TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBDHL-WTW-P20080205C

FCC ID: GZ5NVG578HLXV2

Model No.: NVG578HLX

Series Model: NVG568HLX

Received Date: 2022/5/6

Test Date: 2022/7/26 ~ 2022/8/3

Issued Date: 2022/8/23

Applicant: ARRIS

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

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

FCC Registration / Designation Number: 723255 / TW2022

Approved by: _____ , **Date:** 2022/8/23

May Chen / Manager

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Prepared by : Vivian Hunag / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBDHL-WTW-P20080205C	Original release.	2022/8/23

1 Certificate

Product:	2.5G PON GATEWAY
Brand:	ARRIS
Test Model:	NVG578HLX
Series Model:	NVG568HLX
Sample Status:	Engineering sample
Applicant:	ARRIS
Test Date:	2022/7/26 ~ 2022/8/3
Standard:	47 CFR FCC Part 15, Subpart C (Section 15.247)
Measurement procedure:	ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02 KDB 662911 D01 Multiple Transmitter Output v02r01

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
Standard / Clause	Test Item	Result	Remark
15.247(b)	RF Output Power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	Pass	Meet the requirement of limit.
15.247(a)(2)	6 dB Bandwidth	Pass	Meet the requirement of limit.
15.247(d)	Conducted Out of Band Emissions	Pass	Meet the requirement of limit.
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -11.34 dB at 0.15032 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -3.8 dB at 50.02 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.4 dB at 2390.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(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) (±)
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.5 dB
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.4 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.0 dB
	18 GHz ~ 40 GHz	5.3 dB

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

2.2 Supplementary Information

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

3 General Information

3.1 General Description

Product	2.5G PON GATEWAY
Brand	ARRIS
Test Model	NVG578HLX
Series Model	NVG568HLX
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in VHT mode 1024QAM for OFDMA in 11ax mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 450 Mbps VHT: up to 600 Mbps 802.11ax: up to 860.3 Mbps
Operating Frequency	2412 ~ 2462 MHz
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:** 330.659 mW (25.19 dBm) **Beamforming Mode:** 292.988 mW (24.67 dBm)

Note:

1. The EUT has two radios as following table:

Radio 1	Radio 2
WLAN 2.4GHz	WLAN 5GHz

2. Simultaneously transmission condition.

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

3. The EUT uses following Heat sink:

No.	Brand	Material
1	Hesheng	AL6063 T5
2	Yingfan	AL6063 T5

4. The EUT has below model names, which are identical to each other in all aspects except for the following information:

Different	Model No. NVG578HLX	Model No. NVG568HLX
Feature	5G High power	5G High power
Target Market	NA	NA
Key IC	Main IC: BCM68360 LD: BCM68901 WIFI 2.4G: BCM6710 WIFI 5G：BCM6715X	Main IC: BCM68360 WIFI 2.4G: BCM6710 WIFI 5G：BCM6715X
2.5 G Phy	BCM54991EL	BCM54991EL
Slic	Microsemi Le9642	Microsemi Le9642
Flash	256MB	256MB
DDR	512MB	512MB
802.11ax 2.4G	3 x 3	3 x 3
802.11ax 5G	4 x 4	4 x 4
B+ BOSA with STIA SC/APC	yes	no
5G FEM	SKY85743-21	SKY85743-21
USB 3.0	1	1
VOIP port	2	2
LAN port	RJ45 with 1 LED 2.5G LAN x1 1G LAN x3	RJ45 with 1 LED 2.5G LAN x1 1G LAN x3
Power on/off button	yes	yes
WPS button	yes	yes
Reset button	yes	yes
LEDs	Power, Broadband, WAN, WiFi, Voice	Power, Broadband, WAN, WiFi, Voice

From the above models, model: **NVG578HLX** was selected as representative model for the test and its data was recorded in this report.

5. The EUT must be supplied with a power adapter as following table:

Brand	Model No.	Spec.
NetBit	NBS36J120300VU	Input: 100-120 Vac, 1 A, 50-60 Hz Output: 12 Vdc, 3 A DC Output cable: Unshielded, 2 m

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Ant. Set	RF Chain No.	Ant. Net Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type	Cable Length (mm)
0	5G Chain0	3.93	5.15~5.25	PIFA	RF switch	on-board no cable
		3.45	5.25~5.35			
		4.15	5.47~5.725			
		4.33	5.725~5.85			
1	5G Chain1 / 2.4G Chain 2	4.69	2.4~2.4835	PIFA	RF switch	on-board no cable
		2.77	5.15~5.25			
		3.33	5.25~5.35			
		4.33	5.47~5.725			
		4.54	5.725~5.85			
2	5G Chain2 / 2.4G Chain 1	2.27	2.4~2.4835	Dipole	i-pex(MHF)	200
		2.65	5.15~5.25			
		2.86	5.25~5.35			
		3.12	5.47~5.725			
		3.12	5.725~5.85			
3	5G Chain3 / 2.4G Chain 0	3.36	2.4~2.4835	Dipole	i-pex(MHF)	200
		2.83	5.15~5.25			
		2.77	5.25~5.35			
		2.65	5.47~5.725			
		2.83	5.725~5.85			

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

2. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11b	3TX	3RX
802.11g	3TX	3RX
802.11n (HT20)	3TX	3RX
802.11n (HT40)	3TX	3RX
VHT20	3TX	3RX
VHT40	3TX	3RX
802.11ax (HE20)	3TX	3RX
802.11ax (HE40)	3TX	3RX

Note:
1. All of modulation mode support beamforming function except 802.11b/g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), VHT mode for 20MHz (40MHz) and 802.11ax mode for 20MHz (40MHz), therefore the manufacturer will control the power for 802.11n/ VHT mode is the same as the 802.11ax mode or more lower than it and investigated worst case to representative mode in test report.

3.3 Channel List

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20), VHT20 and 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 and 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

Worst Case:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Note: Partial RU(resource unit) configurations not supported.

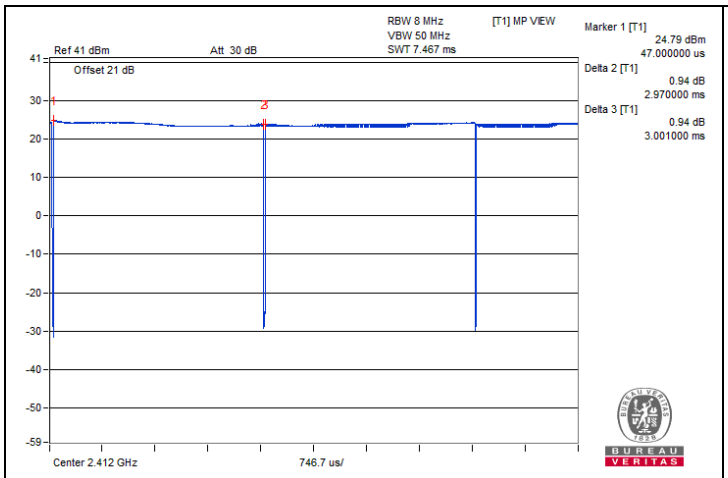
Following channel(s) was (were) selected for the final test as listed below:

Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	A	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		VHT20	CDD & Beamforming	1, 6, 11	BPSK	MCS0
		VHT40	CDD & Beamforming	3, 6, 9	BPSK	MCS0
		802.11ax (HE20)	CDD & Beamforming	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD & Beamforming	3, 6, 9	BPSK	MCS0
Power Spectral Density / 6 dB Bandwidth / Conducted Out of Band Emissions	A	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		VHT20	CDD	1, 6, 11	BPSK	MCS0
		VHT40	CDD	3, 6, 9	BPSK	MCS0
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
AC Power Conducted Emissions	A	802.11ax (HE20)	CDD	6	BPSK	MCS0
Unwanted Emissions below 1 GHz	A, B	802.11ax (HE20)	CDD	6	BPSK	MCS0
Unwanted Emissions above 1 GHz	A	802.11b	CDD	1, 6, 11	DBPSK	1Mb/s
		802.11g	CDD	1, 6, 11	BPSK	6Mb/s
		802.11ax (HE20)	CDD	1, 6, 11	BPSK	MCS0
		802.11ax (HE40)	CDD	3, 6, 9	BPSK	MCS0
	B	802.11ax (HE20)	CDD	6	BPSK	MCS0
EUT Configure Mode:	A	Use a heatsink (manufacturer: Heli), and use an RF 5G IC (BCM6715X)				
	B	Use a heatsink (manufacturer: Yingfan) and use the RF 5G IC (BCM6715X)				

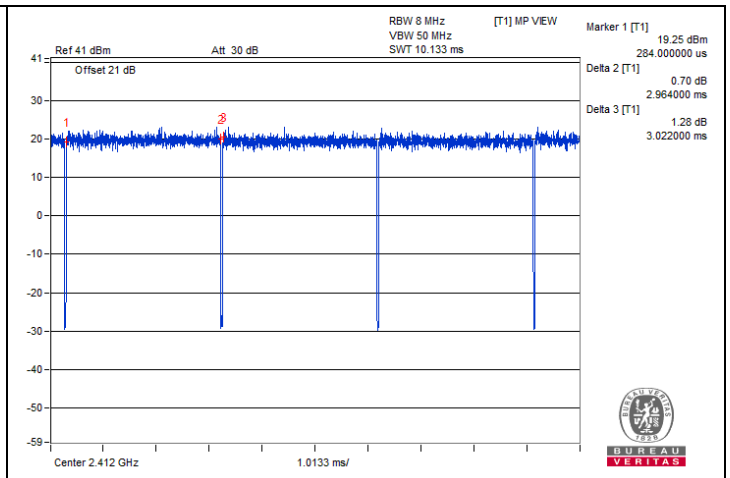
3.5 Duty Cycle of Test Signal

Duty cycle of test signal is >= 98 %, duty factor is not required.
Duty cycle of test signal is < 98 %, duty factor shall be considered.

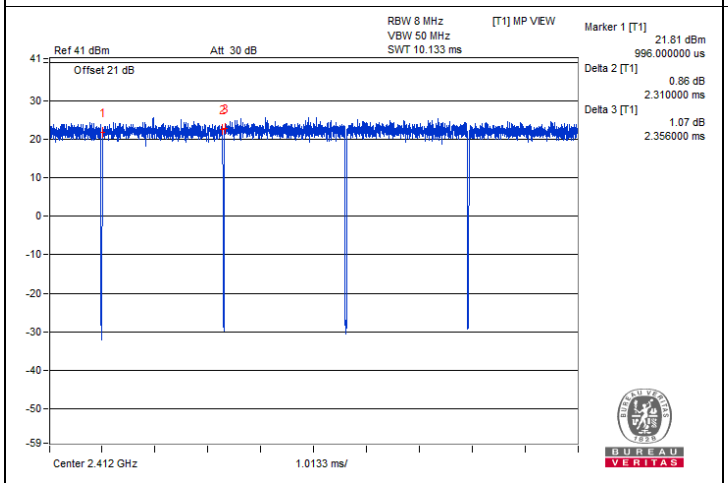
802.11b: Duty cycle = 2.97 ms / 3.001 ms x 100% = 99.0%
802.11g: Duty cycle = 2.964 ms / 3.022 ms x 100% = 98.1%
802.11ax (HE20): Duty cycle = 2.31 ms / 2.356 ms x 100% = 98.0%
802.11ax (HE40): Duty cycle = 2.394 ms / 2.434 ms x 100% = 98.4%



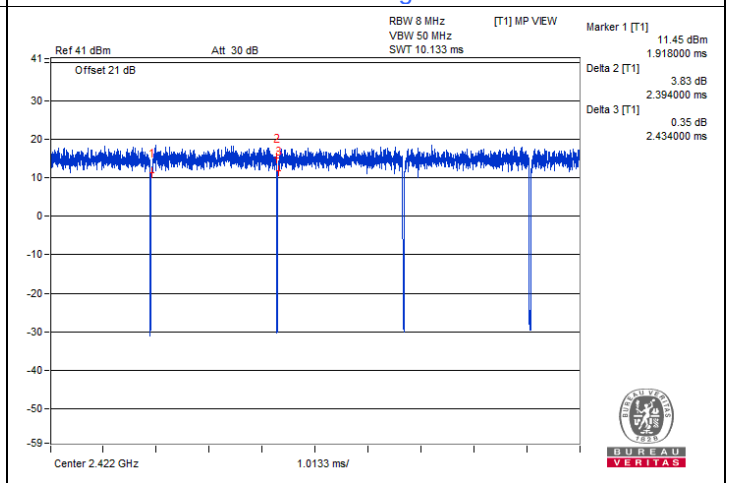
802.11b



802.11g



802.11ax (HE20)

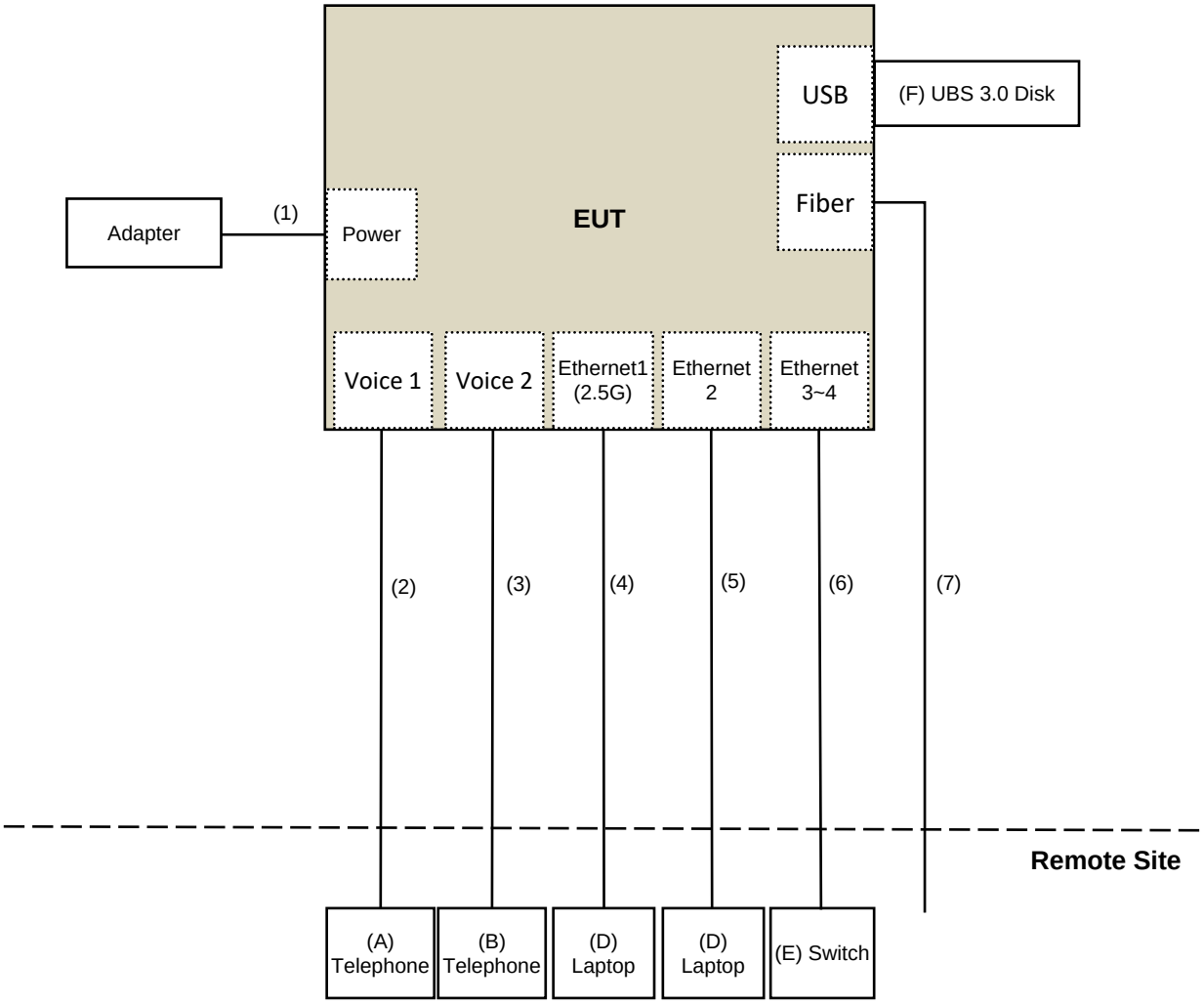


802.11ax (HE40)

3.6 Test Program Used and Operation Descriptions

Controlling software (accessMTool_REL_3_2_0_0) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Telephone	Romeo	TE-812	97285638	N/A	Provided by Lab
B	Telephone	Romeo	TE-812	97280903	N/A	Provided by Lab
C	Laptop	DELL	PP36S	25733582128	N/A	Provided by Lab
D	Laptop	DELL	E5430	HYV4VY1	DoC	Provided by Lab
E	Switch	D-Link	DGS-1005D	DR8WC92000523	N/A	Provided by Lab
F	UBS 3.0 Disk	Transcend	16GB JetFlash 700	F80093 0291	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	2	No	0	Supplied by applicant
2	RJ-11 Cable	1	10	No	0	Provided by Lab
3	RJ-11 Cable	1	10	No	0	Provided by Lab
4	RJ-45 Cable	1	10	No	0	Provided by Lab
5	RJ-45 Cable	1	10	No	0	Provided by Lab
6	RJ-45 Cable	2	10	No	0	Provided by Lab
7	Fiber 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
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/8/3

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	101516	2022/3/7	2023/3/6

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/8/3

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
50 ohms Terminator	50	3	2021/10/27	2022/10/26
Fixed attenuator STI	STI02-2200-10	005	2021/8/27	2022/8/26
LISN R&S	ESH3-Z5	848773/004	2021/10/29	2022/10/28
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2021/9/25	2022/9/24
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A
TEST RECEIVER R&S	ESCS 30	847124/029	2021/10/13	2022/10/12

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2022/7/30

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2021/9/23	2022/9/22
LOOP ANTENNA Electro-Metrics	EM-6879	264	2022/3/18	2023/3/17
Pre_Amplifier Agilent	8447D	2944A10636	2022/3/19	2023/3/18
Pre_Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	2021/10/19	2022/10/18
RF Coaxial Cable COMMATE/PEWC	8D	966-3-2	2022/2/26	2023/2/25
		966-3-3	2022/2/26	2023/2/25
		966-4-1	2022/3/8	2023/3/7
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2022/4/26	2023/4/25
Test Receiver KEYSIGHT	N9038A	MY59050100	2022/6/20	2023/6/19
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-361	2021/10/26	2022/10/25

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/7/30

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9170	9170-739	2021/11/14	2022/11/13
	BBHA9120-D	9120D-406	2021/11/14	2022/11/13
Pre_Amplifier EMCI	EMC12630SE	980384	2022/1/10	2023/1/9
	EMC184045SE	980387	2022/1/10	2023/1/9
RF Cable EMCI	EMC104-SM-SM-6000	210201	2022/5/10	2023/5/9
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
	EMC104-SM-SM-1500	180504	2022/4/25	2023/4/24
	EMC104-SM-SM-2000	180601	2022/6/6	2023/6/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2022/4/26	2023/4/25
Test Receiver KEYSIGHT	N9038A	MY59050100	2022/6/20	2023/6/19

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/7/26 ~ 2022/8/3

5 Limits of Test Items

5.1 RF Output Power

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30 dBm)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

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

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

5.2 Power Spectral Density

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

5.3 6 dB Bandwidth

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

5.4 Conducted Out of Band Emissions

Below 30 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

5.5 AC Power Conducted Emissions

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.6 Unwanted Emissions below 1 GHz

Radiated emissions up to 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30 dB below the highest level of the desired power:

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

Notes:

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

5.7 Unwanted Emissions above 1 GHz

Radiated emissions above 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30 dB below the highest level of the desired power:

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

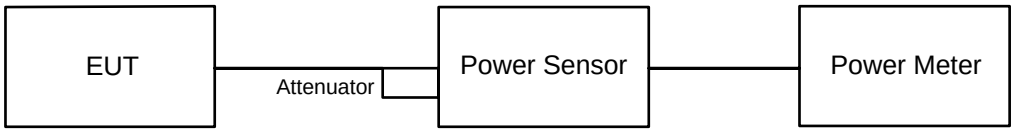
Notes:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

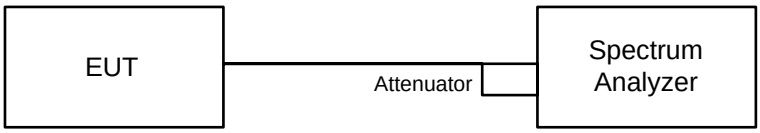


6.1.2 Test Procedure

Average power 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



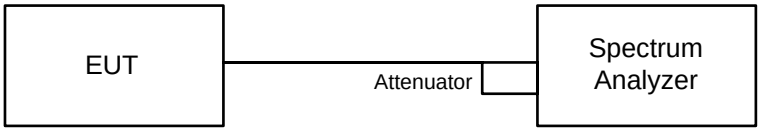
6.2.2 Test Procedure

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 ≥3 x RBW.
f. Detector = power averaging (RMS) or sample detector (when RMS not available).
g. Ensure that the number of measurement points in the sweep ≥ 2 x 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.

