

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)
Report No.: RFCDBM-WTW-P22060902
FCC ID: QOQ-GM240S
Model No.: MGM240S22A
Series Model: BGM240S22A (Refer to item 3.1 for more details)
Received Date: 2022/7/6
Test Date: 2022/7/16 ~ 2022/7/29
Issued Date: 2022/10/11

Applicant: Silicon Laboratories Finland Oy

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

Designation Number:

Approved by: _____

Jeremy Lin

Date: _____

2022/10/11

Jeremy Lin / Project Engineer

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Prepared by : Polly Chien / Specialist _____

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Release Control Record

Issue No.	Description	Date Issued
RFCDBM-WTW-P22060902	Original release.	2022/10/11

1 Certificate

Product: Bluetooth Low Energy and 802.15.4 wireless radio module

Brand: SILICON LABS

Test Model: MGM240S22A

Series Model: BGM240S22A (Refer to item 3.1 for more details)

Sample Status: Engineering samples fully representing the production modules

Applicant: Silicon Laboratories Finland Oy

Test Date: 2022/7/16 ~ 2022/7/29

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

Measurement ANSI C63.10-2013

procedure: KDB 558074 D01 15.247 Meas Guidance v05r02

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 -15.55 dB at 0.15000 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -5.9 dB at 48.43 MHz
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -9.8 dB at 2483.50 MHz
15.203	Antenna Requirement	Pass	Integral PCB Trace Antenna: No antenna connector is used. RF pin: Antenna connector is RP-SMA 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	2.79 dB
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.79 dB
Unwanted Emissions below 1 GHz	30 MHz ~ 1 GHz	3.60 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 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	Bluetooth Low Energy and 802.15.4 wireless radio module
Brand	SILICON LABS
Test Model	MGM240S22A
Series Model	BGM240S22A
Model Difference	Refer to note
Status of EUT	Engineering samples fully representing the production modules
Power Supply Rating	1.8V to 3.8V, with nominal supply voltage of 3.0V
Modulation Type	GFSK
Modulation Technology	DTS
Transfer Rate	1MBaud with 1Mbps transfer rate 1MBaud with Coded 125kbps transfer rate 1MBaud with Coded 500kbps transfer rate 2MBaud with 2Mbps transfer rate
Operating Frequency	2402 ~ 2480 MHz
Number of Channel	1MBaud: 40 2MBaud: 37
Output Power	1MBaud: 11.220mW (125kbps) 1MBaud: 11.194mW 2MBaud: 11.246mW

Note:

1. The models difference are as below.

Product Spec.	Model			
	Main Model: MGM240S22A		Series Model: BGM240S22A	
Power rating: Low-Power Wireless protocols: BLE and 802.15.4			Power rating: Low-Power Wireless protocols: BLE	
Test mode	To be tested as DTS for both 802.15.4 and BLE In the case of BLE, three PHYs to test: 2Mbps, 1Mbps and 125Kbps		Testing of the Main Model will cover this Series Model / In fact, the hardware and software are exactly the same, except for one single software-related difference: the 802.15.4 protocol is disabled in the factory for marketing differentiation	
RF nominal max TX output power	10dBm			
Antenna type	Integral PCB Trace Antenna	RF pin	Integral PCB Trace Antenna	RF pin
Hardware	<p>Hardware-wise, the main model and the first series model are identical. Supply voltage range: 1V8 to 3V8 (nominal 3V0) / Fully internally regulated, including the RF PA. Temperature range: -40C to +105C.</p> <p>The BLE wireless protocol is identical in all the models. The 802.15.4 wireless protocol is made available only for the main model.</p> <p>The module's RF OUT pin exposes the 50Ω-matched RF port of the embedded radio chipset. Conducted measurements are taken at the module's RF OUT pin.</p> <p>The RF OUT pin can be further connected either to the adjacent RF ANT IN pin (using a 0Ω resistor), so that the integral antenna can be used, or directly to an external antenna. All radiated tests are taken both with a sample using the integral antenna, and with a sample where the RF signal from the RF OUT pin is routed instead to an external reference dipole antenna.</p>			

2. 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.

No.	Type	Connector	Gain (dBi)	Remark
1	Integral PCB Trace Antenna	NA	1.48	-
2	External reference dipole antenna**	RP-SMA	2.80	-

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

** The dipole antenna is not sold with the EUT, but is used during testing as a reference antenna for radiated measurements of the parts making use of the RF pin.

2. BT LE and 802.15.4 modes technology cannot transmit at same time.

3. For 1MBaud, after the pretesting three transfer rates (1Mbps, 125Kbps and 500Kbps), 1MBaud with 1Mbps and 125Kbps transfer rate were the worst case test and chosen for final test.

4. Power setting is as below:

<1MBaud PHY with 125kbps>

Channel	Power Setting
0	100
1	100
19	100
38	100
39	100

<1MBaud PHY with 1Mbps>

Channel	Power Setting
0	100
1	100
19	100
38	100
39	100

<2MBaud PHY>

Channel	Power Setting
1	100
19	100
38	100

3.3 Channel List

1MBaud PHY

40 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

Note:

1. The channels which were indicated in bold type of the above channel list were selected as representative test channel. Therefore only the data of the test channels were recorded in this report.
2. Physical Channels 0, 12 and 39 are special low-duty-cycle channels used only for BLE advertising mode.

2MBaud PHY

37 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2404	11	2424	21	2444	31	2464
2	2406	-	-	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460		
10	2422	20	2442	30	2462		

Note: The channels which were indicated in bold type of the above channel list were selected as representative test channel. Therefore only the data of the test channels were recorded in this report.

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. EUT can be used in the following ways: X/ Y/ Z. Pre-scan in these ways and find the worst case as a representative test condition.
Worst Case:	1. X/ Y/ Z Worst Condition: Y-AXIS (Integral PCB Trace Antenna) and X-AXIS (Dipole antenna)

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

Test Item	EUT Configure Mode	Mode	Tested Channel	Modulation	Data Rate Parameter
AC Power Conducted Emissions	A, B	1MBaud PHY	0	GFSK	1Mb/s
Unwanted Emissions below 1 GHz	A, B	1MBaud PHY	0	GFSK	1Mb/s
Unwanted Emissions above 1 GHz	A, B	1MBaud PHY with 125kbps	0, 1, 19, 38, 39	GFSK	125 kbps
		1MBaud PHY	0, 1, 19, 38, 39	GFSK	1Mb/s
		2MBaud PHY	1, 19, 38	GFSK	2Mb/s
RF Output Power	B	1MBaud PHY with 125kbps	0, 1, 19, 38, 39	GFSK	125 kbps
		1MBaud PHY	0, 1, 19, 38, 39	GFSK	1Mb/s
		2MBaud PHY	1, 19, 38	GFSK	2Mb/s
6 dB Bandwidth / Power Spectral Density / Conducted Out of Band Emissions	B	1MBaud PHY with 125kbps	0, 1, 19, 38, 39	GFSK	125 kbps
		1MBaud PHY	0, 1, 19, 38, 39	GFSK	1Mb/s
		2MBaud PHY	1, 19, 38	GFSK	2Mb/s
EUT Configure Mode:	A	EUT + Integral PCB Trace Antenna			
	B	EUT + Dipole antenna			

3.5 Duty Cycle of Test Signal

Duty cycle of test signal is $\geq 98\%$, duty factor is not required.
 Duty cycle of test signal is $< 98\%$, duty factor shall be considered.

1MBaud PHY with 125kbps & 1MBaud PHY with 1Mbps: CH 0, 39

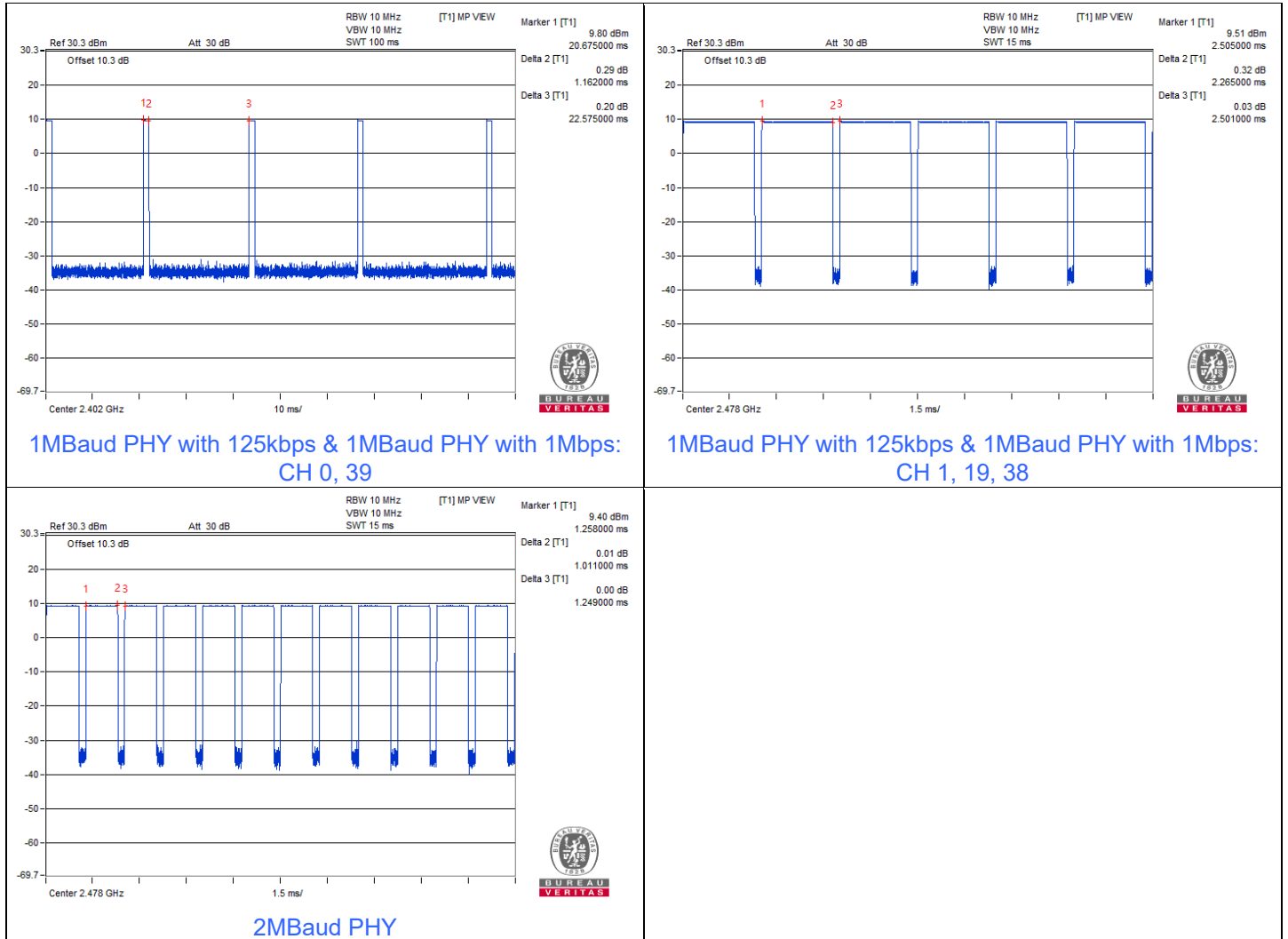
Duty cycle = $1.162 \text{ ms} / 22.575 \text{ ms} \times 100\% = 5.1\%$, duty factor = $10 * \log(1/\text{Duty cycle}) = 12.88 \text{ dB}$
 *This is in particular for the advertising channels.

1MBaud PHY with 125kbps & 1MBaud PHY with 1Mbps: CH 1, 19, 38

Duty cycle = $2.265 \text{ ms} / 2.501 \text{ ms} \times 100\% = 90.6\%$, duty factor = $10 * \log(1/\text{Duty cycle}) = 0.43 \text{ dB}$

2MBaud PHY:

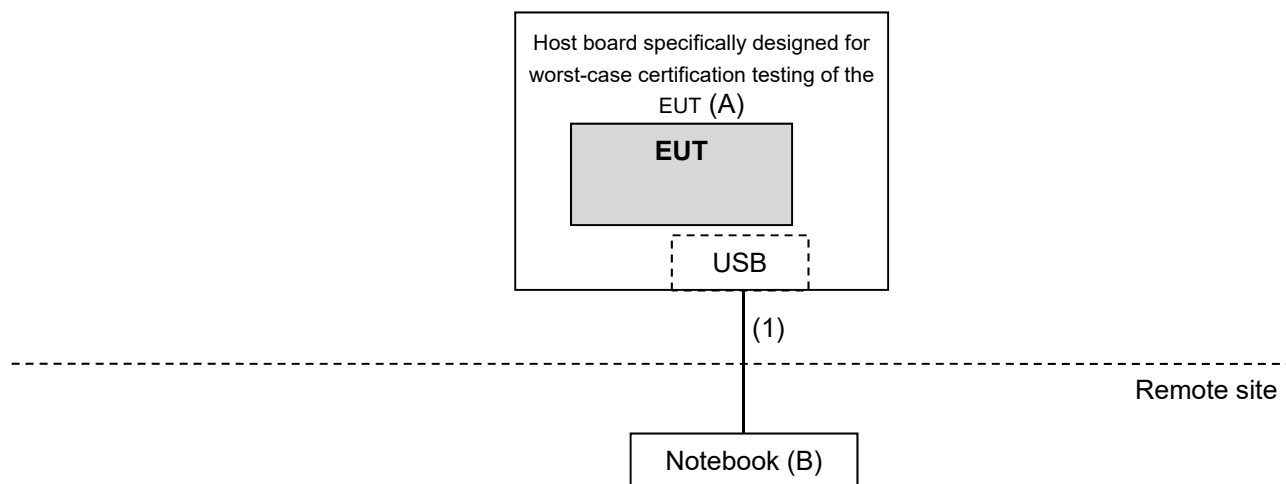
Duty cycle = $1.011 \text{ ms} / 1.249 \text{ ms} \times 100\% = 80.9\%$, duty factor = $10 * \log(1/\text{Duty cycle}) = 0.92 \text{ dB}$



3.6 Test Program Used and Operation Descriptions

Controlling software (Python 3.10.3) 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	Host board specifically designed for worst-case certification testing of the EUT	Silicon Labs	NA	NA	NA	Provided by client
B	Notebook	Lenovo	L440	R9-0GFJJK	FCC DoC Approved	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
A	USB Cable	1	1.5	Yes	0	Supplied by applicant

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	2022/1/18	2023/1/17
Power sensor Keysight	U2021XA	MY55380009	2022/3/23	2023/3/22
Wideband Power Sensor(N1923A) KEYSIGHT	N1923A	MY58020002	2022/1/17	2023/1/16

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/7/29

4.2 Power Spectral Density

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

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/7/29

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
DC LISN R&S	ESH3-Z6	100219	2021/7/25	2022/7/24
		844950/018	2021/7/25	2022/7/24
DC-LISN SCHWARZBECK MESS- ELETRONIK	NNBM 8126G	8126G-069	2021/11/10	2022/11/9
LISN R&S	ESH2-Z5	100100	2022/2/17	2023/2/16
	ESH3-Z5	100312	2021/9/17	2022/9/16
RF Coaxial Cable WORKEN	5D-FB	Cable-cond2-01	2021/9/4	2022/9/3
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
Test Receiver R&S	ESR3	102783	2021/12/20	2022/12/19
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2021/8/20	2022/8/19

Notes:

1. The test was performed in HY - Conduction 2.
2. Tested Date: 2022/7/19

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn BV ADT	AT100	AT93021705	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB9168	9168-160	2021/10/28	2022/10/27
Preamplifier Agilent	8447D	2944A10638	2022/5/14	2023/5/13
RF Coaxial Cable WOKEN	8D-FB	Cable-CH9-01	2022/5/14	2023/5/13
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101867	2022/1/7	2023/1/6
Test Receiver Agilent	N9038A	MY51210203	2021/9/22	2022/9/21
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 4.
2. Tested Date: 2022/7/19

