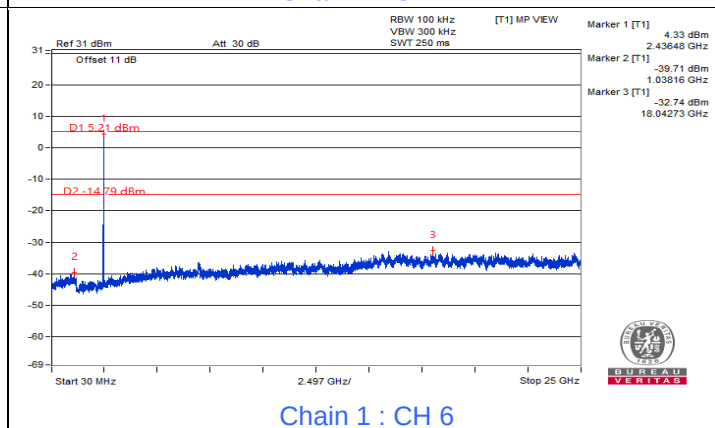
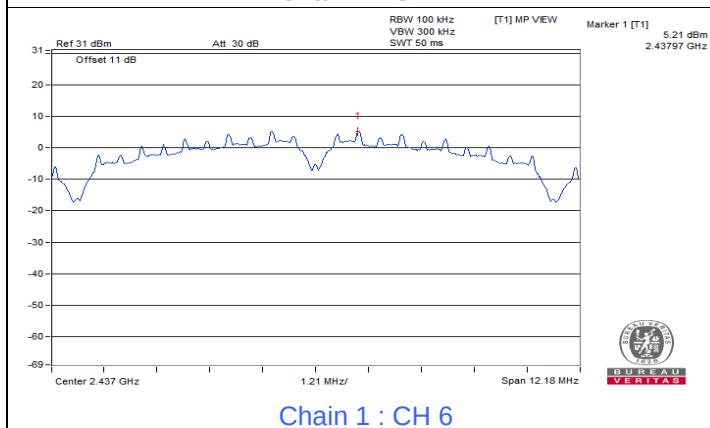
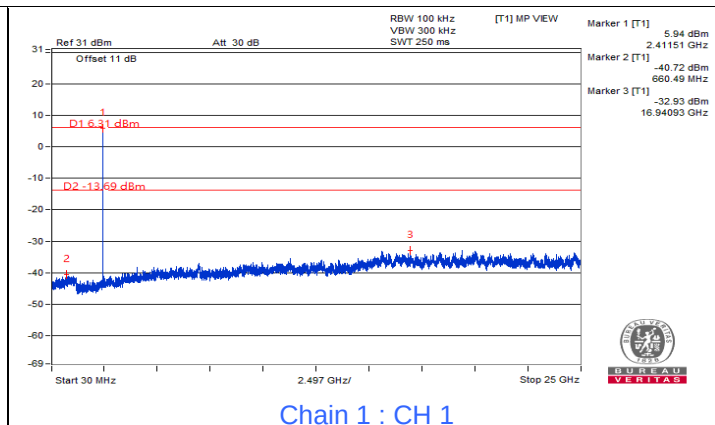
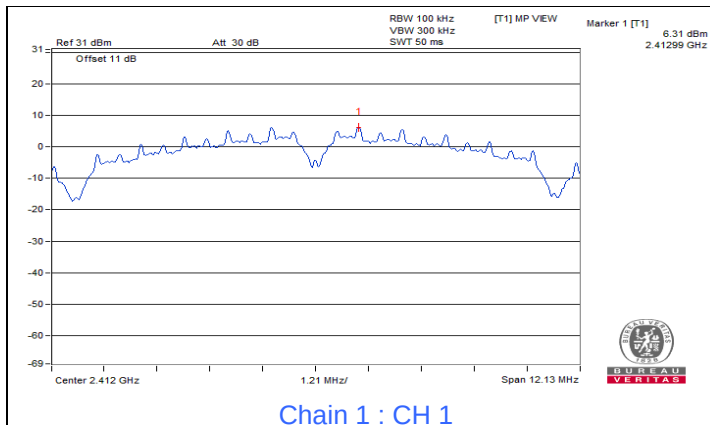
7.4 Conducted Out of Band Emissions

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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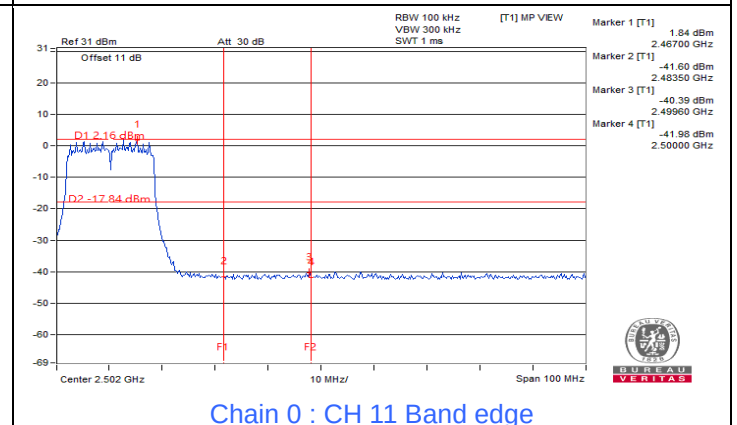
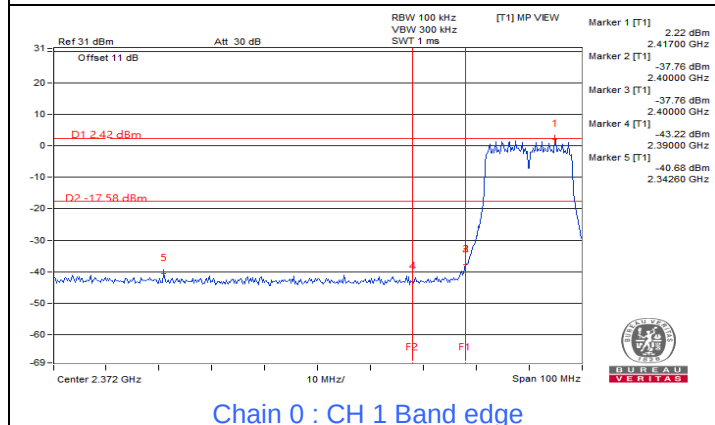
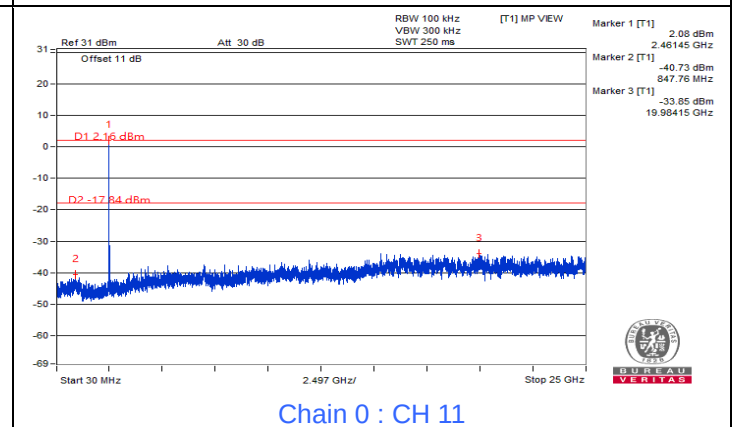
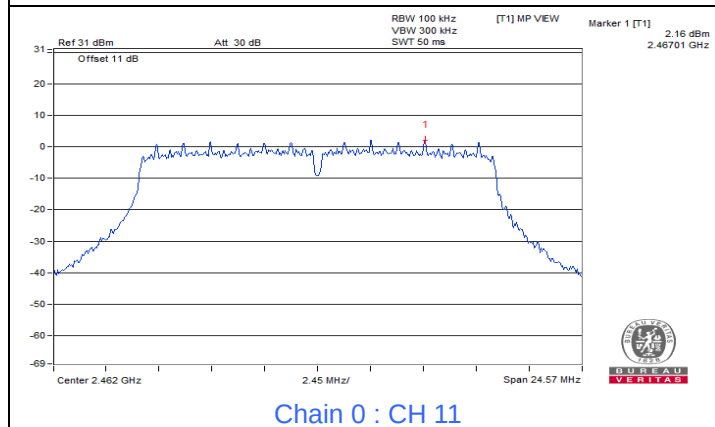
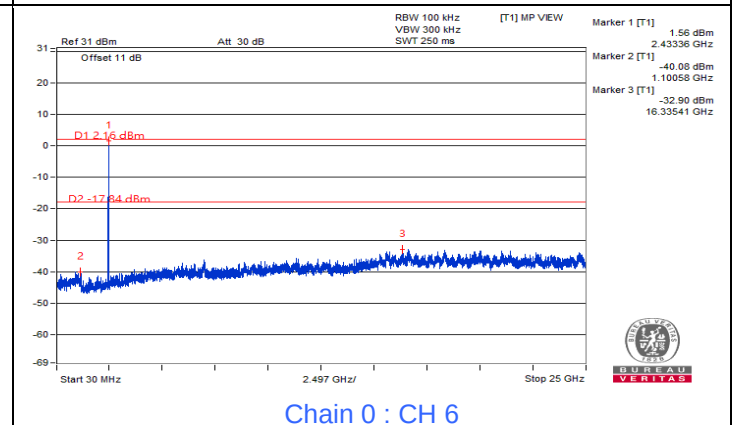
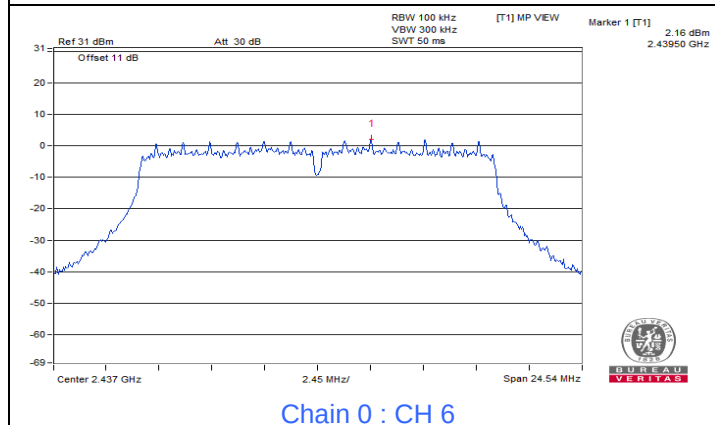
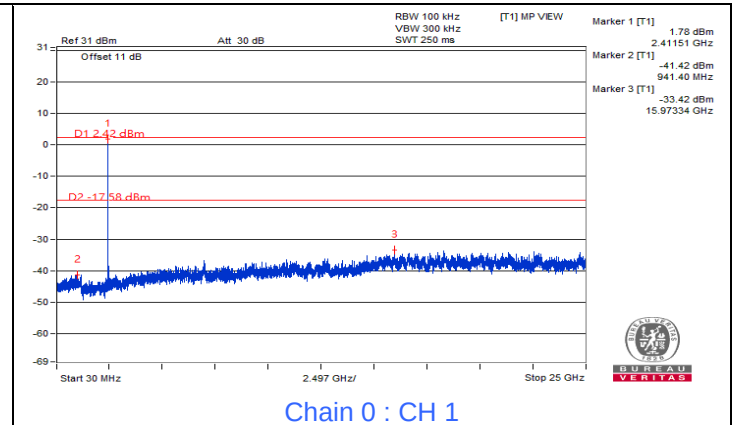
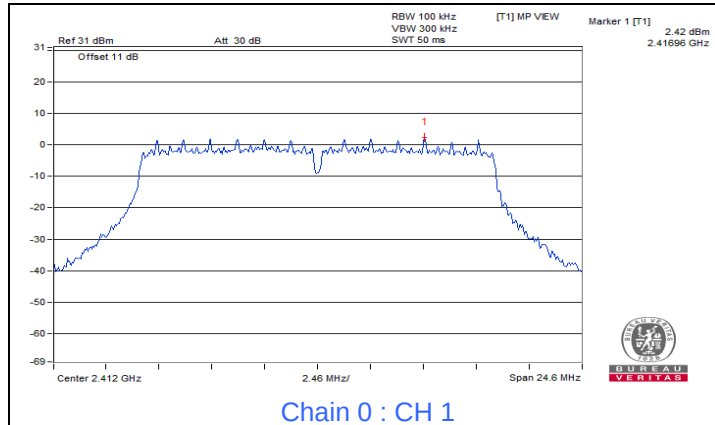
Mode A

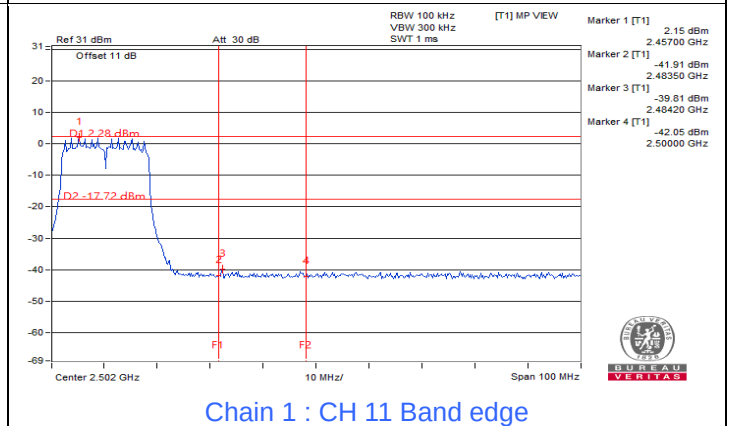
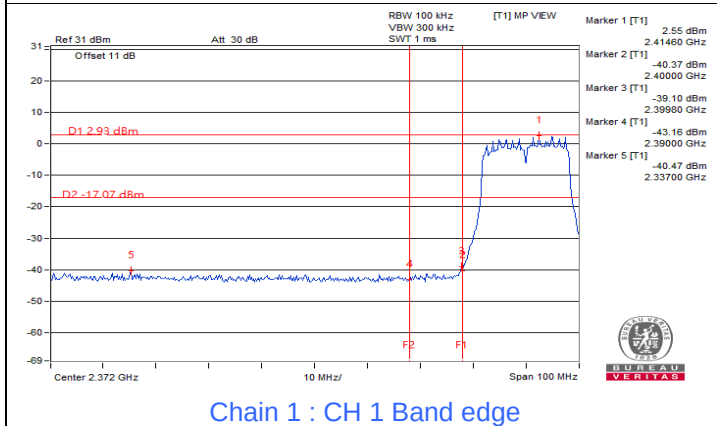
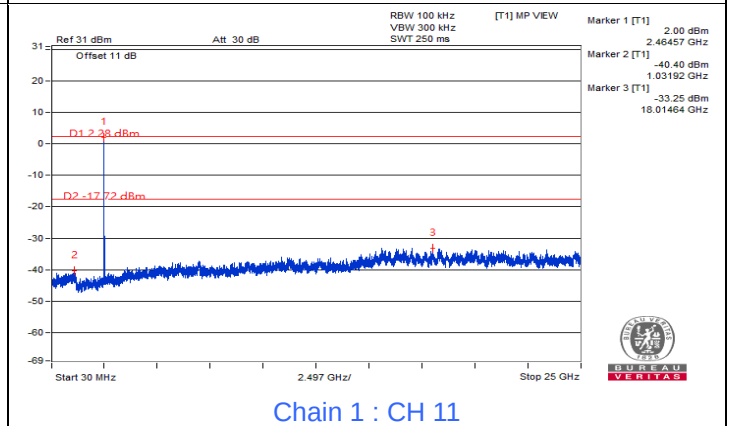
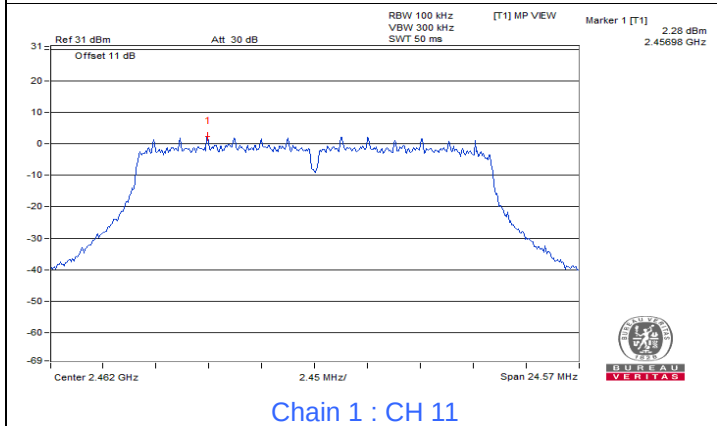
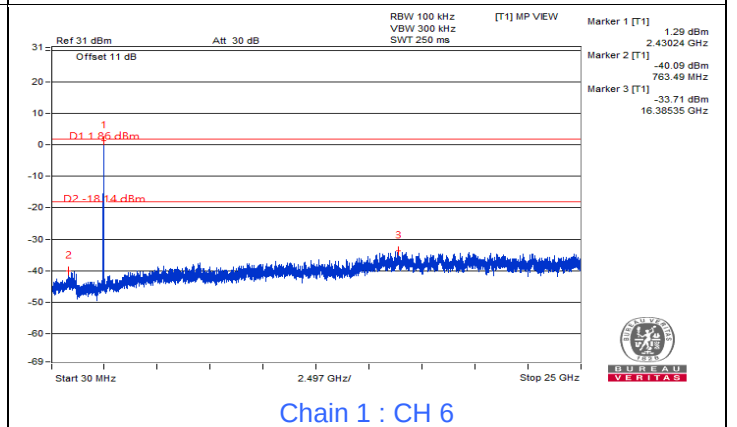
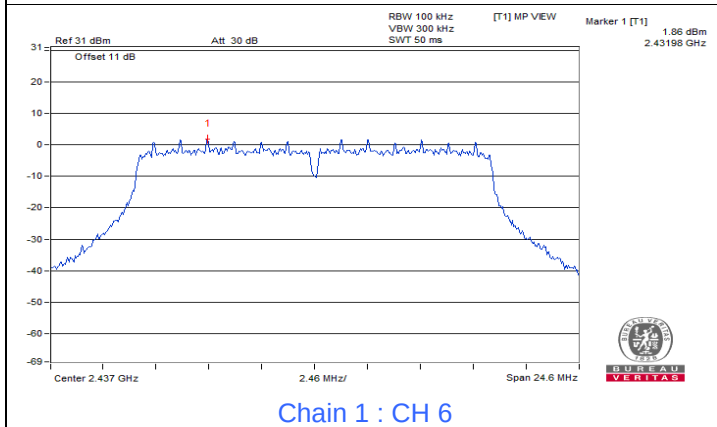
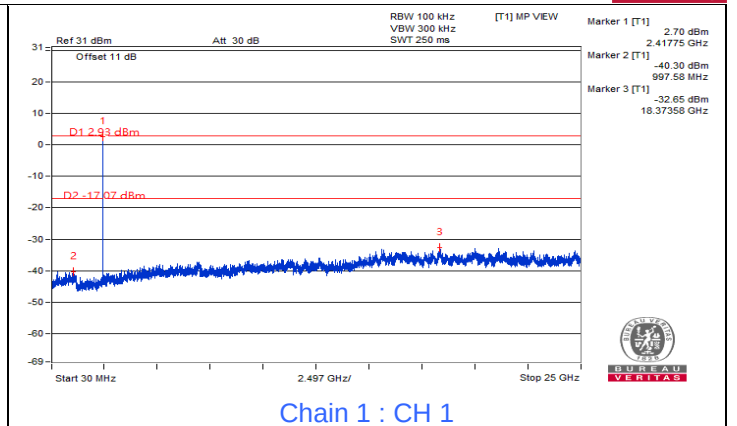
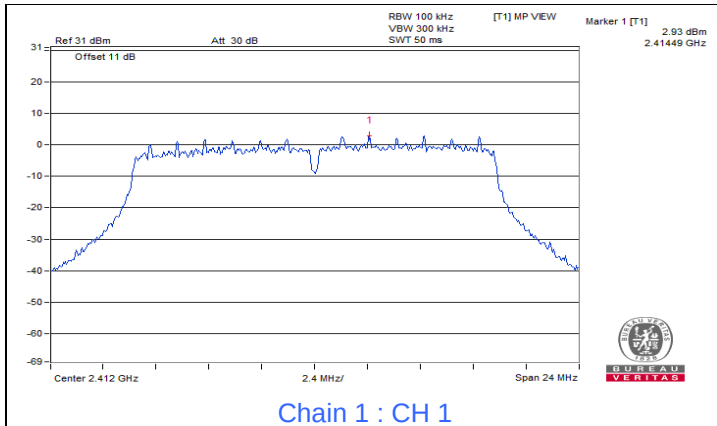
802.11b



