

Prüfbericht-Nr.: <i>Test report no.:</i>	CN22JQ53 001	Auftrags-Nr.: <i>Order no.:</i>	168394483	Seite 1 von 14 <i>Page 1 of 14</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2022-10-09	
Auftraggeber: <i>Client:</i>	Honeywell (Beijing) Technology Solutions Labs Co., Ltd. A1 Building, C&W Industry Zone, No.14 Jiuxianqiao Road, Chaoyang District, Beijing, 100015, P.R. China			
Prüfgegenstand: <i>Test item:</i>	BACnet IP/MSTP VAV Controller			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	WEB-VA75MB24NM, CPO-VA75MB24NM, CLMEVA75MB24NM, WEB-VA00MB24NM, CPO-VA00MB24NM, CLMEVA00MB24NM, WEB-VA00IB24NM, CPO-VA00IB24NM, CLMEVA00IB24NM, WEB-VA75IB24NM, CPO-VA75IB24NM, CLMEVA75IB24NM, VAVi-7u5-IP-BLE			
Auftrags-Inhalt: <i>Order content:</i>	Test Report			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247		RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 March 2019	
Wareneingangsdatum: <i>Date of sample receipt:</i>	2022-10-20	Please refer to Photo Document		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003334654-001, 004, 010			
Prüfzeitraum: <i>Testing period:</i>	2022-10-29 – 2022-11-04			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	<u>x Bell Hu</u>	genehmigt von: <i>authorized by:</i>	<u>X Lin Lin</u>	
Datum: <i>Date:</i>	2022-11-24 <small>Signed by: Bell Hu</small>	Ausstellungsdatum: <i>Issue date:</i>	2022-11-24 <small>Signed by: Lin Lin</small>	
Stellung / Position:	Project Manager	Stellung / Position:	Reviewer	
Sonstiges / Other:	FCC ID: 2ARTN-00005; IC: 24552-00005;HVIN: 301002;PMN: BACnet IP/MSTP VAV Controller This report is based on original reports SRTC2021-9004(F)-21030305(E) and SRTC2021-9004(I)-21030305(E) for Class 2 permissive change, due to some optimizations on non-Radio circuits, details as listed in CIIPC letter. It verified that there is no degradation on Radio power, and only the RSE reported.			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend N/A = nicht anwendbar	4 = ausreichend N/T = nicht getestet
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory N/A = not applicable	4 = sufficient N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

v05

Prüfbericht - Nr.: CN22JQ53 001
Test Report No.:

Seite 2 von 14
Page 2 of 14

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 RADIATED SPURIOUS EMISSION

RESULT: Pass

Contents

1	GENERAL REMARKS	4
1.1	COMPLEMENTARY MATERIALS	4
2	TEST SITES	5
2.1	TEST FACILITIES	5
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS.....	5
2.3	TRACEABILITY	6
2.4	CALIBRATION	6
2.5	MEASUREMENT UNCERTAINTY.....	6
2.6	LOCATION OF ORIGINAL DATA.....	6
2.7	STATUS OF FACILITY USED FOR TESTING.....	6
3	GENERAL PRODUCT INFORMATION	7
3.1	PRODUCT FUNCTION AND INTENDED USE.....	7
3.2	RATINGS AND SYSTEM DETAILS	7
3.3	INDEPENDENT OPERATION MODES	8
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS.....	8
3.5	SUBMITTED DOCUMENTS.....	8
4	TEST SET-UP AND OPERATION MODES	9
4.1	PRINCIPLE OF CONFIGURATION SELECTION	9
4.2	TEST OPERATION AND TEST SOFTWARE.....	9
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT.....	9
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE.....	9
4.5	TEST SETUP DIAGRAM.....	10
5	TEST RESULTS	12
5.1	TRANSMITTER REQUIREMENT & TEST SUITES	12
5.1.1	Antenna Requirement	12
5.1.2	Radiated Spurious Emission	13
6	PHOTOGRAPHS OF THE TEST SET-UP	14
7	LIST OF TABLES.....	14

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of Bluetooth Low energy

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	10.10.2023
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	10.10.2023
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	10.10.2023
DC power supply	Keysight	E3642A	MY61276100	10.10.2023
Power Control Unit	Tonscend	JS0806-4ADC	N/A	10.10.2023
Automation Control Unit	Tonscend	JS0806-2	21C8060396	10.10.2023
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Shielding Room 8#	Albatross	SR8	APC17151-SR8	22.06.2022
Unwanted Emission Testing (TS9975)				
Equipment	Manufacturer	Model	Serial No.	Cal. until
EMI Test Receiver	R&S	ESR 7	102021	02.08.2023
Signal Analyzer	R&S	FSV 40	101439	01.08.2023
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	01.08.2023
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	02.08.2023
Amplifier	R&S	SCU-18F	180070	02.08.2023
Amplifier	R&S	SCU40A	100475	02.08.2023
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	06.08.2024
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	06.08.2024
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	27.08.2024
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	06.08.2024
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A

Prüfbericht - Nr.: CN22JQ53 001
Test Report No.:

 Seite 6 von 14
 Page 6 of 14

Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	22.06.2024

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-7}$
RF Power (conducted)	± 2.5 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	± 6 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	± 6 dB
Temperature	± 1 °C
Humidity	± 5 %
Voltage (DC)	± 1 %
Voltage (AC, <10kHz)	± 2 %

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The product is BACnet IP/MSTP VAV Controller, which supports Bluetooth low energy technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	BACnet IP/MSTP VAV Controller
Type Designation:	WEB-VA75MB24NM, CPO-VA75MB24NM, CLMEVA75MB24NM, WEB-VA00MB24NM, CPO-VA00MB24NM, CLMEVA00MB24NM, WEB-VA00IB24NM, CPO-VA00IB24NM, CLMEVA00IB24NM, WEB-VA75IB24NM, CPO-VA75IB24NM, CLMEVA75IB24NM, VAVi-7u5-IP-BLE (They are identical in electrical design, only different in decorative enclosure and interface ports)
FCC ID:	2ARTN-00005
IC:	24552-00005
HVIN:	301002
Operating Voltage:	AC 24V
Technical Specification of Bluetooth low energy	
Frequency Range:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK
Channel Number:	40 channels
Data Rate:	1 Mbps, 2Mbps
Channel Separation:	2 MHz
Antenna info	<p>This device has three antennas, Ant 1, Ant 2 or Ant3. Details as listed below:</p> <p>Ant 1: Model number: ANT-DB1-LCD-SMA, antenna gain:2.8dBi, connector type: SMA</p> <p>Ant 2: Model number: MPNARY113-0012-006-00, antenna gain:-0.31dBi, connector type: SMA</p> <p>Ant 3: Internal PCB antenna, which permanently attached. Antenna gain: 2.3dBi</p> <p>Note: As for Antenna 1 or antenna 2, only professional Installation permitted.</p> <p>All antennas considered during test, only worst-case results reported</p>

