

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)
Report No.: RFBFJZ-WTW-P22110126-12
FCC ID: V65E7200
Product: Smart Phone
Brand: Kyocera
Model No.: E7200
Received Date: 2023/1/3
Test Date: 2023/1/13 ~ 2023/3/6
Issued Date: 2023/4/11

Applicant: Kyocera Corporation % Kyocera International, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003

Designation Number: 281270 / TW0032

Approved by: Jeremy Lin , **Date:** 2023/4/11
Jeremy Lin / Project Engineer

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Prepared by : Polly Chien / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBFJZ-WTW-P22110126-12	Original release.	2023/4/11

1 Certificate

Product: Smart Phone

Brand: Kyocera

Test Model: E7200

Sample Status: Identical prototype

Applicant: Kyocera Corporation % Kyocera International, Inc.

Test Date: 2023/1/13 ~ 2023/3/6

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

Measurement ANSI C63.10-2013

procedure: 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 -19.17 dB at 0.59800 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -8.2 dB at 36.79 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.7 dB at 2483.50 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.99 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.00 dB
	30 MHz ~ 1 GHz	2.93 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	1.76 dB
	18 GHz ~ 40 GHz	1.77 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	Smart Phone
Brand	Kyocera
Test Model	E7200
Status of EUT	Identical prototype
Power Supply Rating	20Vdc or 15Vdc or 9Vdc or 5Vdc (From adapter) 3.87Vdc (From battery)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM for OFDMA in 11ax mode only
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	Up to 286.8 Mbps
Operating Frequency	2.412 GHz ~ 2.462 GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20), 802.11ax (HE20):11
Output Power	61.043 mW (17.86 dBm)

Note:

1. The EUT uses following accessories.

Battery		
Brand	Model	Specification
Kyocera	SCP-76LBPS	Power Rating : 3.87Vdc, typ 4270mAh, typ. 16.6Wh
USB Type A to USB type C cable		
Brand	Model	Specification
KYOCERA	SCP-24 SDC	Signal Line : 1m shielded Type A to Type C USB

2. The EUT uses following support unit only.

Adapter (Support unit)		
Brand	Model	Specification
Kyocera	SCP-53ADT	AC Input: 100-240 Vac, 50/60 Hz, 0.6A DC Output: 5Vdc, 3A; 9Vdc, 3A; 15Vdc, 1.8A; 20Vdc, 1.35A

3. There are WWAN, Bluetooth, NFC, ANT+ and WLAN technology used for the EUT.

4. Simultaneously transmission condition.

Condition	Technology	
1	WWAN	Bluetooth
2	WWAN	WLAN 2.4GHz
3	WWAN	WLAN 5GHz
4	WWAN	Bluetooth + WLAN 5GHz
5	WWAN	Bluetooth + WLAN 6GHz

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

5. The EUT support OFDMA and Partial RU mode, therefore partial RU combination were investigated and the worst case scenario was identified. (The worst case data were presented in section 3.4)
6. 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 Type		Monopole
Antenna Connector		NA
Item	Antenna No.	Gain (dBi)
Bluetooth	ANT3 (CH0)	-0.1
	ANT5 (CH1)	-0.6
WLAN 2.4G	ANT3 (CH0)	-0.1
WLAN 5G		3.2
WLAN 6G		1.8
WLAN 2.4G	ANT5 (CH1)	-0.6
WLAN 5G		2.1
WLAN 6G		2.0

*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
802.11ax (HE20)	2TX	2RX

Note:

1. The bandwidth and modulation are similar for HT20 on 802.11n mode and HE20 on 802.11ax mode. Therefore the investigated worst case is the representative mode in test report.
2. In WLAN 2.4 GHz 802.11ax mode, DUT supports RU26, RU52, RU106, RU242 and Full RU modes. After pre-testing, the Full RU mode is the worst mode. Except for the output power, power spectral density and Unwanted Emissions above 1 GHz test items, all DUTs are measured separately in the supported RU mode, and the rest of the test items are finally measured in the Full RU mode.

3.3 Channel List

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20), 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		

3.4 Test Mode Applicability and Tested Channel Detail

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

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

Test Item	Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	802.11n (HT20)	1, 6, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU26)	1, 6, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU52)	1, 6, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU106)	1, 6, 11	BPSK	MCS0
	802.11ax (HE20) Full RU	1, 6, 11	BPSK	MCS0
Power Spectral Density	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	20 MHz Preamble 802.11ax (RU26)	1, 6, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU52)	1, 6, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU106)	1, 6, 11	BPSK	MCS0
	802.11ax (HE20) Full RU	1, 6, 11	BPSK	MCS0
6 dB Bandwidth	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	802.11n (HT20)	1, 6, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU26)	1, 6, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU52)	1, 6, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU106)	1, 6, 11	BPSK	MCS0
	802.11ax (HE20) Full RU	1, 6, 11	BPSK	MCS0
Conducted Out of Band Emissions	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20) Full RU	1, 6, 11	BPSK	MCS0
AC Power Conducted Emissions	802.11g	6	BPSK	6Mb/s
Unwanted Emissions below 1 GHz	802.11g	6	BPSK	6Mb/s
Unwanted Emissions above 1 GHz	802.11b	1, 6, 11	DBPSK	1Mb/s
	802.11g	1, 6, 11	BPSK	6Mb/s
	20 MHz Preamble 802.11ax (RU26)	1, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU52)	1, 11	BPSK	MCS0
	20 MHz Preamble 802.11ax (RU106)	1, 11	BPSK	MCS0
	802.11ax (HE20) Full RU	1, 11	BPSK	MCS0

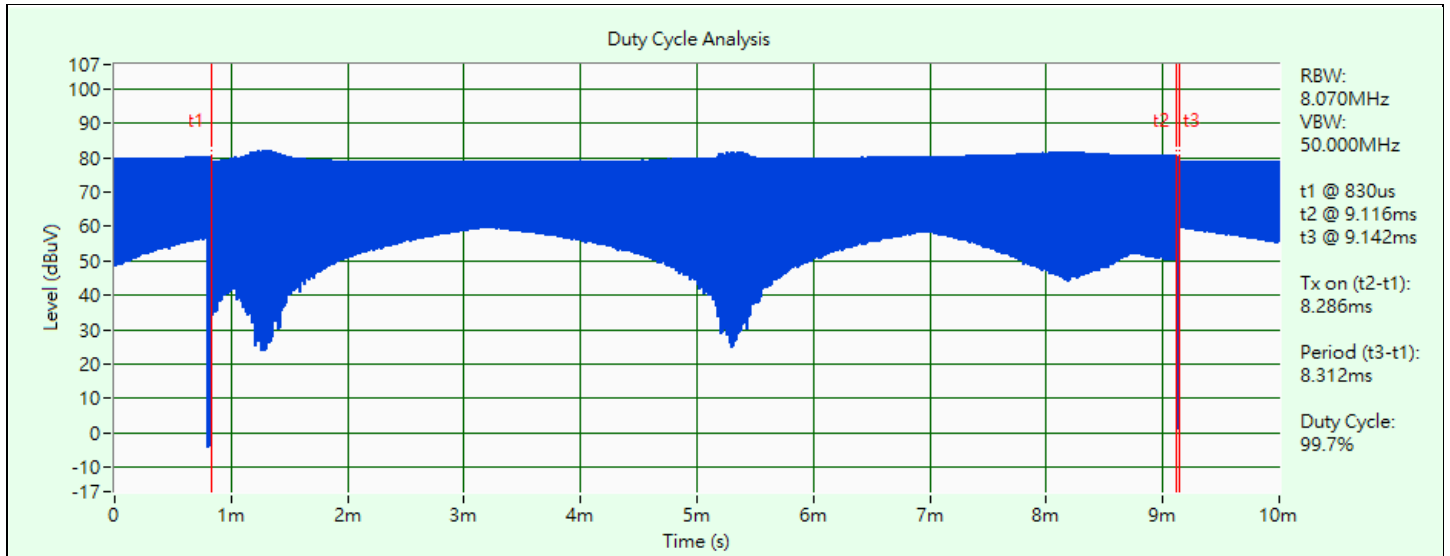


3.5 Duty Cycle of Test Signal

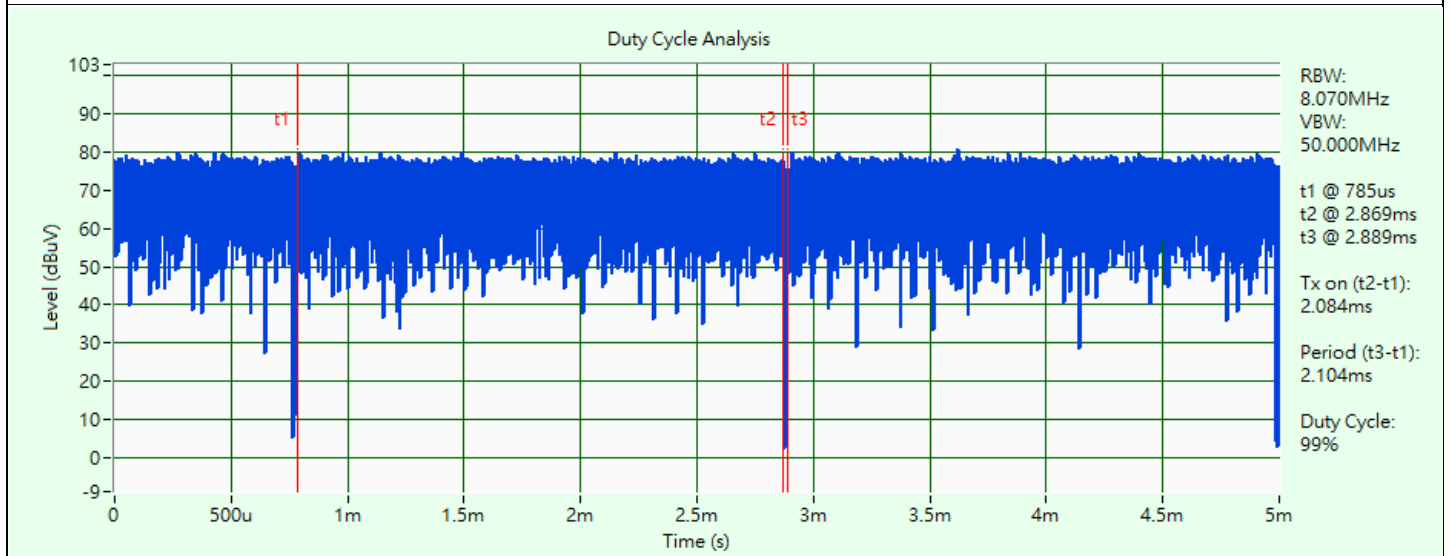
802.11b: Duty cycle = 8.286 ms / 8.312 ms x 100% = 99.7%

802.11g: Duty cycle = 2.084 ms / 2.104 ms x 100% = 99.0%

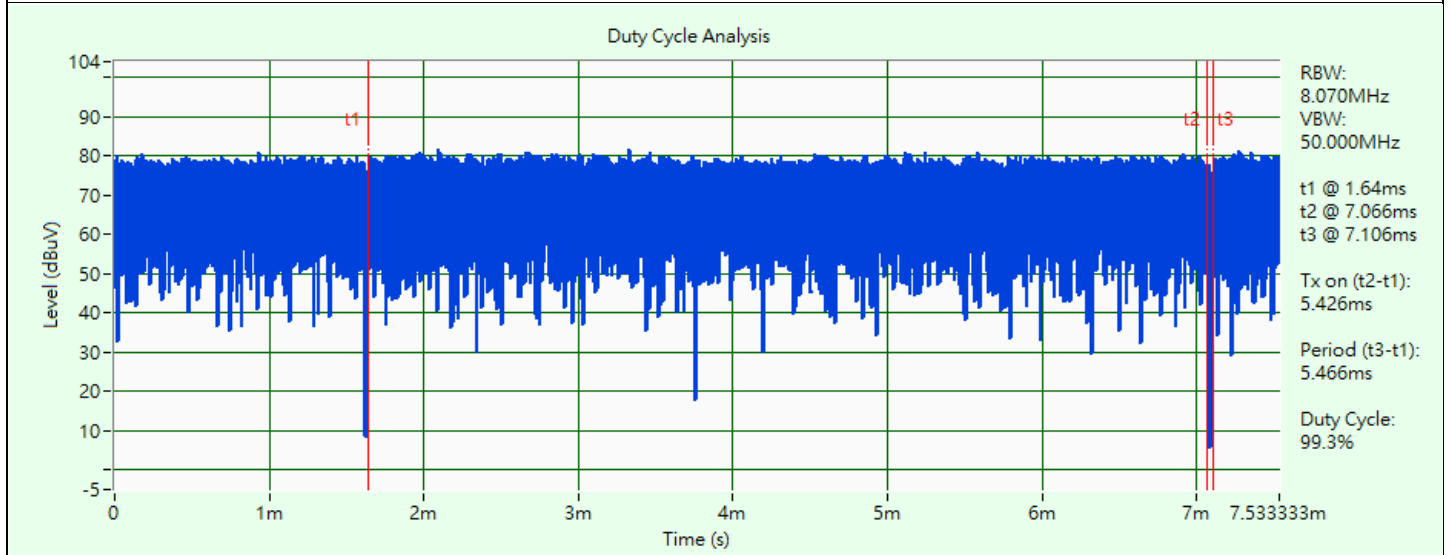
802.11ax (HE20) Full RU: Duty cycle = 5.426 ms / 5.466 ms x 100% = 99.3%



802.11b



802.11g

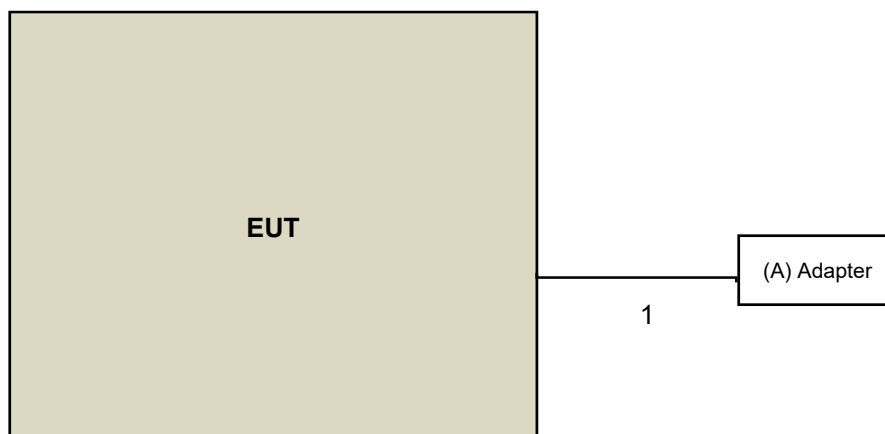


802.11ax (HE20) Full RU

3.6 Test Program Used and Operation Descriptions

Controlling software (DroidDM_V1.1.16) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Adapter	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	Kyocera	SCP-53ADT	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	Type A to Type C USB	1	1	Y	0	Accessory of EUT

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
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/ MY55190007/MY55210005	2022/7/13	2023/7/12
Wideband Power Sensor KEYSIGHT	N1923A	MY58020002	2023/1/18	2024/1/17
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	2023/1/19	2024/1/18

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/2/10 ~ 2023/3/6

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	100979	2022/3/25	2023/3/24

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/2/10 ~ 2023/3/6

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Conducted Out of Band Emissions

Refer to section 4.2 to get information of the instruments.

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
LISN R&S	ESH3-Z5	100311	2022/9/12	2023/9/11
LISN ROHDE & SCHWARZ	ENV216	101826	2022/3/14	2023/3/13
RF Coaxial Cable WOKEN	5D-FB	Cable-cond1-01	2023/1/7	2024/1/6
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
Test Receiver Rohde&Schwarz	ESCI	100613	2022/12/5	2023/12/4
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2022/8/31	2023/8/30

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2023/3/1

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
Bi-log Broadband Antenna Schwarzbeck	VULB9168	9168-1213	2022/10/20	2023/10/19
Loop Antenna EMCI	EM-6879	269	2022/9/19	2023/9/18
Loop Antenna TESEQ	HLA 6121	45745	2022/7/27	2023/7/26
Pre-amplifier EMCI	EMC001340	980201	2022/9/23	2023/9/22
Pre_Amplifier EMCI	EMC330N	980782	2023/1/16	2024/1/15
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2023/1/7	2024/1/6
	EMCCFD400-NM-NM- 500	201233	2023/1/16	2024/1/15
	EMCCFD400-NM-NM- 3000	201235	2023/1/16	2024/1/15
	EMCCFD400-NM-NM- 9000	201236	2023/1/16	2024/1/15
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101866	2023/1/10	2024/1/9
Test Receiver R&S	ESR3+	102782	2022/12/12	2023/12/11
Turn Table Max-Full	MF-7802BS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208674	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 8.
2. Tested Date: 2023/1/30

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
Horn Antenna RFSPIN	DRH18-E	210103A18E	2022/11/13	2023/11/12
Horn Antenna Schwarzbeck	BBHA 9170	9170-1049	2022/11/13	2023/11/12
Pre_Amplifier EMCI	EMC118A45SE	980808	2022/12/29	2023/12/28
	EMC184045SE	980788	2022/1/17 2023/1/16	2023/1/16 2024/1/15
RF Coaxial Cable EMCI	EMC101G-KM-KM-2000	201254	2022/1/17 2023/1/16	2023/1/16 2024/1/15
	EMC101G-KM-KM-3000	201257	2022/1/17 2023/1/16	2023/1/16 2024/1/15
	EMC101G-KM-KM-5000	201260	2022/1/17 2023/1/16	2023/1/16 2024/1/15
	EMC104-SM-SM-1000	210102	2022/1/17 2023/1/16	2023/1/16 2024/1/15
	EMC104-SM-SM-3000	201231	2022/1/17 2023/1/16	2023/1/16 2024/1/15
	EMC104-SM-SM-9000	201243	2022/1/17 2023/1/16	2023/1/16 2024/1/15
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101866	2023/1/10	2024/1/9
Test Receiver R&S	ESR3+	102782	2022/12/12	2023/12/11
Turn Table Max-Full	MF-7802BS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208674	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 8.
2. Tested Date: 2023/1/13 ~ 2023/3/3

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 30 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 30 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 30 dB below the highest level of the desired power:

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

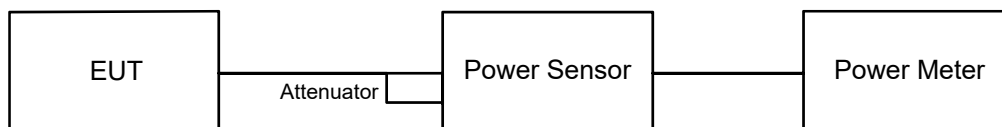
Notes:

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



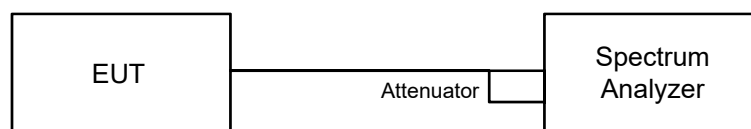
6.1.2 Test Procedure

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

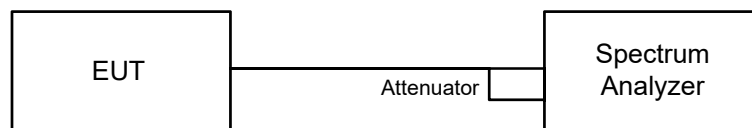


6.2.2 Test Procedure

- a. Measure the duty cycle (x).
- b. Set instrument center frequency to DTS channel center frequency.
- c. Set span to at least 1.5 times the OBW.
- d. Set RBW to: 3 kHz.
- e. Set VBW $\geq 3 \times$ RBW.
- f. Detector = power averaging (RMS) or sample detector (when RMS not available).
- g. Ensure that the number of measurement points in the sweep $\geq 2 \times$ span/RBW.
- h. Sweep time = auto couple.
- i. Do not use sweep triggering. Allow sweep to "free run".
- j. Employ trace averaging (RMS) mode over a minimum of 100 traces.
- k. Use the peak marker function to determine the maximum amplitude level.
- l. Note: If Duty cycle < 98%, Add $10 \log (1/x)$, where x is the duty cycle measured in step (a), to the measured PSD to compute the average PSD during the actual transmission time.