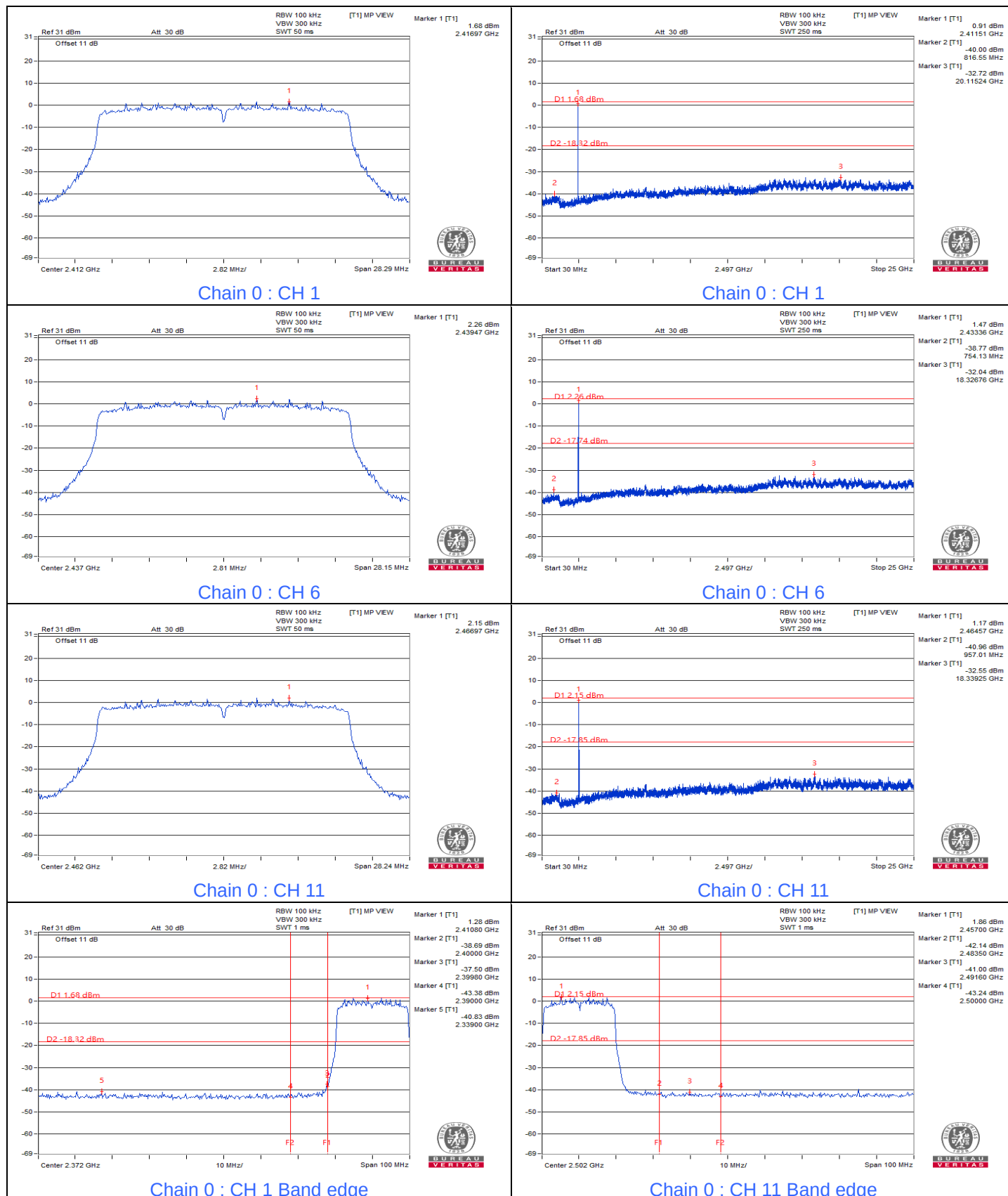


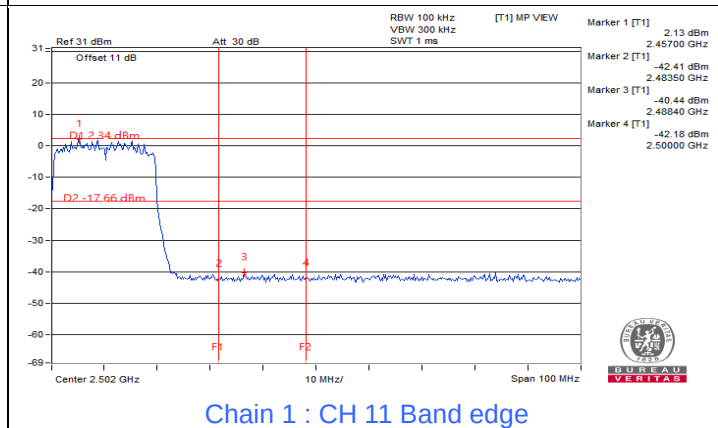
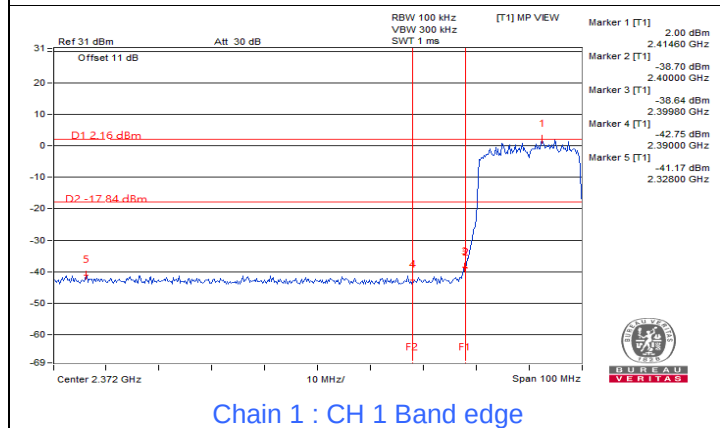
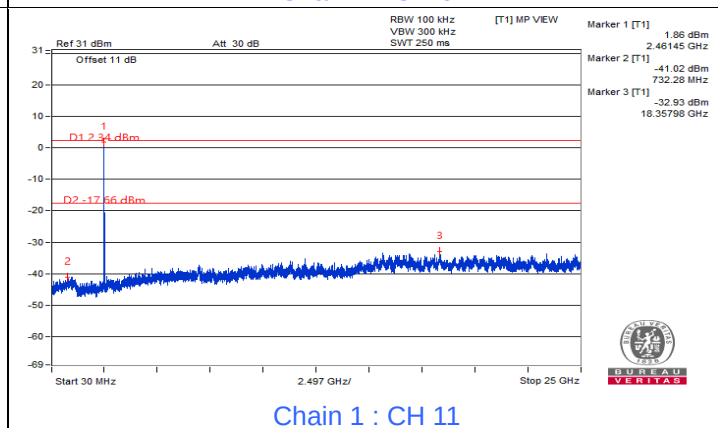
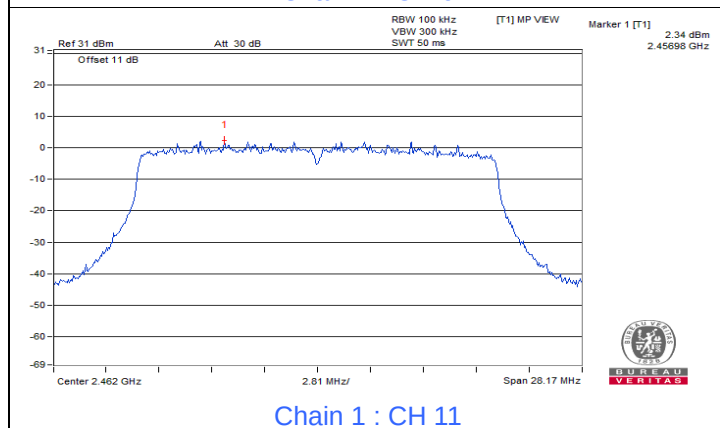
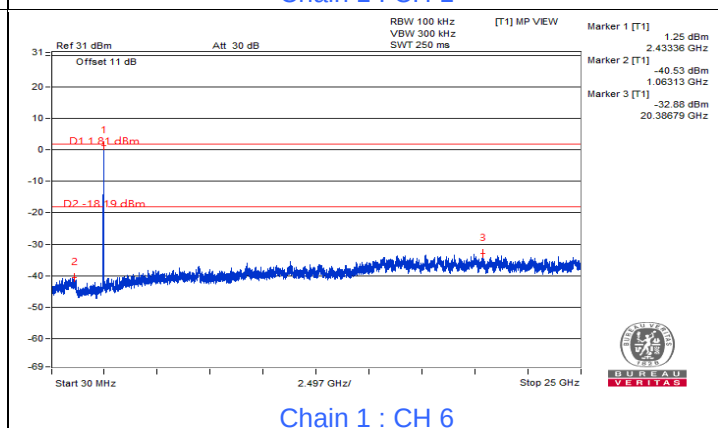
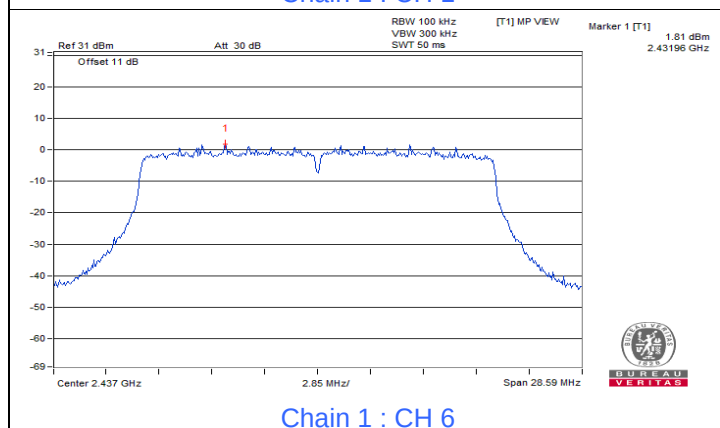
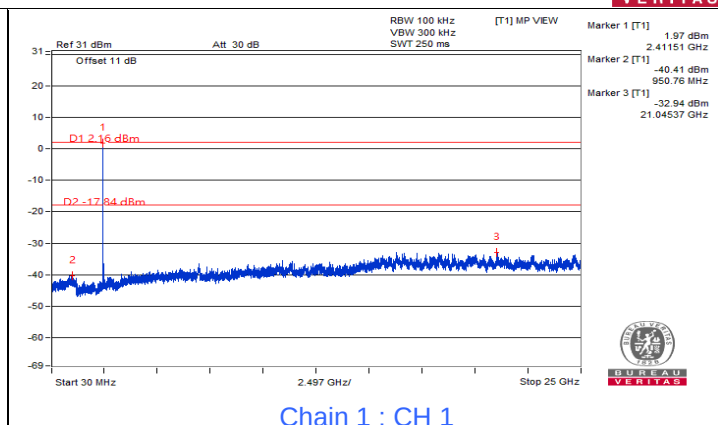
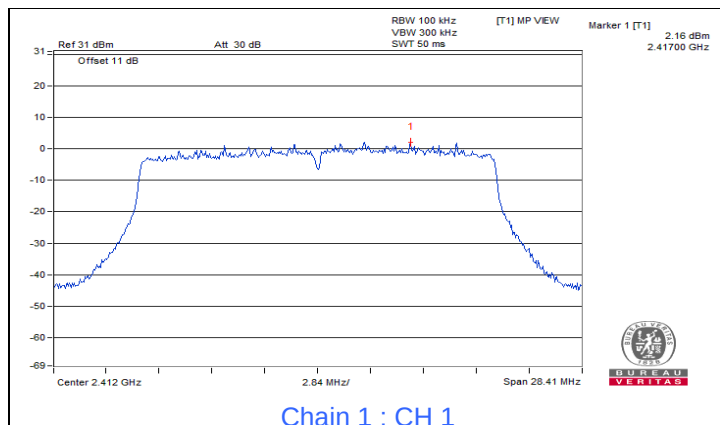
802.11g