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

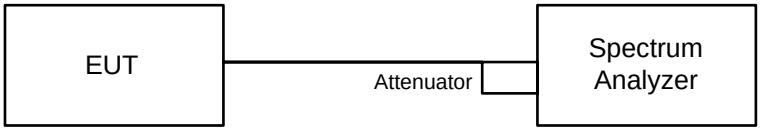


6.3.2 Test Procedure

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

6.4 Conducted Out of Band Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

MEASUREMENT PROCEDURE REF

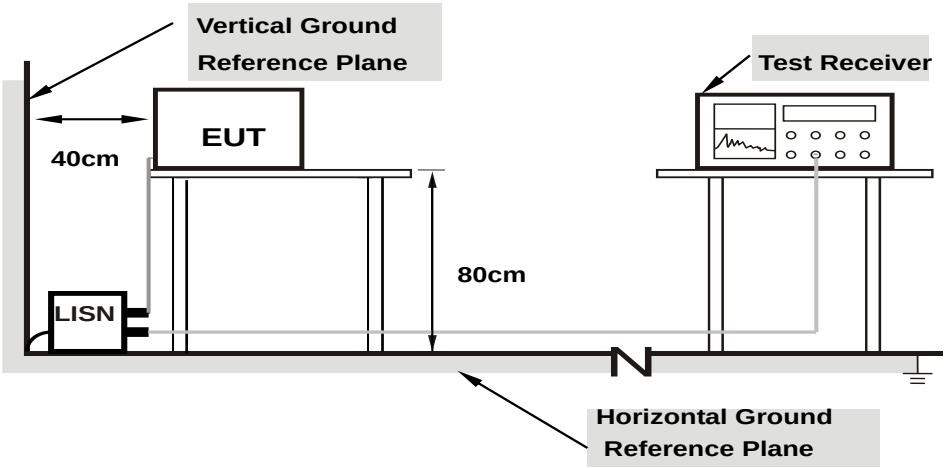
a. Set the RBW = 100 kHz.
b. Set the VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep time = auto couple.
e. Trace mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

a. Set RBW = 100 kHz.
b. Set VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep = auto couple.
e. Trace Mode = max hold.
f. Allow trace to fully stabilize.
g. 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

a. 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.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

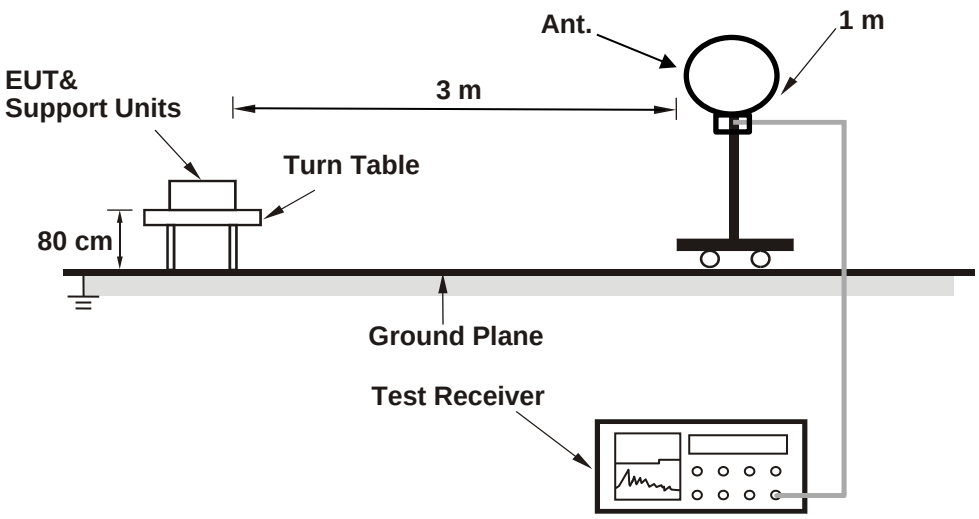
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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.

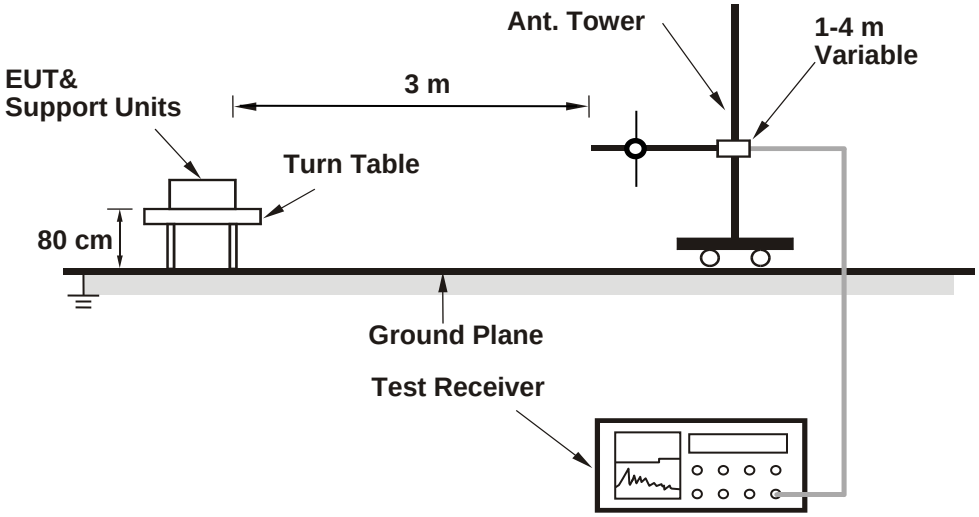
6.6 Unwanted Emissions below 1 GHz

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.

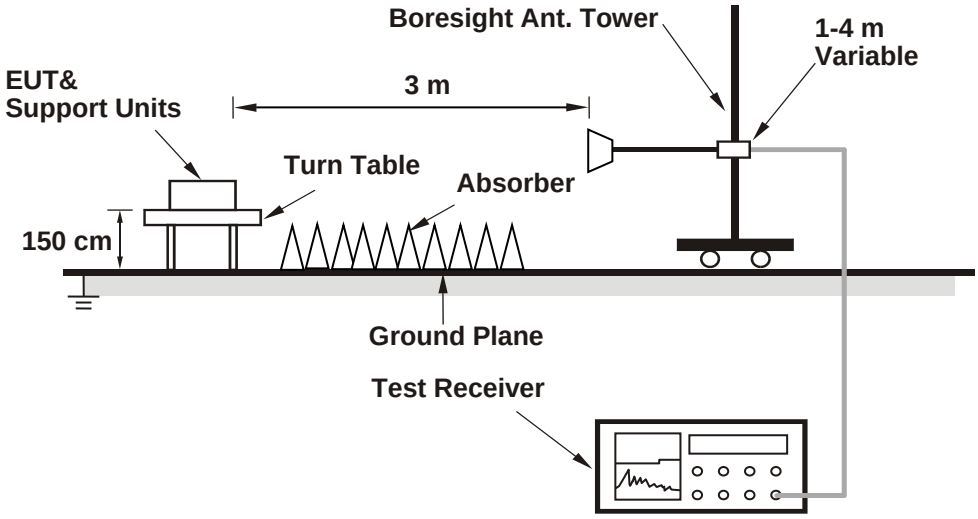
Notes:

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 Radiated emission above 1 GHz



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

6.7.2 Test Procedure

a. 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.

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 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:

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

7 Test Results of Test Item

7.1 RF Output Power

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng

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				
1	2412	19.14	19.62	19.48	262.373	24.19	30	Pass
6	2437	18.91	19.66	18.89	247.72	23.94	30	Pass
11	2462	20.18	19.91	19.50	291.306	24.64	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.69 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				
1	2412	16.41	16.44	16.35	130.96	21.17	30	Pass
6	2437	20.34	20.79	20.11	330.659	25.19	30	Pass
11	2462	16.79	16.33	16.16	132.011	21.21	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.69 dBi < 6 dBi, so the output power limit shall not be reduced.

VHT20 CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2				
1	2412	14.23	14.65	14.09	81.304	19.10	30	Pass
6	2437	19.67	20.33	19.52	290.114	24.63	30	Pass
11	2462	15.72	15.81	15.44	110.426	20.43	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.69 dBi < 6 dBi, so the output power limit shall not be reduced.

VHT40 CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2				
3	2422	14.99	14.97	14.49	91.074	19.59	30	Pass
6	2437	16.75	16.68	16.20	135.561	21.32	30	Pass
9	2452	15.04	14.96	14.52	91.562	19.62	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.69 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				
1	2412	14.54	14.19	14.38	82.103	19.14	30	Pass
6	2437	20.02	20.03	19.63	292.988	24.67	30	Pass
11	2462	16.11	15.44	15.66	112.639	20.52	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.69 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				
3	2422	15.67	15.23	14.91	101.215	20.05	30	Pass
6	2437	17.04	16.85	16.41	142.752	21.55	30	Pass
9	2452	15.53	15.11	14.99	99.711	19.99	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. The maximum gain is 4.69 dBi < 6 dBi, so the output power limit shall not be reduced.

VHT20 Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2				
1	2412	14.23	14.65	14.09	81.304	19.10	27.73	Pass
6	2437	19.67	20.33	19.52	290.114	24.63	27.73	Pass
11	2462	15.72	15.81	15.44	110.426	20.43	27.73	Pass

Notes:

1. Directional gain = $10 \log[(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20})^2 / 3]$
2. The directional gain is 8.27 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.27-6) = 27.73 dBm.

VHT40 Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2				
3	2422	14.99	14.97	14.49	91.074	19.59	27.73	Pass
6	2437	16.75	16.68	16.20	135.561	21.32	27.73	Pass
9	2452	15.04	14.96	14.52	91.562	19.62	27.73	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20})^2$ / 3]
2. The directional gain is 8.27 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.27-6) = 27.73 dBm.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1	Chain 2				
1	2412	14.54	14.19	14.38	82.103	19.14	27.73	Pass
6	2437	20.02	20.03	19.63	292.988	24.67	27.73	Pass
11	2462	16.11	15.44	15.66	112.639	20.52	27.73	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20})^2$ / 3]
2. The directional gain is 8.27 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.27-6) = 27.73 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				
3	2422	15.67	15.23	14.91	101.215	20.05	27.73	Pass
6	2437	17.04	16.85	16.41	142.752	21.55	27.73	Pass
9	2452	15.53	15.11	14.99	99.711	19.99	27.73	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20})^2$ / 3]
2. The directional gain is 8.27 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.27-6) = 27.73 dBm.

7.2 Power Spectral Density

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng

802.11b CDD

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)			Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1	Chain 2			
1	2412	-9.06	-8.58	-8.86	-4.06	5.73	Pass
6	2437	-9.58	-8.82	-8.81	-4.28	5.73	Pass
11	2462	-8.35	-8.79	-9.60	-4.11	5.73	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20})^2$ / 3]
3. The directional gain is 8.27 dBi > 6 dBi, so the power density limit shall be reduced to 8-(8.27-6) = 5.73 dBm/3kHz.

802.11g CDD

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)			Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1	Chain 2			
1	2412	-15.02	-15.42	-13.33	-9.72	5.73	Pass
6	2437	-11.38	-10.60	-9.81	-5.78	5.73	Pass
11	2462	-14.13	-14.84	-14.74	-9.79	5.73	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20})^2$ / 3]
3. The directional gain is 8.27 dBi > 6 dBi, so the power density limit shall be reduced to 8-(8.27-6) = 5.73 dBm/3kHz.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)			Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1	Chain 2			
1	2412	-17.68	-18.50	-18.29	-13.37	5.73	Pass
6	2437	-13.02	-12.38	-12.50	-7.85	5.73	Pass
11	2462	-16.16	-17.40	-15.13	-11.36	5.73	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20})^2$ / 3]
3. The directional gain is 8.27 dBi > 6 dBi, so the power density limit shall be reduced to 8-(8.27-6) = 5.73 dBm/3kHz.

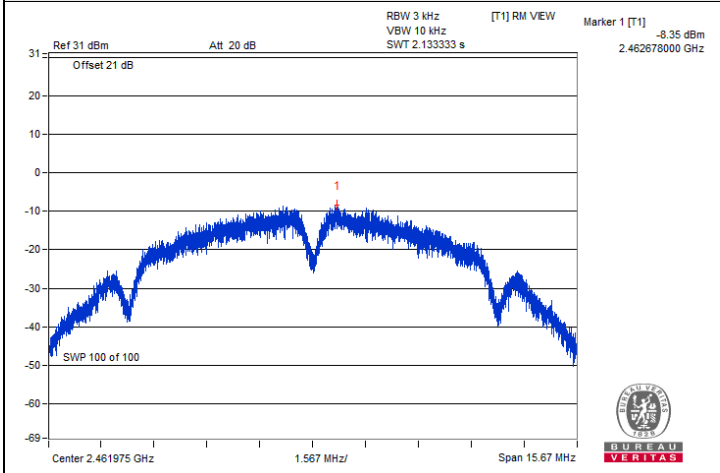
802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)			Total PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
		Chain 0	Chain 1	Chain 2			
3	2422	-20.06	-18.95	-18.87	-14.49	5.73	Pass
6	2437	-18.69	-17.36	-17.66	-13.10	5.73	Pass
9	2452	-20.27	-17.78	-20.16	-14.47	5.73	Pass

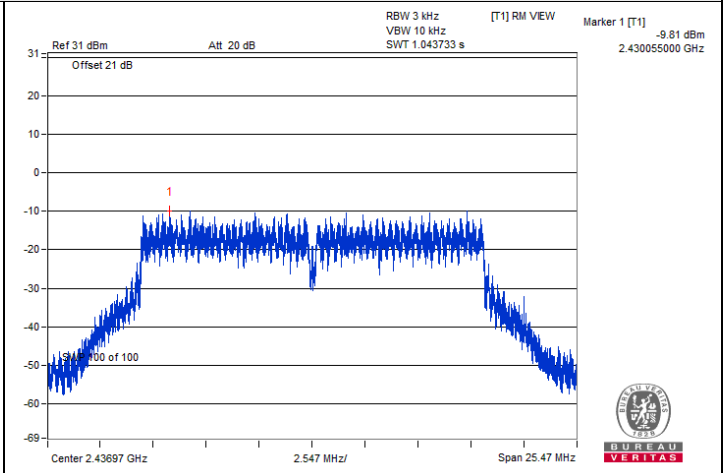
Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20} + 10^{Chain2/20})^2$ / 3]
3. The directional gain is 8.27 dBi > 6 dBi, so the power density limit shall be reduced to 8-(8.27-6) = 5.73 dBm/3kHz.

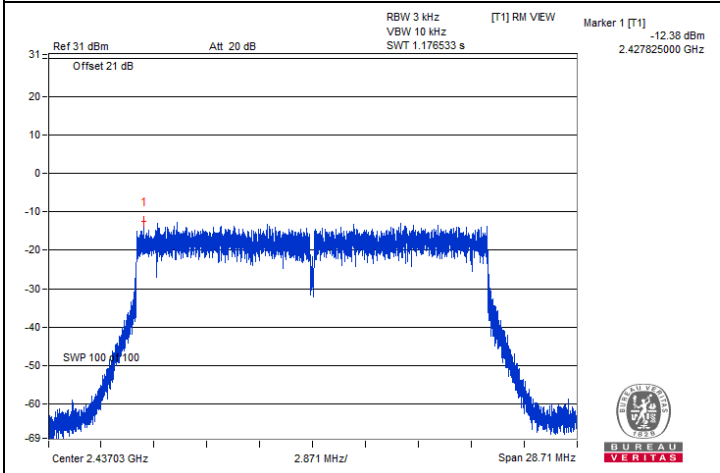
Spectrum Plot of Maximum Value



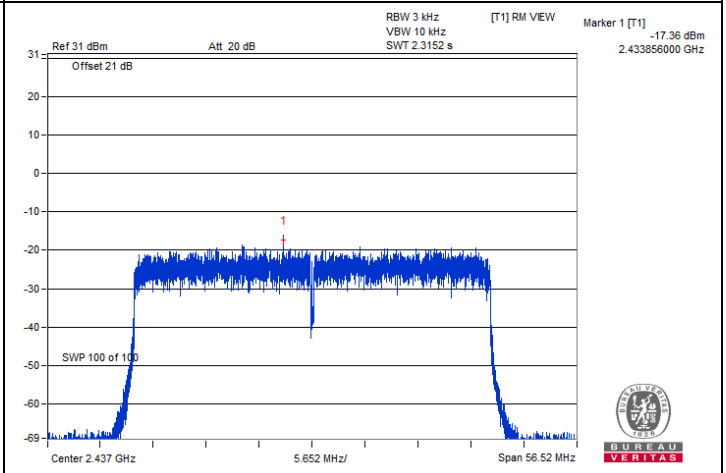
802.11b CDD / Chain0 : CH 11



802.11g CDD / Chain2 : CH 6



802.11ax (HE20) CDD / Chain1 : CH 6



802.11ax (HE40) CDD / Chain1 : CH 6

7.3 6 dB Bandwidth

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng

802.11b CDD

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)			Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2		
1	2412	7.07	7.05	7.08	0.5	Pass
6	2437	7.07	7.08	7.06	0.5	Pass
11	2462	7.08	7.06	7.05	0.5	Pass

802.11g CDD

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)			Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2		
1	2412	16.42	16.38	16.39	0.5	Pass
6	2437	16.40	16.39	16.40	0.5	Pass
11	2462	16.40	16.40	16.38	0.5	Pass

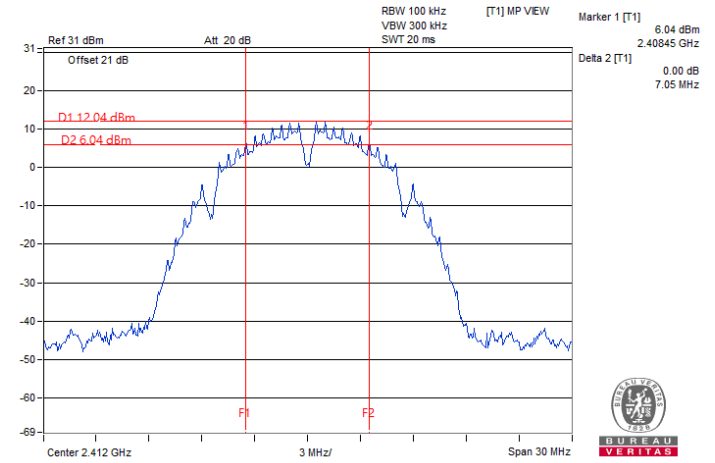
802.11ax (HE20) CDD

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)			Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2		
1	2412	18.97	18.97	18.97	0.5	Pass
6	2437	18.98	19.03	18.95	0.5	Pass
11	2462	19.00	19.00	18.99	0.5	Pass

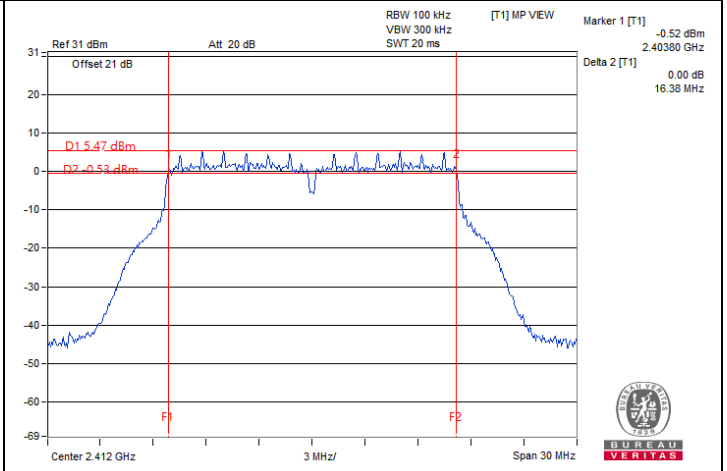
802.11ax (HE40) CDD

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)			Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2		
3	2422	37.53	36.81	37.32	0.5	Pass
6	2437	37.62	37.09	37.55	0.5	Pass
9	2452	37.57	37.07	37.08	0.5	Pass

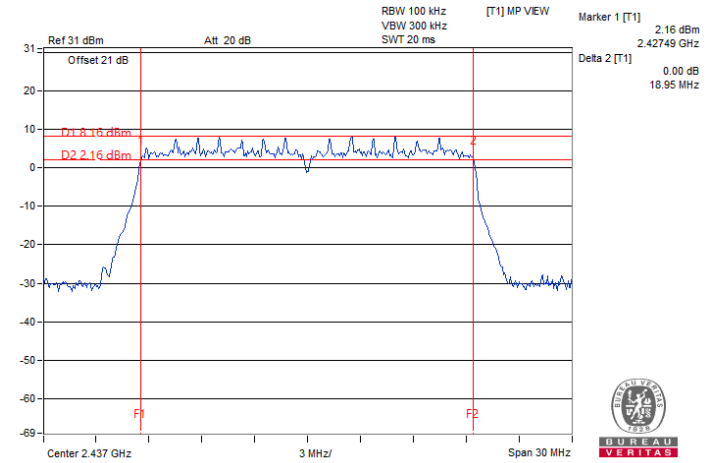
Spectrum Plot of Minimum Value



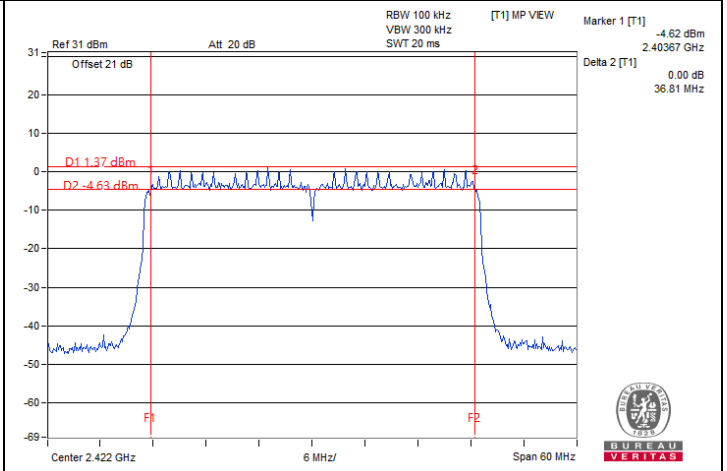
802.11b CDD / Chain1 : CH 1



802.11g CDD / Chain1 : CH 1



802.11ax (HE20) CDD / Chain2 : CH 6



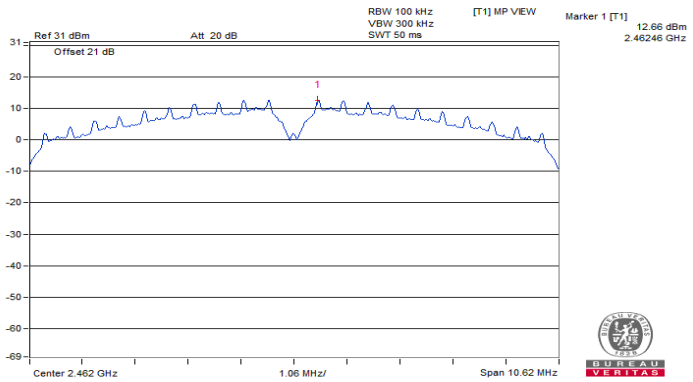
802.11ax (HE40) CDD / Chain1 : CH 3

7.4 Conducted Out of Band Emissions

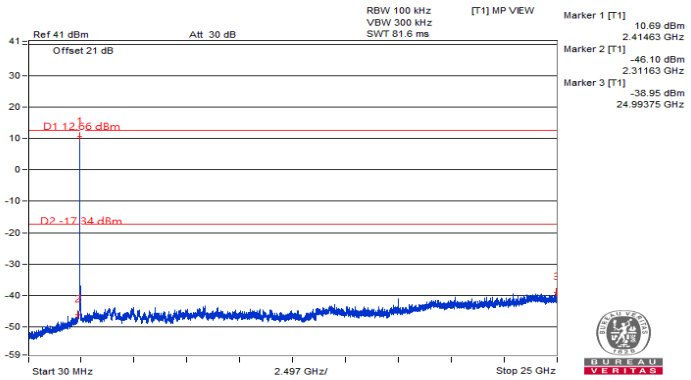
Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	John Peng