6.3 6 dB Bandwidth

6.3.1 Test Setup

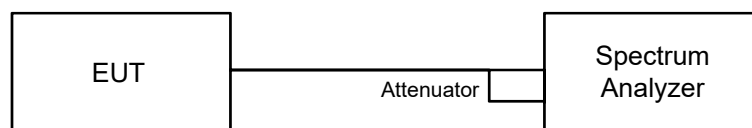


6.3.2 Test Procedure

- 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

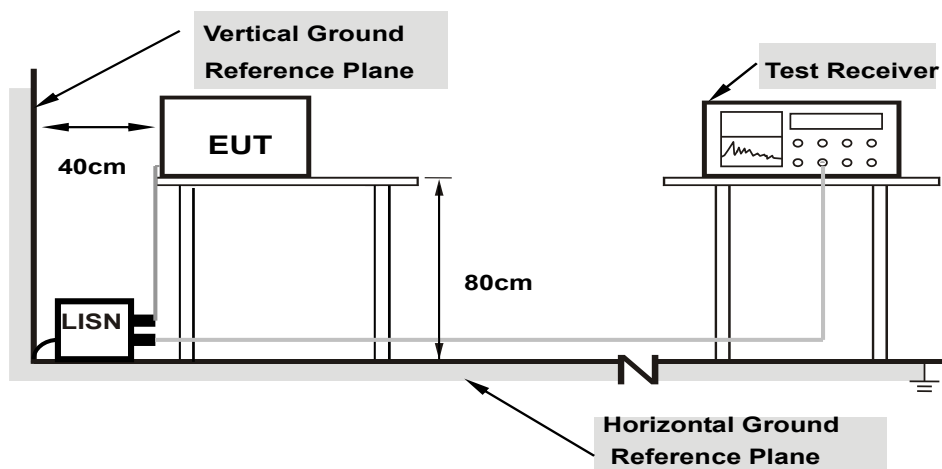
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOB

- 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

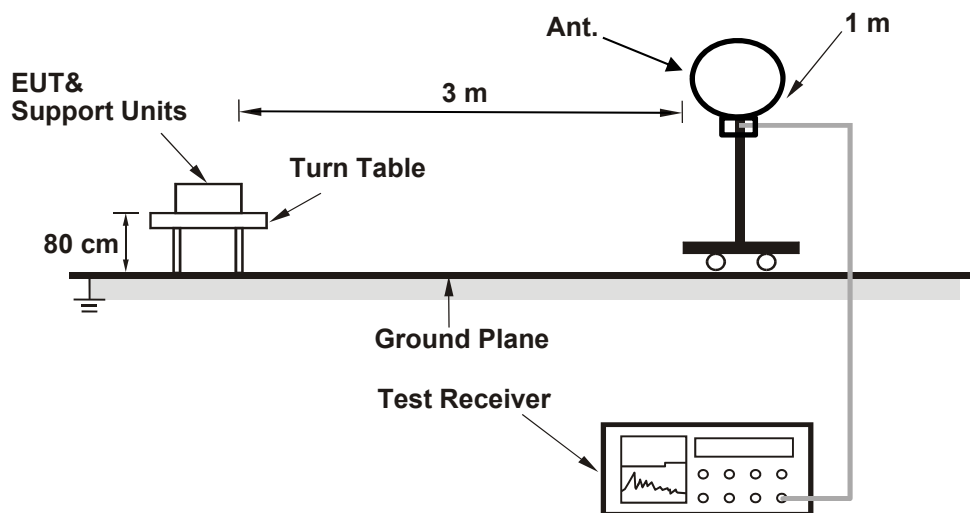
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

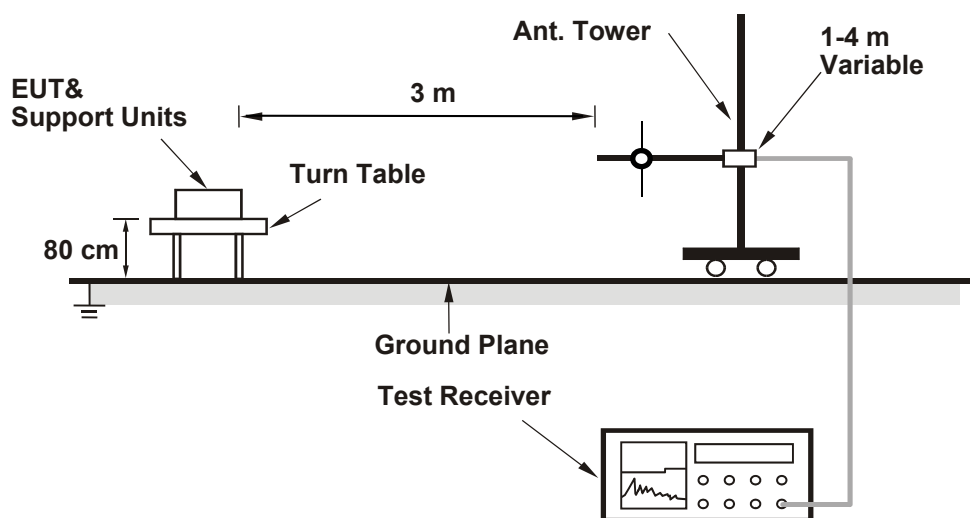
6.6 Unwanted Emissions below 1 GHz

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

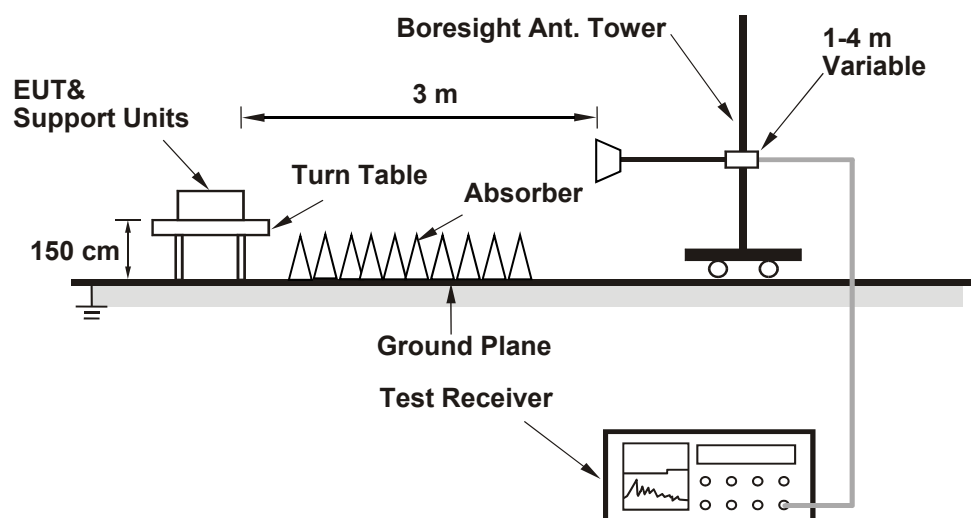
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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, 60% RH	Tested By:	Frank Liu / Gary Lin
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802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	14.07	14.82	55.866	17.47	30	Pass
6	2437	14.45	14.66	57.103	17.57	30	Pass
11	2462	14.21	14.99	57.913	17.63	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is $-0.1 \text{ dBi} < 6 \text{ dBi}$, so the output power limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	14.38	14.87	58.106	17.64	30	Pass
6	2437	14.75	14.94	61.043	17.86	30	Pass
11	2462	12.93	13.39	41.461	16.18	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is $-0.1 \text{ dBi} < 6 \text{ dBi}$, so the output power limit shall not be reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	14.53	14.64	57.438	17.59	30	Pass
6	2437	14.17	14.43	53.877	17.31	30	Pass
11	2462	10.52	10.93	23.649	13.74	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is $-0.1 \text{ dBi} < 6 \text{ dBi}$, so the output power limit shall not be reduced.

20 MHz Preamble 802.11ax (RU26)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	14.54	14.77	58.428	17.67	30	Pass
6	2437	14.30	14.58	55.618	17.45	30	Pass
11	2462	10.64	10.95	24.034	13.81	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is $-0.1 \text{ dBi} < 6 \text{ dBi}$, so the output power limit shall not be reduced.

20 MHz Preamble 802.11ax (RU52)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	14.44	14.83	58.226	17.65	30	Pass
6	2437	14.36	14.55	55.82	17.47	30	Pass
11	2462	10.67	10.93	24.047	13.81	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is $-0.1 \text{ dBi} < 6 \text{ dBi}$, so the output power limit shall not be reduced.

20 MHz Preamble 802.11ax (RU106)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	14.52	14.84	58.762	17.69	30	Pass
6	2437	14.42	14.58	56.42	17.51	30	Pass
11	2462	10.69	10.98	24.239	13.85	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is $-0.1 \text{ dBi} < 6 \text{ dBi}$, so the output power limit shall not be reduced.

802.11ax (HE20) Full RU

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
1	2412	14.55	14.92	59.556	17.75	30	Pass
6	2437	14.45	14.65	57.035	17.56	30	Pass
11	2462	10.73	10.98	24.362	13.87	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is $-0.1 \text{ dBi} < 6 \text{ dBi}$, so the output power limit shall not be reduced.

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Frank Liu / Gary Lin
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802.11b

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-17.78	-16.80	-14.25	8	Pass
6	2437	-17.42	-17.14	-14.27	8	Pass
11	2462	-17.58	-16.67	-14.09	8	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.66 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-22.05	-21.49	-18.75	8	Pass
6	2437	-21.65	-21.34	-18.48	8	Pass
11	2462	-23.24	-22.67	-19.94	8	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.66 dBi < 6 dBi, so the power density limit shall not be reduced.

20 MHz Preamble 802.11ax (RU26)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-13.31	-13.50	-10.39	8	Pass
6	2437	-13.92	-13.78	-10.84	8	Pass
11	2462	-17.60	-17.36	-14.47	8	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.66 dBi < 6 dBi, so the power density limit shall not be reduced.

20 MHz Preamble 802.11ax (RU52)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-16.54	-16.66	-13.59	8	Pass
6	2437	-16.98	-16.76	-13.86	8	Pass
11	2462	-20.63	-20.58	-17.59	8	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.66 dBi < 6 dBi, so the power density limit shall not be reduced.

20 MHz Preamble 802.11ax (RU106)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-19.45	-19.55	-16.49	8	Pass
6	2437	-20.03	-19.49	-16.74	8	Pass
11	2462	-23.28	-22.99	-20.12	8	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.66 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20) Full RU

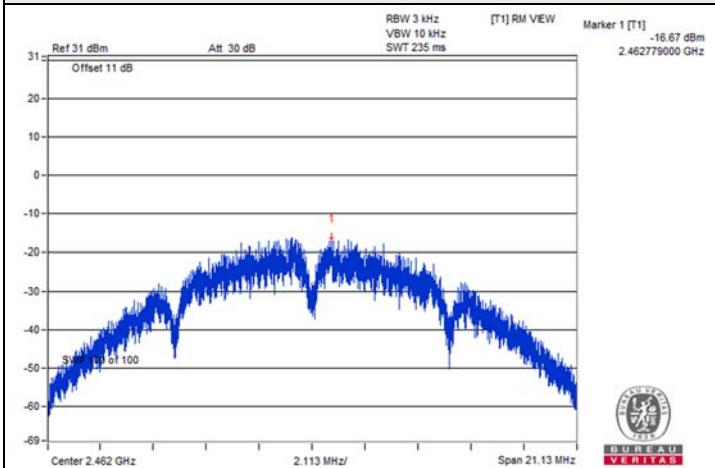
Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1			
1	2412	-22.51	-22.41	-19.45	8	Pass
6	2437	-22.99	-22.68	-19.82	8	Pass
11	2462	-26.30	-26.15	-23.21	8	Pass

Notes:

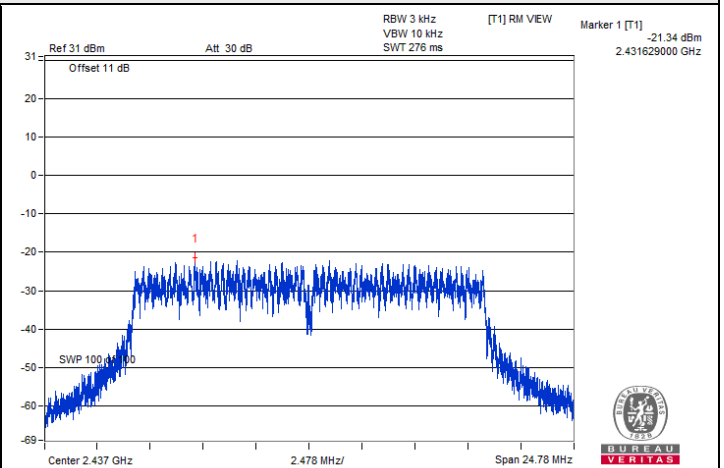
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. The directional gain is 2.66 dBi < 6 dBi, so the power density limit shall not be reduced.



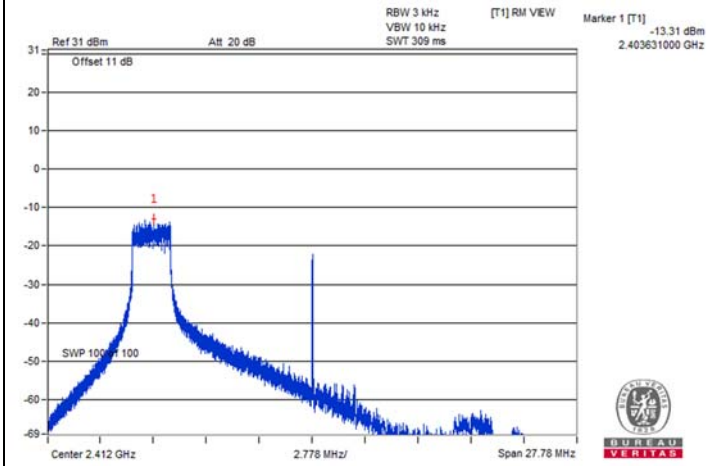
Spectrum Plot of Maximum Value



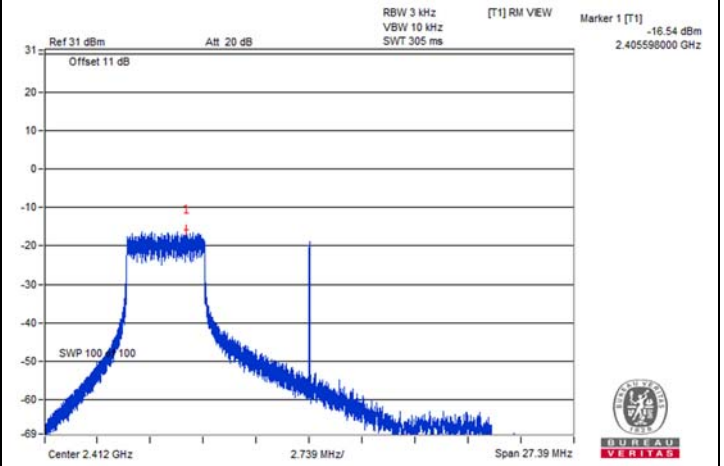
802.11b / Chain 1 : CH 11



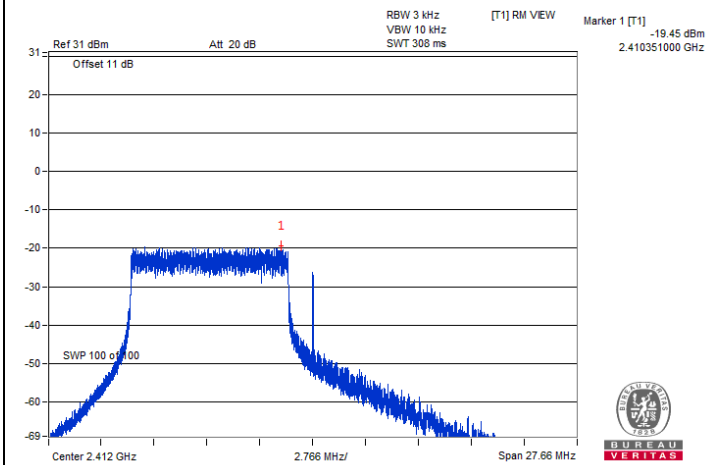
802.11g / Chain 1 : CH 6



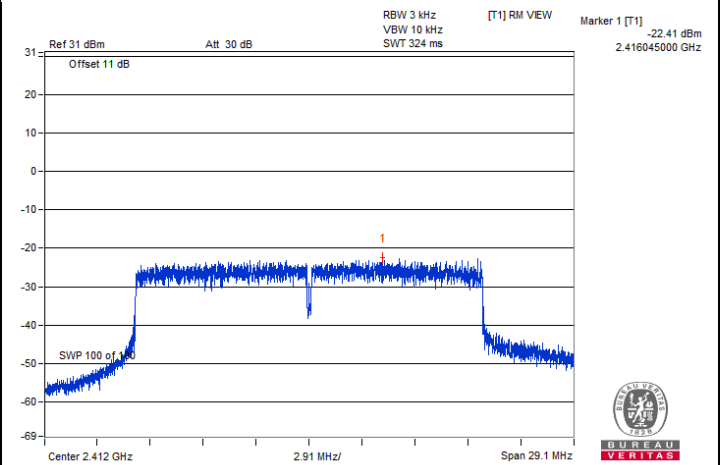
20 MHz Preamble 802.11ax (RU26) / Chain 0 : CH 1



20 MHz Preamble 802.11ax (RU52) / Chain 0 : CH 1



20 MHz Preamble 802.11ax (RU106) / Chain 0 : CH 1



802.11ax (HE20) Full RU / Chain 1 : CH 1

7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Frank Liu / Gary Lin
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802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	8.58	8.13	0.5	Pass
6	2437	8.10	8.08	0.5	Pass
11	2462	8.12	8.60	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	15.98	15.50	0.5	Pass
6	2437	16.37	16.06	0.5	Pass
11	2462	15.41	15.77	0.5	Pass

20 MHz Preamble 802.11ax (RU26)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	17.11	17.11	0.5	Pass
6	2437	2.16	2.15	0.5	Pass
11	2462	17.10	17.11	0.5	Pass

20 MHz Preamble 802.11ax (RU52)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	17.15	17.17	0.5	Pass
6	2437	17.13	17.11	0.5	Pass
11	2462	17.13	17.13	0.5	Pass

