



# FCC SDoC Test Report

Issued date: May 16, 2024

Project No.: 24Q012304

**Product :** Network Camera

**Model :** IB9383-HTV, IB9383-HV, IB833-HV, IB833-HTV

**Applicant :** VIVOTEK INC.

**Address :** 6F, No.192, Lien-Cheng Rd., Chung-Ho , New Taipei City, 235,  
Taiwan, R.O.C.

**Report No: WD-EF-R-240129-A0**

**According to**

**47 CFR FCC Part 15, Subpart B, Class A**  
**ICES-003: 2020 Issue 7, Class A**

**ANSI C63.4: 2014**  
**ANSI C63.4a: 2017**

**Authorized Signatory :**  / Ken Huang

**Wendell Industrial Co., Ltd**  
**Wendell EMC & RF Laboratory**

Add: 5F-1, No. 188, Baoqiao Road, Xindian District, New Taipei City 23145, Taiwan R.O.C.





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### History of this test report

Report No.	Issue date	Description
WD-EF-R-240129-A0	May 16, 2024	Initial Issue

**Declaration**

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us.



### History of supplementary report

Report No.	Issue date	Description
WD-EF-R-240129-A0	May 16, 2024	Original report

**Declaration**

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us.



## 1 Certification

**Product:** Network Camera

**Brand Name:** VIVOTEK

**Model:** IB9383-HTV, IB9383-HV, IB833-HV, IB833-HTV

**Applicant:** VIVOTEK INC.

**Tested:** May 03 ~ May 06, 2024

**Standard:** 47 CFR FCC Part 15, Subpart B, Class A

ICES-003: 2020 Issue 7, Class A

ANSI C63.4: 2014

ANSI C63.4a: 2017

The above equipment (Model: IB9383-HTV) has been tested by **Wendell EMC & RF Laboratory**, and found compliance with the requirement of the above standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.



## 1.1 Summary of Test Result

The EUT has been tested according to the following specifications:

Emission				
Standard	Test Item	Limit	Result	Remark
47 CFR FCC Part 15, Subpart B ICES-003	Conducted disturbance at mains terminals	-	N/A	Without AC main power port of the EUT
	Radiated disturbance	Class A	Pass	Meets the requirements

**Note:** Test record contained in the referenced test report relate only to the EUT sample and test item.

## **2 Test Configuration of Equipment Under Test**

### **2.1 Test Facility**

#### **Conducted disturbance at mains terminals Test**

W01: 5F-1, No.188, Baoqiao Rd., Xindian Dist., New Taipei City 23145, Taiwan (R.O.C)

#### **Conducted disturbance at mains terminals and Radiated emission (9\*6\*6 Chamber) Tests**

W08: No.119, Wugong 3rd Rd., Wugu Dist., New Taipei City 248, Taiwan (R.O.C)

#### **ACCREDITATIONS**

The laboratories are accredited and approved by the TAF according to ISO/IEC 17025.

## 2.2 Measurement Uncertainty

The measurement instrumentation uncertainty is evaluated according to CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Wendell EMC & RF Laboratory  $U_{lab}$  is less than  $U_{cisp}$ , therefore compliance or non-compliance with a disturbance limit shall be determined in the following manner.

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

Please note that the measurement uncertainty ( $U_{lab}$ ) is provided for informational purpose only and is not used in determining the Pass/Fail results.

### 2.2.1 Conducted Emission test

Test Site	Measurement Freq. Range	dB ( $U_{lab}$ )	Note
W01-CE	150 kHz ~ 30 MHz	2.75	N/A
W08-CE	150 kHz ~ 30 MHz	2.76	N/A

### 2.2.2 Radiated Emission test

Test Site	Measurement Freq. Range	Ant	dB ( $U_{lab}$ )	Note
W08-966-1	30 MHz ~ 200 MHz	V	3.78	N/A
	30 MHz ~ 200 MHz	H	2.69	N/A
	200 MHz ~ 1000 MHz	V	4.91	N/A
	200 MHz ~ 1000 MHz	H	3.40	N/A
	1 GHz ~ 6 GHz	V	4.48	N/A
	1 GHz ~ 6 GHz	H	4.33	N/A
	6 GHz ~ 18 GHz	V	4.56	N/A
	6 GHz ~ 18 GHz	H	4.56	N/A
	18 GHz ~ 40 GHz	V	4.42	N/A
	18 GHz ~ 40 GHz	H	4.42	N/A





### 3 General Information

#### 3.1 Description of EUT

<b>Product</b>	Network Camera
<b>Brand</b>	VIVOTEK
<b>Model</b>	IB9383-HTV, IB9383-HV, IB833-HV, IB833-HTV
<b>Applicant</b>	VIVOTEK INC.
<b>Received Date</b>	Jan. 23, 2024
<b>EUT Power Rating</b>	54Vdc (from PoE injector)
<b>Model Differences</b>	Refer to Note for more details
<b>Operating System</b>	N/A
<b>Data Cable Supplied</b>	N/A
<b>Accessory Device</b>	N/A
<b>I/O Port</b>	Please refer to the User's Manual

**Note:**

1. The following models are provided to this EUT. The models are electrically identical, different models no. are for marketing purpose. The series model information is provided by client.