Table 3: RF Channel and Frequency of Bluetooth (BLE)

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (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

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Bluetooth Low Energy transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, Normal Working mode with BLE connected
- C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- User Manual
- FCC/IC Label and Location Info

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 4: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N	Rating
Laptop	Lenovo	T480	PF-16A6N8	N/A
Charge transformer	DELIXI	BK-100	/	Output AC24V

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

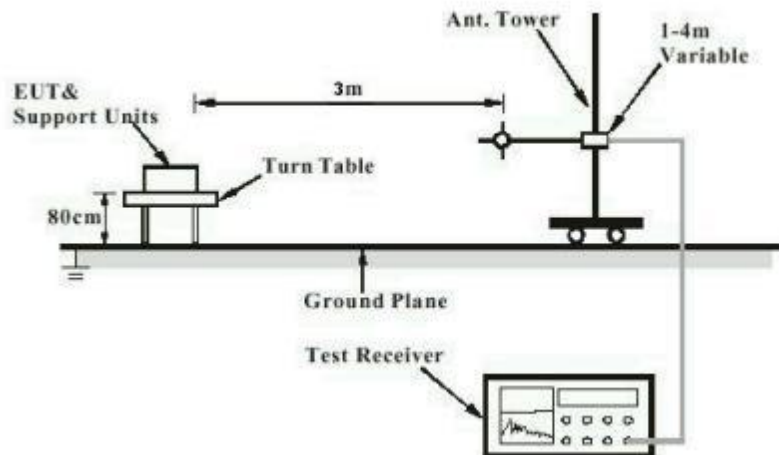


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

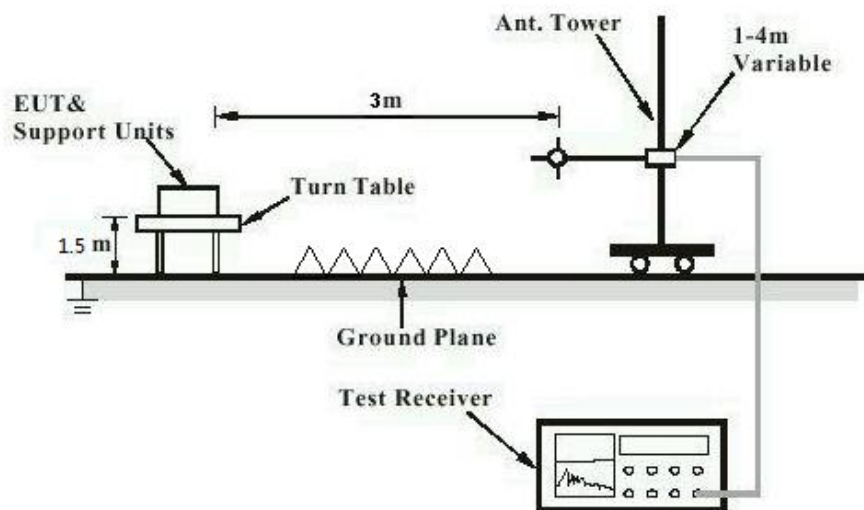


Diagram of Measurement Configuration for Mains Conduction Measurement

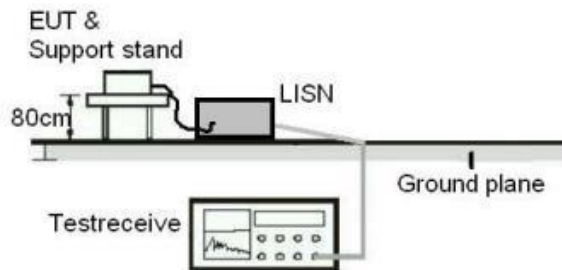
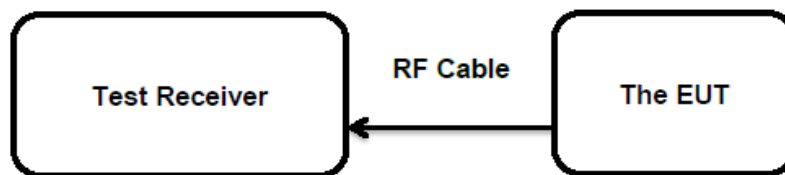


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.247(b)(4) and Part 15.203
RSS-Gen Clause 6.8

According to the manufacturer declared, the EUT has 3 antennas, Ant 1 and Ant 2 with SMA connector are for professional installation only. Ant 3 is internal antenna which permanent attached and no consideration of replacement. Details as listed on section 3.2 table 2.

Therefore, the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Section 8.9 & 8.10
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2022-11-01 to 2022-11-04
Input voltage	: AC 24V
Operation mode	: A
Test channel	: Low/Middle/High
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

Remark:

Testing carried out within frequency range 9kHz to the tenth harmonics. Only the worst-case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix B.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

7 List of Tables

Table 1: List of Test and Measurement Equipment.....	5
Table 2: Technical Specification of EUT.....	7
Table 3: RF Channel and Frequency of Bluetooth (BLE).....	8
Table 4: Auxiliary Equipment Used during Test	9

Appendix B: Test Results of Bluetooth Low Energy

APPENDIX B: TEST RESULTS OF BLUETOOTH LOW ENERGY	1
APPENDIX B.1: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS	2
30 MHz to 1GHz.....	2
1GHz-18GHz.....	6
APPENDIX B.2: TEST RESULTS OF RADIATED EMISSIONS IN RESTRICTED BANDS	18

Appendix B.1: Test Results of Radiated Spurious Emissions

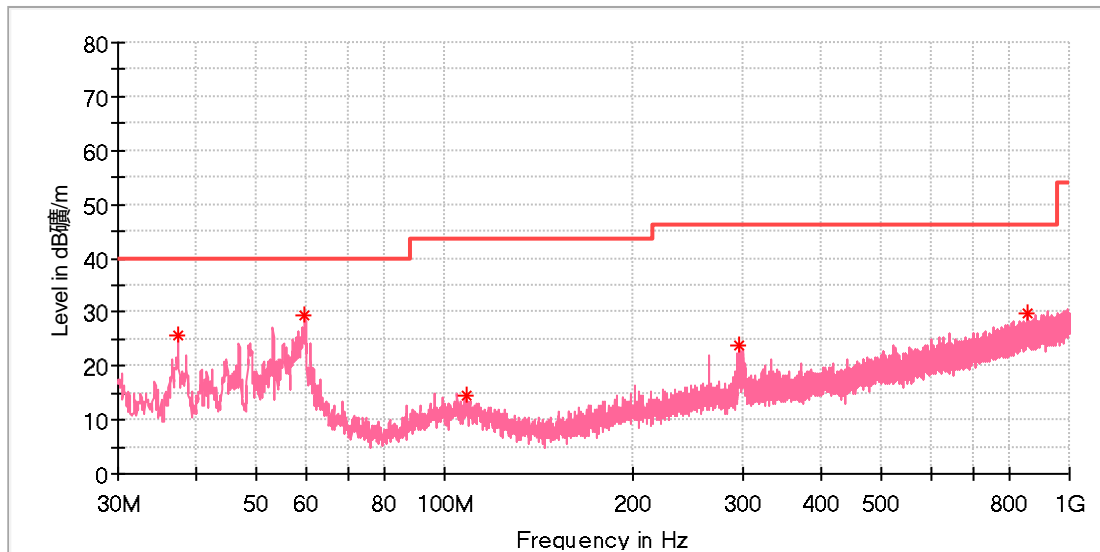
Note:

- 1) This testing was carried out on all modes, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30 MHz to 1GHz

EUT Information

EUT Name:	BACnet IP/MSTP VAV Controller
Model:	WEB-VA75IB24NM
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168394483/A003334654-004
Test Voltage::	24V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

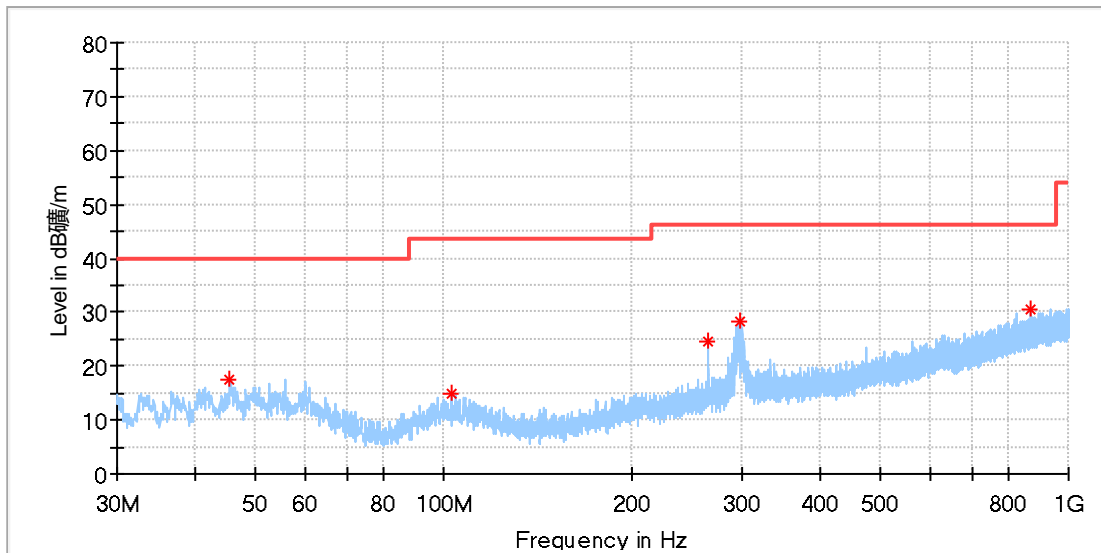
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.469000	25.53	40.00	14.47	100.0	V	147.0	-21.0
59.585000	29.51	40.00	10.49	100.0	V	356.0	-18.9
107.988000	14.59	43.50	28.91	100.0	V	342.0	-18.9
296.119500	23.96	46.00	22.04	100.0	V	278.0	-16.4
853.384500	29.75	46.00	16.25	100.0	V	0.0	-5.5

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_Low channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

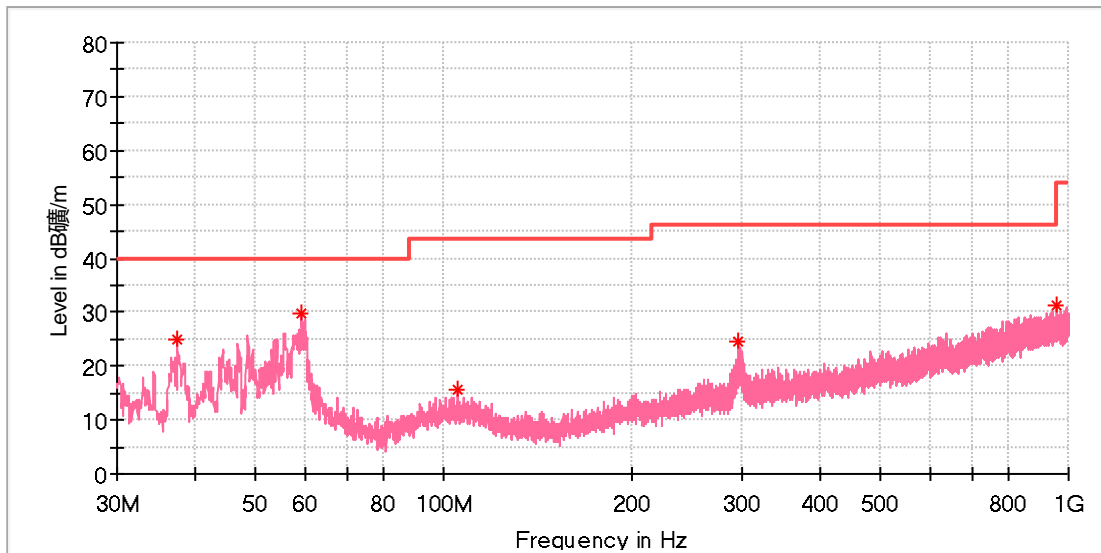
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
45.520000	17.40	40.00	22.60	100.0	H	109.0	-18.7
103.138000	14.95	43.50	28.55	100.0	H	353.0	-18.8
263.964000	24.54	46.00	21.46	100.0	H	292.0	-17.0
297.332000	28.24	46.00	17.76	100.0	H	34.0	-16.4
869.147000	30.38	46.00	15.62	100.0	H	286.0	-5.2

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_High channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

