

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBCWK-WTW-P22070543

FCC ID: MSQ-RTAX6700

Product: TUF Gaming AX6000 Dual Band WiFi 6 Router

Brand: ASUS

Model No.: TUF-AX6000

Received Date: 2022/7/19

Test Date: 2023/2/3 ~ 2023/3/1

Issued Date: 2023/3/29

Applicant: ASUSTeK COMPUTER 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:

Approved by: _____

Jeremy Lin

, Date: _____

2023/3/29

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
RFBCWK-WTW-P22070543	Original release.	2023/3/29

1 Certificate

Product: TUF Gaming AX6000 Dual Band WiFi 6 Router

Brand: ASUS

Test Model: TUF-AX6000

Sample Status: Engineering Sample

Applicant: ASUSTeK COMPUTER INC.

Test Date: 2023/2/3 ~ 2023/3/1

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 -21.26 dB at 0.32600 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -5.7 dB at 34.85 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at 2387.80 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.99 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.44 dB
	30 MHz ~ 1 GHz	2.95 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 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	TUF Gaming AX6000 Dual Band WiFi 6 Router
Brand	ASUS
Test Model	TUF-AX6000
Status of EUT	Engineering Sample
Power Supply Rating	12Vdc from adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11n mode and VHT20/ VHT40 in 2.4 GHz mode 1024QAM for OFDMA in 11ax mode only
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n/VHT: up to 800Mbps 802.11ax: up to 1147.1Mbps
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
Output Power	CDD Mode: 988.725 mW (29.95 dBm) Beamforming NSS1 Mode: 570.002 mW (27.56 dBm) Beamforming NSS2 Mode: 932.673 mW (29.70 dBm)

Note:

1. The EUT uses following accessories.

AC Adapter		
Brand	Model	Specification
ChenZhou Frecom Electronics Co., Ltd	F30L10-120250SPAU	AC Input : 100-240V ~ 50/60Hz, 1.25A DC Output : 12.0V, 2.5A, 30.0W DC Output Cable : 1.48M/0 core

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

Brand	Model	Type	Connector	Frequency Range	Gain (dBi)
RFlink	U00T01S039N01804	Dipole	ipex(MHF)	2400~2483.5MHz	2
RFlink	U00T01S039N01805	Dipole	ipex(MHF)	2400~2483.5MHz	2
RFlink	U00T01S039N01809	Dipole	ipex(MHF)	2400~2483.5MHz	2
RFlink	U00T01S039N01810	Dipole	ipex(MHF)	2400~2483.5MHz	2
RFlink	U00T01S039N01806	Dipole	ipex(MHF)	5150~5850MHz	2
RFlink	U00T01S039N01807	Dipole	ipex(MHF)	5150~5850MHz	2
RFlink	U00T01S039N01809	Dipole	ipex(MHF)	5150~5850MHz	2
RFlink	U00T01S039N01810	Dipole	ipex(MHF)	5150~5850MHz	2

* 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	CDD Mode	Beamforming Mode	TX Function
802.11b	Support	Not Support	4TX
802.11g	Support	Not Support	4TX
802.11n (HT20)	Support	Support	4TX
802.11n (HT40)	Support	Support	4TX
VHT20	Support	Support	4TX
VHT40	Support	Support	4TX
802.11ax (HE20)	Support	Support	4TX
802.11ax (HE40)	Support	Support	4TX

Note:

- All of modulation mode support beamforming function except 802.11b/g modulation mode.
- The EUT device modulation technique OFDMA does not support partial RUs (resource units).
- The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
- The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz) and VHT mode for 20 MHz (40 MHz), therefore the manufacturer will control the power for 802.11n/VHT mode is the same as the 802.11ax or more lower than it and investigated worst case to representative mode in test report.

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

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

Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
	802.11g	CDD	1, 6, 11	BPSK	6Mb/s
	802.11ax (HE20)	CDD & Beamforming NSS 1 & Beamforming NSS 2	1, 6, 11	BPSK	MCS0
	802.11ax (HE40)	CDD & Beamforming NSS 1 & Beamforming NSS 2	3, 6, 9	BPSK	MCS0
Power Spectral Density	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
6 dB Bandwidth / Conducted Out of Band Emissions	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
AC Power Conducted Emissions	802.11b	CDD	6	DBPSK	1Mb/s
Unwanted Emissions below 1 GHz	802.11b	CDD	6	DBPSK	1Mb/s
Unwanted Emissions above 1 GHz	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

Note: The EUT was positioned on the X-plane during testing.

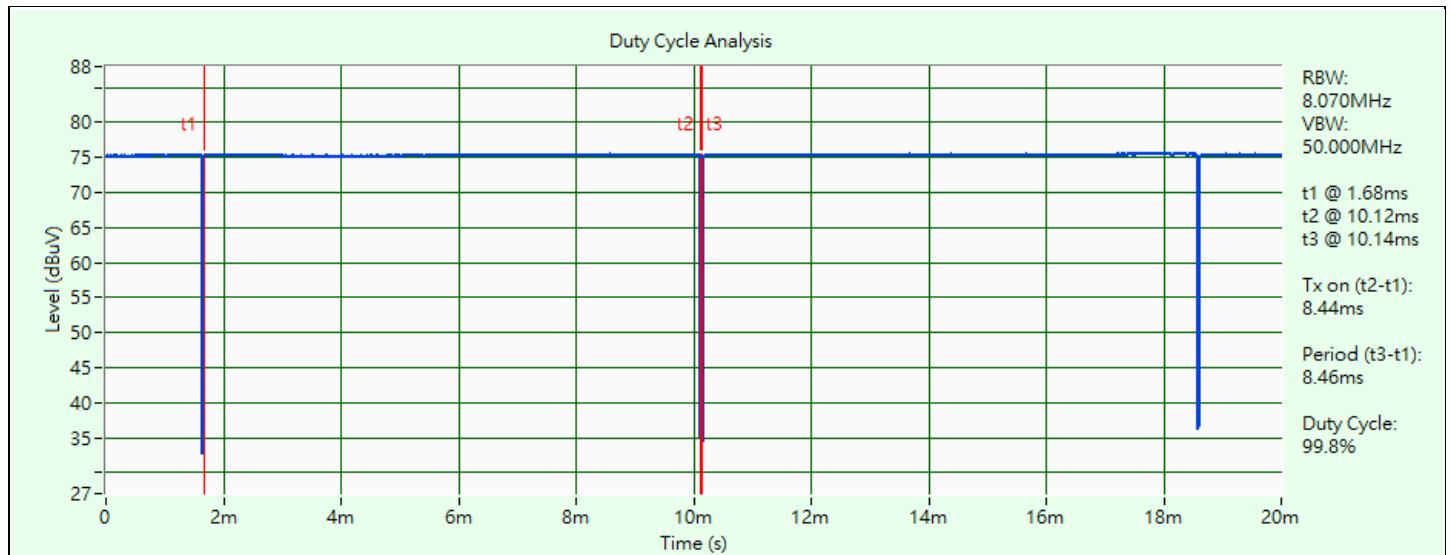
3.5 Duty Cycle of Test Signal

802.11b: Duty cycle = 8.44 ms / 8.46 ms x 100% = 99.8%

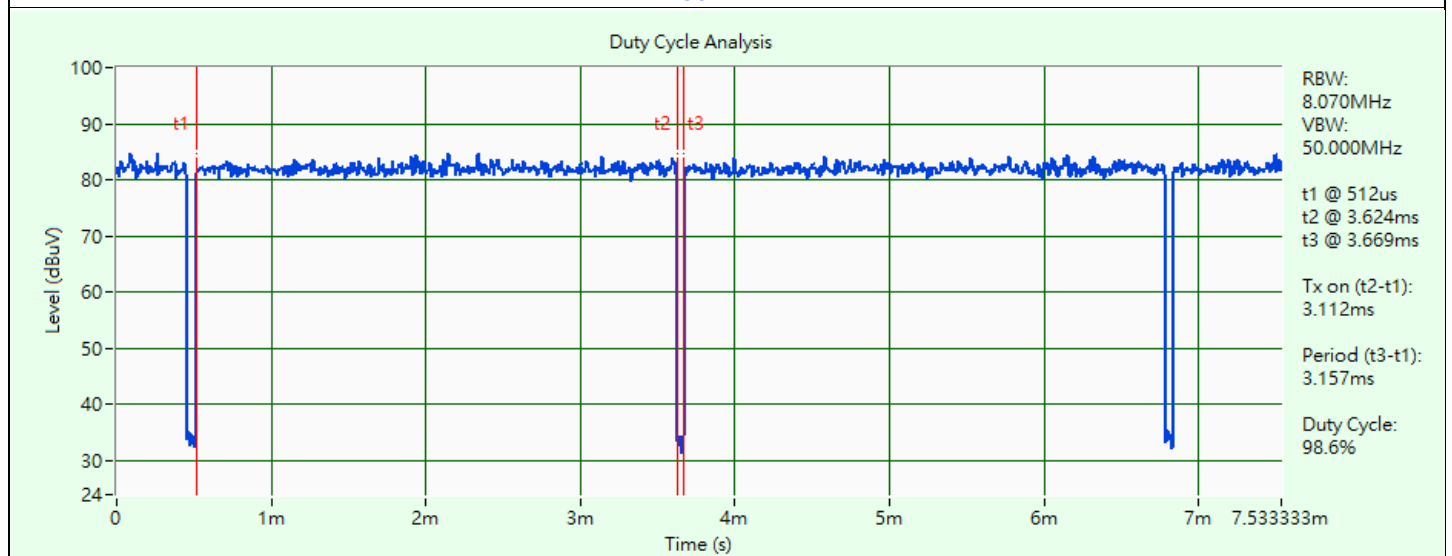
802.11g: Duty cycle = 3.112 ms / 3.157 ms x 100% = 98.6%

802.11ax (HE20): Duty cycle = 3.52 ms / 3.55 ms x 100% = 99.2%

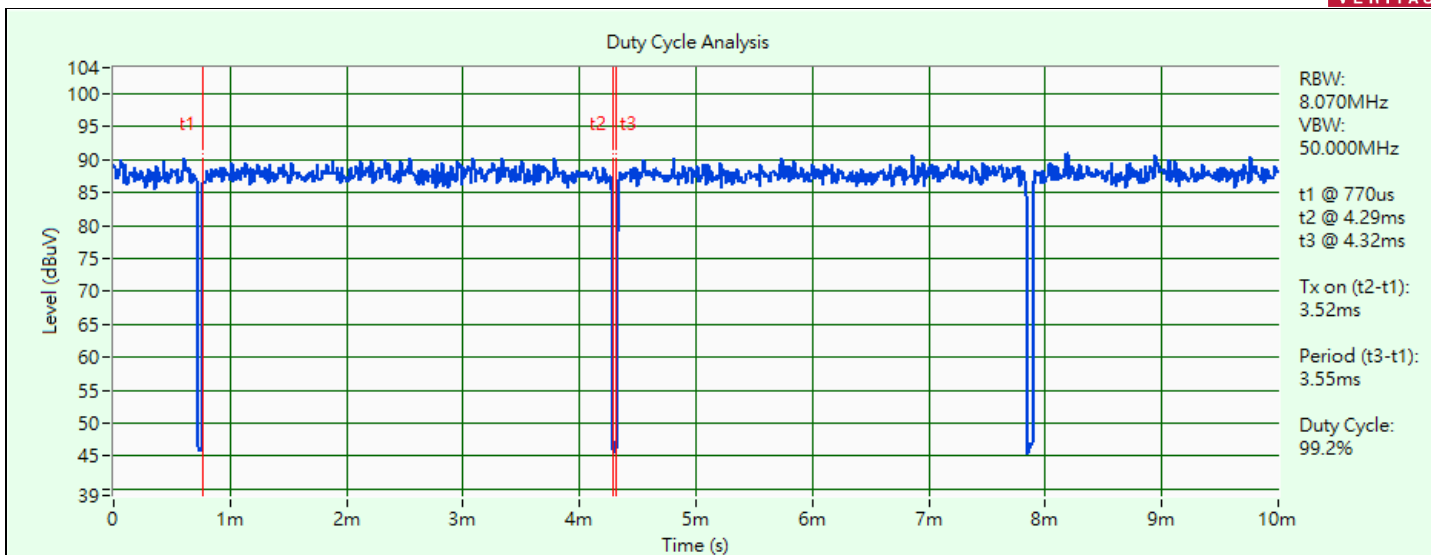
802.11ax (HE40): Duty cycle = 3.52 ms / 3.55 ms x 100% = 99.2%



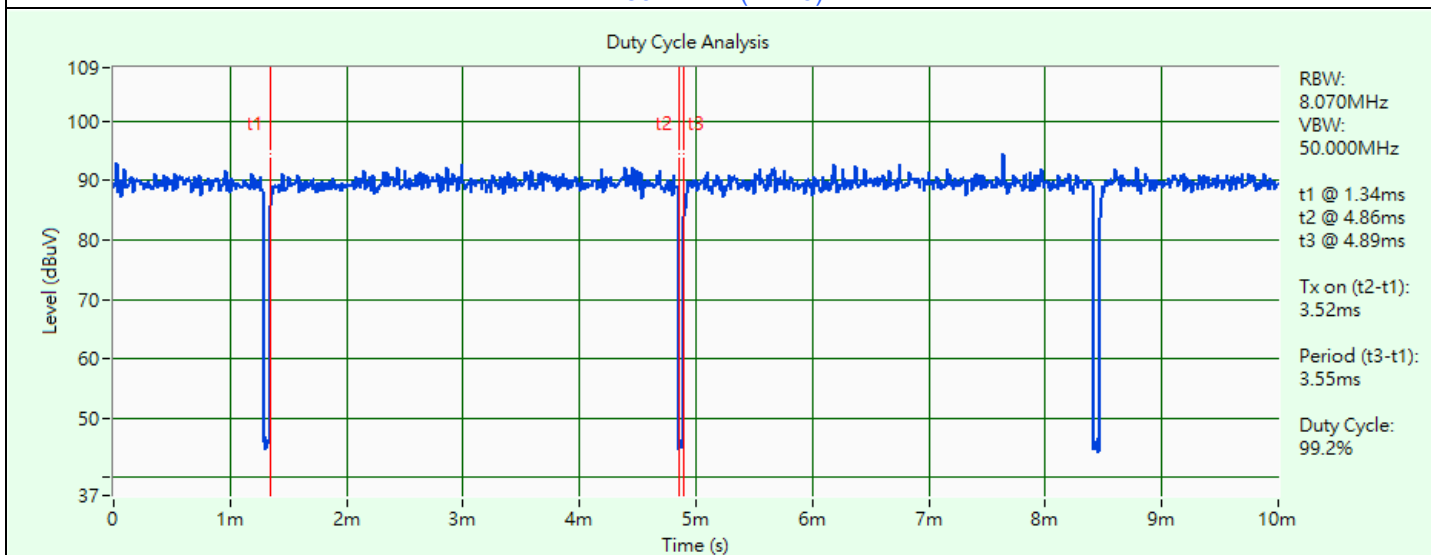
802.11b



802.11g



802.11ax (HE20)

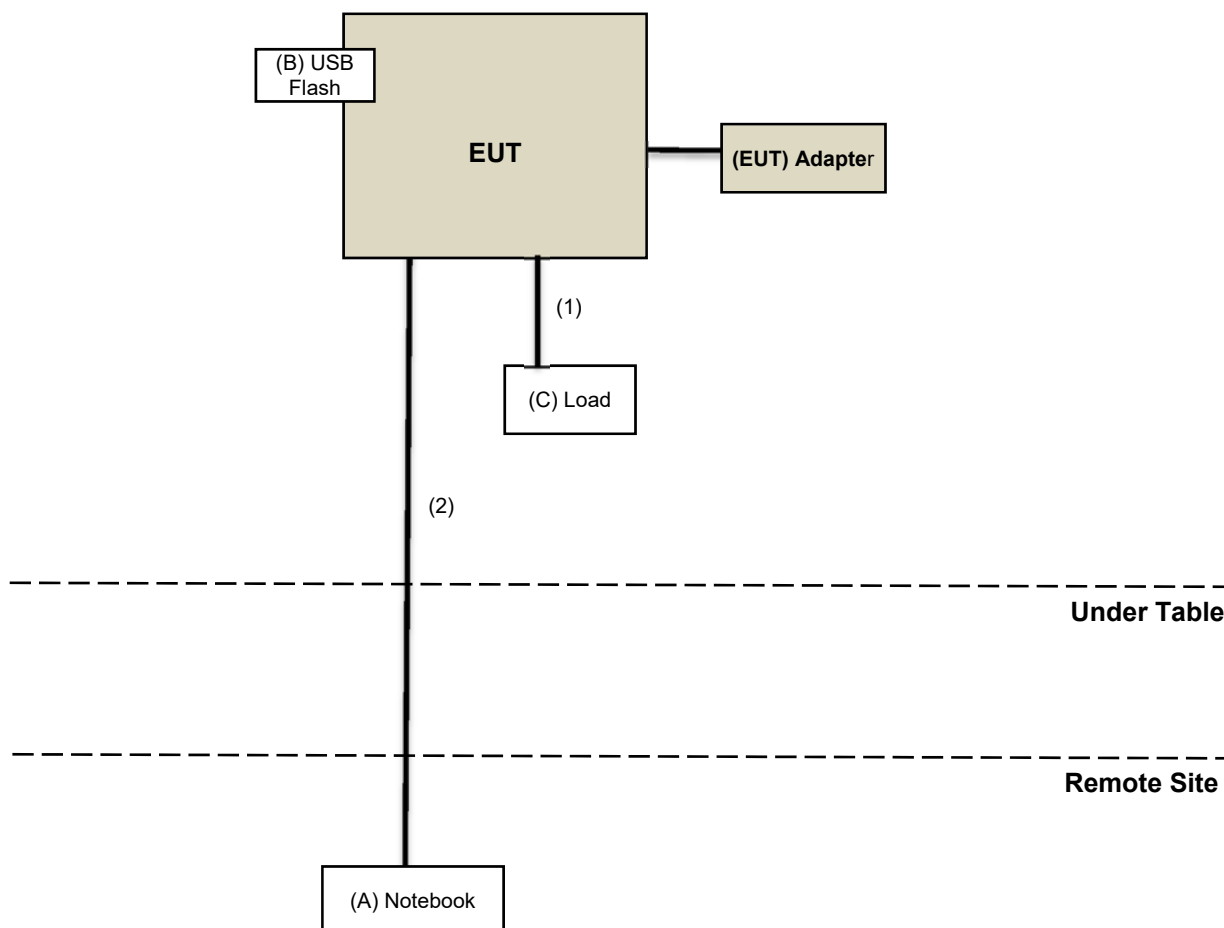


802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

Controlling software (QA UI(MT986_000F) Version 0.0.2.88) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Notebook	Lenovo	L440	R9-0GFJJK	FCC DoC Approved	Provided by Lab
B	USB Flash	SanDisk	SDDDC3-032G	N/A	N/A	Provided by Lab
C	Load	N/A	N/A	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	5	1.5	No	0	Provided by Lab
2	RJ-45 Cable	1	10	No	0	Provided by Lab

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

Notes:

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

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	100980	2022/4/20	2023/4/19

Notes:

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

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: 2023/2/8

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB9168	9168-472	2022/10/21	2023/10/20
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	EMC 330H	980112	2022/10/1	2023/9/30
Pre-amplifier EMCI	EMC001340	980201	2022/9/23	2023/9/22
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2023/1/7	2024/1/6
RF Coaxial Cable WORKEN	8D-FB	Cable-Ch10-01	2022/10/1	2023/9/30
Signal Analyzer Agilent	N9010A	MY52220207	2023/1/3	2024/1/2
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Test Receiver KEYSIGHT	N9038A	MY55420137	2022/4/27	2023/4/26
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2023/2/7 ~ 2023/2/8

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	7	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-969	2022/11/13	2023/11/12
	BBHA 9170	148	2022/11/13	2023/11/12
Pre-Amplifier EMCI	EMC 184045	980116	2022/10/1	2023/9/30
Pre-Amplifier EMCI	EMC 012645	980115	2022/10/1	2023/9/30
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2022/7/9	2023/7/8
	EMC102-KM-KM-3000	150929	2022/7/9	2023/7/8
	EMC104-SM-SM- 8000+3000	171005	2022/10/1	2023/9/30
RF Coaxial Cable HUBER SUHNER	SUCOFLEX 104	EMC104-SM-SM- 1000(140807)	2022/10/1	2023/9/30
RF FLITER MICRO-TRONICS	BRM17690	004	2023/1/11	2024/1/10
	BRM50716	060	2023/1/11	2024/1/10
Signal Analyzer Agilent	N9010A	MY52220207	2023/1/3	2024/1/2
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Test Receiver KEYSIGHT	N9038A	MY55420137	2022/4/27	2023/4/26
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2023/2/3 ~ 2023/3/1

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

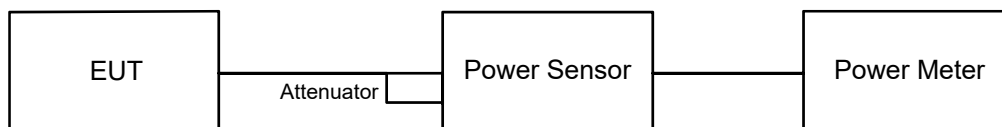
Notes:

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



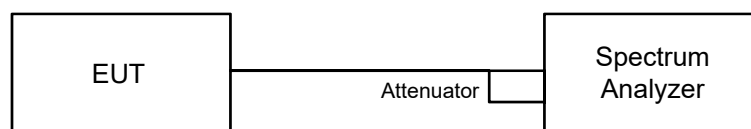
6.1.2 Test Procedure

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

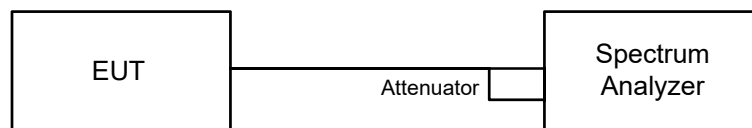


6.2.2 Test Procedure

- 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

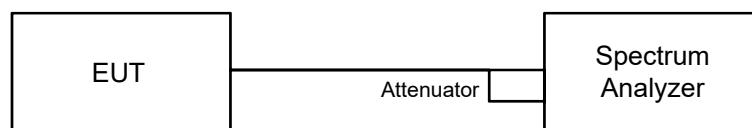


6.3.2 Test Procedure

- 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

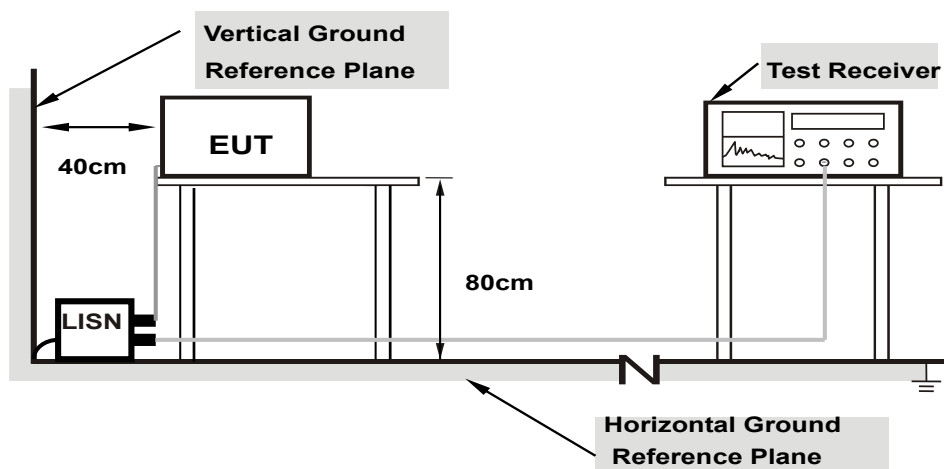
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

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

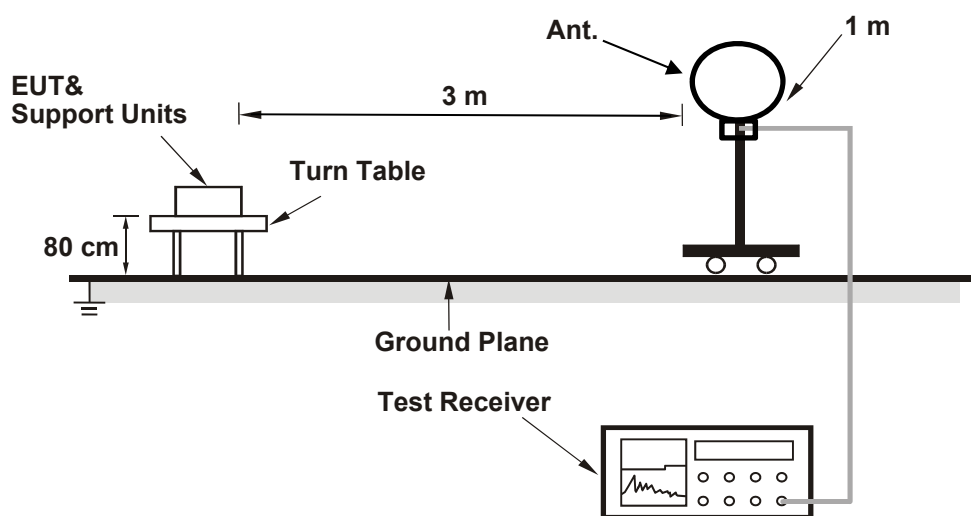
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