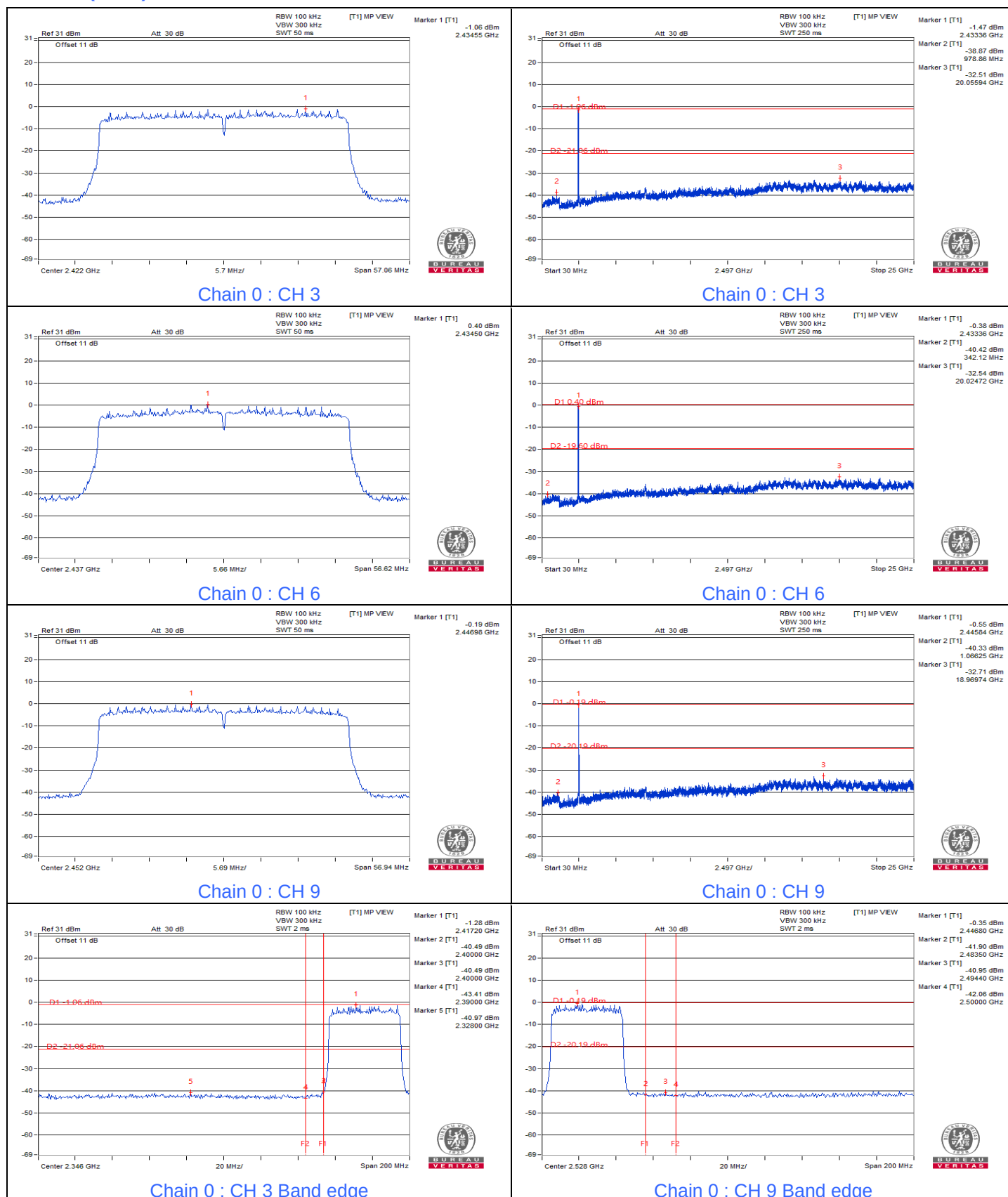


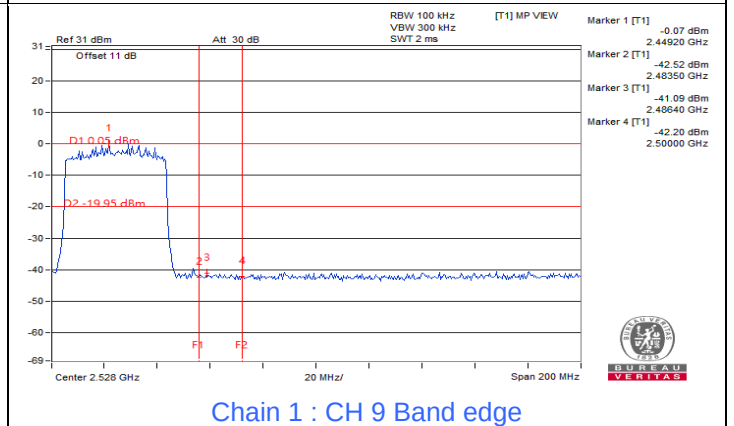
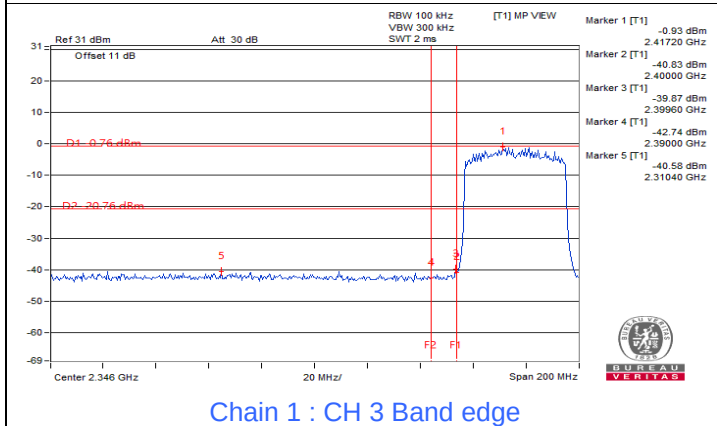
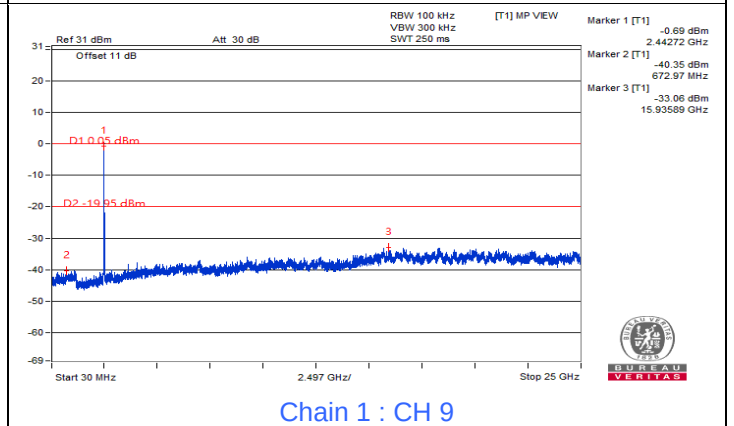
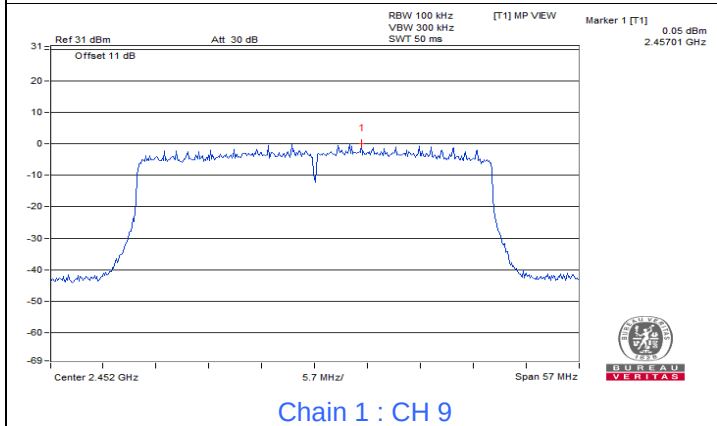
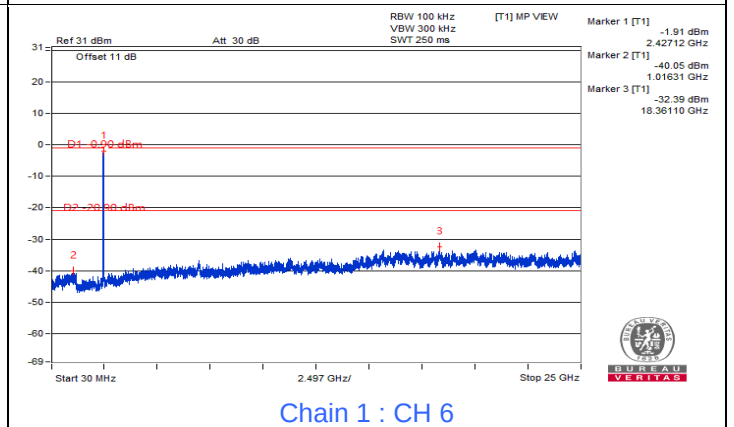
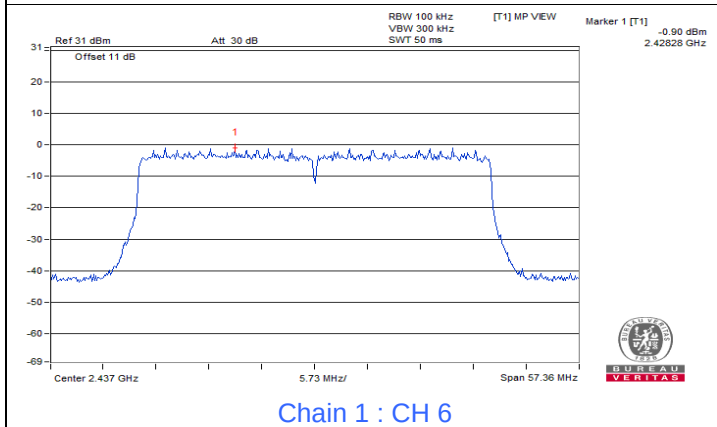
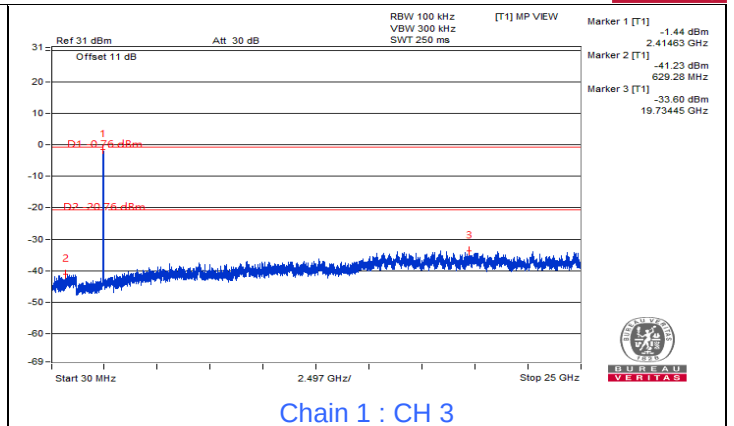
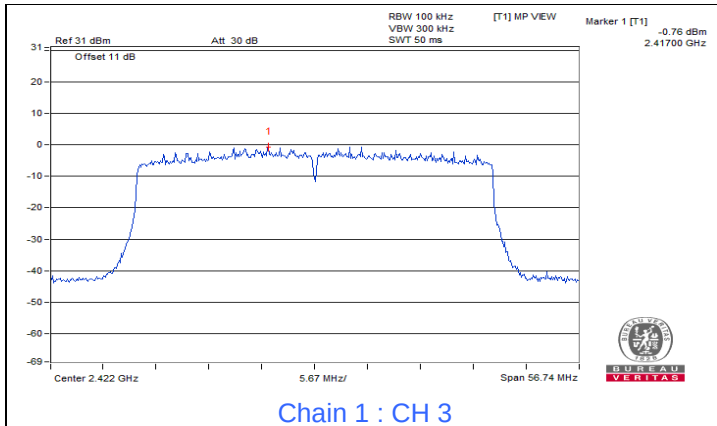
802.11ax (HE20)





802.11ax (HE40)





7.5 AC Power Conducted Emissions

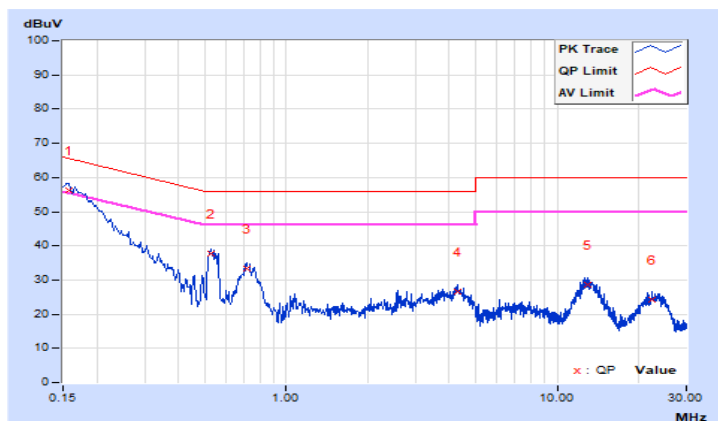
Mode A

RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 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, 49.6% RH
Tested By	Jed Wu		

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	0.15686	10.05	46.27	26.14	56.32	36.19	65.63	55.63	-9.31	-19.44
2	0.52793	10.24	27.50	18.11	37.74	28.35	56.00	46.00	-18.26	-17.65
3	0.71147	10.29	22.99	16.18	33.28	26.47	56.00	46.00	-22.72	-19.53
4	4.31045	10.51	16.16	4.72	26.67	15.23	56.00	46.00	-29.33	-30.77
5	13.03985	10.73	17.83	11.74	28.56	22.47	60.00	50.00	-31.44	-27.53
6	22.41236	10.84	13.25	8.34	24.09	19.18	60.00	50.00	-35.91	-30.82

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

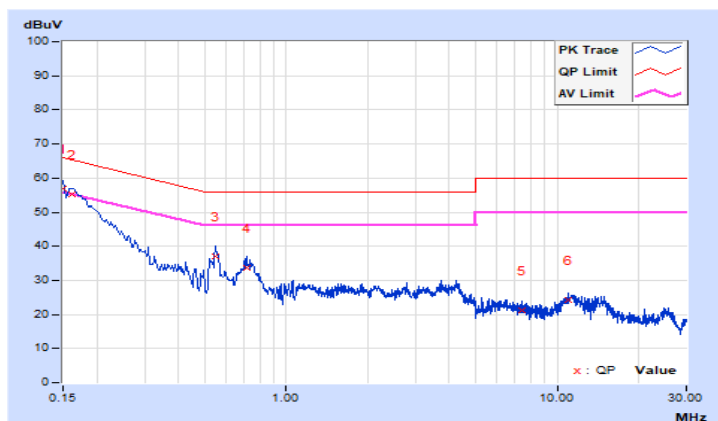


RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 49.6% RH
Tested By	Jed Wu		

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	10.06	46.89	28.39	56.95	38.45	66.00	56.00	-9.05	-17.55
2	0.16197	10.09	45.21	27.86	55.30	37.95	65.36	55.36	-10.06	-17.41
3	0.54788	10.21	26.96	19.51	37.17	29.72	56.00	46.00	-18.83	-16.28
4	0.71147	10.23	23.46	16.42	33.69	26.65	56.00	46.00	-22.31	-19.35
5	7.45385	10.56	10.55	5.19	21.11	15.75	60.00	50.00	-38.89	-34.25
6	11.01293	10.68	13.65	8.69	24.33	19.37	60.00	50.00	-35.67	-30.63

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



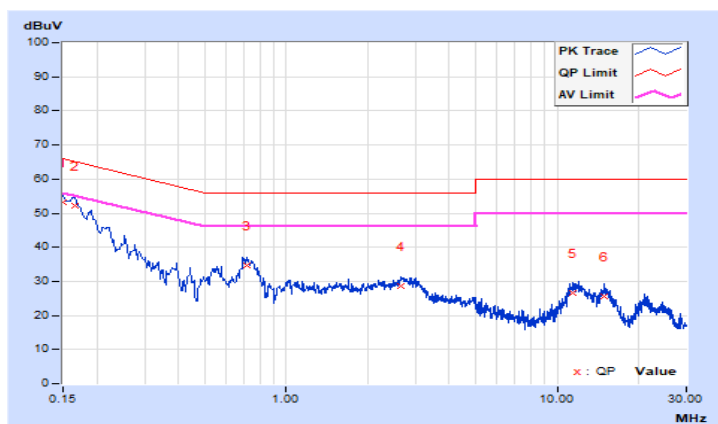
Mode B

RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 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, 49.6% RH
Tested By	Jed Wu		

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	10.04	43.23	25.33	53.27	35.37	66.00	56.00	-12.73	-20.63
2	0.16534	10.06	42.10	23.50	52.16	33.56	65.19	55.19	-13.03	-21.63
3	0.71922	10.29	24.48	19.16	34.77	29.45	56.00	46.00	-21.23	-16.55
4	2.65859	10.43	18.31	8.73	28.74	19.16	56.00	46.00	-27.26	-26.84
5	11.48375	10.70	15.98	10.45	26.68	21.15	60.00	50.00	-33.32	-28.85
6	14.86727	10.78	14.91	7.91	25.69	18.69	60.00	50.00	-34.31	-31.31

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

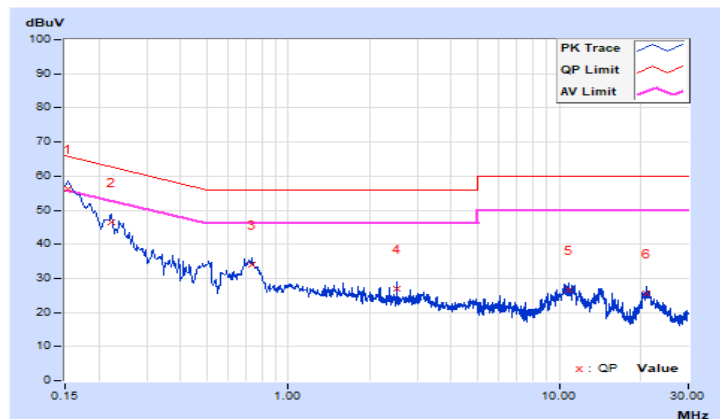


RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 49.6% RH
Tested By	Jed Wu		

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	0.15399	10.07	46.26	27.88	56.33	37.95	65.78	55.78	-9.45	-17.83
2	0.22151	10.18	36.38	20.50	46.56	30.68	62.76	52.76	-16.20	-22.08
3	0.73142	10.23	23.85	17.24	34.08	27.47	56.00	46.00	-21.92	-18.53
4	2.52293	10.32	16.71	10.09	27.03	20.41	56.00	46.00	-28.97	-25.59
5	10.84136	10.68	15.95	10.43	26.63	21.11	60.00	50.00	-33.37	-28.89
6	20.98394	10.83	14.71	8.13	25.54	18.96	60.00	50.00	-34.46	-31.04