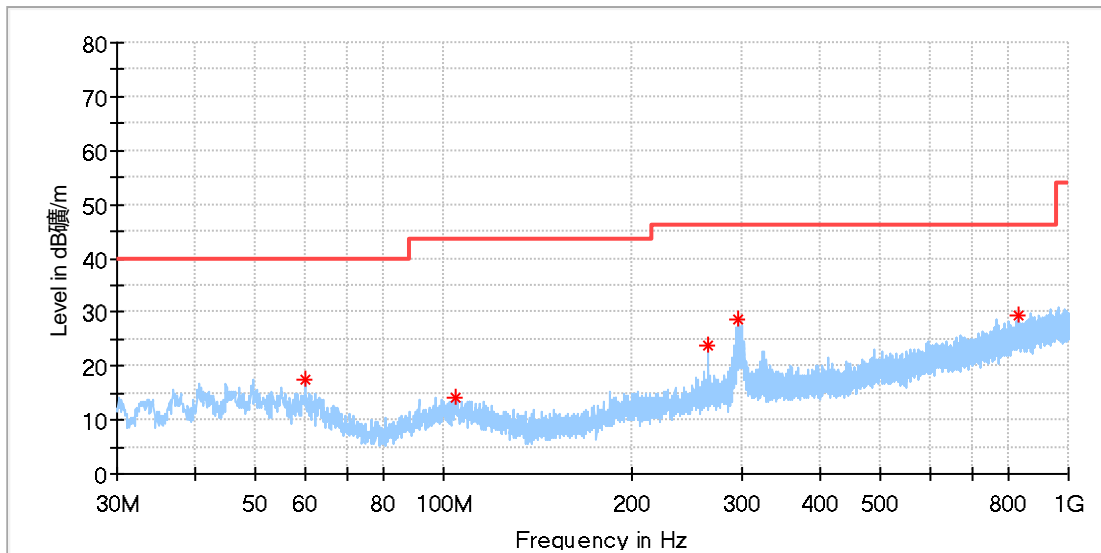
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.517500	25.08	40.00	14.92	100.0	V	182.0	-21.0
59.197000	29.69	40.00	10.31	100.0	V	281.0	-18.9
105.223500	15.60	43.50	27.90	100.0	V	154.0	-18.8
296.701500	24.65	46.00	21.35	100.0	V	257.0	-16.4
955.331500	31.28	46.00	14.72	100.0	V	249.0	-4.3

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_High channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
60.070000	17.43	40.00	22.57	100.0	H	88.0	-19.0
104.253500	14.16	43.50	29.34	100.0	H	293.0	-18.8
263.964000	23.65	46.00	22.35	100.0	H	293.0	-17.0
296.653000	28.72	46.00	17.28	100.0	H	204.0	-16.4
831.268500	29.53	46.00	16.47	100.0	H	44.0	-5.8

Final_Result

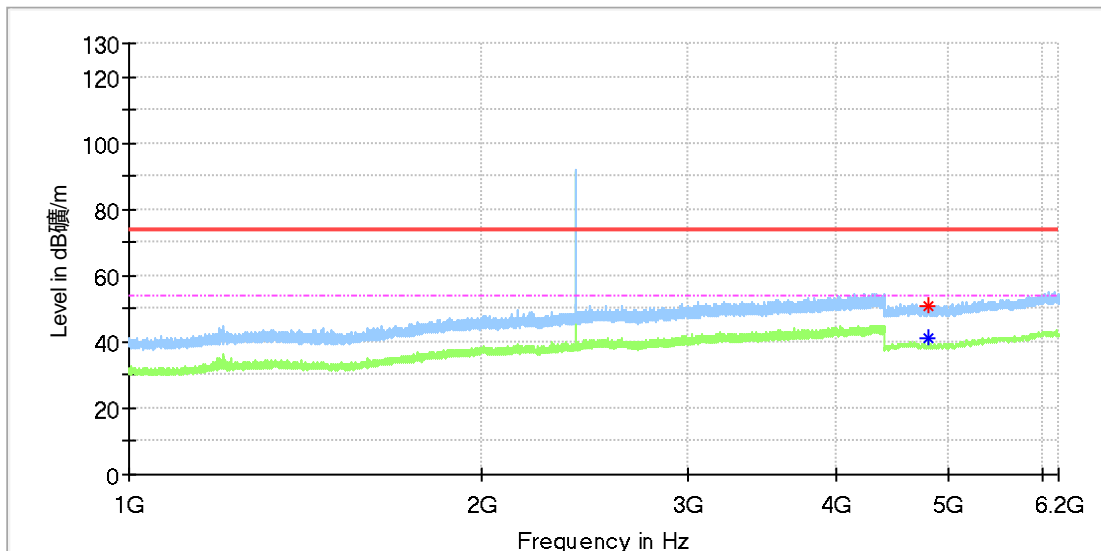
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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1GHz-18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	BACnet IP/MSTP VAV Controller
Model:	WEB-VA75IB24NM
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168394483/A003334654-004
Test Voltage::	24V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

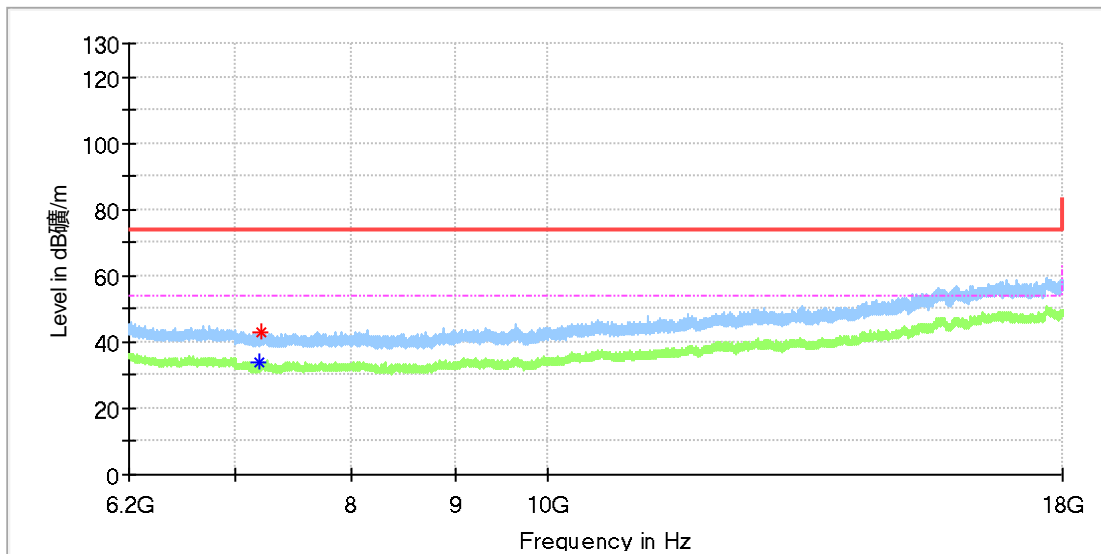
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4801.500000	50.91	---	74.00	23.09	100.0	H	156.0	11.8
4803.500000	---	40.89	54.00	13.11	100.0	H	243.0	11.8

Final Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_Low channel
 Order No./Sample No: 168394483/A003334654-004
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Critical_Freqs