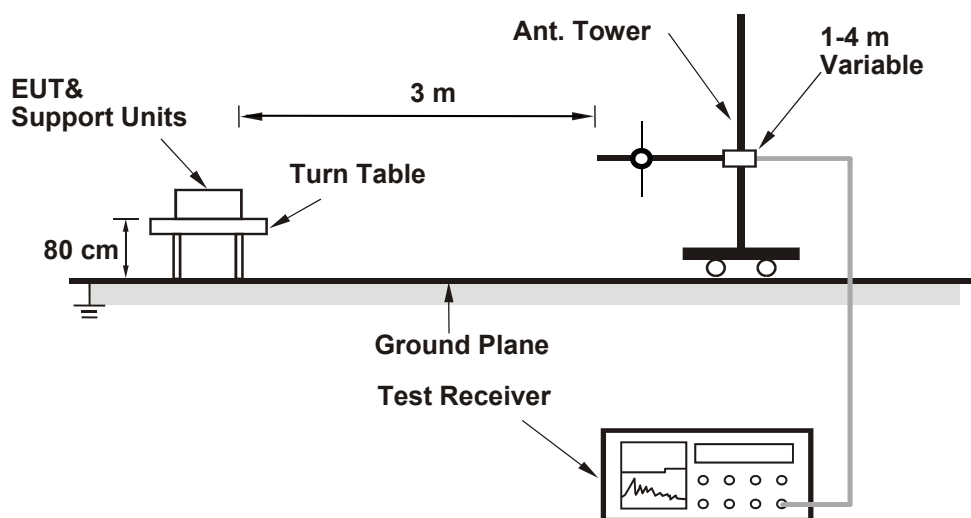
6.6 Unwanted Emissions below 1 GHz

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

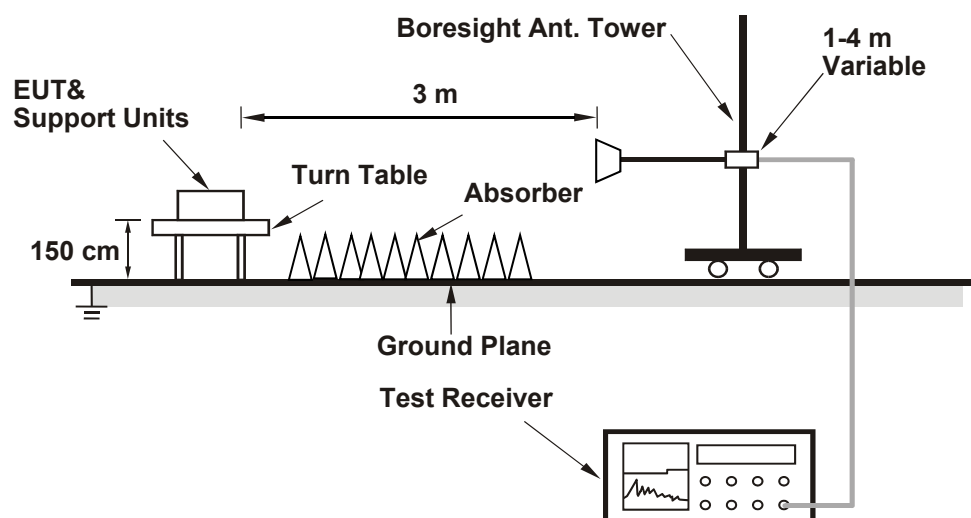
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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:	Alan Wu
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802.11b CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	20.94	20.45	20.60	20.62	465.243	26.68	30	Pass
6	2437	24.13	23.71	23.89	23.98	988.725	29.95	30	Pass
11	2462	24.09	23.61	23.79	23.84	967.498	29.86	30	Pass

Notes:

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

802.11g CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	18.48	17.81	18.14	18.44	265.85	24.25	30	Pass
6	2437	24.03	23.59	23.65	23.75	950.367	29.78	30	Pass
11	2462	16.88	16.29	16.52	16.76	183.611	22.64	30	Pass

Notes:

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

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	18.92	18.34	18.74	18.76	296.196	24.72	30	Pass
6	2437	23.95	23.29	23.66	23.78	932.673	29.70	30	Pass
11	2462	19.71	19.08	19.43	19.44	350.052	25.44	30	Pass

Notes:

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

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
3	2422	15.23	14.74	14.86	14.93	124.865	20.96	30	Pass
6	2437	20.00	19.74	19.46	19.68	375.394	25.74	30	Pass
9	2452	16.90	16.27	16.45	16.74	182.706	22.62	30	Pass

Notes:

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

NSS 1

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	18.92	18.34	18.74	18.76	296.196	24.72	27.98	Pass
6	2437	21.84	21.11	21.52	21.65	570.002	27.56	27.98	Pass
11	2462	19.71	19.08	19.43	19.44	350.052	25.44	27.98	Pass

Notes:

1. Directional gain = $G_{ANT} + 10 \log(N_{ANT}/N_{SS})$
2. The directional gain is 8.02 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (8.02 - 6) = 27.98$ dBm.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
3	2422	15.23	14.74	14.86	14.93	124.865	20.96	27.98	Pass
6	2437	20.00	19.74	19.46	19.68	375.394	25.74	27.98	Pass
9	2452	16.90	16.27	16.45	16.74	182.706	22.62	27.98	Pass

Notes:

1. Directional gain = $G_{ANT} + 10 \log(N_{ANT}/N_{SS})$
2. The directional gain is 8.02 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (8.02 - 6) = 27.98$ dBm.

NSS2

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
1	2412	18.92	18.34	18.74	18.76	296.196	24.72	30	Pass
6	2437	23.95	23.29	23.66	23.78	932.673	29.70	30	Pass
11	2462	19.71	19.08	19.43	19.44	350.052	25.44	30	Pass

Notes:

1. Directional gain = $G_{ANT} + 10 \log(N_{ANT}/N_{SS})$
2. The directional gain is 5.01 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3				
3	2422	15.23	14.74	14.86	14.93	124.865	20.96	30	Pass
6	2437	20.00	19.74	19.46	19.68	375.394	25.74	30	Pass
9	2452	16.90	16.27	16.45	16.74	182.706	22.62	30	Pass

Notes:

1. Directional gain = $G_{ANT} + 10 \log(N_{ANT}/N_{SS})$
2. The directional gain is 5.01 dBi < 6 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:	Alan Wu
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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	Chain 2	Chain 3			
1	2412	-13.20	-13.70	-13.75	-13.92	-7.61	5.98	Pass
6	2437	-8.01	-8.25	-7.87	-8.31	-2.09	5.98	Pass
11	2462	-8.27	-8.64	-8.37	-8.45	-2.41	5.98	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 = $G_{ANT} + 10 \log(N_{ANT})$
3. The directional gain is 8.02 dBi > 6 dBi, so the power density limit shall be reduced to $8 - (8.02 - 6) = 5.98$ dBm/3kHz.

802.11g

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)				Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
1	2412	-16.66	-16.87	-16.70	-16.41	-10.64	5.98	Pass
6	2437	-10.15	-10.68	-10.51	-10.41	-4.41	5.98	Pass
11	2462	-18.13	-17.95	-18.14	-18.19	-12.08	5.98	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 = $G_{ANT} + 10 \log(N_{ANT})$
3. The directional gain is 8.02 dBi > 6 dBi, so the power density limit shall be reduced to $8 - (8.02 - 6) = 5.98$ dBm/3kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)				Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
1	2412	-18.27	-18.71	-18.06	-18.16	-12.27	5.98	Pass
6	2437	-12.01	-11.63	-11.84	-11.71	-5.77	5.98	Pass
11	2462	-17.60	-17.37	-17.79	-18.09	-11.68	5.98	Pass

Notes:

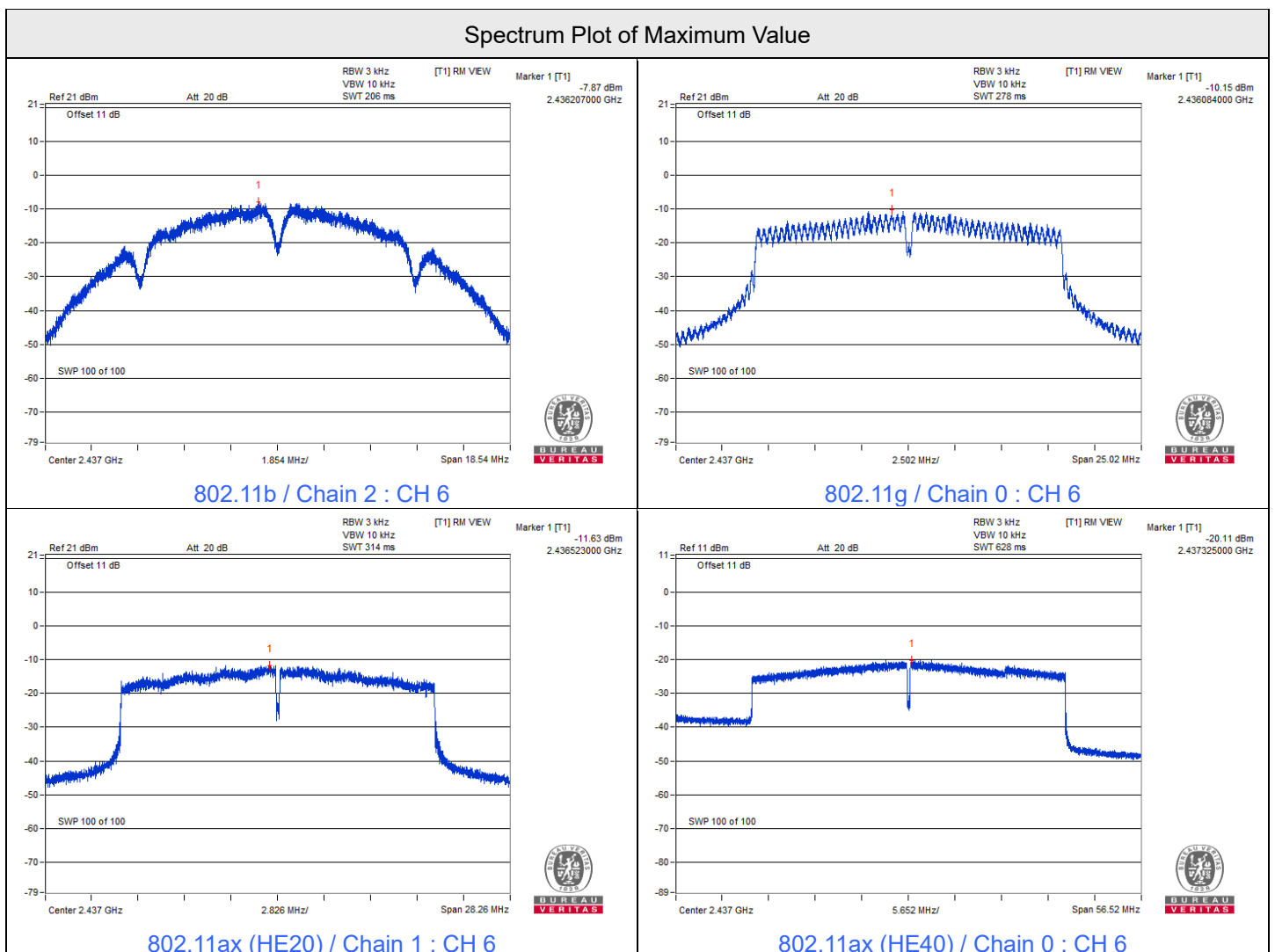
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = $G_{ANT} + 10 \log(N_{ANT})$
3. The directional gain is 8.02 dBi > 6 dBi, so the power density limit shall be reduced to $8 - (8.02 - 6) = 5.98$ dBm/3kHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)				Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3			
3	2422	-24.18	-24.10	-24.06	-23.89	-18.04	5.98	Pass
6	2437	-20.11	-20.51	-20.24	-20.16	-14.23	5.98	Pass
9	2452	-22.39	-22.54	-22.19	-22.53	-16.39	5.98	Pass

Notes:

- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain = $G_{ANT} + 10 \log(N_{ANT})$
- The directional gain is 8.02 dBi > 6 dBi, so the power density limit shall be reduced to $8 - (8.02 - 6) = 5.98$ dBm/3kHz.



7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Alan Wu
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802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
1	2412	7.58	7.58	8.07	8.07	0.5	Pass
6	2437	7.59	7.62	8.06	8.06	0.5	Pass
11	2462	8.06	7.60	8.06	8.06	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
1	2412	15.53	15.17	15.19	15.15	0.5	Pass
6	2437	15.18	15.18	15.11	15.18	0.5	Pass
11	2462	15.19	15.15	15.19	15.48	0.5	Pass

802.11ax (HE20)

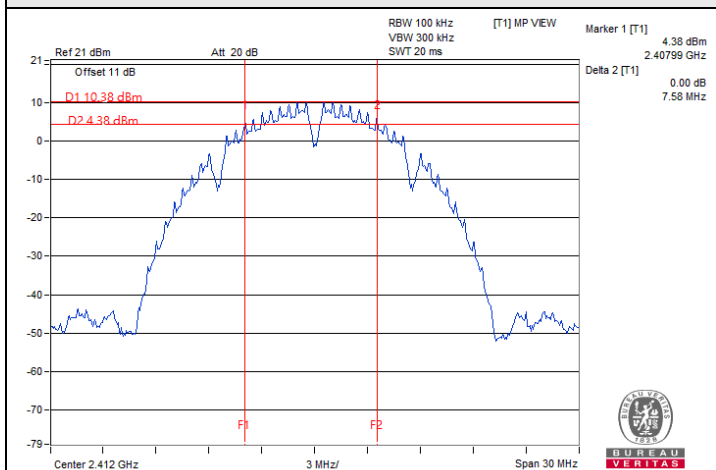
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
1	2412	18.46	18.08	18.24	18.46	0.5	Pass
6	2437	18.15	17.69	17.36	18.19	0.5	Pass
11	2462	18.08	15.70	15.66	15.96	0.5	Pass

802.11ax (HE40)

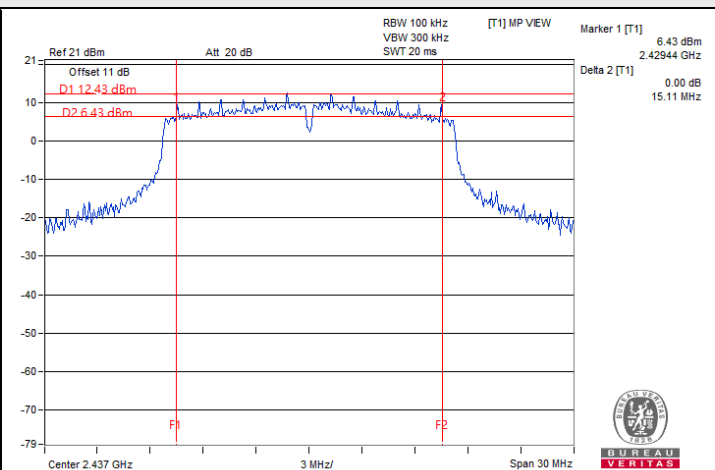
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)				Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2	Chain 3		
3	2422	35.57	33.88	35.30	35.78	0.5	Pass
6	2437	35.34	34.08	35.27	35.26	0.5	Pass
9	2452	37.25	35.96	35.31	35.23	0.5	Pass



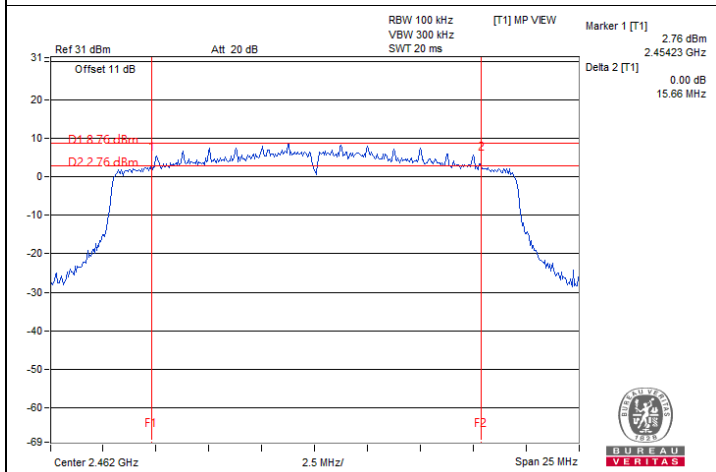
Spectrum Plot of Minimum Value



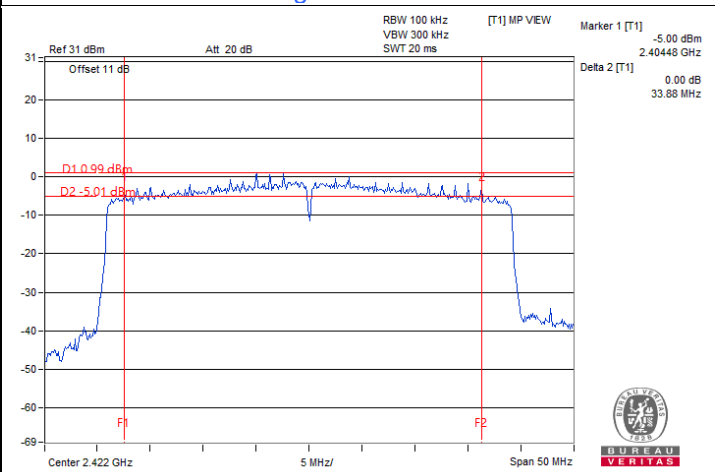
802.11b / Chain 0 : CH 1



802.11g / Chain 2 : CH 6



802.11ax (HE20) / Chain 2 : CH 11



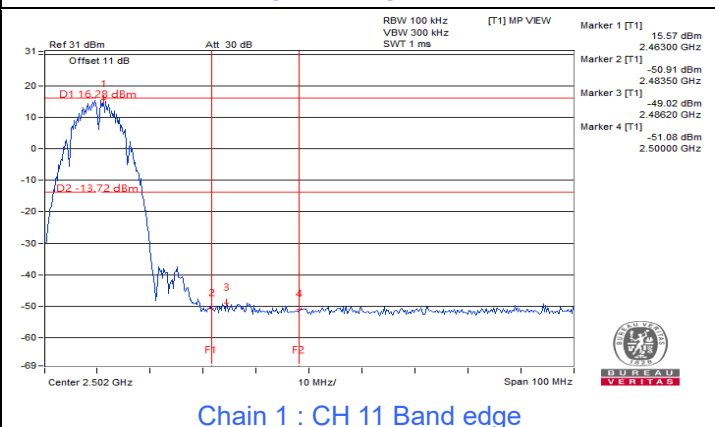
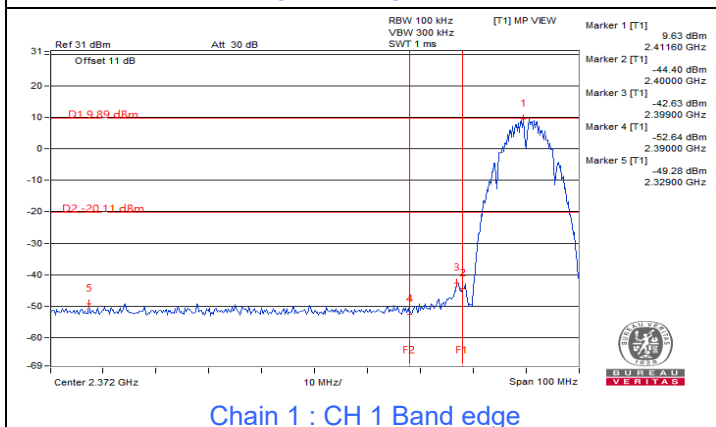
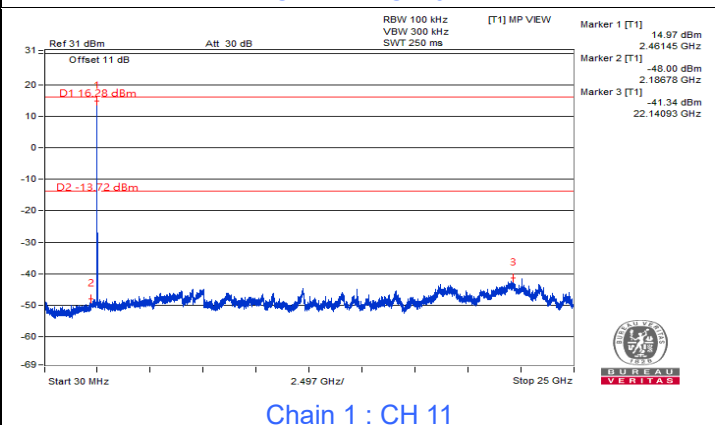
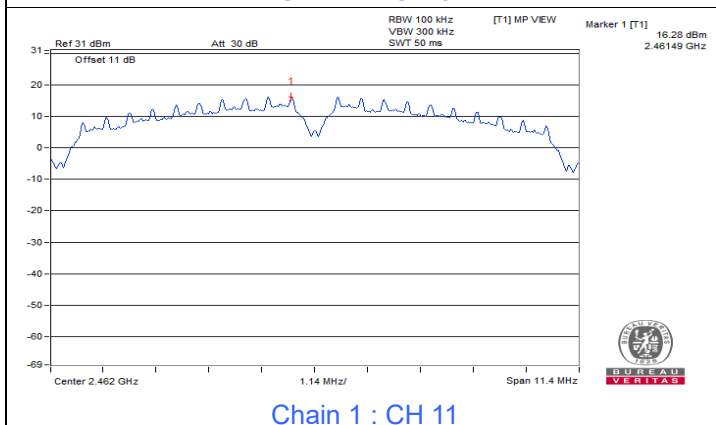
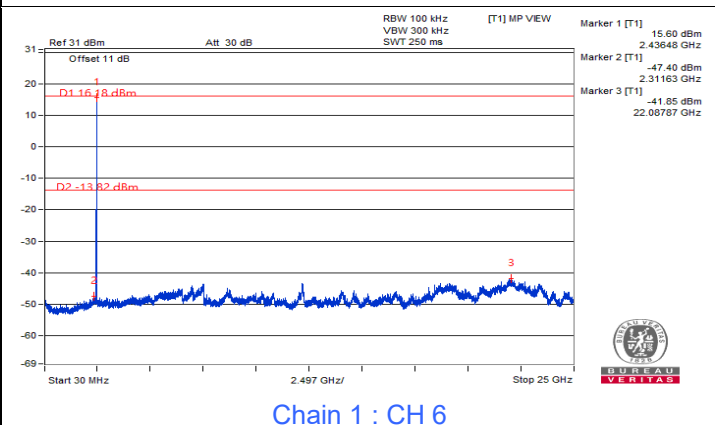
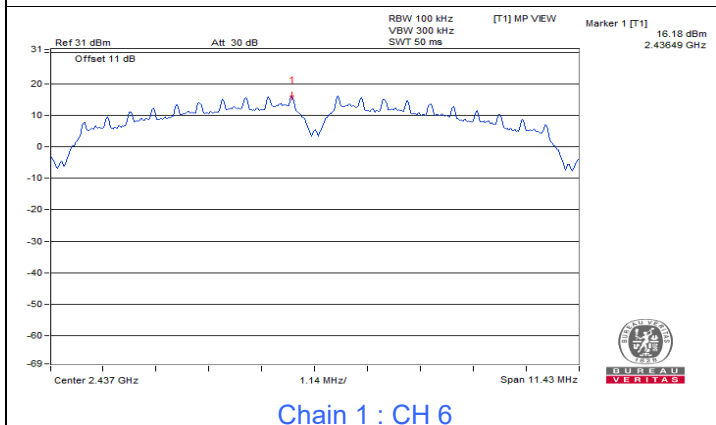
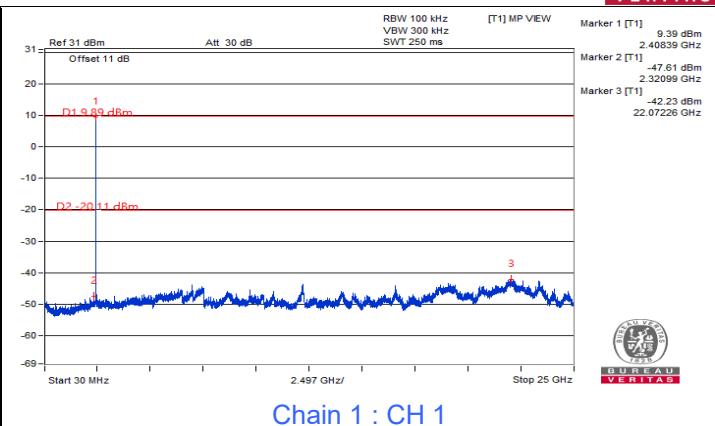
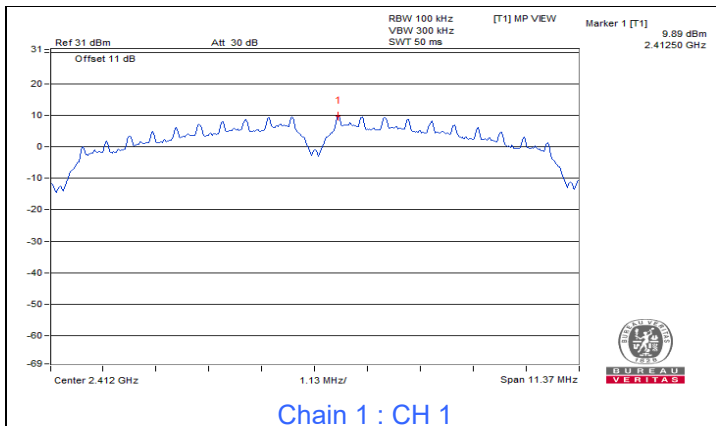
802.11ax (HE40) / Chain 1 : CH 3

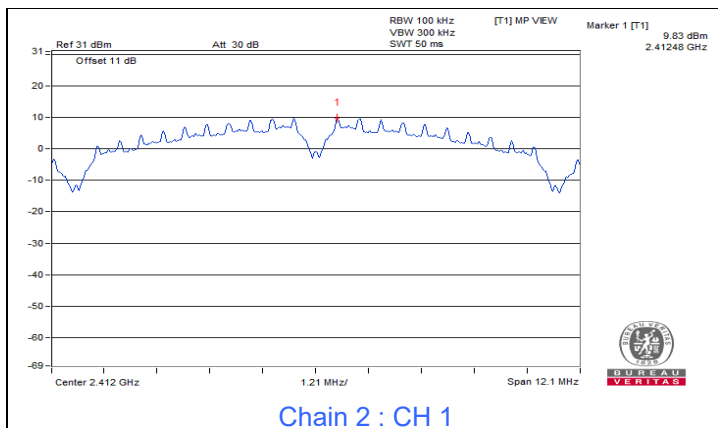
7.4 Conducted Out of Band Emissions

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Alan Wu
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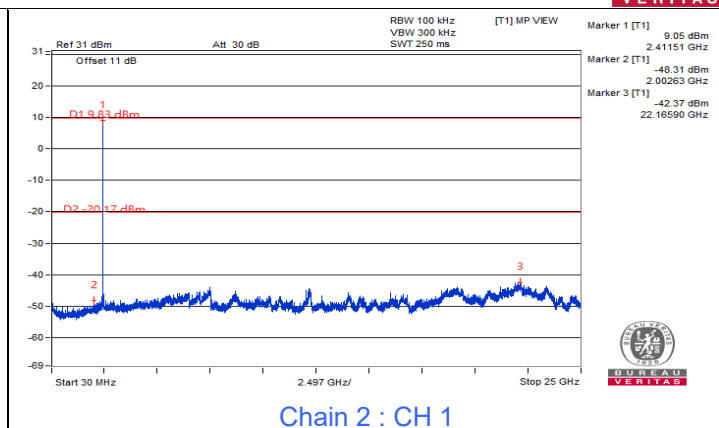
802.11b