20 MHz Preamble 802.11ax (RU106)

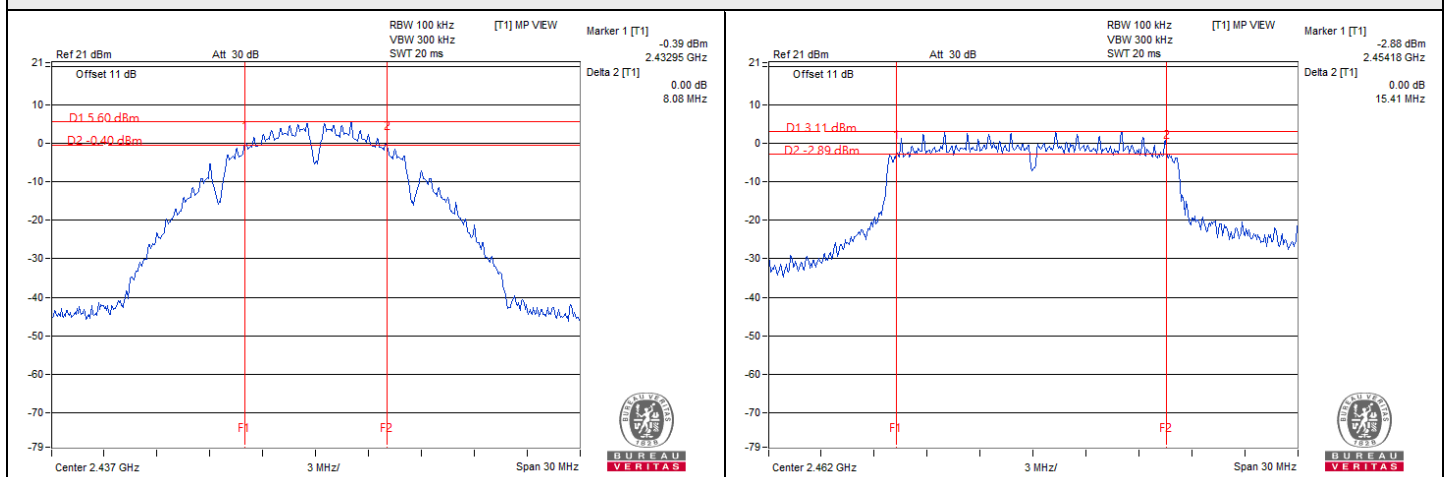
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.14	18.18	0.5	Pass
6	2437	17.20	17.19	0.5	Pass
11	2462	18.40	18.40	0.5	Pass



802.11ax (HE20) Full RU

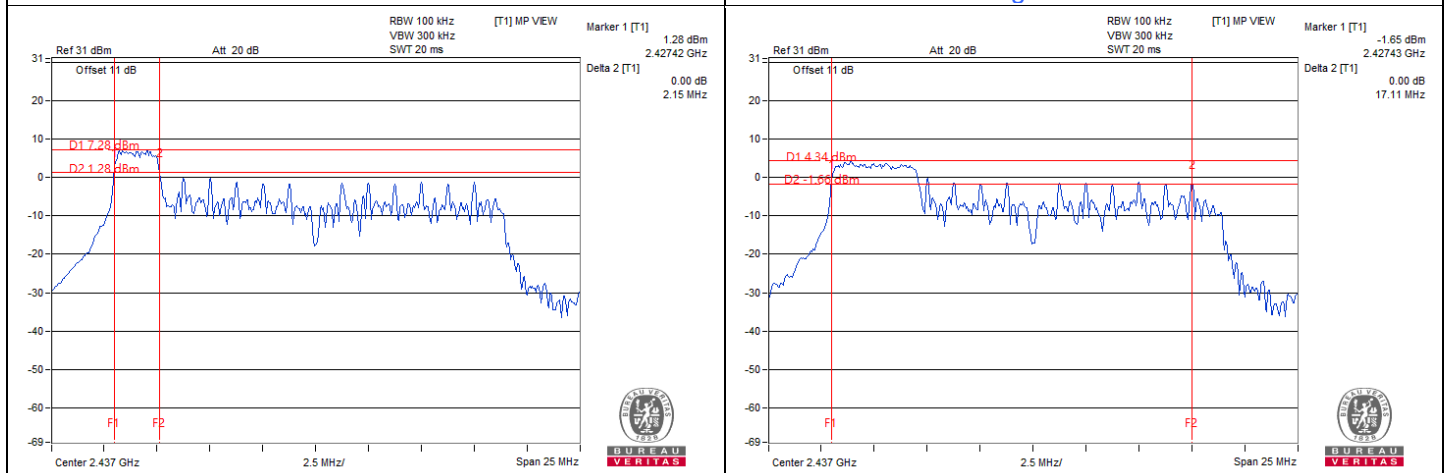
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
1	2412	18.72	18.50	0.5	Pass
6	2437	18.59	18.91	0.5	Pass
11	2462	17.14	17.76	0.5	Pass

Spectrum Plot of Minimum Value



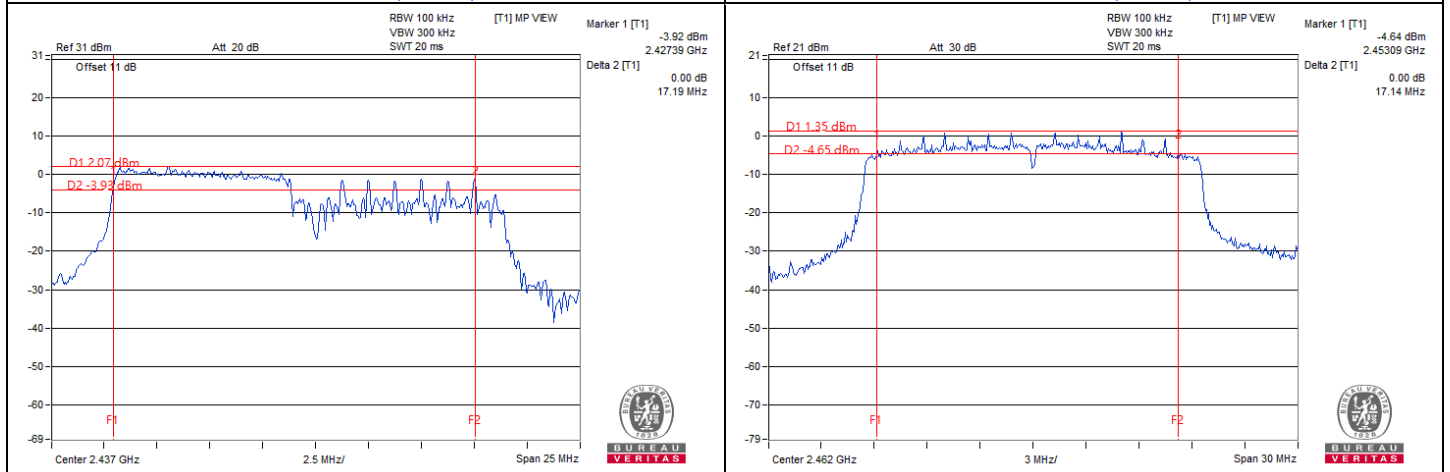
802.11b / Chain 1 : CH 6

802.11g / Chain 0 : CH 11



20 MHz Preamble 802.11ax (RU26) / Chain 1 : CH 6

20 MHz Preamble 802.11ax (RU52) / Chain 1 : CH 6



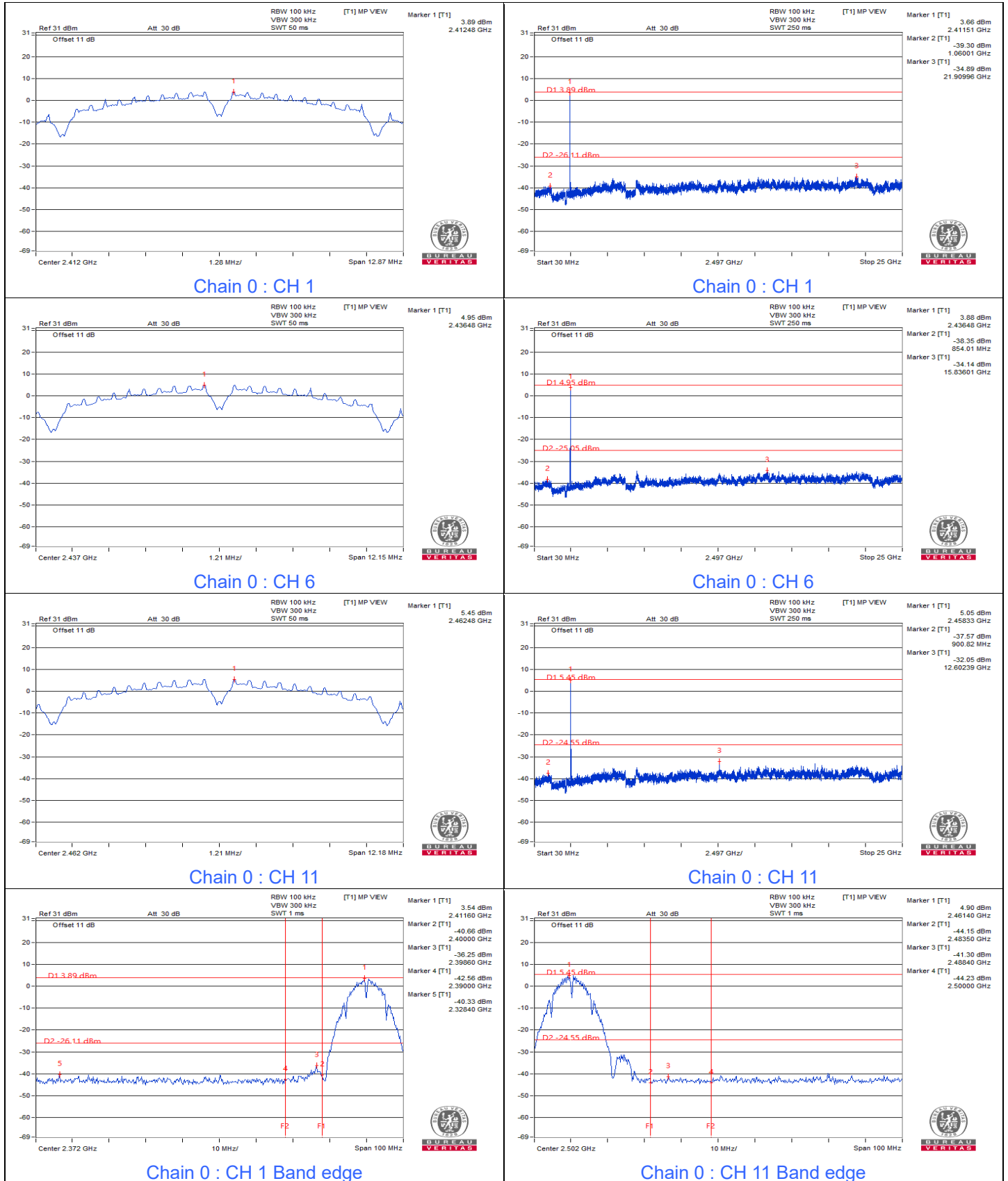
20 MHz Preamble 802.11ax (RU106) / Chain 1 : CH 6

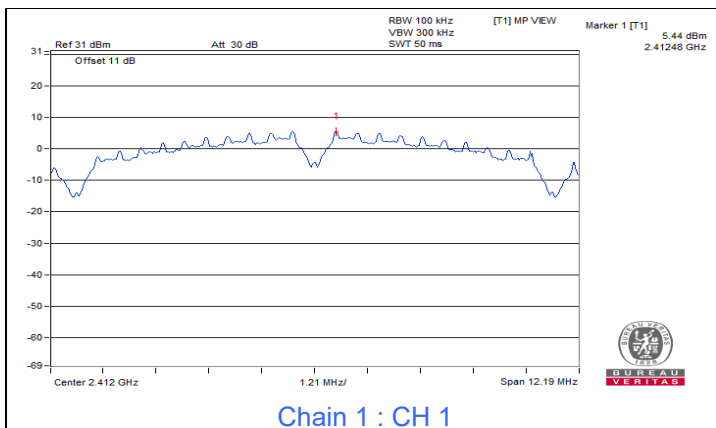
802.11ax (HE20) Full RU / Chain 0 : CH 11

7.4 Conducted Out of Band Emissions

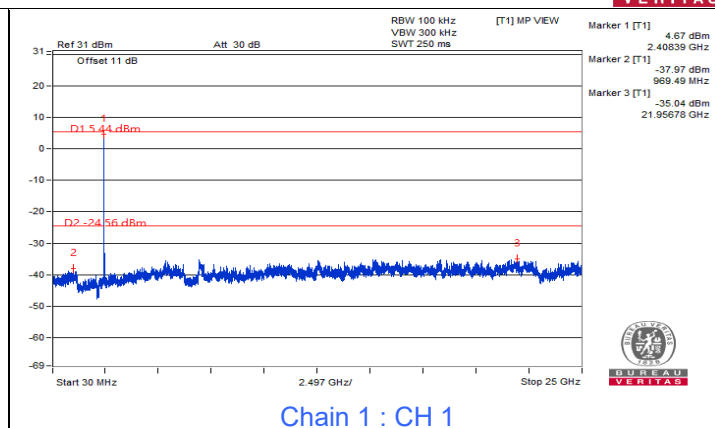
Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Frank Liu / Gary Lin
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802.11b