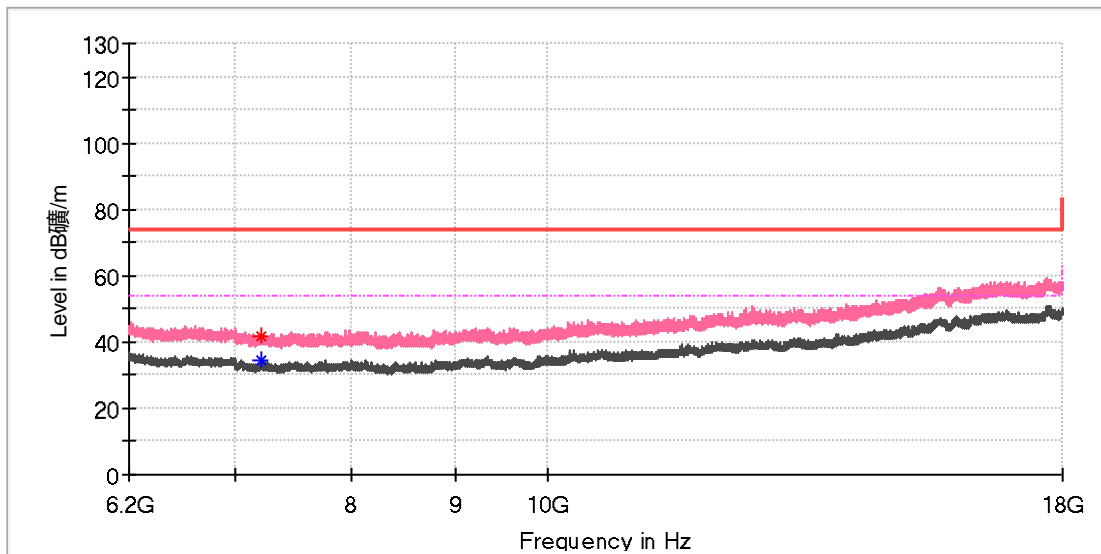
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7201.033333	---	33.75	54.00	20.25	100.0	H	0.0	8.8
7211.850000	42.98	---	74.00	31.02	100.0	H	97.0	8.7

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_Low channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

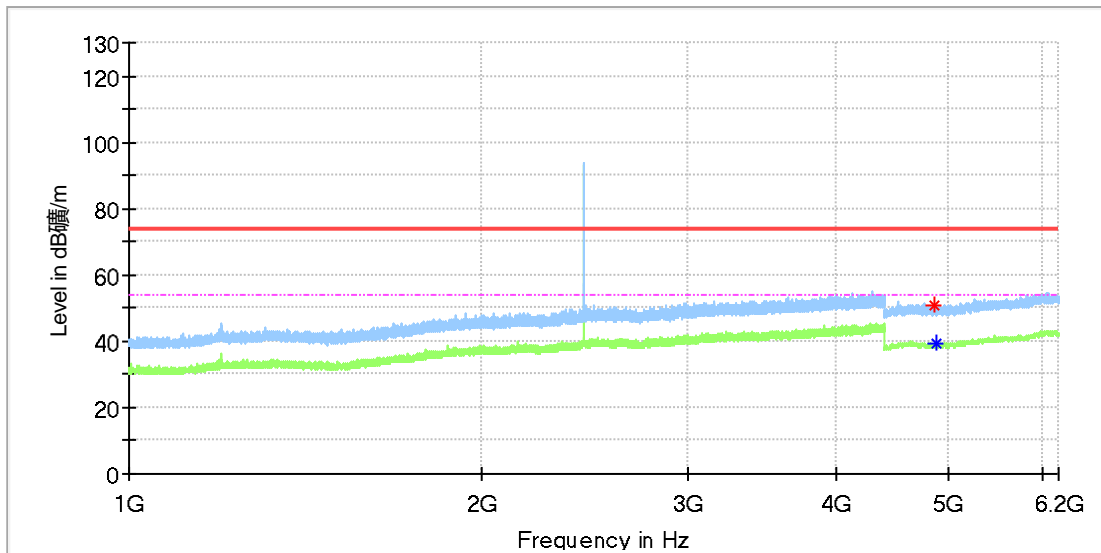
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7207.916667	41.97	---	74.00	32.03	100.0	V	64.0	8.8
7217.258333	---	34.20	54.00	19.80	100.0	V	327.0	8.7

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_Mid channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

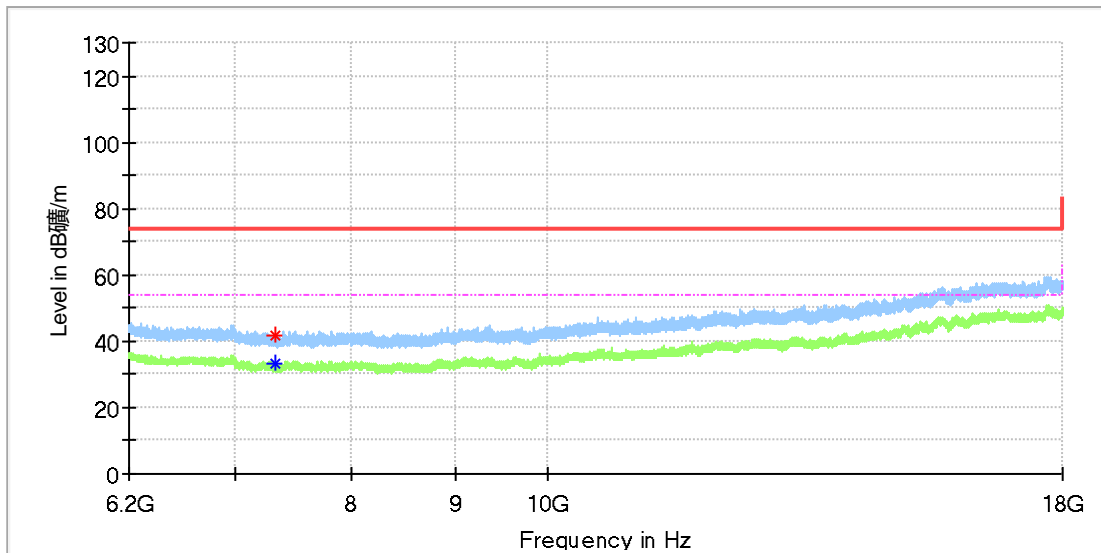
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4864.000000	50.65	---	74.00	23.35	100.0	H	120.0	11.8
4879.500000	---	39.40	54.00	14.60	100.0	H	336.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_Mid channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