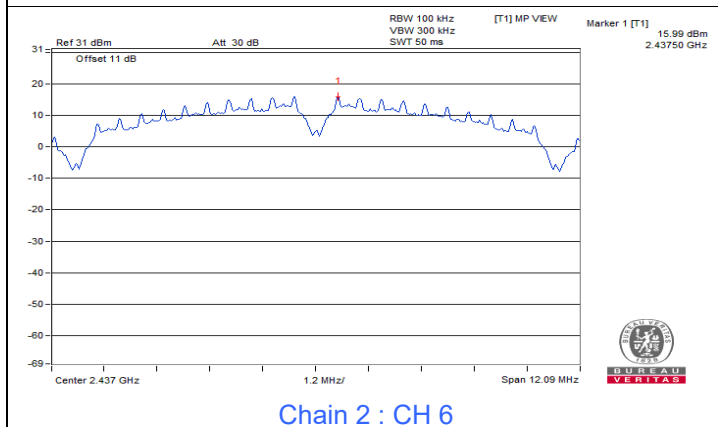




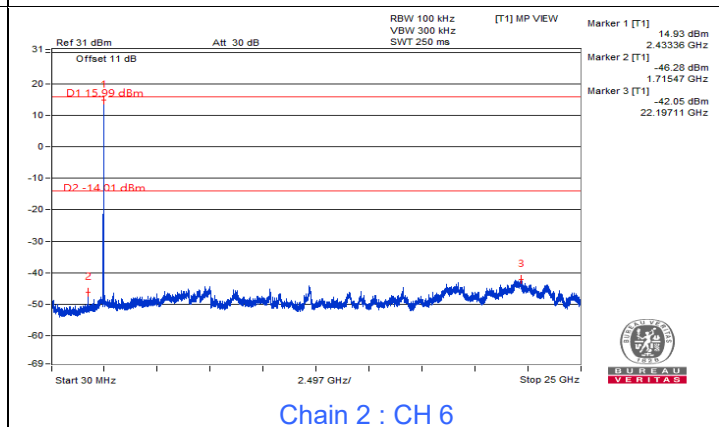
Chain 2 : CH 1



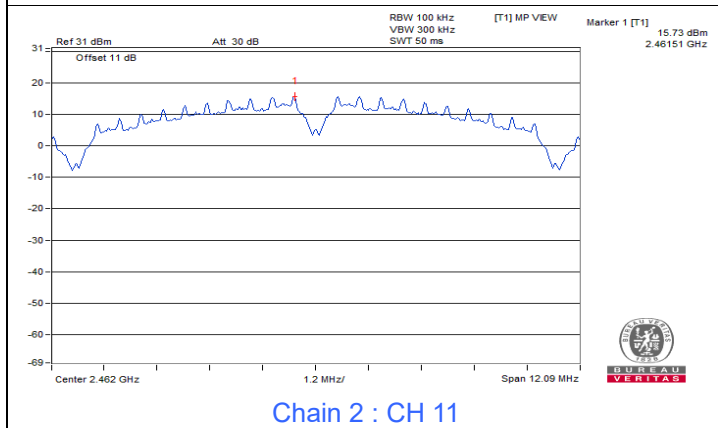
Chain 2 : CH 1



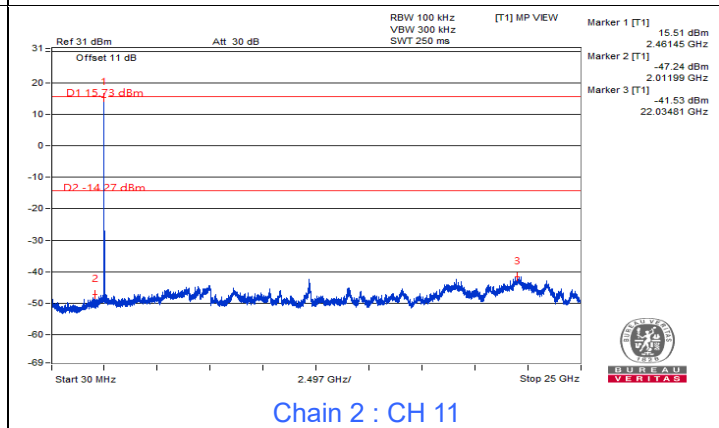
Chain 2 : CH 6



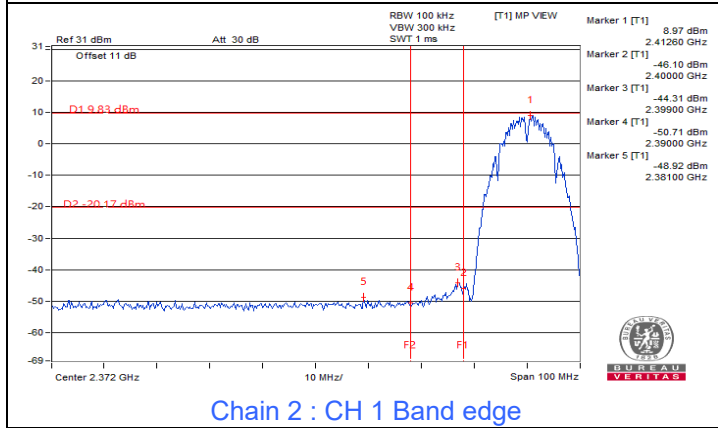
Chain 2 : CH 6



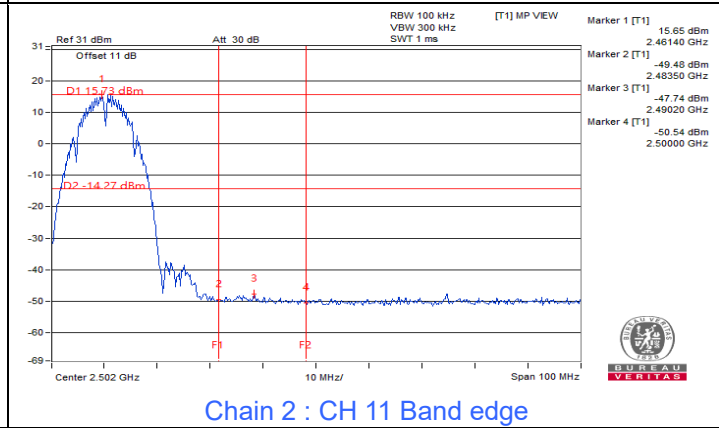
Chain 2 : CH 11



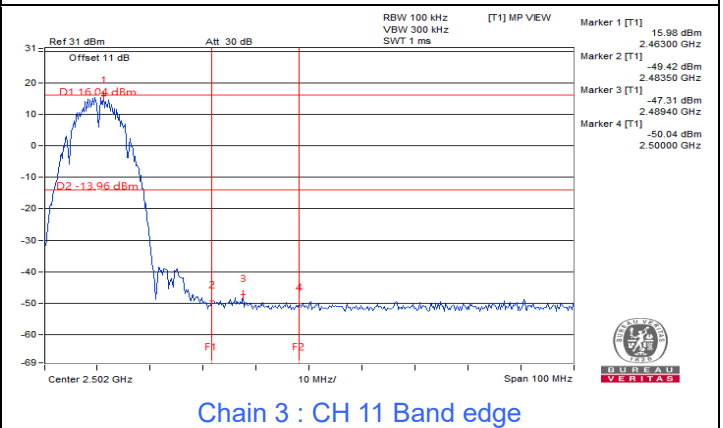
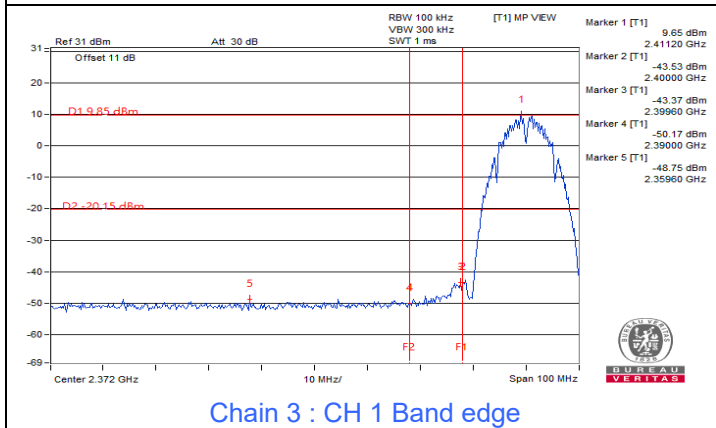
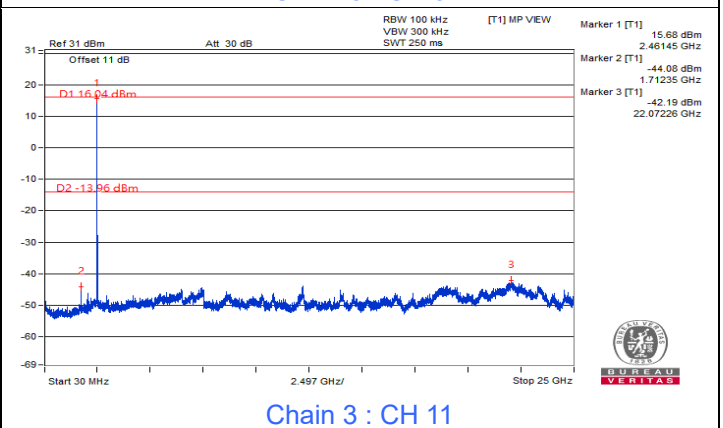
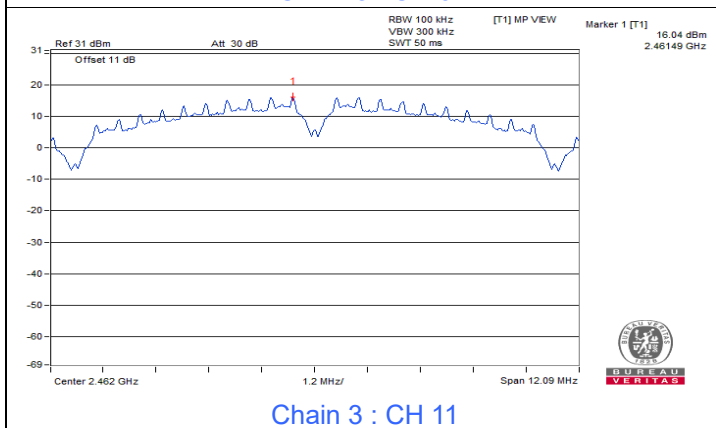
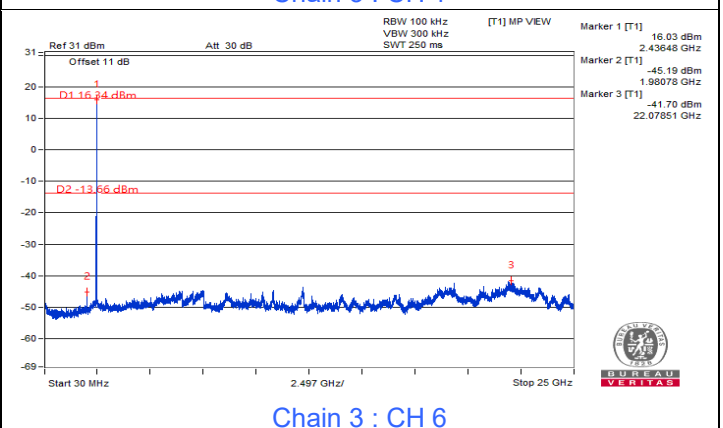
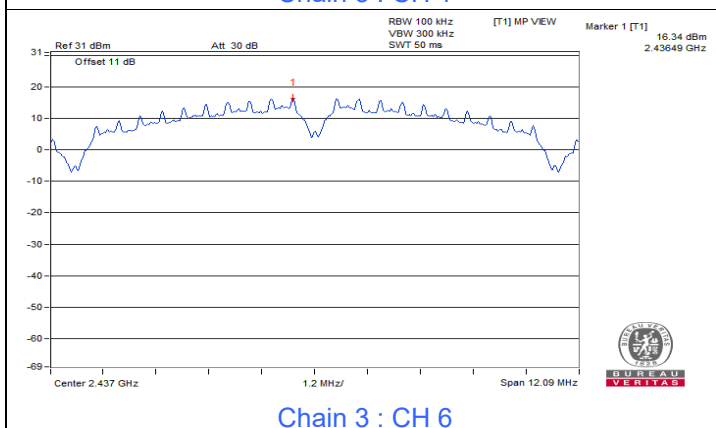
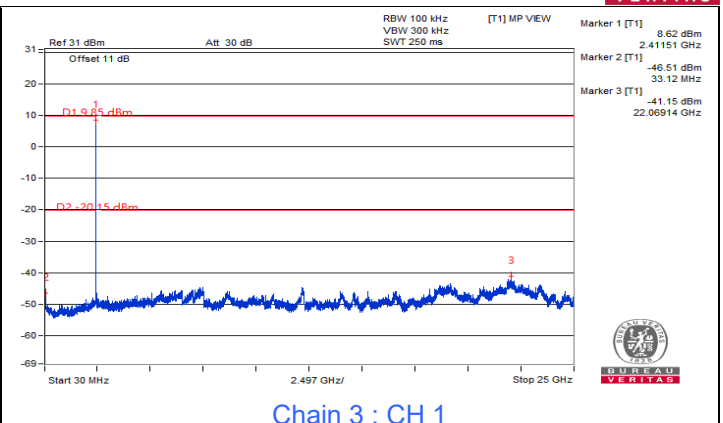
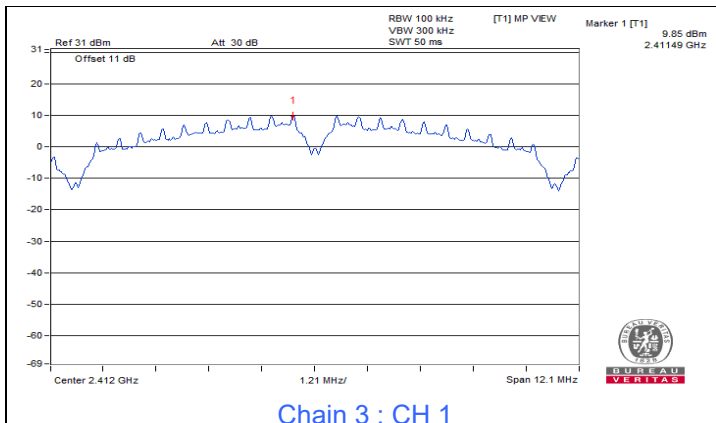
Chain 2 : CH 11



Chain 2 : CH 1 Band edge

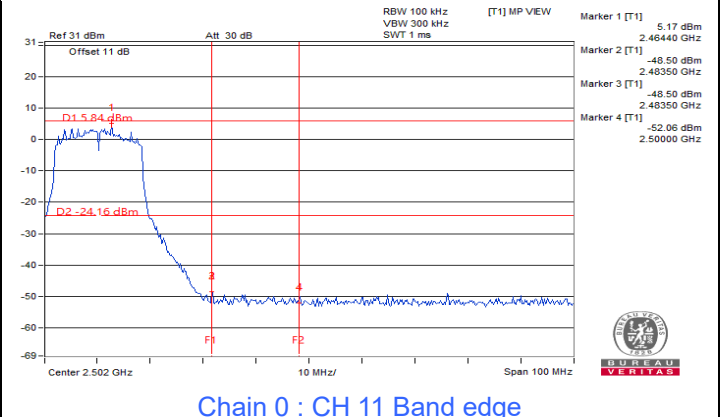
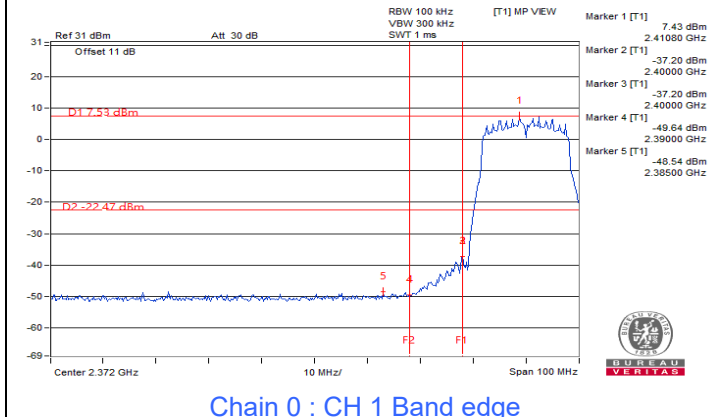
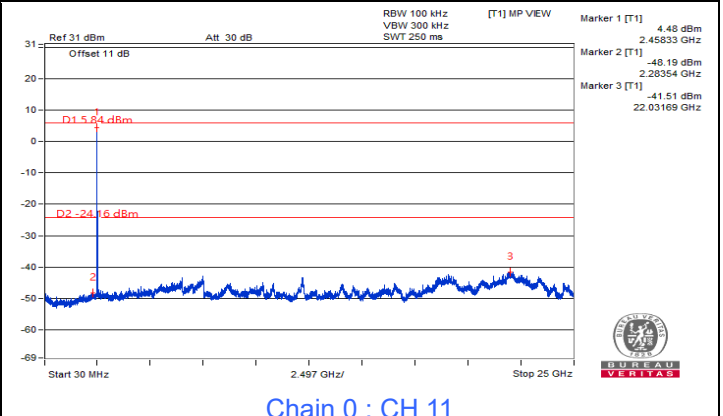
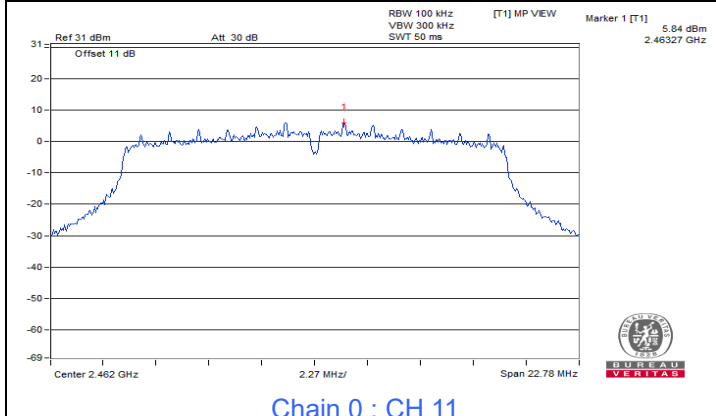
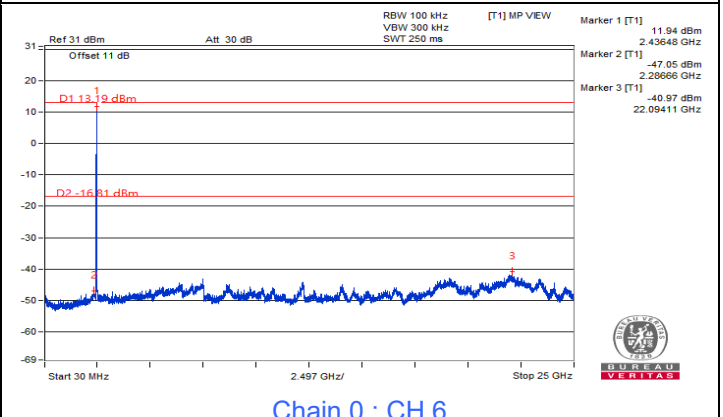
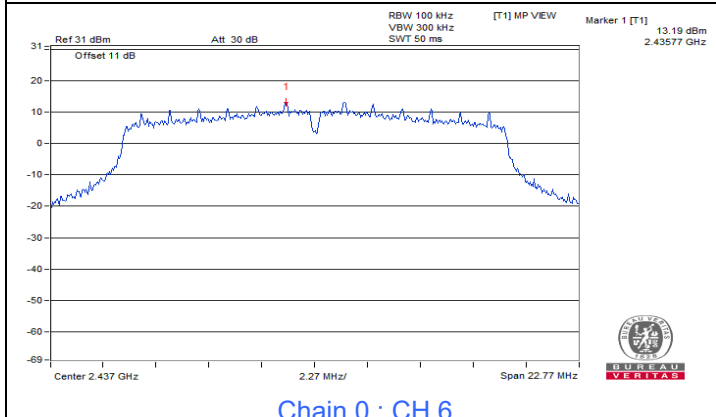
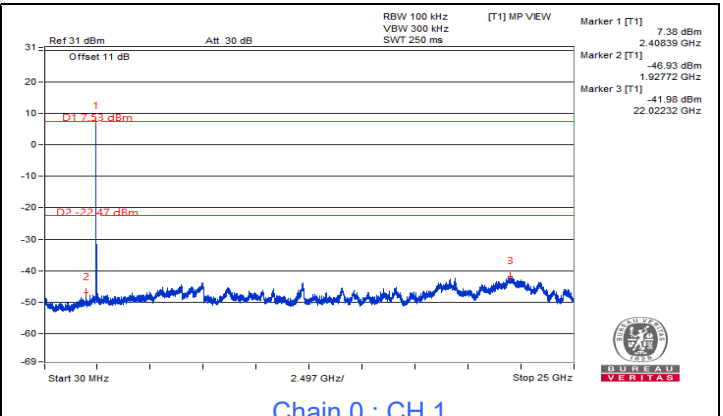
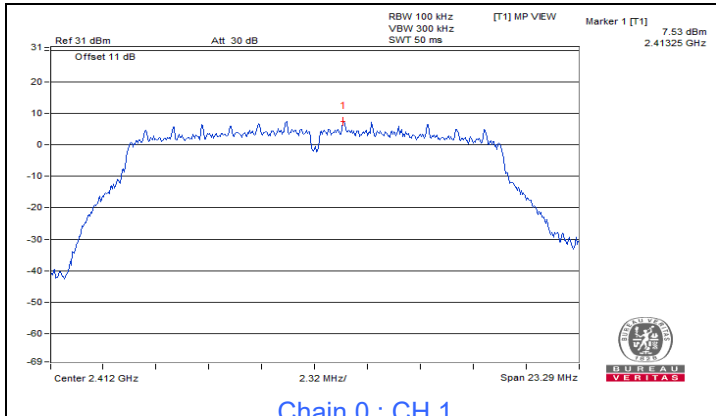