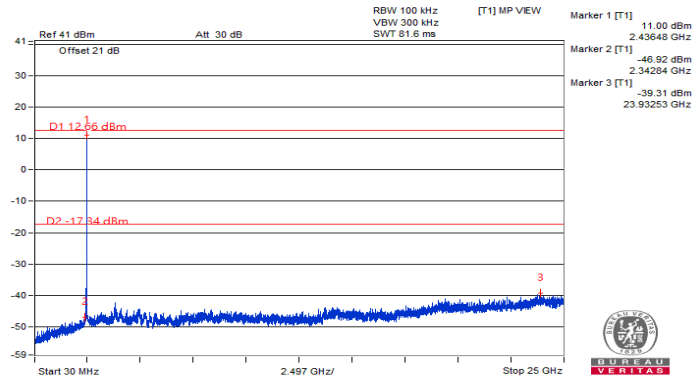
802.11b



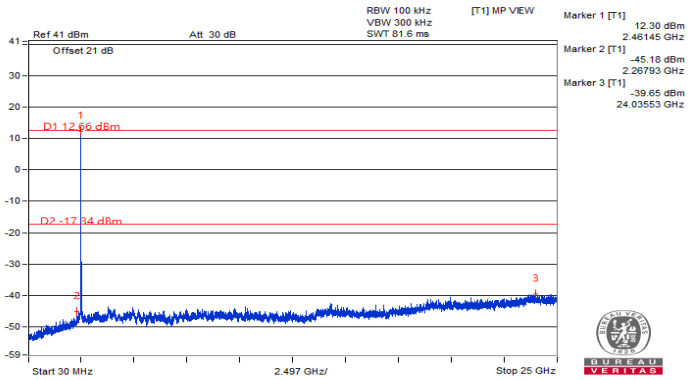
Maximum Reference Level



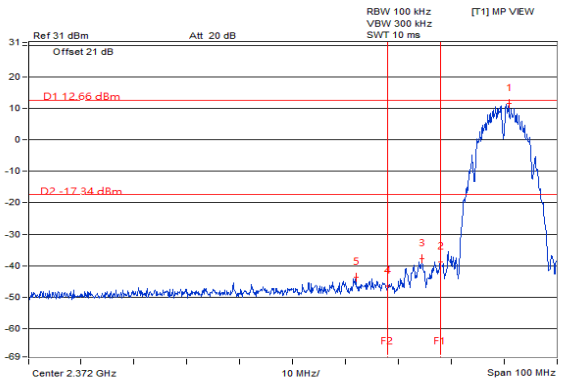
Chain 0 : CH 1



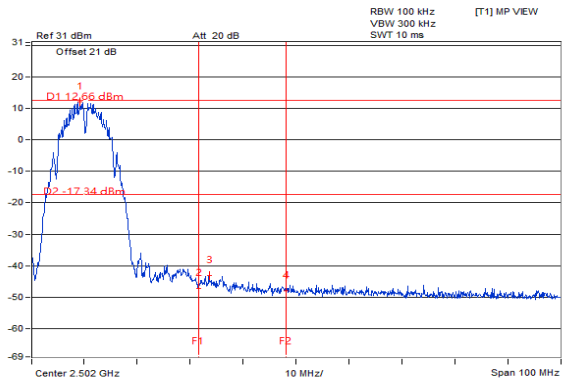
Chain 0 : CH 6



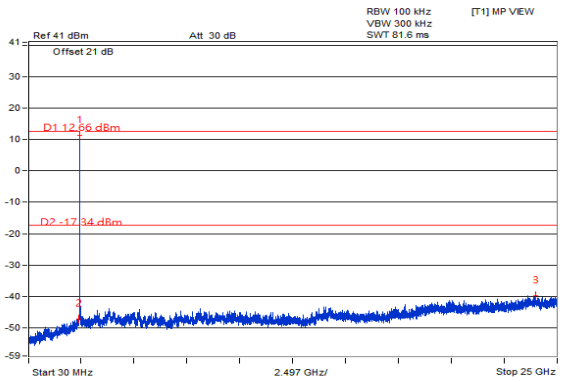
Chain 0 : CH 11



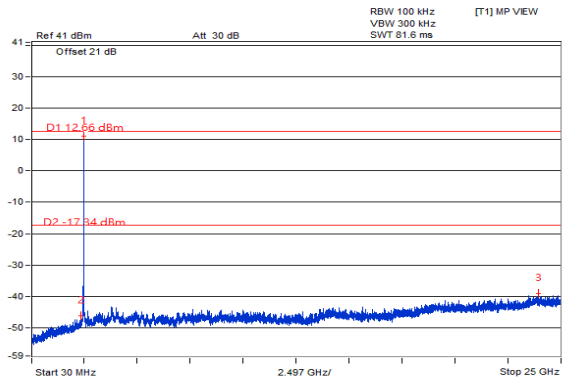
Chain 0 : CH 1 Band edge



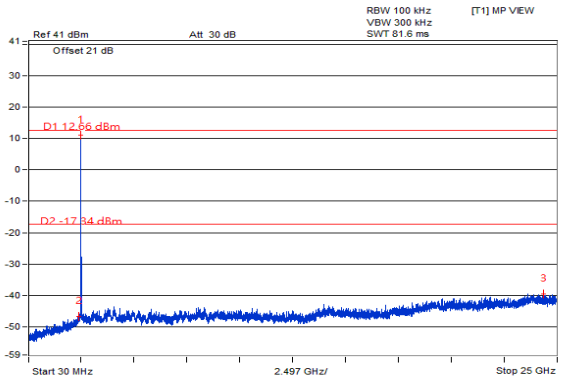
Chain 0 : CH 11 Band edge



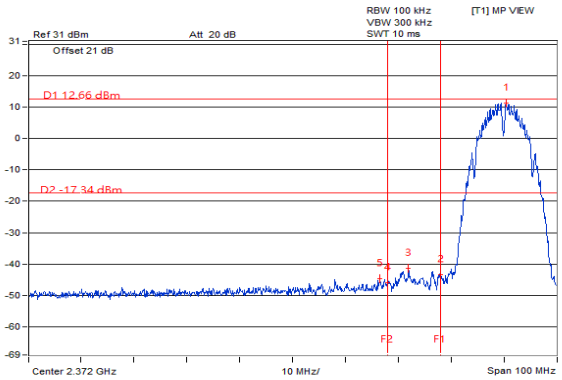
Chain 1 : CH 1



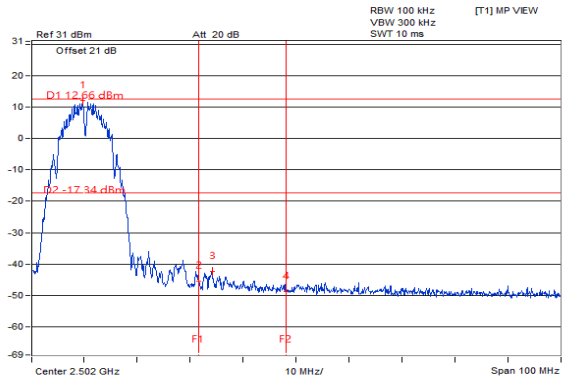
Chain 1 : CH 6



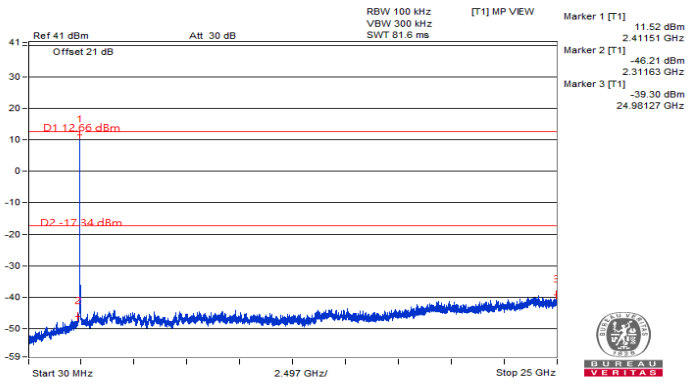
Chain 1 : CH 11



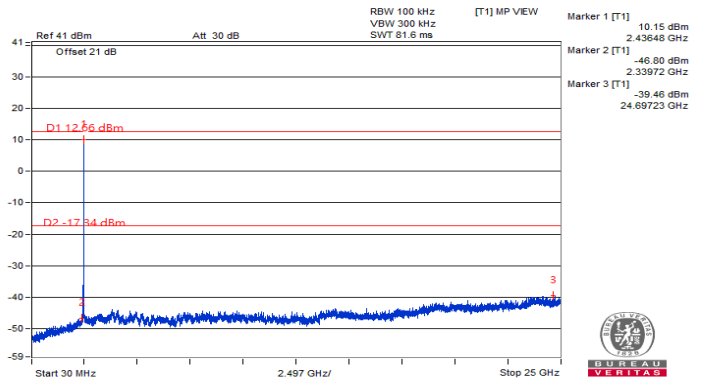
Chain 1 : CH 1 Band edge



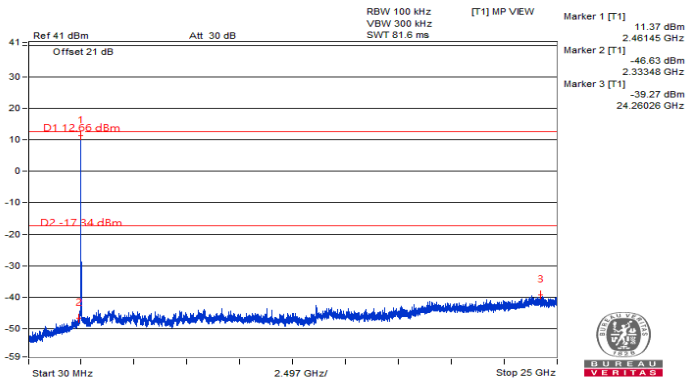
Chain 1 : CH 11 Band edge



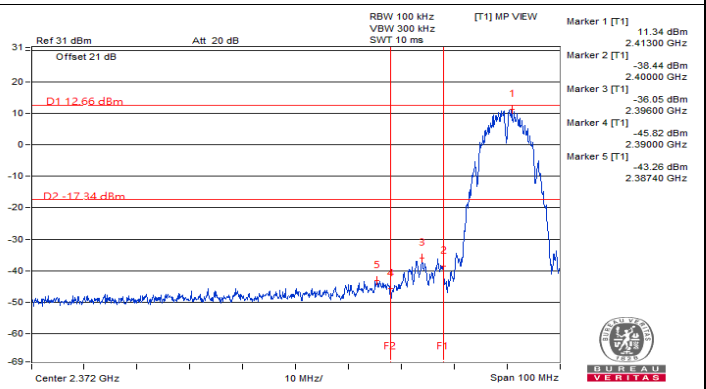
Chain 2 : CH 1



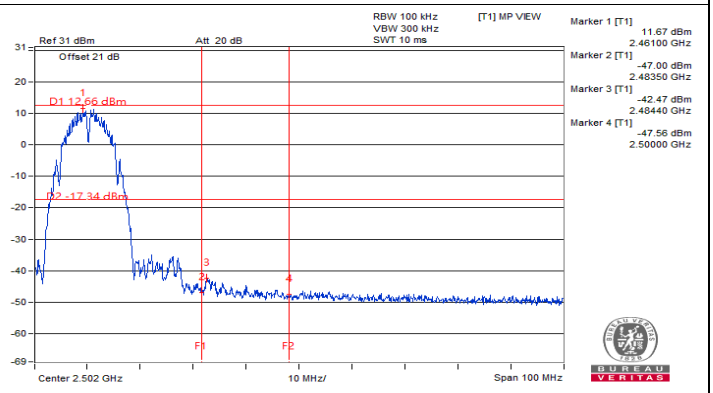
Chain 2 : CH 6



Chain 2 : CH 11

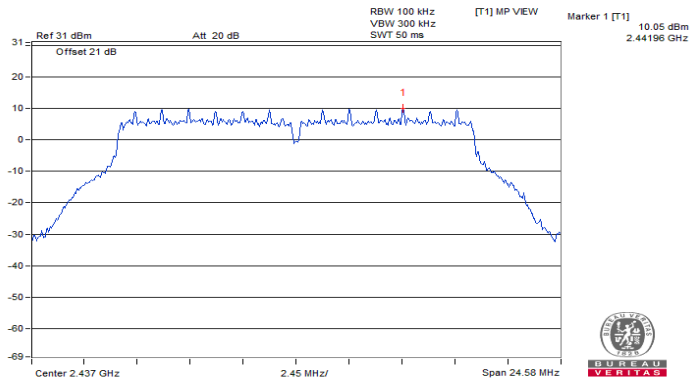


Chain 2 : CH 1 Band edge

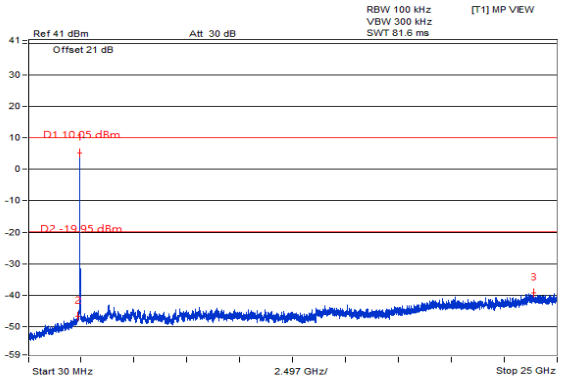


Chain 2 : CH 11 Band edge

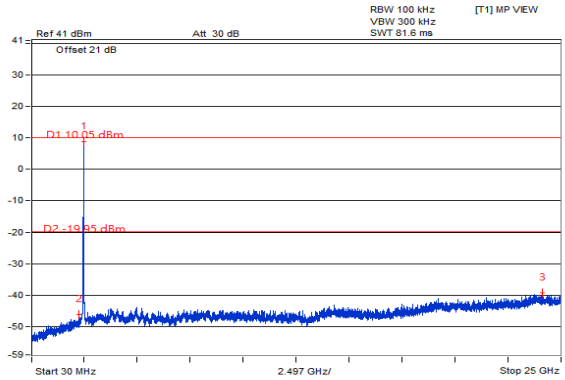
802.11g



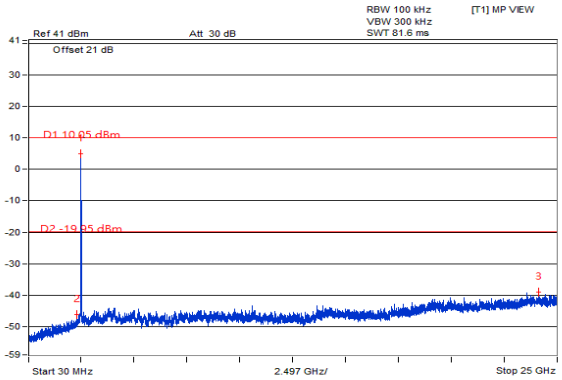
Maximum Reference Level



Chain 0 : CH 1



Chain 0 : CH 6



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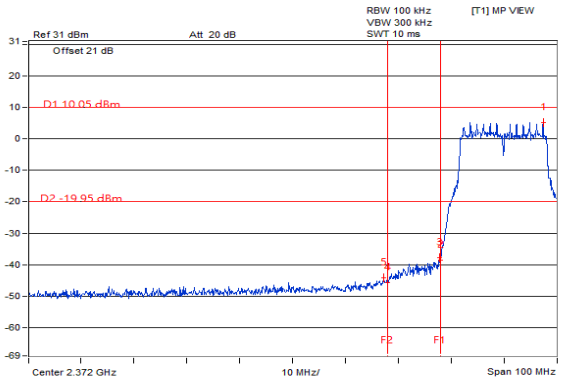
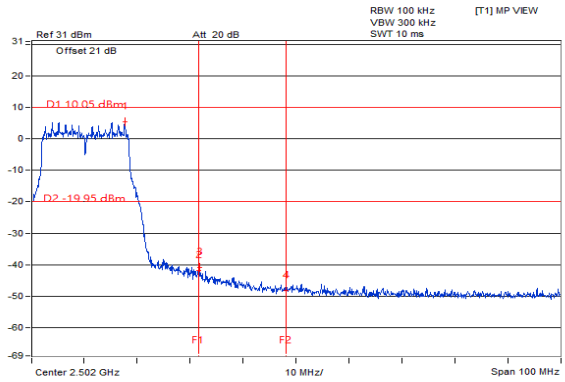
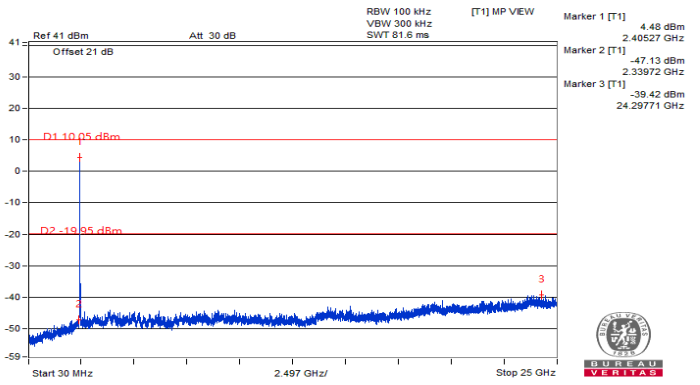