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



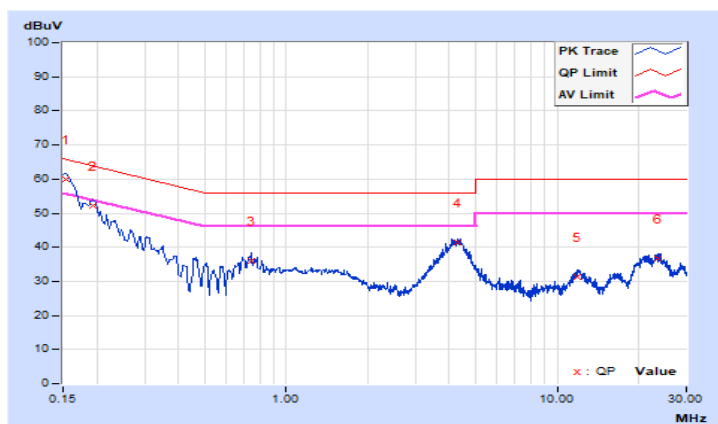
Mode C

RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 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, 49.6% RH
Tested By	Jed Wu		

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	0.15399	10.04	49.93	35.05	59.97	45.09	65.78	55.78	-5.81	-10.69
2	0.19264	10.11	42.07	28.24	52.18	38.35	63.92	53.92	-11.74	-15.57
3	0.74339	10.30	25.58	18.69	35.88	28.99	56.00	46.00	-20.12	-17.01
4	4.27055	10.51	30.88	24.84	41.39	35.35	56.00	46.00	-14.61	-10.65
5	11.88275	10.71	20.51	15.31	31.22	26.02	60.00	50.00	-28.78	-23.98
6	23.45375	10.84	25.75	20.75	36.59	31.59	60.00	50.00	-23.41	-18.41

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

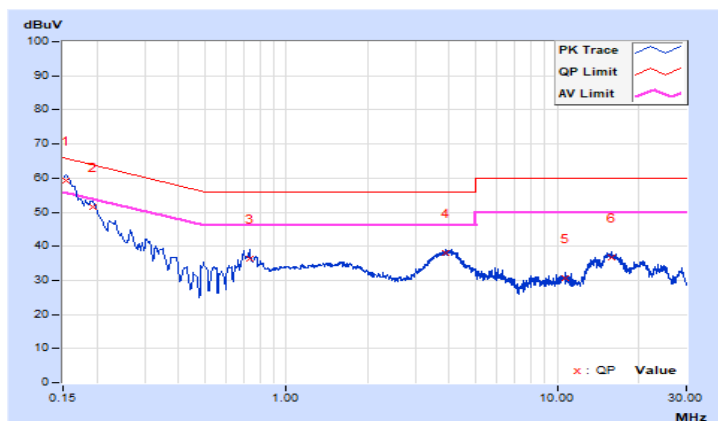


RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 49.6% RH
Tested By	Jed Wu		

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	0.15399	10.07	49.20	34.28	59.27	44.35	65.78	55.78	-6.51	-11.43
2	0.19389	10.17	41.30	27.67	51.47	37.84	63.87	53.87	-12.40	-16.03
3	0.73142	10.23	26.18	20.04	36.41	30.27	56.00	46.00	-19.59	-15.73
4	3.87155	10.42	27.55	23.32	37.97	33.74	56.00	46.00	-18.03	-12.26
5	10.78151	10.68	19.93	15.02	30.61	25.70	60.00	50.00	-29.39	-24.30
6	15.81689	10.79	25.81	20.80	36.60	31.59	60.00	50.00	-23.40	-18.41

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



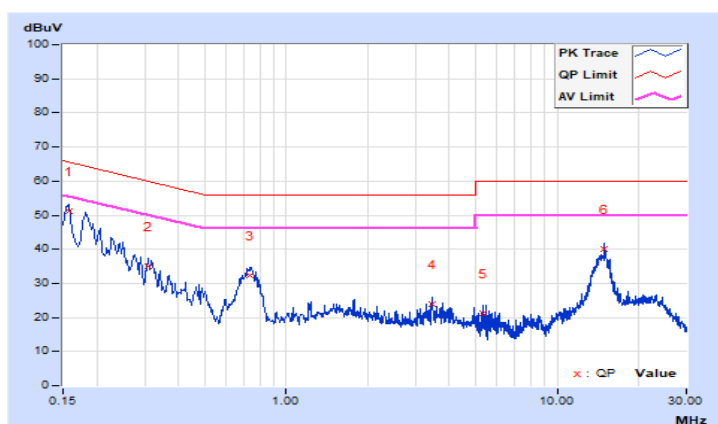
Mode D

RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 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, 49.6% RH
Tested By	Jed Wu		

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	0.15768	10.00	41.08	15.45	51.08	25.45	65.59	55.59	-14.51	-30.14
2	0.30954	10.06	25.03	6.96	35.09	17.02	59.98	49.98	-24.89	-32.96
3	0.73142	10.08	22.41	15.40	32.49	25.48	56.00	46.00	-23.51	-20.52
4	3.45260	10.16	13.80	7.86	23.96	18.02	56.00	46.00	-32.04	-27.98
5	5.35112	10.22	11.16	6.09	21.38	16.31	60.00	50.00	-38.62	-33.69
6	14.96303	10.45	29.66	23.45	40.11	33.90	60.00	50.00	-19.89	-16.10

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

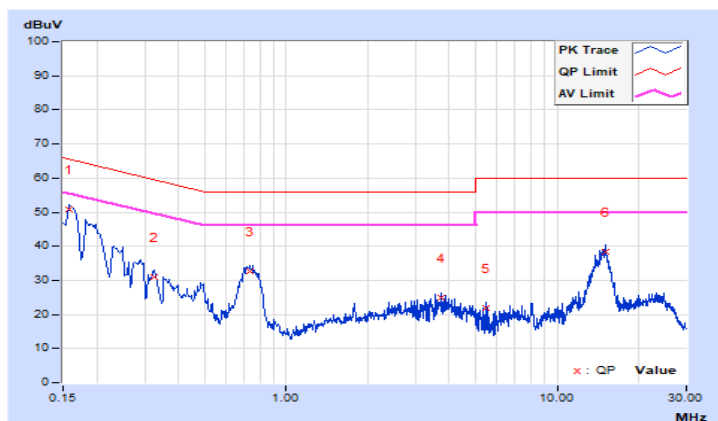


RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 49.6% RH
Tested By	Jed Wu		

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	0.15798	10.02	40.94	22.50	50.96	32.52	65.57	55.57	-14.61	-23.05
2	0.32543	10.06	20.81	5.92	30.87	15.98	59.57	49.57	-28.70	-33.59
3	0.73142	10.09	22.52	15.70	32.61	25.79	56.00	46.00	-23.39	-20.21
4	3.72791	10.18	14.67	6.67	24.85	16.85	56.00	46.00	-31.15	-29.15
5	5.43890	10.23	11.56	3.58	21.79	13.81	60.00	50.00	-38.21	-36.19
6	15.15056	10.47	27.76	22.13	38.23	32.60	60.00	50.00	-21.77	-17.40

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



7.6 Unwanted Emissions below 1 GHz

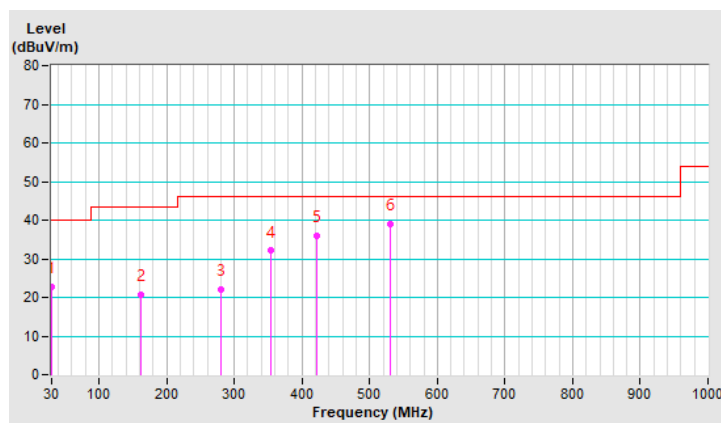
Mode A

RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	14°C, 58% RH
Tested By	Jed Wu		

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	30.58	22.8 QP	40.0	-17.2	1.59 H	48	33.6	-10.8
2	162.55	20.6 QP	43.5	-22.9	1.37 H	57	28.8	-8.2
3	279.63	22.2 QP	46.0	-23.8	1.48 H	14	28.9	-6.7
4	354.85	32.1 QP	46.0	-13.9	1.25 H	9	37.2	-5.1
5	422.41	36.1 QP	46.0	-9.9	1.00 H	354	39.2	-3.1
6	529.94	39.1 QP	46.0	-6.9	1.89 H	356	40.2	-1.1

Remarks:

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

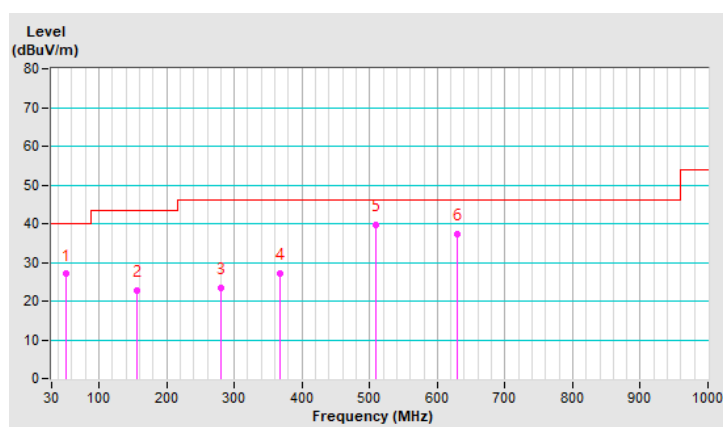


RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	14°C, 58% RH
Tested By	Jed Wu		

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	50.61	27.0 QP	40.0	-13.0	1.28 V	360	35.5	-8.5
2	156.88	22.7 QP	43.5	-20.8	1.49 V	228	30.9	-8.2
3	281.13	23.5 QP	46.0	-22.5	1.57 V	154	30.2	-6.7
4	368.29	27.2 QP	46.0	-18.8	1.63 V	149	31.9	-4.7
5	509.81	39.8 QP	46.0	-6.2	1.20 V	360	41.2	-1.4
6	629.02	37.3 QP	46.0	-8.7	1.18 V	2	35.8	1.5

Remarks:

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



7.7 Unwanted Emissions above 1 GHz

Mode A

RF Mode	802.11b	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	2390.00	48.4 PK	74.0	-25.6	3.88 H	182	46.1	2.3
2	2390.00	37.5 AV	54.0	-16.5	3.88 H	182	35.2	2.3
3	*2412.00	105.8 PK			3.88 H	182	103.3	2.5
4	*2412.00	104.0 AV			3.88 H	182	101.5	2.5
5	4824.00	51.6 PK	74.0	-22.4	3.56 H	158	38.3	13.3
6	4824.00	39.8 AV	54.0	-14.2	3.56 H	158	26.5	13.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	49.3 PK	74.0	-24.7	1.02 V	139	47.0	2.3
2	2390.00	38.2 AV	54.0	-15.8	1.02 V	139	35.9	2.3
3	*2412.00	107.9 PK			1.02 V	139	105.4	2.5
4	*2412.00	106.1 AV			1.02 V	139	103.6	2.5
5	4824.00	52.0 PK	74.0	-22.0	1.09 V	154	38.7	13.3
6	4824.00	40.2 AV	54.0	-13.8	1.09 V	154	26.9	13.3

Remarks:

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

RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2437.00	105.7 PK			3.90 H	184	103.1	2.6
2	*2437.00	103.8 AV			3.90 H	184	101.2	2.6
3	4874.00	51.7 PK	74.0	-22.3	3.58 H	161	38.1	13.6
4	4874.00	39.9 AV	54.0	-14.1	3.58 H	161	26.3	13.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	107.8 PK			1.04 V	141	105.2	2.6
2	*2437.00	106.0 AV			1.04 V	141	103.4	2.6
3	4874.00	52.1 PK	74.0	-21.9	1.11 V	156	38.5	13.6
4	4874.00	40.3 AV	54.0	-13.7	1.11 V	156	26.7	13.6

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.

RF Mode	802.11b	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2462.00	105.0 PK			3.59 H	180	102.3	2.7
2	*2462.00	103.1 AV			3.59 H	180	100.4	2.7
3	2483.50	49.1 PK	74.0	-24.9	3.59 H	180	46.4	2.7
4	2483.50	37.5 AV	54.0	-16.5	3.59 H	180	34.8	2.7
5	4924.00	53.0 PK	74.0	-21.0	3.27 H	156	39.3	13.7
6	4924.00	41.2 AV	54.0	-12.8	3.27 H	156	27.5	13.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	107.1 PK			1.31 V	137	104.4	2.7
2	*2462.00	105.2 AV			1.31 V	137	102.5	2.7
3	2483.50	49.6 PK	74.0	-24.4	1.31 V	137	46.9	2.7
4	2483.50	37.8 AV	54.0	-16.2	1.31 V	137	35.1	2.7
5	4924.00	53.4 PK	74.0	-20.6	1.38 V	152	39.7	13.7
6	4924.00	41.6 AV	54.0	-12.4	1.38 V	152	27.9	13.7

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.

RF Mode	802.11g	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	2390.00	50.7 PK	74.0	-23.3	3.58 H	156	48.4	2.3
2	2390.00	39.7 AV	54.0	-14.3	3.58 H	156	37.4	2.3
3	*2412.00	107.9 PK			3.58 H	156	105.4	2.5
4	*2412.00	99.2 AV			3.58 H	156	96.7	2.5
5	4824.00	53.5 PK	74.0	-20.5	3.26 H	132	40.2	13.3
6	4824.00	41.7 AV	54.0	-12.3	3.26 H	132	28.4	13.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	55.6 PK	74.0	-18.4	1.31 V	113	53.3	2.3
2	2390.00	42.5 AV	54.0	-11.5	1.31 V	113	40.2	2.3
3	*2412.00	109.8 PK			1.31 V	113	107.3	2.5
4	*2412.00	101.2 AV			1.31 V	113	98.7	2.5
5	4824.00	53.9 PK	74.0	-20.1	1.39 V	128	40.6	13.3
6	4824.00	42.1 AV	54.0	-11.9	1.39 V	128	28.8	13.3

Remarks:

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

RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2437.00	108.3 PK			3.51 H	163	105.7	2.6
2	*2437.00	99.6 AV			3.51 H	163	97.0	2.6
3	4874.00	53.5 PK	74.0	-20.5	3.19 H	125	39.9	13.6
4	4874.00	41.7 AV	54.0	-12.3	3.19 H	125	28.1	13.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	110.2 PK			1.24 V	120	107.6	2.6
2	*2437.00	101.6 AV			1.24 V	120	99.0	2.6
3	4874.00	53.9 PK	74.0	-20.1	1.46 V	121	40.3	13.6
4	4874.00	42.1 AV	54.0	-11.9	1.46 V	121	28.5	13.6

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.

RF Mode	802.11g	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2462.00	107.8 PK			3.75 H	37	105.1	2.7
2	*2462.00	99.8 AV			3.75 H	37	97.1	2.7
3	2483.50	56.5 PK	74.0	-17.5	3.75 H	37	53.8	2.7
4	2483.50	42.6 AV	54.0	-11.4	3.75 H	37	39.9	2.7
5	4924.00	53.3 PK	74.0	-20.7	3.43 H	13	39.6	13.7
6	4924.00	41.5 AV	54.0	-12.5	3.43 H	13	27.8	13.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	110.0 PK			1.15 V	284	107.3	2.7
2	*2462.00	102.0 AV			1.15 V	284	99.3	2.7
3	2483.50	61.7 PK	74.0	-12.3	1.15 V	284	59.0	2.7
4	2483.50	46.3 AV	54.0	-7.7	1.15 V	284	43.6	2.7
5	4924.00	53.7 PK	74.0	-20.3	1.37 V	318	40.0	13.7
6	4924.00	41.9 AV	54.0	-12.1	1.37 V	318	28.2	13.7

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.

RF Mode	802.11ax (HE20)	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	2390.00	56.7 PK	74.0	-17.3	3.75 H	107	54.4	2.3
2	2390.00	43.4 AV	54.0	-10.6	3.75 H	107	41.1	2.3
3	*2412.00	110.0 PK			3.75 H	107	107.5	2.5
4	*2412.00	98.4 AV			3.75 H	107	95.9	2.5
5	4824.00	53.3 PK	74.0	-20.7	3.43 H	83	40.0	13.3
6	4824.00	41.5 AV	54.0	-12.5	3.43 H	83	28.2	13.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	60.0 PK	74.0	-14.0	1.15 V	64	57.7	2.3
2	2390.00	45.3 AV	54.0	-8.7	1.15 V	64	43.0	2.3
3	*2412.00	112.2 PK			1.15 V	64	109.7	2.5
4	*2412.00	100.5 AV			1.15 V	64	98.0	2.5
5	4824.00	53.7 PK	74.0	-20.3	1.36 V	79	40.4	13.3
6	4824.00	41.9 AV	54.0	-12.1	1.36 V	79	28.6	13.3

Remarks:

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

RF Mode	802.11ax (HE20)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2437.00	109.4 PK			3.68 H	272	106.8	2.6
2	*2437.00	97.7 AV			3.68 H	272	95.1	2.6
3	4874.00	53.7 PK	74.0	-20.3	3.35 H	248	40.1	13.6
4	4874.00	41.9 AV	54.0	-12.1	3.35 H	248	28.3	13.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	111.5 PK			1.22 V	229	108.9	2.6
2	*2437.00	99.8 AV			1.22 V	229	97.2	2.6
3	4874.00	54.1 PK	74.0	-19.9	1.43 V	244	40.5	13.6
4	4874.00	42.3 AV	54.0	-11.7	1.43 V	244	28.7	13.6

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.