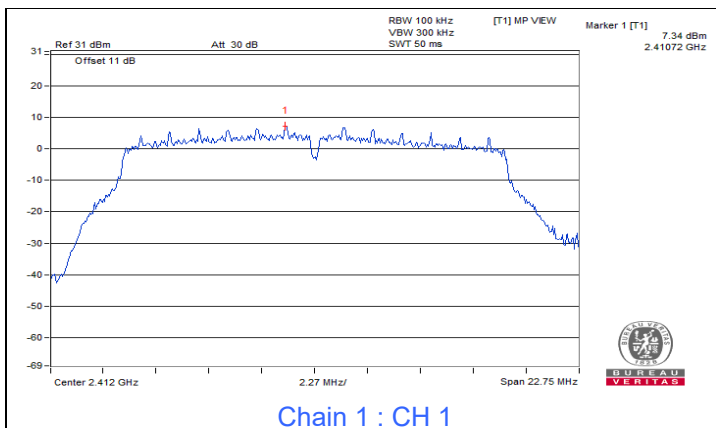
Chain 2 : CH 11 Band edge



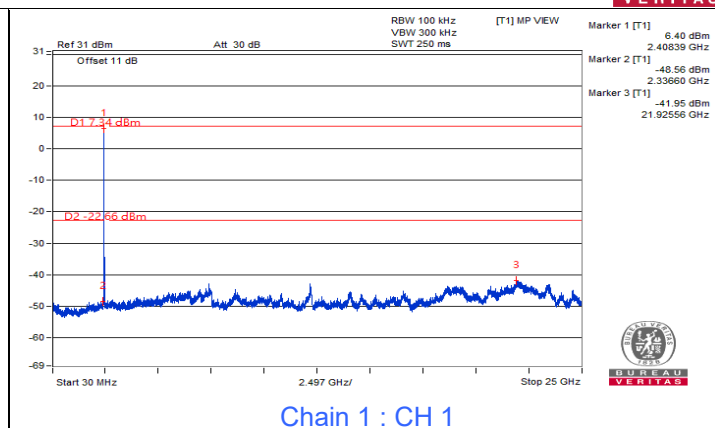


802.11g

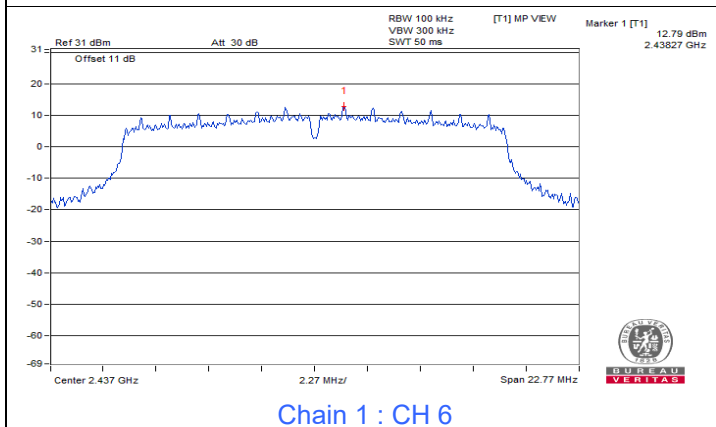




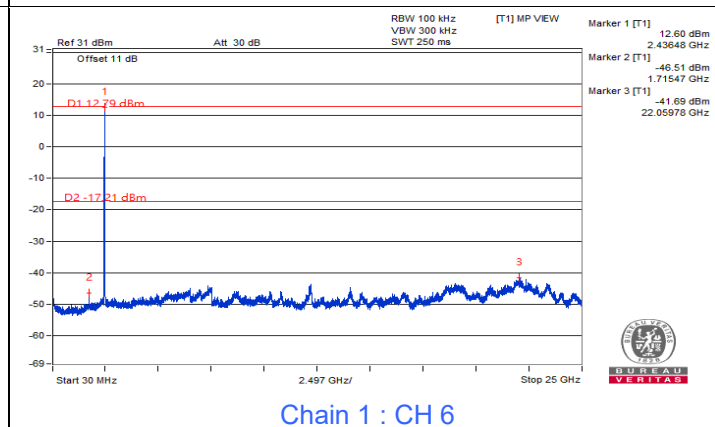
Chain 1 : CH 1



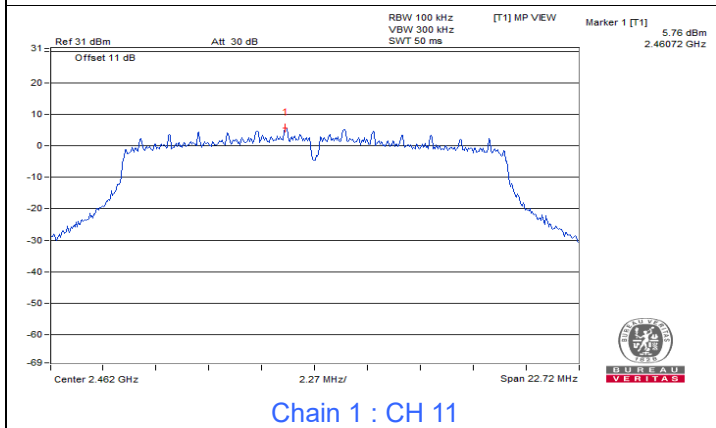
Chain 1 : CH 1



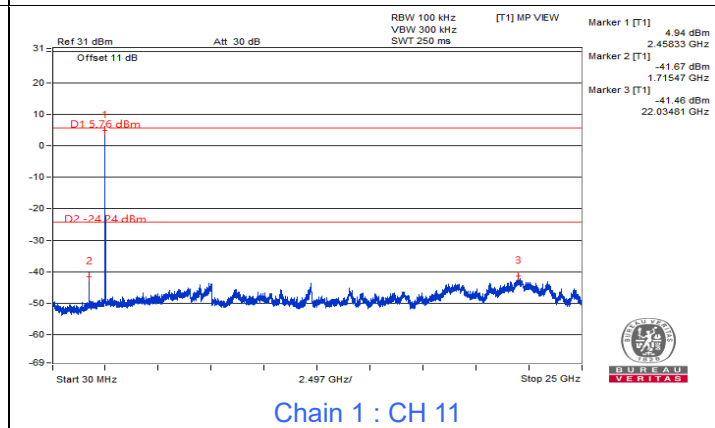
Chain 1 : CH 6



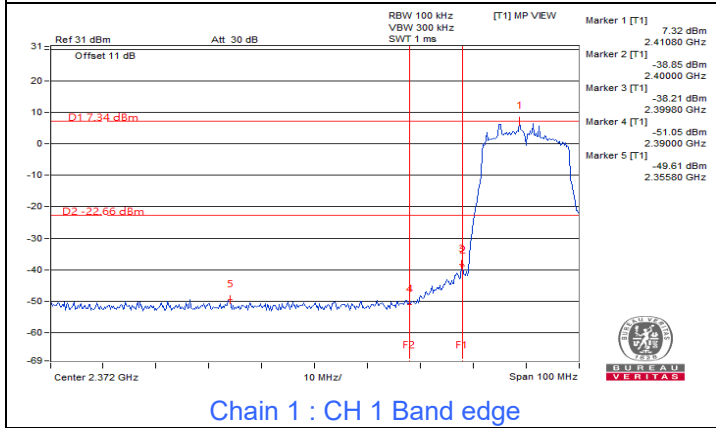
Chain 1 : CH 6



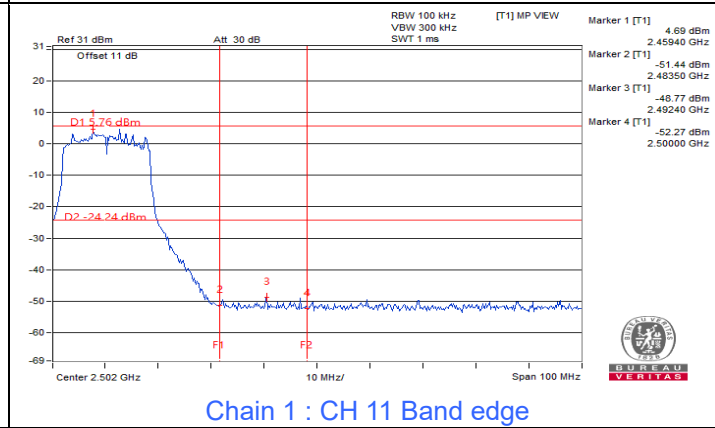
Chain 1 : CH 11



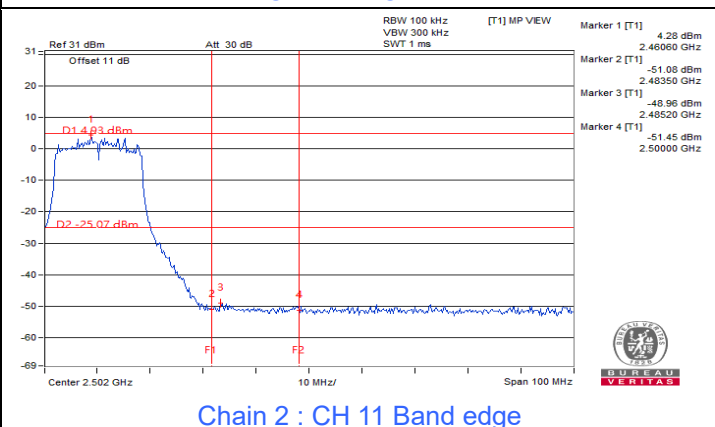
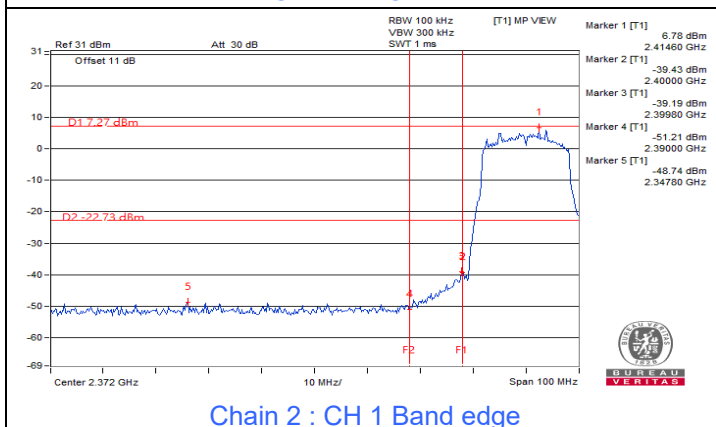
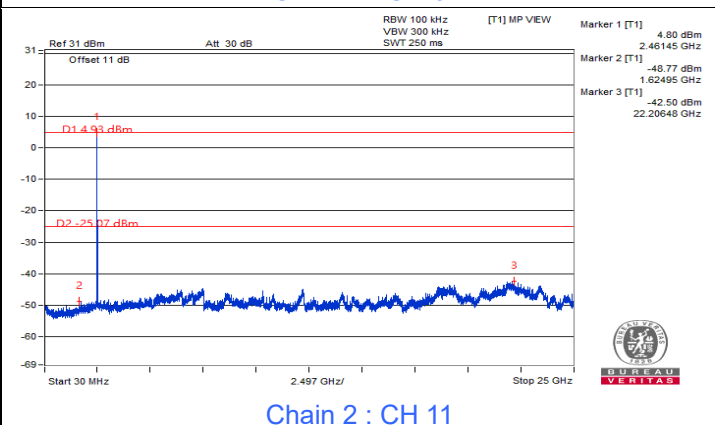
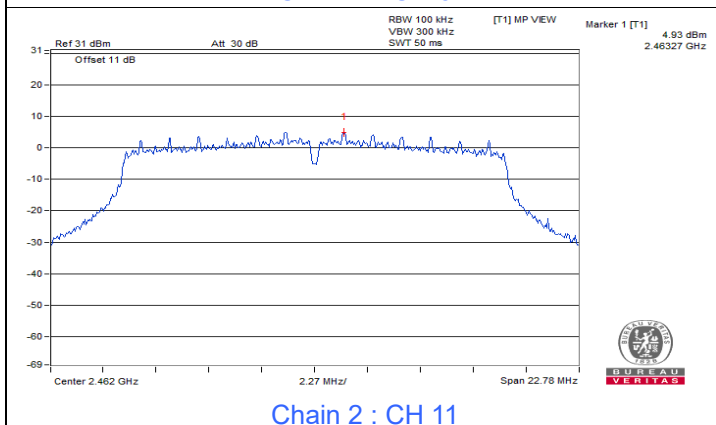
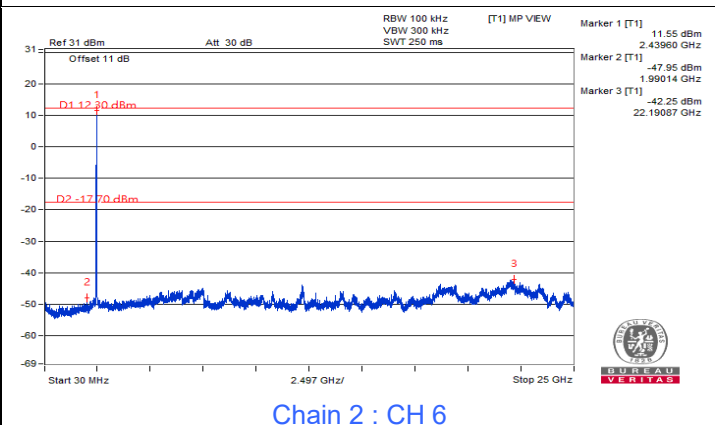
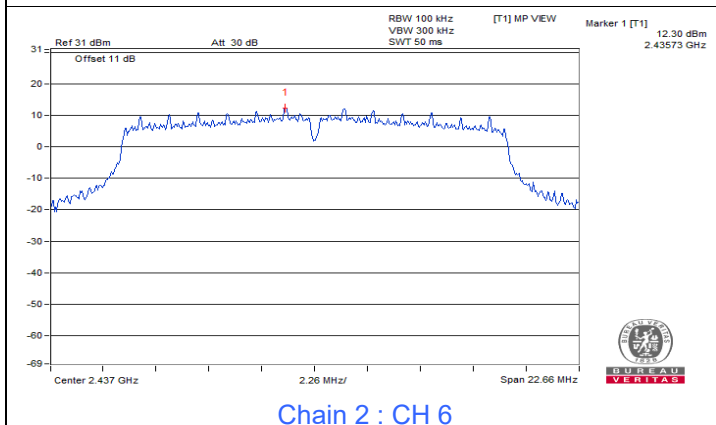
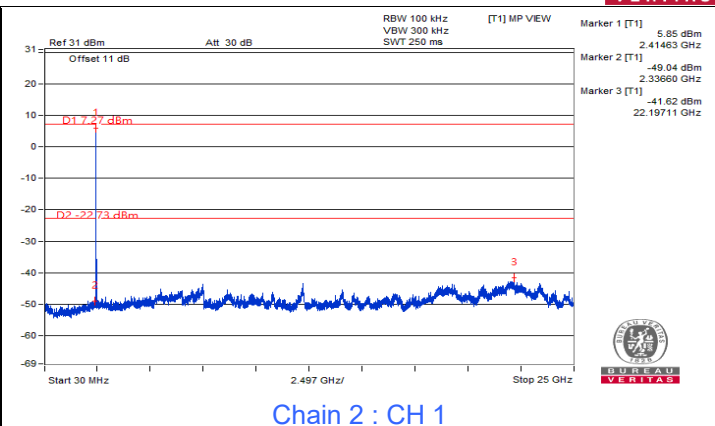
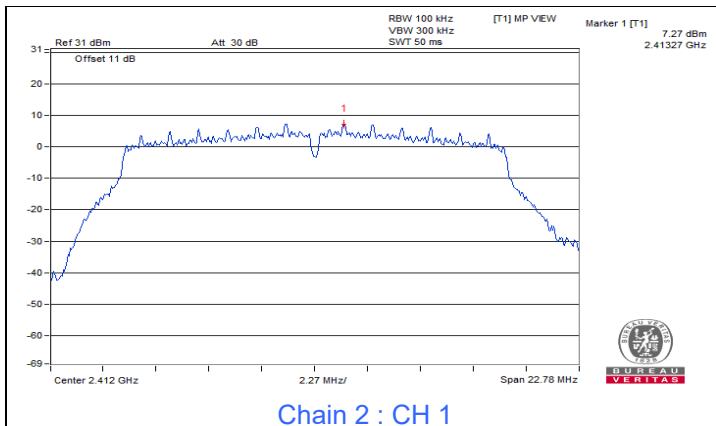
Chain 1 : CH 11

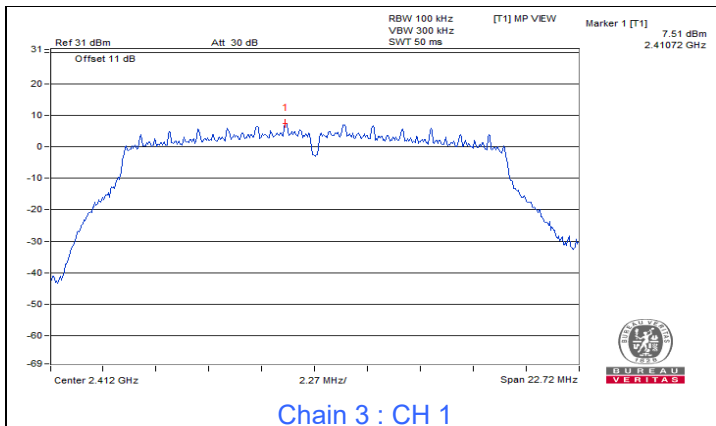


Chain 1 : CH 1 Band edge

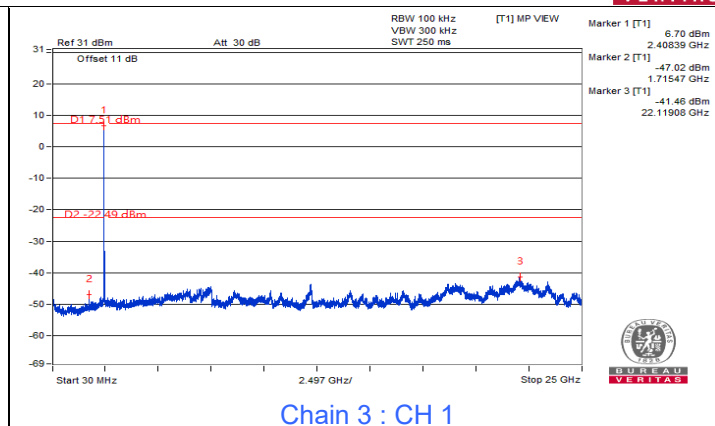


Chain 1 : CH 11 Band edge

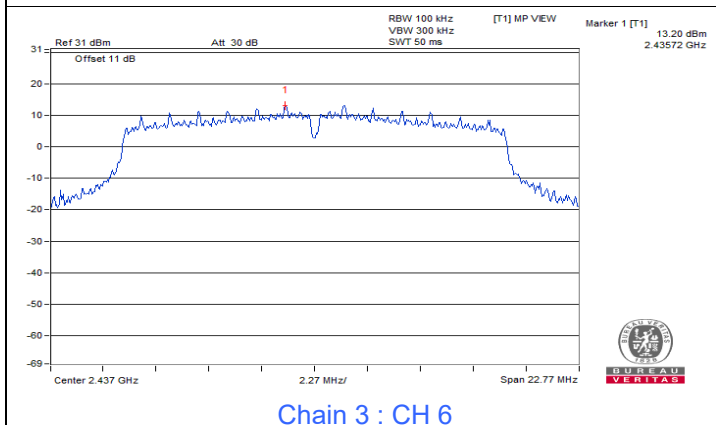




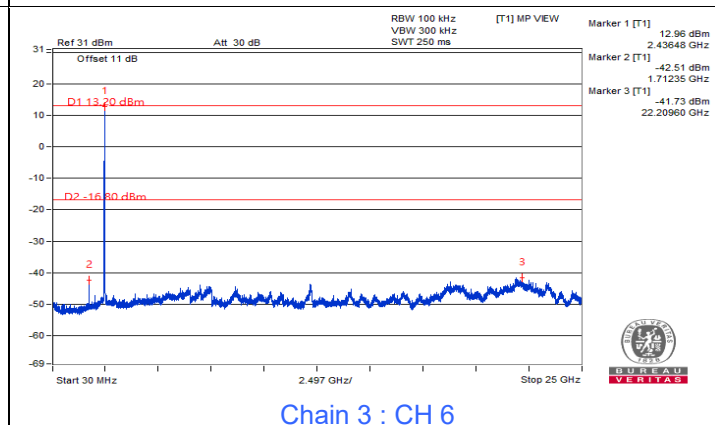
Chain 3 : CH 1



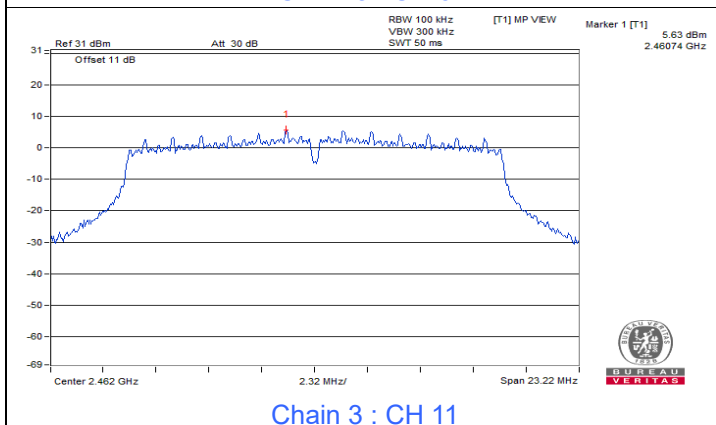
Chain 3 : CH 1



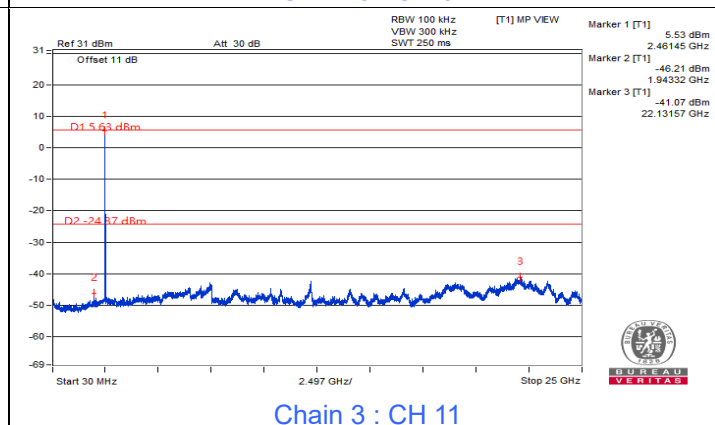
Chain 3 : CH 6



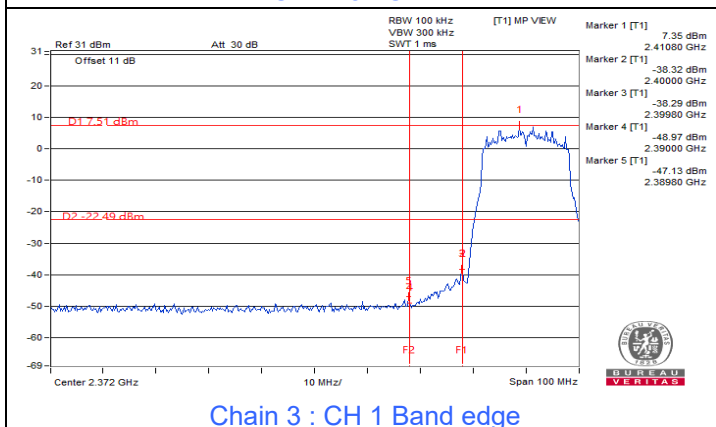
Chain 3 : CH 6



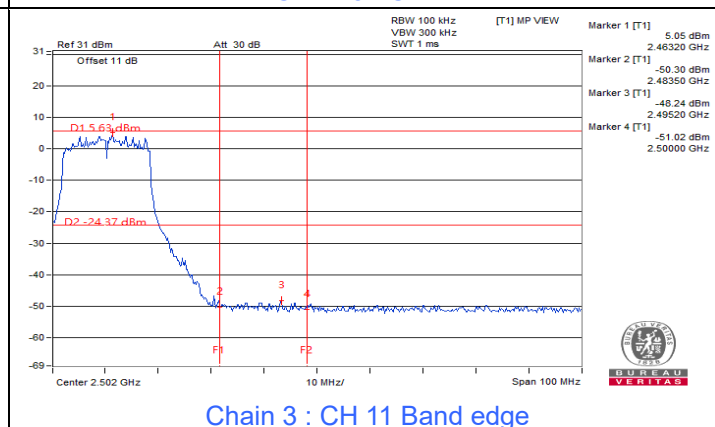
Chain 3 : CH 11



Chain 3 : CH 11



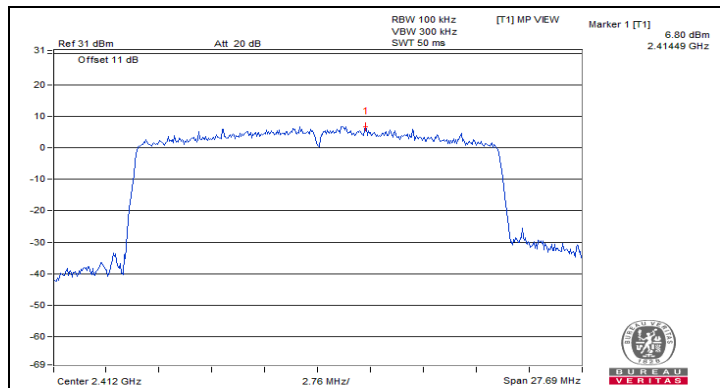
Chain 3 : CH 1 Band edge



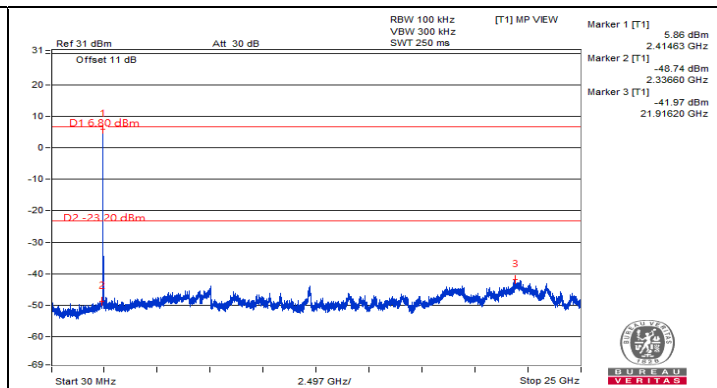
Chain 3 : CH 11 Band edge



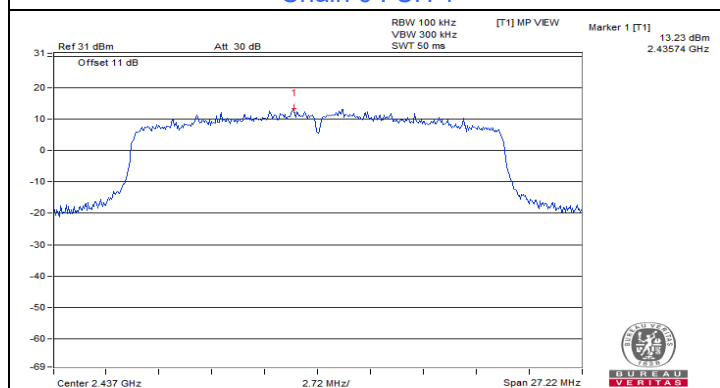
802.11ax (HE20)