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn BV ADT	AT100	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	5	N/A	N/A
Horn Antenna Schwarzbeck	9120D	9120D-1169	2021/11/14	2022/11/13
	BBHA 9170	BBHA9170241	2021/10/26	2022/10/25
Pre-Amplifier EMCI	EMC 184045	980116	2021/10/5	2022/10/4
Preamplifier Agilent	8449B	3008A02367	2022/2/16	2023/2/15
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	2022/1/15	2023/1/14
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	2022/1/15	2023/1/14
RF FLITER MICRO-TRONICS	BRM17690	004	2022/1/10	2023/1/9
	BRM50716	060	2022/1/10	2023/1/9
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101867	2022/1/7	2023/1/6
Test Receiver Agilent	N9038A	MY51210203	2021/9/22	2022/9/21
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 4.
2. Tested Date: 2022/7/16 ~ 2022/7/19

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)

5.2 Power Spectral Density

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

5.3 6 dB Bandwidth

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

5.4 Conducted Out of Band Emissions

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

5.5 AC Power Conducted Emissions

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

Notes:

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

5.6 Unwanted Emissions below 1 GHz

Radiated emissions up to 1 GHz which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 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

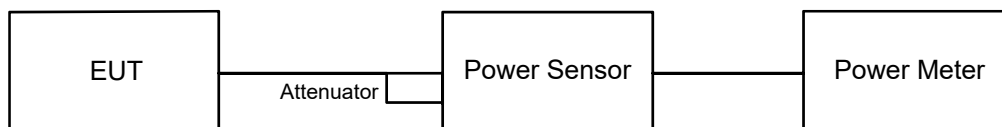
Notes:

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

Peak Power:

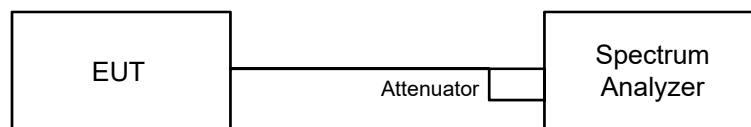
A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Average Power:

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

6.2 Power Spectral Density

6.2.1 Test Setup

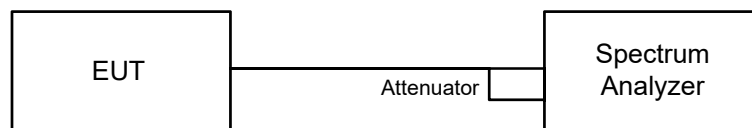


6.2.2 Test Procedure

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

6.3 6 dB Bandwidth

6.3.1 Test Setup

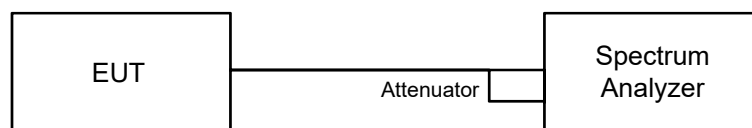


6.3.2 Test Procedure

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

6.4 Conducted Out of Band Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

MEASUREMENT PROCEDURE REF

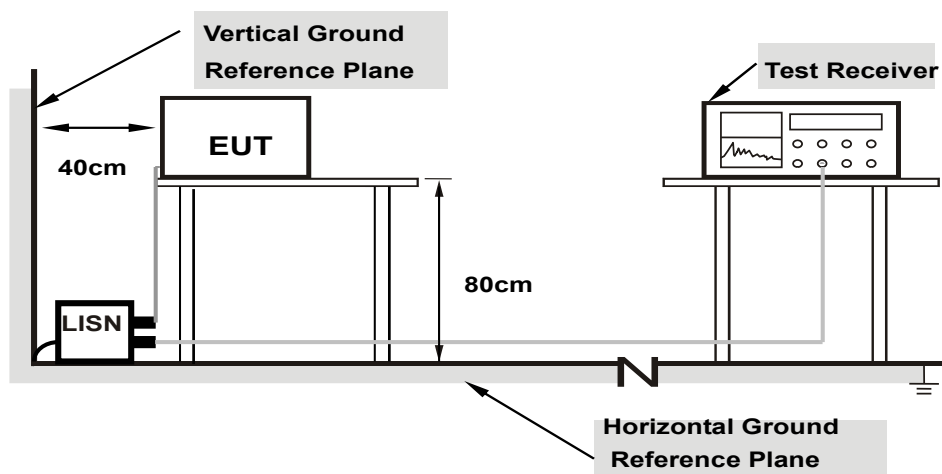
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

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

6.5 AC Power Conducted Emissions

6.5.1 Test Setup



Note: 1.Support units were connected to second LISN.

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

6.5.2 Test Procedure

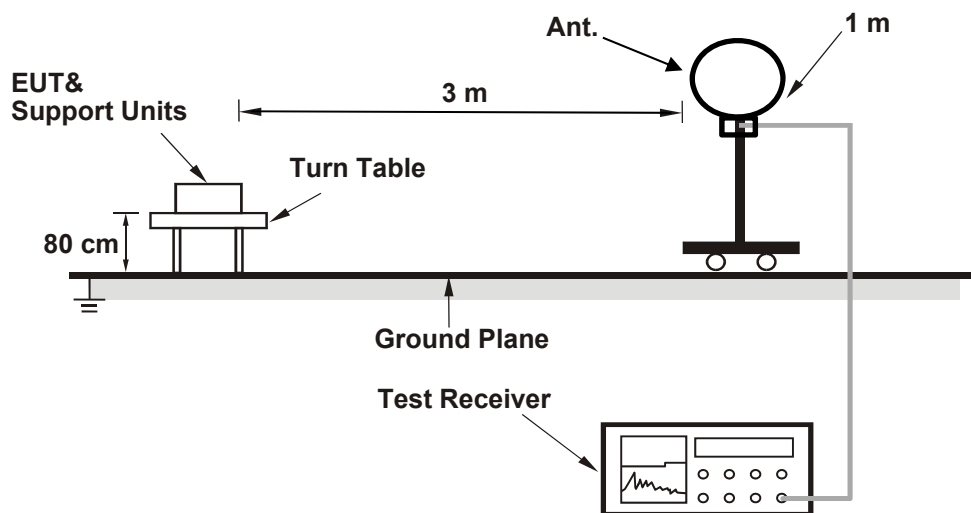
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

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

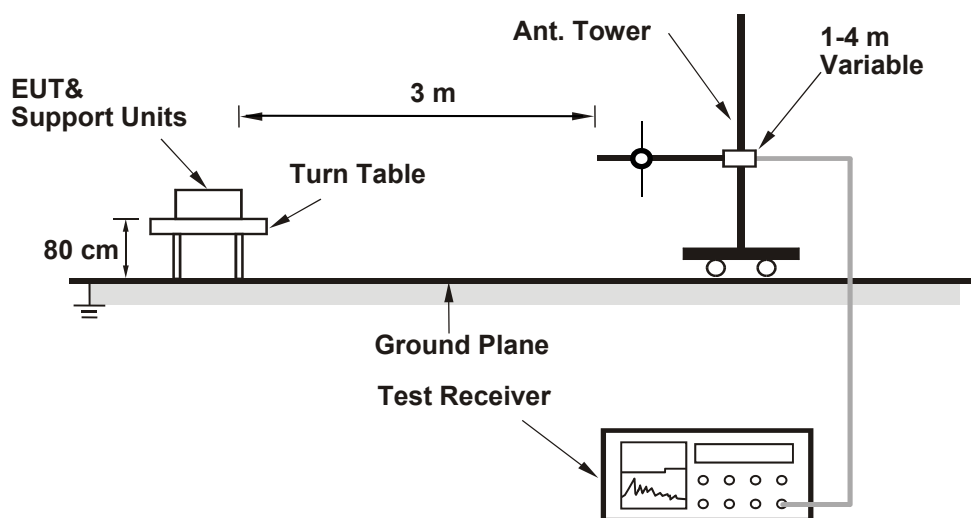
6.6 Unwanted Emissions below 1 GHz

6.6.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.6.2 Test Procedure

For Radiated emission below 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

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

For Radiated emission above 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

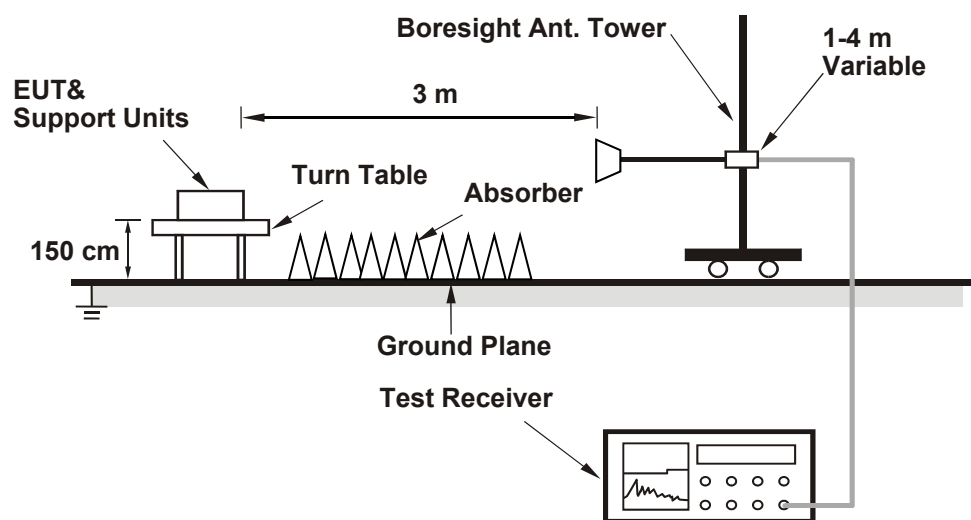
Notes:

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

6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup

For Radiated emission above 1 GHz



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

6.7.2 Test Procedure

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
- According to ANSI C63.10 section 6.6.4 and 4.1.4.2.2. For fundamental and harmonic signal measurement, according to ANSI C63.10 section 11.12.2.5.1 or 11.12.2.5.2 and 11.13.3.3 or 11.13.3.4, the average value = peak reading value + duty cycle correction factor. For duty cycle correction factor values, see the Test Signal Duty Cycle section in this report.
- All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Chun
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For Peak Power

1MBaud PHY with 125kbps

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	11.143	10.47	30	Pass
1	2404	11.220	10.50	30	Pass
19	2440	10.765	10.32	30	Pass
38	2478	10.447	10.19	30	Pass
39	2480	10.495	10.21	30	Pass

Note: The antenna gain is 2.8 dBi < 6 dBi, so the output power limit shall not be reduced.

1MBaud PHY with 1Mbps

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
0	2402	11.194	10.49	30	Pass
1	2404	11.194	10.49	30	Pass
19	2440	10.814	10.34	30	Pass
38	2478	10.471	10.20	30	Pass
39	2480	10.520	10.22	30	Pass

Note: The antenna gain is 2.8 dBi < 6 dBi, so the output power limit shall not be reduced.

2MBaud PHY PHY

Chan.	Chan. Freq. (MHz)	Peak Power (mW)	Peak Power (dBm)	Power Limit (dBm)	Test Result
1	2404	11.246	10.51	30	Pass
19	2440	10.889	10.37	30	Pass
38	2478	10.495	10.21	30	Pass

Note: The antenna gain is 2.8 dBi < 6 dBi, so the output power limit shall not be reduced.

For Average Power

1MBaud PHY with 125kbps

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	10.789	10.33
1	2404	10.740	10.31
19	2440	10.399	10.17
38	2478	10.280	10.12
39	2480	10.257	10.11

1MBaud PHY with 1Mbps

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	10.814	10.34
1	2404	10.814	10.34
19	2440	10.423	10.18
38	2478	10.304	10.13
39	2480	10.280	10.12

2MBaud PHY

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
1	2404	10.789	10.33
19	2440	10.375	10.16
38	2478	10.375	10.16

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Chun Wu
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1MBaud PHY with 125kbps

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
0	2402	3.66	8.00	Pass
1	2404	3.65	8.00	Pass
19	2440	3.47	8.00	Pass
38	2478	3.18	8.00	Pass
39	2480	3.14	8.00	Pass

Note: The antenna gain is 2.8 dBi < 6 dBi, so the power density limit shall not be reduced.

1MBaud PHY with 1Mbps

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
0	2402	-2.96	8.00	Pass
1	2404	5.27	8.00	Pass
19	2440	5.08	8.00	Pass
38	2478	4.85	8.00	Pass
39	2480	-5.72	8.00	Pass

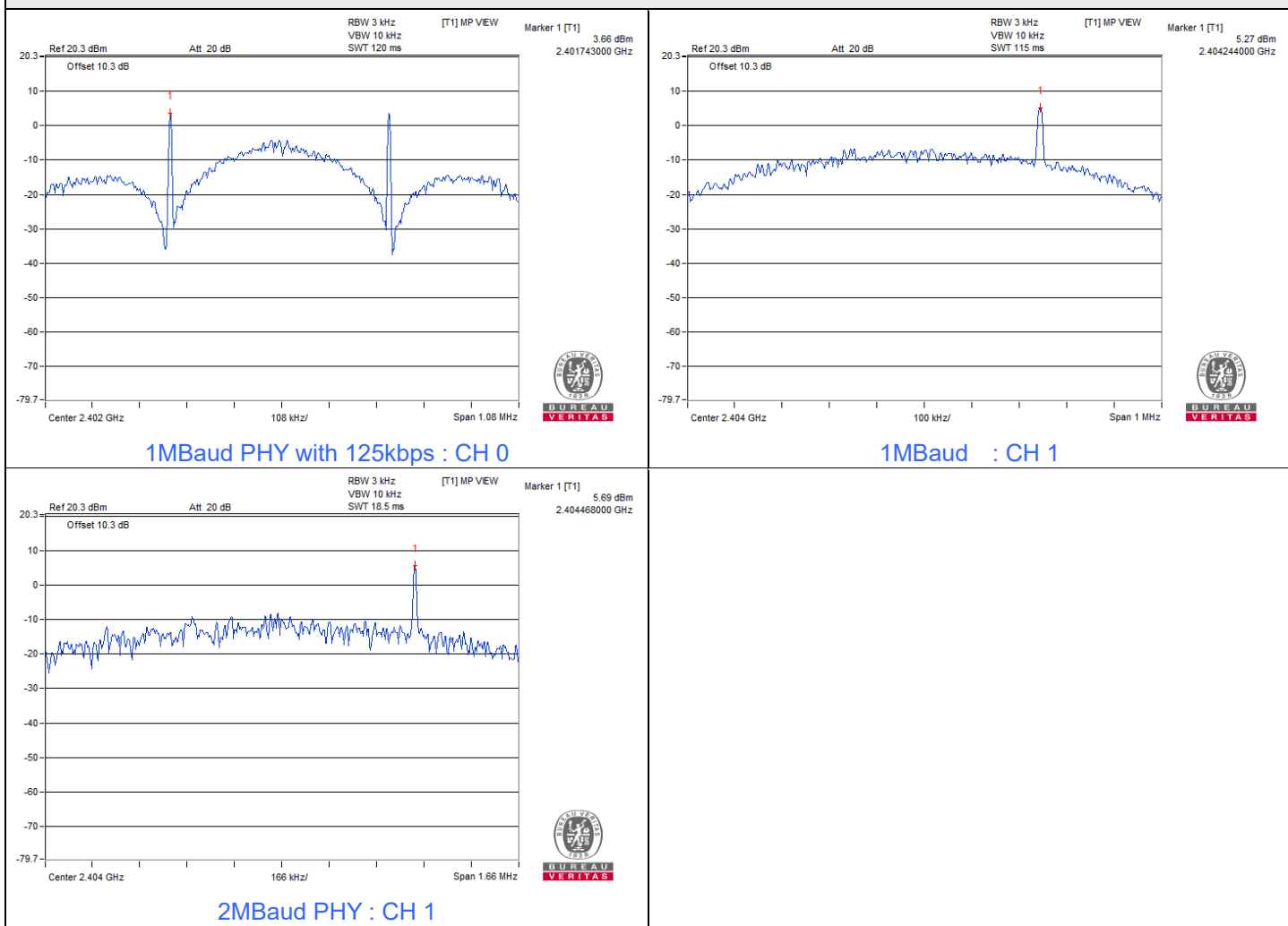
Note: The antenna gain is 2.8 dBi < 6 dBi, so the power density limit shall not be reduced.