<b>Brand Name</b>	<b>Model</b>	<b>Difference</b>
VIVOTEK	IB9383-HTV	remote lens
	IB9383-HV	fixed lens
	IB833-HV	fixed lens
	IB833-HTV	remote lens

2. The EUT's highest operating frequency is 1600MHz. Therefore the radiated emission is tested up to 8GHz.

### 3.2 Description of Test Modes

For radiated emission, the EUT has been pre-tested under the following test modes, and **test mode 1** was the worst case for final test.

Test Mode	Test Condition
1	PoE mode, IR ON
2	PoE mode, IR OFF

Test results are presented in the report as below.

Test Mode	Test Condition
<b>Radiated emission 30MHz ~ 1GHz test</b>	
-	PoE mode, IR ON
<b>Radiated emission above 1GHz test</b>	
-	PoE mode, IR ON

### 3.3 EUT Operating Condition

- Placed the EUT on the test table.
- Prepare PC and PoE injector to act as a communication partner and placed it outside of testing area.
- The EUT was connected to PC via LAN and PoE injector.
- The communication partner sent data to EUT by command "ping" via LAN.
- The EUT sent video signal to PC via LAN cable.
- The EUT write data with micro SD card.



### 3.4 Description of Support Unit

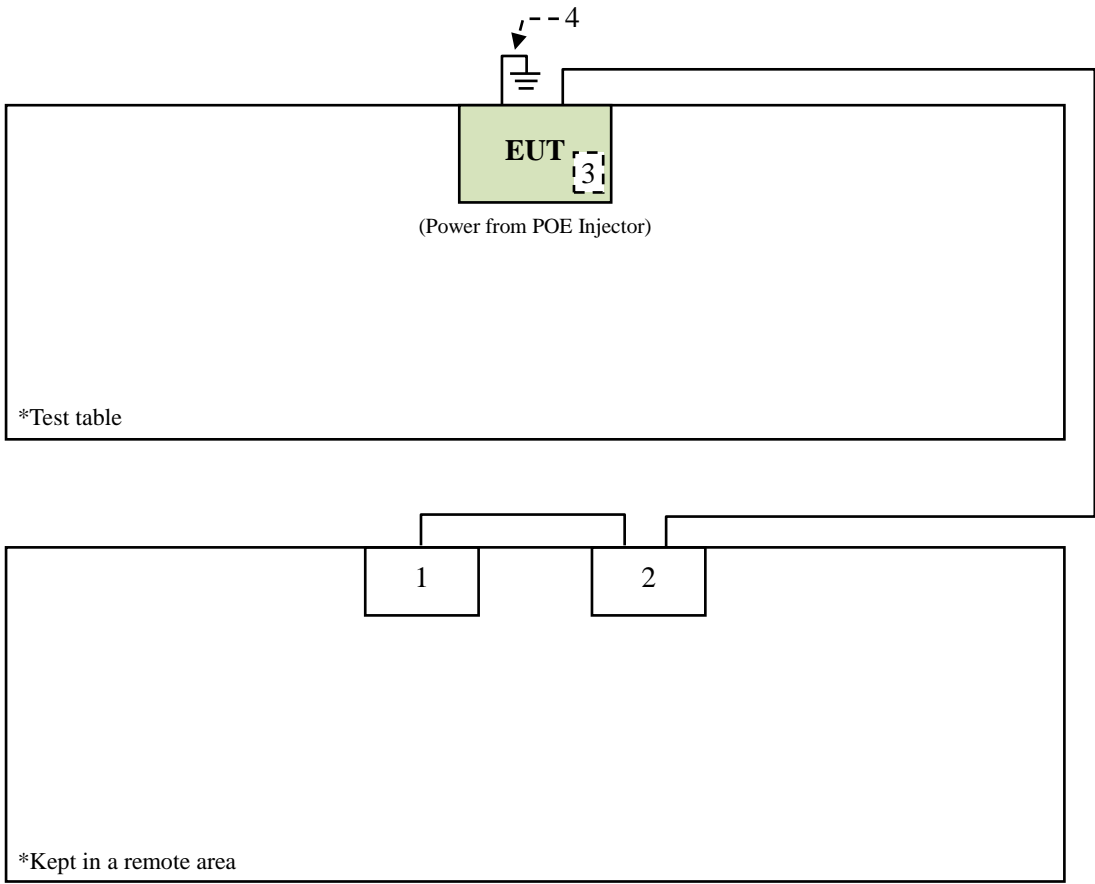
The EUT has been conducted testing with other necessary accessories or support units.