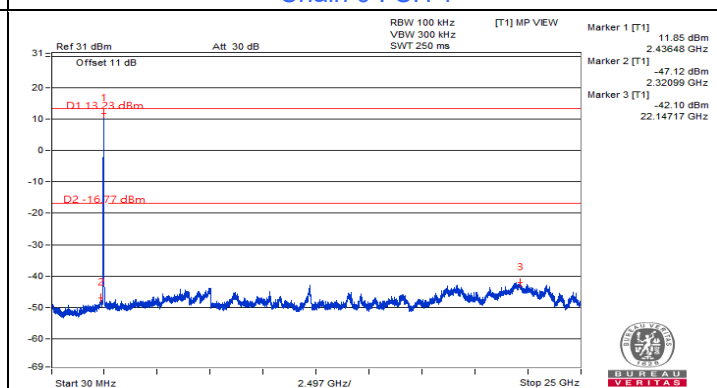
Chain 0 : CH 1



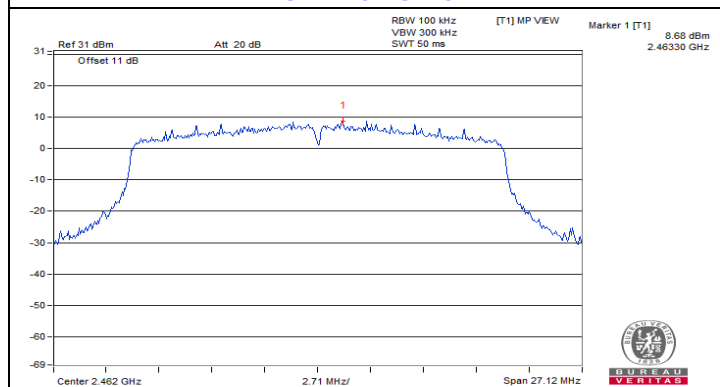
Chain 0 : CH 1



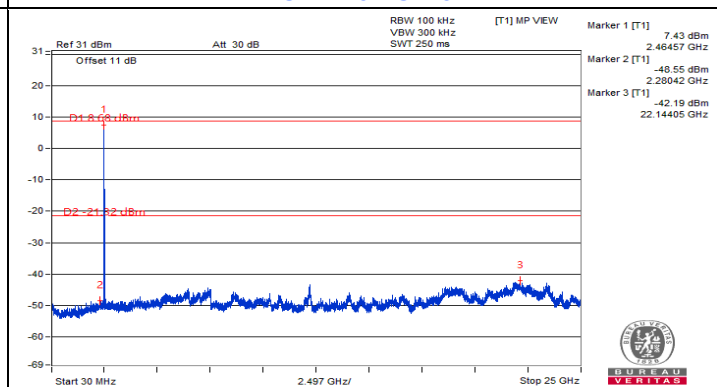
Chain 0 : CH 6



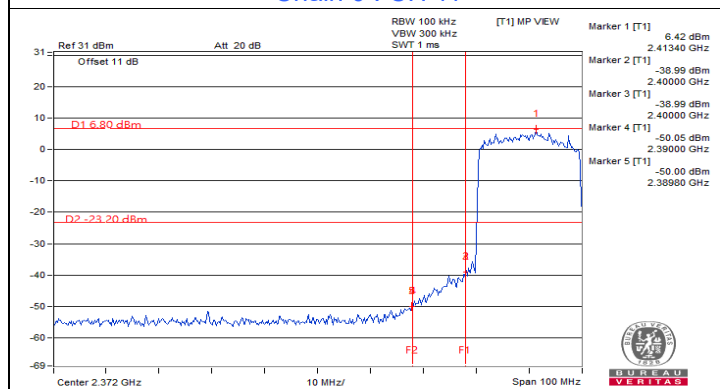
Chain 0 : CH 6



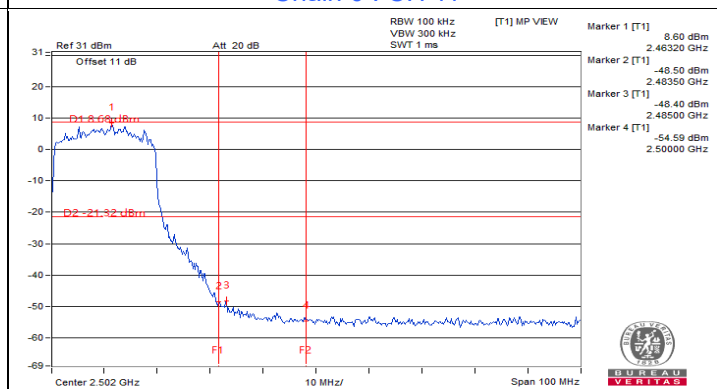
Chain 0 : CH 11



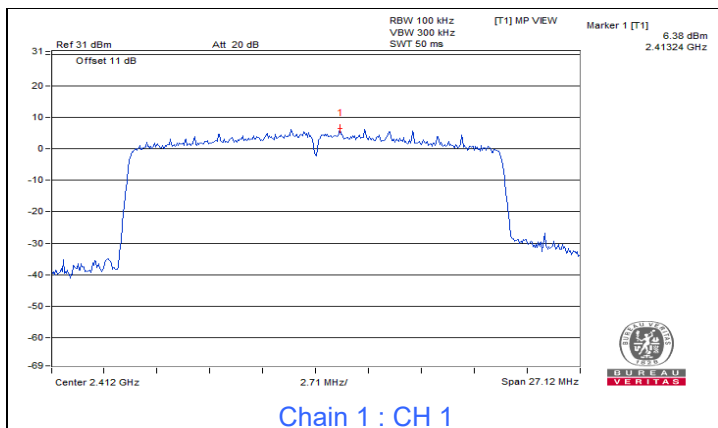
Chain 0 : CH 11



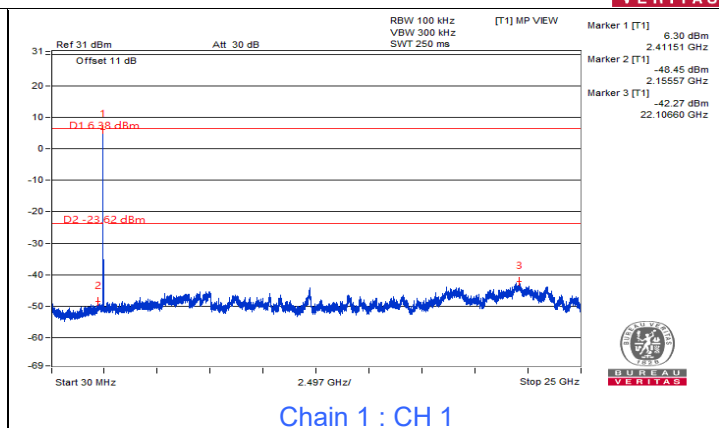
Chain 0 : CH 1 Band edge



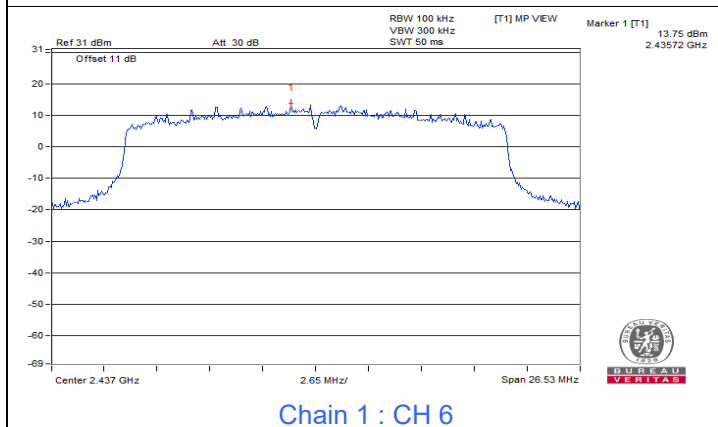
Chain 0 : CH 11 Band edge



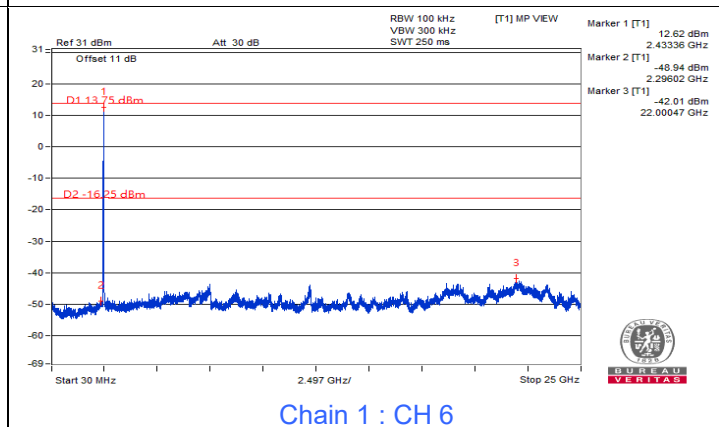
Chain 1 : CH 1



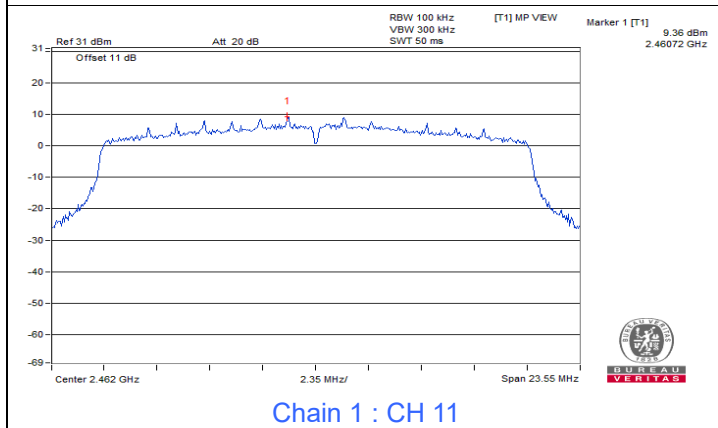
Chain 1 : CH 1



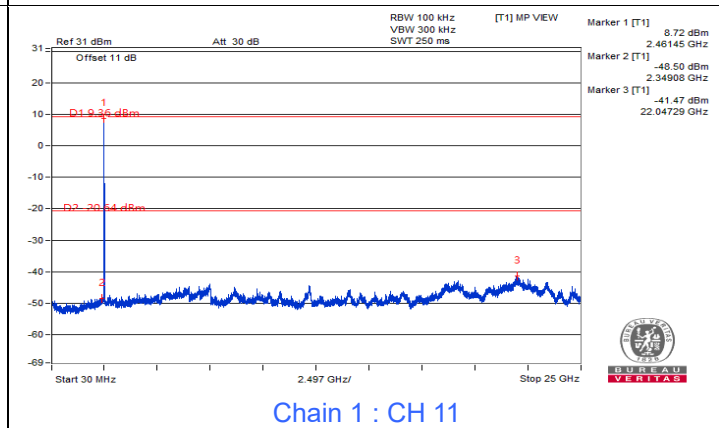
Chain 1 : CH 6



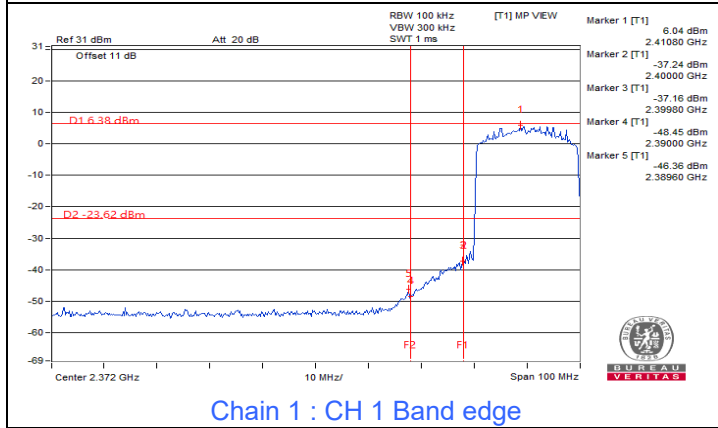
Chain 1 : CH 6



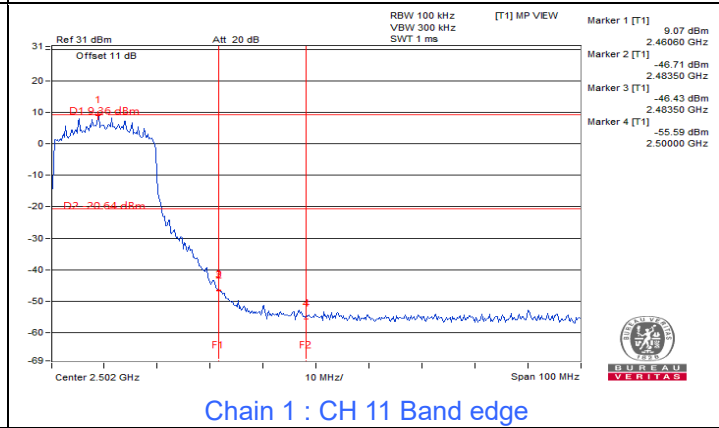
Chain 1 : CH 11



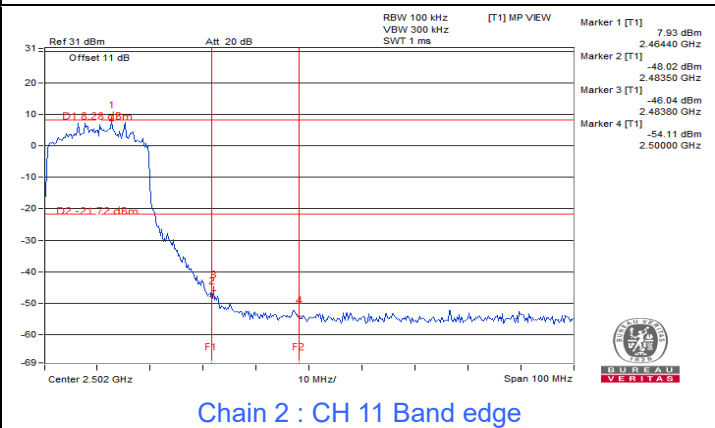
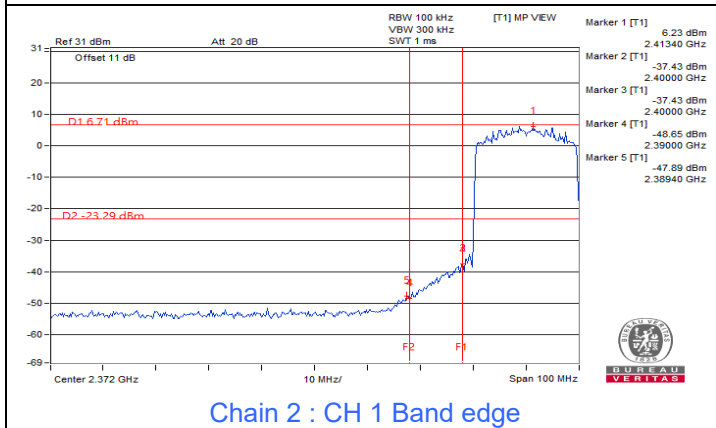
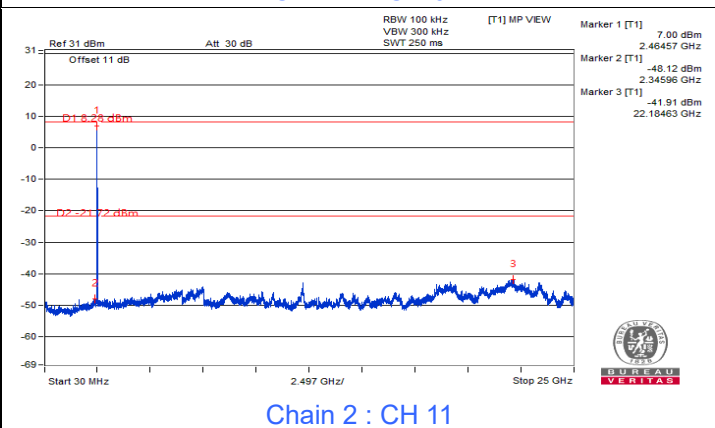
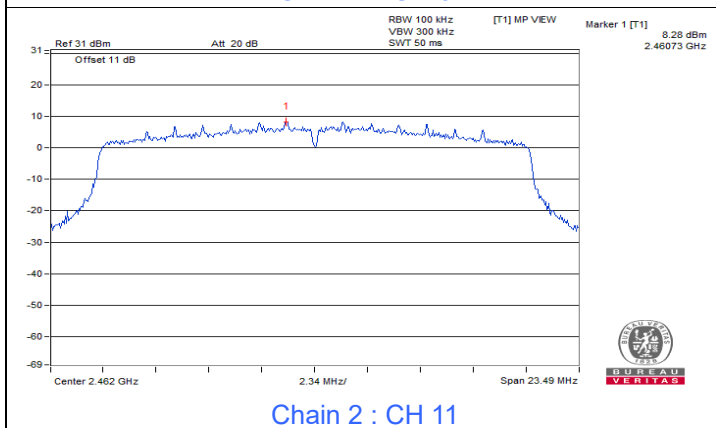
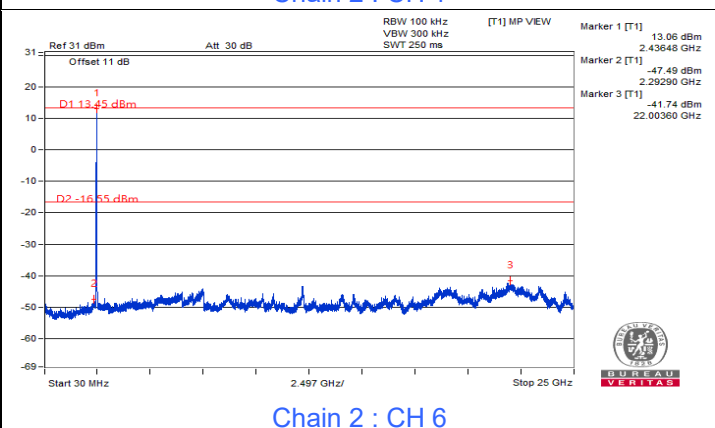
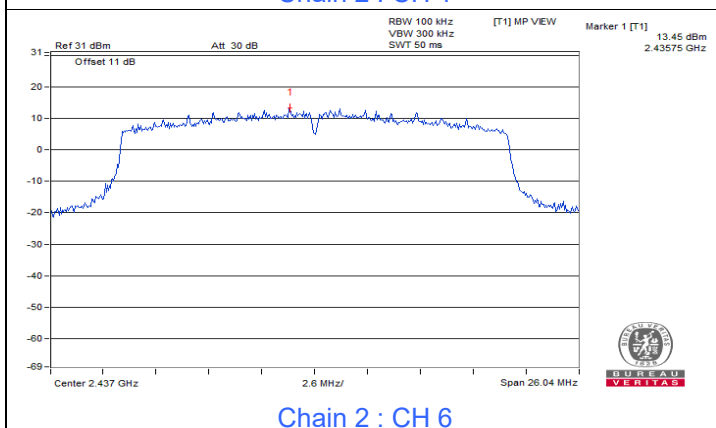
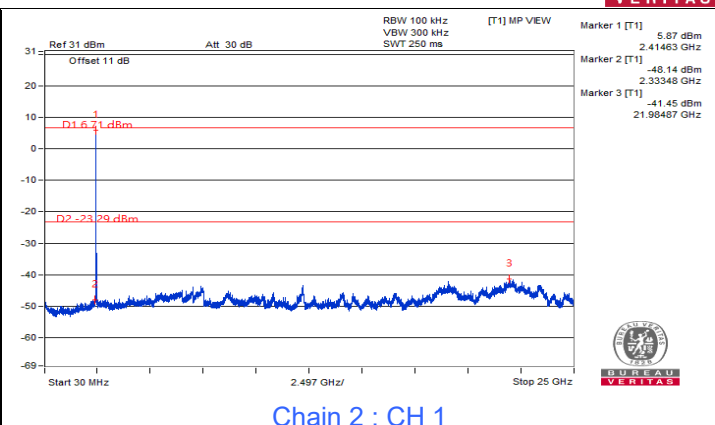
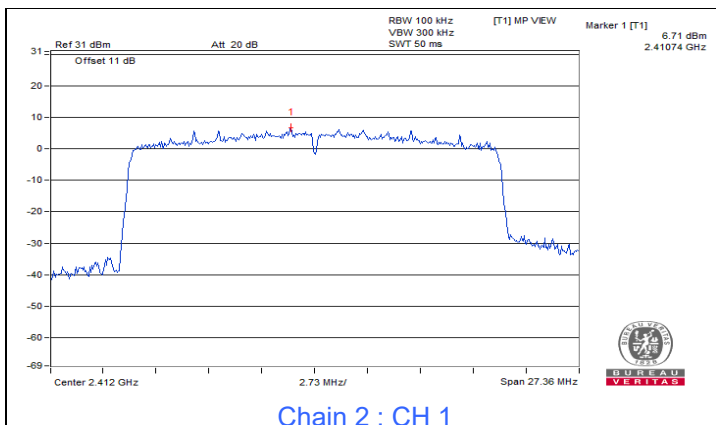
Chain 1 : CH 11

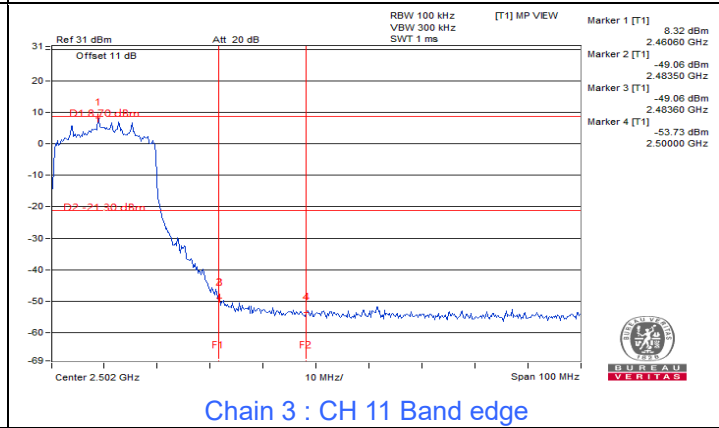
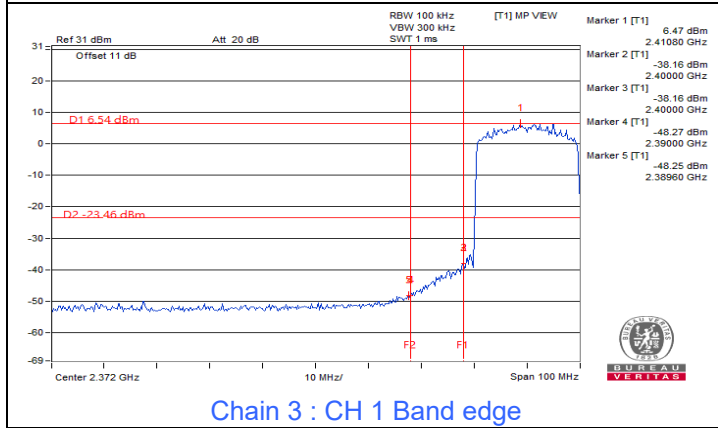
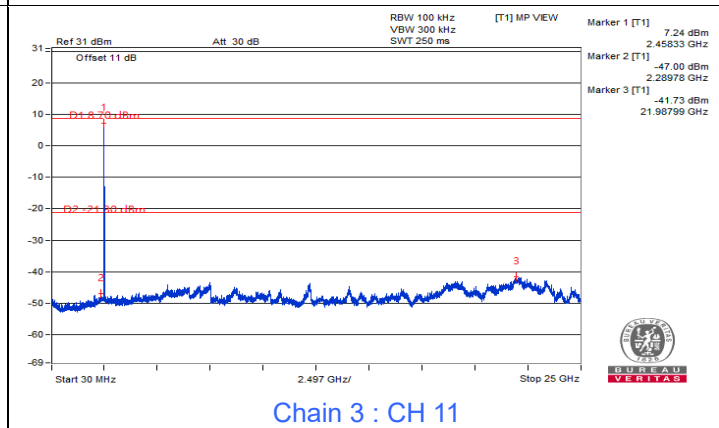
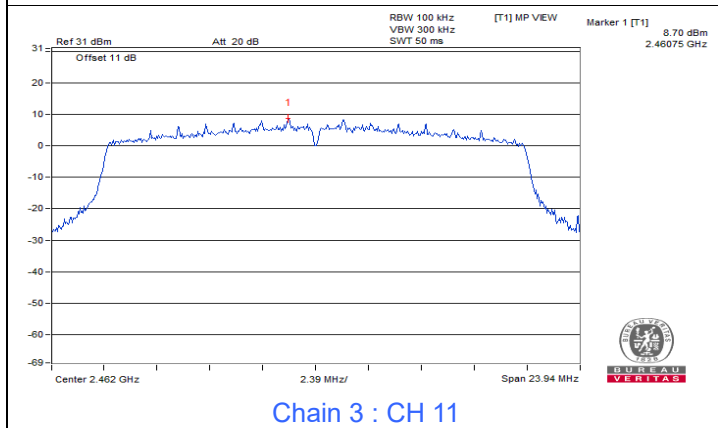
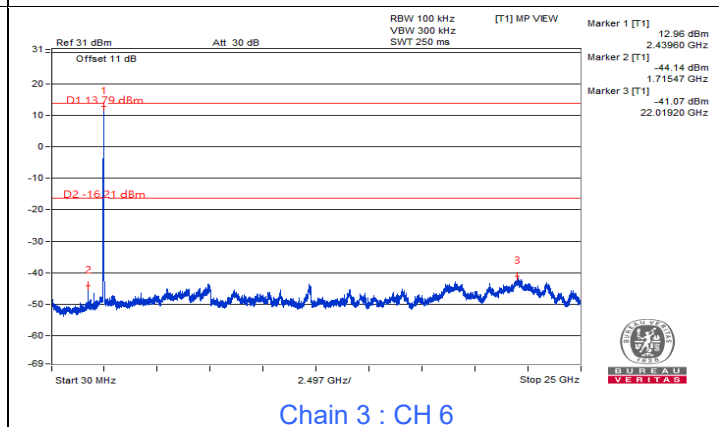
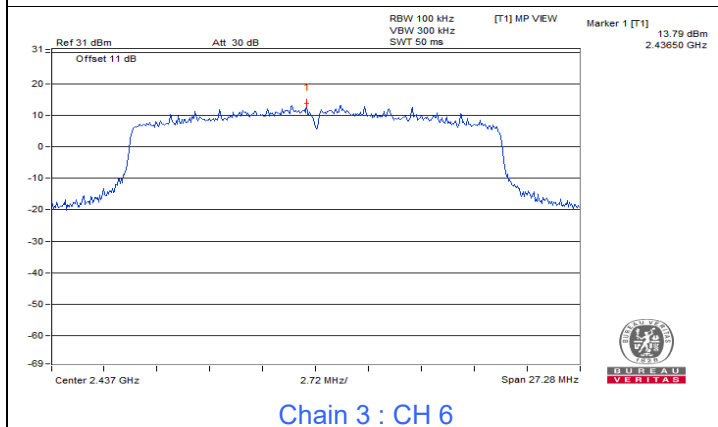
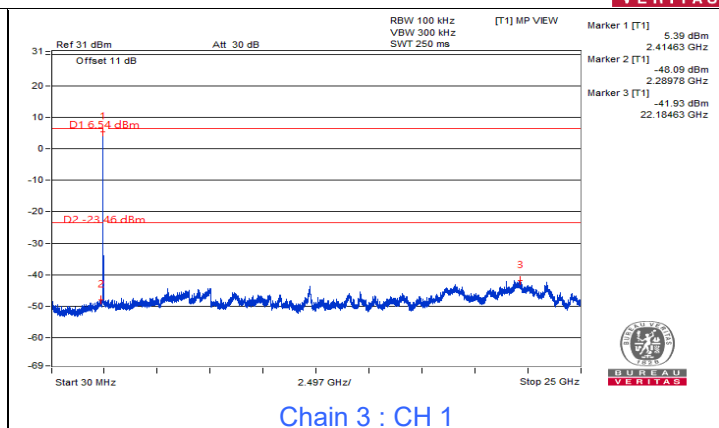
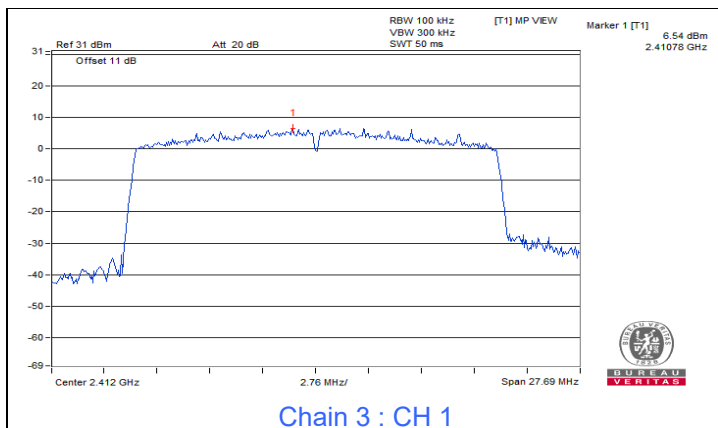