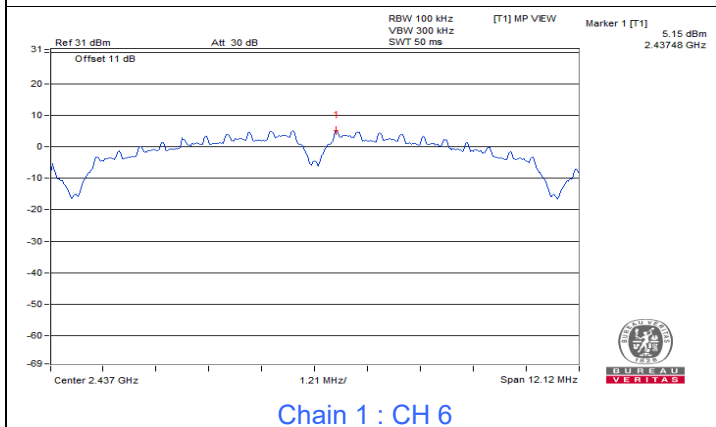




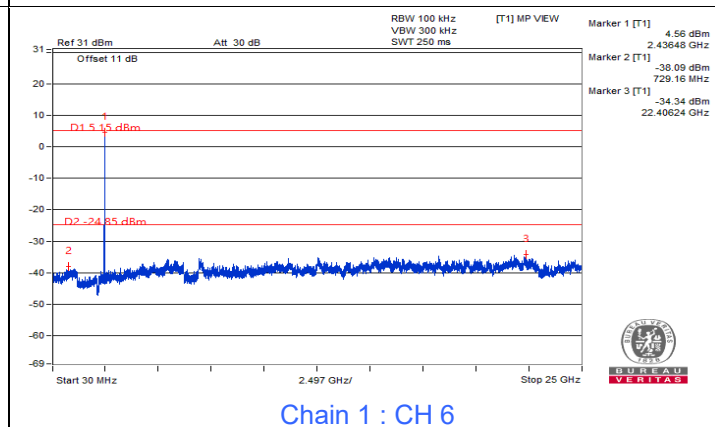
Chain 1 : CH 1



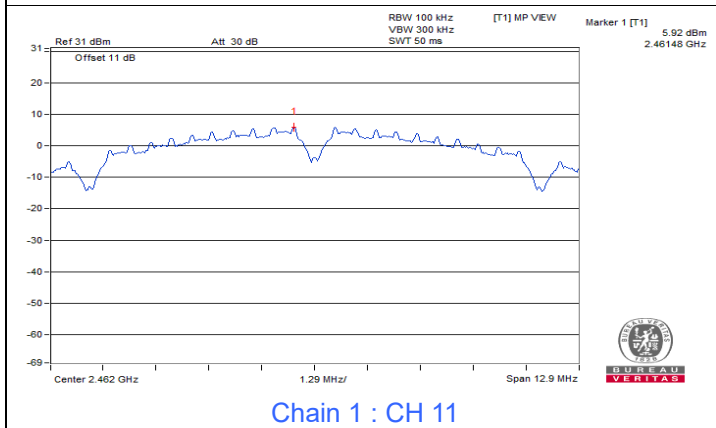
Chain 1 : CH 1



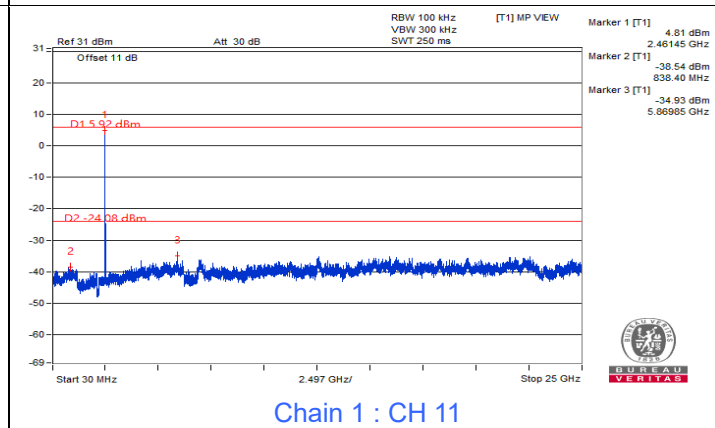
Chain 1 : CH 6



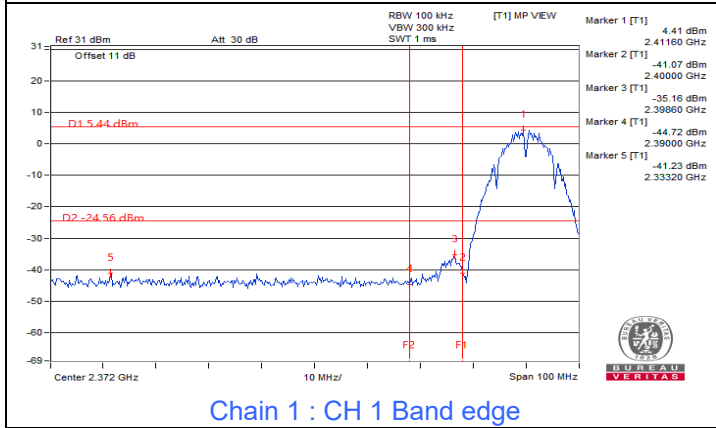
Chain 1 : CH 6



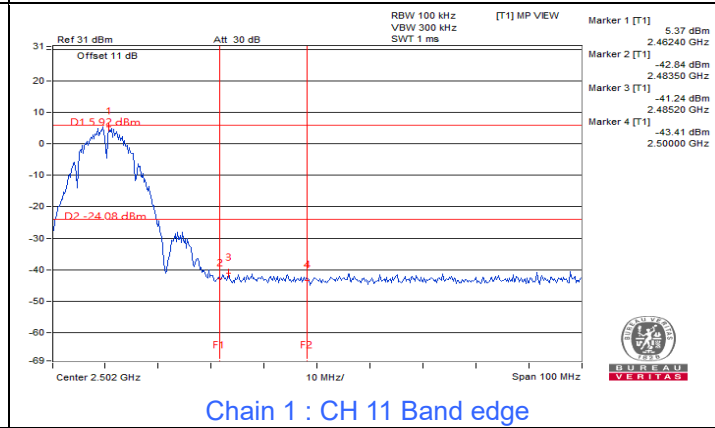
Chain 1 : CH 11



Chain 1 : CH 11



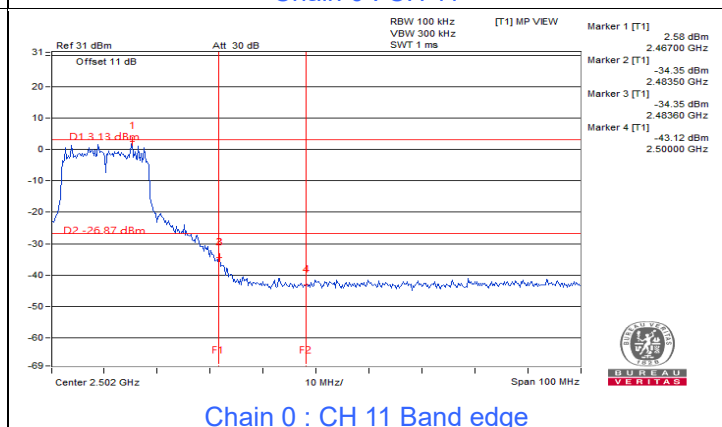
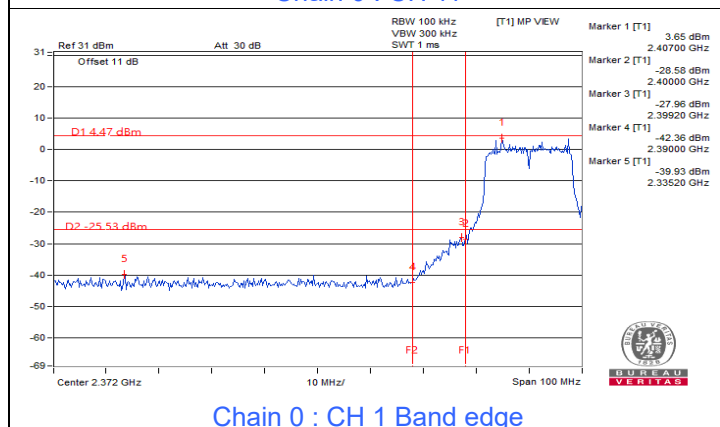
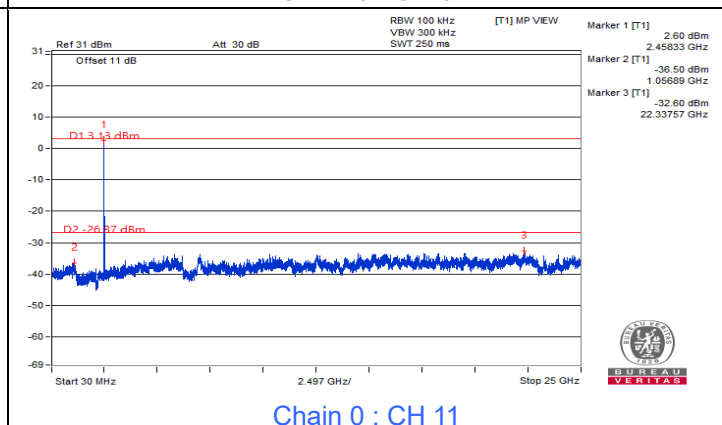
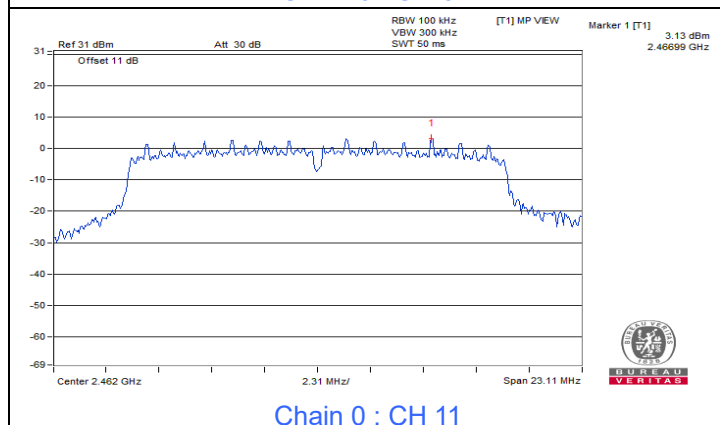
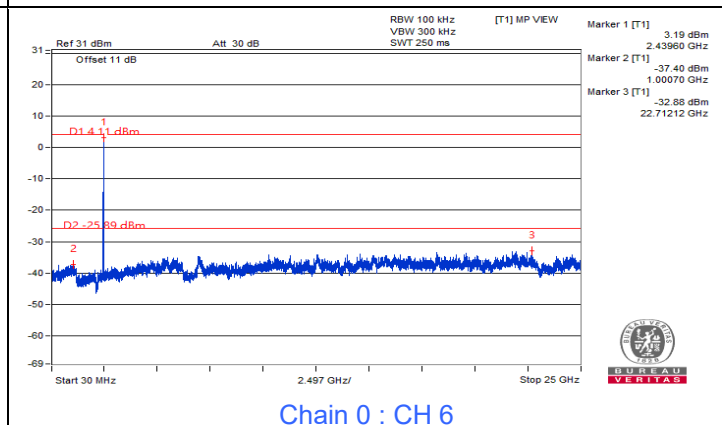
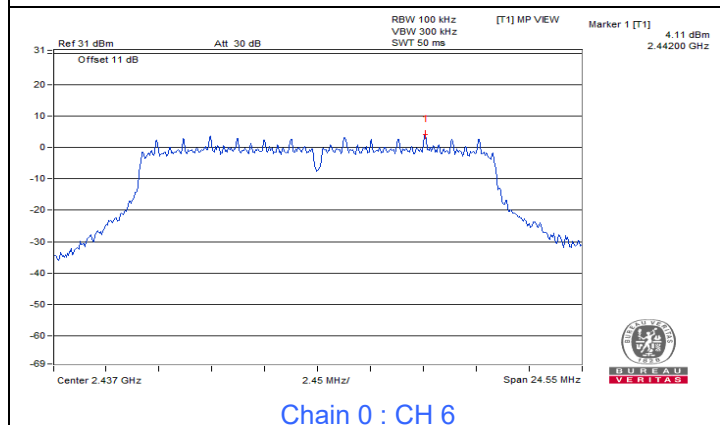
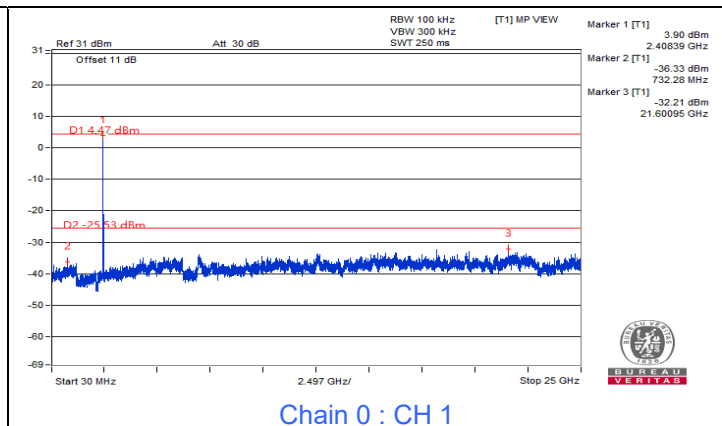
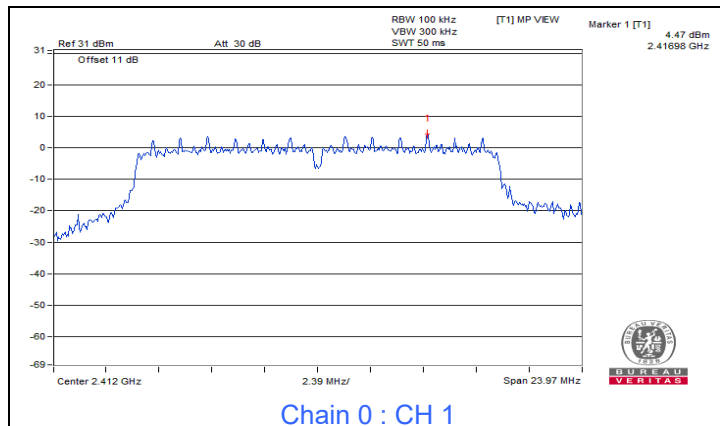
Chain 1 : CH 1 Band edge