RF Mode	802.11ax (HE20)	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2462.00	111.1 PK			3.74 H	329	108.4	2.7
2	*2462.00	99.7 AV			3.74 H	329	97.0	2.7
3	2483.50	56.7 PK	74.0	-17.3	3.74 H	329	54.0	2.7
4	2483.50	42.7 AV	54.0	-11.3	3.74 H	329	40.0	2.7
5	4924.00	54.2 PK	74.0	-19.8	3.44 H	305	40.5	13.7
6	4924.00	42.4 AV	54.0	-11.6	3.44 H	305	28.7	13.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	113.0 PK			1.15 V	286	110.3	2.7
2	*2462.00	101.4 AV			1.15 V	286	98.7	2.7
3	2483.50	60.0 PK	74.0	-14.0	1.15 V	286	57.3	2.7
4	2483.50	46.1 AV	54.0	-7.9	1.15 V	286	43.4	2.7
5	4924.00	54.6 PK	74.0	-19.4	1.36 V	301	40.9	13.7
6	4924.00	42.8 AV	54.0	-11.2	1.36 V	301	29.1	13.7

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.

RF Mode	802.11ax (HE40)	Channel	CH 3 : 2422 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	2390.00	58.5 PK	74.0	-15.5	3.76 H	107	56.2	2.3
2	2390.00	43.9 AV	54.0	-10.1	3.76 H	107	41.6	2.3
3	*2422.00	108.6 PK			3.76 H	107	106.1	2.5
4	*2422.00	97.2 AV			3.76 H	107	94.7	2.5
5	4844.00	52.6 PK	74.0	-21.4	3.43 H	83	39.1	13.5
6	4844.00	40.8 AV	54.0	-13.2	3.43 H	83	27.3	13.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	60.4 PK	74.0	-13.6	1.14 V	64	58.1	2.3
2	2390.00	46.5 AV	54.0	-7.5	1.14 V	64	44.2	2.3
3	*2422.00	110.4 PK			1.14 V	64	107.9	2.5
4	*2422.00	98.6 AV			1.14 V	64	96.1	2.5
5	4844.00	53.0 PK	74.0	-21.0	1.37 V	79	39.5	13.5
6	4844.00	41.2 AV	54.0	-12.8	1.37 V	79	27.7	13.5

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.

RF Mode	802.11ax (HE40)	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2437.00	108.7 PK			3.79 H	111	106.1	2.6
2	*2437.00	96.9 AV			3.79 H	111	94.3	2.6
3	4874.00	53.0 PK	74.0	-21.0	3.47 H	87	39.4	13.6
4	4874.00	41.2 AV	54.0	-12.8	3.47 H	87	27.6	13.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	110.8 PK			1.11 V	68	108.2	2.6
2	*2437.00	99.0 AV			1.11 V	68	96.4	2.6
3	4874.00	53.4 PK	74.0	-20.6	1.39 V	75	39.8	13.6
4	4874.00	41.6 AV	54.0	-12.4	1.39 V	75	28.0	13.6

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.

RF Mode	802.11ax (HE40)	Channel	CH 9 : 2452 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2452.00	108.5 PK			3.74 H	338	105.8	2.7
2	*2452.00	96.6 AV			3.74 H	338	93.9	2.7
3	2483.50	66.6 PK	74.0	-7.4	3.74 H	338	63.9	2.7
4	2483.50	48.7 AV	54.0	-5.3	3.74 H	338	46.0	2.7
5	4904.00	52.6 PK	74.0	-21.4	3.42 H	314	38.9	13.7
6	4904.00	40.8 AV	54.0	-13.2	3.42 H	314	27.1	13.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2452.00	110.4 PK			1.15 V	295	107.7	2.7
2	*2452.00	98.8 AV			1.15 V	295	96.1	2.7
3	2483.50	67.5 PK	74.0	-6.5	1.15 V	295	64.8	2.7
4	2483.50	51.6 AV	54.0	-2.4	1.15 V	295	48.9	2.7
5	4904.00	53.0 PK	74.0	-21.0	1.43 V	208	39.3	13.7
6	4904.00	41.2 AV	54.0	-12.8	1.43 V	208	27.5	13.7

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.

RF Mode	802.11ax (HE20) 26-tone RU	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	2390.00	57.3 PK	74.0	-16.7	3.48 H	211	44.6	12.7
2	2390.00	45.5 AV	54.0	-8.5	3.48 H	211	32.8	12.7
3	*2412.00	118.5 PK			3.48 H	211	105.6	12.9
4	*2412.00	107.5 AV			3.48 H	211	94.6	12.9
5	4824.00	53.7 PK	74.0	-20.3	3.69 H	226	40.4	13.3
6	4824.00	40.8 AV	54.0	-13.2	3.69 H	226	27.5	13.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.6 PK	74.0	-14.4	1.33 V	170	46.9	12.7
2	2390.00	46.7 AV	54.0	-7.3	1.33 V	170	34.0	12.7
3	*2412.00	121.8 PK			1.33 V	170	108.9	12.9
4	*2412.00	110.7 AV			1.33 V	170	97.8	12.9
5	4824.00	54.1 PK	74.0	-19.9	1.54 V	185	40.8	13.3
6	4824.00	41.2 AV	54.0	-12.8	1.54 V	185	27.9	13.3

Remarks:

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

RF Mode	802.11ax (HE20) 26-tone RU	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2437.00	116.8 PK			3.31 H	203	103.8	13.0
2	*2437.00	105.8 AV			3.31 H	203	92.8	13.0
3	4874.00	53.8 PK	74.0	-20.2	2.57 H	221	40.2	13.6
4	4874.00	40.9 AV	54.0	-13.1	2.57 H	221	27.3	13.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	120.1 PK			1.24 V	165	107.1	13.0
2	*2437.00	109.0 AV			1.24 V	165	96.0	13.0
3	4874.00	54.2 PK	74.0	-19.8	1.47 V	180	40.6	13.6
4	4874.00	41.3 AV	54.0	-12.7	1.47 V	180	27.7	13.6

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.

RF Mode	802.11ax (HE20) 26-tone RU	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2462.00	117.3 PK			3.29 H	339	104.2	13.1
2	*2462.00	105.1 AV			3.29 H	339	92.0	13.1
3	2483.50	60.5 PK	74.0	-13.5	3.29 H	339	47.4	13.1
4	2483.50	45.3 AV	54.0	-8.7	3.29 H	339	32.2	13.1
5	4924.00	54.3 PK	74.0	-19.7	3.50 H	354	40.6	13.7
6	4924.00	41.4 AV	54.0	-12.6	3.50 H	354	27.7	13.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	120.6 PK			1.14 V	298	107.5	13.1
2	*2462.00	108.5 AV			1.14 V	298	95.4	13.1
3	2483.50	63.0 PK	74.0	-11.0	1.14 V	298	49.9	13.1
4	2483.50	46.3 AV	54.0	-7.7	1.14 V	298	33.2	13.1
5	4924.00	54.7 PK	74.0	-19.3	1.36 V	313	41.0	13.7
6	4924.00	41.8 AV	54.0	-12.2	1.36 V	313	28.1	13.7

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.

RF Mode	802.11ax (HE20) 52-tone RU	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	2390.00	57.9 PK	74.0	-16.1	3.30 H	172	45.2	12.7
2	2390.00	45.1 AV	54.0	-8.9	3.30 H	172	32.4	12.7
3	*2412.00	116.9 PK			3.30 H	172	104.0	12.9
4	*2412.00	104.7 AV			3.30 H	172	91.8	12.9
5	4824.00	52.9 PK	74.0	-21.1	3.51 H	187	39.6	13.3
6	4824.00	39.3 AV	54.0	-14.7	3.51 H	187	26.0	13.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.3 PK	74.0	-14.7	1.15 V	131	46.6	12.7
2	2390.00	46.7 AV	54.0	-7.3	1.15 V	131	34.0	12.7
3	*2412.00	119.9 PK			1.15 V	131	107.0	12.9
4	*2412.00	107.8 AV			1.15 V	131	94.9	12.9
5	4824.00	53.3 PK	74.0	-20.7	1.36 V	146	40.0	13.3
6	4824.00	39.7 AV	54.0	-14.3	1.36 V	146	26.4	13.3

Remarks:

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

RF Mode	802.11ax (HE20) 52-tone RU	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2437.00	115.5 PK			3.21 H	164	102.5	13.0
2	*2437.00	104.6 AV			3.21 H	164	91.6	13.0
3	4874.00	53.5 PK	74.0	-20.5	3.40 H	177	39.9	13.6
4	4874.00	39.9 AV	54.0	-14.1	3.40 H	177	26.3	13.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	118.6 PK			1.23 V	145	105.6	13.0
2	*2437.00	106.5 AV			1.23 V	145	93.5	13.0
3	4874.00	53.9 PK	74.0	-20.1	1.44 V	160	40.3	13.6
4	4874.00	40.3 AV	54.0	-13.7	1.44 V	160	26.7	13.6

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.

RF Mode	802.11ax (HE20) 52-tone RU	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2462.00	114.7 PK			3.29 H	210	101.6	13.1
2	*2462.00	102.8 AV			3.29 H	210	89.7	13.1
3	2483.50	59.9 PK	74.0	-14.1	3.29 H	210	46.8	13.1
4	2483.50	45.2 AV	54.0	-8.8	3.29 H	210	32.1	13.1
5	4924.00	54.5 PK	74.0	-19.5	3.49 H	225	40.8	13.7
6	4924.00	40.9 AV	54.0	-13.1	3.49 H	225	27.2	13.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	117.8 PK			1.14 V	171	104.7	13.1
2	*2462.00	105.9 AV			1.14 V	171	92.8	13.1
3	2483.50	61.2 PK	74.0	-12.8	1.14 V	171	48.1	13.1
4	2483.50	46.0 AV	54.0	-8.0	1.14 V	171	32.9	13.1
5	4924.00	54.9 PK	74.0	-19.1	1.35 V	186	41.2	13.7
6	4924.00	41.3 AV	54.0	-12.7	1.35 V	186	27.6	13.7

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.

RF Mode	802.11ax (HE20) 106-tone RU	Channel	CH 1 : 2412 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	2390.00	59.9 PK	74.0	-14.1	3.29 H	171	47.2	12.7
2	2390.00	44.9 AV	54.0	-9.1	3.29 H	171	32.2	12.7
3	*2412.00	113.1 PK			3.29 H	171	100.2	12.9
4	*2412.00	102.0 AV			3.29 H	171	89.1	12.9
5	4824.00	52.9 PK	74.0	-21.1	3.51 H	186	39.6	13.3
6	4824.00	39.5 AV	54.0	-14.5	3.51 H	186	26.2	13.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	63.9 PK	74.0	-10.1	1.14 V	130	51.2	12.7
2	2390.00	45.8 AV	54.0	-8.2	1.14 V	130	33.1	12.7
3	*2412.00	116.3 PK			1.14 V	130	103.4	12.9
4	*2412.00	105.1 AV			1.14 V	130	92.2	12.9
5	4824.00	53.3 PK	74.0	-20.7	1.35 V	145	40.0	13.3
6	4824.00	39.9 AV	54.0	-14.1	1.35 V	145	26.6	13.3

Remarks:

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

RF Mode	802.11ax (HE20) 106-tone RU	Channel	CH 6 : 2437 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

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	*2437.00	111.9 PK			3.46 H	195	98.9	13.0
2	*2437.00	100.7 AV			3.46 H	195	87.7	13.0
3	4874.00	53.7 PK	74.0	-20.3	3.67 H	210	40.1	13.6
4	4874.00	40.3 AV	54.0	-13.7	3.67 H	210	26.7	13.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	115.0 PK			1.31 V	154	102.0	13.0
2	*2437.00	103.8 AV			1.31 V	154	90.8	13.0
3	4874.00	54.1 PK	74.0	-19.9	1.59 V	168	40.5	13.6
4	4874.00	40.7 AV	54.0	-13.3	1.59 V	168	27.1	13.6

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.

RF Mode	802.11ax (HE20) 106-tone RU	Channel	CH 11 : 2462 MHz
Frequency Range	1 GHz ~ 25 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	18.4°C, 64.2% RH
Tested By	Jed Wu		

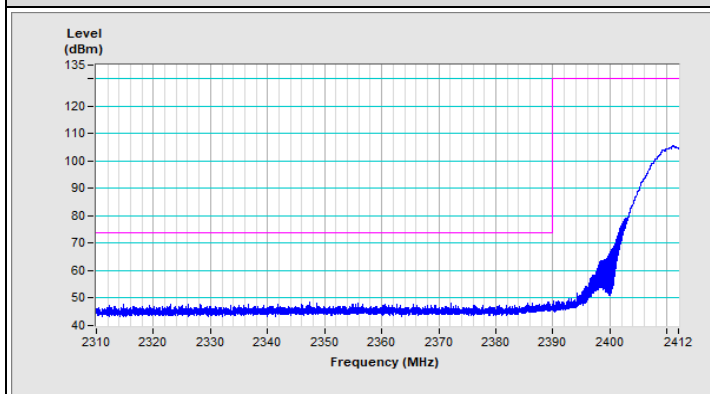
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	112.1 PK			3.30 H	339	99.0	13.1
2	*2462.00	99.8 AV			3.30 H	339	86.7	13.1
3	2483.50	62.0 PK	74.0	-12.0	3.30 H	339	48.9	13.1
4	2483.50	44.4 AV	54.0	-9.6	3.30 H	339	31.3	13.1
5	4924.00	54.2 PK	74.0	-19.8	3.51 H	354	40.5	13.7
6	4924.00	40.8 AV	54.0	-13.2	3.51 H	354	27.1	13.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	115.5 PK			1.15 V	298	102.4	13.1
2	*2462.00	103.1 AV			1.15 V	298	90.0	13.1
3	2483.50	63.9 PK	74.0	-10.1	1.15 V	298	50.8	13.1
4	2483.50	45.5 AV	54.0	-8.5	1.15 V	298	32.4	13.1
5	4924.00	54.6 PK	74.0	-19.4	1.43 V	312	40.9	13.7
6	4924.00	41.2 AV	54.0	-12.8	1.43 V	312	27.5	13.7

Remarks:

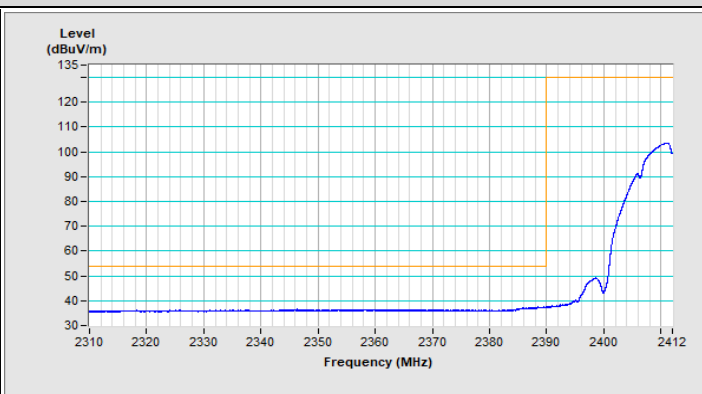
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency,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

Plot of Band Edge_Mode A

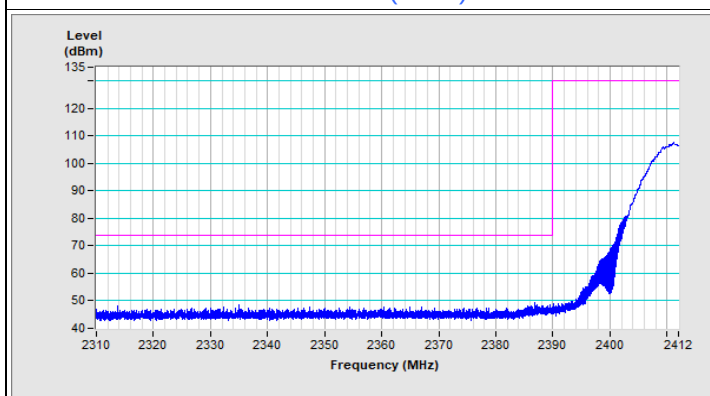
802.11b Channel 1



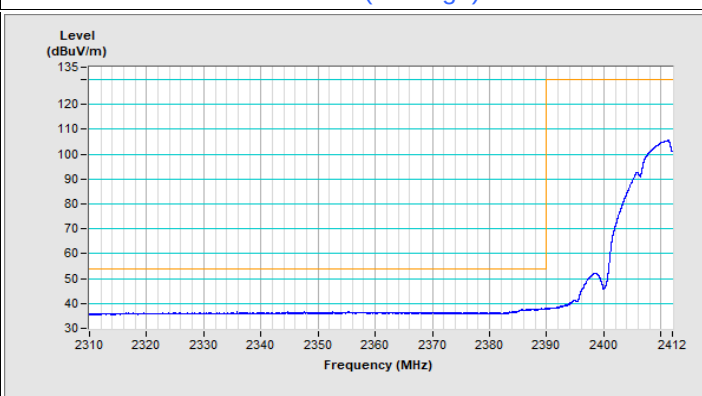
Horizontal (Peak)