Chain 1 : CH 1 Band edge



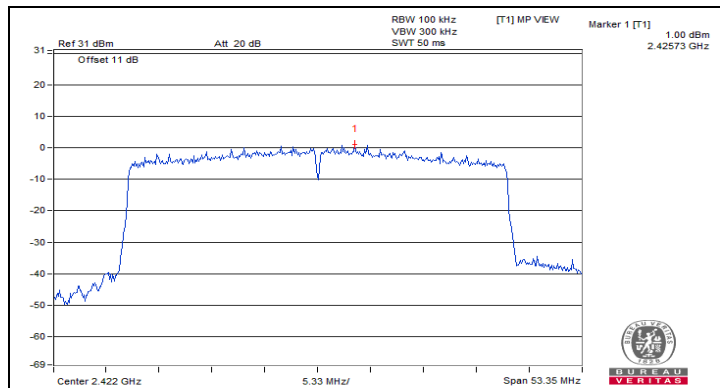
Chain 1 : CH 11 Band edge



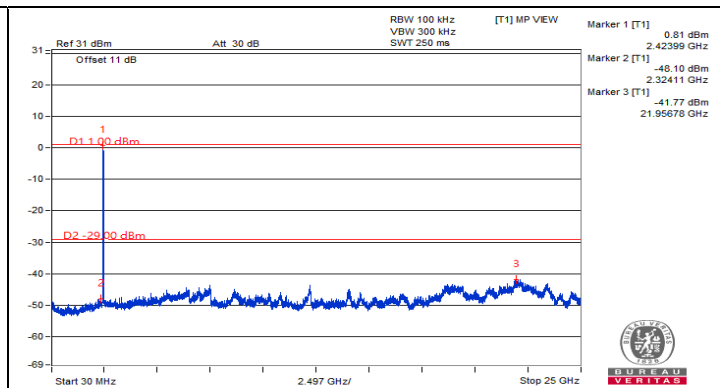




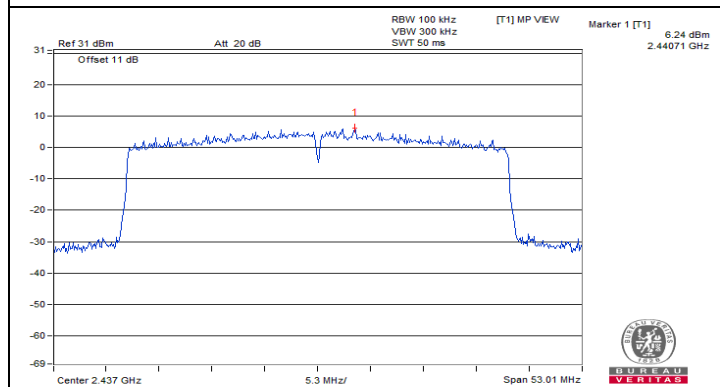
802.11ax (HE40)