Item	Equipment	Brand	Model No.	Serial No.	FCC ID	Data Cable	Power Cable	Remark
1	Desktop PC	DELL	D13M	H6K10 A00	FCC DoC Approved	1m CAT.5E non-shielded RJ45 cable	1.8m non-shielded cable	-
2	POE Injector	VIVOTEK	AP-GIC-011 A-095	N/A	N/A	20m CAT.5E non-shielded RJ45 cable	1.8m non-shielded cable	Supplied by client
3	Micro SD Card	ADATA	32GB	N/A	N/A	N/A	N/A	-
4	Grounding wire	N/A	N/A	N/A	N/A	1m non-shielded cable	N/A	-

- Note:**
1. The core(s) is(are) originally attached to the cable(s).
  2. Item 1-2 acted as communication partners to transfer data.
  3. The EUT uses the follow POE:

POE Injector (Support unit only)	
Brand	VIVOTEK
Model	AP-GIC-011A-095
Input Power	100-240Vac, 50-60Hz
Output Power	54Vdc, 95W
Power line	1.8m non-shielded cable

3.5 Configuration of System Under Test





## **4 Emission Test**

### **4.1 Conducted Emission Measurement**

The test is determined no necessary for the EUT do not operate from the AC main power lines or contain provisions for operation while connected to the AC main power lines.

## 4.2 Radiated Emission Measurement

### 4.2.1 Limits of Radiated Emission Measurement

Radiated Frequency range 30 MHz to 1000 MHz

FCC 15B Radiated Emissions Limits				
Frequency range (MHz)	Class A (3m) Quasi-peak (dBμV/m)	Class A (10m) Quasi-peak (dBμV/m)	Class B (3m) Quasi-peak (dBμV/m)	Class B (10m) Quasi-peak (dBμV/m)
30 - 88	49.5	39.1	40	29.5
88 - 216	54	43.5	43.5	33.1
216 - 230	56.9	46.4	46	35.6
230 - 960				
960 - 1000	60	49.5	54	43.5

ICES-003 Radiated Emissions Limits				
Frequency range (MHz)	Class A (3m) Quasi-peak (dBμV/m)	Class A (10m) Quasi-peak (dBμV/m)	Class B (3m) Quasi-peak (dBμV/m)	Class B (10m) Quasi-peak (dBμV/m)
30 - 88	50	40	40	30
88 - 216	54	43.5	43.5	33.1
216 - 230	56.9	46.4	46	35.6
230 - 960	57	47	47	37
960 - 1000	60	49.5	54	43.5

- Note:**
1. The lower limit shall apply at the transition frequency.
  2. Detector function in the form: PK = Peak, QP = Quasi Peak, AV = Average
  3. The test result calculated as following:  
 Measurement Value = Reading Level + Correct Factor  
 Correction Factor = Antenna factor + Cable loss (Antenna to preamplifier) - preamplifier Gain  
 + Cable loss (preamplifier to receiver)  
 Margin Level = Measurement Value - Limit Value

At the same test procedures, due to the limits of FCC Part 15 Subpart B are severe than ICES-003: 2020 Issue 7, When the requirements of FCC Part 15 Subpart B are satisfied, the requirement of ICES-003: 2020 Issue 7 could be considered satisfied.

**Radiated Frequency range above 1 GHz**

FCC 15B / ICES-003 Radiated Emissions Limits				
Frequency range (GHz)	Class A (3m) (dBμV/m)		Class B (3m) (dBμV/m)	
	Peak	Average	Peak	Average
1 - 40	80	60	74	54

- Note:** 1. The lower limit shall apply at the transition frequency.  
2. Detector function in the form: PK = Peak, QP = Quasi Peak, AV = Average  
3. The test result calculated as following:  
Measurement Value = Reading Level + Correct Factor  
Correction Factor = Antenna factor + Cable loss (Antenna to preamplifier) - preamplifier Gain  
+ Cable loss (preamplifier to receiver)  
Margin Level = Measurement Value - Limit Value