2MBaud PHY

Chan.	Chan. Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)	Test Result
1	2404	5.69	8.00	Pass
19	2440	5.54	8.00	Pass
38	2478	5.24	8.00	Pass

Note: The antenna gain is 2.8 dBi < 6 dBi, so the power density limit shall not be reduced.

Spectrum Plot of Maximum Value



7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Chun Wu
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1MBaud PHY with 125kbps

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
0	2402	0.72	0.5	Pass
1	2404	0.72	0.5	Pass
19	2440	0.70	0.5	Pass
38	2478	0.70	0.5	Pass
39	2480	0.70	0.5	Pass

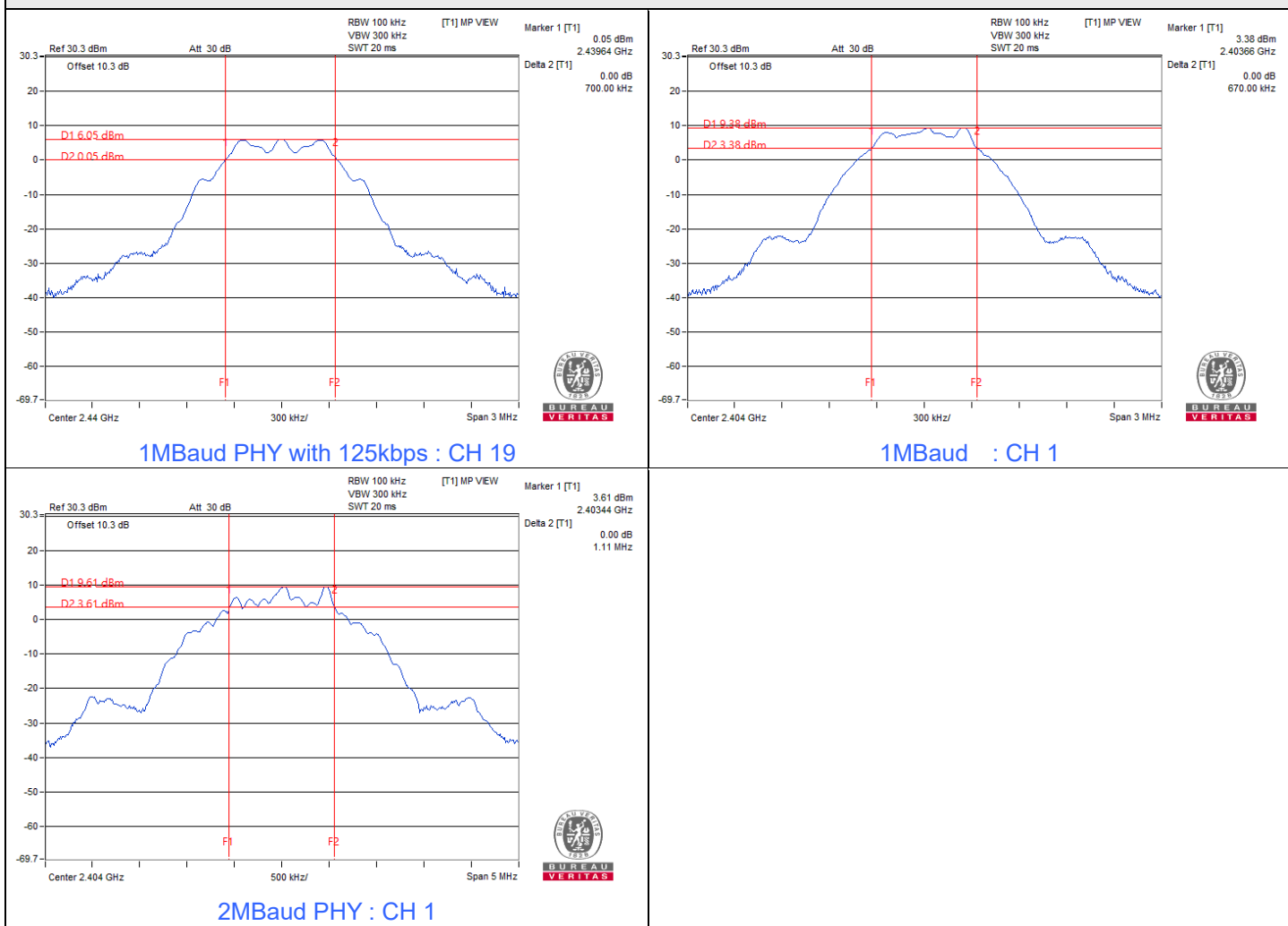
1MBaud

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
0	2402	0.66	0.5	Pass
1	2404	0.67	0.5	Pass
19	2440	0.67	0.5	Pass
38	2478	0.67	0.5	Pass
39	2480	0.65	0.5	Pass

2MBaud PHY

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
0	2404	1.11	0.5	Pass
19	2440	1.11	0.5	Pass
39	2478	1.11	0.5	Pass

Spectrum Plot of Minimum Value



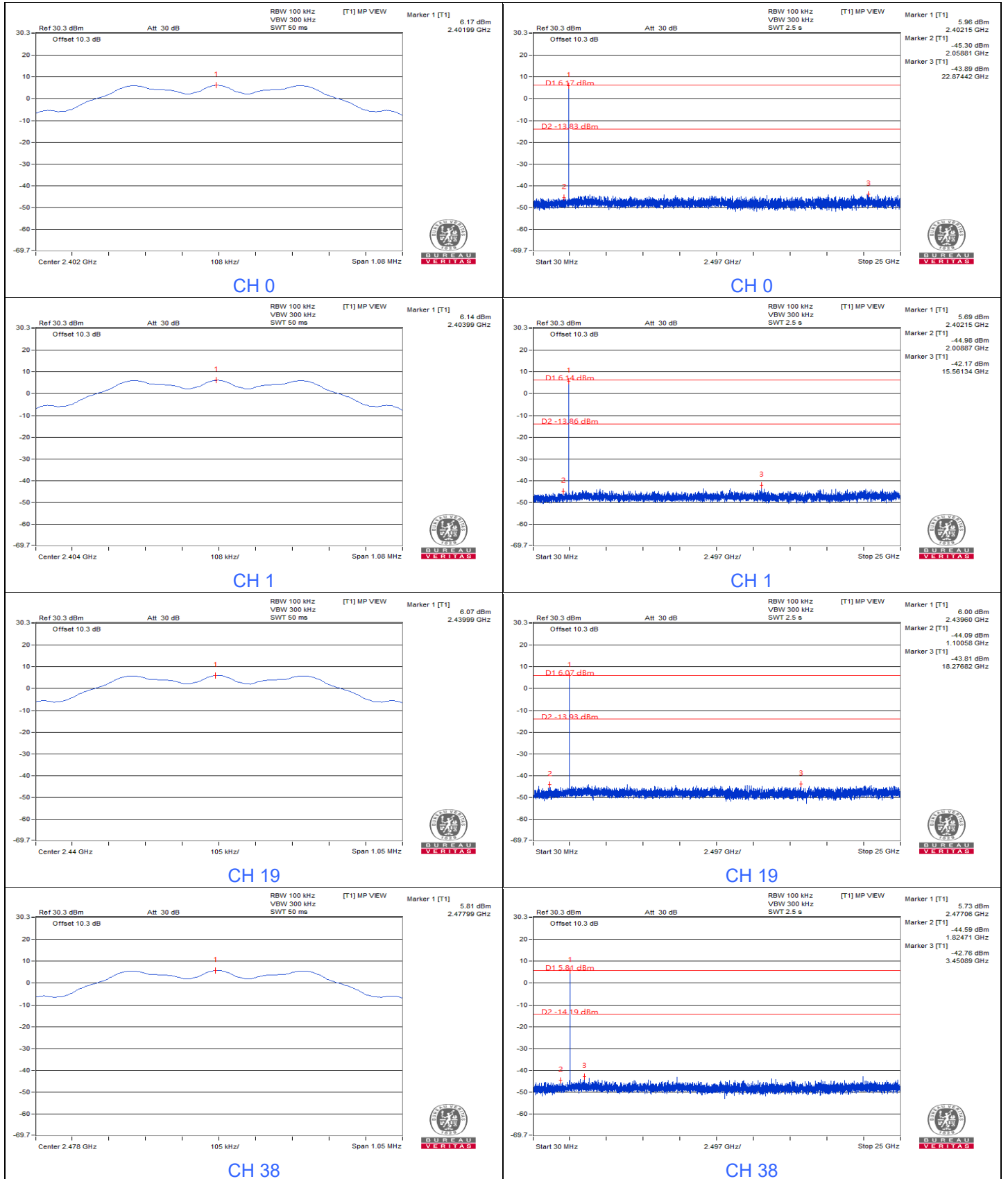


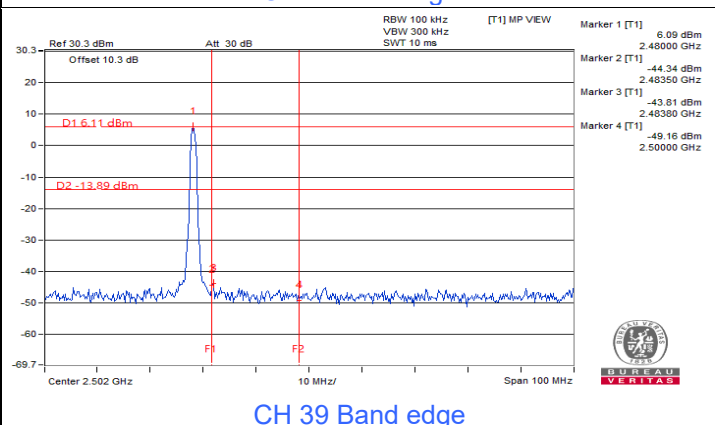
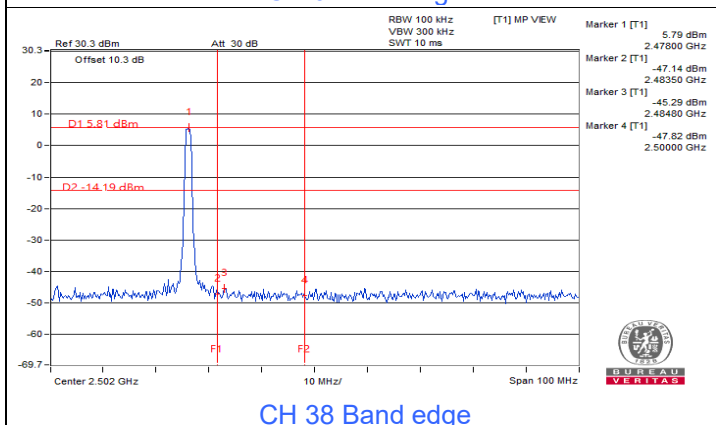
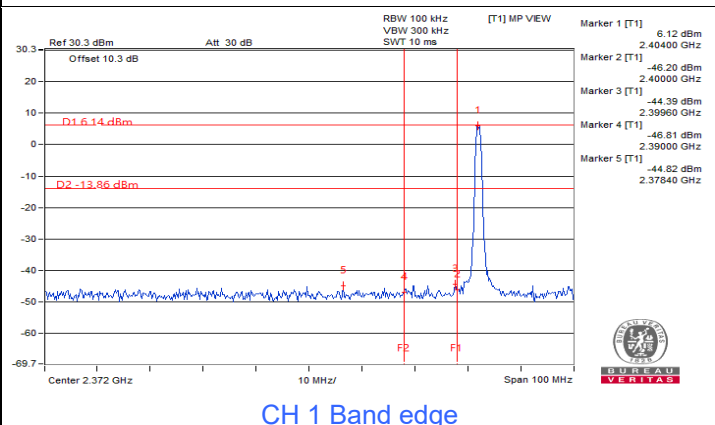
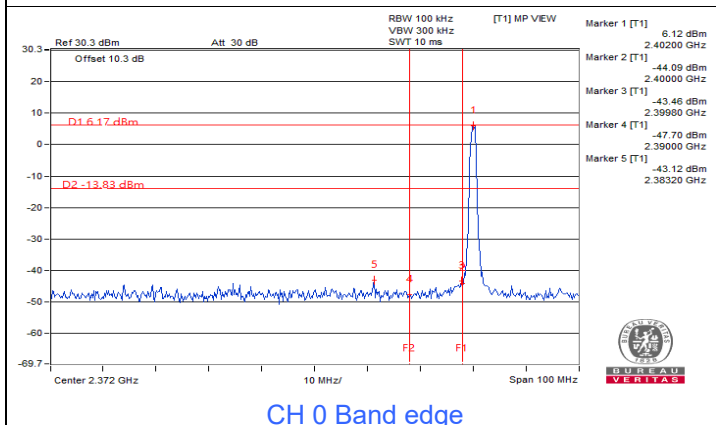
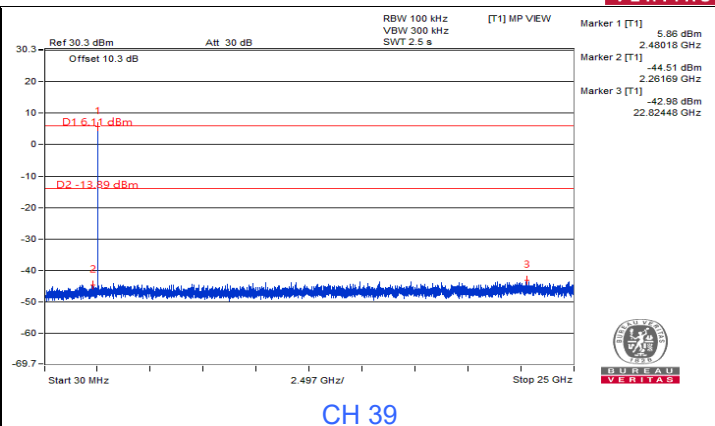
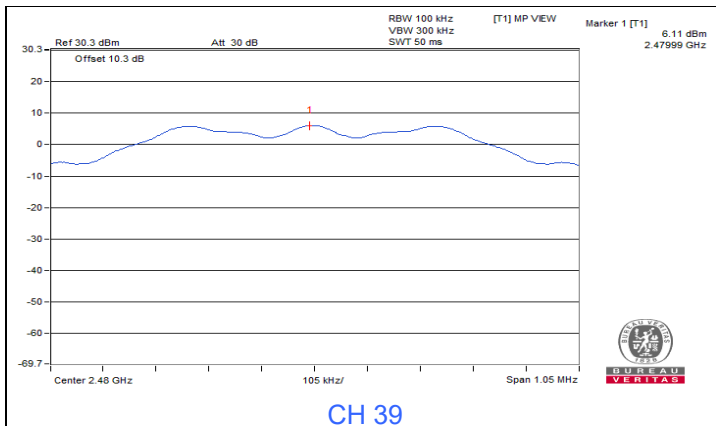
BUREAU VERITAS

7.4 Conducted Out of Band Emissions

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Chun Wu
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1MBaud PHY with 125kbps