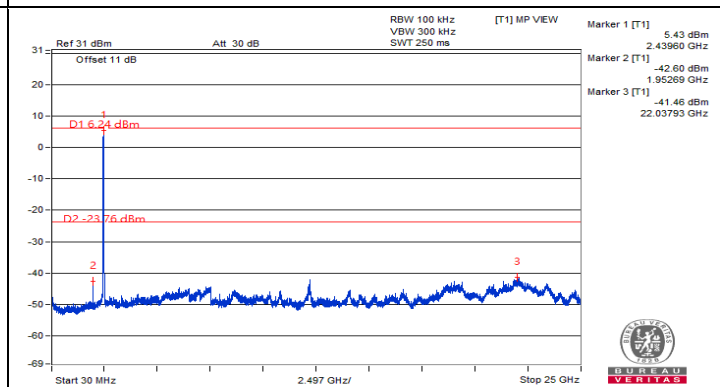
Chain 0 : CH 3



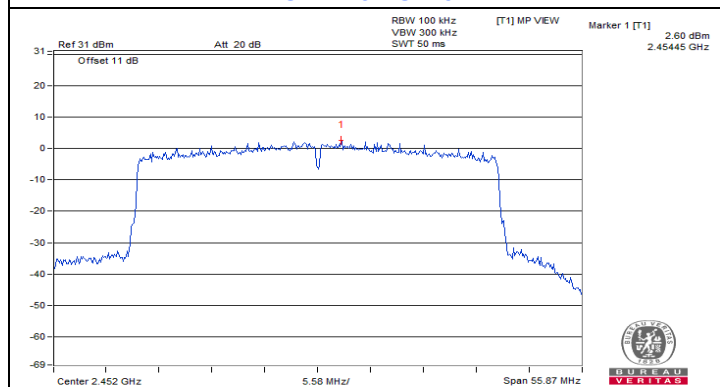
Chain 0 : CH 3



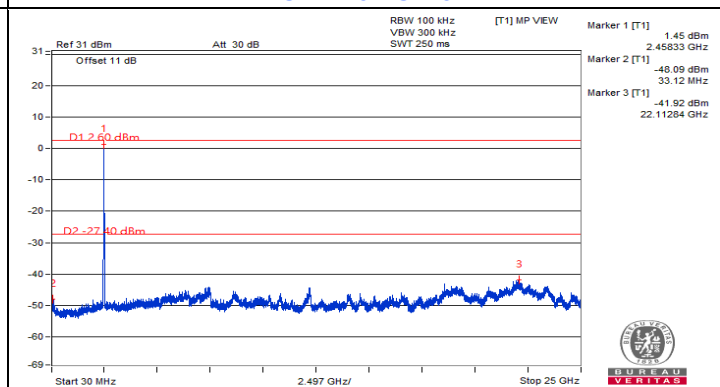
Chain 0 : CH 6



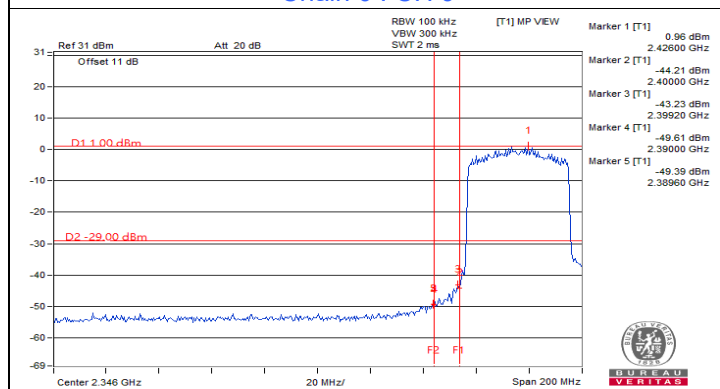
Chain 0 : CH 6



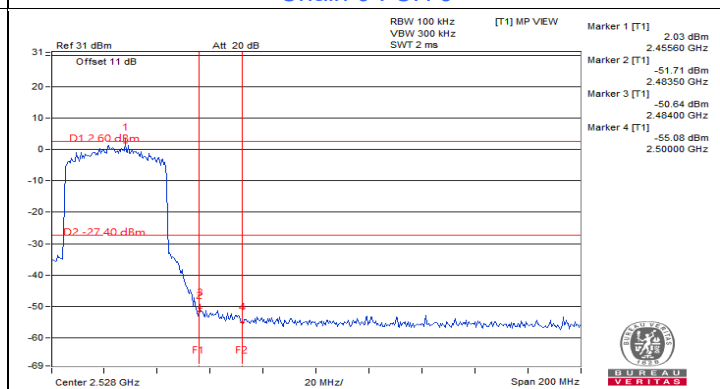
Chain 0 : CH 9



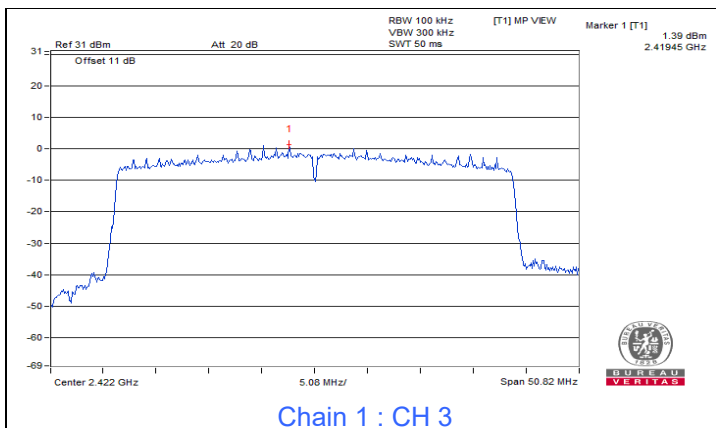
Chain 0 : CH 9



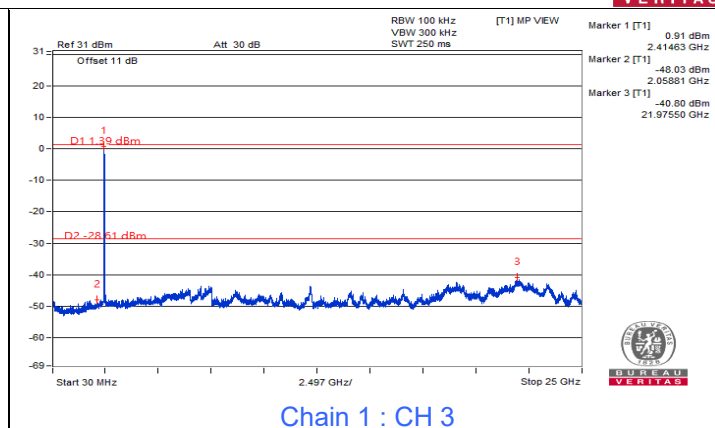
Chain 0 : CH 3 Band edge



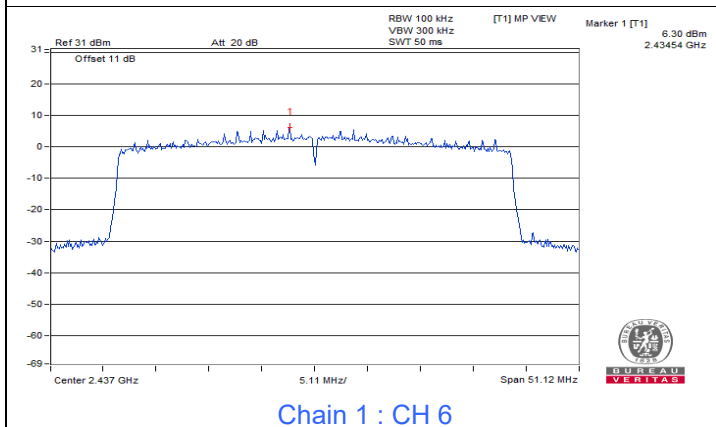
Chain 0 : CH 9 Band edge



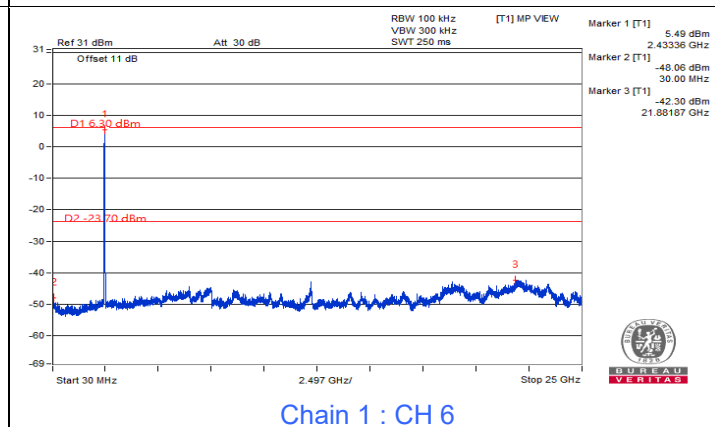
Chain 1 : CH 3



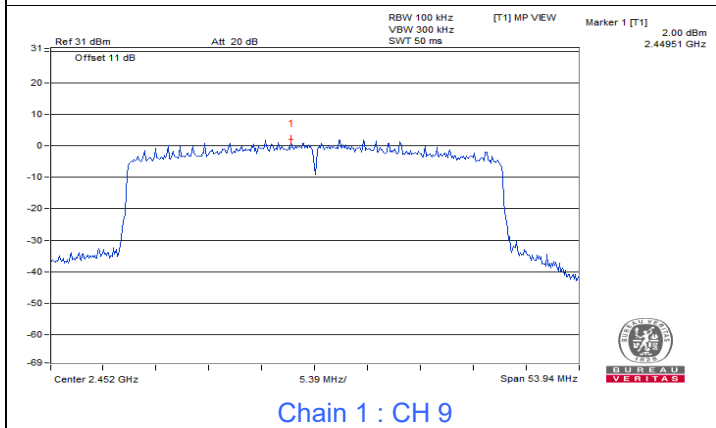
Chain 1 : CH 3



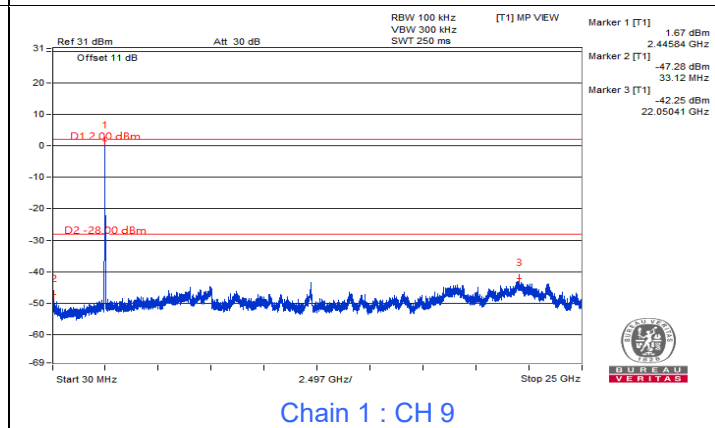
Chain 1 : CH 6



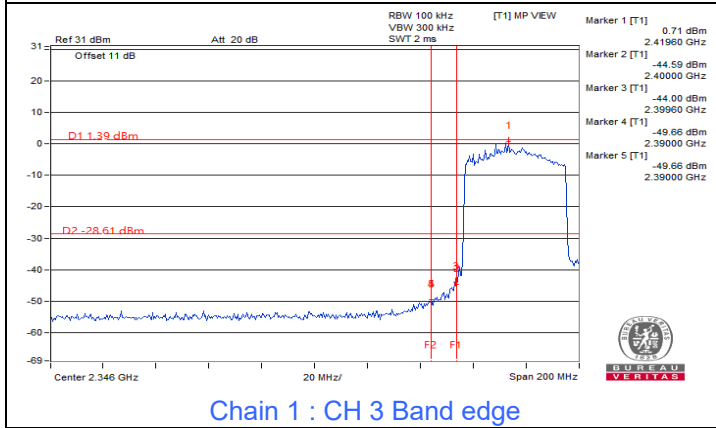
Chain 1 : CH 6



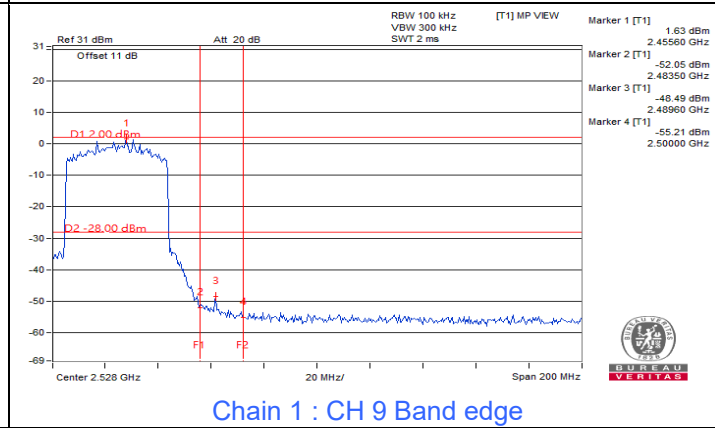
Chain 1 : CH 9



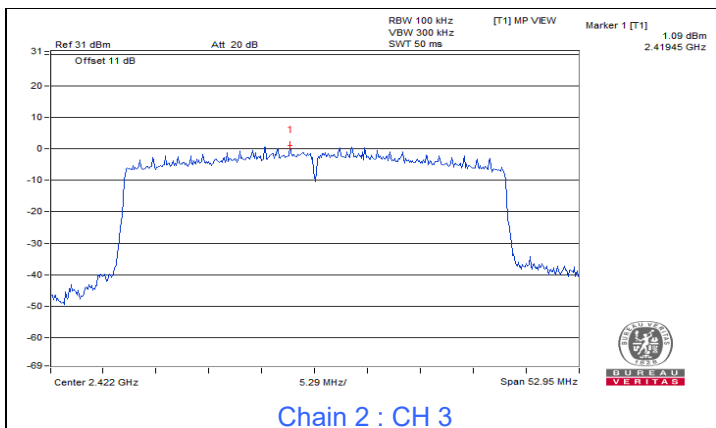
Chain 1 : CH 9



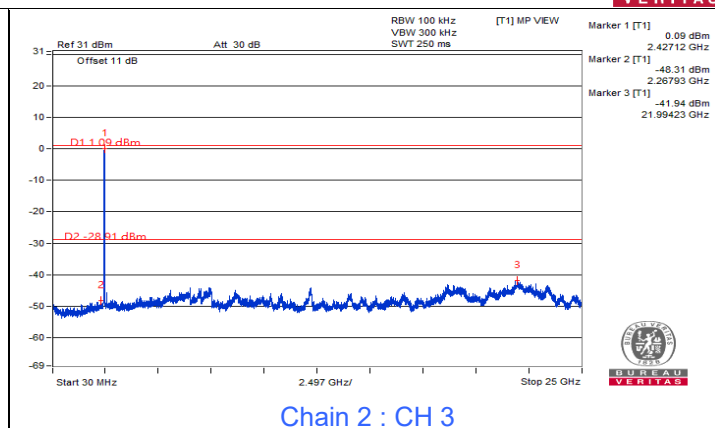
Chain 1 : CH 3 Band edge



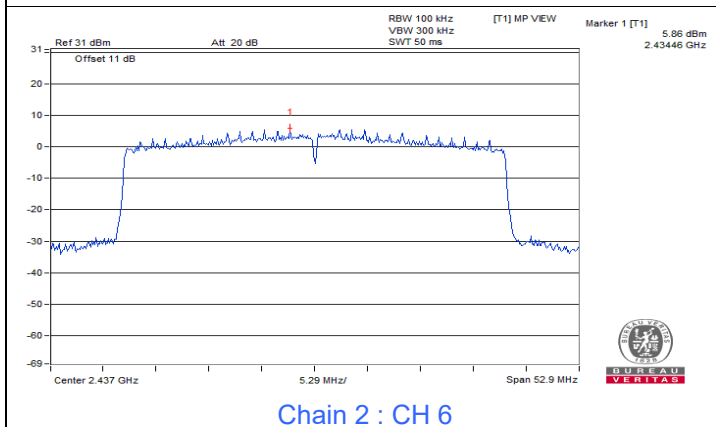
Chain 1 : CH 9 Band edge



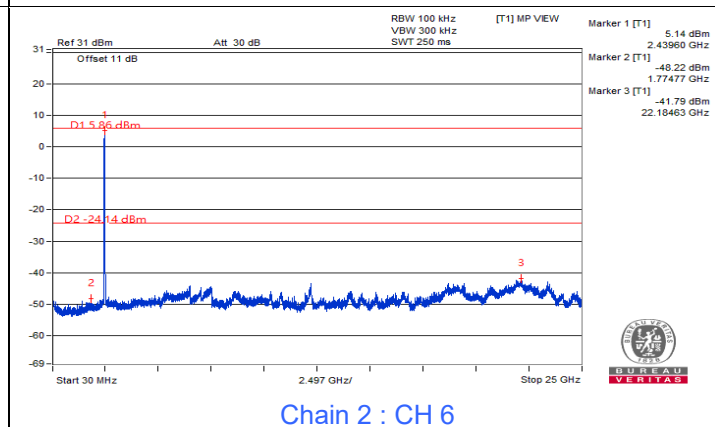
Chain 2 : CH 3



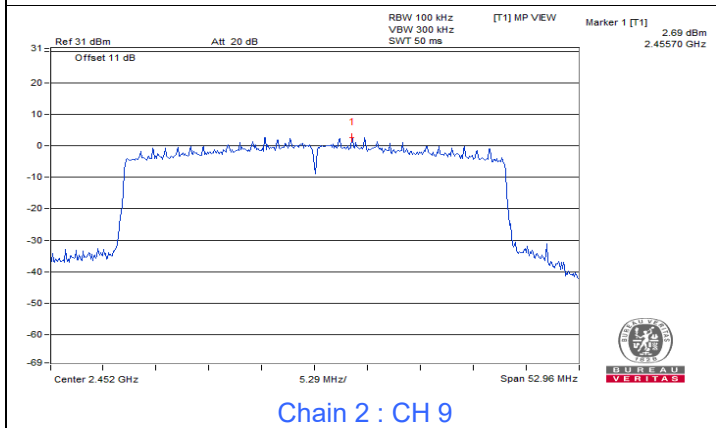
Chain 2 : CH 3



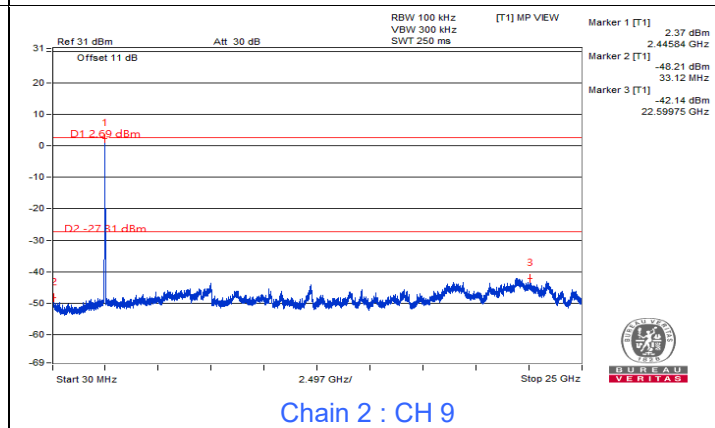
Chain 2 : CH 6



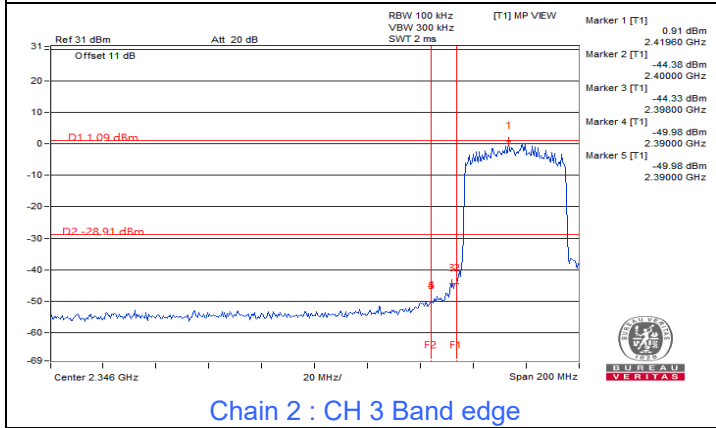
Chain 2 : CH 6



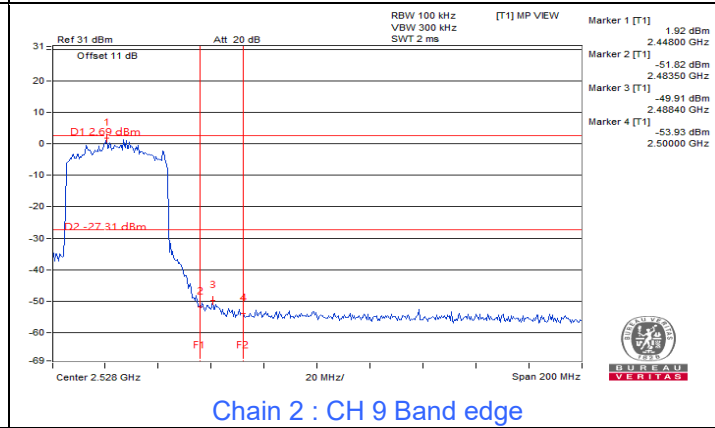
Chain 2 : CH 9



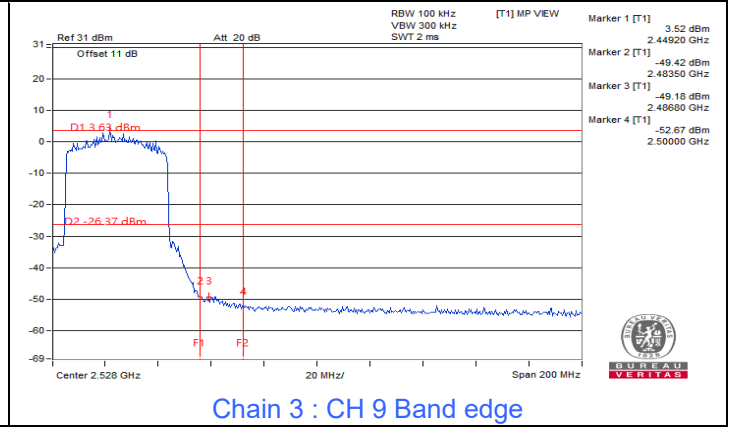
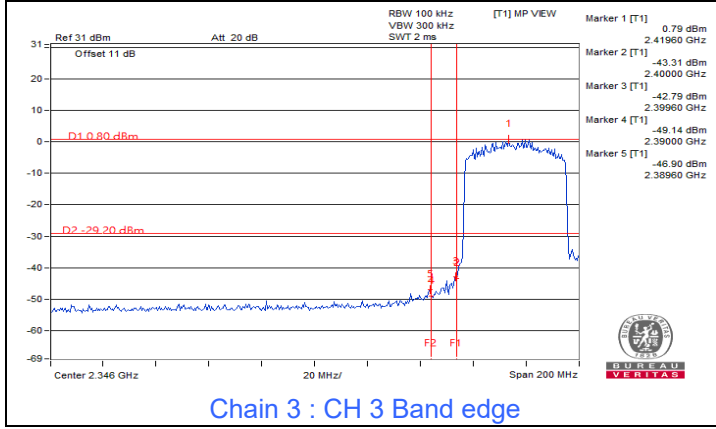
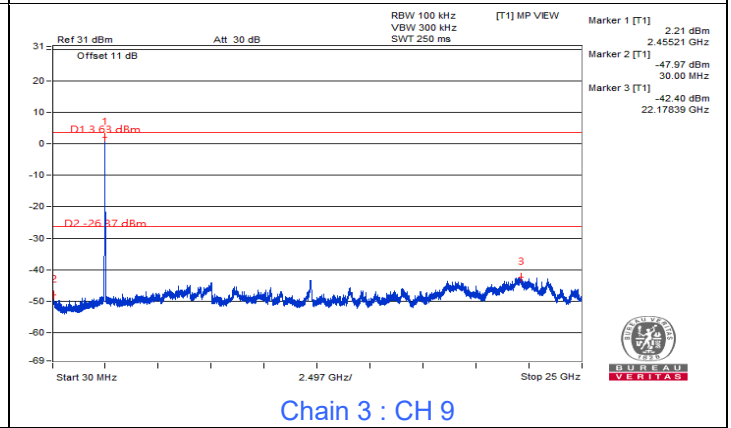
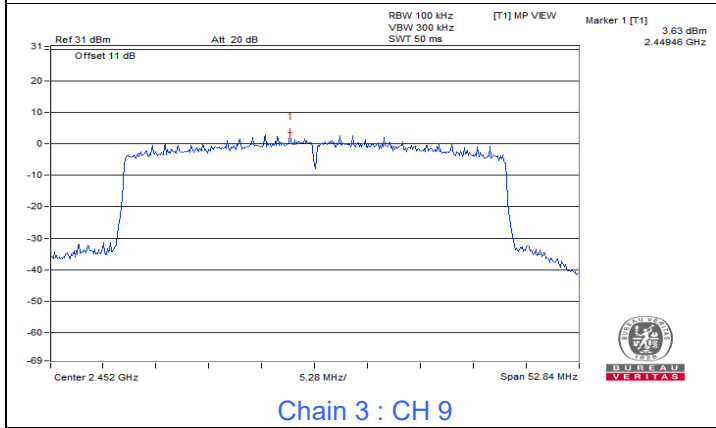
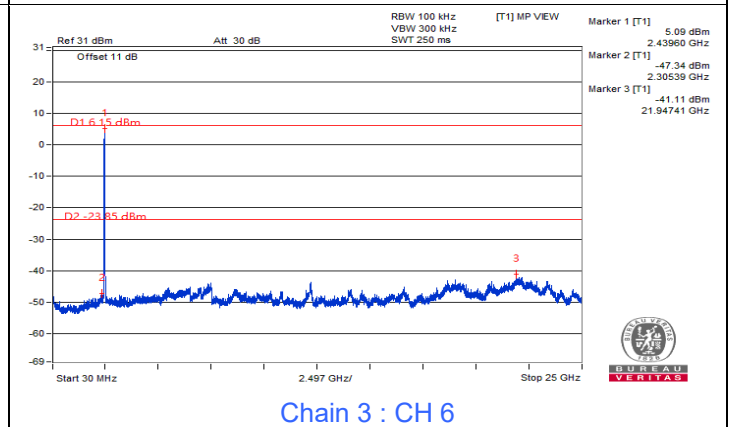
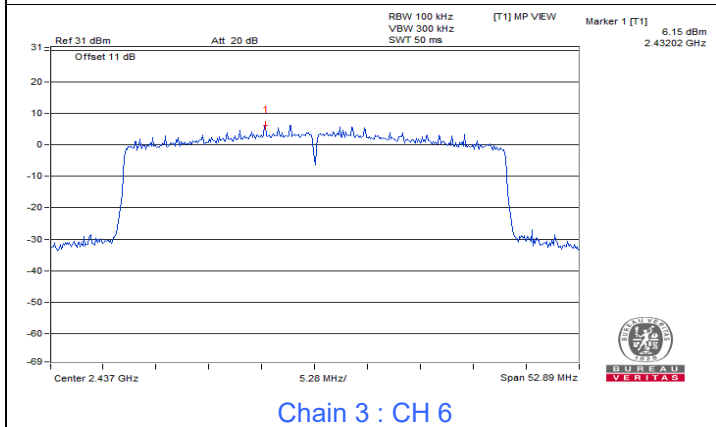
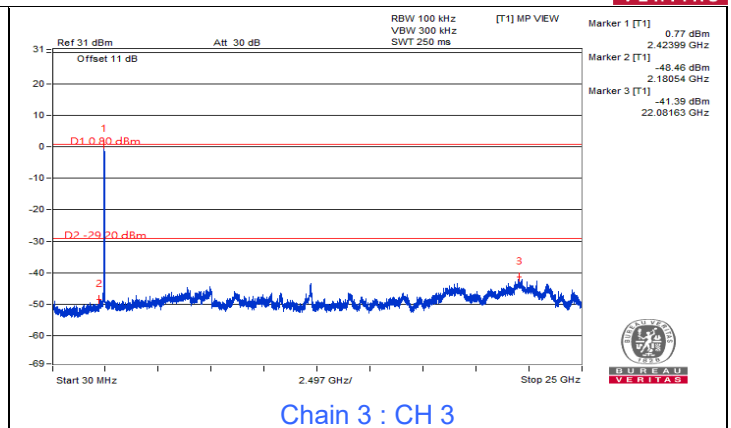
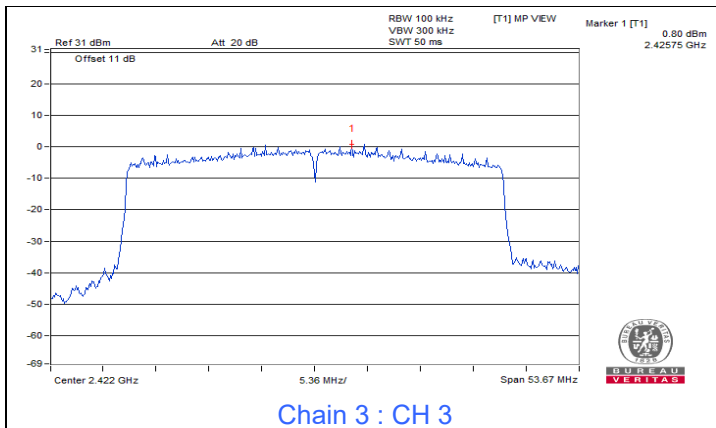
Chain 2 : CH 9



Chain 2 : CH 3 Band edge



Chain 2 : CH 9 Band edge



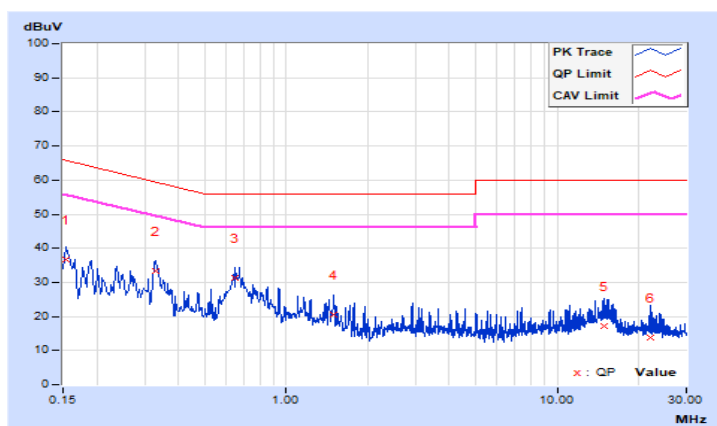
7.5 AC Power Conducted Emissions

RF Mode	802.11b	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	22.7°C, 69.7% 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	0.15400	9.64	27.08	14.66	36.72	24.30	65.78	55.78	-29.06	-31.48
2	0.32803	9.68	23.82	18.45	33.50	28.13	59.50	49.50	-26.00	-21.37
3	0.65000	9.70	21.71	14.48	31.41	24.18	56.00	46.00	-24.59	-21.82
4	1.49800	9.72	10.81	3.38	20.53	13.10	56.00	46.00	-35.47	-32.90
5	14.95400	9.86	7.23	1.90	17.09	11.76	60.00	50.00	-42.91	-38.24
6	22.22600	9.89	3.89	1.33	13.78	11.22	60.00	50.00	-46.22	-38.78

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

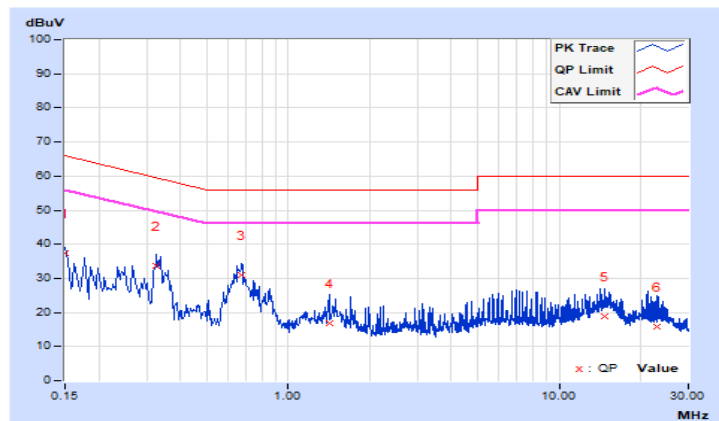


RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22.7°C, 69.7% RH
Tested By	Thomas Cheng		

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	27.61	13.92	37.25	23.56	66.00	56.00	-28.75	-32.44
2	0.32600	9.68	23.91	18.61	33.59	28.29	59.55	49.55	-25.96	-21.26
3	0.66987	9.70	21.29	14.94	30.99	24.64	56.00	46.00	-25.01	-21.36
4	1.41800	9.72	7.19	0.68	16.91	10.40	56.00	46.00	-39.09	-35.60
5	14.65400	9.88	8.89	3.81	18.77	13.69	60.00	50.00	-41.23	-36.31
6	22.84200	9.91	5.85	1.67	15.76	11.58	60.00	50.00	-44.24	-38.42

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



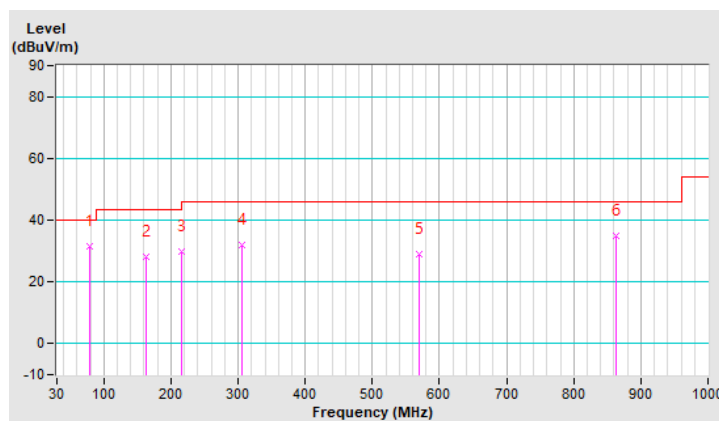
7.6 Unwanted Emissions below 1 GHz

RF Mode	802.11b	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	20°C, 68% RH
Tested By	Thomas Cheng		

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	78.50	31.5 QP	40.0	-8.5	1.01 H	87	47.9	-16.4
2	163.86	28.2 QP	43.5	-15.3	2.00 H	264	41.0	-12.8
3	216.24	29.9 QP	46.0	-16.1	2.00 H	264	45.6	-15.7
4	305.48	32.0 QP	46.0	-14.0	1.01 H	281	43.5	-11.5
5	569.32	29.1 QP	46.0	-16.9	2.00 H	214	35.1	-6.0
6	863.23	35.0 QP	46.0	-11.0	2.00 H	119	36.5	-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.

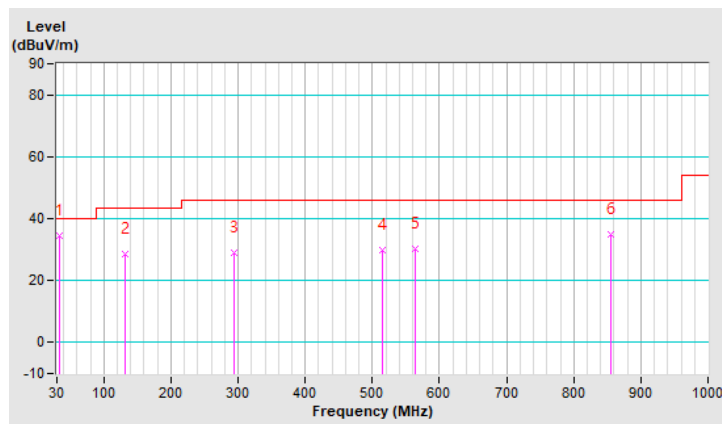


RF Mode	802.11b	Channel	CH 6 : 2437 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20°C, 68% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	34.85	34.3 QP	40.0	-5.7	1.00 V	272	47.2	-12.9
2	131.85	28.4 QP	43.5	-15.1	1.99 V	18	41.8	-13.4
3	294.81	29.1 QP	46.0	-16.9	1.99 V	188	41.0	-11.9
4	515.97	29.8 QP	46.0	-16.2	1.00 V	47	36.3	-6.5
5	563.50	30.2 QP	46.0	-15.8	1.00 V	190	36.4	-6.2
6	854.50	35.1 QP	46.0	-10.9	1.00 V	204	36.6	-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

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, 68.2% RH
Tested By	Thomas Cheng		

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	53.0 PK	74.0	-21.0	2.51 H	276	55.5	-2.5
2	2390.00	42.3 AV	54.0	-11.7	2.51 H	276	44.8	-2.5
3	*2412.00	105.6 PK			2.51 H	276	71.4	34.2
4	*2412.00	103.6 AV			2.51 H	276	69.4	34.2
5	4824.00	49.2 PK	74.0	-24.8	2.89 H	178	53.4	-4.2
6	4824.00	39.2 AV	54.0	-14.8	2.89 H	178	43.4	-4.2
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	2386.00	59.5 PK	74.0	-14.5	2.78 V	342	62.0	-2.5
2	2386.00	53.6 AV	54.0	-0.4	2.78 V	342	56.1	-2.5
3	*2412.00	117.5 PK			2.78 V	342	83.3	34.2
4	*2412.00	115.4 AV			2.78 V	342	81.2	34.2
5	4824.00	50.4 PK	74.0	-23.6	2.88 V	216	54.6	-4.2
6	4824.00	39.6 AV	54.0	-14.4	2.88 V	216	43.8	-4.2

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 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, 68.2% RH
Tested By	Thomas Cheng		

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	113.1 PK			2.50 H	277	78.8	34.3
2	*2437.00	111.1 AV			2.50 H	277	76.8	34.3
3	4874.00	49.5 PK	74.0	-24.5	1.90 H	250	53.8	-4.3
4	4874.00	39.6 AV	54.0	-14.4	1.90 H	250	43.9	-4.3

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	*2437.00	125.1 PK			2.47 V	58	90.8	34.3
2	*2437.00	123.1 AV			2.47 V	58	88.8	34.3
3	4874.00	50.2 PK	74.0	-23.8	2.51 V	101	54.5	-4.3
4	4874.00	39.9 AV	54.0	-14.1	2.51 V	101	44.2	-4.3

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 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, 68.2% RH
Tested By	Thomas Cheng		

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	113.4 PK			2.62 H	262	79.0	34.4
2	*2462.00	111.4 AV			2.62 H	262	77.0	34.4
3	2483.50	63.0 PK	74.0	-11.0	2.62 H	262	28.6	34.4
4	2483.50	52.3 AV	54.0	-1.7	2.62 H	262	17.9	34.4
5	4924.00	50.3 PK	74.0	-23.7	1.81 H	105	54.7	-4.4
6	4924.00	39.4 AV	54.0	-14.6	1.81 H	105	43.8	-4.4

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	117.3 PK			2.34 V	55	82.9	34.4
2	*2462.00	115.3 AV			2.34 V	55	80.9	34.4
3	2483.50	60.7 PK	74.0	-13.3	2.34 V	55	62.6	-1.9
4	2483.50	53.7 AV	54.0	-0.3	2.34 V	55	55.6	-1.9
5	4924.00	50.6 PK	74.0	-23.4	1.60 V	89	55.0	-4.4
6	4924.00	40.1 AV	54.0	-13.9	1.60 V	89	44.5	-4.4

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, 68.2% RH
Tested By	Thomas Cheng		

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	66.9 PK	74.0	-7.1	2.78 H	273	32.8	34.1
2	2390.00	53.6 AV	54.0	-0.4	2.78 H	273	19.5	34.1
3	*2412.00	114.0 PK			2.78 H	273	79.8	34.2
4	*2412.00	106.4 AV			2.78 H	273	72.2	34.2
5	4824.00	49.5 PK	74.0	-24.5	1.21 H	84	53.7	-4.2
6	4824.00	39.7 AV	54.0	-14.3	1.21 H	84	43.9	-4.2
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	2390.00	64.2 PK	74.0	-9.8	2.78 V	349	30.1	34.1
2	2390.00	52.8 AV	54.0	-1.2	2.78 V	349	18.7	34.1
3	*2412.00	120.4 PK			2.78 V	349	86.2	34.2
4	*2412.00	112.6 AV			2.78 V	349	78.4	34.2
5	4824.00	50.0 PK	74.0	-24.0	1.48 V	99	54.2	-4.2
6	4824.00	40.0 AV	54.0	-14.0	1.48 V	99	44.2	-4.2

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 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, 68.2% RH
Tested By	Thomas Cheng		

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	117.5 PK			2.62 H	272	83.2	34.3
2	*2437.00	109.8 AV			2.62 H	272	75.5	34.3
3	4874.00	49.6 PK	74.0	-24.4	3.67 H	299	53.9	-4.3
4	4874.00	39.0 AV	54.0	-15.0	3.67 H	299	43.3	-4.3

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	*2437.00	129.3 PK			2.42 V	133	95.0	34.3
2	*2437.00	121.4 AV			2.42 V	133	87.1	34.3
3	4874.00	50.3 PK	74.0	-23.7	2.01 V	182	54.6	-4.3
4	4874.00	40.1 AV	54.0	-13.9	2.01 V	182	44.4	-4.3

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 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, 68.2% RH
Tested By	Thomas Cheng		

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	109.5 PK			2.62 H	267	75.1	34.4
2	*2462.00	101.6 AV			2.62 H	267	67.2	34.4
3	2483.50	63.6 PK	74.0	-10.4	2.62 H	267	29.2	34.4
4	2483.50	52.3 AV	54.0	-1.7	2.62 H	267	17.9	34.4
5	4924.00	49.7 PK	74.0	-24.3	1.78 H	248	54.1	-4.4
6	4924.00	38.8 AV	54.0	-15.2	1.78 H	248	43.2	-4.4

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	119.0 PK			2.31 V	110	84.6	34.4
2	*2462.00	110.9 AV			2.31 V	110	76.5	34.4
3	2483.50	67.4 PK	74.0	-6.6	2.31 V	110	33.0	34.4
4	2483.50	53.7 AV	54.0	-0.3	2.31 V	110	19.3	34.4
5	4924.00	50.1 PK	74.0	-23.9	1.92 V	203	54.5	-4.4
6	4924.00	39.2 AV	54.0	-14.8	1.92 V	203	43.6	-4.4

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)	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	20.2°C, 76.3% RH
Tested By	Thomas Cheng		

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	64.4 PK	74.0	-9.6	3.03 H	269	30.7	33.7
2	2390.00	49.7 AV	54.0	-4.3	3.03 H	269	16.0	33.7
3	*2412.00	110.4 PK			3.03 H	269	76.7	33.7
4	*2412.00	99.7 AV			3.03 H	269	66.0	33.7
5	4824.00	51.1 PK	74.0	-22.9	2.96 H	244	40.8	10.3
6	4824.00	38.3 AV	54.0	-15.7	2.96 H	244	28.0	10.3
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	68.4 PK	74.0	-5.6	2.41 V	160	34.7	33.7
2	2390.00	53.8 AV	54.0	-0.2	2.41 V	160	20.1	33.7
3	*2412.00	120.6 PK			2.41 V	160	86.9	33.7
4	*2412.00	108.7 AV			2.41 V	160	75.0	33.7
5	4824.00	51.9 PK	74.0	-22.1	2.93 V	304	41.6	10.3
6	4824.00	40.1 AV	54.0	-13.9	2.93 V	304	29.8	10.3

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	22°C, 68.2% RH
Tested By	Thomas Cheng		

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	115.1 PK			2.48 H	360	80.8	34.3
2	*2437.00	105.3 AV			2.48 H	360	71.0	34.3
3	4874.00	50.2 PK	74.0	-23.8	1.65 H	12	54.5	-4.3
4	4874.00	39.3 AV	54.0	-14.7	1.65 H	12	43.6	-4.3
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	*2437.00	126.6 PK			1.75 V	145	92.3	34.3
2	*2437.00	116.8 AV			1.75 V	145	82.5	34.3
3	4874.00	50.6 PK	74.0	-23.4	2.32 V	277	54.9	-4.3
4	4874.00	39.7 AV	54.0	-14.3	2.32 V	277	44.0	-4.3

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 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	20.2°C, 76.3% RH
Tested By	Thomas Cheng		

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	112.2 PK			2.71 H	264	78.3	33.9
2	*2462.00	100.6 AV			2.71 H	264	66.7	33.9
3	2483.50	60.9 PK	74.0	-13.1	2.71 H	264	27.1	33.8
4	2483.50	49.2 AV	54.0	-4.8	2.71 H	264	15.4	33.8
5	4924.00	51.2 PK	74.0	-22.8	2.64 H	255	40.8	10.4
6	4924.00	38.7 AV	54.0	-15.3	2.64 H	255	28.3	10.4

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	123.9 PK			2.08 V	183	90.0	33.9
2	*2462.00	112.9 AV			2.08 V	183	79.0	33.9
3	2483.50	69.8 PK	74.0	-4.2	2.08 V	183	36.0	33.8
4	2483.50	53.6 AV	54.0	-0.4	2.08 V	183	19.8	33.8
5	4924.00	52.1 PK	74.0	-21.9	2.32 V	311	41.7	10.4
6	4924.00	40.4 AV	54.0	-13.6	2.32 V	311	30.0	10.4

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 (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	20.2°C, 76.3% RH
Tested By	Thomas Cheng		

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	63.9 PK	74.0	-10.1	2.48 H	268	30.2	33.7
2	2390.00	49.6 AV	54.0	-4.4	2.48 H	268	15.9	33.7
3	*2422.00	106.1 PK			2.48 H	268	72.4	33.7
4	*2422.00	94.1 AV			2.48 H	268	60.4	33.7
5	4844.00	50.9 PK	74.0	-23.1	2.39 H	256	40.5	10.4
6	4844.00	37.8 AV	54.0	-16.2	2.39 H	256	27.4	10.4

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	2387.80	68.1 PK	74.0	-5.9	2.11 V	183	34.4	33.7
2	2387.80	53.9 AV	54.0	-0.1	2.11 V	183	20.2	33.7
3	*2422.00	117.9 PK			2.11 V	183	84.2	33.7
4	*2422.00	105.3 AV			2.11 V	183	71.6	33.7
5	4844.00	51.7 PK	74.0	-22.3	2.05 V	179	41.3	10.4
6	4844.00	38.9 AV	54.0	-15.1	2.05 V	179	28.5	10.4

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 (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	20.2°C, 76.3% RH
Tested By	Thomas Cheng		

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	109.9 PK			2.44 H	268	76.1	33.8
2	*2437.00	97.8 AV			2.44 H	268	64.0	33.8
3	4874.00	51.0 PK	74.0	-23.0	2.36 H	243	40.5	10.5
4	4874.00	38.1 AV	54.0	-15.9	2.36 H	243	27.6	10.5

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	71.3 PK	74.0	-2.7	2.13 V	181	37.6	33.7
2	2390.00	53.8 AV	54.0	-0.2	2.13 V	181	20.1	33.7
3	*2437.00	122.2 PK			2.13 V	181	88.4	33.8
4	*2437.00	109.6 AV			2.13 V	181	75.8	33.8
5	4874.00	51.7 PK	74.0	-22.3	2.22 V	186	41.2	10.5
6	4874.00	39.1 AV	54.0	-14.9	2.22 V	186	28.6	10.5

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 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	20.2°C, 76.3% RH
Tested By	Thomas Cheng		

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	108.2 PK			2.41 H	268	74.4	33.8
2	*2452.00	94.8 AV			2.41 H	268	61.0	33.8
3	2483.50	60.4 PK	74.0	-13.6	2.41 H	268	26.6	33.8
4	2483.50	49.1 AV	54.0	-4.9	2.41 H	268	15.3	33.8
5	4904.00	50.9 PK	74.0	-23.1	2.38 H	260	40.5	10.4
6	4904.00	38.1 AV	54.0	-15.9	2.38 H	260	27.7	10.4