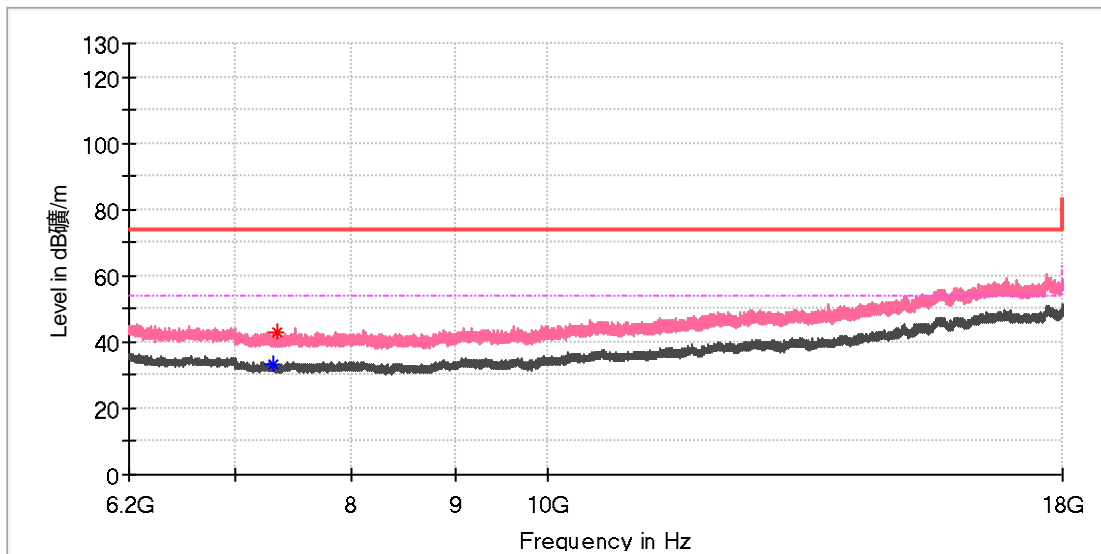
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7321.000000	---	33.24	54.00	20.76	100.0	H	50.0	8.2
7331.816667	41.59	---	74.00	32.41	100.0	H	88.0	8.1

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_Mid channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

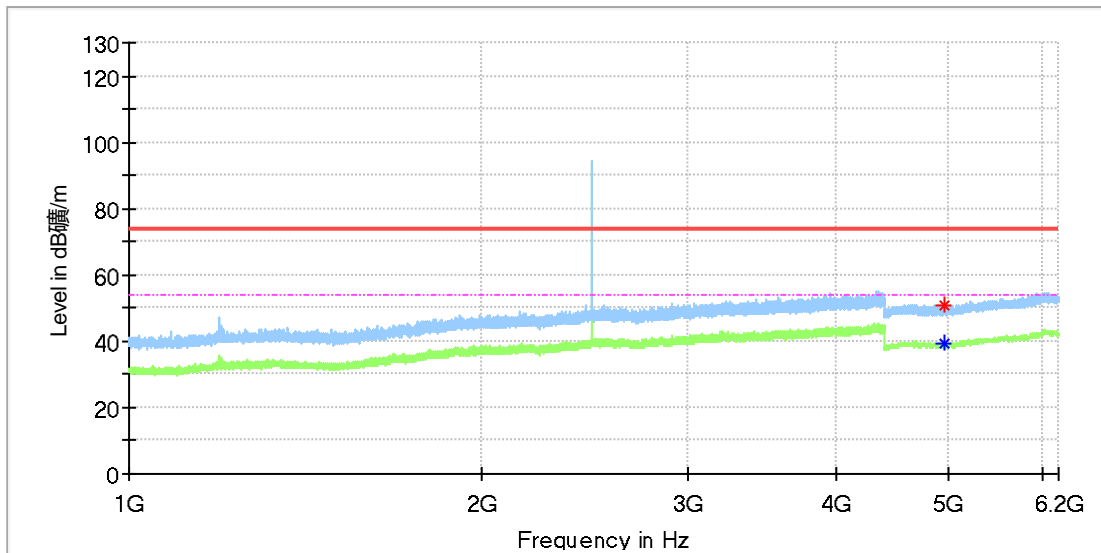
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7316.575000	---	33.44	54.00	20.56	100.0	V	87.0	8.2
7345.583333	42.86	---	74.00	31.14	100.0	V	46.0	8.1

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_High channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

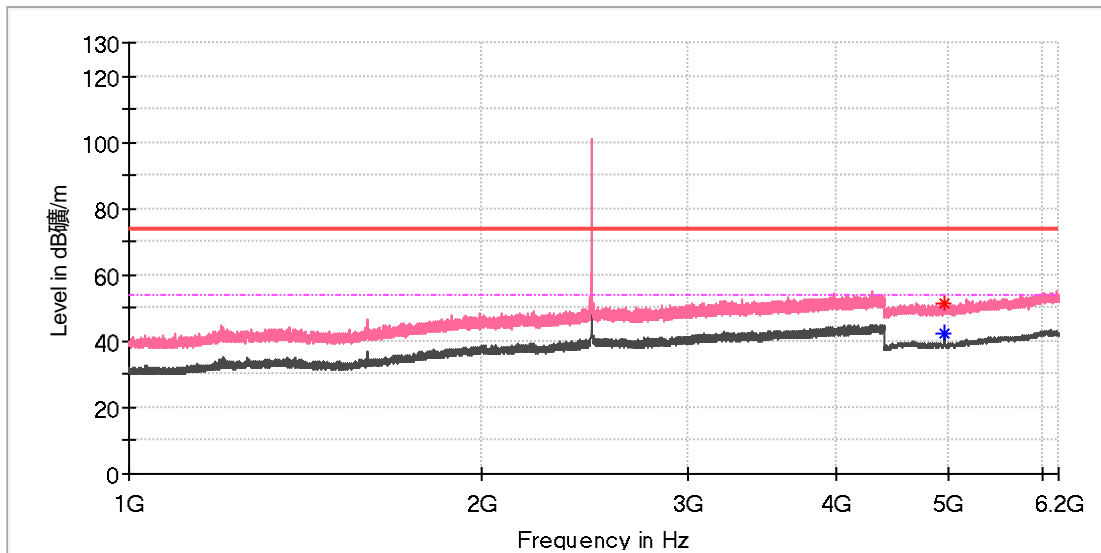
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4959.500000	50.71	---	74.00	23.29	100.0	H	320.0	11.8
4960.500000	---	39.43	54.00	14.57	100.0	H	229.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_High channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