Horizontal (Average)

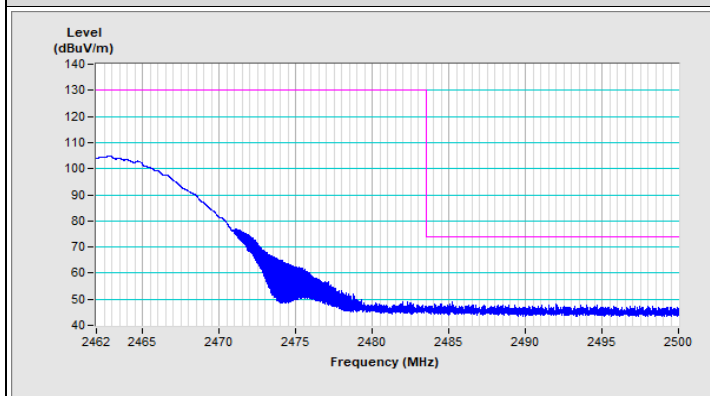


Vertical (Peak)

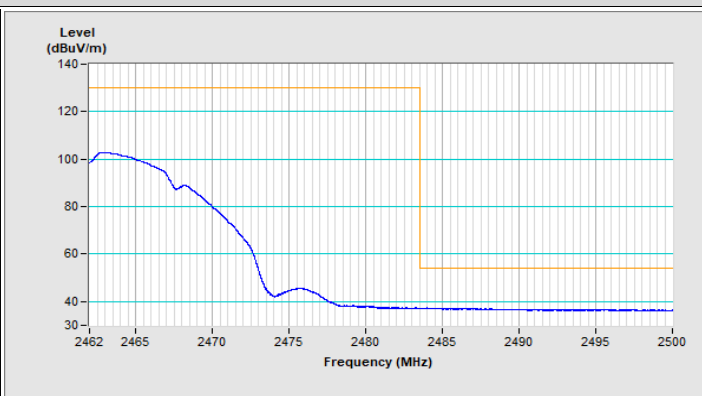


Vertical (Average)

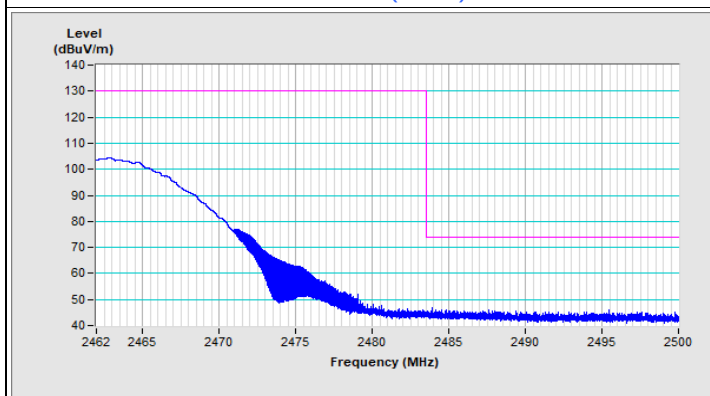
802.11b Channel 11



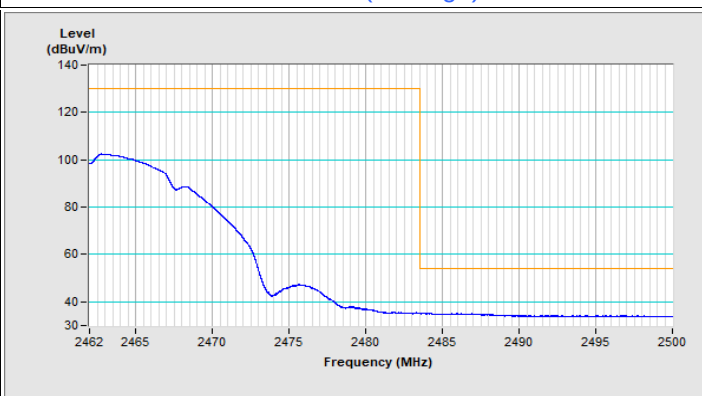
Horizontal (Peak)



Horizontal (Average)

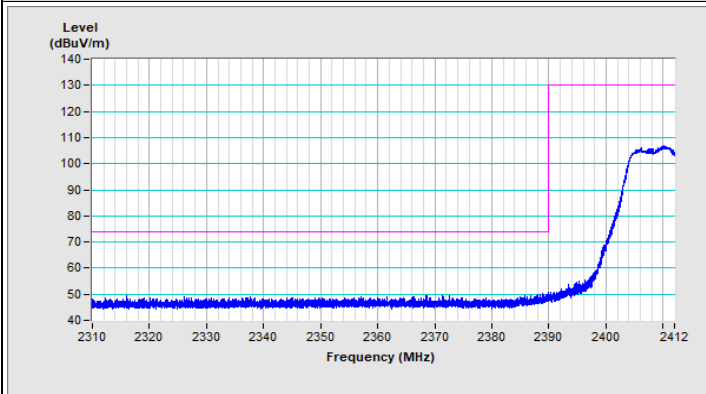


Vertical (Peak)

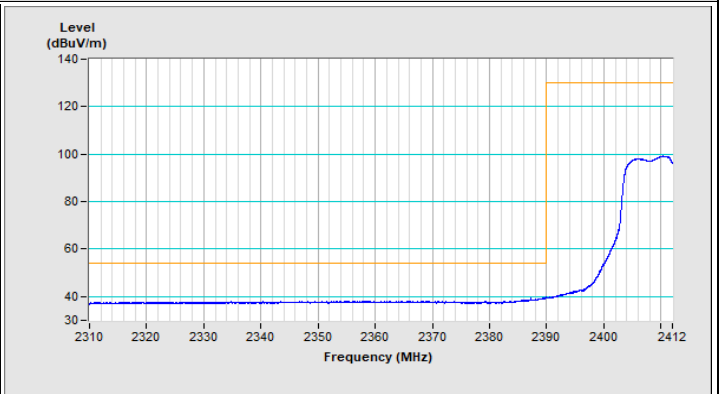


Vertical (Average)

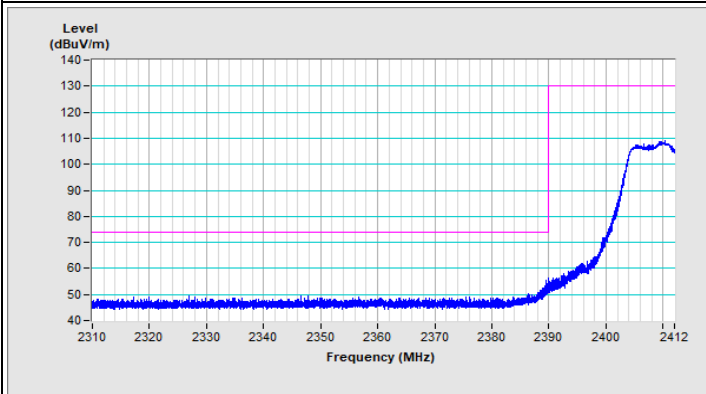
802.11g Channel 1



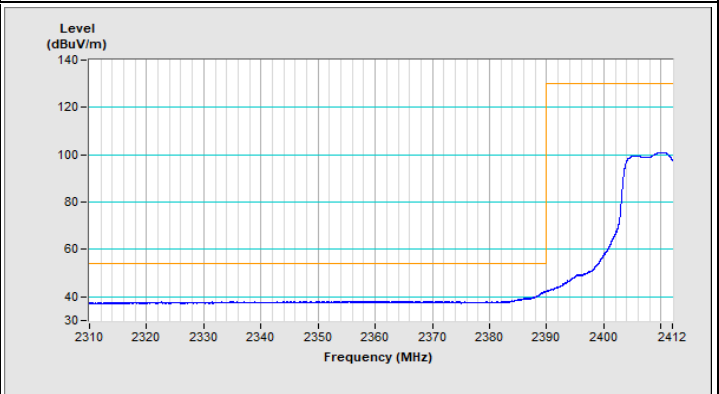
Horizontal (Peak)



Horizontal (Average)

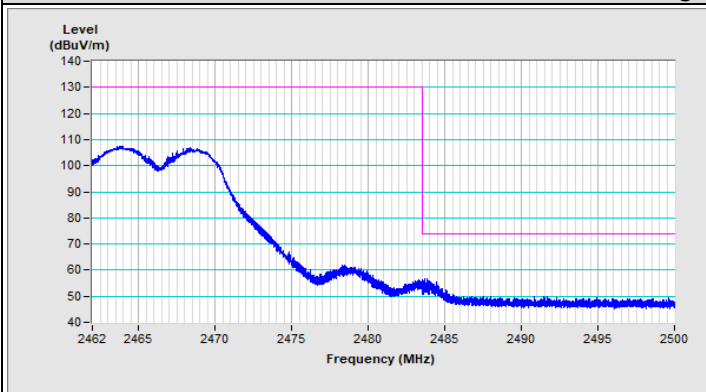


Vertical (Peak)

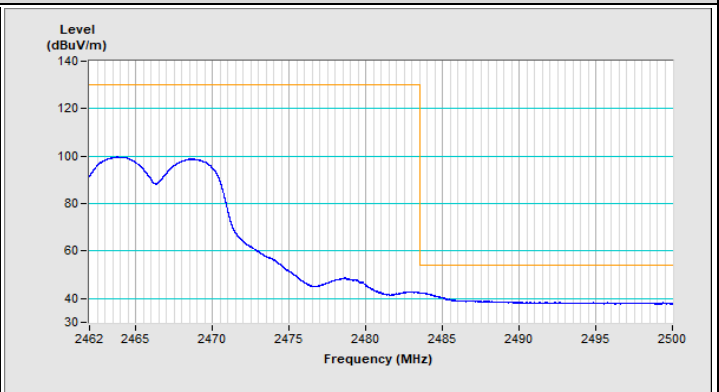


Vertical (Average)

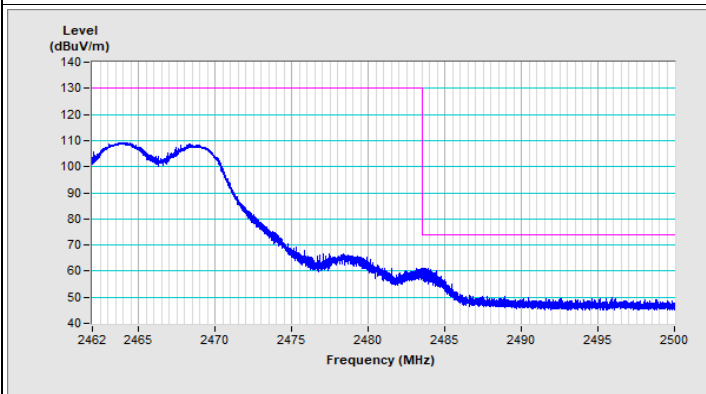
802.11g Channel 11



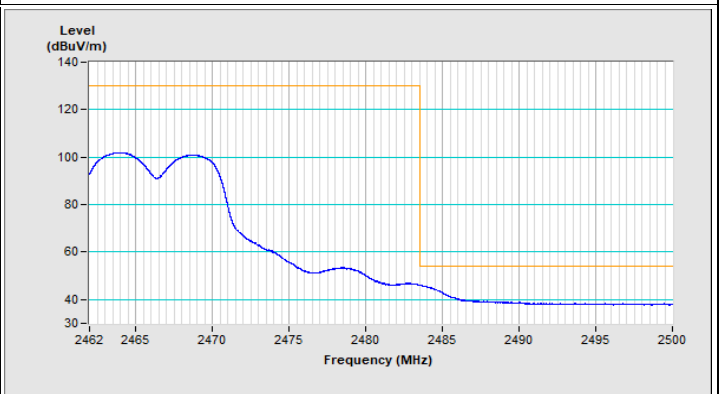
Horizontal (Peak)



Horizontal (Average)

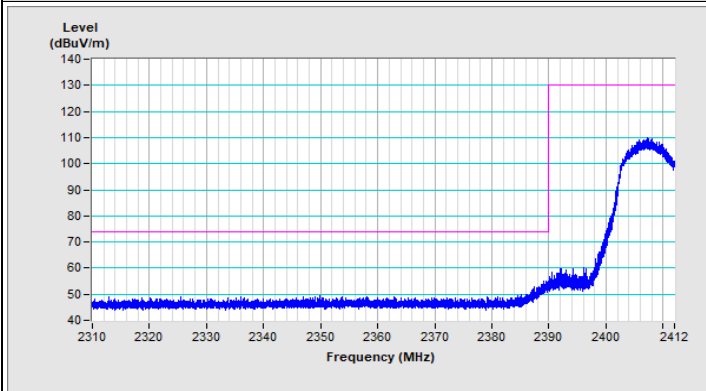


Vertical (Peak)

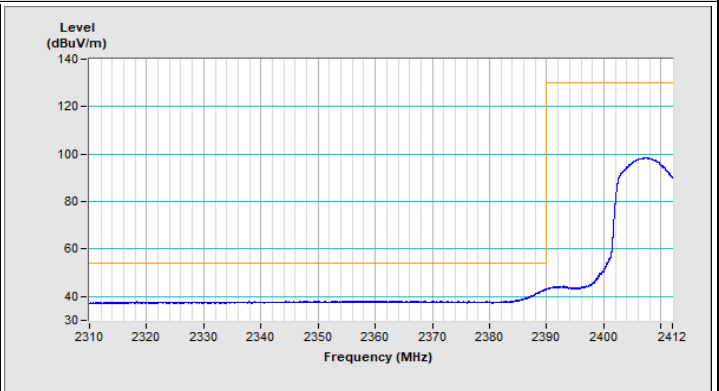


Vertical (Average)

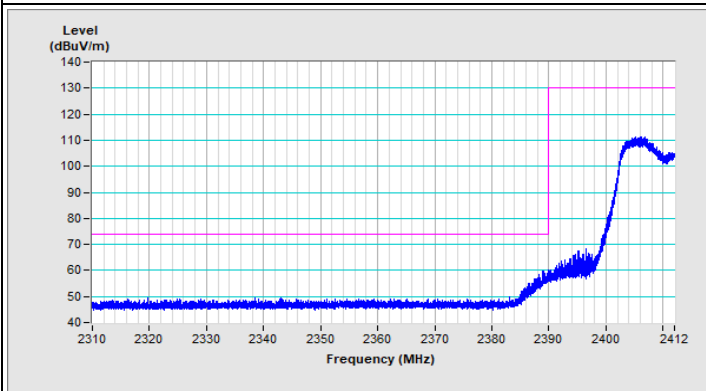
802.11ax (HE20) Channel 1



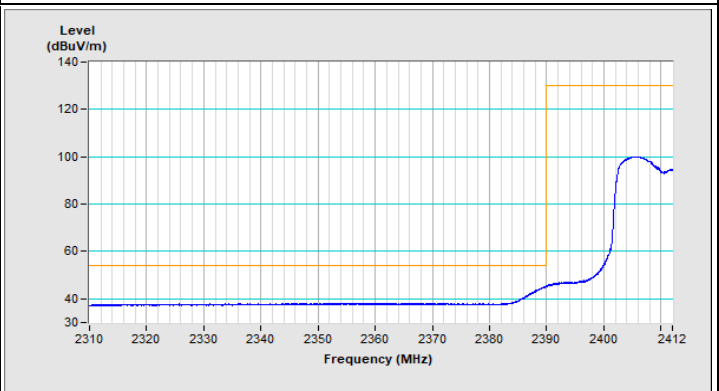
Horizontal (Peak)



Horizontal (Average)

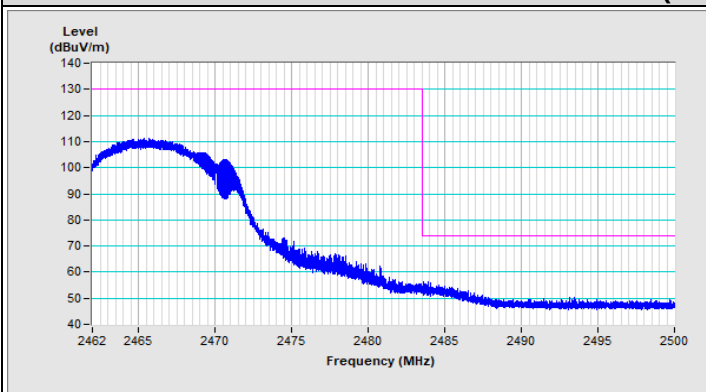


Vertical (Peak)