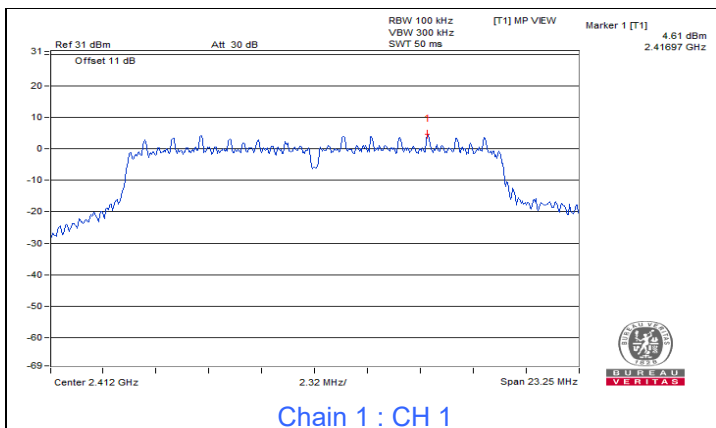


Chain 1 : CH 11 Band edge

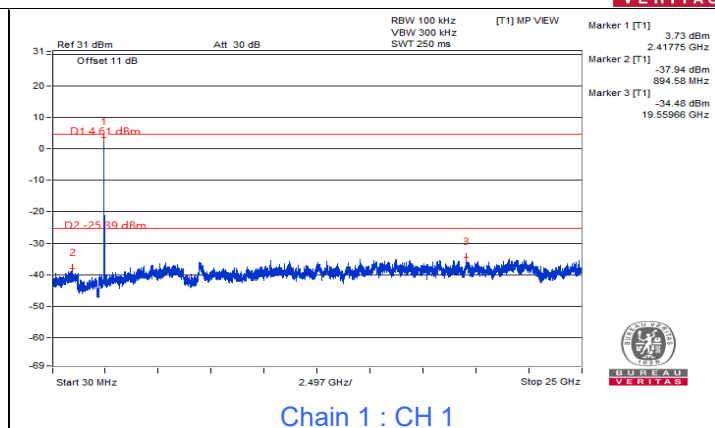


802.11g

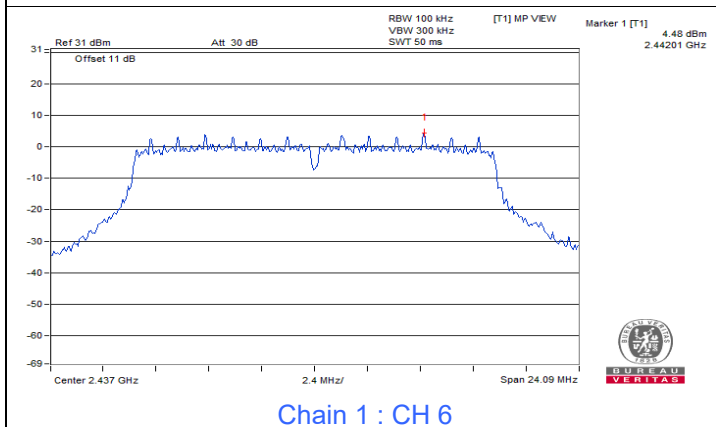




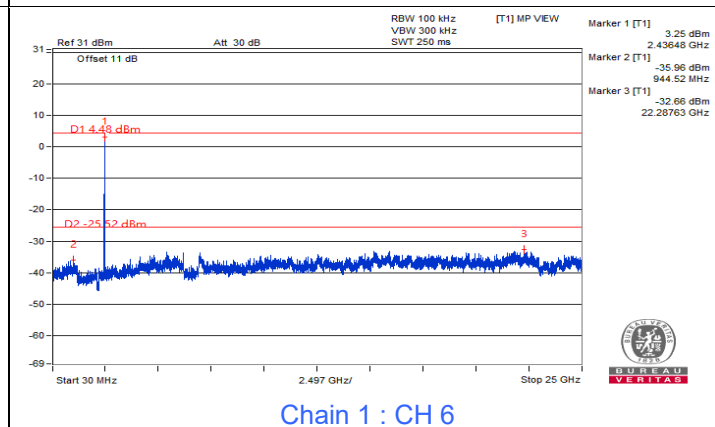
Chain 1 : CH 1



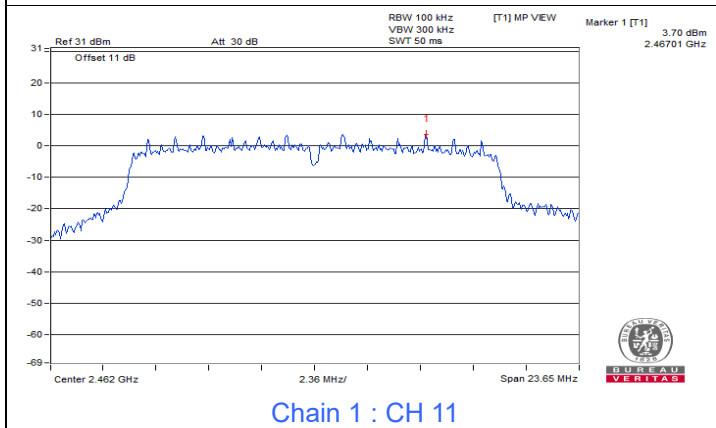
Chain 1 : CH 1



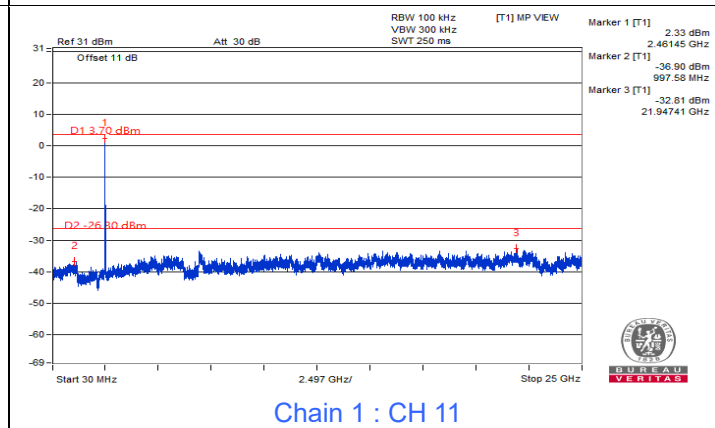
Chain 1 : CH 6



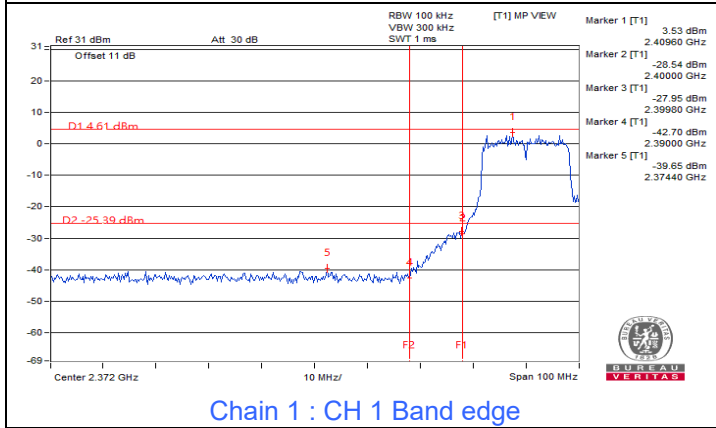
Chain 1 : CH 6



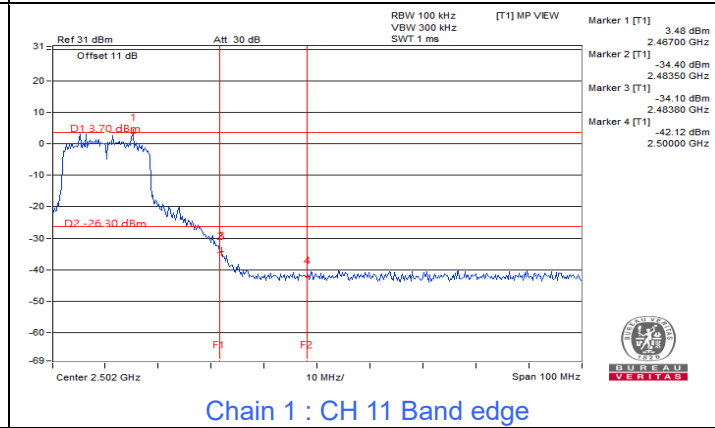
Chain 1 : CH 11



Chain 1 : CH 11



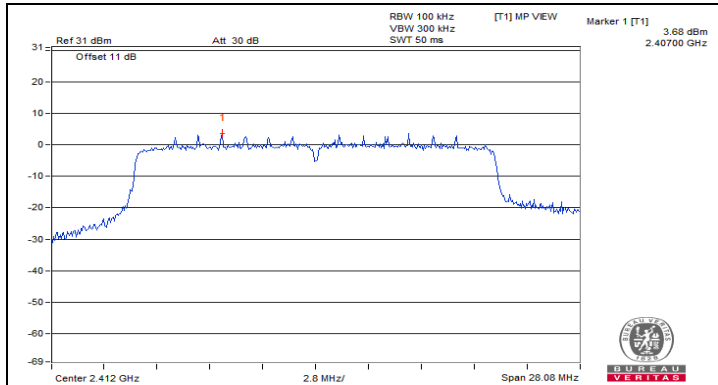
Chain 1 : CH 1 Band edge



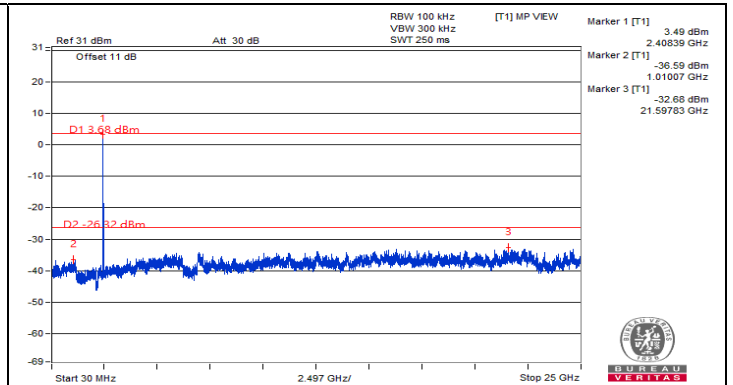
Chain 1 : CH 11 Band edge



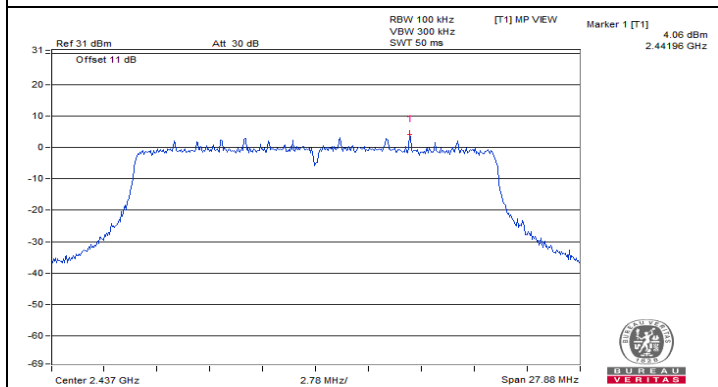
802.11ax (HE20) Full RU



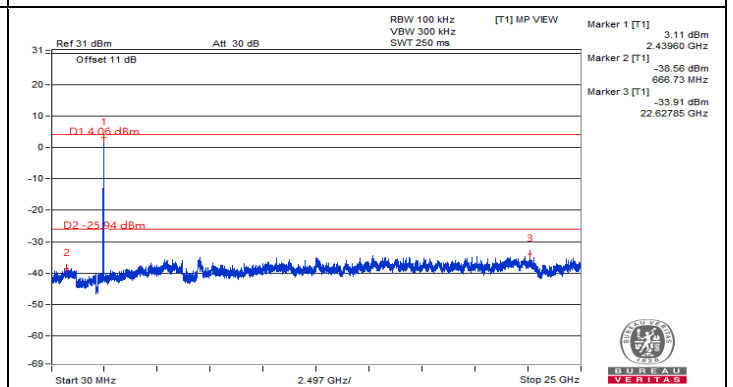
Chain 0 : CH 1



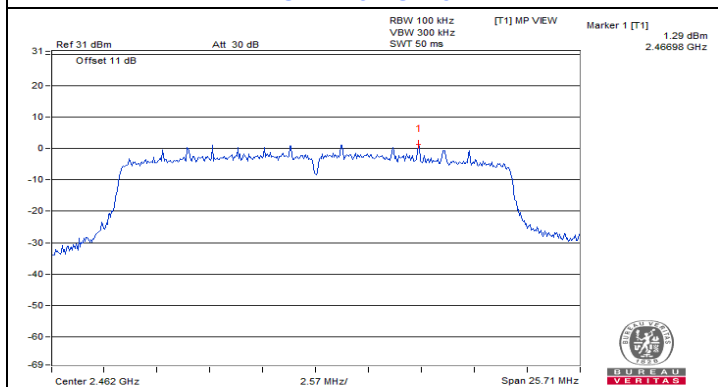
Chain 0 : CH 1



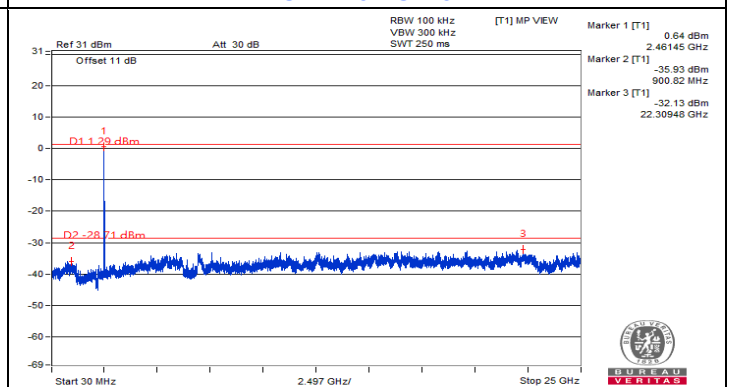
Chain 0 : CH 6



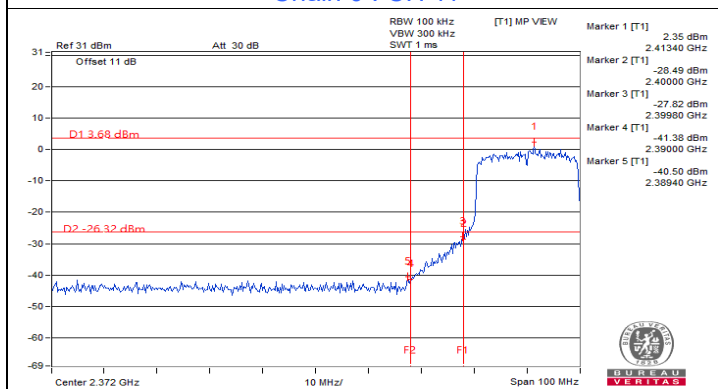
Chain 0 : CH 6



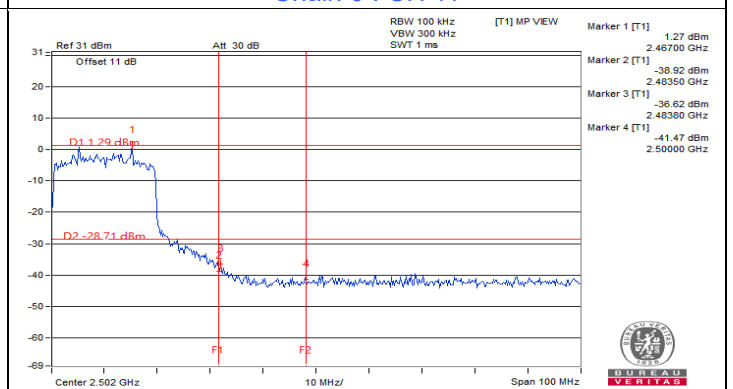
Chain 0 : CH 11



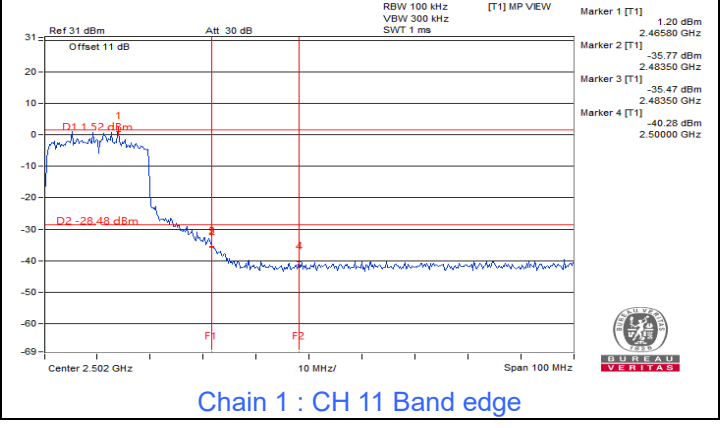
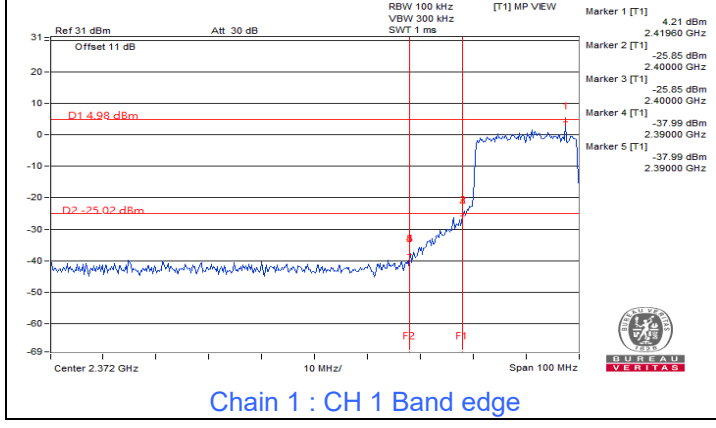
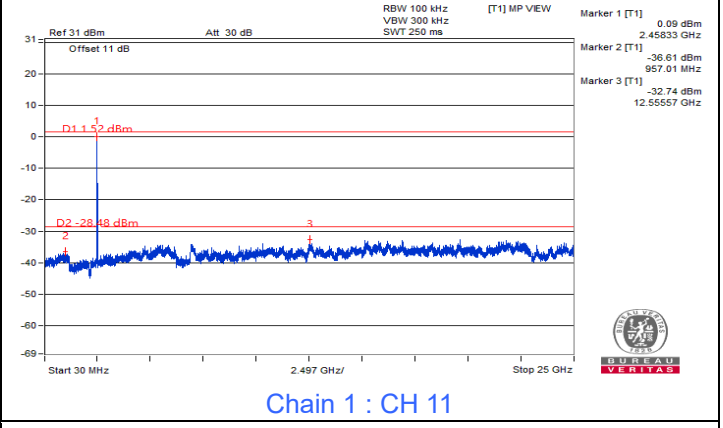
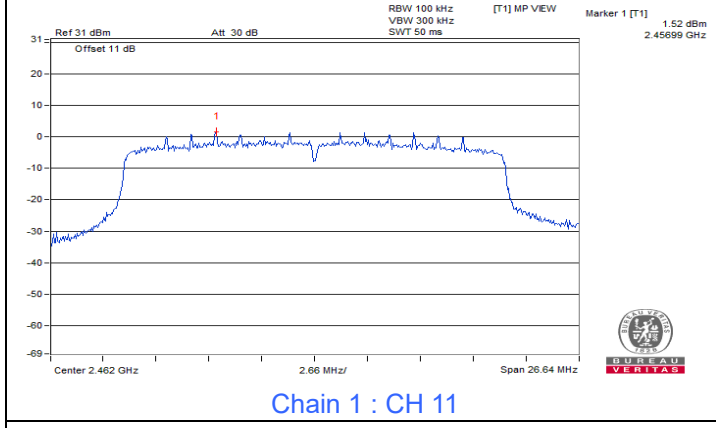
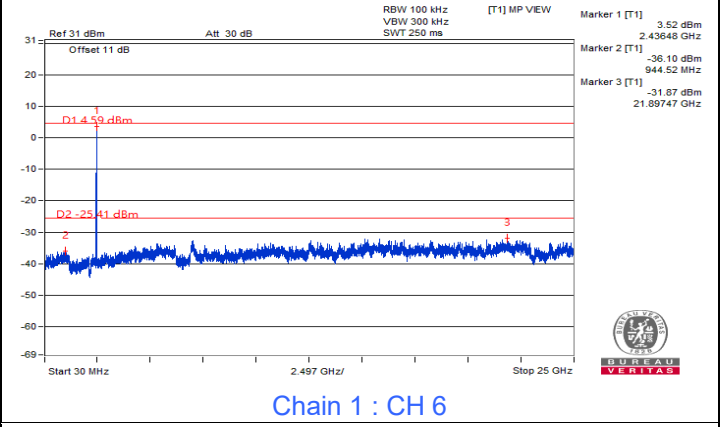
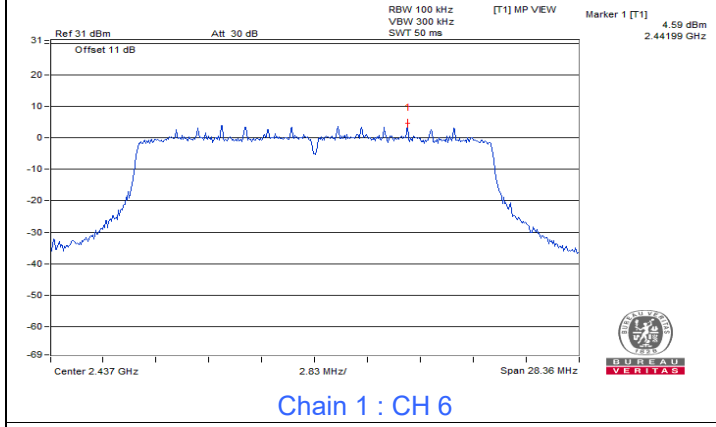
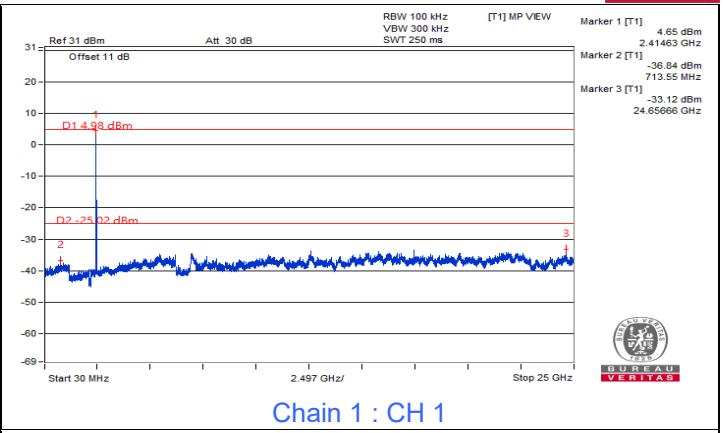
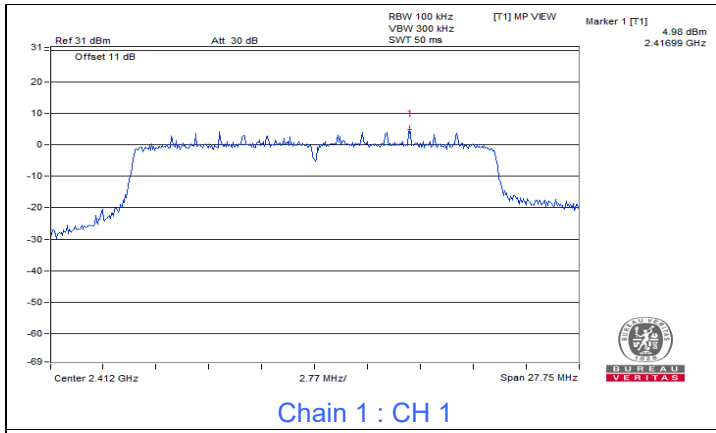
Chain 0 : CH 11



Chain 0 : CH 1 Band edge



Chain 0 : CH 11 Band edge



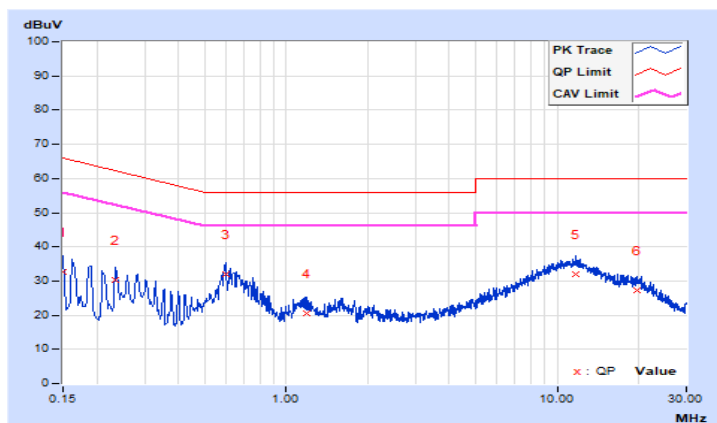
7.5 AC Power Conducted Emissions

RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 66.4% RH
Tested By	Thomas Cheng		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.64	23.03	9.97	32.67	19.61	66.00	56.00	-33.33	-36.39
2	0.23400	9.67	20.56	10.98	30.23	20.65	62.31	52.31	-32.08	-31.66
3	0.59800	9.70	22.34	17.13	32.04	26.83	56.00	46.00	-23.96	-19.17
4	1.18600	9.71	10.80	6.66	20.51	16.37	56.00	46.00	-35.49	-29.63
5	11.65000	9.84	21.99	16.34	31.83	26.18	60.00	50.00	-28.17	-23.82
6	19.68600	9.88	17.36	8.06	27.24	17.94	60.00	50.00	-32.76	-32.06

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

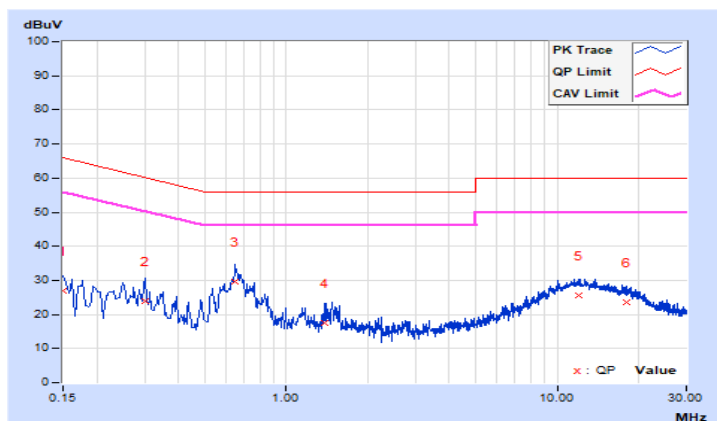


RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 66.4% RH
Tested By	Thomas Cheng		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.64	17.27	5.68	26.91	15.32	66.00	56.00	-39.09	-40.68
2	0.30151	9.68	14.11	5.60	23.79	15.28	60.20	50.20	-36.41	-34.92
3	0.65000	9.70	19.81	13.59	29.51	23.29	56.00	46.00	-26.49	-22.71
4	1.39400	9.72	7.65	2.06	17.37	11.78	56.00	46.00	-38.63	-34.22
5	12.06600	9.85	15.60	10.38	25.45	20.23	60.00	50.00	-34.55	-29.77
6	18.14600	9.90	13.60	7.67	23.50	17.57	60.00	50.00	-36.50	-32.43

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

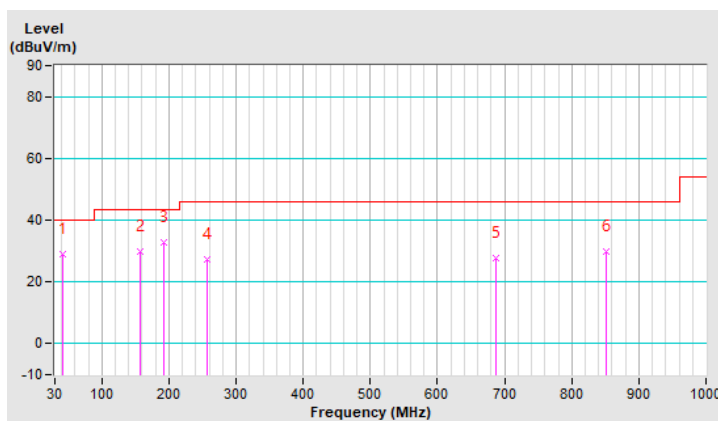
RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 68% RH
Tested By	Greg Lin		

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	42.61	28.9 QP	40.0	-11.1	1.00 H	344	42.3	-13.4
2	158.04	30.0 QP	43.5	-13.5	1.50 H	243	43.0	-13.0
3	192.96	32.7 QP	43.5	-10.8	1.50 H	228	49.0	-16.3
4	256.01	27.5 QP	46.0	-18.5	1.00 H	178	42.0	-14.5
5	686.69	27.7 QP	46.0	-18.3	1.25 H	97	32.0	-4.3
6	851.59	29.7 QP	46.0	-16.3	1.00 H	95	31.6	-1.9

Remarks:

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

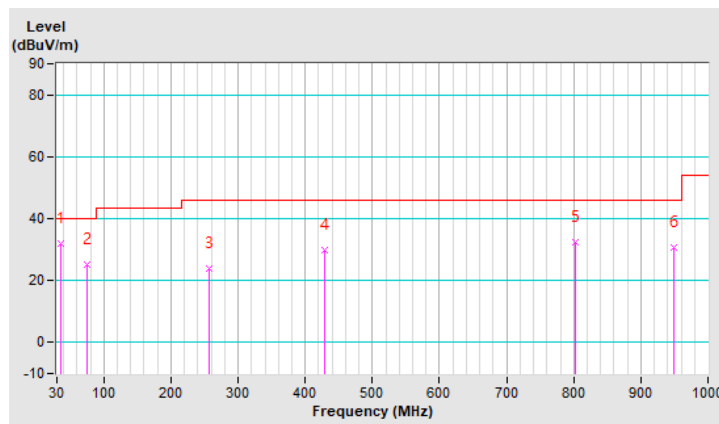


RF Mode	802.11g	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 68% RH
Tested By	Greg Lin		

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	36.79	31.8 QP	40.0	-8.2	1.25 V	16	45.8	-14.0
2	75.59	25.0 QP	40.0	-15.0	1.00 V	358	42.1	-17.1
3	256.01	24.0 QP	46.0	-22.0	1.50 V	161	38.5	-14.5
4	428.67	30.0 QP	46.0	-16.0	1.00 V	212	39.4	-9.4
5	802.12	32.4 QP	46.0	-13.6	1.00 V	344	34.8	-2.4
6	948.59	30.8 QP	46.0	-15.2	1.25 V	249	31.4	-0.6

Remarks:

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



7.7 Unwanted Emissions above 1 GHz

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	22°C, 68% RH
Tested By	Greg Lin		

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	56.8 PK	74.0	-17.2	3.82 H	358	24.7	32.1
2	2390.00	44.2 AV	54.0	-9.8	3.82 H	358	12.1	32.1
3	*2412.00	99.7 PK			3.82 H	358	67.6	32.1
4	*2412.00	97.5 AV			3.82 H	358	65.4	32.1
5	4824.00	48.3 PK	74.0	-25.7	1.33 H	191	44.9	3.4
6	4824.00	39.6 AV	54.0	-14.4	1.33 H	191	36.2	3.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	57.4 PK	74.0	-16.6	1.38 V	134	25.3	32.1
2	2390.00	44.3 AV	54.0	-9.7	1.38 V	134	12.2	32.1
3	*2412.00	104.9 PK			1.38 V	134	72.8	32.1
4	*2412.00	102.7 AV			1.38 V	134	70.6	32.1
5	4824.00	49.7 PK	74.0	-24.3	1.64 V	87	46.3	3.4
6	4824.00	39.8 AV	54.0	-14.2	1.64 V	87	36.4	3.4

Remarks:

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



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	22°C, 68% RH
Tested By	Greg Lin		