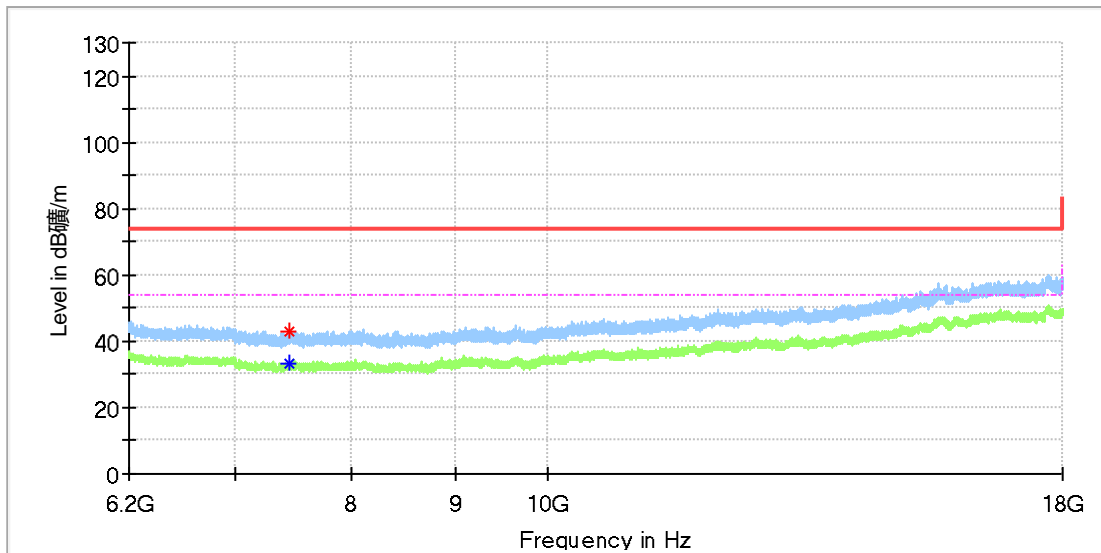
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4959.500000	---	42.15	54.00	11.85	100.0	V	137.0	11.8
4960.000000	51.67	---	74.00	22.33	100.0	V	130.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_High channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

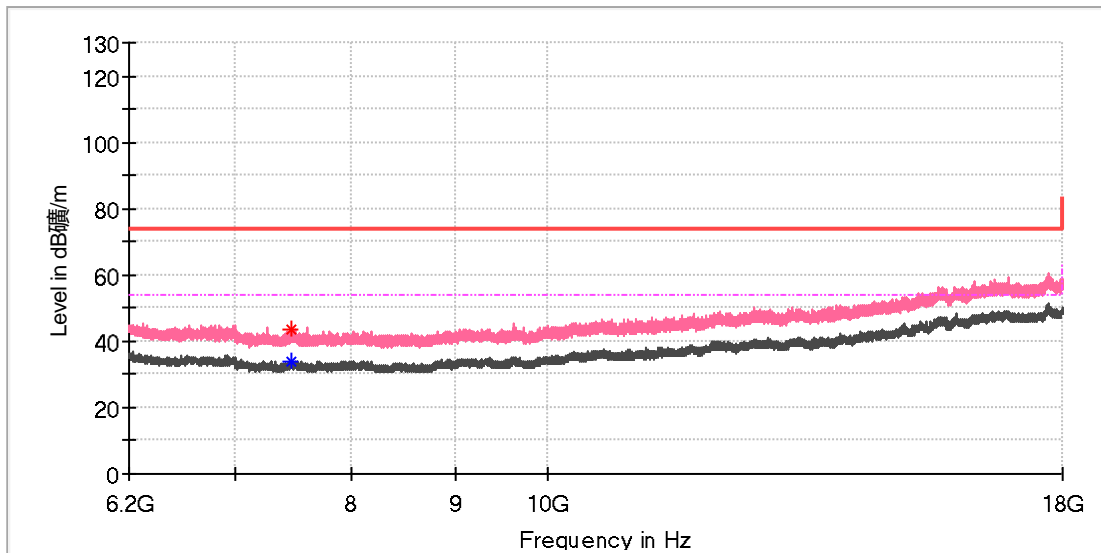
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7447.358333	42.75	---	74.00	31.25	100.0	H	175.0	8.5
7449.816667	---	33.46	54.00	20.54	100.0	H	100.0	8.5

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_High channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7455.225000	---	33.99	54.00	20.01	100.0	V	0.0	8.5
7459.650000	43.31	---	74.00	30.69	100.0	V	199.0	8.5

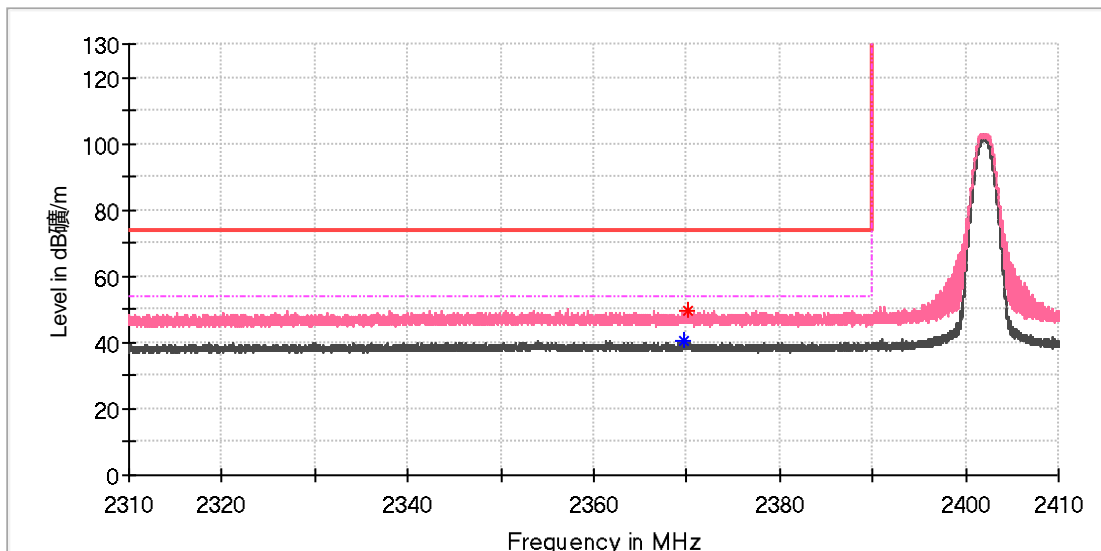
Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Appendix B.2: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	BACnet IP/MSTP VAV Controller
Model:	WEB-VA75IB24NM
Test Mode:	BLE 1M_Low channel
Order No/Sample No:	168394483/A003334654-004
Test Voltage::	24V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