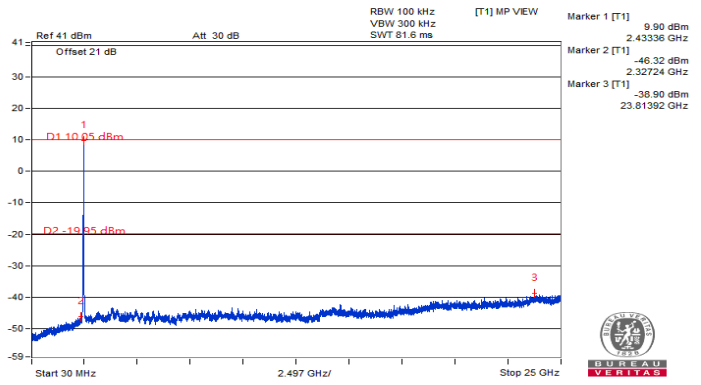
Chain 0 : CH 1 Band edge



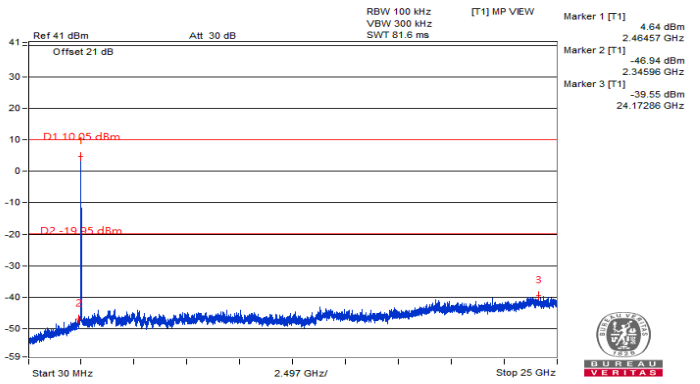
Chain 0 : CH 11 Band edge



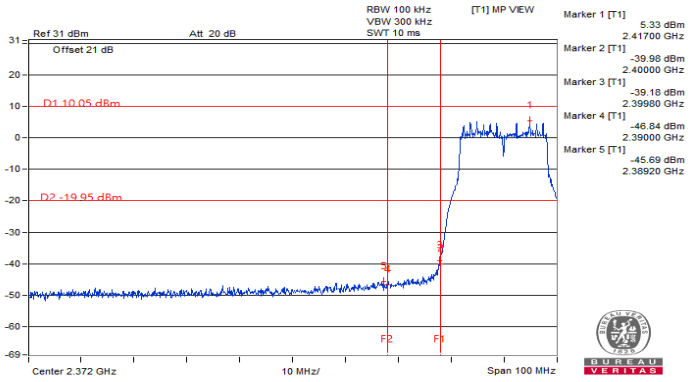
Chain 1 : CH 1



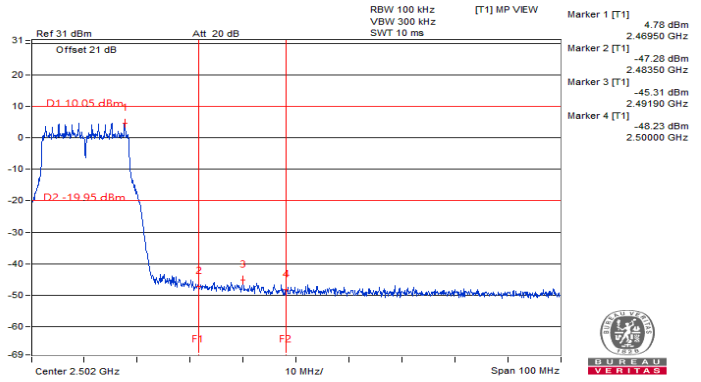
Chain 1 : CH 6



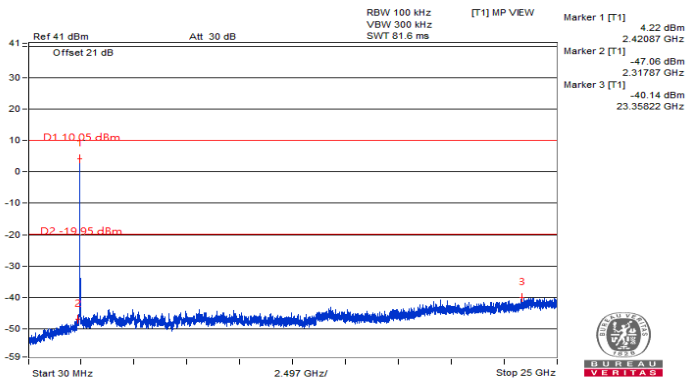
Chain 1 : CH 11



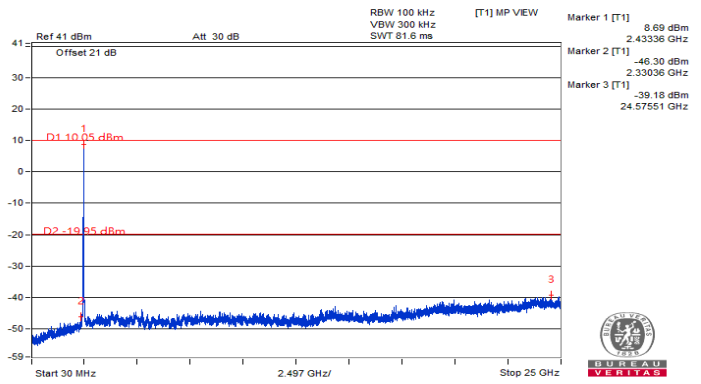
Chain 1 : CH 1 Band edge



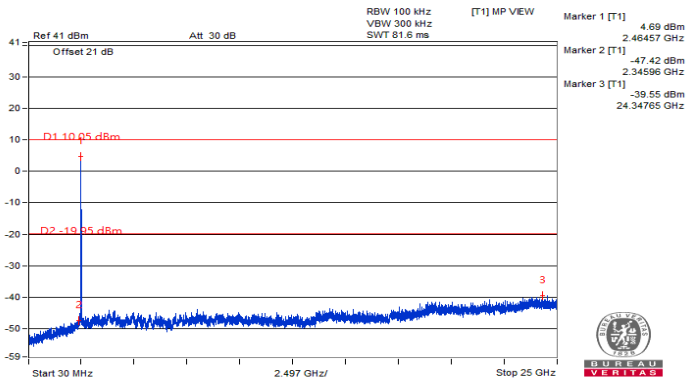
Chain 1 : CH 11 Band edge



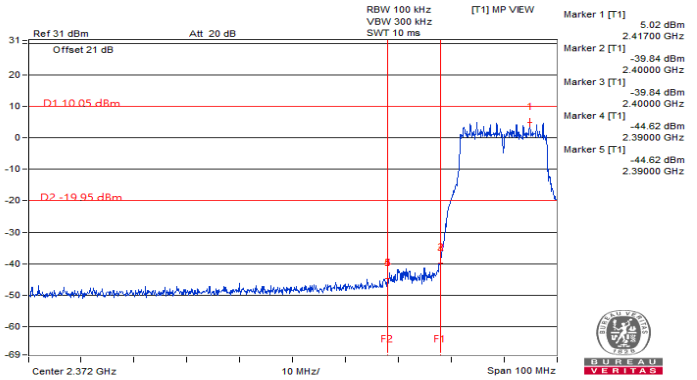
Chain 2 : CH 1



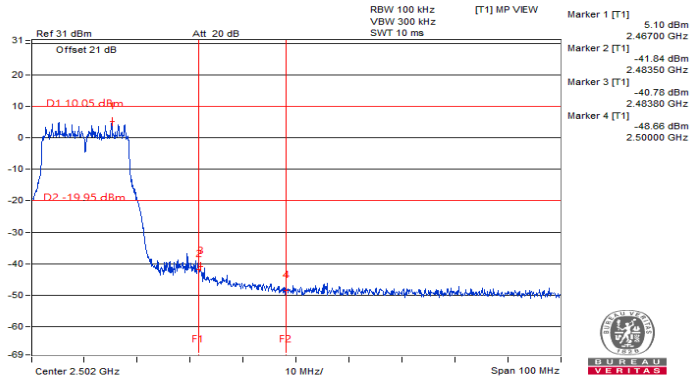
Chain 2 : CH 6



Chain 2 : CH 11

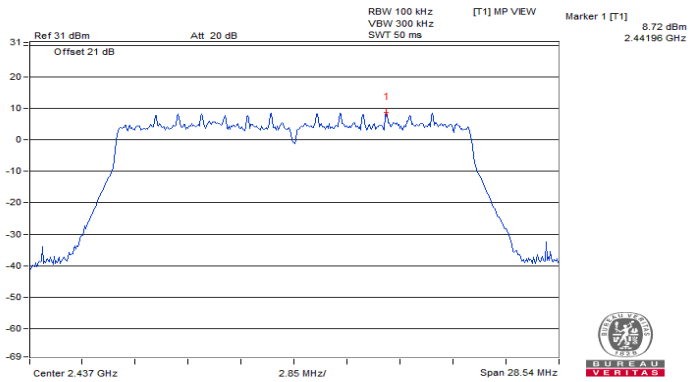


Chain 2 : CH 1 Band edge

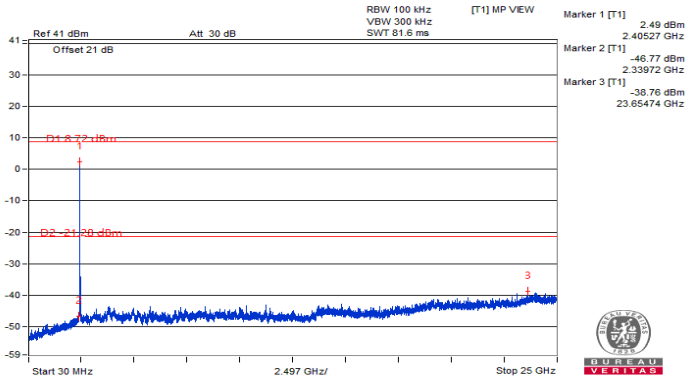


Chain 2 : CH 11 Band edge

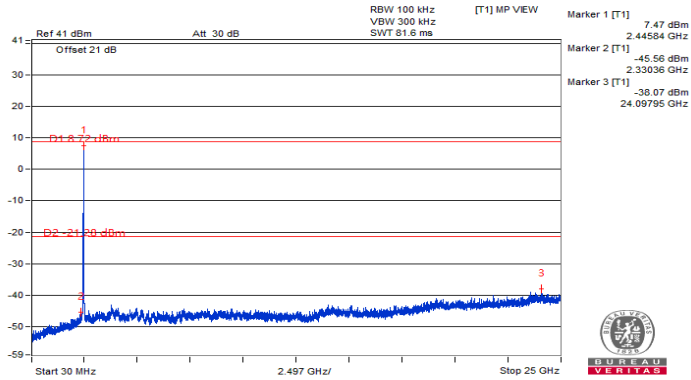
802.11ax (HE20)



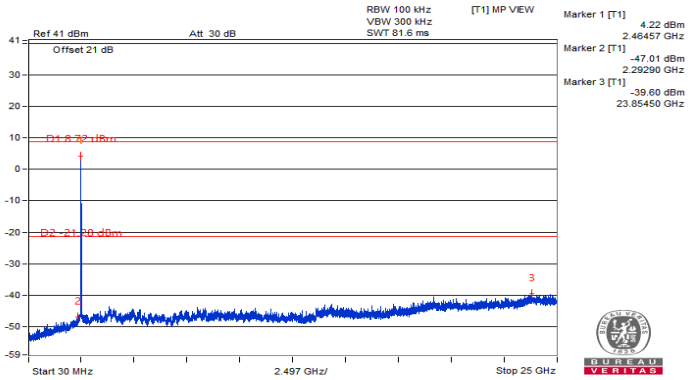
Maximum Reference Level



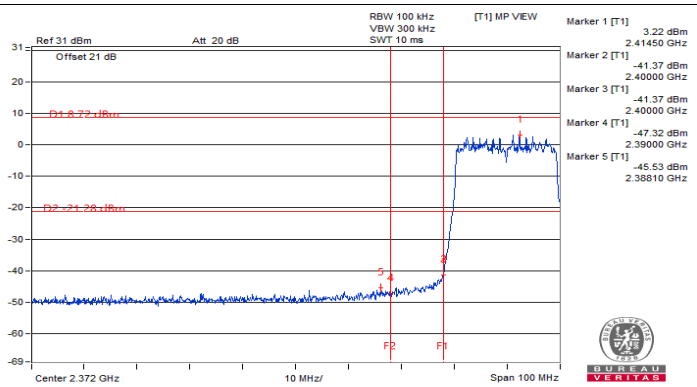
Chain 0 : CH 1



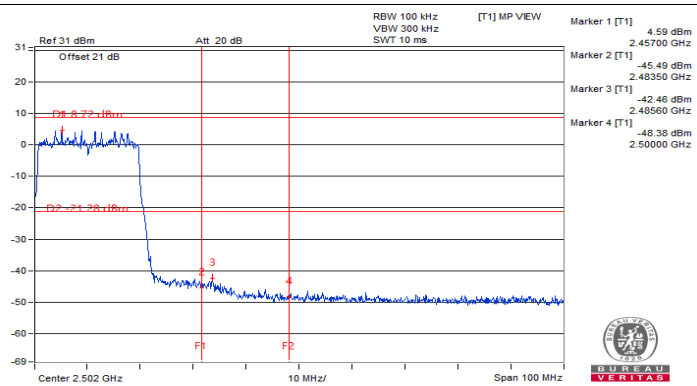
Chain 0 : CH 6



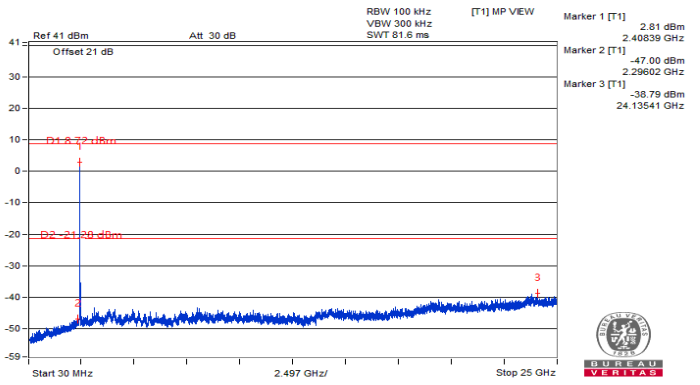
Chain 0 : CH 11



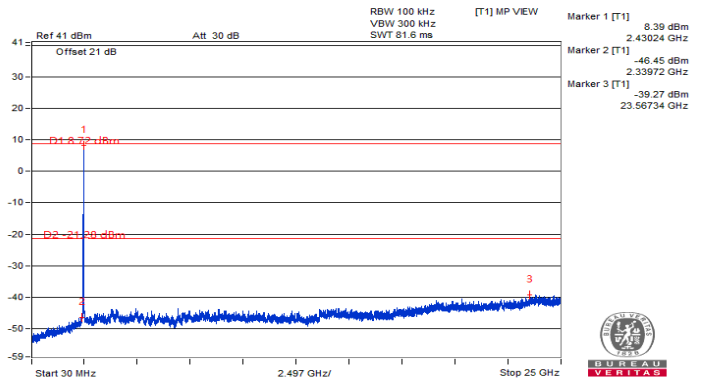
Chain 0 : CH 1 Band edge



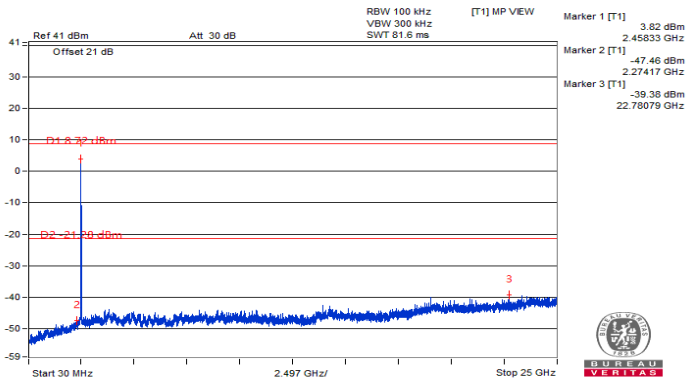
Chain 0 : CH 11 Band edge



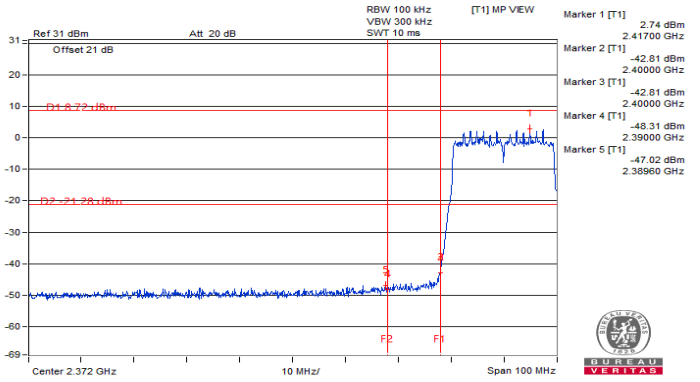
Chain 1 : CH 1



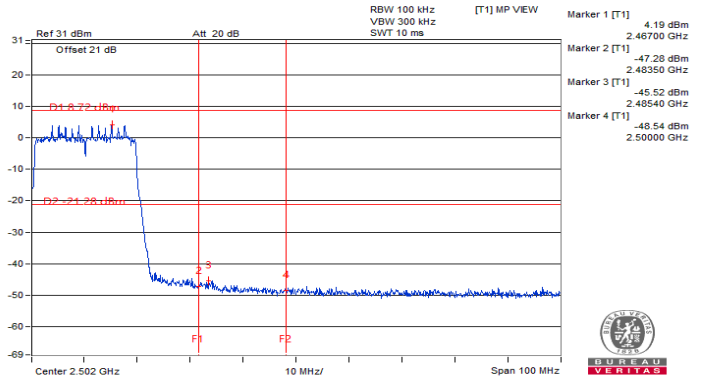
Chain 1 : CH 6



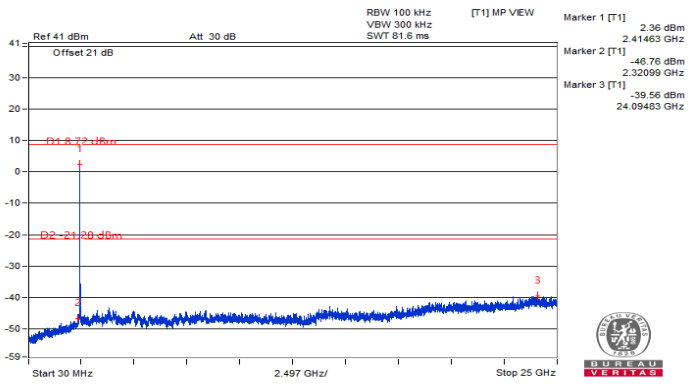
Chain 1 : CH 11



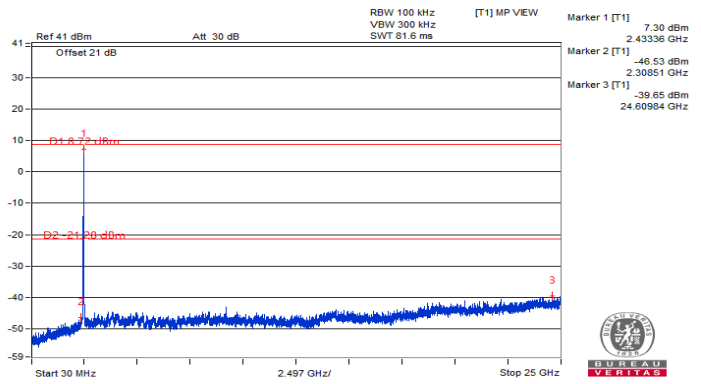
Chain 1 : CH 1 Band edge



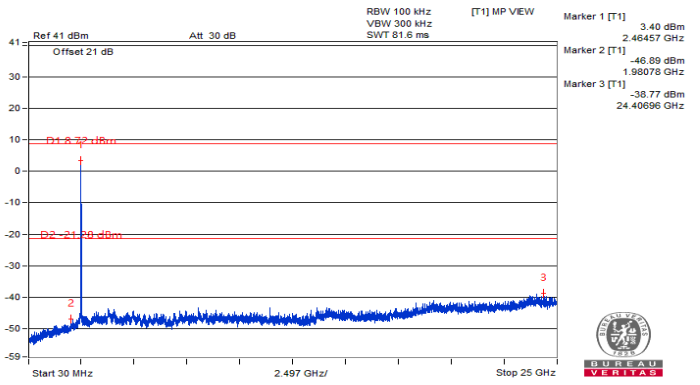
Chain 1 : CH 11 Band edge



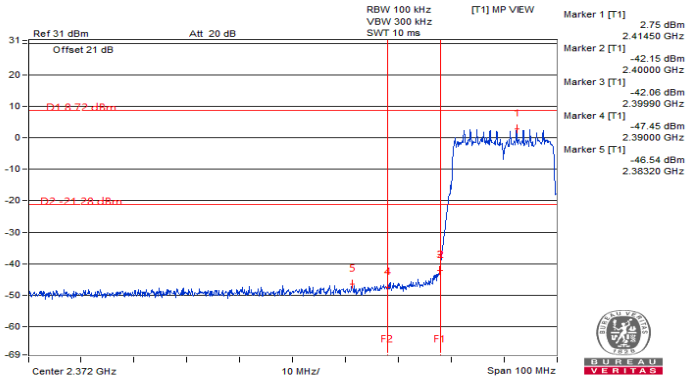
Chain 2 : CH 1



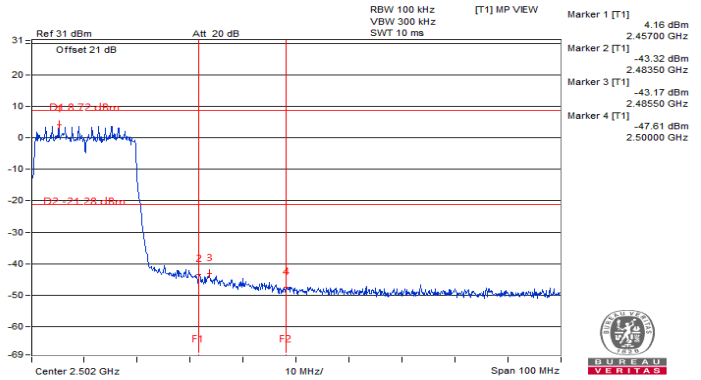
Chain 2 : CH 6



Chain 2 : CH 11

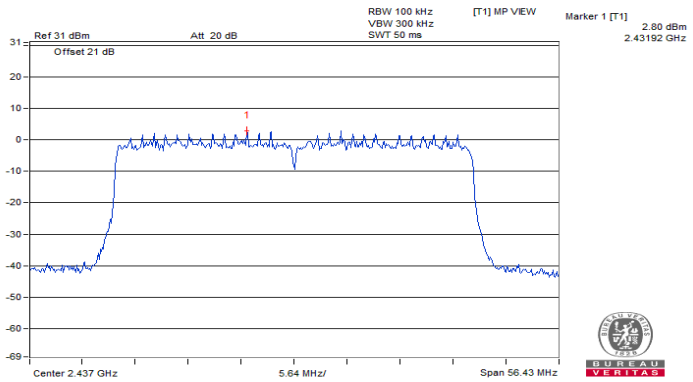


Chain 2 : CH 1 Band edge

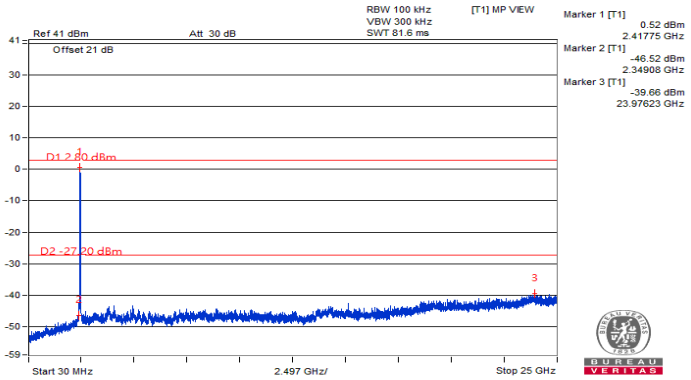


Chain 2 : CH 11 Band edge

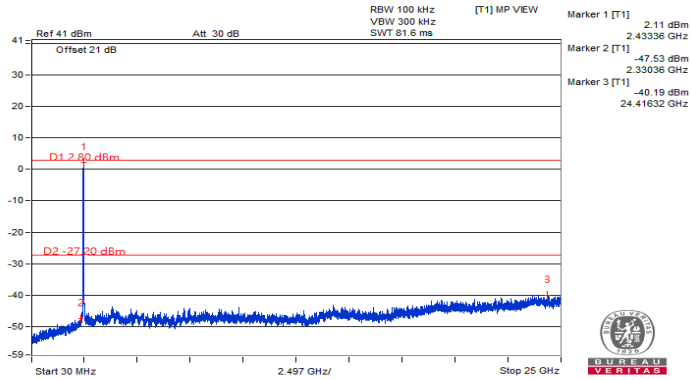
802.11ax (HE40)