**Frequency Range (For unintentional radiators)**

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40GHz, whichever is lower



#### 4.2.2 Test Instrument

Test Site: W08-966-1					
Item	Equipment	Manufacturer	Model	Meter No.	Calibration Date
1	Horn Antenna	Schwarzbeck	BBHA 9120D	CT-9-031	Jul. 31, 2023
2	Horn Antenna	Schwarzbeck	BBHA 9170	CT-9-032	Aug. 21, 2023
3	TRILOG Broadband Antenna with 6 dB Attenuator	Schwarzbeck & MVE	VULB 9168 & MVE2251-06	CT-1-096-1	May 17, 2023
4	Spectrum Analyzer	Agilent	E4407B	CT-1-003(1)	Aug. 02, 2023
5	EXA Signal Analyzer	Keysight	N9010A	CT-1-093	Aug. 18, 2023
6	EMI Test Receiver	Keysight	N9038A	CT-9-007	Aug. 02, 2023
7	Preamplifier	EM	EM 330	CT-9-024	Aug. 03, 2023
8	Preamplifier	SGH & MCL	SGH118 & BW-S15W2+	CT-9-071	Aug. 03, 2023
9	Preamplifier	EMCI	EMC184045SE	CT-9-013	Aug. 22, 2023
10	Test Cable	EMCI	EMCCFD400-NM-NM-1000	CT-1-132	Aug. 03, 2023
11	Test Cable	PEWC	CFD400NL-LW-NM-NM-3000	CT-1-141	Aug. 03, 2023
12	Test Cable	EMCI	EMCCFD400-NM-NM-15000	CT-1-133	Aug. 03, 2023
13	Test Cable	EMCI	EMC104-SM-35M-600	CT-1-134	Aug. 03, 2023
14	Test Cable	MVE	280280.LL266.1400	CT-9-072	Aug. 03, 2023
15	Test Cable	EMCI	EMC102-KM-KM-600	CT-1-136	Aug. 22, 2023
16	Measurement Software	EZ-EMC	Ver :WD-03A1-1	CT-3-012	No calibration request

**Note:** 1. The calibration interval of the above test instruments is 12 months.



### 4.2.3 Test Procedure

- a. The table-top EUT was placed on the top of a turntable 0.8 meters above the ground at 3 m 966 chamber. The floor-standing EUT and all cables shall be insulated from the ground plane by up to 12 mm of insulating material if required. The table was rotated 360 degrees to determine the position of the high radiation emissions.
- b. The height of the test antenna shall vary between 1 m to 4 m. Both vertical and horizontal polarizations of the antenna were set to make the measurement.
- c. The EUT was set up as per the test configuration to simulate typical usage per the user's manual. All I/O cables were positioned to simulate typical usage. The actual test configuration, please refer to EUT test photos.
- d. The initial step in collecting radiated emission data is a Spectrum Mode scanning the measurement frequency range.

#### **Below 1GHz:**

Reading in which marked as QP or Peak means measurements by using Spectrum Mode with detector RBW=120kHz.

If the Spectrum Mode measured peak value compliance with and lower than Quasi Peak Limit, the EUT shall be deemed to meet QP Limits.

#### **Above 1GHz:**

Reading in which marked as Peak & AVG means measurements by using Spectrum Mode with setting in RBW=1MHz.

If the Spectrum Mode measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak and AVG Limits.

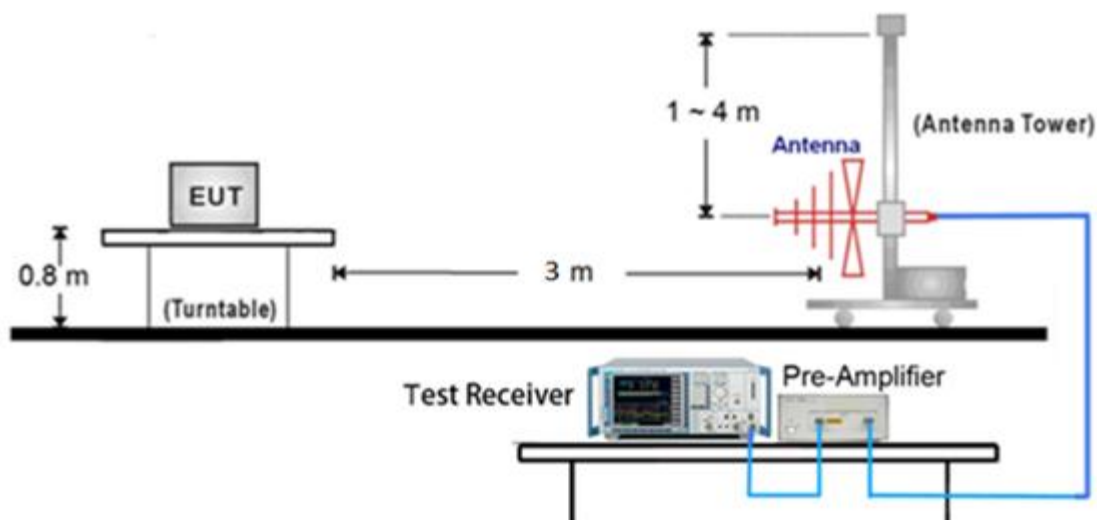
- e. Emission frequency and amplitude were recorded, recording at least six highest emissions. The EUT and cable configuration of the above highest emission levels were recorded. The test data of the worst case was recorded.