Antenna Polarity & Test Distance : Vertical at 3 m

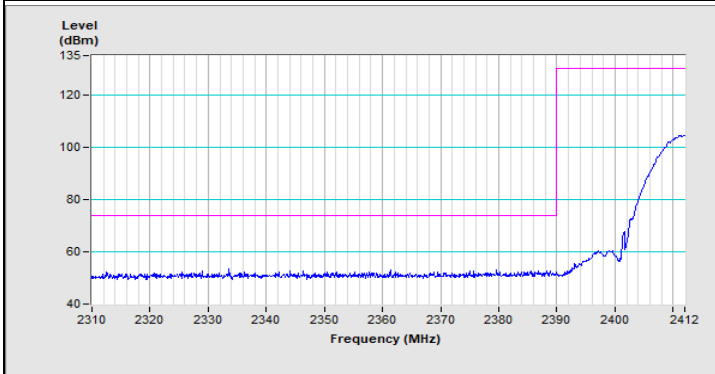
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1	*2452.00	120.0 PK			2.11 V	180	86.2	33.8
2	*2452.00	107.1 AV			2.11 V	180	73.3	33.8
3	2487.80	67.7 PK	74.0	-6.3	2.11 V	180	33.9	33.8
4	2487.80	53.3 AV	54.0	-0.7	2.11 V	180	19.5	33.8
5	4904.00	51.2 PK	74.0	-22.8	2.16 V	195	40.8	10.4
6	4904.00	38.9 AV	54.0	-15.1	2.16 V	195	28.5	10.4

Remarks:

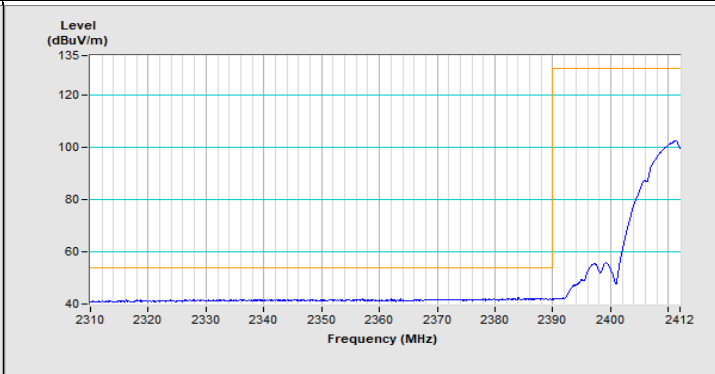
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency,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

Plot of Band Edge

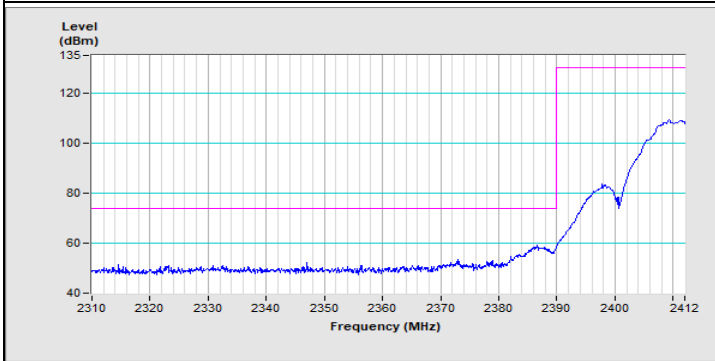
802.11b Channel 1



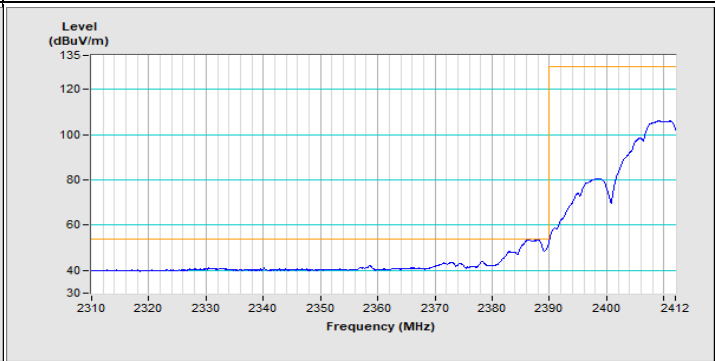
Horizontal (Peak)



Horizontal (Average)

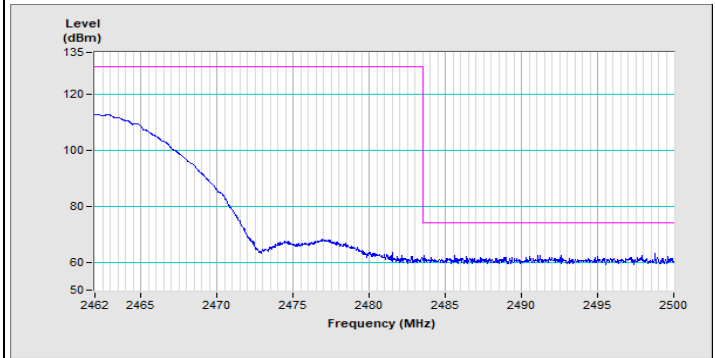


Vertical (Peak)

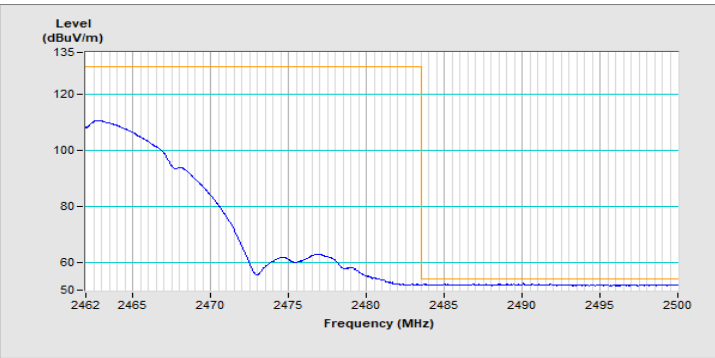


Vertical (Average)

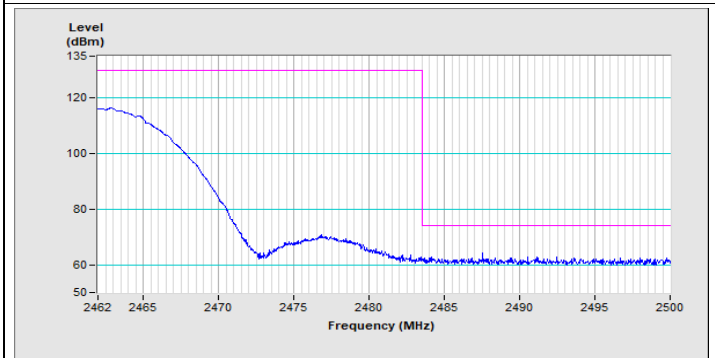
802.11b Channel 11



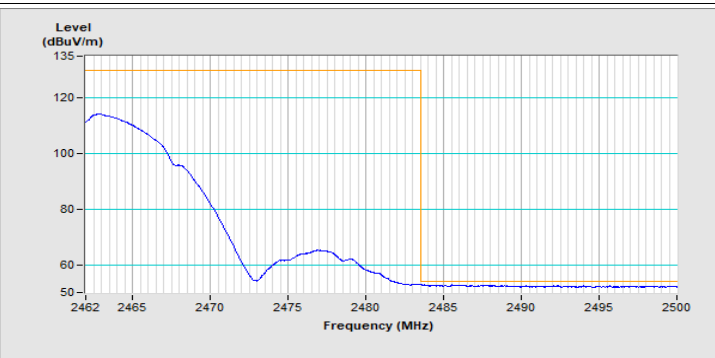
Horizontal (Peak)



Horizontal (Average)

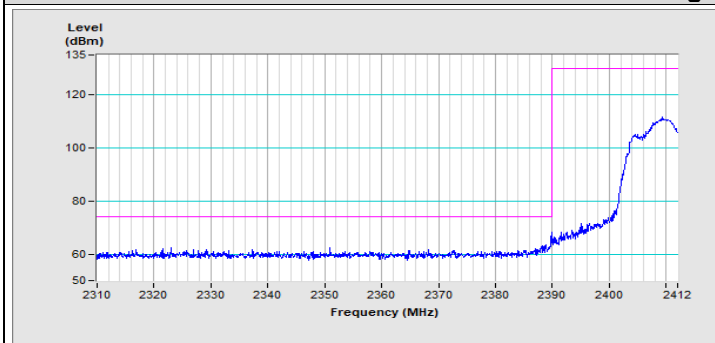


Vertical (Peak)

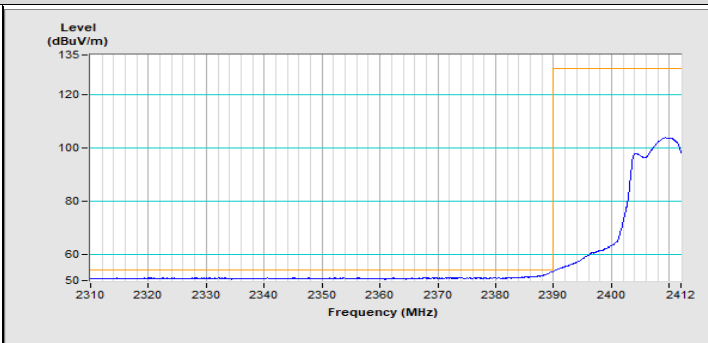


Vertical (Average)

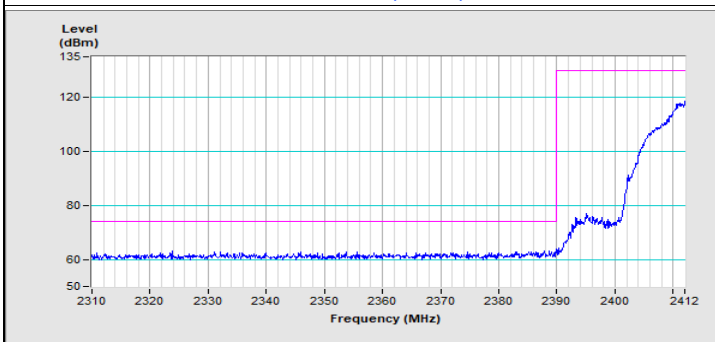
802.11g Channel 1



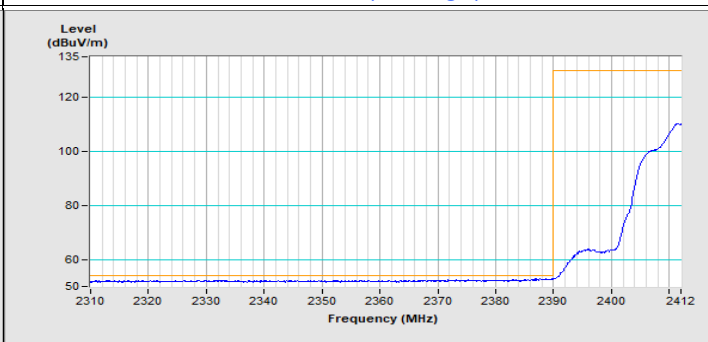
Horizontal (Peak)



Horizontal (Average)

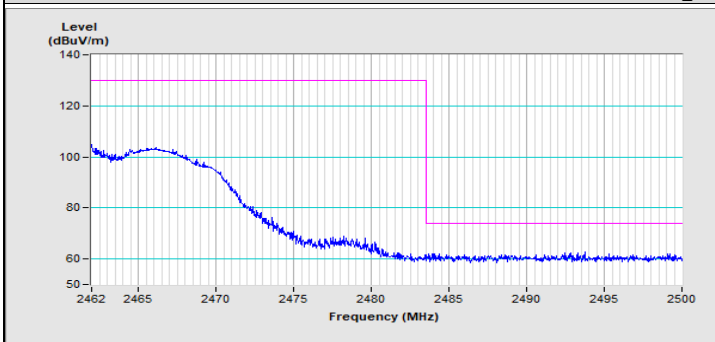


Vertical (Peak)

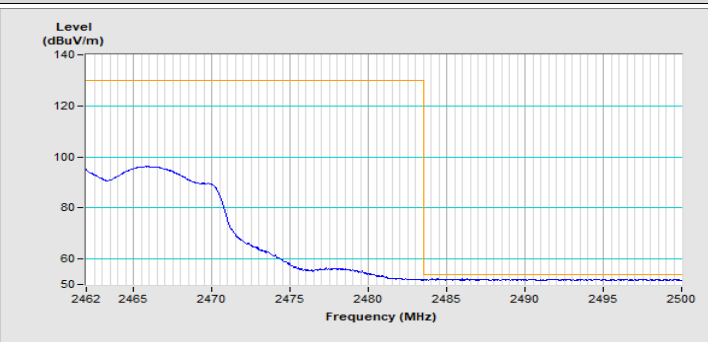


Vertical (Average)

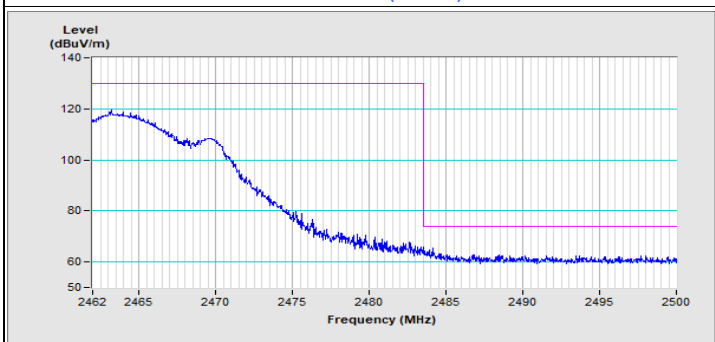
802.11g Channel 11



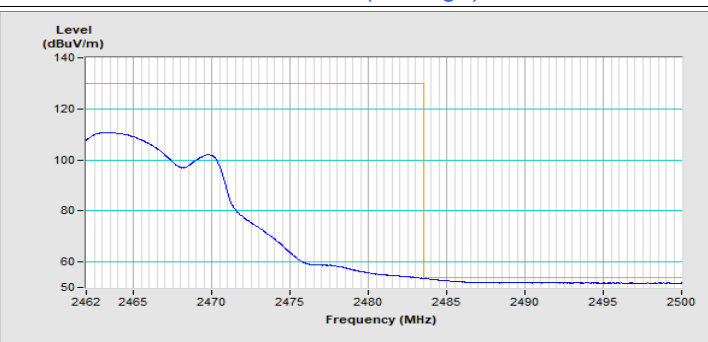
Horizontal (Peak)



Horizontal (Average)

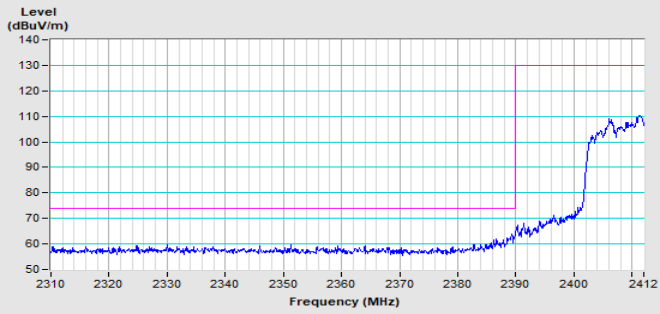


Vertical (Peak)

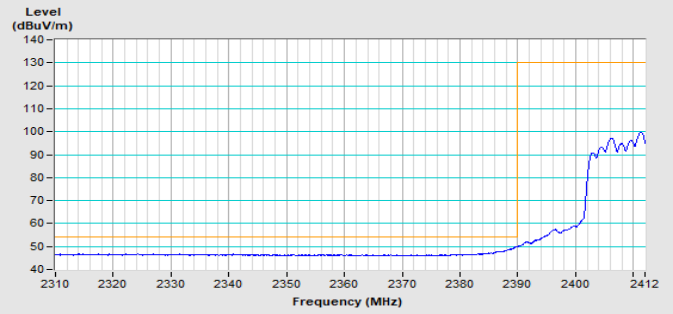


Vertical (Average)

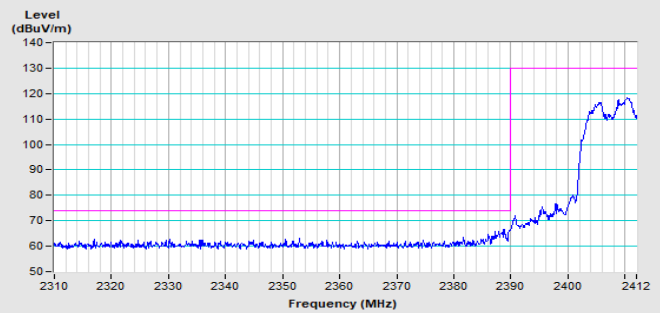
802.11ax (HE20) Channel 1



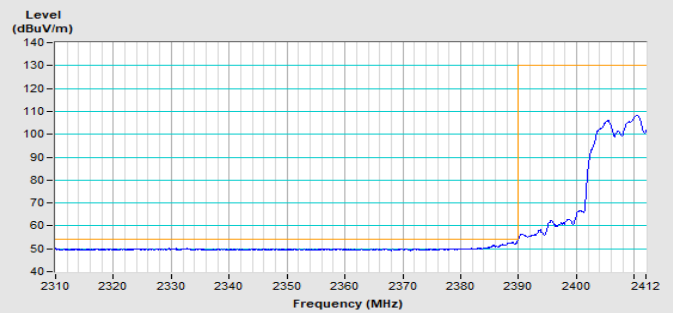
Horizontal (Peak)



Horizontal (Average)

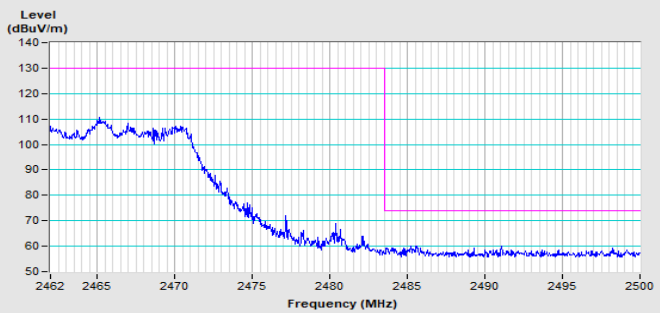


Vertical (Peak)

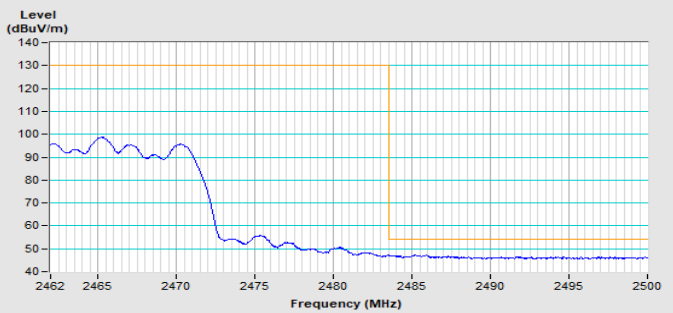


Vertical (Average)

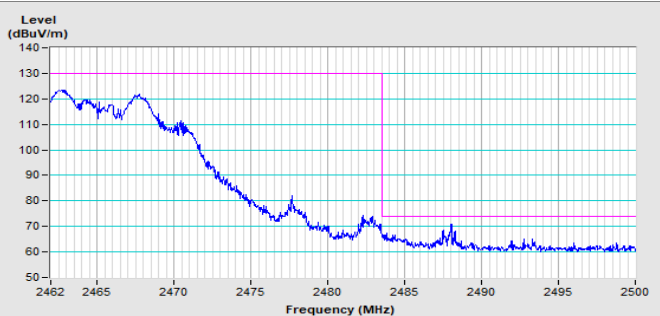
802.11ax (HE20) Channel 11



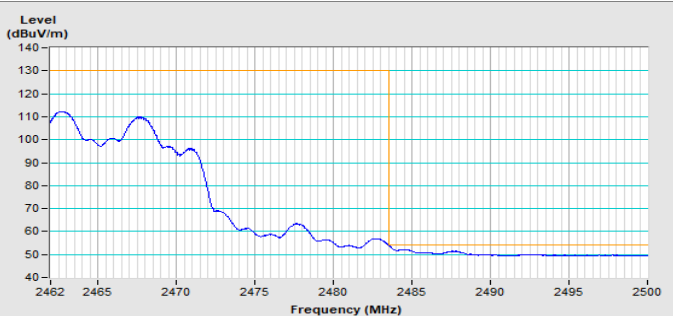
Horizontal (Peak)



Horizontal (Average)

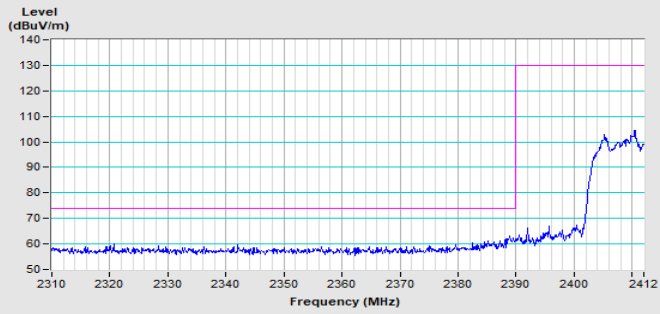


Vertical (Peak)

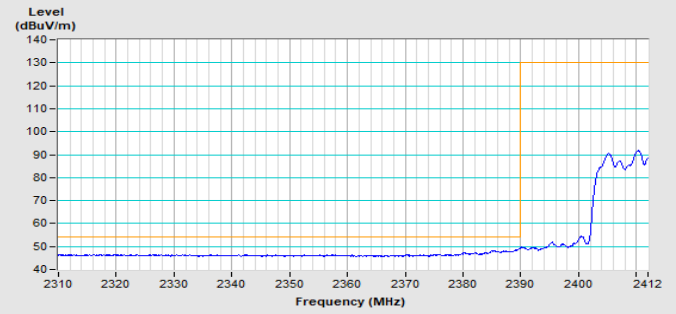


Vertical (Average)

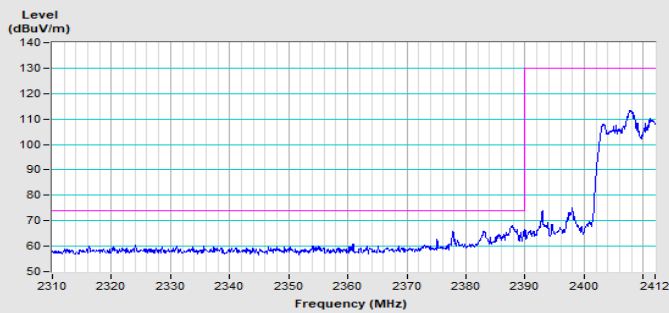
802.11ax (HE40) Channel 3



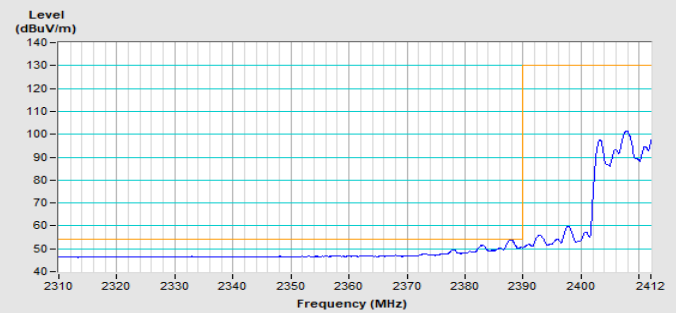
Horizontal (Peak)



Horizontal (Average)

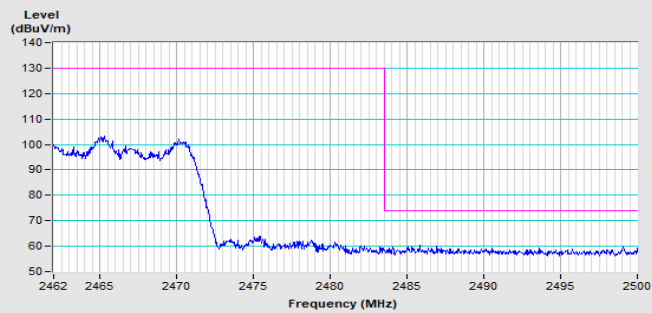


Vertical (Peak)

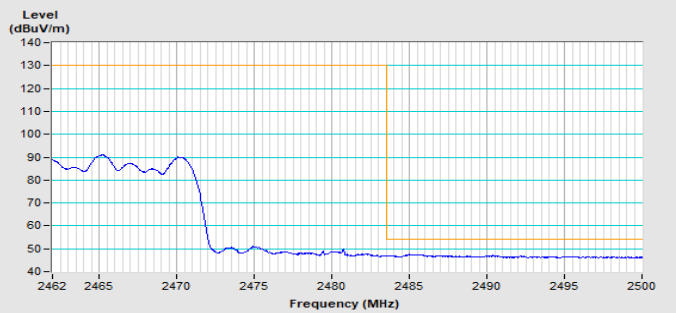


Vertical (Average)

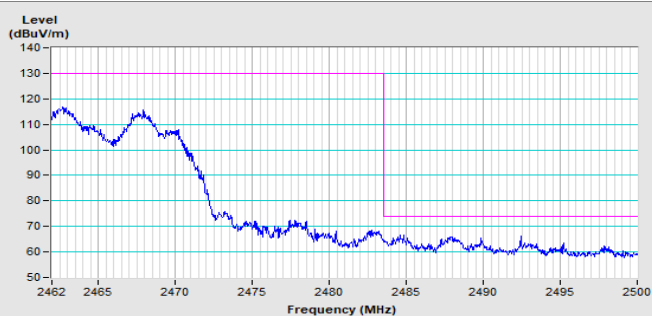
802.11ax (HE40) Channel 9



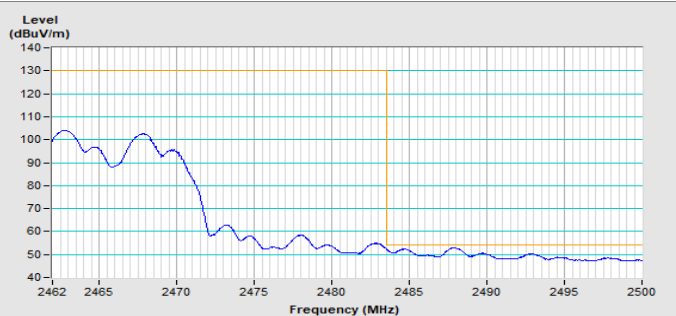
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)



Vertical (Average)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)



9 Information of the Testing Laboratories

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

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

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Email: service.adt@bureauveritas.com

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

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

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