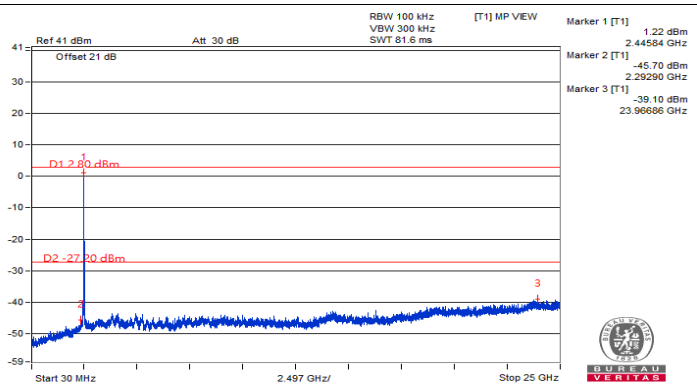
Maximum Reference Level



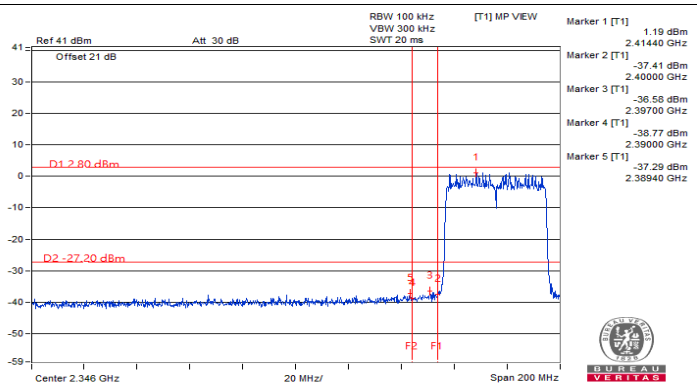
Chain 0 : CH 3



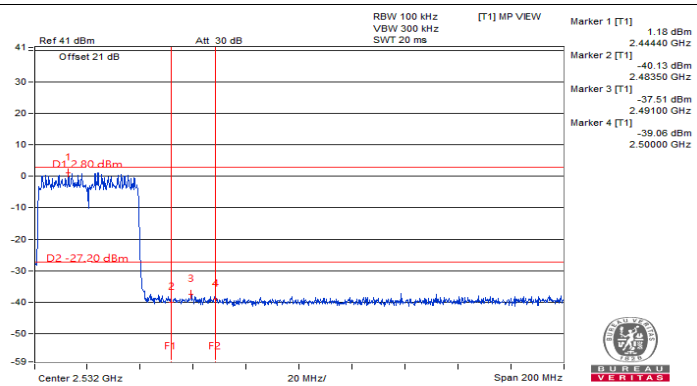
Chain 0 : CH 6



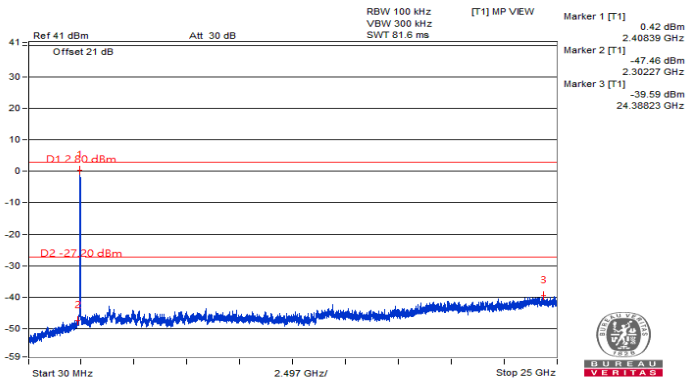
Chain 0 : CH 9



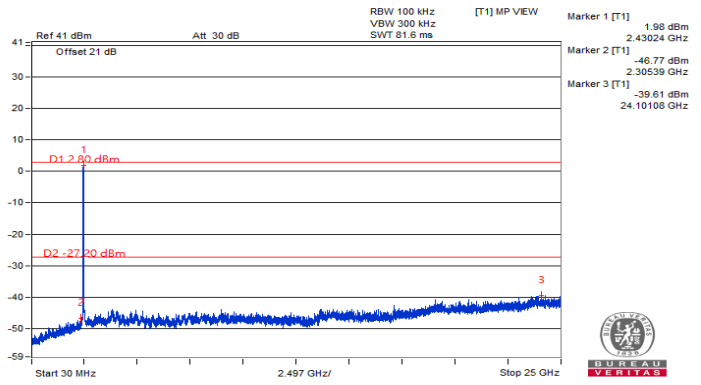
Chain 0 : CH 3 Band edge



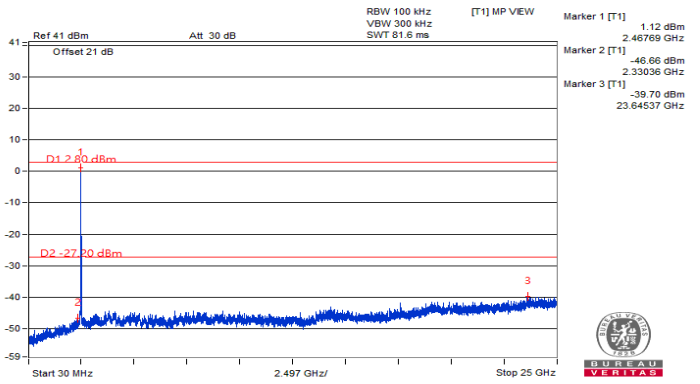
Chain 0 : CH 9 Band edge



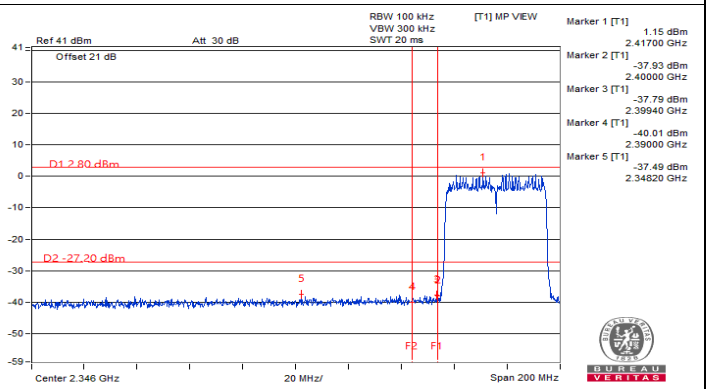
Chain 1 : CH 3



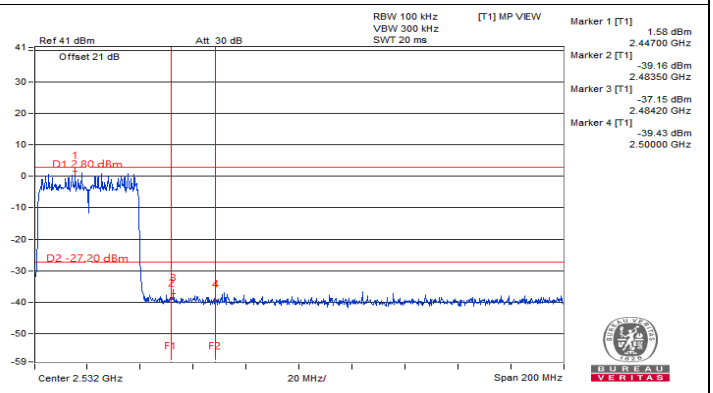
Chain 1 : CH 6



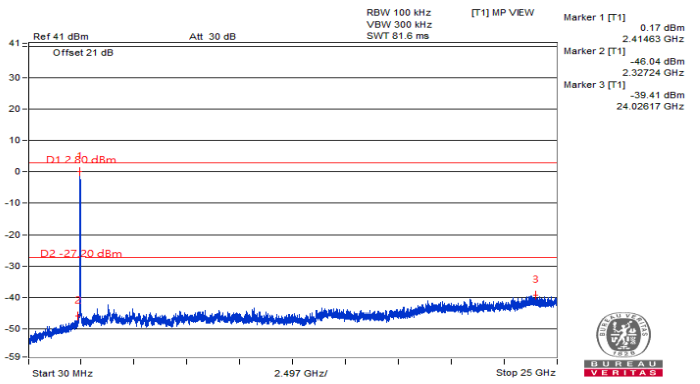
Chain 1 : CH 9



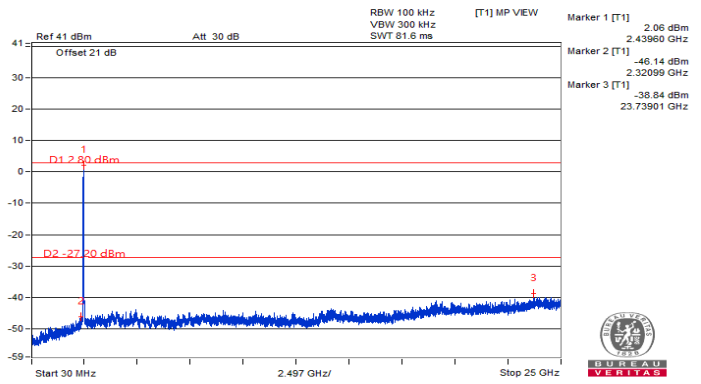
Chain 1 : CH 3 Band edge



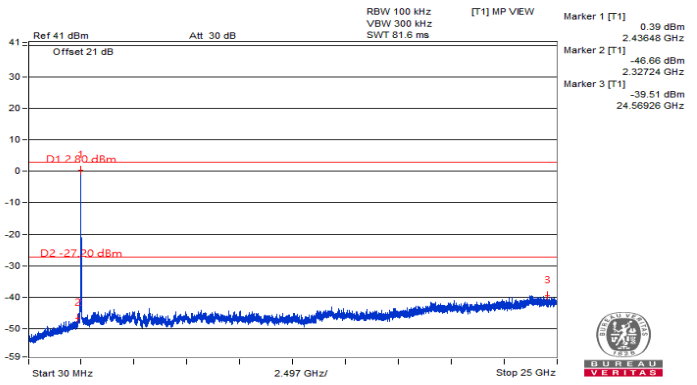
Chain 1 : CH 9 Band edge



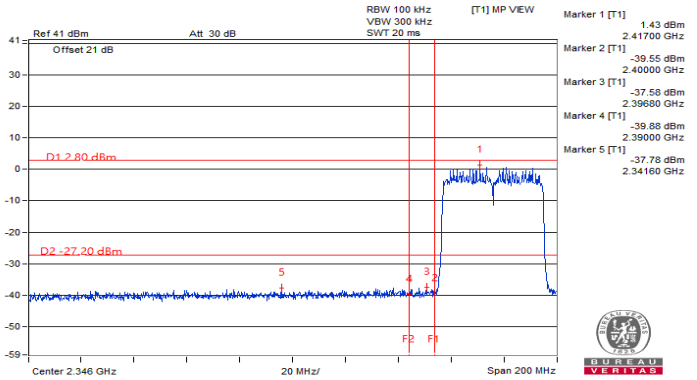
Chain 2 : CH 3



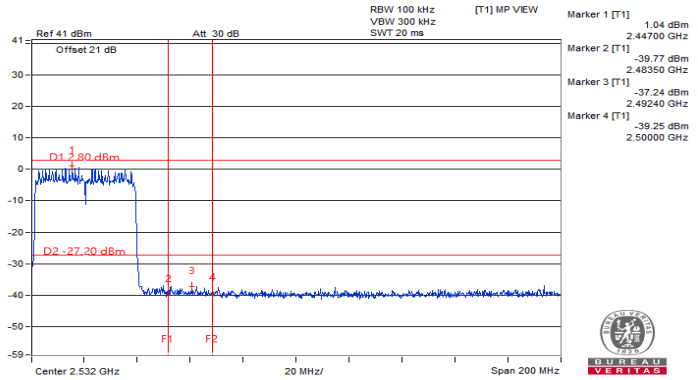
Chain 2 : CH 6



Chain 2 : CH 9



Chain 2 : CH 3 Band edge



Chain 2 : CH 9 Band edge

7.5 AC Power Conducted Emissions

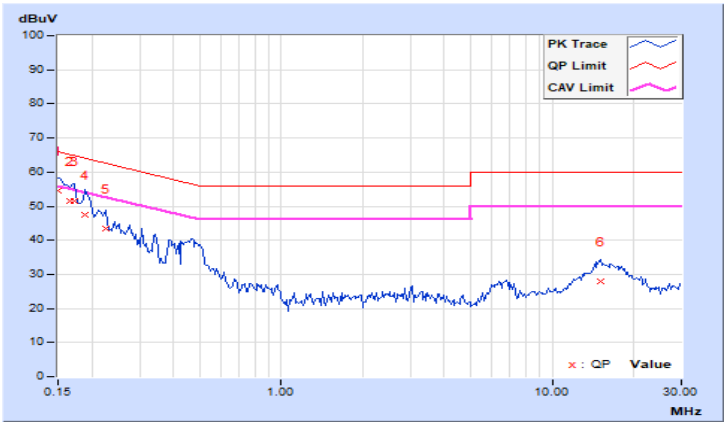
Mode A

RF Mode	TX 802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Ryan Du		

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	**0.15032**	**10.05**	**44.59**	**28.28**	**54.64**	**38.33**	**65.98**	**55.98**	**-11.34**	**-17.65**
2	0.16569	10.05	41.54	24.83	51.59	34.88	65.17	55.17	-13.58	-20.29
3	0.17356	10.05	41.57	25.13	51.62	35.18	64.79	54.79	-13.17	-19.61
4	0.18913	10.05	37.36	22.27	47.41	32.32	64.07	54.07	-16.66	-21.75
5	0.22429	10.05	33.27	18.51	43.32	28.56	62.66	52.66	-19.34	-24.10
6	15.04682	10.92	16.96	12.51	27.88	23.43	60.00	50.00	-32.12	-26.57

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

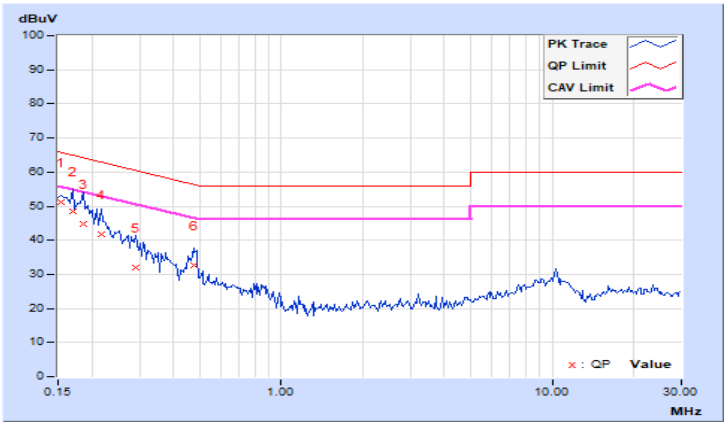


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Ryan Du		

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	0.15384	10.02	41.14	23.26	51.16	33.28	65.79	55.79	-14.63	-22.51
2	0.16942	10.02	38.49	19.86	48.51	29.88	64.99	54.99	-16.48	-25.11
3	0.18523	10.03	34.67	18.29	44.70	28.32	64.25	54.25	-19.55	-25.93
4	0.21653	10.03	31.81	14.12	41.84	24.15	62.95	52.95	-21.11	-28.80
5	0.29077	10.03	21.86	7.86	31.89	17.89	60.50	50.50	-28.61	-32.61
6	0.47434	10.04	22.69	15.62	32.73	25.66	56.44	46.44	-23.71	-20.78

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



7.6 Unwanted Emissions below 1 GHz

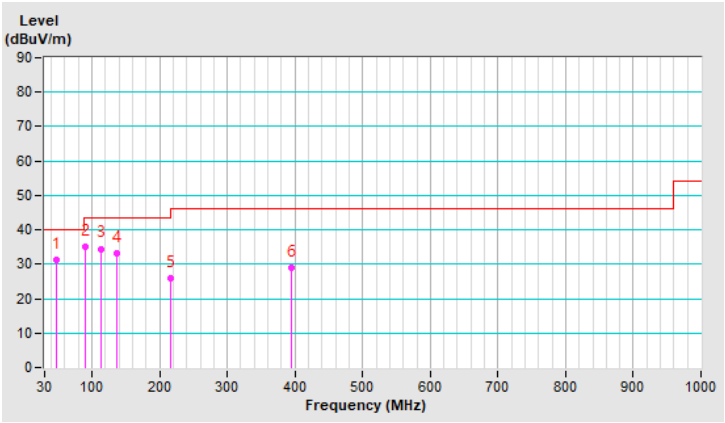
Mode A

RF Mode	TX 802.11ax (HE20)	**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, 70% RH
Tested By	Ryan Du		

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	48.34	31.4 QP	40.0	-8.6	2.00 H	12	39.6	-8.2
2	90.27	35.2 QP	43.5	-8.3	2.00 H	134	49.3	-14.1
3	112.79	34.5 QP	43.5	-9.0	1.50 H	259	45.2	-10.7
4	136.02	33.0 QP	43.5	-10.5	2.00 H	138	41.7	-8.7
5	215.53	26.0 QP	43.5	-17.5	2.00 H	108	37.1	-11.1
6	395.49	29.0 QP	46.0	-17.0	3.00 H	189	34.4	-5.4

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 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.

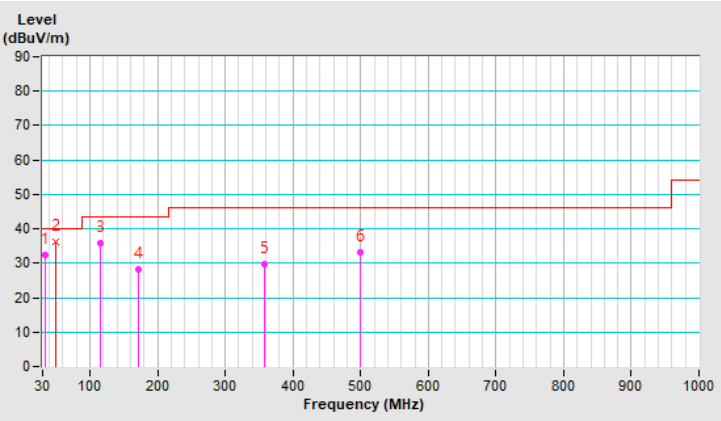


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	20°C, 70% RH
Tested By	Ryan Du		

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	33.68	32.5 QP	40.0	-7.5	1.00 V	293	41.9	-9.4
2	**50.02**	**36.2 QP**	**40.0**	**-3.8**	**1.00 V**	**47**	**44.4**	**-8.2**
3	116.02	35.7 QP	43.5	-7.8	1.50 V	258	46.1	-10.4
4	171.73	28.2 QP	43.5	-15.3	1.50 V	224	37.2	-9.0
5	357.43	29.6 QP	46.0	-16.4	2.00 V	268	35.9	-6.3
6	500.33	33.0 QP	46.0	-13.0	1.00 V	79	35.9	-2.9

Remarks:

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



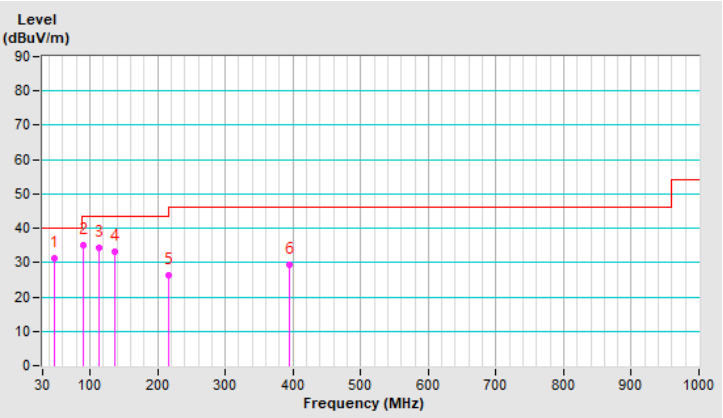
Mode B

RF Mode	TX 802.11ax (HE20)	**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, 70% RH
Tested By	Ryan Du		

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	48.28	31.3 QP	40.0	-8.7	2.00 H	35	39.5	-8.2
2	90.31	35.1 QP	43.5	-8.4	2.00 H	117	49.2	-14.1
3	112.76	34.4 QP	43.5	-9.1	1.50 H	247	45.1	-10.7
4	136.01	33.1 QP	43.5	-10.4	2.00 H	142	41.8	-8.7
5	215.48	26.2 QP	43.5	-17.3	2.00 H	131	37.3	-11.1
6	395.53	29.2 QP	46.0	-16.8	3.00 H	175	34.6	-5.4

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 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.

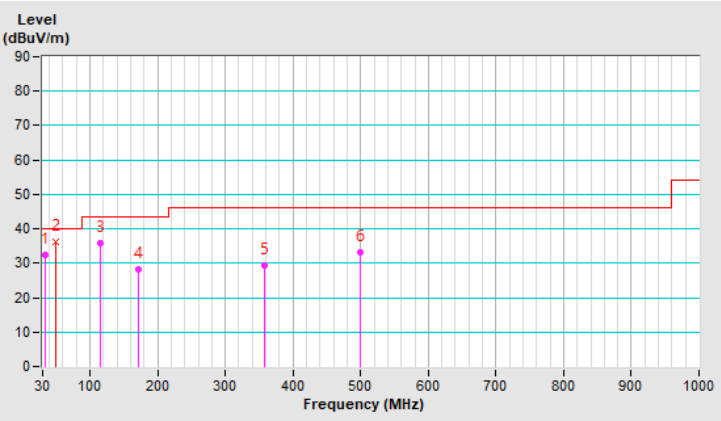


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	20°C, 70% RH
Tested By	Ryan Du		

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	33.63	32.4 QP	40.0	-7.6	1.00 V	275	41.8	-9.4
2	49.99	36.1 QP	40.0	-3.9	1.00 V	58	44.3	-8.2
3	116.01	35.8 QP	43.5	-7.7	1.50 V	264	46.2	-10.4
4	171.71	28.1 QP	43.5	-15.4	1.50 V	201	37.1	-9.0
5	357.39	29.5 QP	46.0	-16.5	2.00 V	293	35.8	-6.3
6	500.28	33.1 QP	46.0	-12.9	1.00 V	81	36.0	-2.9

Remarks:

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



7.7 Unwanted Emissions above 1 GHz

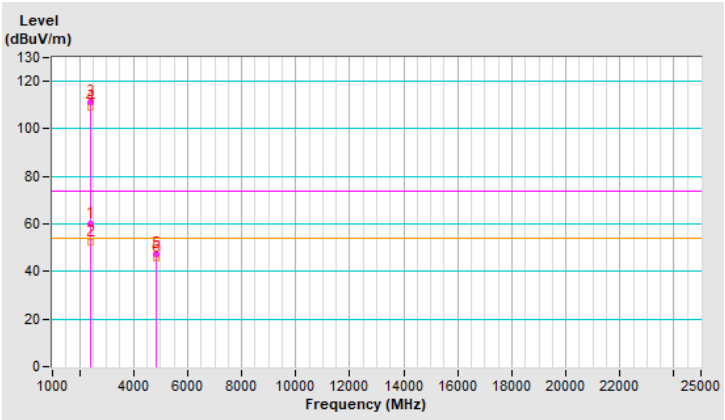
Mode A

RF Mode	TX 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**	25°C, 65% RH
Tested By	Nelson Teng		

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	2389.04	60.0 PK	74.0	-14.0	2.50 H	56	60.8	-0.8
2	2389.04	52.5 AV	54.0	-1.5	2.50 H	56	53.3	-0.8
3	*2412.00	111.3 PK			2.50 H	56	112.1	-0.8
4	*2412.00	108.8 AV			2.50 H	56	109.6	-0.8
5	4824.00	47.4 PK	74.0	-26.6	2.02 H	35	43.5	3.9
6	4824.00	45.5 AV	54.0	-8.5	2.02 H	35	41.6	3.9

Remarks:

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

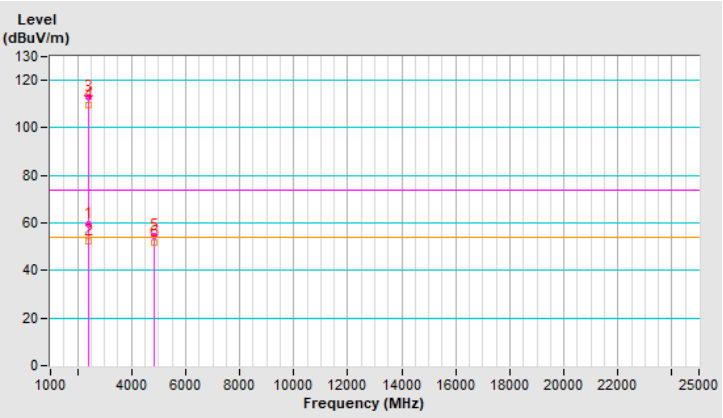


RF Mode	TX 802.11b	Channel	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

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	2389.21	59.4 PK	74.0	-14.6	2.68 V	67	60.2	-0.8
2	2389.21	52.1 AV	54.0	-1.9	2.68 V	67	52.9	-0.8
3	*2412.00	113.0 PK			2.68 V	67	113.8	-0.8
4	*2412.00	109.8 AV			2.68 V	67	110.6	-0.8
5	4824.00	54.4 PK	74.0	-19.6	1.80 V	135	50.5	3.9
6	4824.00	51.8 AV	54.0	-2.2	1.80 V	135	47.9	3.9