### 4.2.4 Deviation from Test Standard

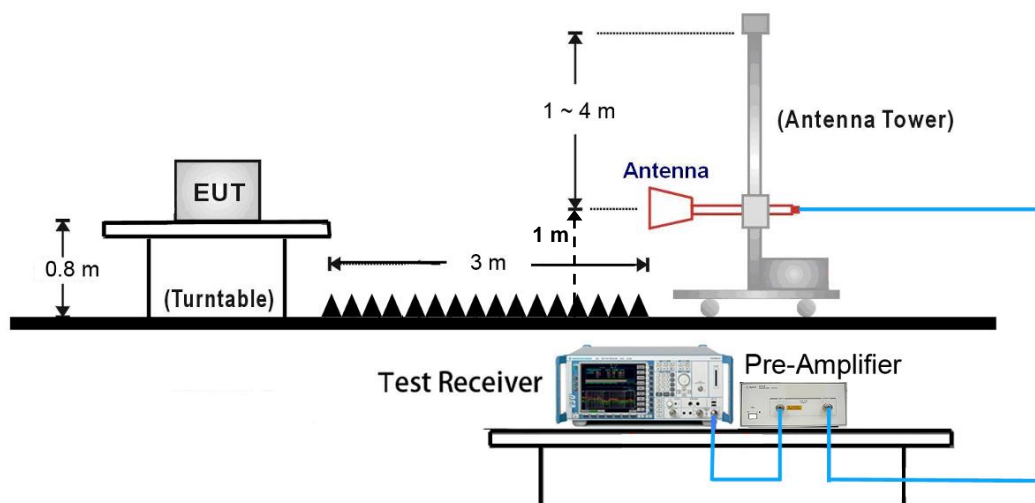
No deviation

## 4.2.5 Test Setup

< Radiated Emissions Frequency: 30 MHz to 1000 MHz >



< Radiated Emissions Frequency: above 1GHz >



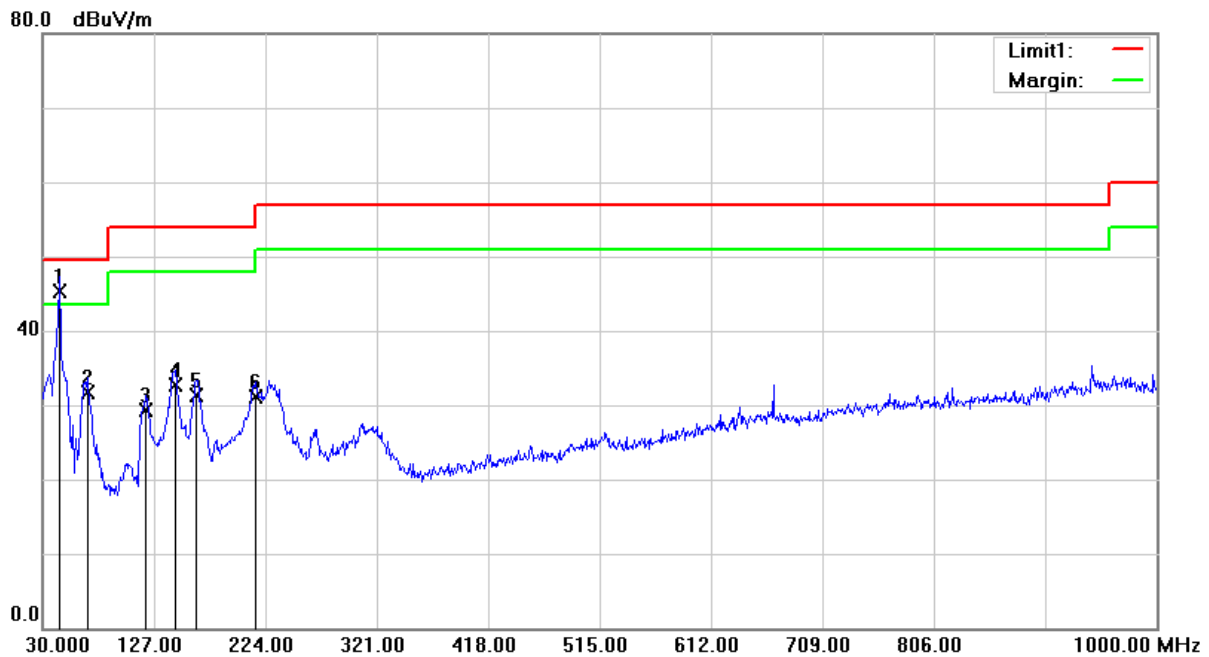
### Note:

- (1) Please refer to the 4.2.7 for the actual test configuration.
- (2) The formula of measured value as: Test Result = Reading + Correction Factor
- (3) Detector function in the form: PK = Peak, QP = Quasi Peak, AV = Average
- (4) The test result calculated as following:  
 Measurement Value = Reading Level + Correct Factor  
 Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain (if use)  
 Margin Level = Measurement Value - Limit Value



#### 4.2.6 Test Result

Test Voltage	54Vdc (from PoE)	Frequency Range	30 – 1000 MHz
Environmental Conditions	24°C , 50% RH	6dB Bandwidth	120 kHz
Test Date	2024/05/06	Test Distance	3m
Tested by	Karwin Kao	Polarization	Vertical
Test Site	W08-966-1		



No.	Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB/m)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	44.5500	55.05	-9.83	45.22	49.50	-4.28	73	100	QP
2	68.8000	43.83	-12.10	31.73	49.50	-17.77	360	112	QP
3	120.2100	41.55	-12.28	29.27	54.00	-24.73	151	100	QP
4	145.4300	42.41	-9.75	32.66	54.00	-21.34	161	100	QP
5	163.8600	40.94	-9.67	31.27	54.00	-22.73	157	100	QP
6	215.2700	43.52	-12.46	31.06	54.00	-22.94	140	100	QP

**Remark:**

1. QP = Quasi Peak
2. Correction Factor = Antenna factor + Cable loss (Antenna to preamplifier ) - preamplifier Gain + Cable loss (preamplifier to receiver )
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value - Limit Value



Test Voltage	54Vdc (from PoE)	Frequency Range	30 – 1000 MHz
Environmental Conditions	24°C, 50% RH	6dB Bandwidth	120 kHz
Test Date	2024/05/06	Test Distance	3m
Tested by	Karwin Kao	Polarization	Horizontal
Test Site	W08-966-1		

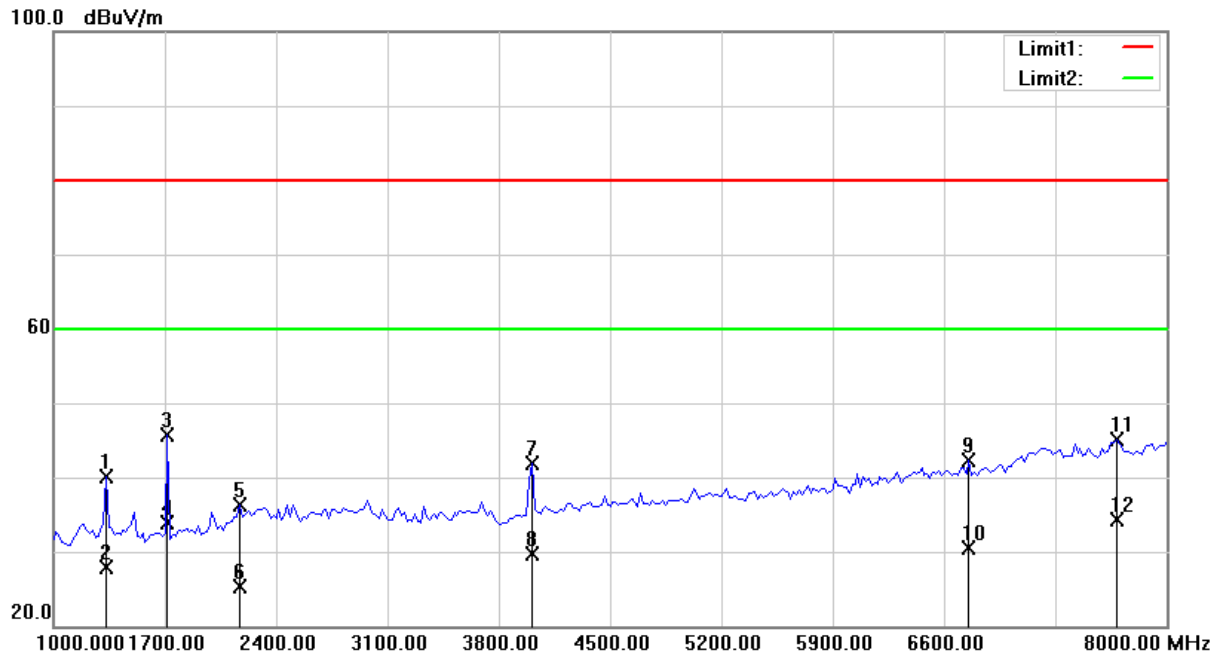


No.	Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB/m)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	44.5500	38.66	-9.83	28.83	49.50	-20.67	83	100	QP
2	66.8600	31.06	-11.65	19.41	49.50	-30.09	66	100	QP
3	145.4300	40.62	-9.75	30.87	54.00	-23.13	76	200	QP
4	220.1200	40.75	-12.35	28.40	56.90	-28.50	117	200	QP
5	266.6800	33.78	-9.65	24.13	56.90	-32.77	80	100	QP
6	318.0900	34.42	-7.99	26.43	56.90	-30.47	69	100	QP