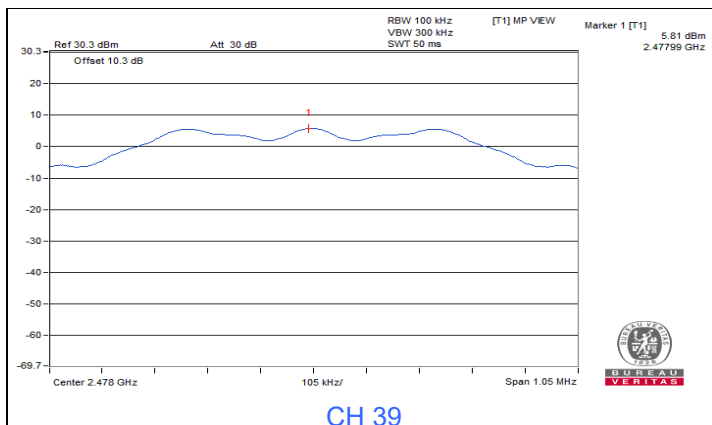




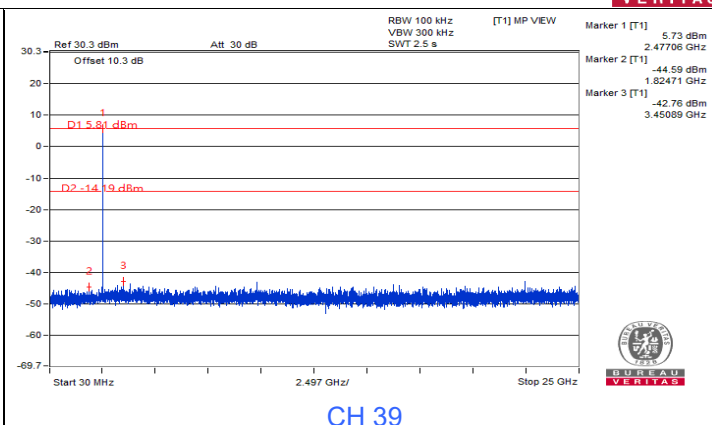


1MBaud PHY

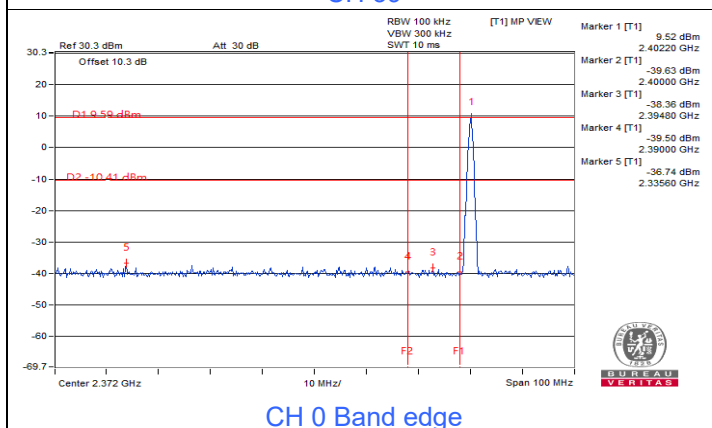




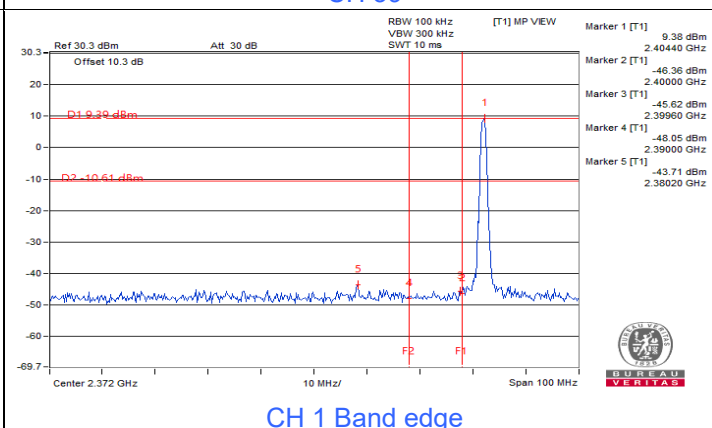
CH 39



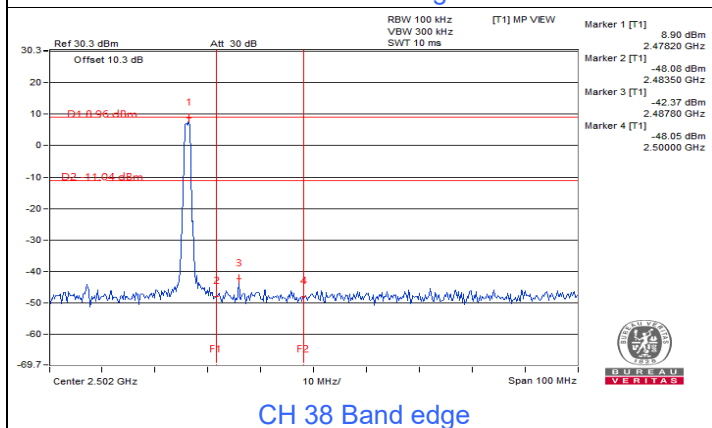
CH 39



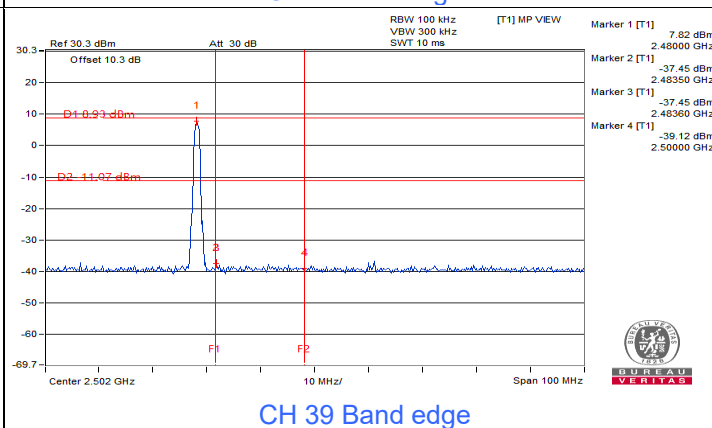
CH 0 Band edge



CH 1 Band edge



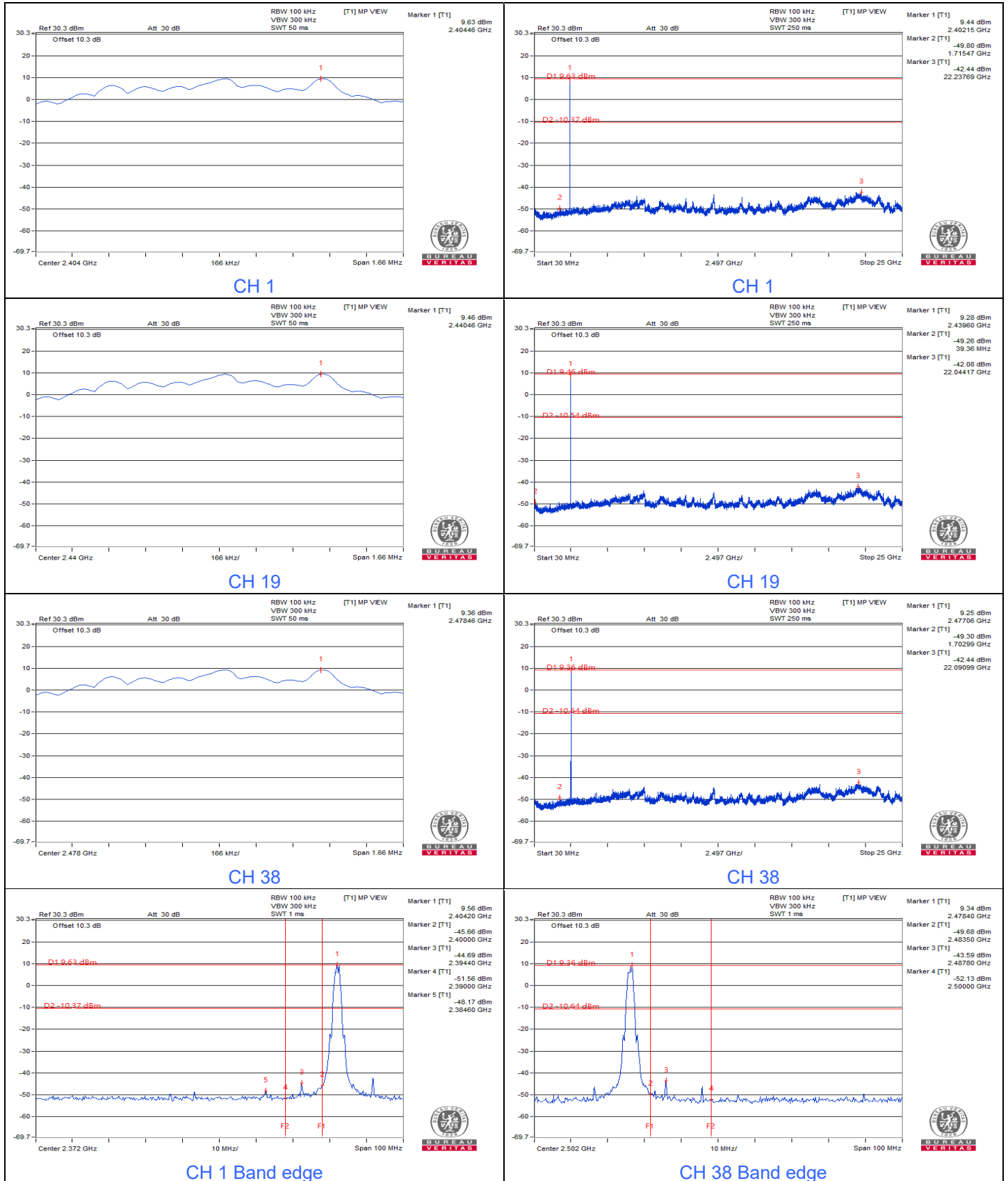
CH 38 Band edge



CH 39 Band edge



2MBaud PHY



7.5 AC Power Conducted Emissions

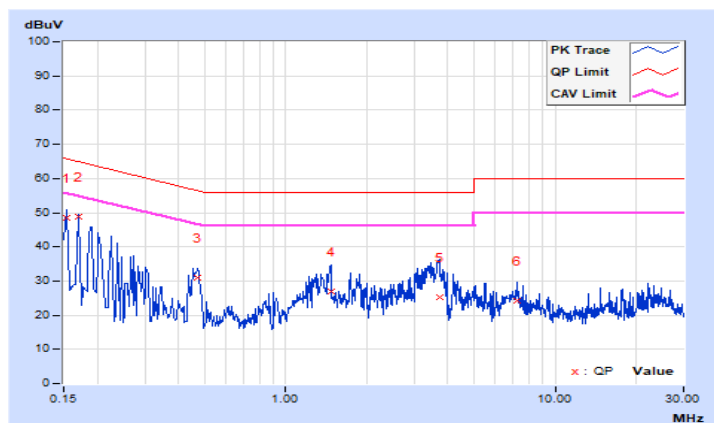
Mode A

RF Mode	TX 1MBaud PHY	Channel	CH 0 : 2402 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	Rex Wang		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	10.13	38.22	22.74	48.35	32.87	65.78	55.78	-17.43	-22.91
2	0.17000	10.13	38.84	19.85	48.97	29.98	64.96	54.96	-15.99	-24.98
3	0.47000	10.16	20.92	14.75	31.08	24.91	56.51	46.51	-25.43	-21.60
4	1.46873	10.20	16.88	6.63	27.08	16.83	56.00	46.00	-28.92	-29.17
5	3.72200	10.25	14.96	5.76	25.21	16.01	56.00	46.00	-30.79	-29.99
6	7.19000	10.27	13.98	7.09	24.25	17.36	60.00	50.00	-35.75	-32.64

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

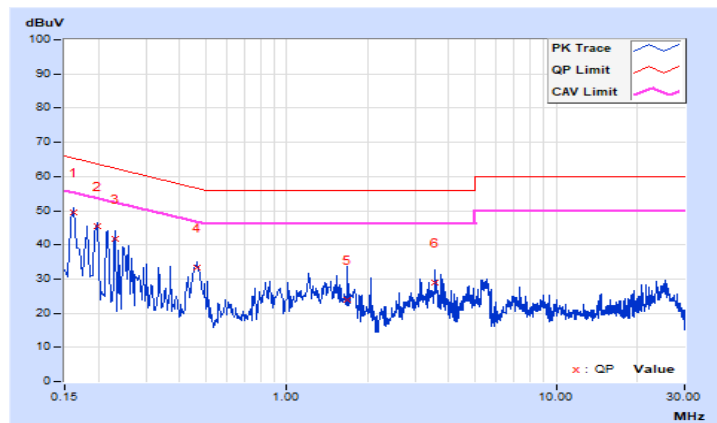


RF Mode	TX 1MBaud PHY	Channel	CH 0 : 2402 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Rex Wang		

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	0.16190	10.14	39.28	21.84	49.42	31.98	65.37	55.37	-15.95	-23.39
2	0.19780	10.15	35.41	17.61	45.56	27.76	63.70	53.70	-18.14	-25.94
3	0.23000	10.15	31.57	12.88	41.72	23.03	62.45	52.45	-20.73	-29.42
4	0.46567	10.17	23.26	18.49	33.43	28.66	56.59	46.59	-23.16	-17.93
5	1.68600	10.22	13.74	5.75	23.96	15.97	56.00	46.00	-32.04	-30.03
6	3.54600	10.26	18.82	8.74	29.08	19.00	56.00	46.00	-26.92	-27.00

Remarks:

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



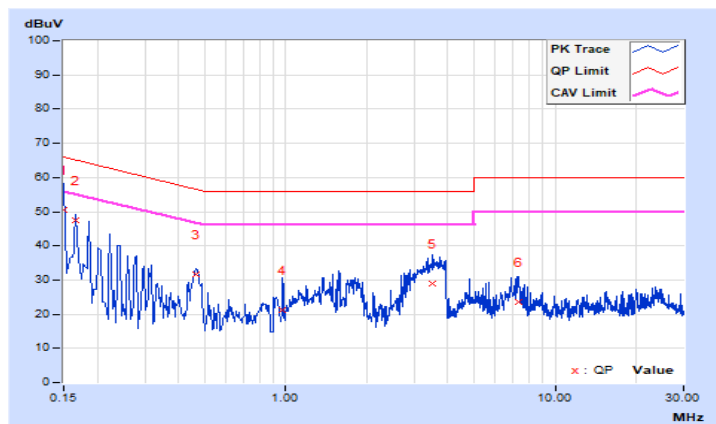
Mode B

RF Mode	TX 1MBaud PHY	Channel	CH 0 : 2402 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	Rex Wang		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.13	40.32	22.42	50.45	32.55	66.00	56.00	-15.55	-23.45
2	0.16600	10.13	37.21	19.97	47.34	30.10	65.16	55.16	-17.82	-25.06
3	0.46200	10.16	21.55	16.08	31.71	26.24	56.66	46.66	-24.95	-20.42
4	0.97400	10.19	11.14	2.45	21.33	12.64	56.00	46.00	-34.67	-33.36
5	3.49400	10.24	18.77	9.24	29.01	19.48	56.00	46.00	-26.99	-26.52
6	7.28600	10.27	13.36	6.65	23.63	16.92	60.00	50.00	-36.37	-33.08

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

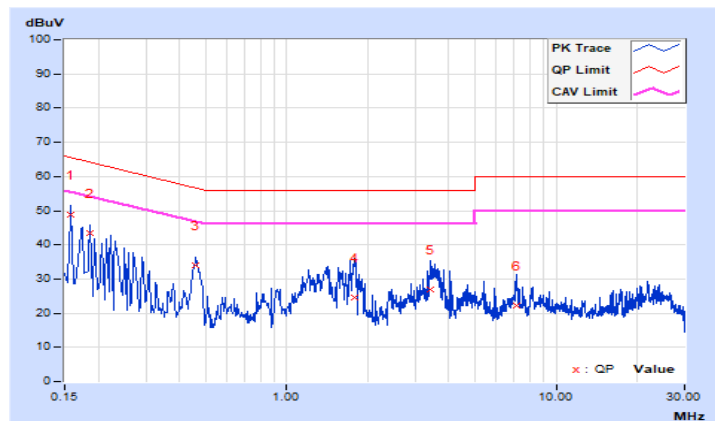


RF Mode	TX 1MBaud PHY	Channel	CH 0 : 2402 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Rex Wang		