Remarks:

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

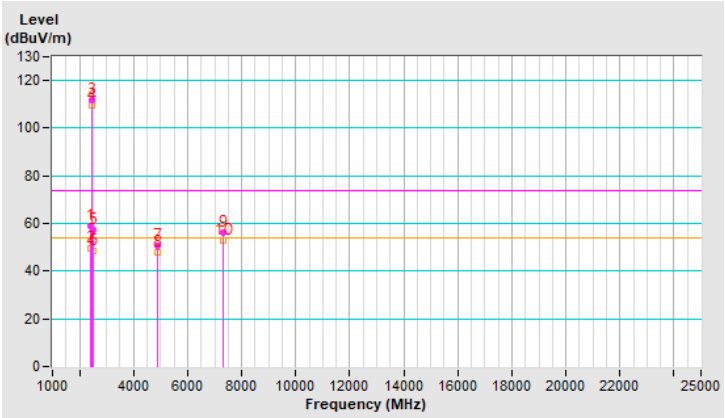


RF Mode	TX 802.11b	Channel	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.0 PK	74.0	-15.0	2.42 H	56	59.8	-0.8
2	2390.00	49.7 AV	54.0	-4.3	2.42 H	56	50.5	-0.8
3	*2437.00	112.0 PK			2.42 H	56	112.8	-0.8
4	*2437.00	109.5 AV			2.42 H	56	110.3	-0.8
5	2483.50	57.5 PK	74.0	-16.5	2.42 H	56	58.5	-1.0
6	2483.50	48.4 AV	54.0	-5.6	2.42 H	56	49.4	-1.0
7	4874.00	50.5 PK	74.0	-23.5	1.70 H	145	46.5	4.0
8	4874.00	48.0 AV	54.0	-6.0	1.70 H	145	44.0	4.0
9	7311.00	56.4 PK	74.0	-17.6	1.05 H	113	46.3	10.1
10	7311.00	52.7 AV	54.0	-1.3	1.05 H	113	42.6	10.1

Remarks:

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

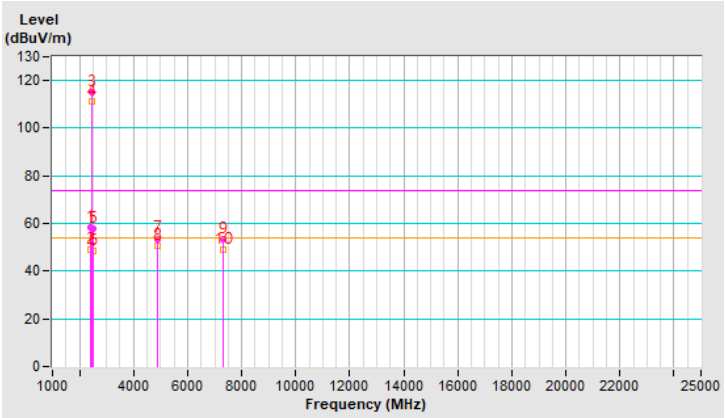


RF Mode	TX 802.11b	**Channel**	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	2390.00	58.6 PK	74.0	-15.4	2.68 V	46	59.4	-0.8
2	2390.00	49.2 AV	54.0	-4.8	2.68 V	46	50.0	-0.8
3	*2437.00	115.0 PK			2.68 V	46	115.8	-0.8
4	*2437.00	111.3 AV			2.68 V	46	112.1	-0.8
5	2483.50	57.7 PK	74.0	-16.3	2.68 V	46	58.7	-1.0
6	2483.50	48.5 AV	54.0	-5.5	2.68 V	46	49.5	-1.0
7	4874.00	53.7 PK	74.0	-20.3	1.69 V	121	49.7	4.0
8	4874.00	50.9 AV	54.0	-3.1	1.69 V	121	46.9	4.0
9	7311.00	53.4 PK	74.0	-20.6	1.66 V	326	43.3	10.1
10	7311.00	49.0 AV	54.0	-5.0	1.66 V	326	38.9	10.1

Remarks:

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

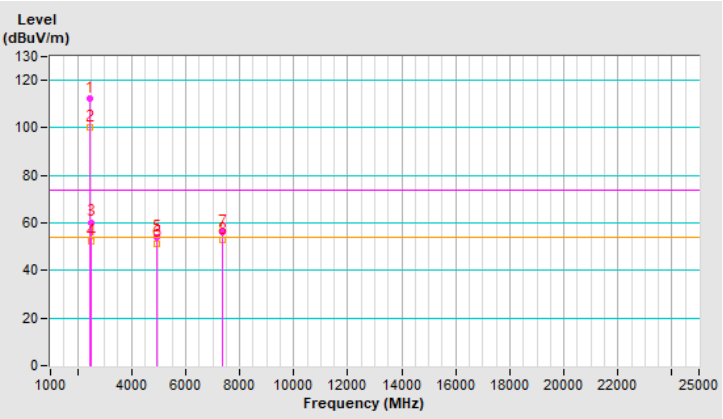


RF Mode	TX 802.11b	Channel	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

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	112.5 PK			1.00 H	238	113.4	-0.9
2	*2462.00	100.0 AV			1.00 H	238	100.9	-0.9
3	2483.50	60.3 PK	74.0	-13.7	1.00 H	238	61.3	-1.0
4	2483.50	52.2 AV	54.0	-1.8	1.00 H	238	53.2	-1.0
5	4924.00	53.8 PK	74.0	-20.2	1.47 H	157	49.8	4.0
6	4924.00	51.5 AV	54.0	-2.5	1.47 H	157	47.5	4.0
7	7386.00	56.4 PK	74.0	-17.6	1.26 H	11	46.2	10.2
8	7386.00	52.9 AV	54.0	-1.1	1.26 H	11	42.7	10.2

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.

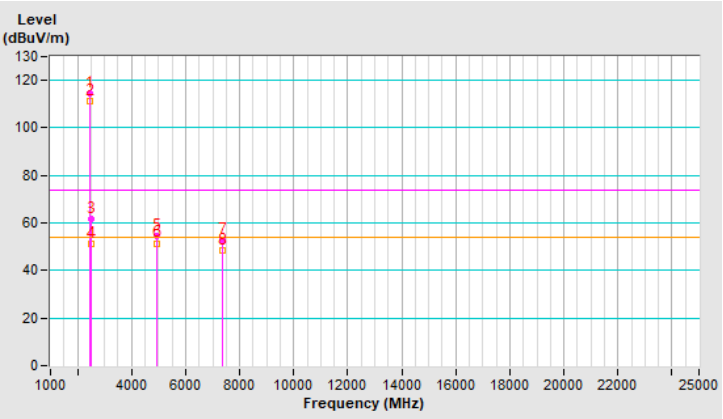


RF Mode	TX 802.11b	Channel	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	114.4 PK			2.57 V	342	115.3	-0.9
2	*2462.00	111.5 AV			2.57 V	342	112.4	-0.9
3	2484.78	61.7 PK	74.0	-12.3	2.57 V	342	62.7	-1.0
4	2484.78	51.2 AV	54.0	-2.8	2.57 V	342	52.2	-1.0
5	4924.00	54.5 PK	74.0	-19.5	1.69 V	119	50.5	4.0
6	4924.00	51.5 AV	54.0	-2.5	1.69 V	119	47.5	4.0
7	7386.00	53.0 PK	74.0	-21.0	1.58 V	320	42.8	10.2
8	7386.00	48.4 AV	54.0	-5.6	1.58 V	320	38.2	10.2

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.

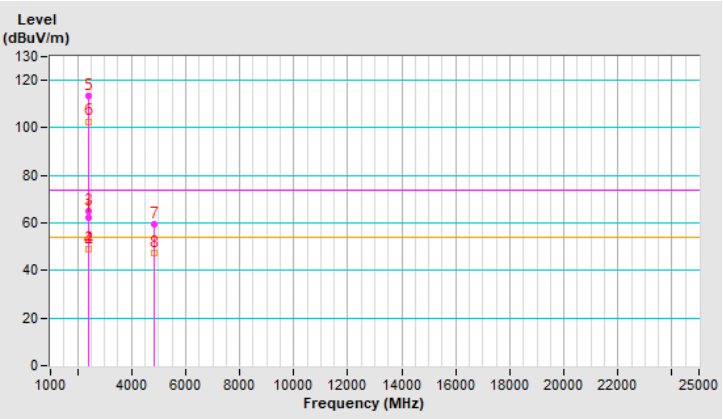


RF Mode	TX 802.11g	**Channel**	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	2387.58	62.2 PK	74.0	-11.8	2.51 H	68	63.0	-0.8
2	2387.58	49.2 AV	54.0	-4.8	2.51 H	68	50.0	-0.8
3	2390.00	65.1 PK	74.0	-8.9	2.51 H	68	65.9	-0.8
4	2390.00	48.8 AV	54.0	-5.2	2.51 H	68	49.6	-0.8
5	*2412.00	113.2 PK			2.51 H	68	114.0	-0.8
6	*2412.00	102.7 AV			2.51 H	68	103.5	-0.8
7	4824.00	59.4 PK	74.0	-14.6	1.61 H	188	55.5	3.9
8	4824.00	47.4 AV	54.0	-6.6	1.61 H	188	43.5	3.9

Remarks:

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

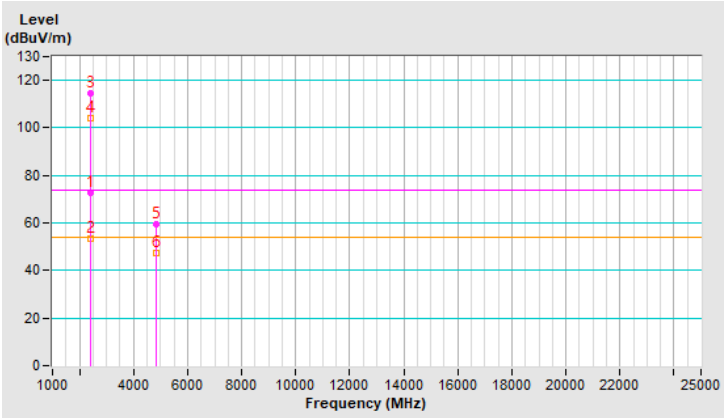


RF Mode	TX 802.11g	**Channel**	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	72.9 PK	74.0	-1.1	2.57 V	28	73.7	-0.8
2	**2390.00**	**53.6 AV**	**54.0**	**-0.4**	**2.57 V**	**28**	**54.4**	**-0.8**
3	*2412.00	114.7 PK			2.57 V	28	115.5	-0.8
4	*2412.00	103.9 AV			2.57 V	28	104.7	-0.8
5	4824.00	59.6 PK	74.0	-14.4	1.87 V	94	55.7	3.9
6	4824.00	47.2 AV	54.0	-6.8	1.87 V	94	43.3	3.9

Remarks:

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

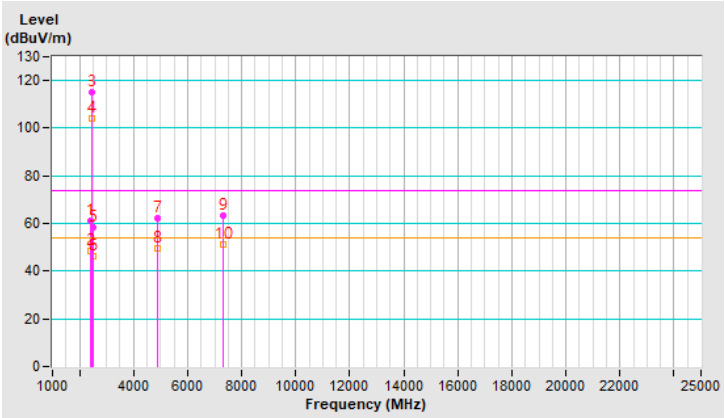


RF Mode	TX 802.11g	**Channel**	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	61.2 PK	74.0	-12.8	1.09 H	218	62.0	-0.8
2	2390.00	48.6 AV	54.0	-5.4	1.09 H	218	49.4	-0.8
3	*2437.00	115.2 PK			1.09 H	218	116.0	-0.8
4	*2437.00	104.1 AV			1.09 H	218	104.9	-0.8
5	2483.50	58.3 PK	74.0	-15.7	1.09 H	218	59.3	-1.0
6	2483.50	46.1 AV	54.0	-7.9	1.09 H	218	47.1	-1.0
7	4874.00	62.2 PK	74.0	-11.8	1.67 H	153	58.2	4.0
8	4874.00	49.7 AV	54.0	-4.3	1.67 H	153	45.7	4.0
9	7311.00	63.5 PK	74.0	-10.5	1.55 H	301	53.4	10.1
10	7311.00	51.2 AV	54.0	-2.8	1.55 H	301	41.1	10.1

Remarks:

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

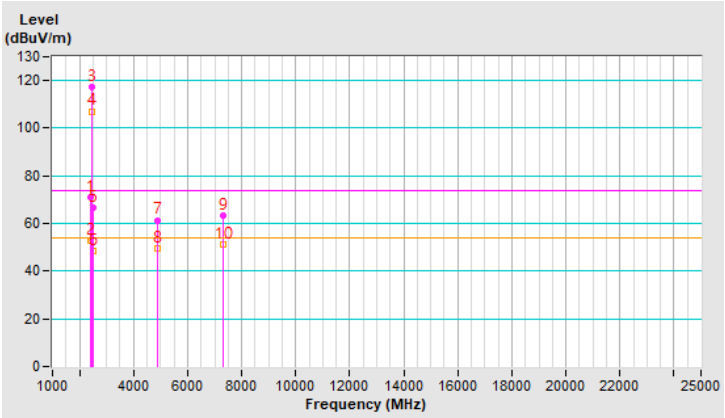


RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

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	70.8 PK	74.0	-3.2	2.03 V	343	71.6	-0.8
2	2390.00	53.1 AV	54.0	-0.9	2.03 V	343	53.9	-0.8
3	*2437.00	117.4 PK			2.03 V	343	118.2	-0.8
4	*2437.00	107.1 AV			2.03 V	343	107.9	-0.8
5	2483.50	66.8 PK	74.0	-7.2	2.03 V	343	67.8	-1.0
6	2483.50	48.5 AV	54.0	-5.5	2.03 V	343	49.5	-1.0
7	4874.00	61.4 PK	74.0	-12.6	1.80 V	96	57.4	4.0
8	4874.00	49.4 AV	54.0	-4.6	1.80 V	96	45.4	4.0
9	7311.00	63.4 PK	74.0	-10.6	1.61 V	317	53.3	10.1
10	7311.00	51.2 AV	54.0	-2.8	1.61 V	317	41.1	10.1

Remarks:

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

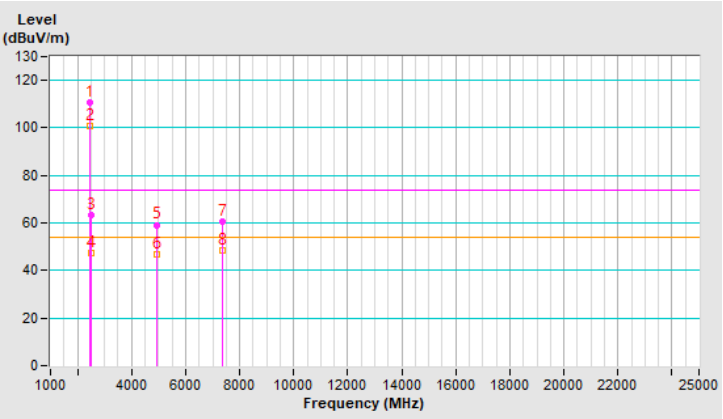


RF Mode	TX 802.11g	**Channel**	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	110.7 PK			1.02 H	230	111.6	-0.9
2	*2462.00	100.7 AV			1.02 H	230	101.6	-0.9
3	2483.50	63.5 PK	74.0	-10.5	1.02 H	230	64.5	-1.0
4	2483.50	47.3 AV	54.0	-6.7	1.02 H	230	48.3	-1.0
5	4924.00	59.2 PK	74.0	-14.8	1.63 H	177	55.2	4.0
6	4924.00	47.0 AV	54.0	-7.0	1.63 H	177	43.0	4.0
7	7386.00	60.7 PK	74.0	-13.3	1.52 H	341	50.5	10.2
8	7386.00	48.5 AV	54.0	-5.5	1.52 H	341	38.3	10.2

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.

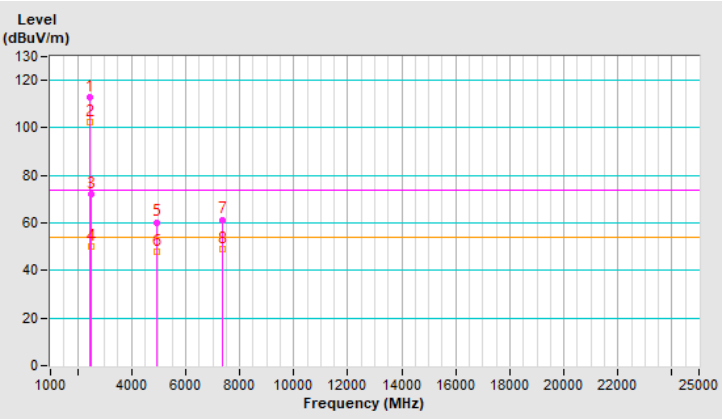


RF Mode	TX 802.11g	**Channel**	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	112.8 PK			2.34 V	25	113.7	-0.9
2	*2462.00	102.5 AV			2.34 V	25	103.4	-0.9
3	2483.50	72.1 PK	74.0	-1.9	2.34 V	25	73.1	-1.0
4	2483.50	50.1 AV	54.0	-3.9	2.34 V	25	51.1	-1.0
5	4924.00	60.3 PK	74.0	-13.7	1.77 V	87	56.3	4.0
6	4924.00	47.9 AV	54.0	-6.1	1.77 V	87	43.9	4.0
7	7386.00	61.4 PK	74.0	-12.6	1.70 V	308	51.2	10.2
8	7386.00	49.0 AV	54.0	-5.0	1.70 V	308	38.8	10.2

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.

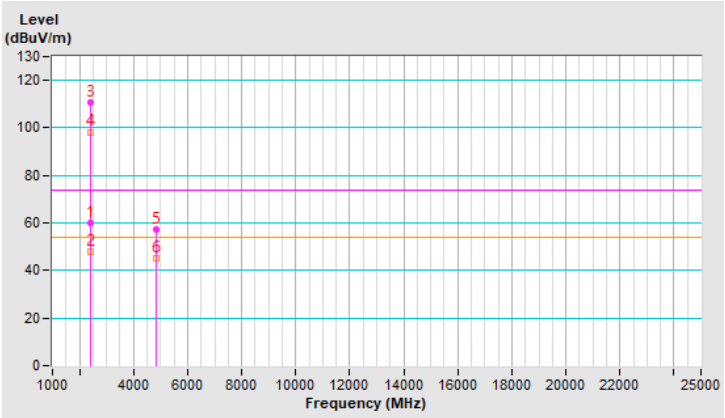


RF Mode	TX 802.11ax (HE20)	Channel	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.9 PK	74.0	-14.1	2.18 H	73	60.7	-0.8
2	2390.00	48.0 AV	54.0	-6.0	2.18 H	73	48.8	-0.8
3	*2412.00	110.7 PK			2.18 H	73	111.5	-0.8
4	*2412.00	98.3 AV			2.18 H	73	99.1	-0.8
5	4824.00	57.3 PK	74.0	-16.7	1.64 H	165	53.4	3.9
6	4824.00	45.2 AV	54.0	-8.8	1.64 H	165	41.3	3.9

Remarks:

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

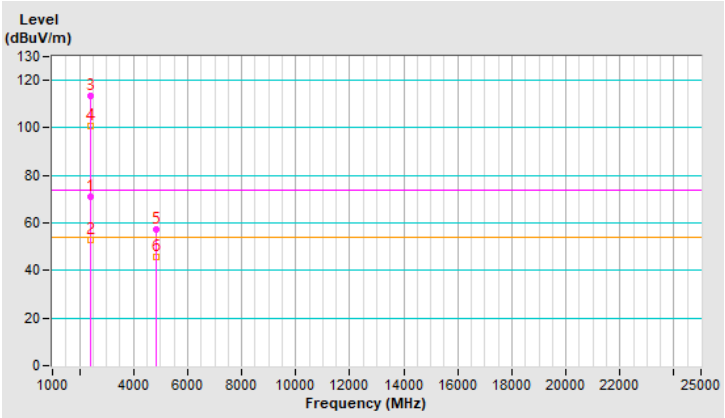


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 1：2412 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	71.2 PK	74.0	-2.8	2.81 V	9	72.0	-0.8
2	2390.00	53.0 AV	54.0	-1.0	2.81 V	9	53.8	-0.8
3	*2412.00	113.3 PK			2.81 V	9	114.1	-0.8
4	*2412.00	100.7 AV			2.81 V	9	101.5	-0.8
5	4824.00	57.2 PK	74.0	-16.8	1.59 V	117	53.3	3.9
6	4824.00	45.5 AV	54.0	-8.5	1.59 V	117	41.6	3.9

Remarks:

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

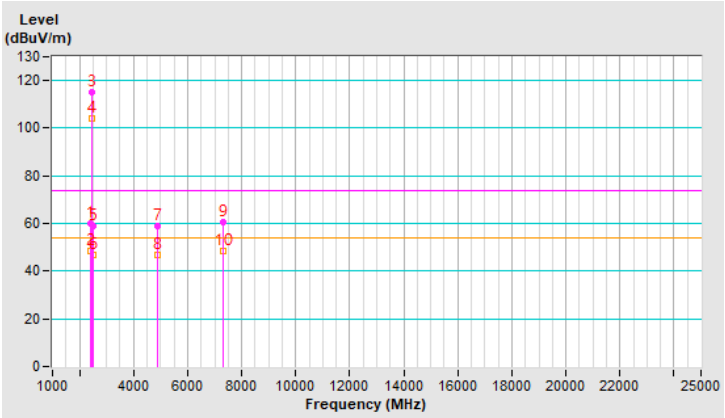


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	60.1 PK	74.0	-13.9	2.52 H	42	60.9	-0.8
2	2390.00	48.4 AV	54.0	-5.6	2.52 H	42	49.2	-0.8
3	*2437.00	115.0 PK			2.52 H	42	115.8	-0.8
4	*2437.00	104.2 AV			2.52 H	42	105.0	-0.8
5	2483.50	59.0 PK	74.0	-15.0	2.52 H	42	60.0	-1.0
6	2483.50	46.8 AV	54.0	-7.2	2.52 H	42	47.8	-1.0
7	4874.00	58.9 PK	74.0	-15.1	1.57 H	114	54.9	4.0
8	4874.00	46.6 AV	54.0	-7.4	1.57 H	114	42.6	4.0
9	7311.00	60.6 PK	74.0	-13.4	1.50 H	308	50.5	10.1
10	7311.00	48.7 AV	54.0	-5.3	1.50 H	308	38.6	10.1

Remarks:

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

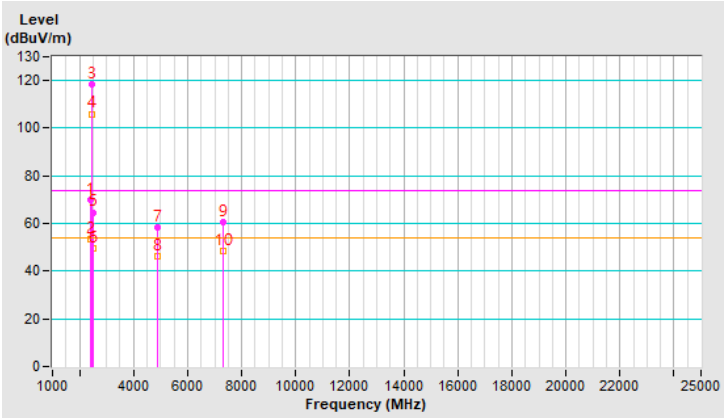


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	69.9 PK	74.0	-4.1	1.95 V	356	70.7	-0.8
2	2390.00	53.5 AV	54.0	-0.5	1.95 V	356	54.3	-0.8
3	*2437.00	118.3 PK			1.95 V	356	119.1	-0.8
4	*2437.00	106.0 AV			1.95 V	356	106.8	-0.8
5	2483.50	64.7 PK	74.0	-9.3	1.95 V	356	65.7	-1.0
6	2483.50	49.4 AV	54.0	-4.6	1.95 V	356	50.4	-1.0
7	4874.00	58.2 PK	74.0	-15.8	1.65 V	114	54.2	4.0
8	4874.00	46.0 AV	54.0	-8.0	1.65 V	114	42.0	4.0
9	7311.00	60.8 PK	74.0	-13.2	1.63 V	317	50.7	10.1
10	7311.00	48.5 AV	54.0	-5.5	1.63 V	317	38.4	10.1

Remarks:

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

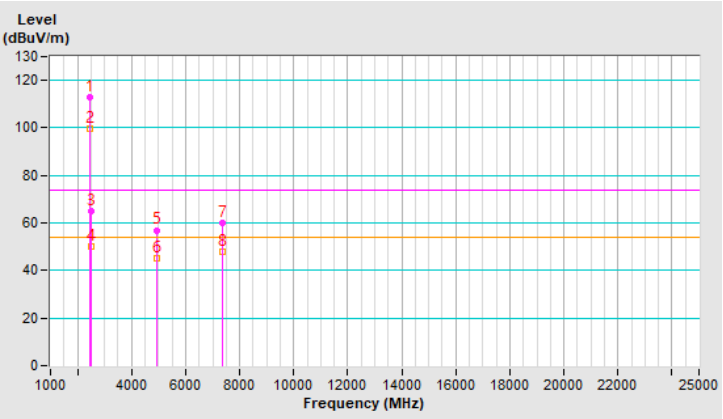


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	112.7 PK			2.05 H	82	113.6	-0.9
2	*2462.00	99.9 AV			2.05 H	82	100.8	-0.9
3	2484.10	64.8 PK	74.0	-9.2	2.05 H	82	65.8	-1.0
4	2484.10	50.0 AV	54.0	-4.0	2.05 H	82	51.0	-1.0
5	4924.00	57.0 PK	74.0	-17.0	1.56 H	139	53.0	4.0
6	4924.00	45.0 AV	54.0	-9.0	1.56 H	139	41.0	4.0
7	7386.00	59.8 PK	74.0	-14.2	1.53 H	315	49.6	10.2
8	7386.00	47.9 AV	54.0	-6.1	1.53 H	315	37.7	10.2

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.

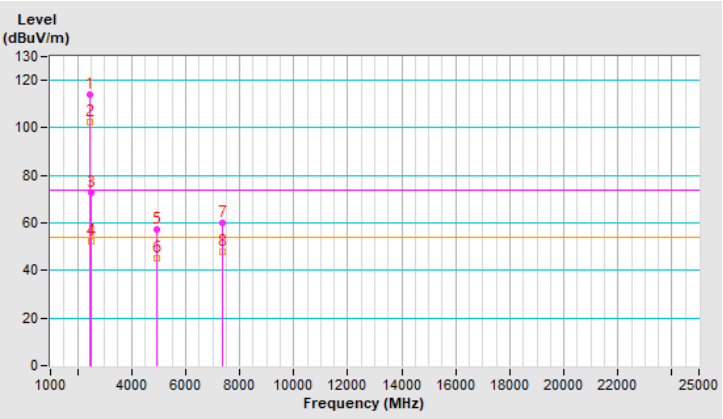


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 11：2462 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*2462.00	114.2 PK			1.94 V	352	115.1	-0.9
2	*2462.00	102.2 AV			1.94 V	352	103.1	-0.9
3	2483.50	72.5 PK	74.0	-1.5	1.94 V	352	73.5	-1.0
4	2483.50	52.3 AV	54.0	-1.7	1.94 V	352	53.3	-1.0
5	4924.00	57.5 PK	74.0	-16.5	1.70 V	127	53.5	4.0
6	4924.00	45.1 AV	54.0	-8.9	1.70 V	127	41.1	4.0
7	7386.00	59.9 PK	74.0	-14.1	1.71 V	287	49.7	10.2
8	7386.00	48.0 AV	54.0	-6.0	1.71 V	287	37.8	10.2

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.

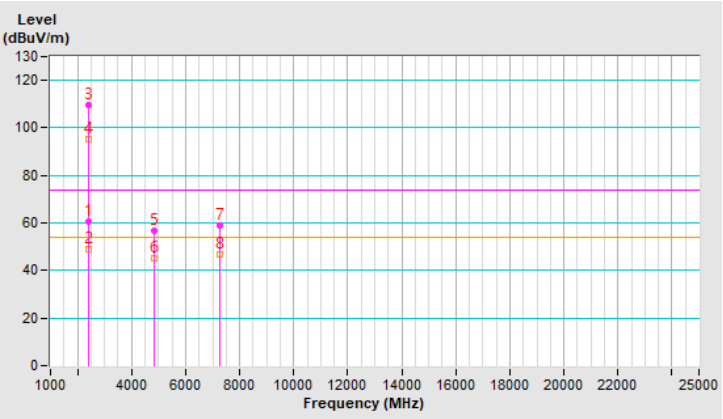


RF Mode	TX 802.11ax (HE40)	Channel	CH 3：2422 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

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	2388.53	60.7 PK	74.0	-13.3	1.02 H	234	61.5	-0.8
2	2388.53	48.9 AV	54.0	-5.1	1.02 H	234	49.7	-0.8
3	*2422.00	109.7 PK			1.02 H	234	110.5	-0.8
4	*2422.00	95.3 AV			1.02 H	234	96.1	-0.8
5	4844.00	56.8 PK	74.0	-17.2	1.63 H	128	52.9	3.9
6	4844.00	44.9 AV	54.0	-9.1	1.63 H	128	41.0	3.9
7	7266.00	59.0 PK	74.0	-15.0	1.50 H	297	49.0	10.0
8	7266.00	47.0 AV	54.0	-7.0	1.50 H	297	37.0	10.0

Remarks:

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

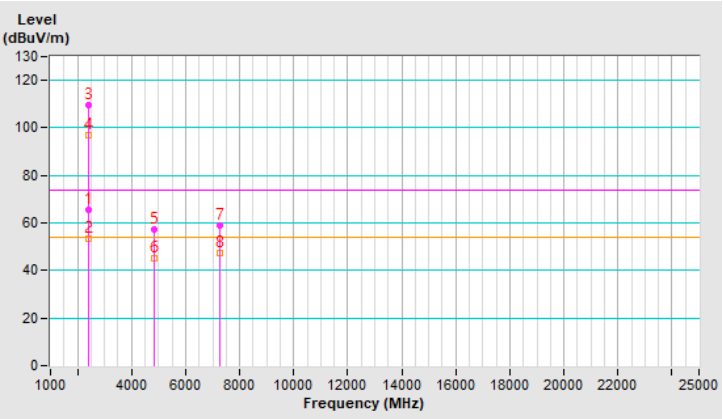


RF Mode	TX 802.11ax (HE40)	Channel	CH 3：2422 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

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	65.6 PK	74.0	-8.4	2.19 V	345	66.4	-0.8
2	2390.00	53.5 AV	54.0	-0.5	2.19 V	345	54.3	-0.8
3	*2422.00	109.7 PK			2.19 V	345	110.5	-0.8
4	*2422.00	96.8 AV			2.19 V	345	97.6	-0.8
5	4844.00	57.5 PK	74.0	-16.5	1.64 V	96	53.6	3.9
6	4844.00	45.0 AV	54.0	-9.0	1.64 V	96	41.1	3.9
7	7266.00	59.0 PK	74.0	-15.0	1.64 V	306	49.0	10.0
8	7266.00	47.2 AV	54.0	-6.8	1.64 V	306	37.2	10.0

Remarks:

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

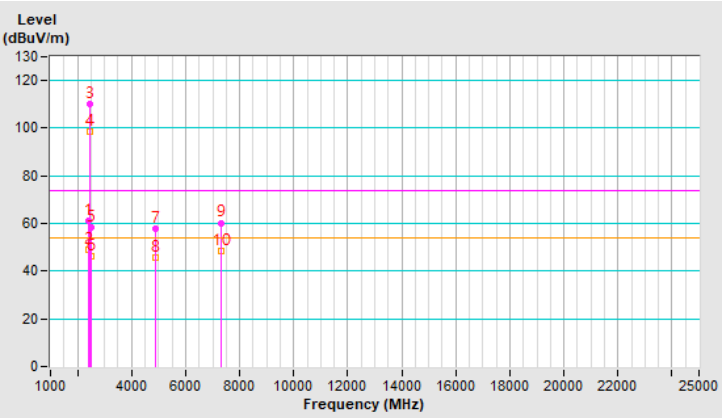


RF Mode	TX 802.11ax (HE40)	Channel	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 65% RH
Tested By	Nelson Teng		

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	61.0 PK	74.0	-13.0	1.09 H	208	61.8	-0.8
2	2390.00	49.2 AV	54.0	-4.8	1.09 H	208	50.0	-0.8
3	*2437.00	110.1 PK			1.09 H	208	110.9	-0.8
4	*2437.00	98.6 AV			1.09 H	208	99.4	-0.8
5	2483.50	58.3 PK	74.0	-15.7	1.09 H	208	59.3	-1.0
6	2483.50	46.5 AV	54.0	-7.5	1.09 H	208	47.5	-1.0
7	4874.00	57.6 PK	74.0	-16.4	1.55 H	171	53.6	4.0
8	4874.00	45.5 AV	54.0	-8.5	1.55 H	171	41.5	4.0
9	7311.00	60.3 PK	74.0	-13.7	1.62 H	332	50.2	10.1
10	7311.00	48.6 AV	54.0	-5.4	1.62 H	332	38.5	10.1

Remarks:

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

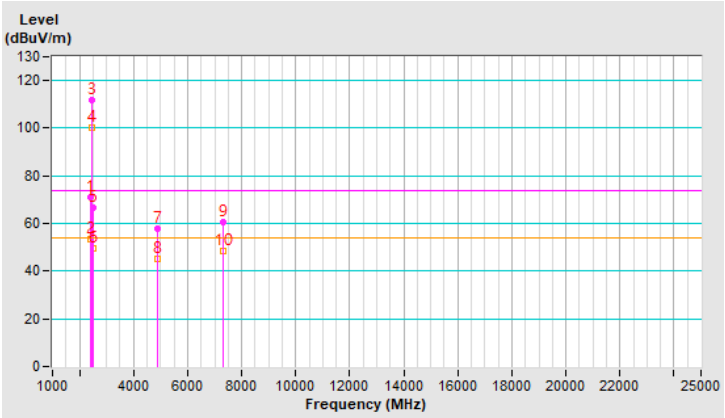


RF Mode	TX 802.11ax (HE40)	**Channel**	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	71.2 PK	74.0	-2.8	2.21 V	339	72.0	-0.8
2	2390.00	53.4 AV	54.0	-0.6	2.21 V	339	54.2	-0.8
3	*2437.00	112.0 PK			2.21 V	339	112.8	-0.8
4	*2437.00	100.3 AV			2.21 V	339	101.1	-0.8
5	2486.17	66.8 PK	74.0	-7.2	2.21 V	339	67.8	-1.0
6	2486.17	49.7 AV	54.0	-4.3	2.21 V	339	50.7	-1.0
7	4874.00	57.7 PK	74.0	-16.3	1.59 V	91	53.7	4.0
8	4874.00	45.0 AV	54.0	-9.0	1.59 V	91	41.0	4.0
9	7311.00	60.4 PK	74.0	-13.6	1.64 V	297	50.3	10.1
10	7311.00	48.4 AV	54.0	-5.6	1.64 V	297	38.3	10.1

Remarks:

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

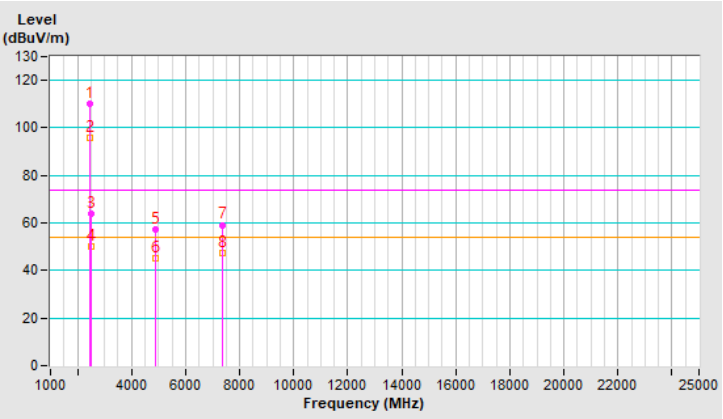


RF Mode	TX 802.11ax (HE40)	**Channel**	CH 9：2452 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	110.0 PK			2.99 H	76	110.9	-0.9
2	*2452.00	96.0 AV			2.99 H	76	96.9	-0.9
3	2491.91	64.0 PK	74.0	-10.0	2.99 H	76	65.0	-1.0
4	2491.91	49.9 AV	54.0	-4.1	2.99 H	76	50.9	-1.0
5	4904.00	57.4 PK	74.0	-16.6	1.68 H	144	53.5	3.9
6	4904.00	45.1 AV	54.0	-8.9	1.68 H	144	41.2	3.9
7	7356.00	59.2 PK	74.0	-14.8	1.54 H	306	49.1	10.1
8	7356.00	47.1 AV	54.0	-6.9	1.54 H	306	37.0	10.1

Remarks:

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

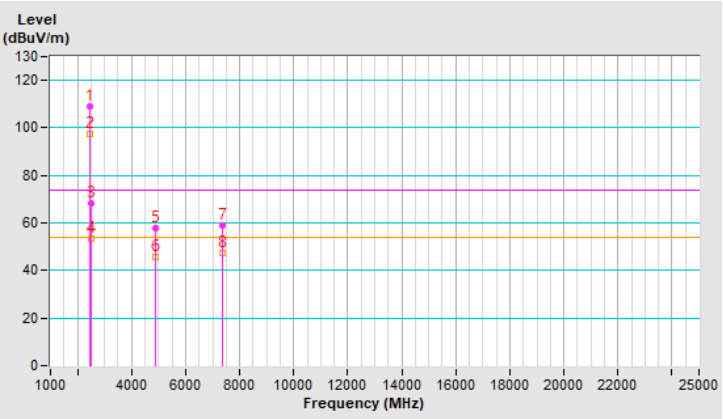


RF Mode	TX 802.11ax (HE40)	**Channel**	CH 9：2452 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*2452.00	109.3 PK			2.08 V	320	110.2	-0.9
2	*2452.00	97.3 AV			2.08 V	320	98.2	-0.9
3	2483.50	68.2 PK	74.0	-5.8	2.08 V	320	69.2	-1.0
4	2483.50	53.2 AV	54.0	-0.8	2.08 V	320	54.2	-1.0
5	4904.00	57.6 PK	74.0	-16.4	1.58 V	110	53.7	3.9
6	4904.00	45.5 AV	54.0	-8.5	1.58 V	110	41.6	3.9
7	7356.00	59.0 PK	74.0	-15.0	1.58 V	289	48.9	10.1
8	7356.00	47.1 AV	54.0	-6.9	1.58 V	289	37.0	10.1

Remarks:

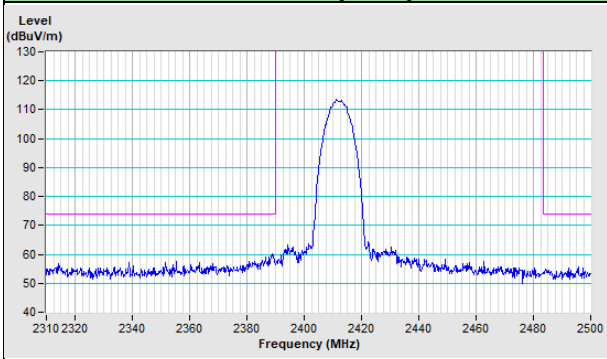
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency,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



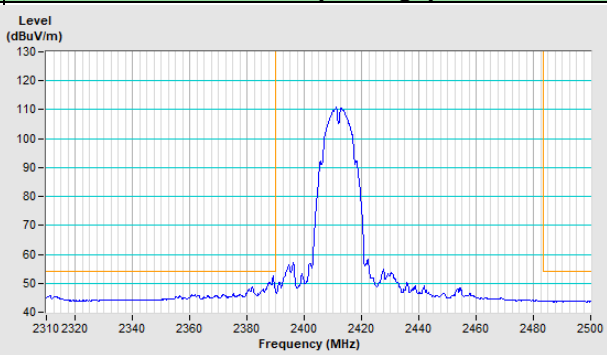
Mode A_Plot of Band Edge

802.11b Channel 1

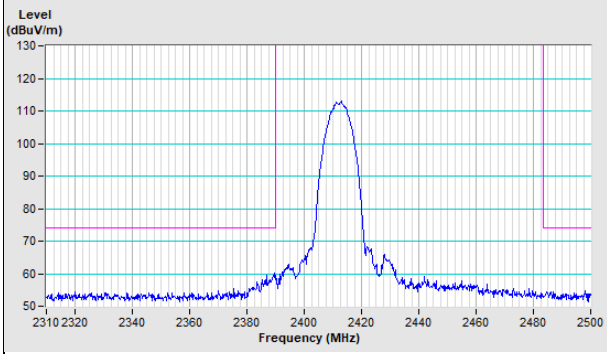
Horizontal (Peak)



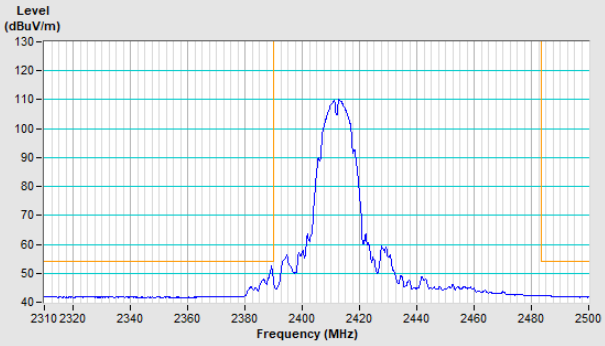
Horizontal (Average)



Vertical (Peak)

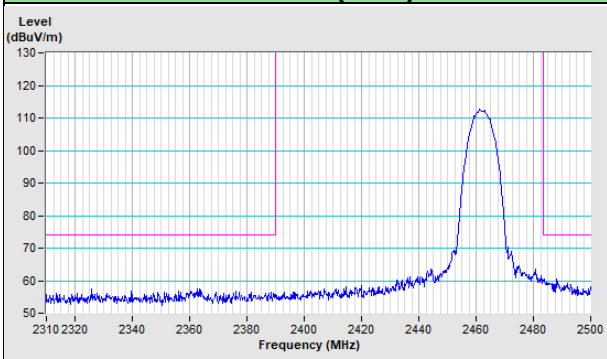


Vertical (Average)

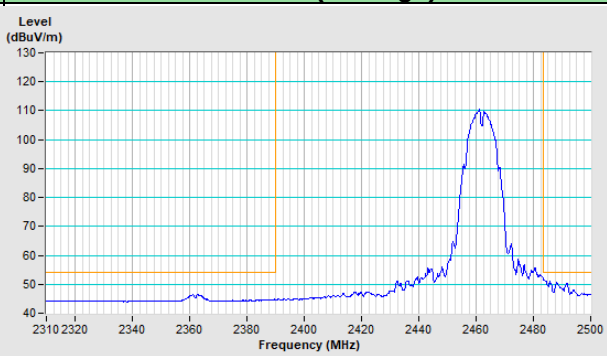


802.11b Channel 11

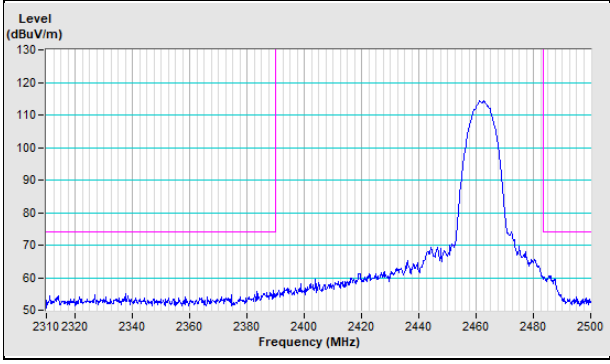
Horizontal (Peak)