**Remark:** 1. QP = Quasi Peak  
2. Correction Factor = Antenna factor + Cable loss (Antenna to preamplifier ) - preamplifier Gain  
+ Cable loss (preamplifier to receiver )  
3. Measurement Value = Reading Level + Correct Factor  
4. Margin Level = Measurement Value - Limit Value



Test Voltage	54Vdc (from PoE)	Frequency Range	1 – 8GHz
Environmental Conditions	24°C, 50% RH	6dB Bandwidth	1MHz
Test Date	2024/05/03	Test Distance	3m
Tested by	Karwin Kao	Polarization	Vertical
Test Site	W08-966-1		



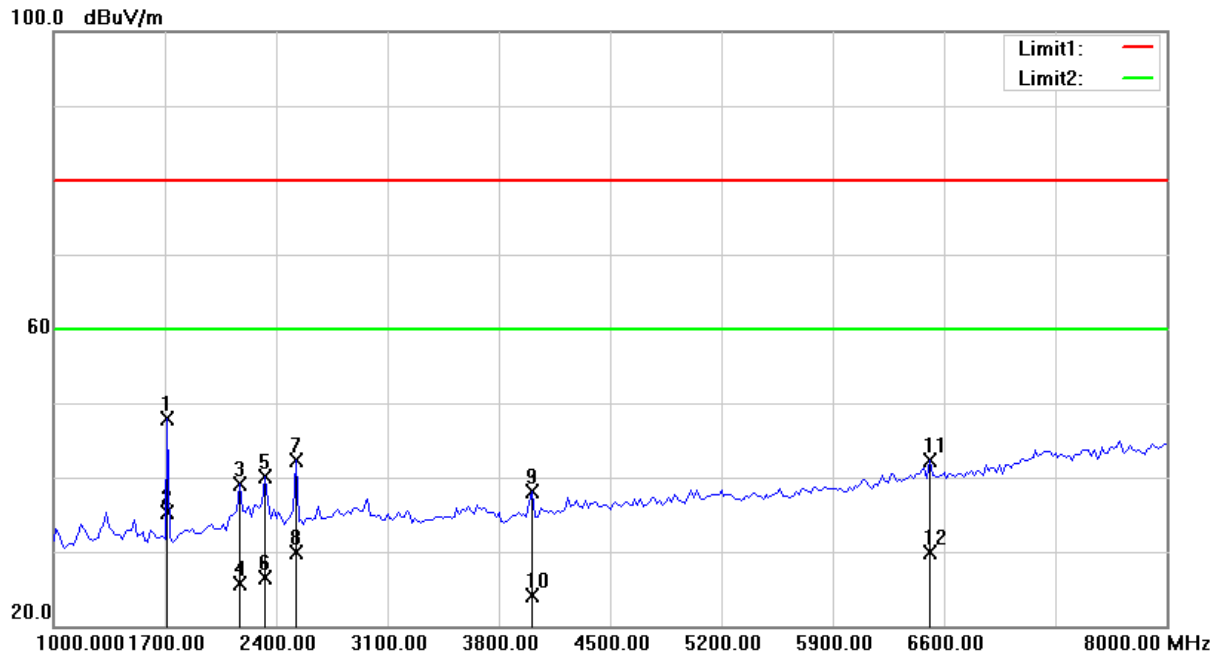
No.	Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB/m)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	1332.500	58.35	-18.28	40.07	80.00	-39.93	195	100	peak
2	1332.500	46.22	-18.28	27.94	60.00	-32.06	195	100	AVG
3	1717.500	64.03	-18.42	45.61	80.00	-34.39	129	200	peak
4	1717.500	52.39	-18.42	33.97	60.00	-26.03	129	200	AVG
5	2172.500	51.32	-15.06	36.26	80.00	-43.74	311	100	peak
6	2172.500	40.27	-15.06	25.21	60.00	-34.79	311	100	AVG
7	4010.000	52.76	-10.92	41.84	80.00	-38.16	358	100	peak
8	4010.000	40.56	-10.92	29.64	60.00	-30.36	358	100	AVG
9	6757.500	45.99	-3.70	42.29	80.00	-37.71	360	101	peak
10	6757.500	34.23	-3.70	30.53	60.00	-29.47	360	101	AVG
11	7685.000	46.38	-1.32	45.06	80.00	-34.94	82	200	peak
12	7685.000	35.67	-1.32	34.35	60.00	-25.65	82	200	AVG