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	101.1 PK			3.76 H	357	69.1	32.0
2	*2437.00	98.8 AV			3.76 H	357	66.8	32.0
3	4874.00	49.4 PK	74.0	-24.6	1.38 H	193	46.2	3.2
4	4874.00	39.3 AV	54.0	-14.7	1.38 H	193	36.1	3.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	106.4 PK			1.15 V	114	74.4	32.0
2	*2437.00	104.1 AV			1.15 V	114	72.1	32.0
3	4874.00	49.7 PK	74.0	-24.3	1.69 V	91	46.5	3.2
4	4874.00	39.8 AV	54.0	-14.2	1.69 V	91	36.6	3.2

Remarks:

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



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	22°C, 68% RH
Tested By	Greg Lin		

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	101.0 PK			3.76 H	356	68.9	32.1
2	*2462.00	98.7 AV			3.76 H	356	66.6	32.1
3	2483.50	57.7 PK	74.0	-16.3	3.76 H	356	25.6	32.1
4	2483.50	44.5 AV	54.0	-9.5	3.76 H	356	12.4	32.1
5	4924.00	49.5 PK	74.0	-24.5	1.37 H	187	46.1	3.4
6	4924.00	39.4 AV	54.0	-14.6	1.37 H	187	36.0	3.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	106.4 PK			1.14 V	132	74.3	32.1
2	*2462.00	104.1 AV			1.14 V	132	72.0	32.1
3	2483.50	58.0 PK	74.0	-16.0	1.14 V	132	25.9	32.1
4	2483.50	44.8 AV	54.0	-9.2	1.14 V	132	12.7	32.1
5	4924.00	49.7 PK	74.0	-24.3	1.59 V	93	46.3	3.4
6	4924.00	39.8 AV	54.0	-14.2	1.59 V	93	36.4	3.4

Remarks:

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



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	22°C, 68% RH
Tested By	Greg Lin		

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	1.28 H	187	25.2	32.1
2	2390.00	44.6 AV	54.0	-9.4	1.28 H	187	12.5	32.1
3	*2412.00	102.9 PK			1.28 H	187	70.8	32.1
4	*2412.00	95.3 AV			1.28 H	187	63.2	32.1
5	4824.00	47.2 PK	74.0	-26.8	1.42 H	194	43.8	3.4
6	4824.00	37.1 AV	54.0	-16.9	1.42 H	194	33.7	3.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	58.0 PK	74.0	-16.0	1.43 V	155	25.9	32.1
2	2390.00	46.0 AV	54.0	-8.0	1.43 V	155	13.9	32.1
3	*2412.00	108.1 PK			1.43 V	155	76.0	32.1
4	*2412.00	100.5 AV			1.43 V	155	68.4	32.1
5	4824.00	48.0 PK	74.0	-26.0	1.73 V	92	44.6	3.4
6	4824.00	37.7 AV	54.0	-16.3	1.73 V	92	34.3	3.4

Remarks:

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



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	22°C, 68% RH
Tested By	Greg Lin		

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	103.2 PK			3.77 H	354	71.2	32.0
2	*2437.00	95.6 AV			3.77 H	354	63.6	32.0
3	4874.00	47.4 PK	74.0	-26.6	1.38 H	197	44.2	3.2
4	4874.00	37.0 AV	54.0	-17.0	1.38 H	197	33.8	3.2

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	108.3 PK			1.36 V	147	76.3	32.0
2	*2437.00	100.8 AV			1.36 V	147	68.8	32.0
3	4874.00	48.1 PK	74.0	-25.9	1.73 V	85	44.9	3.2
4	4874.00	37.8 AV	54.0	-16.2	1.73 V	85	34.6	3.2

Remarks:

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



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	22°C, 68% RH
Tested By	Greg Lin		

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	101.7 PK			3.84 H	351	69.6	32.1
2	*2462.00	94.2 AV			3.84 H	351	62.1	32.1
3	2483.50	62.5 PK	74.0	-11.5	3.84 H	351	30.4	32.1
4	2483.50	50.2 AV	54.0	-3.8	3.84 H	351	18.1	32.1
5	4924.00	46.9 PK	74.0	-27.1	1.38 H	192	43.5	3.4
6	4924.00	36.9 AV	54.0	-17.1	1.38 H	192	33.5	3.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	106.9 PK			3.62 V	165	74.8	32.1
2	*2462.00	99.2 AV			3.62 V	165	67.1	32.1
3	2483.50	66.2 PK	74.0	-7.8	3.62 V	165	34.1	32.1
4	2483.50	53.3 AV	54.0	-0.7	3.62 V	165	21.2	32.1
5	4924.00	48.0 PK	74.0	-26.0	1.67 V	82	44.6	3.4
6	4924.00	37.8 AV	54.0	-16.2	1.67 V	82	34.4	3.4

Remarks:

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

RF Mode	20 MHz Preamble 802.11ax (RU26)	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	23°C, 65% RH
Tested By	Edison Lee		

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	57.2 PK	74.0	-16.8	1.95 H	122	24.9	32.3
2	2390.00	44.6 AV	54.0	-9.4	1.95 H	122	12.3	32.3
3	*2412.00	111.0 PK			1.95 H	122	78.7	32.3
4	*2412.00	100.4 AV			1.95 H	122	68.1	32.3
5	4824.00	50.8 PK	74.0	-23.2	1.52 H	140	47.2	3.6
6	4824.00	38.1 AV	54.0	-15.9	1.52 H	140	34.5	3.6

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	2390.00	62.5 PK	74.0	-11.5	1.22 V	208	30.2	32.3
2	2390.00	44.8 AV	54.0	-9.2	1.22 V	208	12.5	32.3
3	*2412.00	119.5 PK			1.22 V	208	87.2	32.3
4	*2412.00	107.9 AV			1.22 V	208	75.6	32.3
5	4824.00	51.1 PK	74.0	-22.9	1.68 V	199	47.5	3.6
6	4824.00	38.1 AV	54.0	-15.9	1.68 V	199	34.5	3.6

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	20 MHz Preamble 802.11ax (RU26)	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	23°C, 67% RH
Tested By	Edison Lee		

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	108.8 PK			2.39 H	138	76.5	32.3
2	*2462.00	95.8 AV			2.39 H	138	63.5	32.3
3	2483.50	60.3 PK	74.0	-13.7	2.39 H	138	27.9	32.4
4	2483.50	45.9 AV	54.0	-8.1	2.39 H	138	13.5	32.4
5	4924.00	50.6 PK	74.0	-23.4	1.68 H	147	46.8	3.8
6	4924.00	38.0 AV	54.0	-16.0	1.68 H	147	34.2	3.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	114.3 PK			1.21 V	148	82.0	32.3
2	*2462.00	103.3 AV			1.21 V	148	71.0	32.3
3	2483.50	60.5 PK	74.0	-13.5	1.21 V	148	28.1	32.4
4	2483.50	46.0 AV	54.0	-8.0	1.21 V	148	13.6	32.4
5	4924.00	51.0 PK	74.0	-23.0	1.57 V	220	47.2	3.8
6	4924.00	38.5 AV	54.0	-15.5	1.57 V	220	34.7	3.8

Remarks:

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



RF Mode	20 MHz Preamble 802.11ax (RU52)	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	23°C, 67% RH
Tested By	Edison Lee		

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	57.1 PK	74.0	-16.9	1.80 H	121	24.8	32.3
2	2390.00	44.3 AV	54.0	-9.7	1.80 H	121	12.0	32.3
3	*2412.00	108.2 PK			1.80 H	121	75.9	32.3
4	*2412.00	97.1 AV			1.80 H	121	64.8	32.3
5	4824.00	50.7 PK	74.0	-23.3	1.61 H	142	47.1	3.6
6	4824.00	37.7 AV	54.0	-16.3	1.61 H	142	34.1	3.6

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	2390.00	58.0 PK	74.0	-16.0	1.52 V	196	25.7	32.3
2	2390.00	44.3 AV	54.0	-9.7	1.52 V	196	12.0	32.3
3	*2412.00	116.4 PK			1.52 V	196	84.1	32.3
4	*2412.00	104.9 AV			1.52 V	196	72.6	32.3
5	4824.00	50.9 PK	74.0	-23.1	1.78 V	209	47.3	3.6
6	4824.00	37.9 AV	54.0	-16.1	1.78 V	209	34.3	3.6

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	20 MHz Preamble 802.11ax (RU52)	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	23°C, 67% RH
Tested By	Edison Lee		

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	103.4 PK			2.22 H	138	71.1	32.3
2	*2462.00	92.4 AV			2.22 H	138	60.1	32.3
3	2483.50	58.1 PK	74.0	-15.9	2.22 H	138	25.7	32.4
4	2483.50	45.7 AV	54.0	-8.3	2.22 H	138	13.3	32.4
5	4924.00	50.0 PK	74.0	-24.0	1.68 H	137	46.2	3.8
6	4924.00	37.8 AV	54.0	-16.2	1.68 H	137	34.0	3.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	111.8 PK			1.23 V	153	79.5	32.3
2	*2462.00	100.2 AV			1.23 V	153	67.9	32.3
3	2483.50	58.3 PK	74.0	-15.7	1.23 V	153	25.9	32.4
4	2483.50	45.8 AV	54.0	-8.2	1.23 V	153	13.4	32.4
5	4924.00	50.7 PK	74.0	-23.3	1.55 V	233	46.9	3.8
6	4924.00	38.1 AV	54.0	-15.9	1.55 V	233	34.3	3.8

Remarks:

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



RF Mode	20 MHz Preamble 802.11ax (RU106)	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	23°C, 67% RH
Tested By	Edison Lee		

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	57.1 PK	74.0	-16.9	1.75 H	125	24.8	32.3
2	2390.00	44.2 AV	54.0	-9.8	1.75 H	125	11.9	32.3
3	*2412.00	105.3 PK			1.75 H	125	73.0	32.3
4	*2412.00	93.6 AV			1.75 H	125	61.3	32.3
5	4824.00	50.4 PK	74.0	-23.6	1.63 H	141	46.8	3.6
6	4824.00	37.5 AV	54.0	-16.5	1.63 H	141	33.9	3.6

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	2390.00	59.5 PK	74.0	-14.5	1.53 V	196	27.2	32.3
2	2390.00	45.1 AV	54.0	-8.9	1.53 V	196	12.8	32.3
3	*2412.00	113.6 PK			1.53 V	196	81.3	32.3
4	*2412.00	102.0 AV			1.53 V	196	69.7	32.3
5	4824.00	50.8 PK	74.0	-23.2	1.71 V	211	47.2	3.6
6	4824.00	37.8 AV	54.0	-16.2	1.71 V	211	34.2	3.6

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	20 MHz Preamble 802.11ax (RU106)	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	23°C, 67% RH
Tested By	Edison Lee		

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	101.2 PK			2.26 H	129	68.9	32.3
2	*2462.00	89.9 AV			2.26 H	129	57.6	32.3
3	2483.50	60.4 PK	74.0	-13.6	2.26 H	129	28.0	32.4
4	2483.50	46.5 AV	54.0	-7.5	2.26 H	129	14.1	32.4
5	4924.00	50.2 PK	74.0	-23.8	1.63 H	135	46.4	3.8
6	4924.00	37.6 AV	54.0	-16.4	1.63 H	135	33.8	3.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	109.4 PK			1.22 V	195	77.1	32.3
2	*2462.00	97.7 AV			1.22 V	195	65.4	32.3
3	2483.50	60.6 PK	74.0	-13.4	1.22 V	195	28.2	32.4
4	2483.50	46.6 AV	54.0	-7.4	1.22 V	195	14.2	32.4
5	4924.00	50.3 PK	74.0	-23.7	1.57 V	228	46.5	3.8
6	4924.00	37.8 AV	54.0	-16.2	1.57 V	228	34.0	3.8

Remarks:

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



RF Mode	802.11ax (HE20) Full 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	22°C, 68% RH
Tested By	Greg Lin		

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	58.9 PK	74.0	-15.1	3.85 H	355	26.8	32.1
2	2390.00	46.4 AV	54.0	-7.6	3.85 H	355	14.3	32.1
3	*2412.00	105.3 PK			3.85 H	355	73.2	32.1
4	*2412.00	94.8 AV			3.85 H	355	62.7	32.1
5	4824.00	47.2 PK	74.0	-26.8	1.38 H	184	43.8	3.4
6	4824.00	37.1 AV	54.0	-16.9	1.38 H	184	33.7	3.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	60.2 PK	74.0	-13.8	1.12 V	184	28.1	32.1
2	2390.00	48.2 AV	54.0	-5.8	1.12 V	184	16.1	32.1
3	*2412.00	110.8 PK			1.12 V	184	78.7	32.1
4	*2412.00	100.2 AV			1.12 V	184	68.1	32.1
5	4824.00	48.2 PK	74.0	-25.8	1.58 V	101	44.8	3.4
6	4824.00	38.0 AV	54.0	-16.0	1.58 V	101	34.6	3.4

Remarks:

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

RF Mode	802.11ax (HE20) Full 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	22°C, 68% RH
Tested By	Greg Lin		

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			3.75 H	350	73.7	32.0
2	*2437.00	95.1 AV			3.75 H	350	63.1	32.0
3	4874.00	47.1 PK	74.0	-26.9	1.29 H	183	43.9	3.2
4	4874.00	36.9 AV	54.0	-17.1	1.29 H	183	33.7	3.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	110.9 PK			1.24 V	167	78.9	32.0
2	*2437.00	100.3 AV			1.24 V	167	68.3	32.0
3	4874.00	48.1 PK	74.0	-25.9	1.57 V	76	44.9	3.2
4	4874.00	37.8 AV	54.0	-16.2	1.57 V	76	34.6	3.2

Remarks:

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



RF Mode	802.11ax (HE20) Full 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	22°C, 68% RH
Tested By	Greg Lin		

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	101.7 PK			3.83 H	353	69.6	32.1
2	*2462.00	91.2 AV			3.83 H	353	59.1	32.1
3	2483.50	64.2 PK	74.0	-9.8	3.83 H	353	32.1	32.1
4	2483.50	49.8 AV	54.0	-4.2	3.83 H	353	17.7	32.1
5	4924.00	47.2 PK	74.0	-26.8	1.31 H	187	43.8	3.4
6	4924.00	37.1 AV	54.0	-16.9	1.31 H	187	33.7	3.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	106.5 PK			3.43 V	152	74.4	32.1
2	*2462.00	96.3 AV			3.43 V	152	64.2	32.1
3	2483.50	66.7 PK	74.0	-7.3	3.43 V	152	34.6	32.1
4	2483.50	53.2 AV	54.0	-0.8	3.43 V	152	21.1	32.1
5	4924.00	48.0 PK	74.0	-26.0	1.73 V	96	44.6	3.4
6	4924.00	37.7 AV	54.0	-16.3	1.73 V	96	34.3	3.4

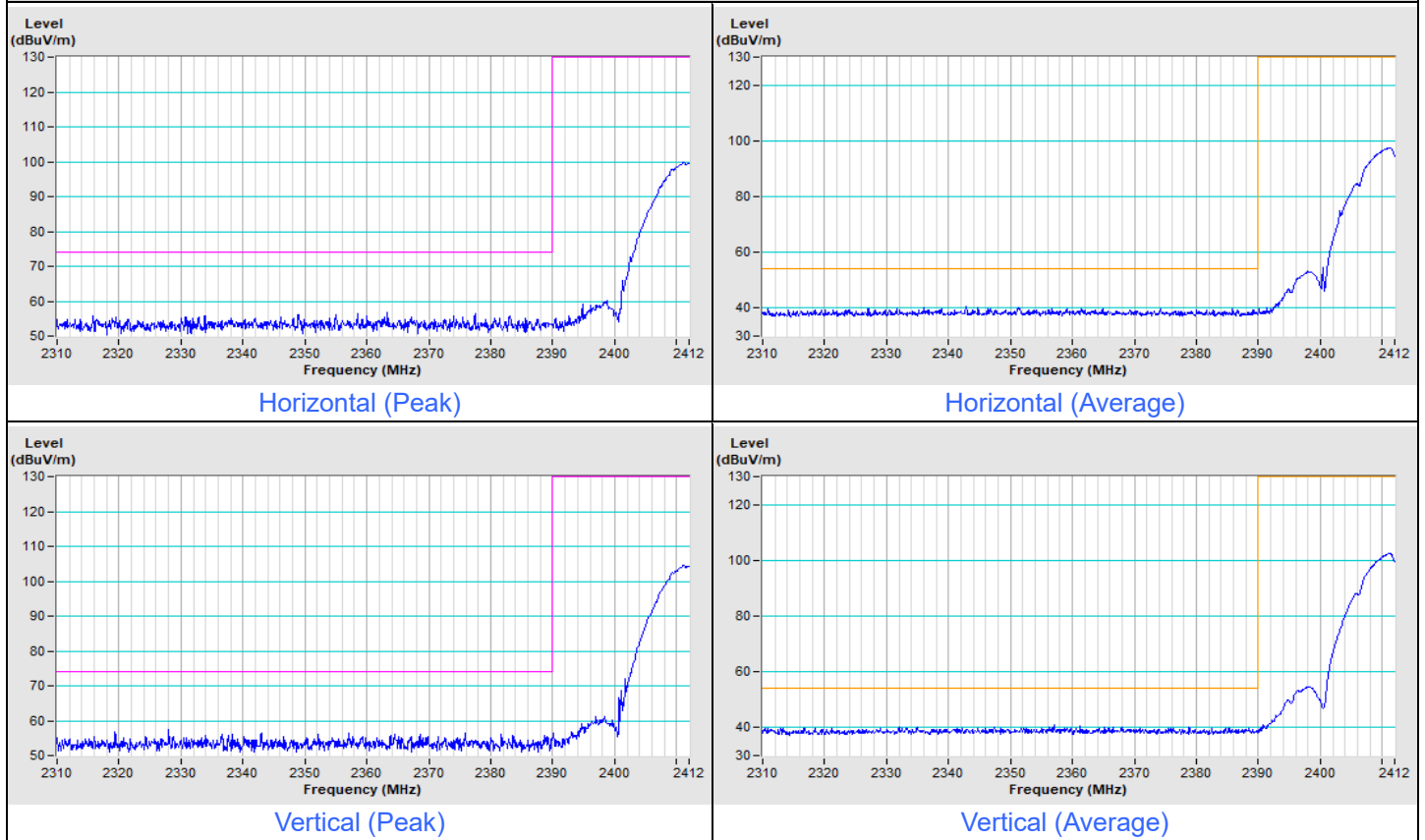
Remarks:

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

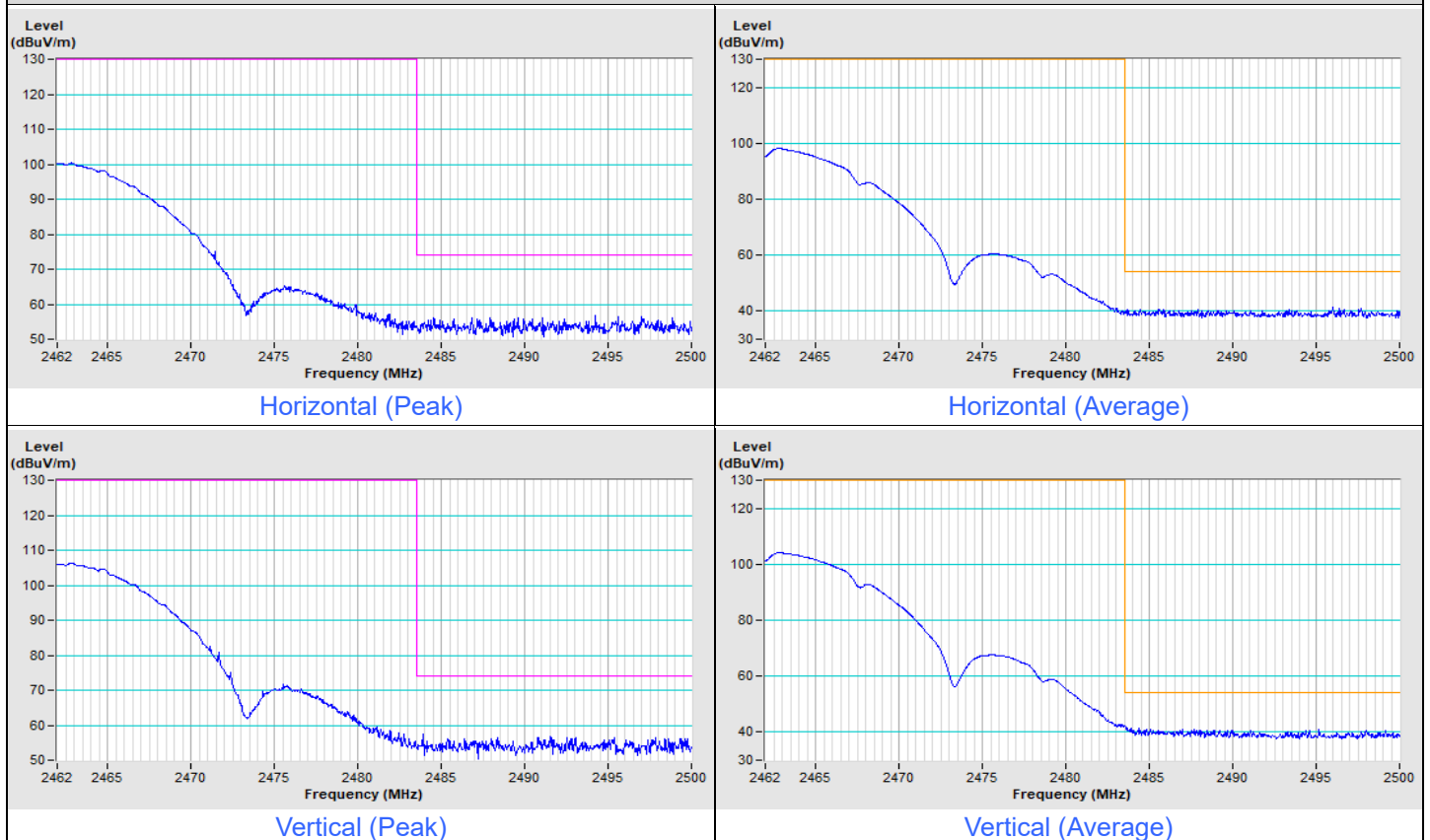


Plot of Band Edge

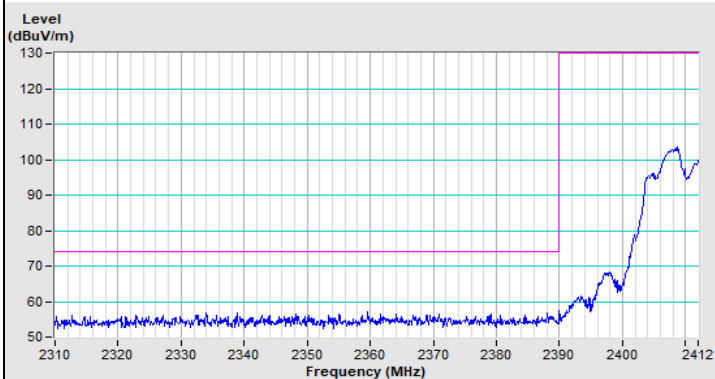
802.11b Channel 1



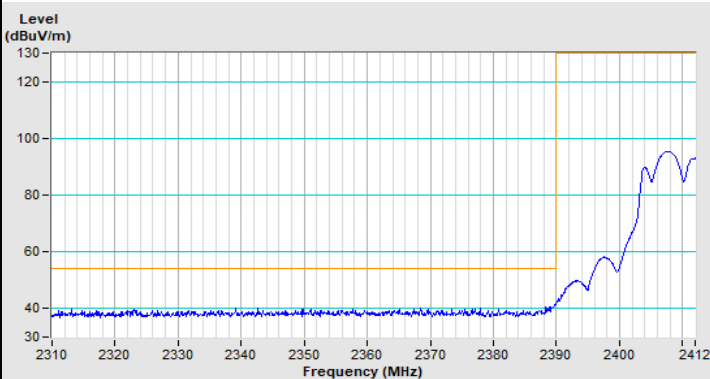
802.11b Channel 11



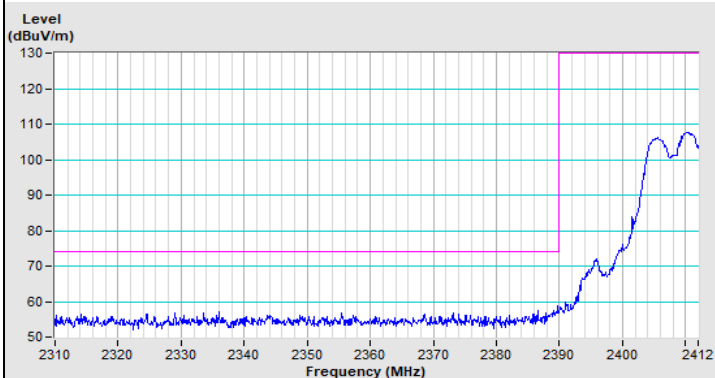
802.11g Channel 1



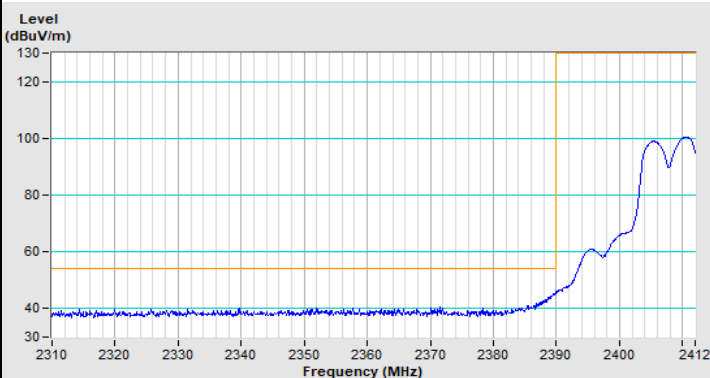
Horizontal (Peak)



Horizontal (Average)

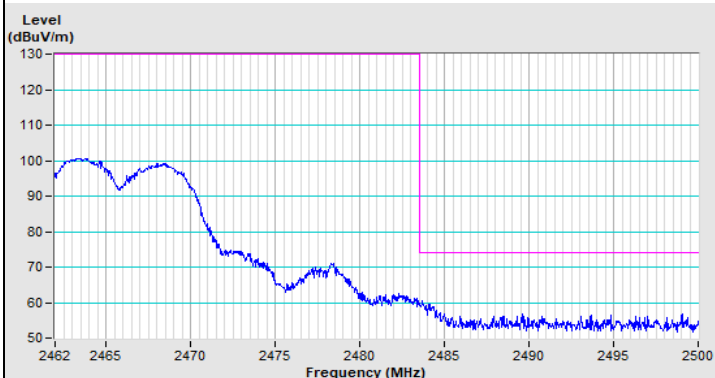


Vertical (Peak)

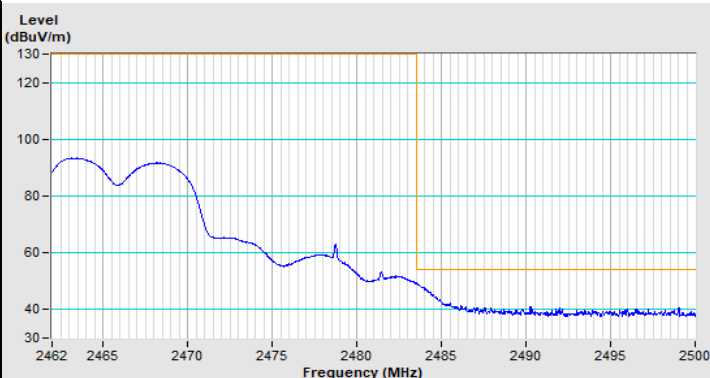


Vertical (Average)

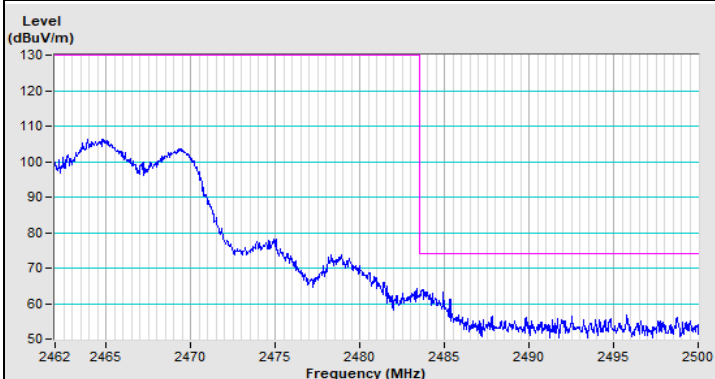
802.11g Channel 11



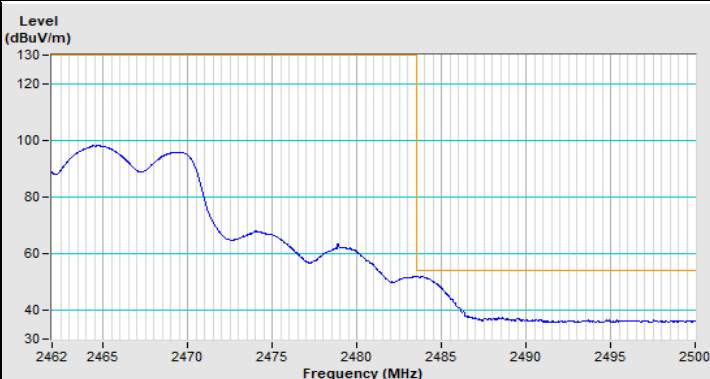
Horizontal (Peak)



Horizontal (Average)



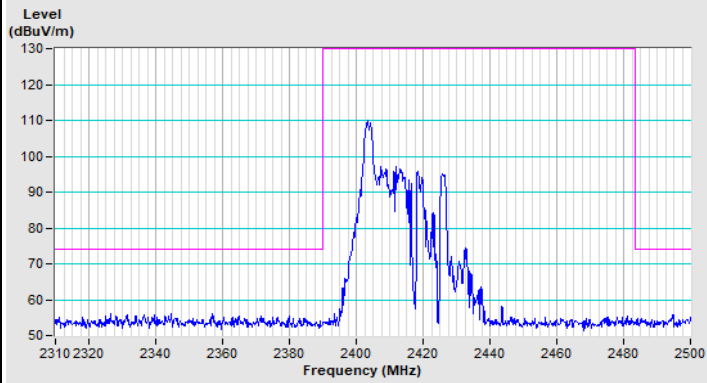
Vertical (Peak)



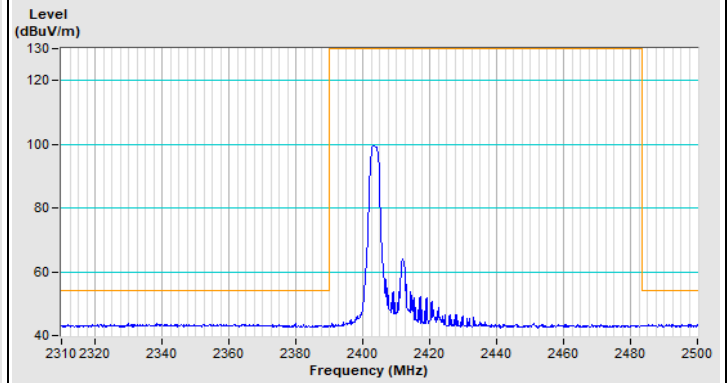
Vertical (Average)



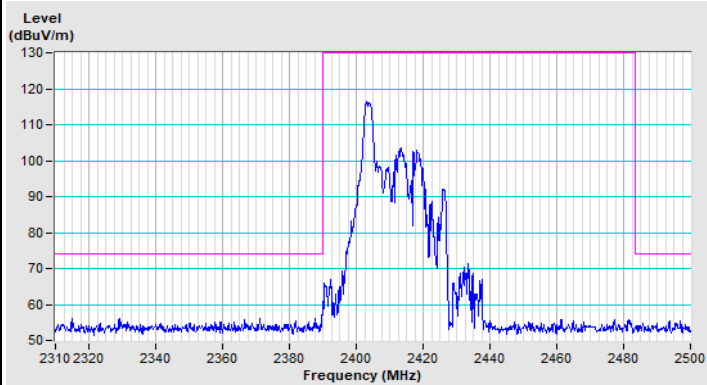
20 MHz Preamble 802.11ax (RU26) Channel 1



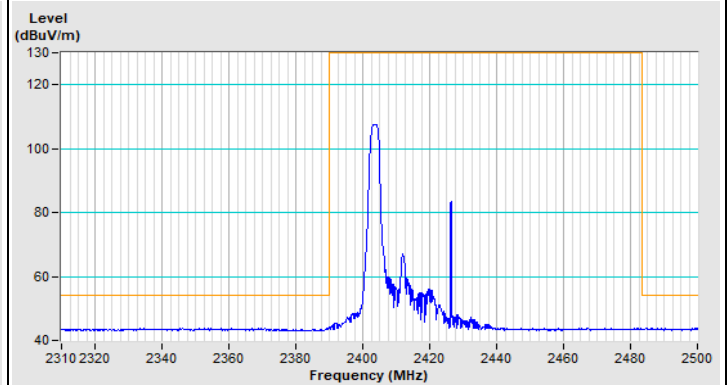
Horizontal (Peak)



Horizontal (Average)

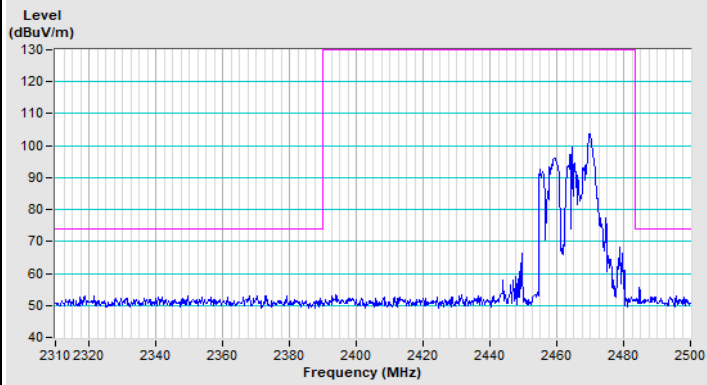


Vertical (Peak)

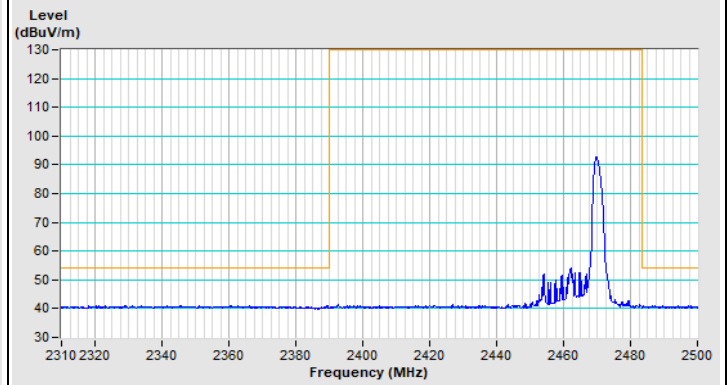


Vertical (Average)

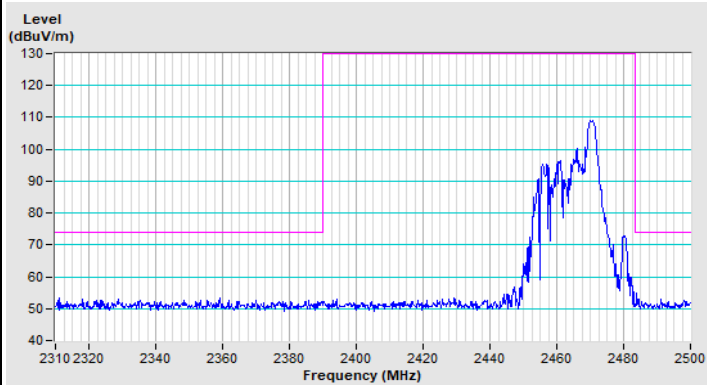
20 MHz Preamble 802.11ax (RU26) Channel 11



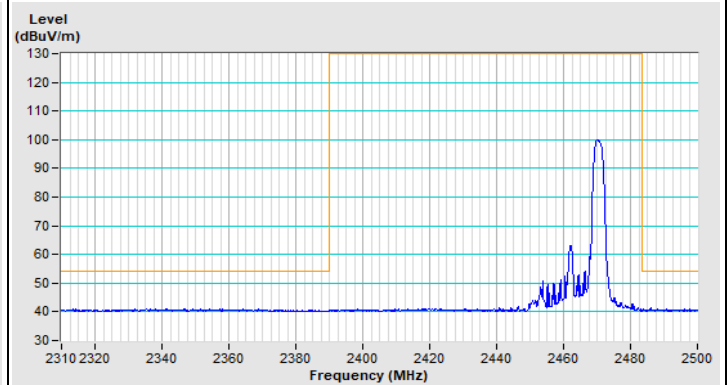
Horizontal (Peak)



Horizontal (Average)

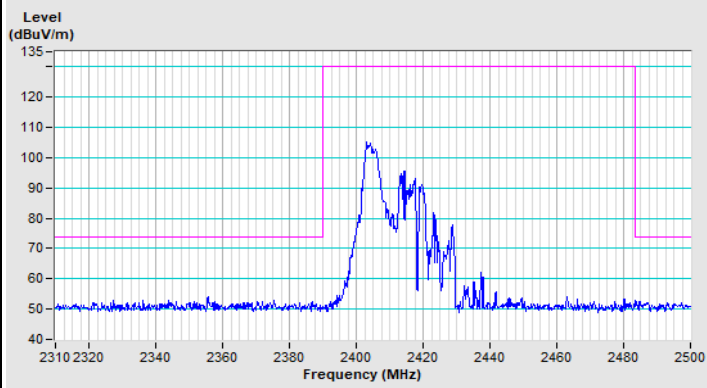


Vertical (Peak)

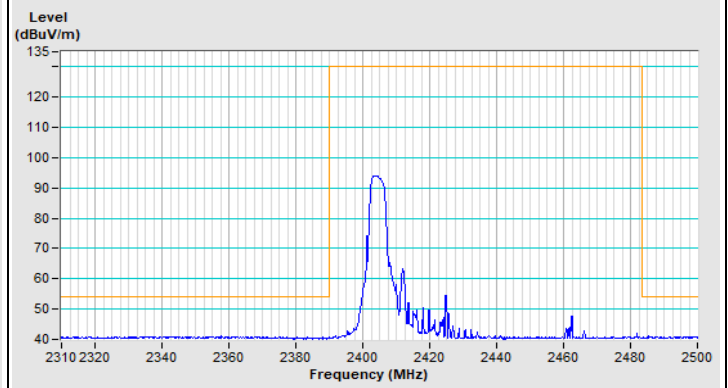


Vertical (Average)

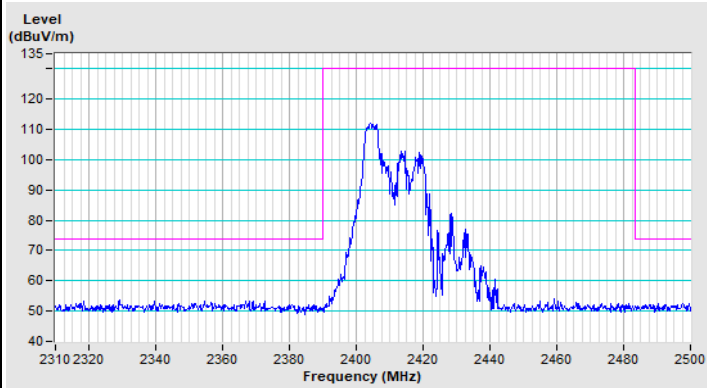
20 MHz Preamble 802.11ax (RU52) Channel 1