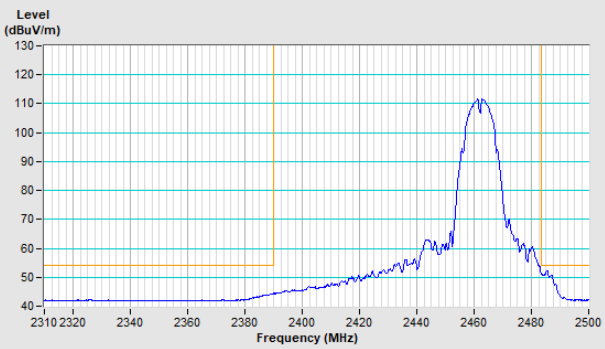
Horizontal (Average)



Vertical (Peak)

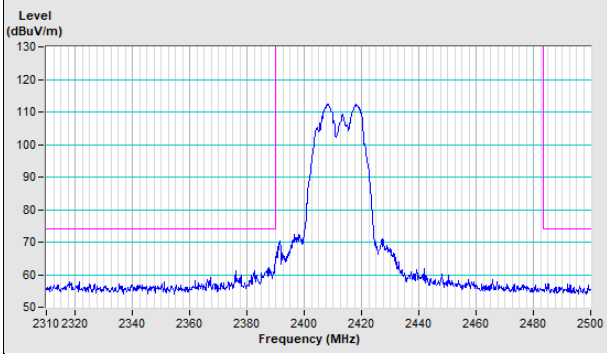


Vertical (Average)

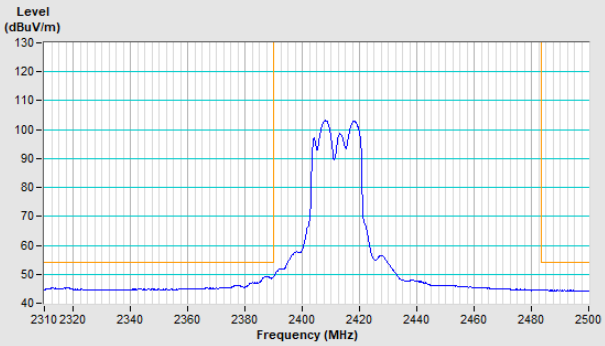


802.11g Channel 1

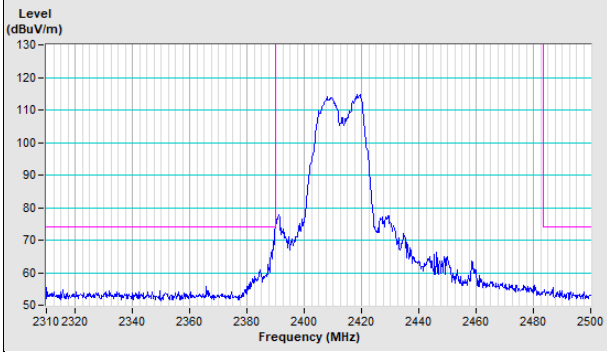
Horizontal (Peak)



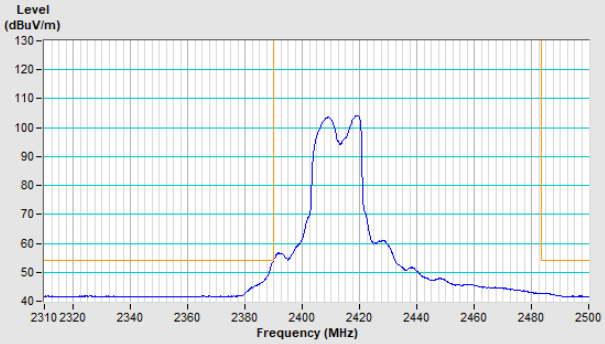
Horizontal (Average)



Vertical (Peak)

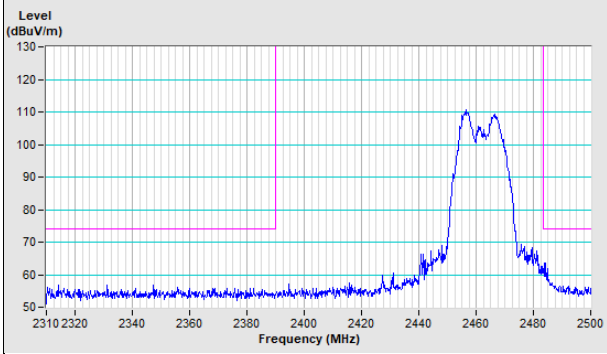


Vertical (Average)

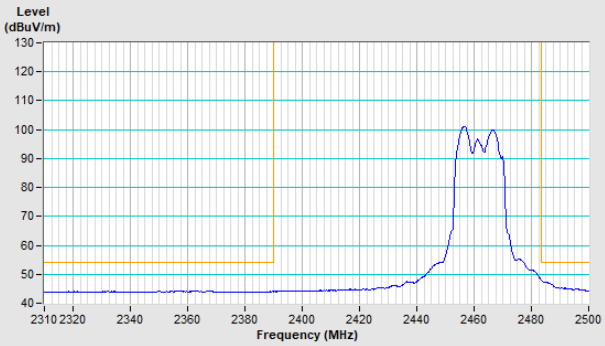


802.11g Channel 11

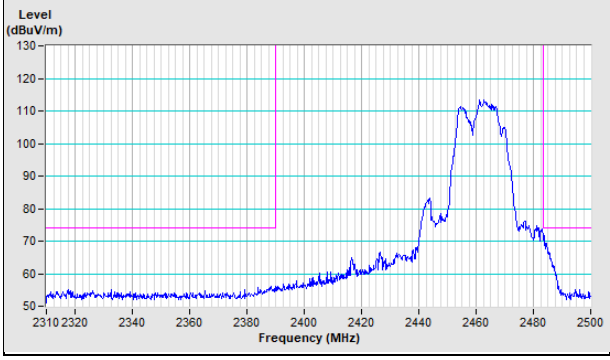
Horizontal (Peak)



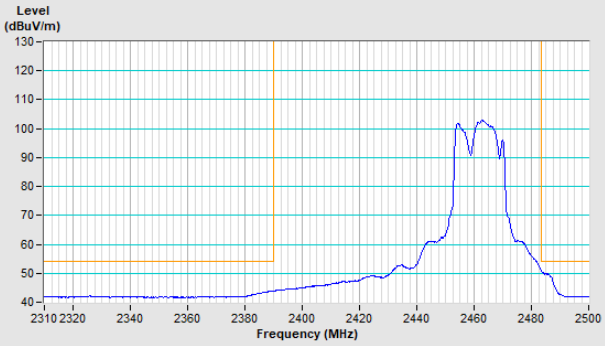
Horizontal (Average)



Vertical (Peak)

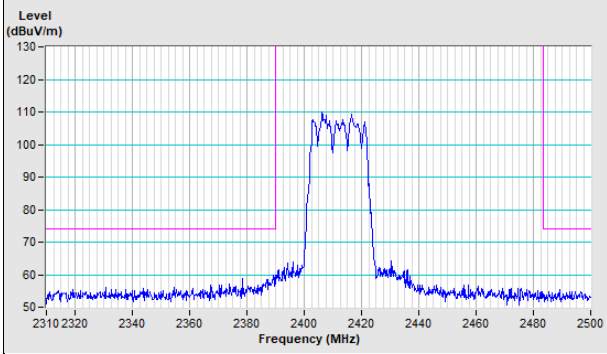


Vertical (Average)

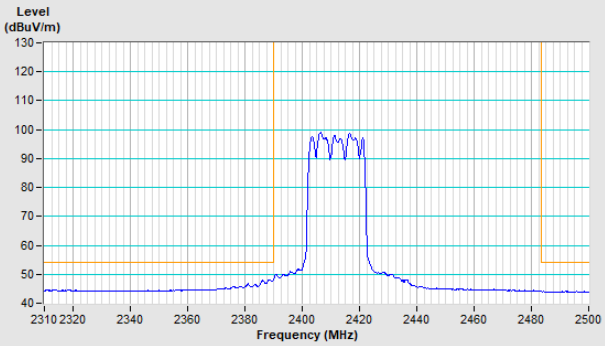


802.11ax (HE20) Channel 1

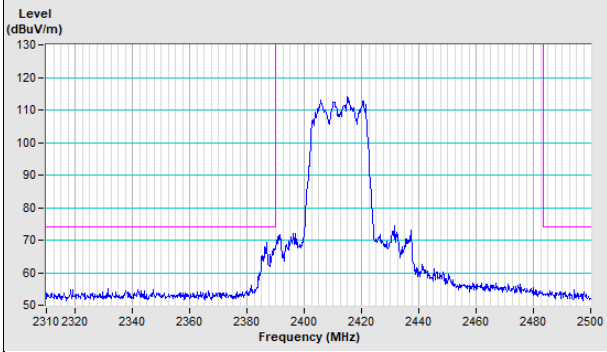
Horizontal (Peak)



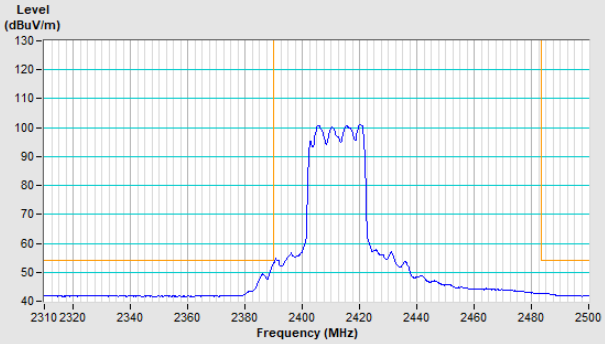
Horizontal (Average)



Vertical (Peak)

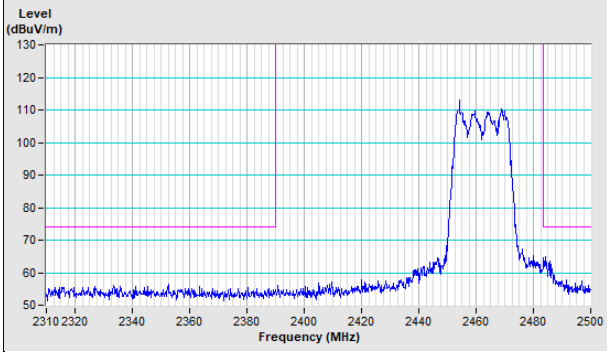


Vertical (Average)

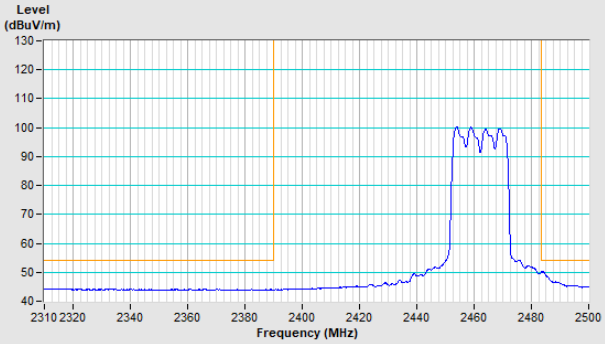


802.11ax (HE20) Channel 11

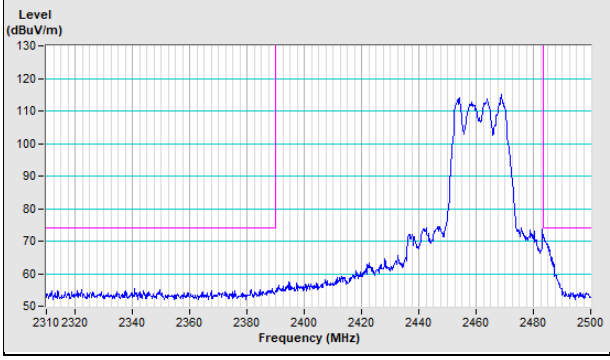
Horizontal (Peak)



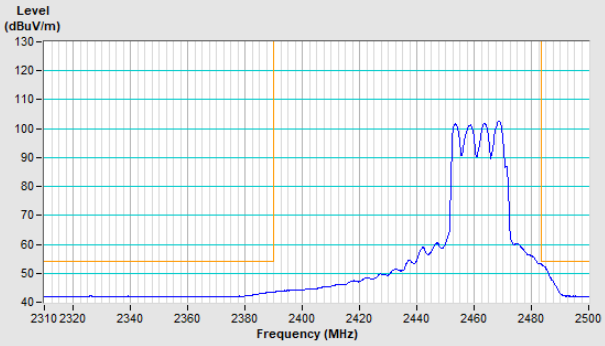
Horizontal (Average)



Vertical (Peak)

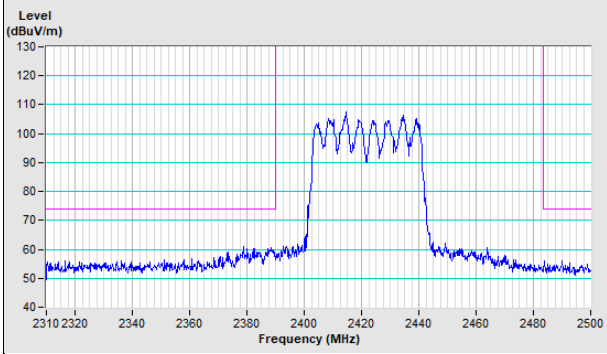


Vertical (Average)

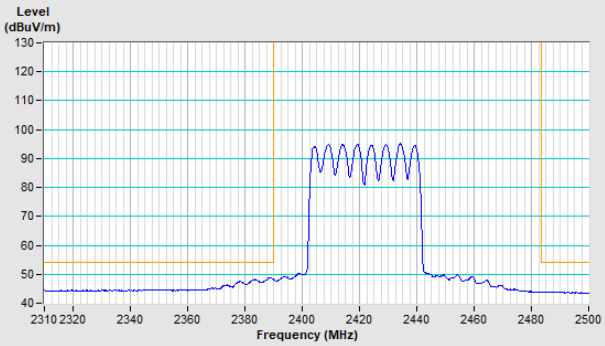


802.11ax (HE40) Channel 3

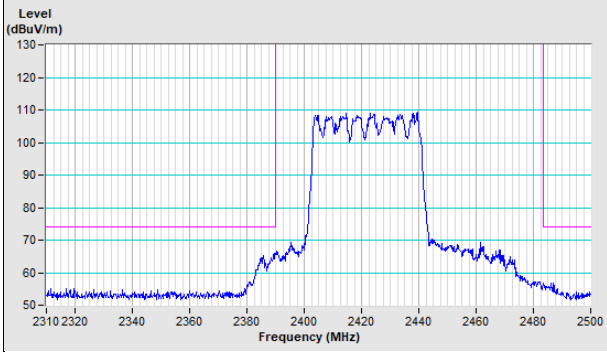
Horizontal (Peak)



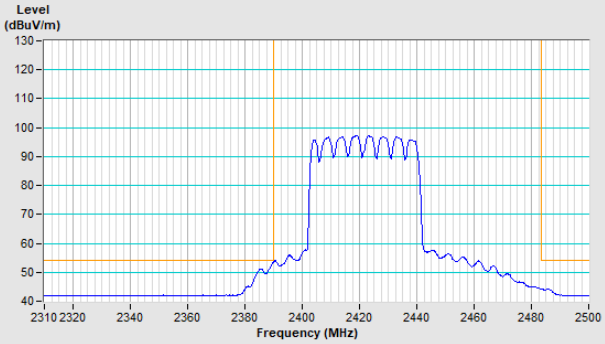
Horizontal (Average)



Vertical (Peak)

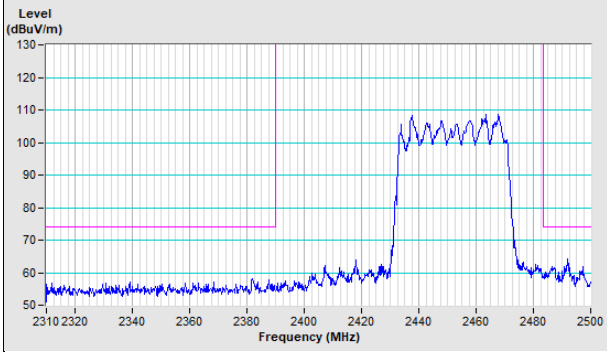


Vertical (Average)

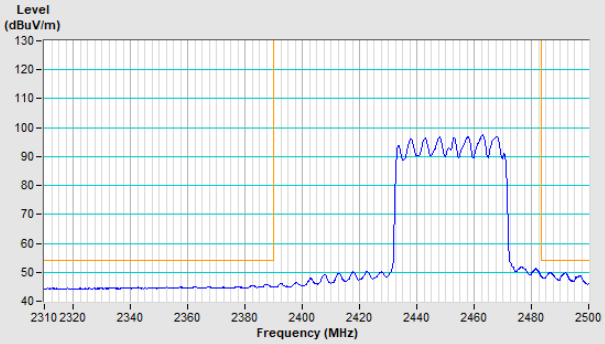


802.11ax (HE40) Channel 9

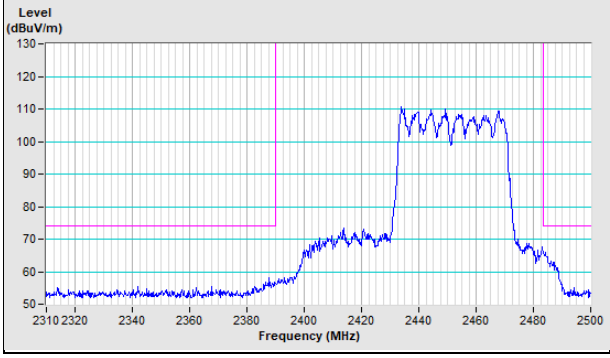
Horizontal (Peak)



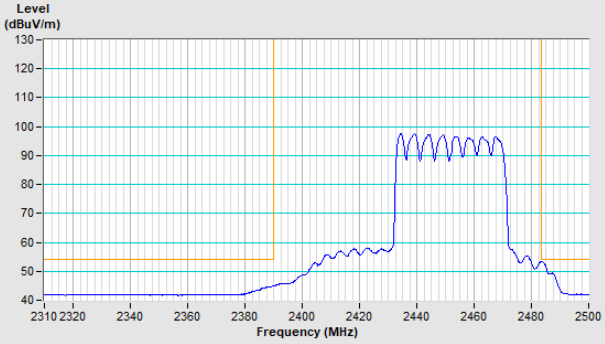
Horizontal (Average)



Vertical (Peak)



Vertical (Average)



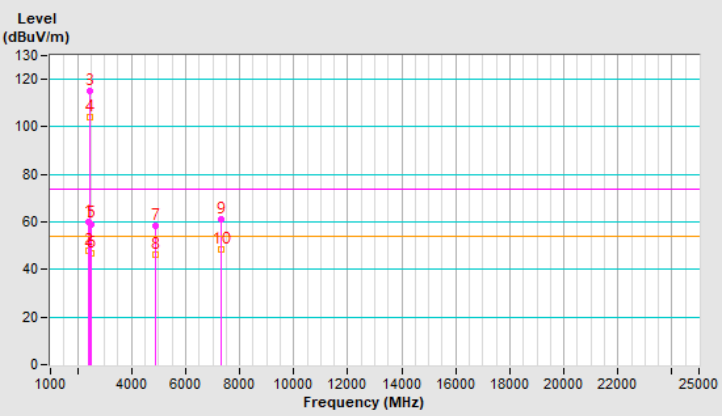
Mode B

RF Mode	TX 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	25°C, 65% RH
Tested By	Nelson Teng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.8 PK	74.0	-14.2	2.53 H	31	60.6	-0.8
2	2390.00	47.9 AV	54.0	-6.1	2.53 H	31	48.7	-0.8
3	*2437.00	115.1 PK			2.53 H	31	115.9	-0.8
4	*2437.00	104.3 AV			2.53 H	31	105.1	-0.8
5	2483.50	59.2 PK	74.0	-14.8	2.53 H	31	60.2	-1.0
6	2483.50	46.9 AV	54.0	-7.1	2.53 H	31	47.9	-1.0
7	4874.00	58.6 PK	74.0	-15.4	1.48 H	109	54.6	4.0
8	4874.00	46.4 AV	54.0	-7.6	1.48 H	109	42.4	4.0
9	7311.00	60.9 PK	74.0	-13.1	1.45 H	308	50.8	10.1
10	7311.00	48.7 AV	54.0	-5.3	1.45 H	308	38.6	10.1

Remarks:

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

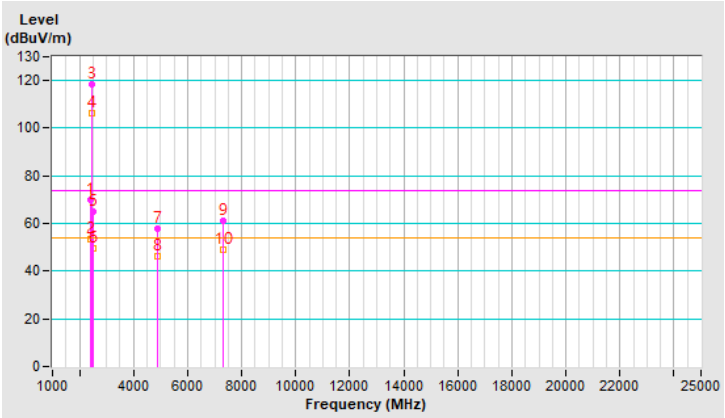


RF Mode	TX 802.11ax (HE20)	**Channel**	CH 6：2437 MHz
Frequency Range	1 GHz ~ 25 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 65% RH
Tested By	Nelson Teng		

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	70.1 PK	74.0	-3.9	1.93 V	341	70.9	-0.8
2	2390.00	53.4 AV	54.0	-0.6	1.93 V	341	54.2	-0.8
3	*2437.00	118.6 PK			1.93 V	341	119.4	-0.8
4	*2437.00	106.3 AV			1.93 V	341	107.1	-0.8
5	2483.50	64.8 PK	74.0	-9.2	1.93 V	341	65.8	-1.0
6	2483.50	49.7 AV	54.0	-4.3	1.93 V	341	50.7	-1.0
7	4874.00	58.0 PK	74.0	-16.0	1.76 V	118	54.0	4.0
8	4874.00	46.2 AV	54.0	-7.8	1.76 V	118	42.2	4.0
9	7311.00	60.9 PK	74.0	-13.1	1.62 V	326	50.8	10.1
10	7311.00	48.9 AV	54.0	-5.1	1.62 V	326	38.8	10.1

Remarks:

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



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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Fax: 886-2-26051924

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Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
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Fax: 886-3-3270892

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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