**Remark:**

1. peak = Peak, AVG = Average
2. Correction Factor = Antenna factor + Cable loss (Antenna to preamplifier ) - preamplifier Gain + Cable loss (preamplifier to receiver )
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value - Limit Value



Test Voltage	54Vdc (from PoE)	Frequency Range	1 – 8GHz
Environmental Conditions	24°C, 50% RH	6dB Bandwidth	1MHz
Test Date	2024/05/03	Test Distance	3m
Tested by	Karwin Kao	Polarization	Horizontal
Test Site	W08-966-1		



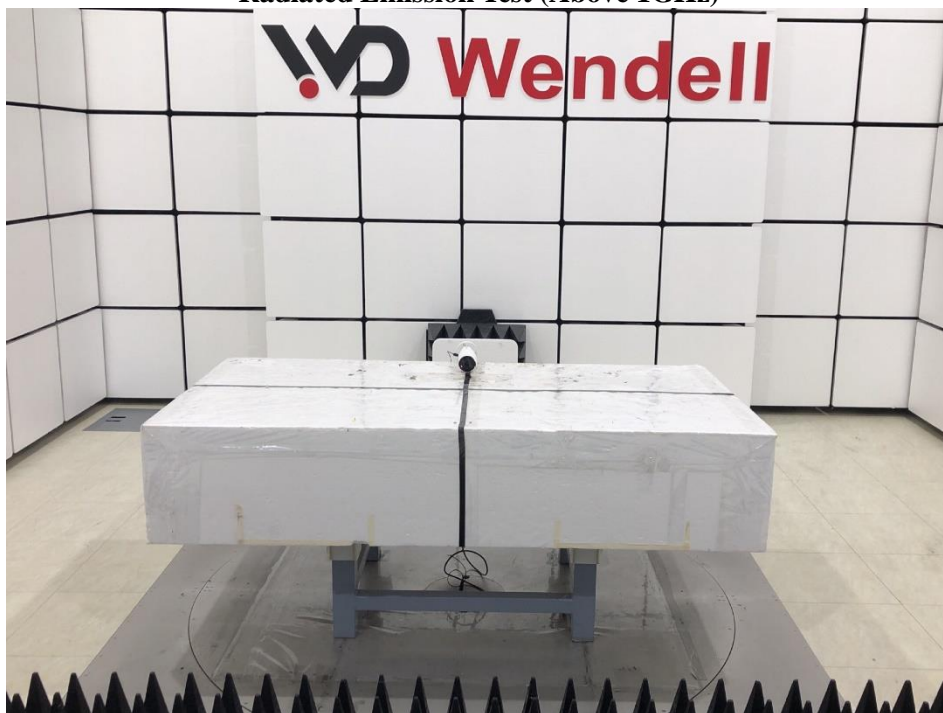
No.	Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB/m)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	1717.500	66.41	-18.42	47.99	80.00	-32.01	344	200	peak
2	1717.500	53.71	-18.42	35.29	60.00	-24.71	344	200	AVG
3	2172.500	54.09	-15.06	39.03	80.00	-40.97	57	200	peak
4	2172.500	40.74	-15.06	25.68	60.00	-34.32	57	200	AVG
5	2330.000	54.84	-14.70	40.14	80.00	-39.86	91	100	peak
6	2330.000	41.25	-14.70	26.55	60.00	-33.45	91	100	AVG
7	2522.500	57.14	-14.80	42.34	80.00	-37.66	360	141	peak
8	2522.500	44.68	-14.80	29.88	60.00	-30.12	360	141	AVG
9	4010.000	49.09	-10.92	38.17	80.00	-41.83	360	100	peak
10	4010.000	35.08	-10.92	24.16	60.00	-35.84	360	100	AVG
11	6512.500	46.35	-4.06	42.29	80.00	-37.71	232	100	peak
12	6512.500	33.98	-4.06	29.92	60.00	-30.08	232	100	AVG

**Remark:** 1. peak = Peak, AVG = Average  
2. Correction Factor = Antenna factor + Cable loss (Antenna to preamplifier ) - preamplifier Gain + Cable loss (preamplifier to receiver )  
3. Measurement Value = Reading Level + Correct Factor  
4. Margin Level = Measurement Value - Limit Value

#### 4.2.7 Photographs of Test Configuration

##### Radiated Emission Test (30MHz~1GHz)



**Radiated Emission Test (Above 1GHz)**

&lt; End Page &gt;