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	0.15800	10.14	38.72	21.40	48.86	31.54	65.57	55.57	-16.71	-24.03
2	0.18600	10.15	33.22	16.82	43.37	26.97	64.21	54.21	-20.84	-27.24
3	0.45800	10.17	23.73	17.36	33.90	27.53	56.73	46.73	-22.83	-19.20
4	1.77800	10.22	14.51	2.66	24.73	12.88	56.00	46.00	-31.27	-33.12
5	3.42600	10.26	16.53	8.61	26.79	18.87	56.00	46.00	-29.21	-27.13
6	7.17000	10.31	12.06	5.52	22.37	15.83	60.00	50.00	-37.63	-34.17

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

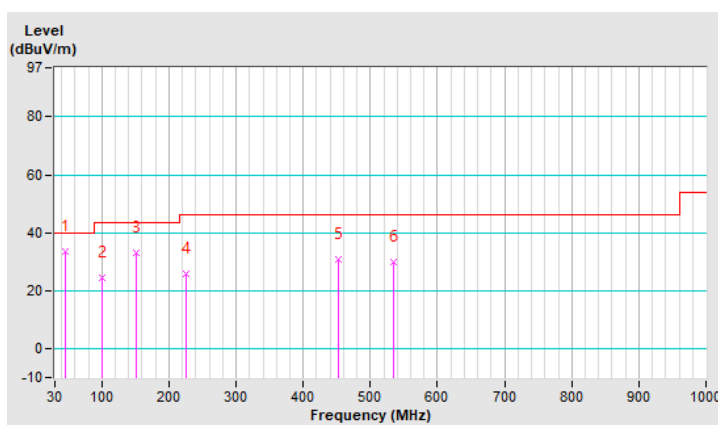
Mode A

RF Mode	TX 1MBaud PHY	Channel	CH 0 : 2402 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	45.52	33.7 QP	40.0	-6.3	1.24 H	191	42.9	-9.2
2	99.84	24.3 QP	43.5	-19.2	1.49 H	6	38.0	-13.7
3	151.25	33.0 QP	43.5	-10.5	1.99 H	14	41.9	-8.9
4	225.94	25.8 QP	46.0	-20.2	1.00 H	123	37.1	-11.3
5	452.92	30.9 QP	46.0	-15.1	1.99 H	83	34.3	-3.4
6	535.37	30.0 QP	46.0	-16.0	1.00 H	342	32.0	-2.0

Remarks:

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

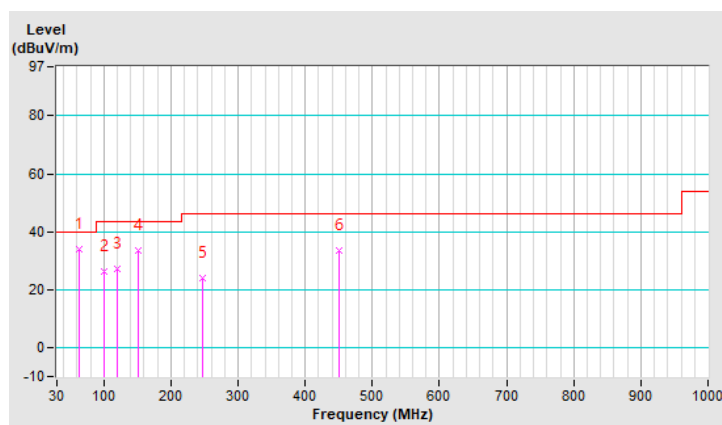


RF Mode	TX 1MBaud PHY	Channel	CH 0 : 2402 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	63.95	33.9 QP	40.0	-6.1	2.00 V	130	43.9	-10.0
2	99.84	26.3 QP	43.5	-17.2	1.00 V	202	40.0	-13.7
3	119.24	27.2 QP	43.5	-16.3	1.00 V	220	38.5	-11.3
4	151.25	33.6 QP	43.5	-9.9	2.00 V	138	42.5	-8.9
5	246.31	23.9 QP	46.0	-22.1	1.00 V	179	33.1	-9.2
6	450.98	33.5 QP	46.0	-12.5	1.00 V	137	37.0	-3.5

Remarks:

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



Mode B

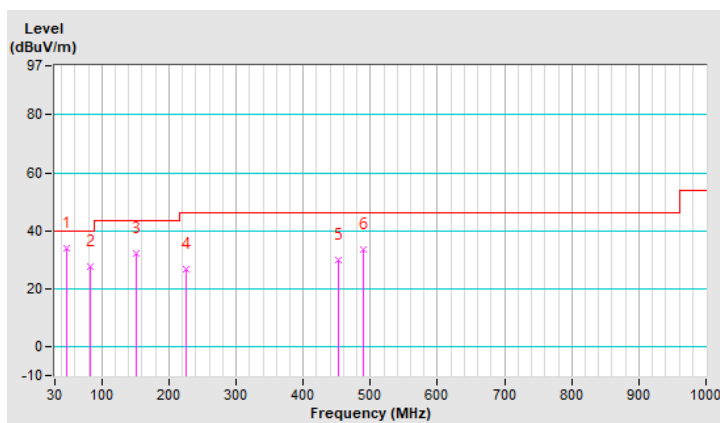
RF Mode	TX 1MBaud PHY	Channel	CH 0 : 2402 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	48.43	34.1 QP	40.0	-5.9	2.00 H	268	43.1	-9.0
2	83.35	27.6 QP	40.0	-12.4	1.25 H	228	41.8	-14.2
3	151.25	32.3 QP	43.5	-11.2	1.51 H	14	41.2	-8.9
4	225.94	26.9 QP	46.0	-19.1	1.51 H	94	38.2	-11.3
5	451.95	30.0 QP	46.0	-16.0	1.51 H	101	33.4	-3.4
6	489.78	33.5 QP	46.0	-12.5	2.00 H	129	36.3	-2.8

Remarks:

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

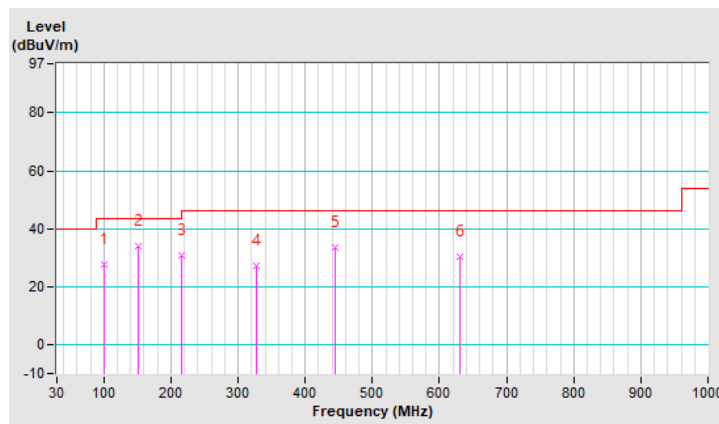


RF Mode	TX 1MBaud PHY	Channel	CH 0 : 2402 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	100.81	27.5 QP	43.5	-16.0	1.51 V	226	40.9	-13.4
2	151.25	33.9 QP	43.5	-9.6	1.25 V	6	42.8	-8.9
3	216.24	30.8 QP	46.0	-15.2	1.25 V	130	42.0	-11.2
4	326.82	27.4 QP	46.0	-18.6	1.51 V	161	33.5	-6.1
5	444.19	33.4 QP	46.0	-12.6	1.01 V	160	37.1	-3.7
6	629.46	30.5 QP	46.0	-15.5	1.01 V	220	30.4	0.1

Remarks:

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



7.7 Unwanted Emissions above 1 GHz

Mode A

RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 0 : 2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.4 PK	74.0	-23.6	1.42 H	26	51.9	-1.5
2	2390.00	39.9 AV	54.0	-14.1	1.42 H	26	41.4	-1.5
3	*2402.00	104.4 PK			1.42 H	26	71.6	32.8
4	*2402.00	91.7 AV			1.42 H	26	58.9	32.8
5	4804.00	50.4 PK	74.0	-23.6	1.24 H	18	44.6	5.8
6	4804.00	38.9 AV	54.0	-15.1	1.24 H	18	33.1	5.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.3 PK	74.0	-23.7	1.26 V	100	51.8	-1.5
2	2390.00	39.5 AV	54.0	-14.5	1.26 V	100	41.0	-1.5
3	*2402.00	101.3 PK			1.26 V	100	68.5	32.8
4	*2402.00	89.2 AV			1.26 V	100	56.4	32.8
5	4804.00	50.0 PK	74.0	-24.0	1.62 V	23	44.2	5.8
6	4804.00	38.4 AV	54.0	-15.6	1.62 V	23	32.6	5.8

Remarks:

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



RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.6 PK	74.0	-23.4	1.41 H	10	52.1	-1.5
2	2390.00	40.0 AV	54.0	-14.0	1.41 H	10	41.5	-1.5
3	*2404.00	104.5 PK			1.41 H	10	71.7	32.8
4	*2404.00	104.0 AV			1.41 H	10	71.2	32.8
5	4808.00	49.9 PK	74.0	-24.1	1.20 H	13	44.1	5.8
6	4808.00	37.2 AV	54.0	-16.8	1.20 H	13	31.4	5.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.3 PK	74.0	-23.7	1.26 V	88	51.8	-1.5
2	2390.00	39.6 AV	54.0	-14.4	1.26 V	88	41.1	-1.5
3	*2404.00	102.1 PK			1.26 V	88	69.3	32.8
4	*2404.00	101.5 AV			1.26 V	88	68.7	32.8
5	4808.00	49.6 PK	74.0	-24.4	1.51 V	19	43.8	5.8
6	4808.00	37.1 AV	54.0	-16.9	1.51 V	19	31.3	5.8

Remarks:

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



RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2440.00	105.5 PK			1.42 H	27	72.7	32.8
2	*2440.00	104.9 AV			1.42 H	27	72.1	32.8
3	4880.00	49.7 PK	74.0	-24.3	1.29 H	12	44.2	5.5
4	4880.00	36.8 AV	54.0	-17.2	1.29 H	12	31.3	5.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	99.8 PK			1.32 V	100	67.0	32.8
2	*2440.00	99.2 AV			1.32 V	100	66.4	32.8
3	4880.00	49.5 PK	74.0	-24.5	1.58 V	21	44.0	5.5
4	4880.00	36.6 AV	54.0	-17.4	1.58 V	21	31.1	5.5

Remarks:

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



RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2478.00	105.2 PK			1.39 H	22	72.3	32.9
2	*2478.00	104.6 AV			1.39 H	22	71.7	32.9
3	2483.50	51.4 PK	74.0	-22.6	1.39 H	22	52.9	-1.5
4	2483.50	40.4 AV	54.0	-13.6	1.39 H	22	41.9	-1.5
5	4956.00	50.2 PK	74.0	-23.8	1.29 H	18	44.6	5.6
6	4956.00	37.2 AV	54.0	-16.8	1.29 H	18	31.6	5.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBUV)	Correction Factor (dB/m)
1	*2478.00	101.1 PK			1.39 V	88	68.2	32.9
2	*2478.00	100.5 AV			1.39 V	88	67.6	32.9
3	2483.50	50.9 PK	74.0	-23.1	1.39 V	88	52.4	-1.5
4	2483.50	39.3 AV	54.0	-14.7	1.39 V	88	40.8	-1.5
5	4956.00	49.9 PK	74.0	-24.1	1.57 V	20	44.3	5.6
6	4956.00	36.8 AV	54.0	-17.2	1.57 V	20	31.2	5.6

Remarks:

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



RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 39 : 2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2480.00	104.8 PK			1.37 H	22	71.9	32.9
2	*2480.00	92.6 AV			1.37 H	22	59.7	32.9
3	2483.50	54.6 PK	74.0	-19.4	1.37 H	22	56.1	-1.5
4	2483.50	43.1 AV	54.0	-10.9	1.37 H	22	44.6	-1.5
5	4960.00	50.2 PK	74.0	-23.8	1.41 H	26	44.5	5.7
6	4960.00	38.5 AV	54.0	-15.5	1.41 H	26	32.8	5.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	101.7 PK			1.18 V	88	68.8	32.9
2	*2480.00	89.1 AV			1.18 V	88	56.2	32.9
3	2483.50	52.9 PK	74.0	-21.1	1.18 V	88	54.4	-1.5
4	2483.50	41.8 AV	54.0	-12.2	1.18 V	88	43.3	-1.5
5	4960.00	49.8 PK	74.0	-24.2	1.56 V	16	44.1	5.7
6	4960.00	38.7 AV	54.0	-15.3	1.56 V	16	33.0	5.7

Remarks:

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

RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 0 : 2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	51.1 PK	74.0	-22.9	1.10 H	0	52.6	-1.5
2	2390.00	40.2 AV	54.0	-13.8	1.10 H	0	41.7	-1.5
3	*2402.00	104.3 PK			1.10 H	0	71.5	32.8
4	*2402.00	92.1 AV			1.10 H	0	59.3	32.8
5	4804.00	50.0 PK	74.0	-24.0	1.19 H	355	44.2	5.8
6	4804.00	38.1 AV	54.0	-15.9	1.19 H	355	32.3	5.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.2 PK	74.0	-23.8	1.25 V	105	51.7	-1.5
2	2390.00	40.1 AV	54.0	-13.9	1.25 V	105	41.6	-1.5
3	*2402.00	102.0 PK			1.25 V	105	69.2	32.8
4	*2402.00	89.7 AV			1.25 V	105	56.9	32.8
5	4804.00	49.9 PK	74.0	-24.1	1.52 V	15	44.1	5.8
6	4804.00	37.9 AV	54.0	-16.1	1.52 V	15	32.1	5.8

Remarks:

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



RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.0 PK	74.0	-24.0	1.08 H	6	51.5	-1.5
2	2390.00	39.9 AV	54.0	-14.1	1.08 H	6	41.4	-1.5
3	*2404.00	103.8 PK			1.08 H	6	71.0	32.8
4	*2404.00	103.3 AV			1.08 H	6	70.5	32.8
5	4808.00	49.8 PK	74.0	-24.2	1.24 H	4	44.0	5.8
6	4808.00	37.2 AV	54.0	-16.8	1.24 H	4	31.4	5.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	49.8 PK	74.0	-24.2	1.03 V	101	51.3	-1.5
2	2390.00	39.2 AV	54.0	-14.8	1.03 V	101	40.7	-1.5
3	*2404.00	102.5 PK			1.03 V	101	69.7	32.8
4	*2404.00	101.9 AV			1.03 V	101	69.1	32.8
5	4808.00	49.7 PK	74.0	-24.3	1.48 V	12	43.9	5.8
6	4808.00	37.0 AV	54.0	-17.0	1.48 V	12	31.2	5.8

Remarks:

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



RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2440.00	104.5 PK			1.05 H	11	71.7	32.8
2	*2440.00	103.8 AV			1.05 H	11	71.0	32.8
3	4880.00	49.7 PK	74.0	-24.3	1.16 H	10	44.2	5.5
4	4880.00	36.9 AV	54.0	-17.1	1.16 H	10	31.4	5.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	101.2 PK			1.00 V	85	68.4	32.8
2	*2440.00	100.6 AV			1.00 V	85	67.8	32.8
3	4880.00	49.5 PK	74.0	-24.5	1.55 V	24	44.0	5.5
4	4880.00	36.8 AV	54.0	-17.2	1.55 V	24	31.3	5.5

Remarks:

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



RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2478.00	104.6 PK			1.35 H	13	71.7	32.9
2	*2478.00	104.1 AV			1.35 H	13	71.2	32.9
3	2483.50	53.7 PK	74.0	-20.3	1.35 H	13	55.2	-1.5
4	2483.50	41.1 AV	54.0	-12.9	1.35 H	13	42.6	-1.5
5	4956.00	49.9 PK	74.0	-24.1	1.26 H	8	44.3	5.6
6	4956.00	36.9 AV	54.0	-17.1	1.26 H	8	31.3	5.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2478.00	101.2 PK			1.18 V	86	68.3	32.9
2	*2478.00	100.7 AV			1.18 V	86	67.8	32.9
3	2483.50	51.4 PK	74.0	-22.6	1.18 V	86	52.9	-1.5
4	2483.50	38.8 AV	54.0	-15.2	1.18 V	86	40.3	-1.5
5	4956.00	49.5 PK	74.0	-24.5	1.46 V	29	43.9	5.6
6	4956.00	36.8 AV	54.0	-17.2	1.46 V	29	31.2	5.6

Remarks:

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



RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 39 : 2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2480.00	104.5 PK			1.22 H	12	71.6	32.9
2	*2480.00	92.1 AV			1.22 H	12	59.2	32.9
3	2483.50	55.4 PK	74.0	-18.6	1.22 H	12	56.9	-1.5
4	2483.50	43.5 AV	54.0	-10.5	1.22 H	12	45.0	-1.5
5	4960.00	50.0 PK	74.0	-24.0	1.15 H	10	44.3	5.7
6	4960.00	38.1 AV	54.0	-15.9	1.15 H	10	32.4	5.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	101.0 PK			1.23 V	88	68.1	32.9
2	*2480.00	88.8 AV			1.23 V	88	55.9	32.9
3	2483.50	54.0 PK	74.0	-20.0	1.23 V	88	55.5	-1.5
4	2483.50	41.2 AV	54.0	-12.8	1.23 V	88	42.7	-1.5
5	4960.00	50.0 PK	74.0	-24.0	1.47 V	34	44.3	5.7
6	4960.00	38.6 AV	54.0	-15.4	1.47 V	345	32.9	5.7

Remarks:

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



RF Mode	TX 2MBaud PHY	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.6 PK	74.0	-23.4	1.24 H	35	52.1	-1.5
2	2390.00	40.0 AV	54.0	-14.0	1.24 H	35	41.5	-1.5
3	*2404.00	103.9 PK			1.24 H	35	71.1	32.8
4	*2404.00	102.3 AV			1.24 H	35	69.5	32.8
5	4808.00	50.3 PK	74.0	-23.7	1.19 H	10	44.5	5.8
6	4808.00	37.4 AV	54.0	-16.6	1.19 H	10	31.6	5.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.4 PK	74.0	-23.6	1.24 V	105	51.9	-1.5
2	2390.00	39.4 AV	54.0	-14.6	1.24 V	105	40.9	-1.5
3	*2404.00	101.5 PK			1.24 V	105	68.7	32.8
4	*2404.00	100.0 AV			1.24 V	105	67.2	32.8
5	4808.00	49.9 PK	74.0	-24.1	1.50 V	16	44.1	5.8
6	4808.00	37.1 AV	54.0	-16.9	1.50 V	16	31.3	5.8

Remarks:

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



RF Mode	TX 2MBaud PHY	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2440.00	105.0 PK			1.22 H	36	72.2	32.8
2	*2440.00	103.5 AV			1.22 H	36	70.7	32.8
3	4880.00	49.8 PK	74.0	-24.2	1.18 H	16	44.3	5.5
4	4880.00	36.9 AV	54.0	-17.1	1.18 H	16	31.4	5.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	101.6 PK			1.17 V	87	68.8	32.8
2	*2440.00	100.1 AV			1.17 V	87	67.3	32.8
3	4880.00	49.5 PK	74.0	-24.5	1.56 V	32	44.0	5.5
4	4880.00	36.7 AV	54.0	-17.3	1.56 V	32	31.2	5.5

Remarks:

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



RF Mode	TX 2MBaud PHY	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2478.00	105.3 PK			1.57 H	10	72.4	32.9
2	*2478.00	103.8 AV			1.57 H	10	70.9	32.9
3	2483.50	55.4 PK	74.0	-18.6	1.57 H	10	56.9	-1.5
4	2483.50	43.4 AV	54.0	-10.6	1.57 H	10	44.9	-1.5
5	4956.00	50.0 PK	74.0	-24.0	1.28 H	19	44.4	5.6
6	4956.00	36.9 AV	54.0	-17.1	1.28 H	19	31.3	5.6

Antenna Polarity & Test Distance : Vertical at 3 m

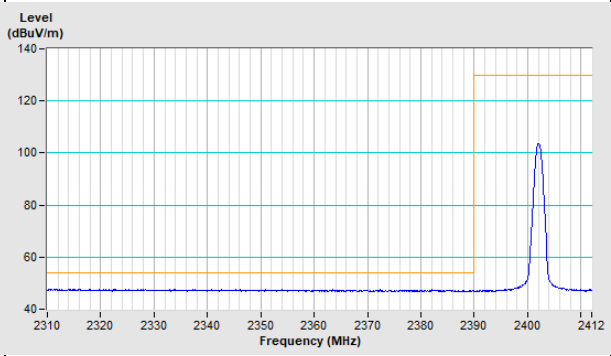
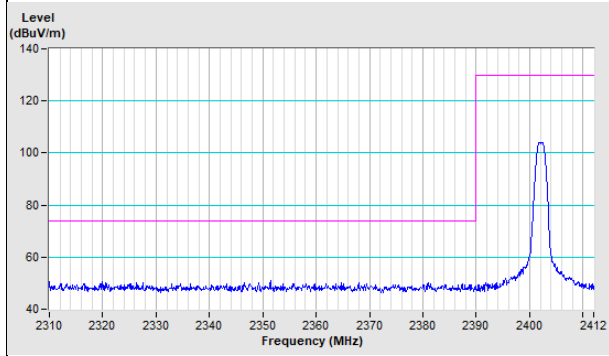
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1	*2478.00	100.3 PK			1.20 V	71	67.4	32.9
2	*2478.00	98.8 AV			1.20 V	71	65.9	32.9
3	2483.50	51.6 PK	74.0	-22.4	1.20 V	71	53.1	-1.5
4	2483.50	39.5 AV	54.0	-14.5	1.20 V	71	41.0	-1.5
5	4956.00	49.8 PK	74.0	-24.2	1.48 V	10	44.2	5.6
6	4956.00	36.8 AV	54.0	-17.2	1.48 V	10	31.2	5.6

Remarks:

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

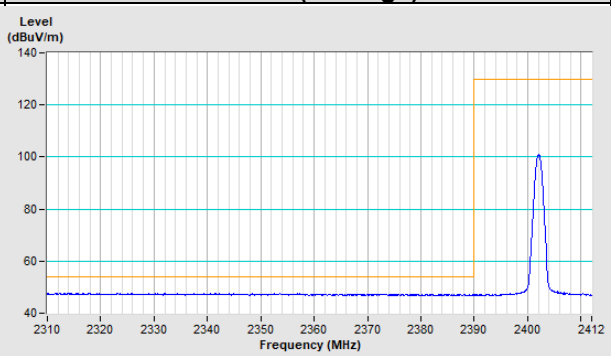
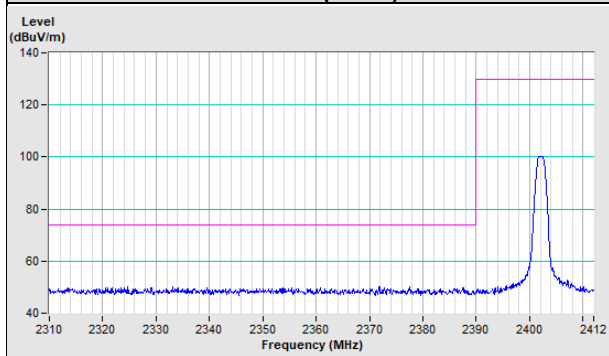
1MBaud PHY with 125kbps Channel 0

Horizontal (Peak) **Horizontal (Average)**



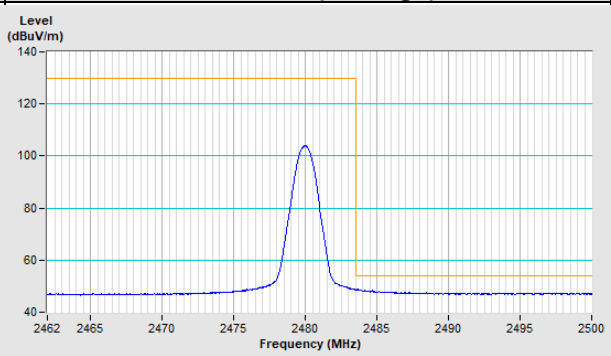
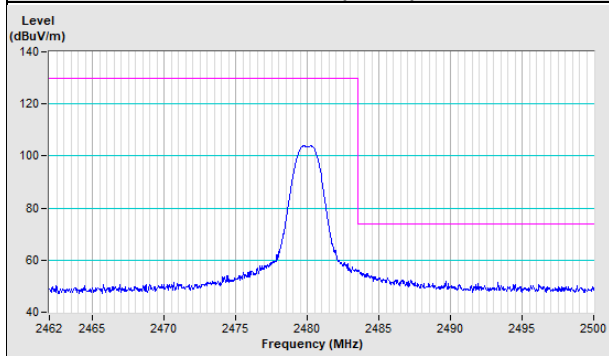
Vertical (Peak)

Vertical (Average)



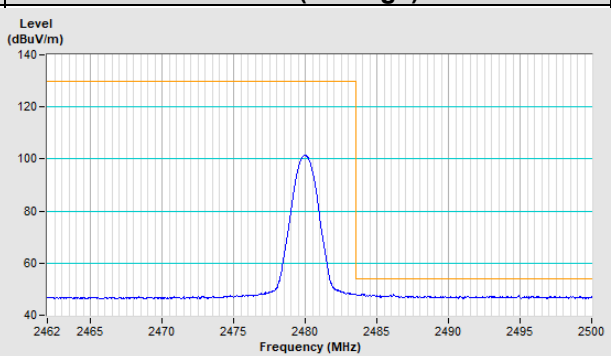
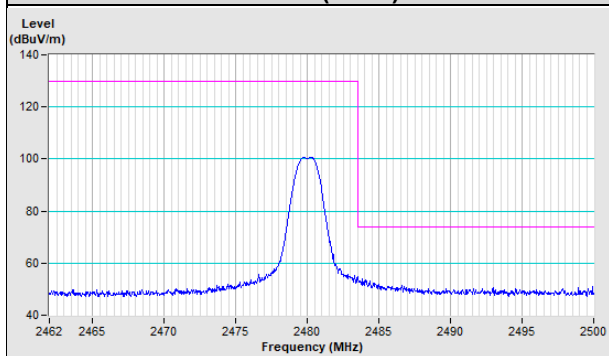
1MBaud PHY with 125kbps Channel 39

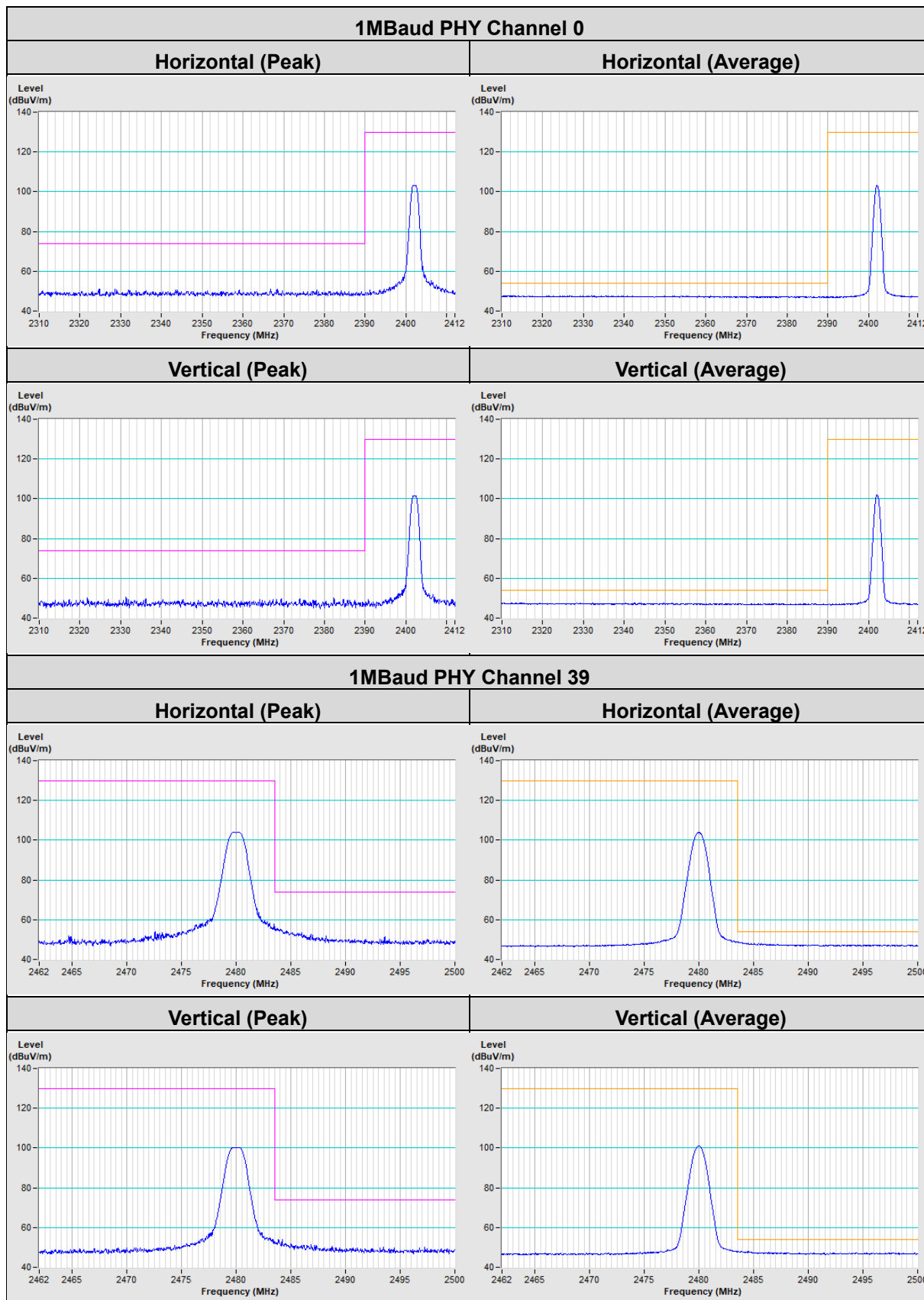
Horizontal (Peak) **Horizontal (Average)**



Vertical (Peak)

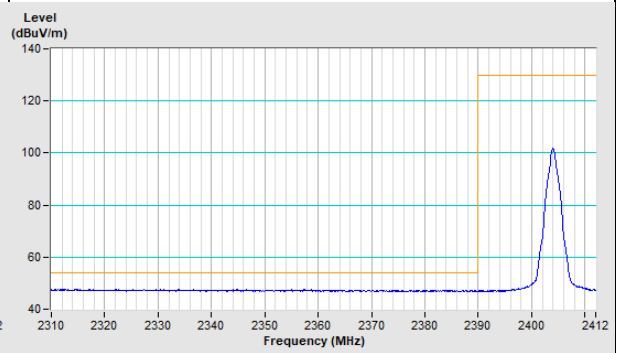
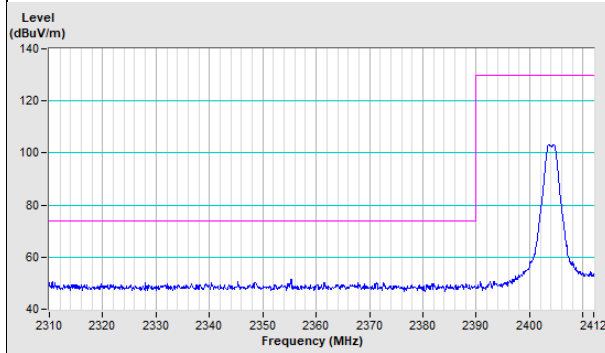
Vertical (Average)