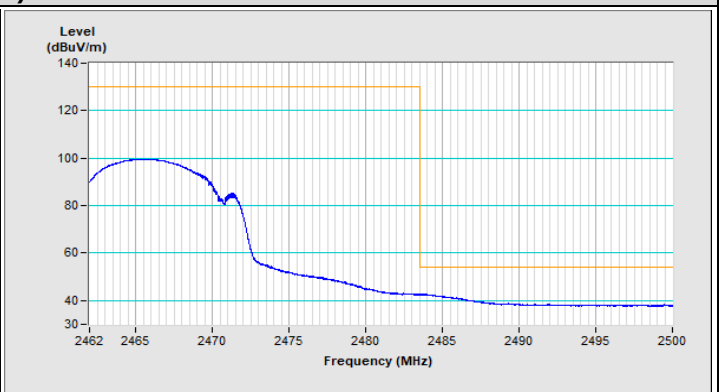


Vertical (Average)

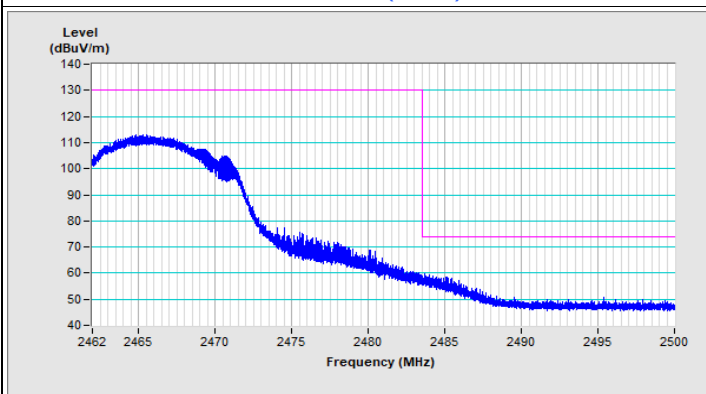
802.11ax (HE20) Channel 11



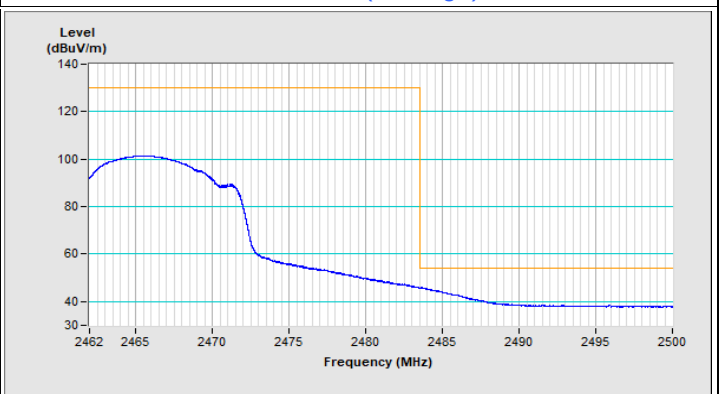
Horizontal (Peak)



Horizontal (Average)

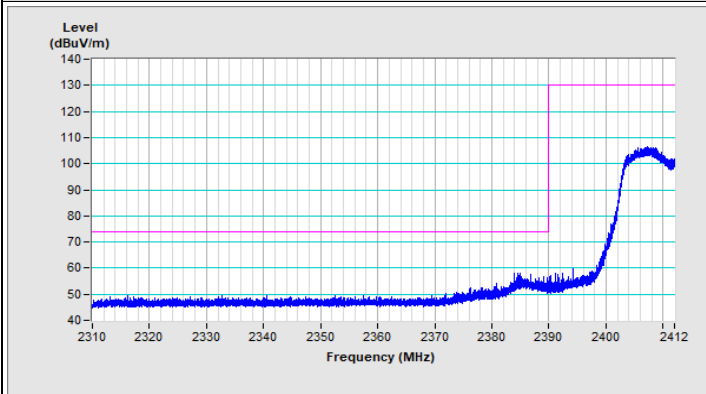


Vertical (Peak)

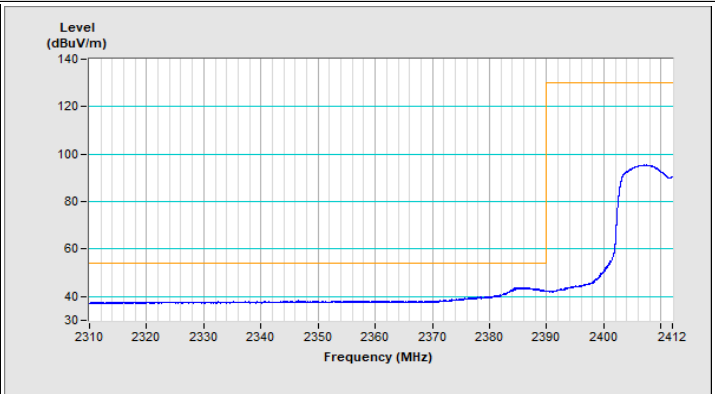


Vertical (Average)

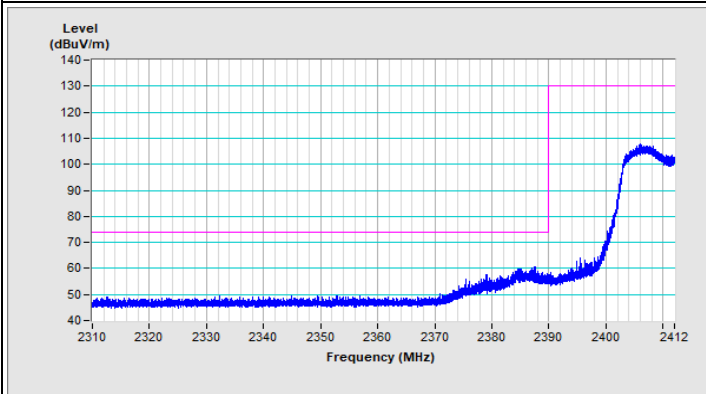
802.11ax (HE40) Channel 3



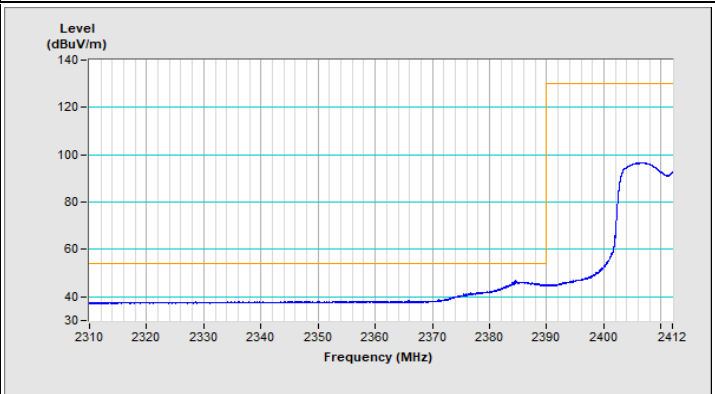
Horizontal (Peak)



Horizontal (Average)

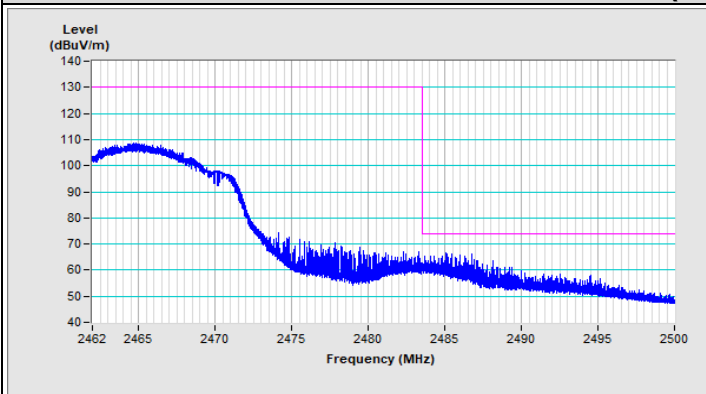


Vertical (Peak)

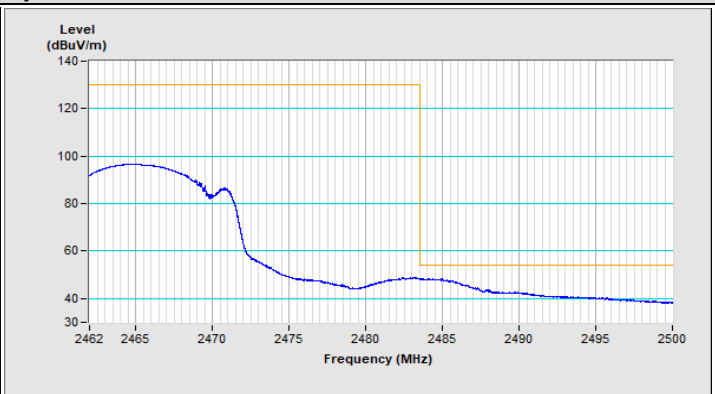


Vertical (Average)

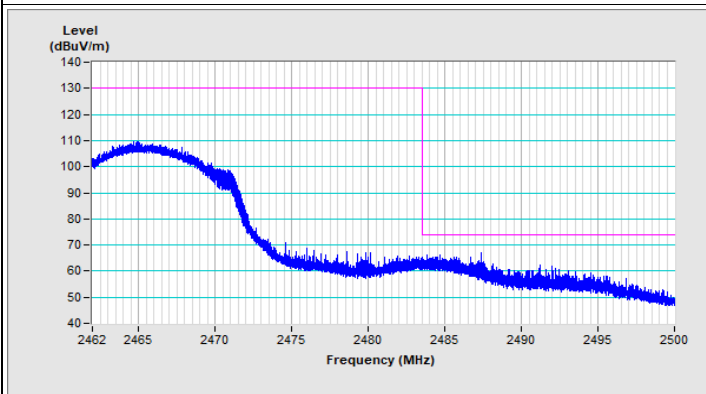
802.11ax (HE40) Channel 9



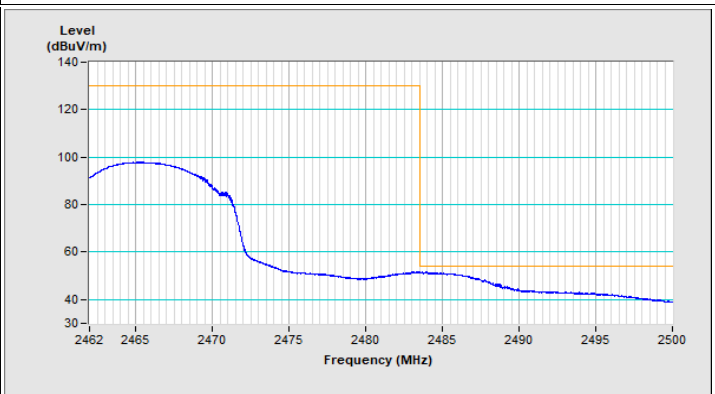
Horizontal (Peak)



Horizontal (Average)

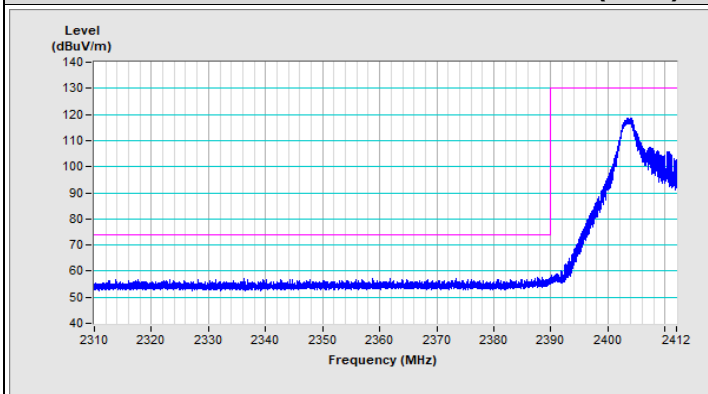


Vertical (Peak)

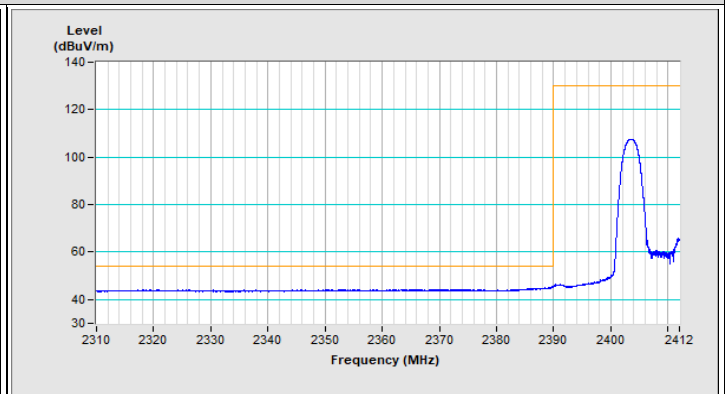


Vertical (Average)

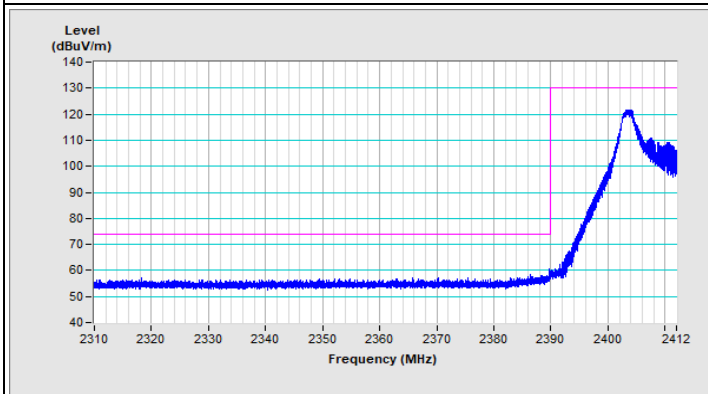
802.11ax (HE20) 26-tone RU Channel 1



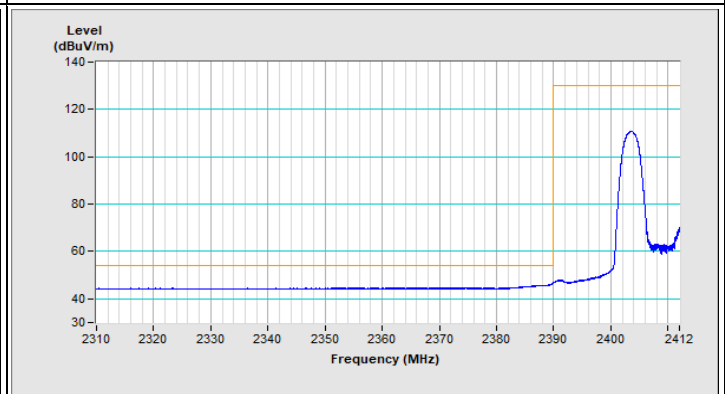
Horizontal (Peak)



Horizontal (Average)

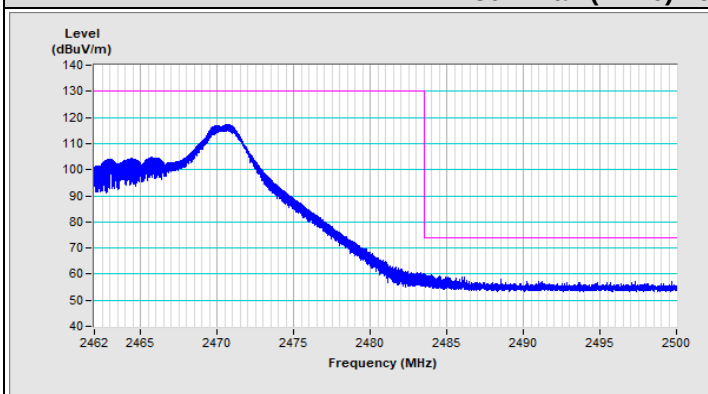


Vertical (Peak)

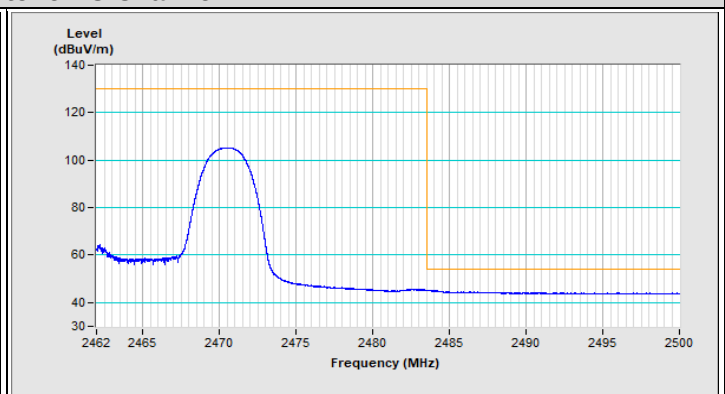


Vertical (Average)