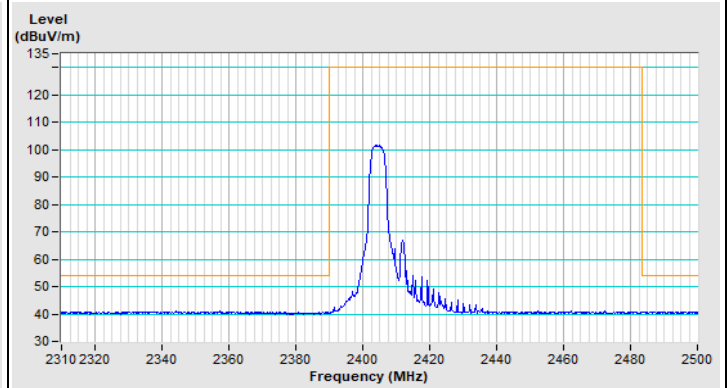
Horizontal (Peak)



Horizontal (Average)

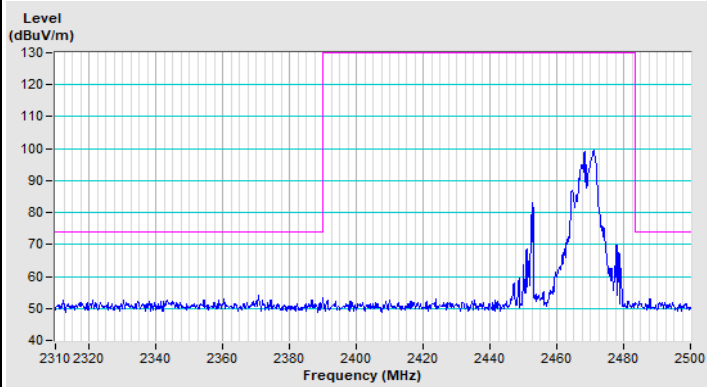


Vertical (Peak)

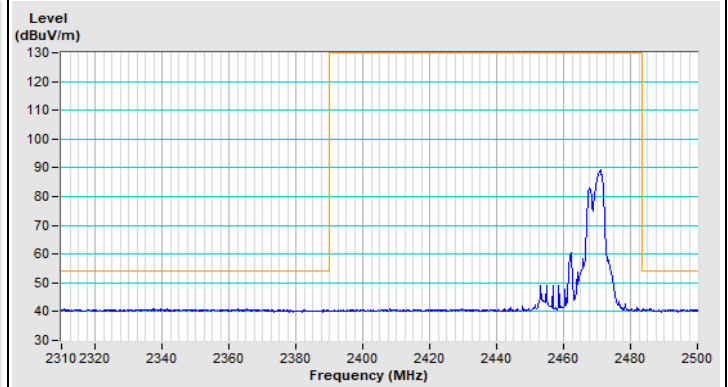


Vertical (Average)

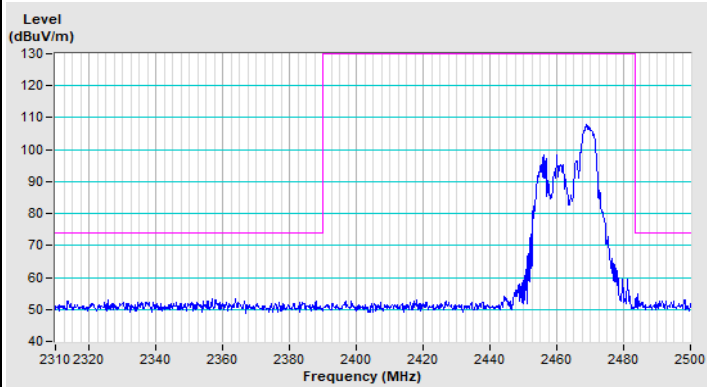
20 MHz Preamble 802.11ax (RU52) Channel 11



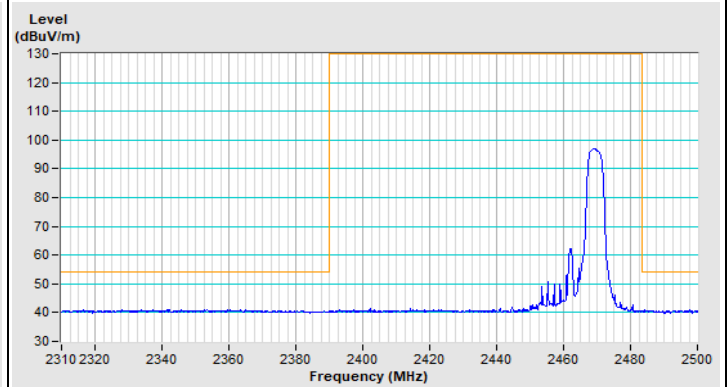
Horizontal (Peak)



Horizontal (Average)

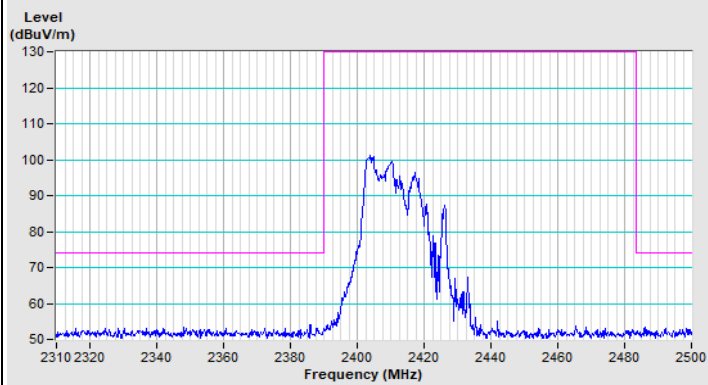


Vertical (Peak)

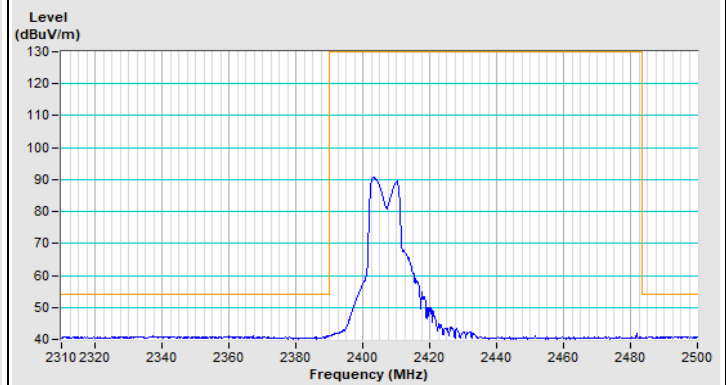


Vertical (Average)

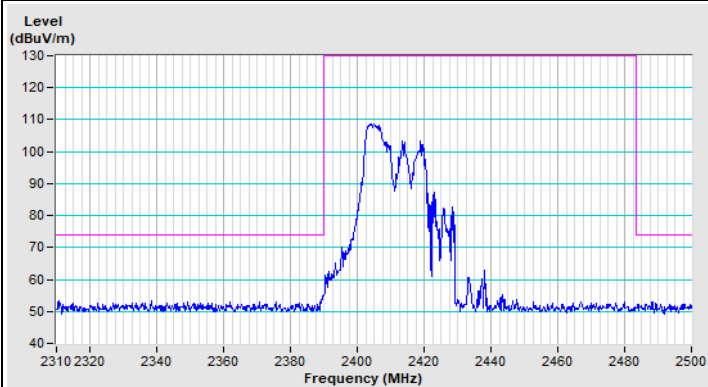
20 MHz Preamble 802.11ax (RU106) Channel 1



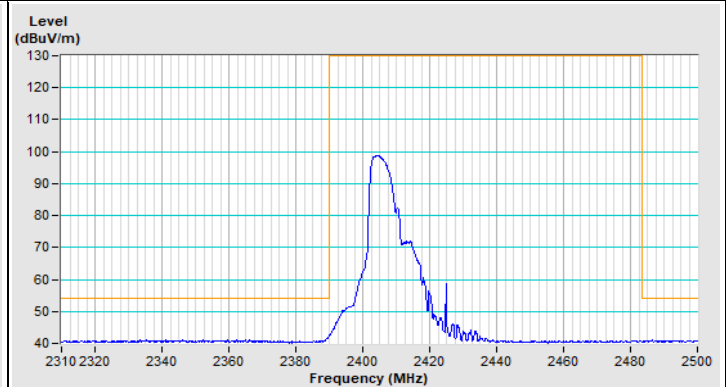
Horizontal (Peak)



Horizontal (Average)

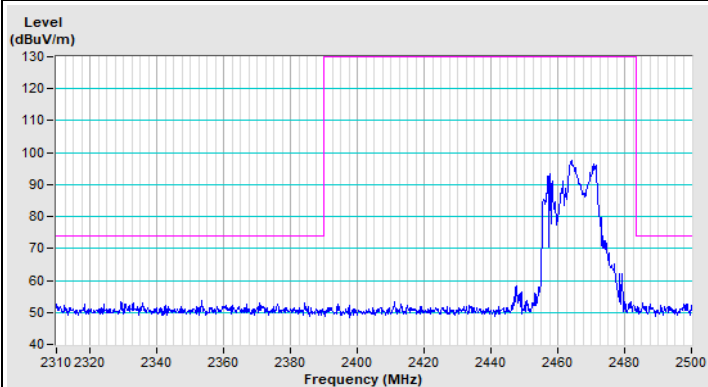


Vertical (Peak)

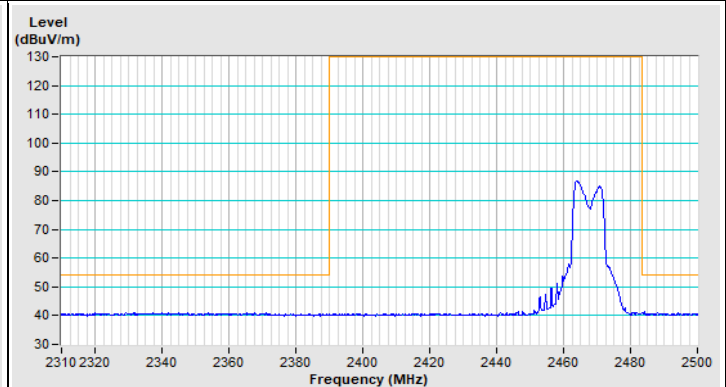


Vertical (Average)

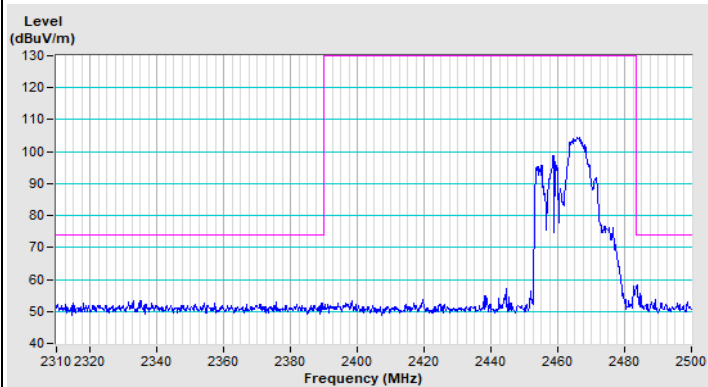
20 MHz Preamble 802.11ax (RU106) Channel 11



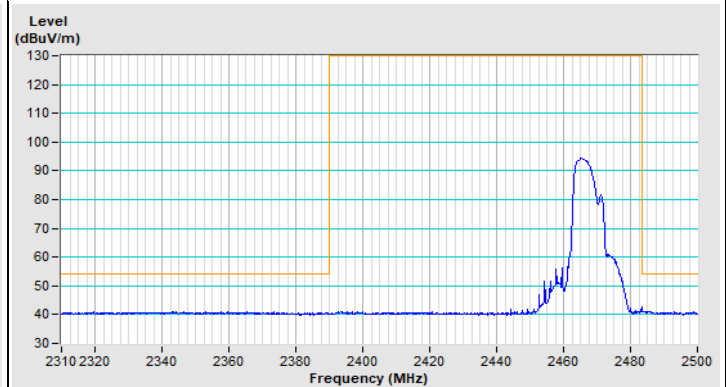
Horizontal (Peak)



Horizontal (Average)

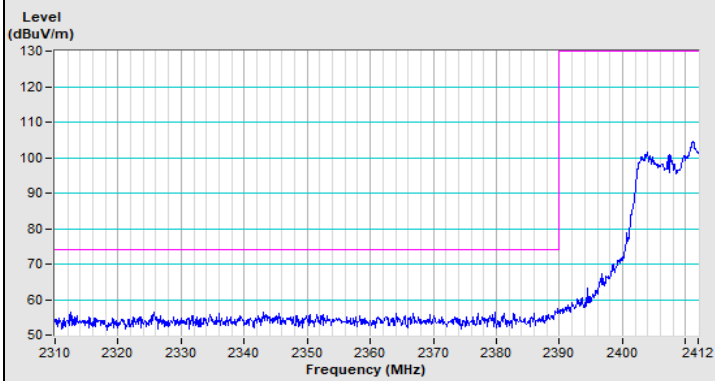


Vertical (Peak)

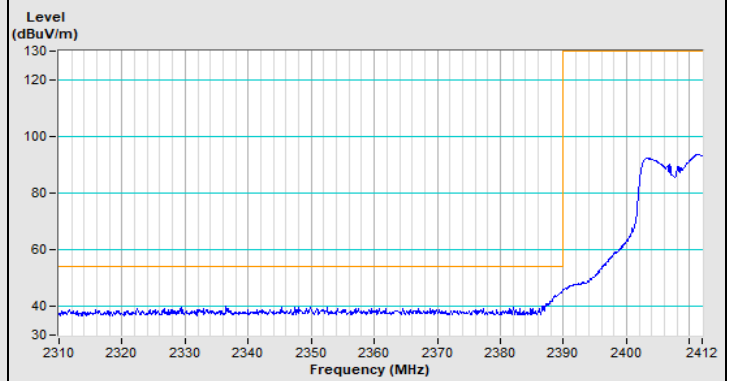


Vertical (Average)

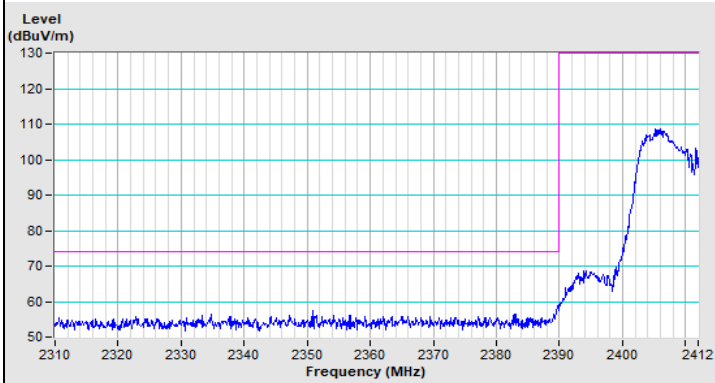
802.11ax (HE20) Full RU Channel 1



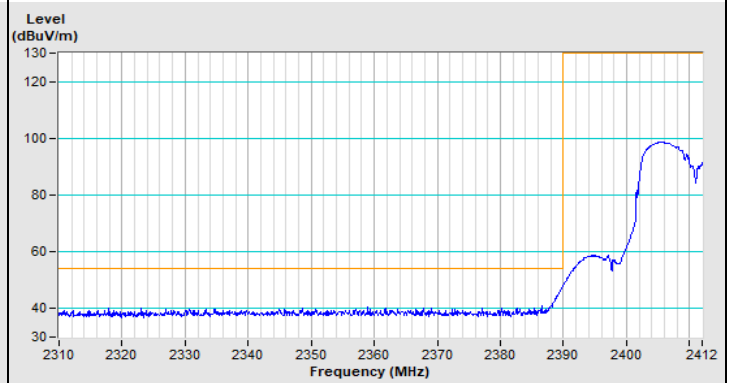
Horizontal (Peak)



Horizontal (Average)

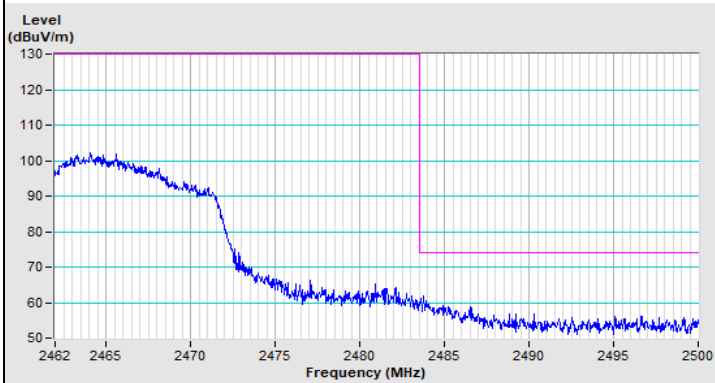


Vertical (Peak)

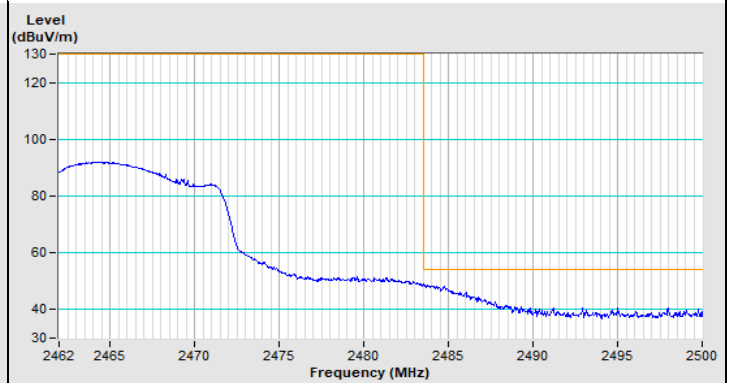


Vertical (Average)

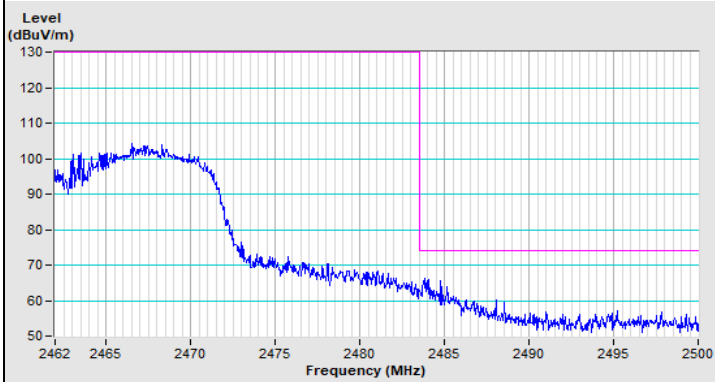
802.11ax (HE20) Full RU Channel 11



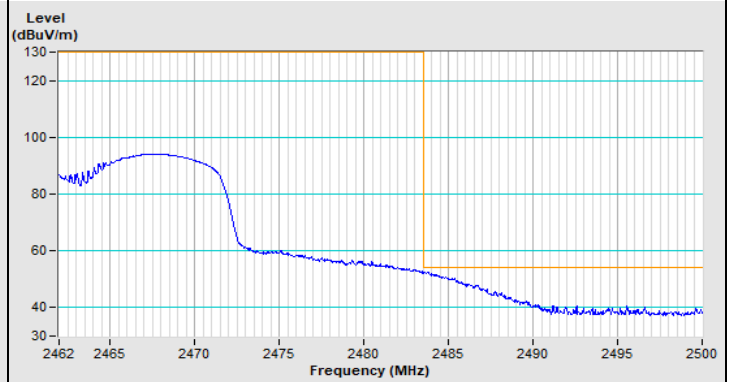
Horizontal (Peak)



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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