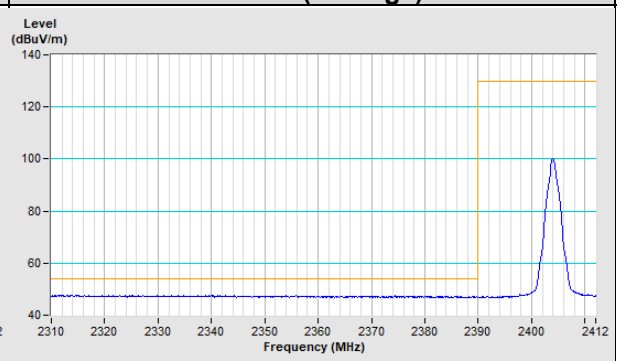
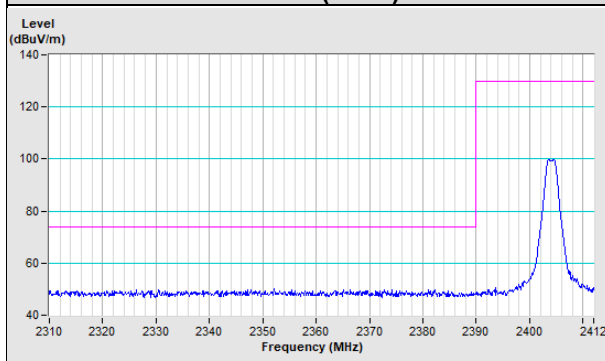
2MBaud PHY Channel 1

Horizontal (Peak) **Horizontal (Average)**



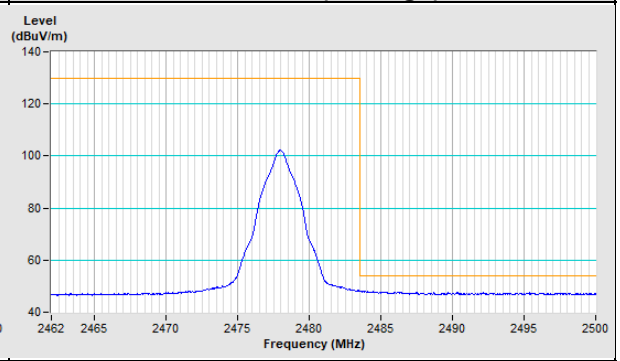
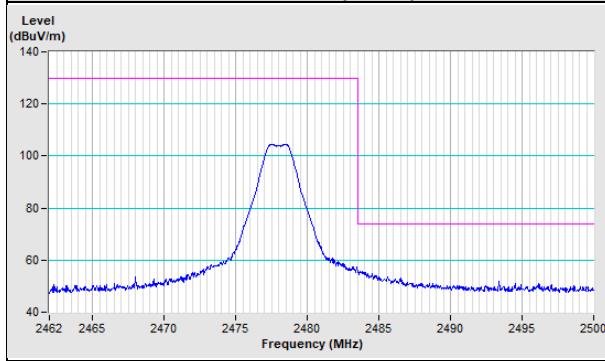
Vertical (Peak)

Vertical (Average)



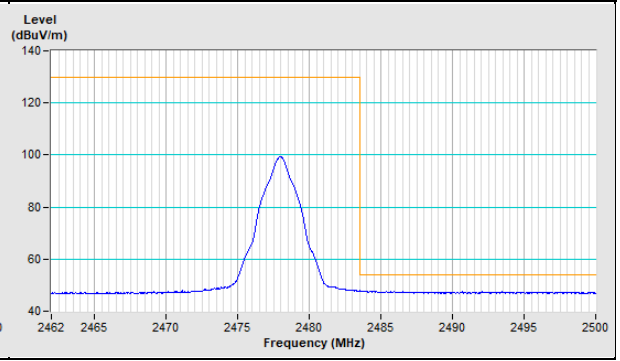
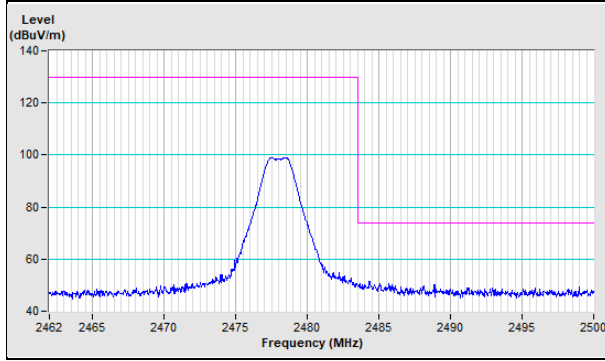
2MBaud PHY Channel 38

Horizontal (Peak) **Horizontal (Average)**



Vertical (Peak)

Vertical (Average)



Mode B

RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 0 : 2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	51.2 PK	74.0	-22.8	2.53 H	268	52.7	-1.5
2	2390.00	39.9 AV	54.0	-14.1	2.53 H	268	41.4	-1.5
3	*2402.00	106.1 PK			2.53 H	268	73.3	32.8
4	*2402.00	93.8 AV			2.53 H	268	61.0	32.8
5	4804.00	49.2 PK	74.0	-24.8	2.33 H	271	43.4	5.8
6	4804.00	39.7 AV	54.0	-14.3	2.33 H	271	33.9	5.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.5 PK	74.0	-23.5	3.54 V	200	52.0	-1.5
2	2390.00	39.2 AV	54.0	-14.8	3.54 V	200	40.7	-1.5
3	*2402.00	100.7 PK			3.54 V	200	67.9	32.8
4	*2402.00	88.7 AV			3.54 V	200	55.9	32.8
5	4804.00	48.8 PK	74.0	-25.2	3.30 V	0	43.0	5.8
6	4804.00	39.2 AV	54.0	-14.8	3.30 V	0	33.4	5.8

Remarks:

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



RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBUV)	Correction Factor (dB/m)
1	2390.00	50.4 PK	74.0	-23.6	2.54 H	268	51.9	-1.5
2	2390.00	39.8 AV	54.0	-14.2	2.54 H	268	41.3	-1.5
3	*2404.00	105.7 PK			2.54 H	268	72.9	32.8
4	*2404.00	104.6 AV			2.54 H	268	71.8	32.8
5	4808.00	49.6 PK	74.0	-24.4	2.32 H	275	43.8	5.8
6	4808.00	41.0 AV	54.0	-13.0	2.32 H	275	35.2	5.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBUV)	Correction Factor (dB/m)
1	2390.00	50.1 PK	74.0	-23.9	4.00 V	204	51.6	-1.5
2	2390.00	39.7 AV	54.0	-14.3	4.00 V	204	41.2	-1.5
3	*2404.00	101.4 PK			4.00 V	204	68.6	32.8
4	*2404.00	100.5 AV			4.00 V	204	67.7	32.8
5	4808.00	49.3 PK	74.0	-24.7	3.42 V	0	43.5	5.8
6	4808.00	40.4 AV	54.0	-13.6	3.42 V	0	34.6	5.8

Remarks:

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



RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2440.00	106.3 PK			2.77 H	271	73.5	32.8
2	*2440.00	105.2 AV			2.77 H	271	72.4	32.8
3	4880.00	49.1 PK	74.0	-24.9	2.30 H	274	43.6	5.5
4	4880.00	40.6 AV	54.0	-13.4	2.30 H	274	35.1	5.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	100.6 PK			3.87 V	209	67.8	32.8
2	*2440.00	99.7 AV			3.87 V	209	66.9	32.8
3	4880.00	48.9 PK	74.0	-25.1	3.36 V	1	43.4	5.5
4	4880.00	40.0 AV	54.0	-14.0	3.36 V	1	34.5	5.5

Remarks:

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



RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2478.00	106.4 PK			3.70 H	273	73.5	32.9
2	*2478.00	105.4 AV			3.70 H	273	72.5	32.9
3	2483.50	53.7 PK	74.0	-20.3	3.70 H	273	55.2	-1.5
4	2483.50	41.1 AV	54.0	-12.9	3.70 H	273	42.6	-1.5
5	4956.00	49.0 PK	74.0	-25.0	2.31 H	269	43.4	5.6
6	4956.00	40.8 AV	54.0	-13.2	2.31 H	269	35.2	5.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2478.00	101.0 PK			3.70 V	209	68.1	32.9
2	*2478.00	100.2 AV			3.70 V	209	67.3	32.9
3	2483.50	50.8 PK	74.0	-23.2	3.70 V	209	52.3	-1.5
4	2483.50	38.7 AV	54.0	-15.3	3.70 V	209	40.2	-1.5
5	4956.00	48.7 PK	74.0	-25.3	3.39 V	4	43.1	5.6
6	4956.00	40.2 AV	54.0	-13.8	3.39 V	4	34.6	5.6

Remarks:

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



RF Mode	TX 1MBaud PHY with 125kbps	Channel	CH 39 : 2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2480.00	106.3 PK			3.69 H	270	73.4	32.9
2	*2480.00	94.0 AV			3.69 H	270	61.1	32.9
3	2483.50	55.5 PK	74.0	-18.5	3.69 H	270	57.0	-1.5
4	2483.50	44.0 AV	54.0	-10.0	3.69 H	270	45.5	-1.5
5	4960.00	49.4 PK	74.0	-24.6	2.34 H	274	43.7	5.7
6	4960.00	39.1 AV	54.0	-14.9	2.34 H	274	33.4	5.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	100.0 PK			3.78 V	211	67.1	32.9
2	*2480.00	88.0 AV			3.78 V	211	55.1	32.9
3	2483.50	50.5 PK	74.0	-23.5	3.78 V	211	52.0	-1.5
4	2483.50	38.6 AV	54.0	-15.4	3.78 V	211	40.1	-1.5
5	4960.00	48.4 PK	74.0	-25.6	3.36 V	1	42.7	5.7
6	4960.00	40.4 AV	54.0	-13.6	3.36 V	1	34.7	5.7

Remarks:

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

RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 0 : 2402 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	51.1 PK	74.0	-22.9	2.56 H	266	52.6	-1.5
2	2390.00	40.1 AV	54.0	-13.9	2.56 H	266	41.6	-1.5
3	*2402.00	106.5 PK			2.56 H	266	73.7	32.8
4	*2402.00	94.3 AV			2.56 H	266	61.5	32.8
5	4804.00	49.4 PK	74.0	-24.6	2.32 H	275	43.6	5.8
6	4804.00	39.9 AV	54.0	-14.1	2.32 H	275	34.1	5.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.0 PK	74.0	-24.0	3.60 V	203	51.5	-1.5
2	2390.00	39.6 AV	54.0	-14.4	3.60 V	203	41.1	-1.5
3	*2402.00	101.1 PK			3.60 V	203	68.3	32.8
4	*2402.00	89.0 AV			3.60 V	203	56.2	32.8
5	4804.00	48.7 PK	74.0	-25.3	3.30 V	0	42.9	5.8
6	4804.00	39.5 AV	54.0	-14.5	3.30 V	0	33.7	5.8

Remarks:

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



RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.7 PK	74.0	-23.3	2.57 H	268	52.2	-1.5
2	2390.00	40.1 AV	54.0	-13.9	2.57 H	268	41.6	-1.5
3	*2404.00	106.1 PK			2.57 H	268	73.3	32.8
4	*2404.00	105.3 AV			2.57 H	268	72.5	32.8
5	4808.00	50.0 PK	74.0	-24.0	2.36 H	277	44.2	5.8
6	4808.00	41.1 AV	54.0	-12.9	2.36 H	277	35.3	5.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.1 PK	74.0	-23.9	3.95 V	204	51.6	-1.5
2	2390.00	39.1 AV	54.0	-14.9	3.95 V	204	40.6	-1.5
3	*2404.00	101.3 PK			3.95 V	204	68.5	32.8
4	*2404.00	100.7 AV			3.95 V	204	67.9	32.8
5	4808.00	49.4 PK	74.0	-24.6	3.37 V	6	43.6	5.8
6	4808.00	41.0 AV	54.0	-13.0	3.37 V	6	35.2	5.8

Remarks:

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



RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2440.00	105.4 PK			2.74 H	277	72.6	32.8
2	*2440.00	104.5 AV			2.74 H	277	71.7	32.8
3	4880.00	49.0 PK	74.0	-25.0	2.34 H	274	43.5	5.5
4	4880.00	40.4 AV	54.0	-13.6	2.34 H	274	34.9	5.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	100.3 PK			3.79 V	200	67.5	32.8
2	*2440.00	99.5 AV			3.79 V	200	66.7	32.8
3	4880.00	48.7 PK	74.0	-25.3	3.44 V	9	43.2	5.5
4	4880.00	40.1 AV	54.0	-13.9	3.44 V	9	34.6	5.5

Remarks:

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



RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2478.00	105.9 PK			2.66 H	270	73.0	32.9
2	*2478.00	104.9 AV			2.66 H	270	72.0	32.9
3	2483.50	52.3 PK	74.0	-21.7	2.66 H	270	53.8	-1.5
4	2483.50	40.8 AV	54.0	-13.2	2.66 H	270	42.3	-1.5
5	4956.00	49.3 PK	74.0	-24.7	2.30 H	278	43.7	5.6
6	4956.00	40.6 AV	54.0	-13.4	2.30 H	278	35.0	5.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2478.00	101.3 PK			3.70 V	208	68.4	32.9
2	*2478.00	100.6 AV			3.70 V	208	67.7	32.9
3	2483.50	51.7 PK	74.0	-22.3	3.70 V	208	53.2	-1.5
4	2483.50	39.0 AV	54.0	-15.0	3.70 V	208	40.5	-1.5
5	4956.00	48.8 PK	74.0	-25.2	3.40 V	4	43.2	5.6
6	4956.00	40.1 AV	54.0	-13.9	3.40 V	4	34.5	5.6

Remarks:

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



RF Mode	TX 1MBaud PHY with 1Mbps	Channel	CH 39 : 2480 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2480.00	106.7 PK			3.66 H	270	73.8	32.9
2	*2480.00	94.2 AV			3.66 H	270	61.3	32.9
3	2483.50	56.3 PK	74.0	-17.7	3.66 H	270	57.8	-1.5
4	2483.50	44.2 AV	54.0	-9.8	3.66 H	270	45.7	-1.5
5	4960.00	50.0 PK	74.0	-24.0	2.39 H	275	44.3	5.7
6	4960.00	39.1 AV	54.0	-14.9	2.39 H	275	33.4	5.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2480.00	101.0 PK			3.60 V	207	68.1	32.9
2	*2480.00	89.1 AV			3.60 V	207	56.2	32.9
3	2483.50	52.3 PK	74.0	-21.7	3.60 V	207	53.8	-1.5
4	2483.50	40.0 AV	54.0	-14.0	3.60 V	207	41.5	-1.5
5	4960.00	49.5 PK	74.0	-24.5	3.30 V	6	43.8	5.7
6	4960.00	38.7 AV	54.0	-15.3	3.30 V	6	33.0	5.7

Remarks:

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

RF Mode	TX 2MBaud PHY	Channel	CH 1 : 2404 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.4 PK	74.0	-23.6	2.53 H	268	51.9	-1.5
2	2390.00	40.1 AV	54.0	-13.9	2.53 H	268	41.6	-1.5
3	*2404.00	106.0 PK			2.53 H	268	73.2	32.8
4	*2404.00	104.1 AV			2.53 H	268	71.3	32.8
5	4808.00	49.6 PK	74.0	-24.4	2.28 H	272	43.8	5.8
6	4808.00	40.7 AV	54.0	-13.3	2.28 H	272	34.9	5.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	50.1 PK	74.0	-23.9	4.00 V	204	51.6	-1.5
2	2390.00	39.8 AV	54.0	-14.2	4.00 V	204	41.3	-1.5
3	*2404.00	101.6 PK			4.00 V	204	68.8	32.8
4	*2404.00	99.6 AV			4.00 V	204	66.8	32.8
5	4808.00	49.2 PK	74.0	-24.8	3.45 V	12	43.4	5.8
6	4808.00	40.4 AV	54.0	-13.6	3.45 V	12	34.6	5.8