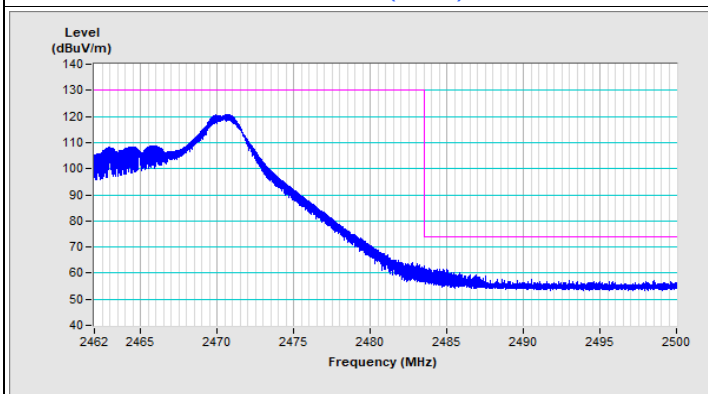
802.11ax (HE20) 26-tone RU Channel 11



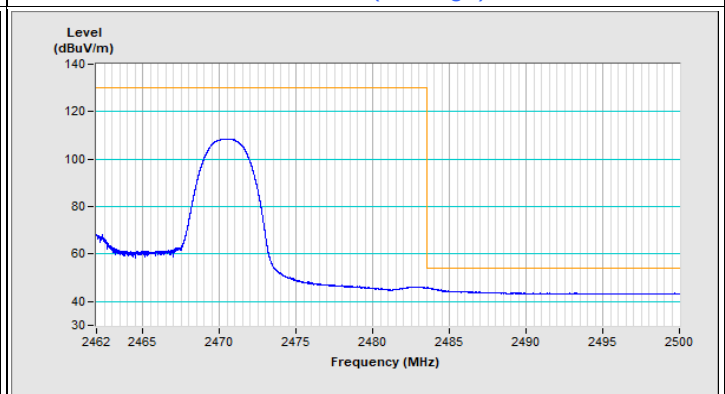
Horizontal (Peak)



Horizontal (Average)

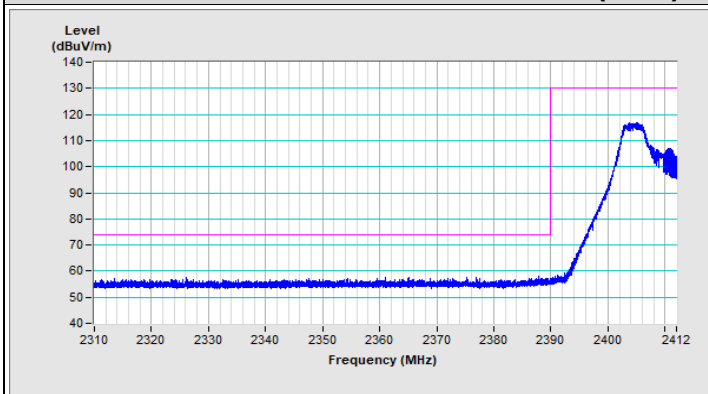


Vertical (Peak)

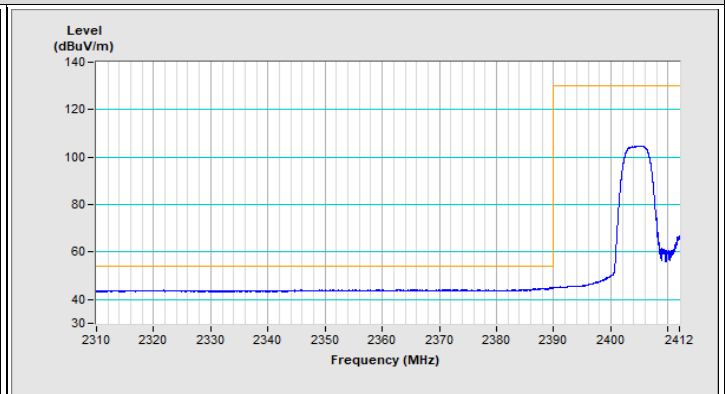


Vertical (Average)

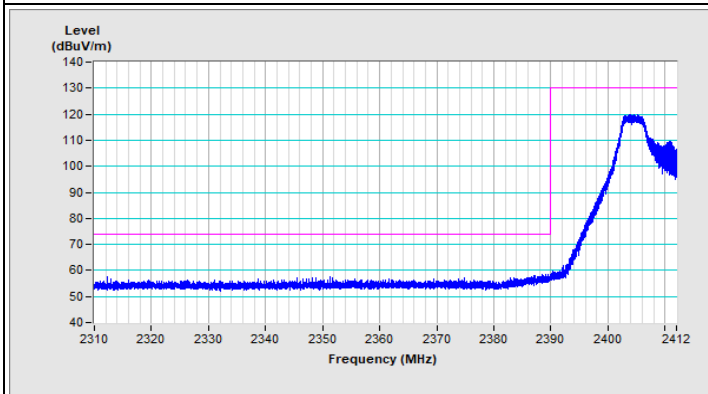
802.11ax (HE20) 52-tone RU Channel 1



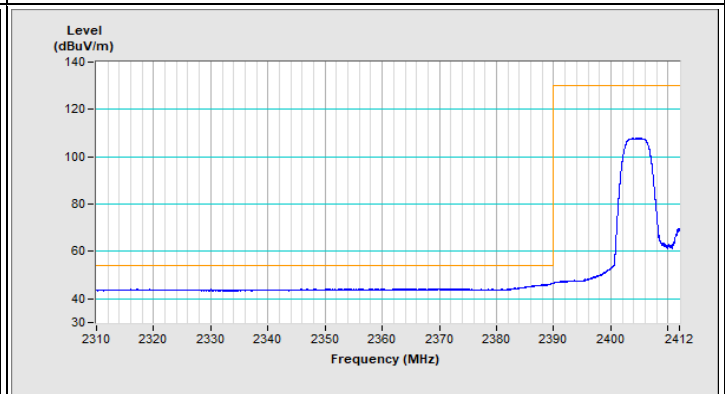
Horizontal (Peak)



Horizontal (Average)

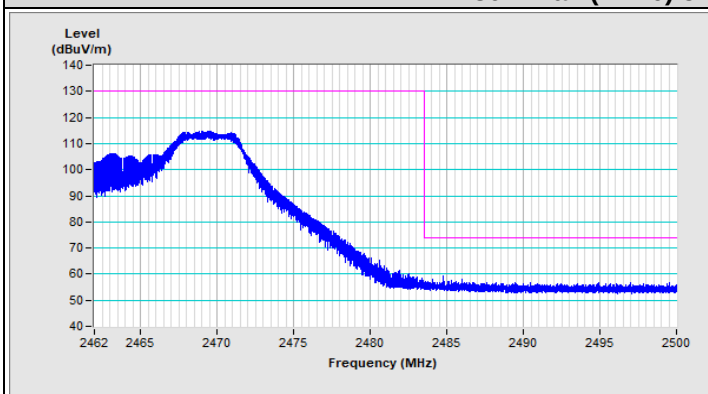


Vertical (Peak)

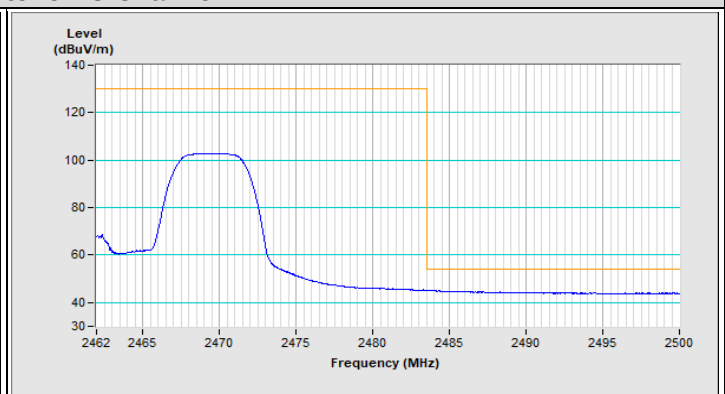


Vertical (Average)

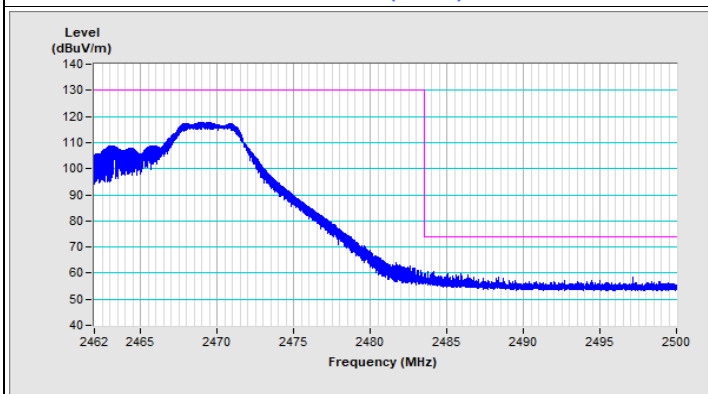
802.11ax (HE20) 52-tone RU Channel 11



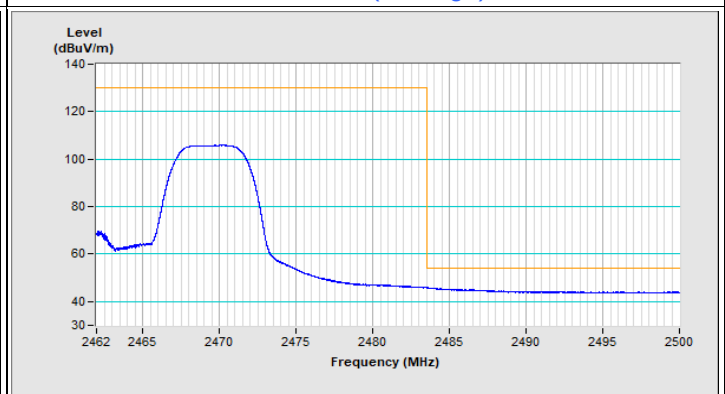
Horizontal (Peak)



Horizontal (Average)

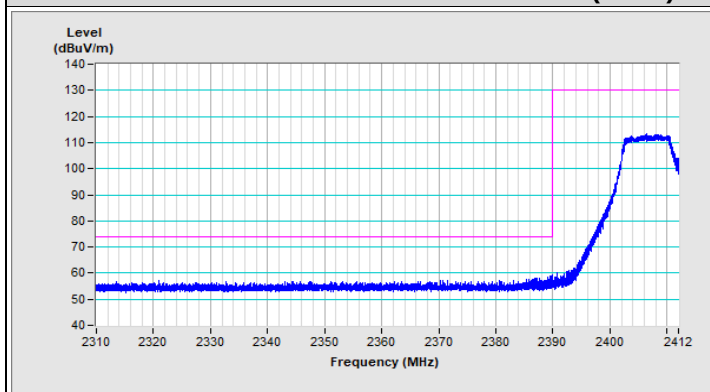


Vertical (Peak)

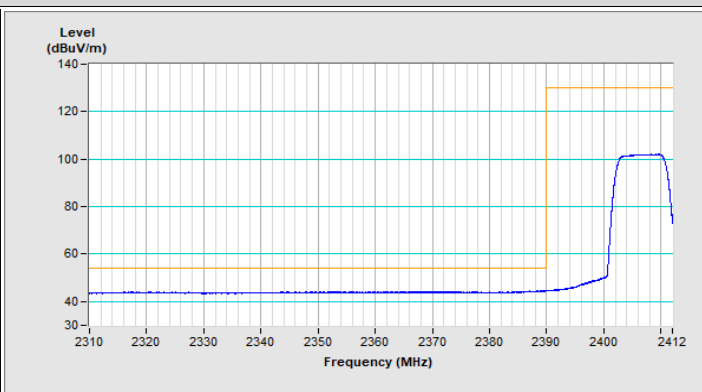


Vertical (Average)

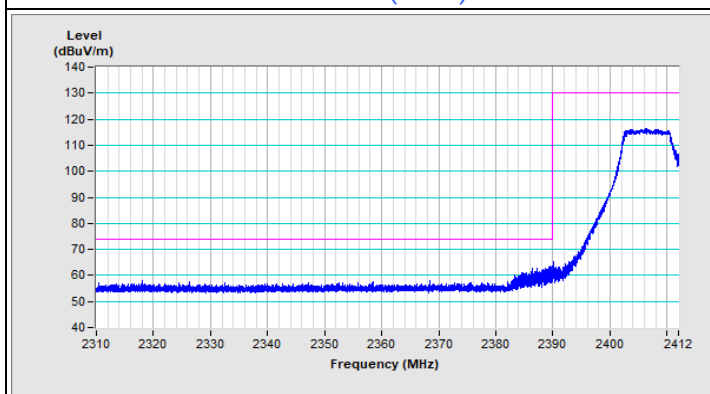
802.11ax (HE20) 106-tone RU Channel 1



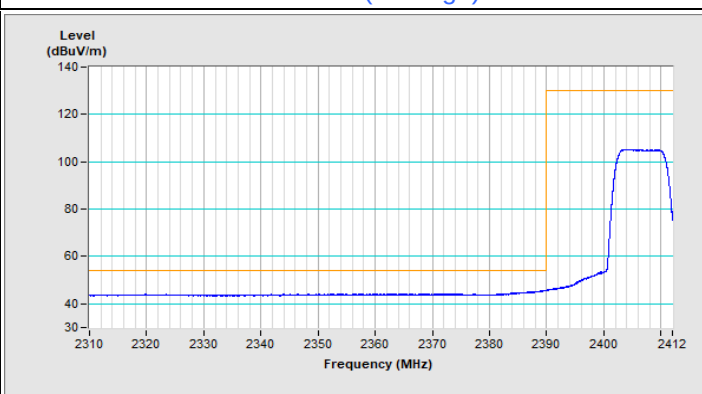
Horizontal (Peak)



Horizontal (Average)

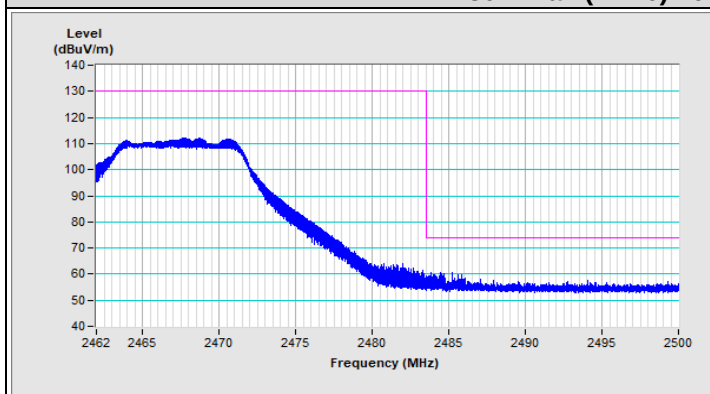


Vertical (Peak)

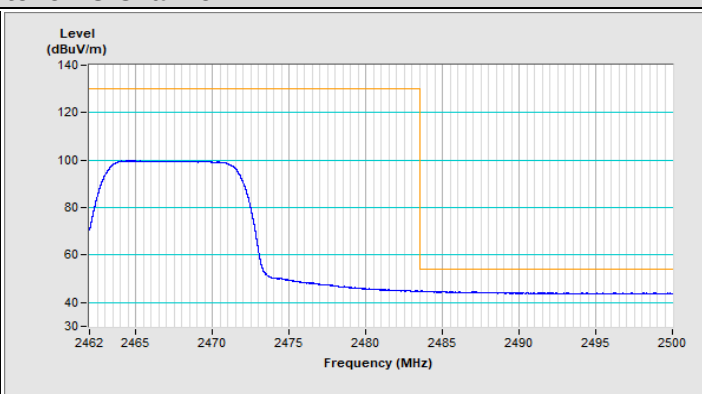


Vertical (Average)

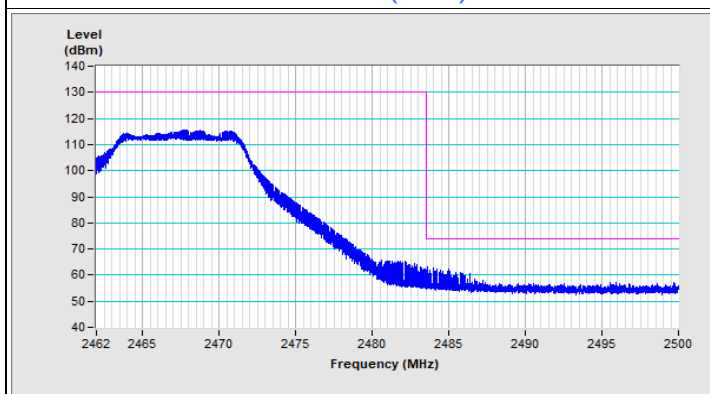
802.11ax (HE20) 106-tone RU Channel 11



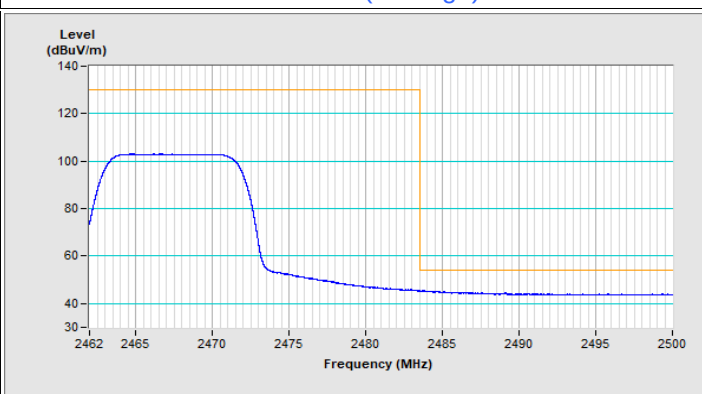
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)



Vertical (Average)

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

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