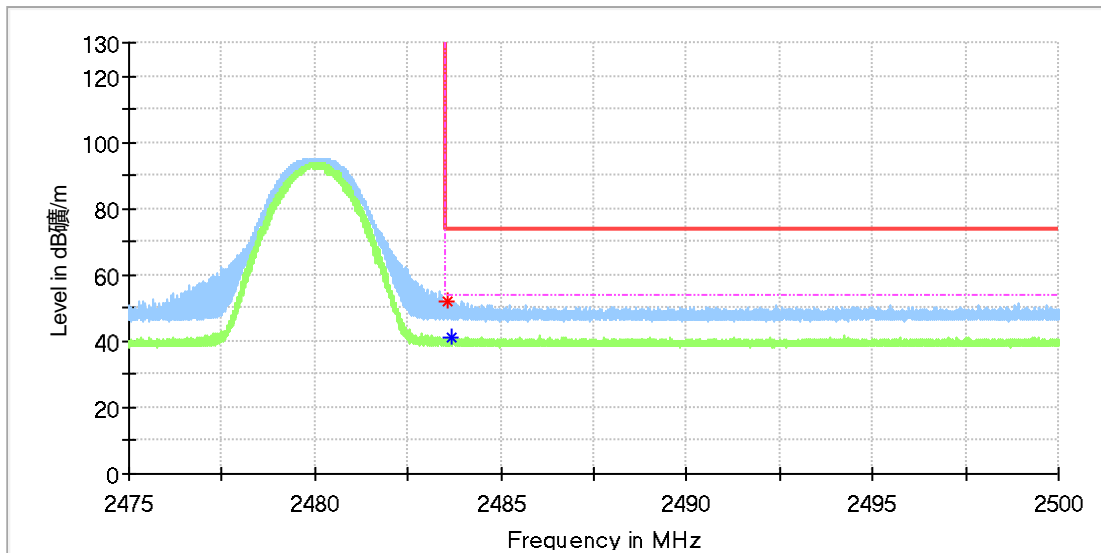
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2369.660000	---	40.27	54.00	13.73	100.0	V	84.0	6.9
2370.110000	49.49	---	74.00	24.51	100.0	V	122.0	6.9

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	BACnet IP/MSTP VAV Controller
Model:	WEB-VA75IB24NM
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168394483/A003334654-004
Test Voltage::	24V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

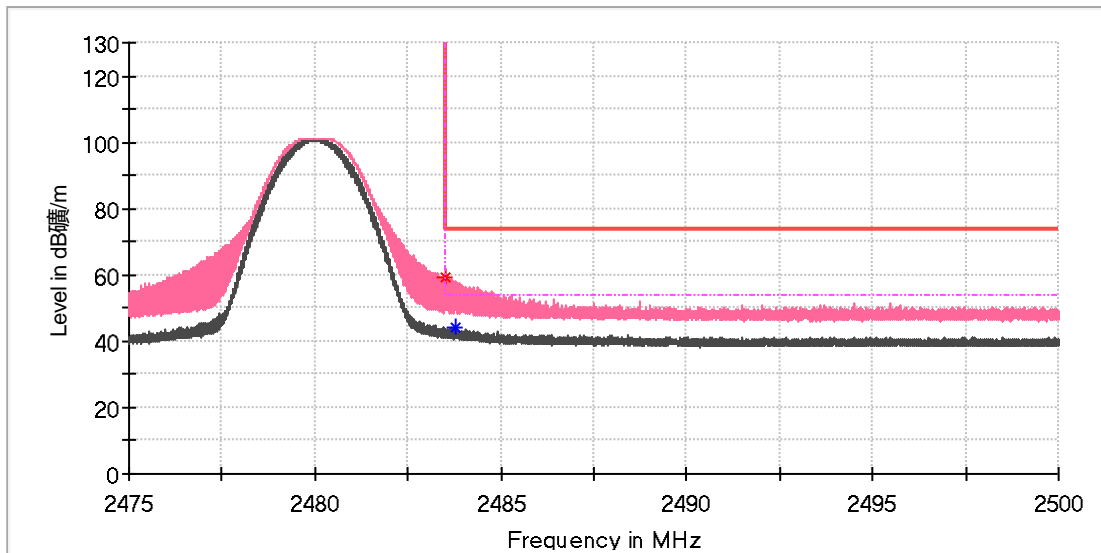
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.588750	52.14	---	74.00	21.86	100.0	H	184.0	7.4
2483.681250	---	41.14	54.00	12.86	100.0	H	175.0	7.4

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name:	BACnet IP/MSTP VAV Controller
Model:	WEB-VA75IB24NM
Test Mode:	BLE 1M_High channel
Order No/Sample No:	168394483/A003334654-004
Test Voltage::	24V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

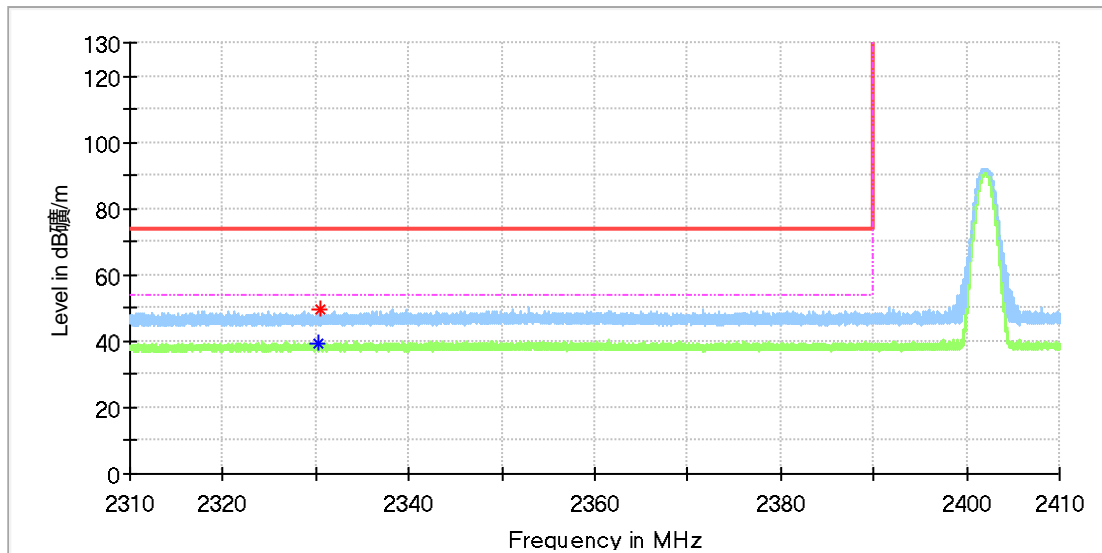
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.517500	58.98	---	74.00	15.02	100.0	V	0.0	7.4
2483.806250	---	43.96	54.00	10.04	100.0	V	44.0	7.4

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---

EUT Information

EUT Name: BACnet IP/MSTP VAV Controller
 Model: WEB-VA75IB24NM
 Test Mode: BLE 1M_Low channel
 Order No/Sample No: 168394483/A003334654-004
 Test Voltage:: 24V/60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2330.160000	---	39.59	54.00	14.41	100.0	H	54.0	6.7
2330.430000	49.60	---	74.00	24.40	100.0	H	31.0	6.7

Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---		---	---