Remarks:

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



RF Mode	TX 2MBaud PHY	Channel	CH 19 : 2440 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

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	*2440.00	106.3 PK			2.77 H	268	73.5	32.8
2	*2440.00	104.4 AV			2.77 H	268	71.6	32.8
3	4880.00	49.1 PK	74.0	-24.9	2.30 H	278	43.6	5.5
4	4880.00	40.5 AV	54.0	-13.5	2.30 H	278	35.0	5.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2440.00	100.4 PK			3.87 V	208	67.6	32.8
2	*2440.00	98.1 AV			3.87 V	208	65.3	32.8
3	4880.00	49.0 PK	74.0	-25.0	3.30 V	5	43.5	5.5
4	4880.00	40.4 AV	54.0	-13.6	3.30 V	5	34.9	5.5

Remarks:

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

RF Mode	TX 2MBaud PHY	Channel	CH 38 : 2478 MHz
Frequency Range	1 GHz ~ 25 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 3MHz(RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 69% RH
Tested By	Rex Wang		

Antenna Polarity & Test Distance : Horizontal at 3 m

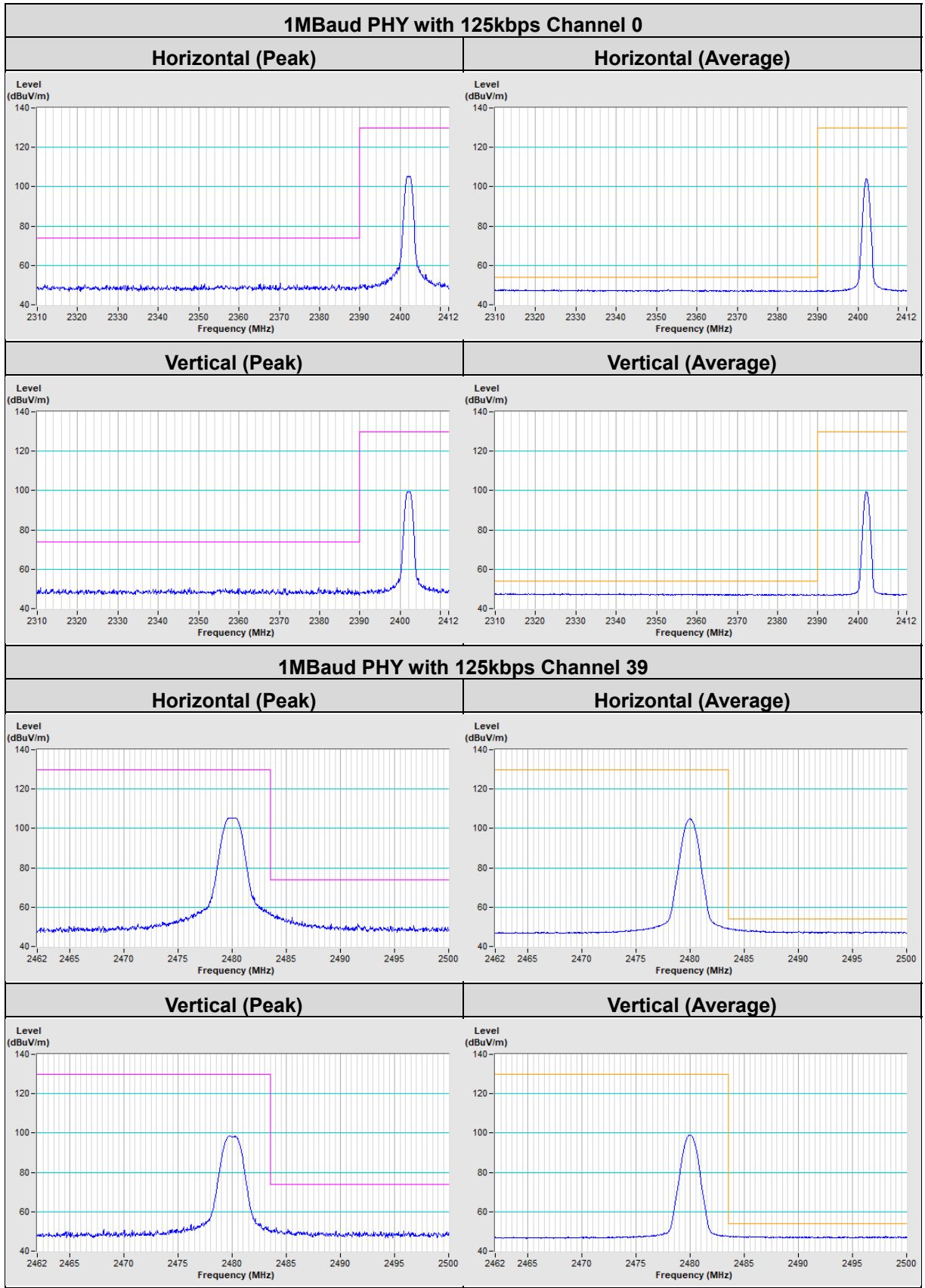
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1	*2478.00	106.3 PK			3.67 H	268	73.4	32.9
2	*2478.00	104.2 AV			3.67 H	268	71.3	32.9
3	2483.50	55.1 PK	74.0	-18.9	3.67 H	268	56.6	-1.5
4	2483.50	42.8 AV	54.0	-11.2	3.67 H	268	44.3	-1.5
5	4956.00	49.1 PK	74.0	-24.9	2.33 H	270	43.5	5.6
6	4956.00	40.4 AV	54.0	-13.6	2.33 H	270	34.8	5.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2478.00	101.2 PK			3.68 V	209	68.3	32.9
2	*2478.00	99.4 AV			3.68 V	209	66.5	32.9
3	2483.50	50.4 PK	74.0	-23.6	3.68 V	209	51.9	-1.5
4	2483.50	38.7 AV	54.0	-15.3	3.68 V	209	40.2	-1.5
5	4956.00	48.7 PK	74.0	-25.3	3.35 V	11	43.1	5.6
6	4956.00	39.9 AV	54.0	-14.1	3.35 V	11	34.3	5.6

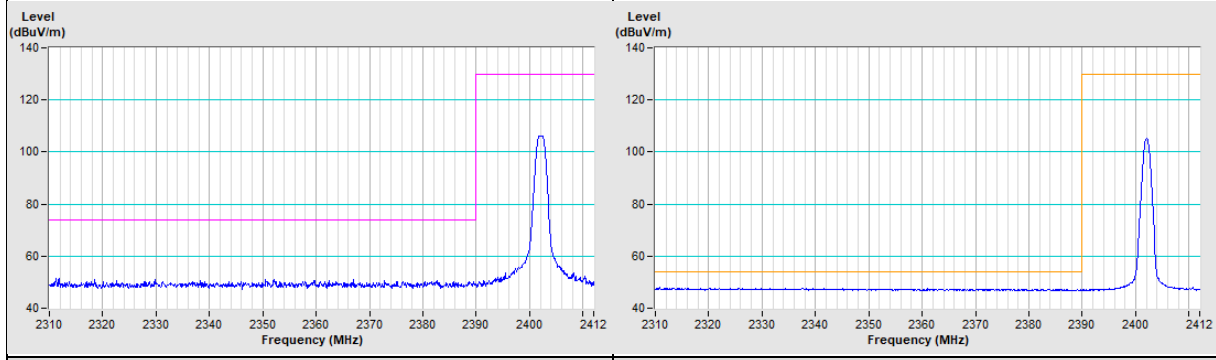
Remarks:

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

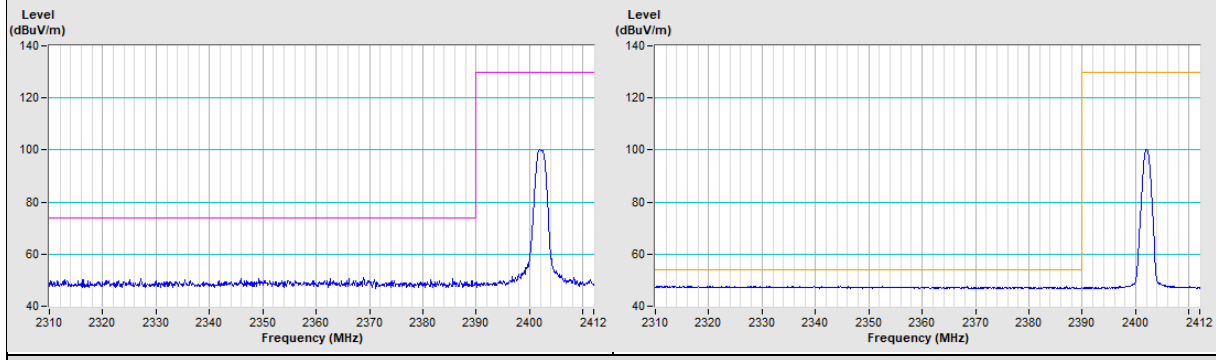


1MBaud PHY Channel 0

Horizontal (Peak)	Horizontal (Average)
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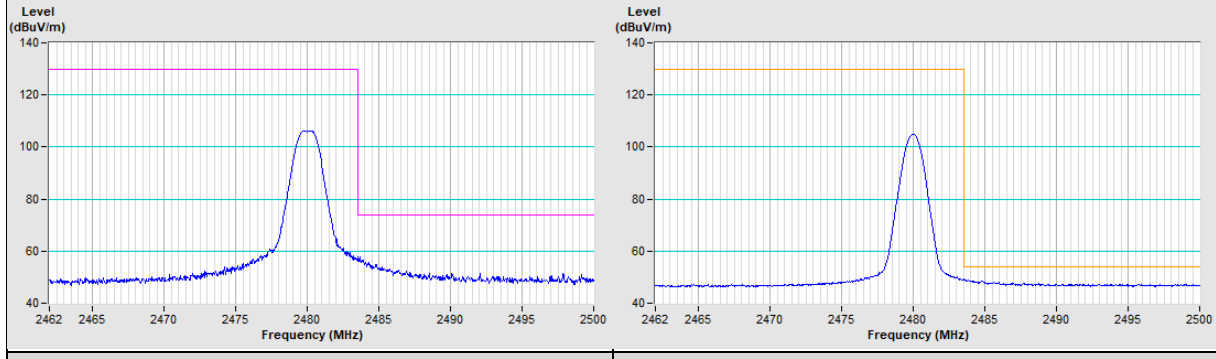


Vertical (Peak)	Vertical (Average)
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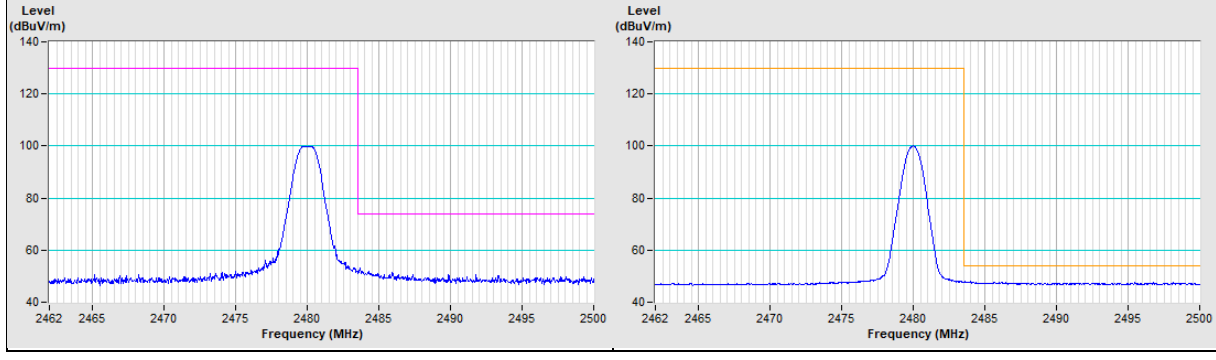


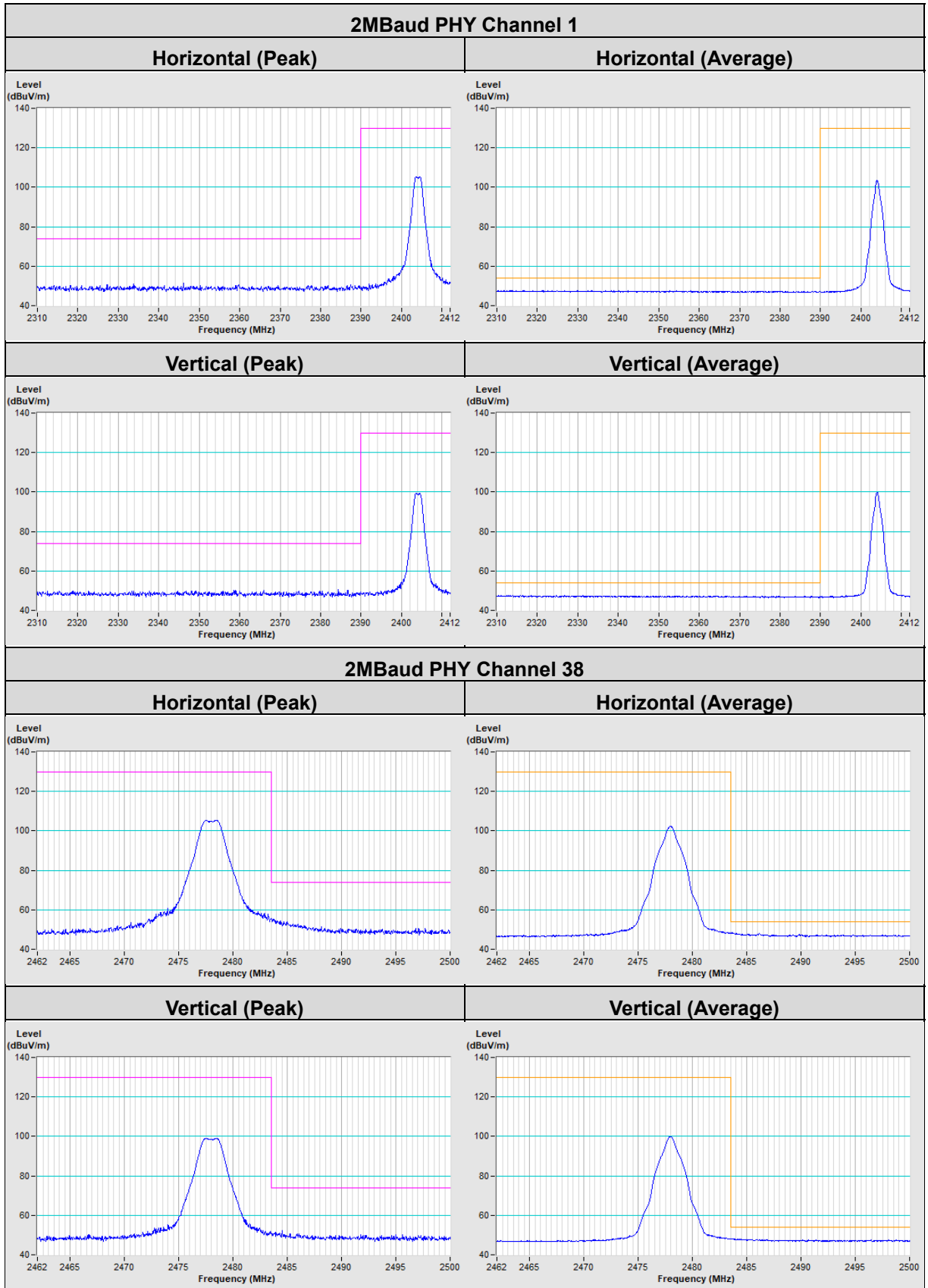
1MBaud PHY Channel 39

Horizontal (Peak)	Horizontal (Average)
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Vertical (Peak)	Vertical (Average)
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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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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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