





Test report No: 2410697R-0E3012110014-A

FCC TEST REPORT

Product Name	Network Camera
Trademark	VIVOTEK
Model and /or type reference	FD9383-HV, FD833-HV
Applicant's name / address	VIVOTEK INC. / 6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, Taiwan, R.O.C.
Manufacturer's name / address	VIVOTEK INC. / 6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, Taiwan, R.O.C.
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart B:2022, Class A
Verdict Summary	IN COMPLIANCE
Documented By (Senior Adm. Specialist / Rita Huang)	
Approved By (Director / Vincent Lin)	
Date of Report	2024/01/24
Date of Issue	2024/04/17
Report No.	2410697R-0E3012110014-A
Report Version	V1.0

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Product Photos: Please refer to the file: 2410697R-Product Photos

Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

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The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Report No.	Version	Description	Issued Date
2410697R-0E3012110014-A	V1.0	Initial issue of report	2024-04-17

1. General Information

1.1. EUT Description

Product Name	Network Camera
Trademark	VIVOTEK
Model No.	FD9383-HV, FD833-HV
EUT Max Frequency	2666 MHz
EUT Rated Voltage	PoE 37-57 Vdc
EUT Test Voltage	PoE

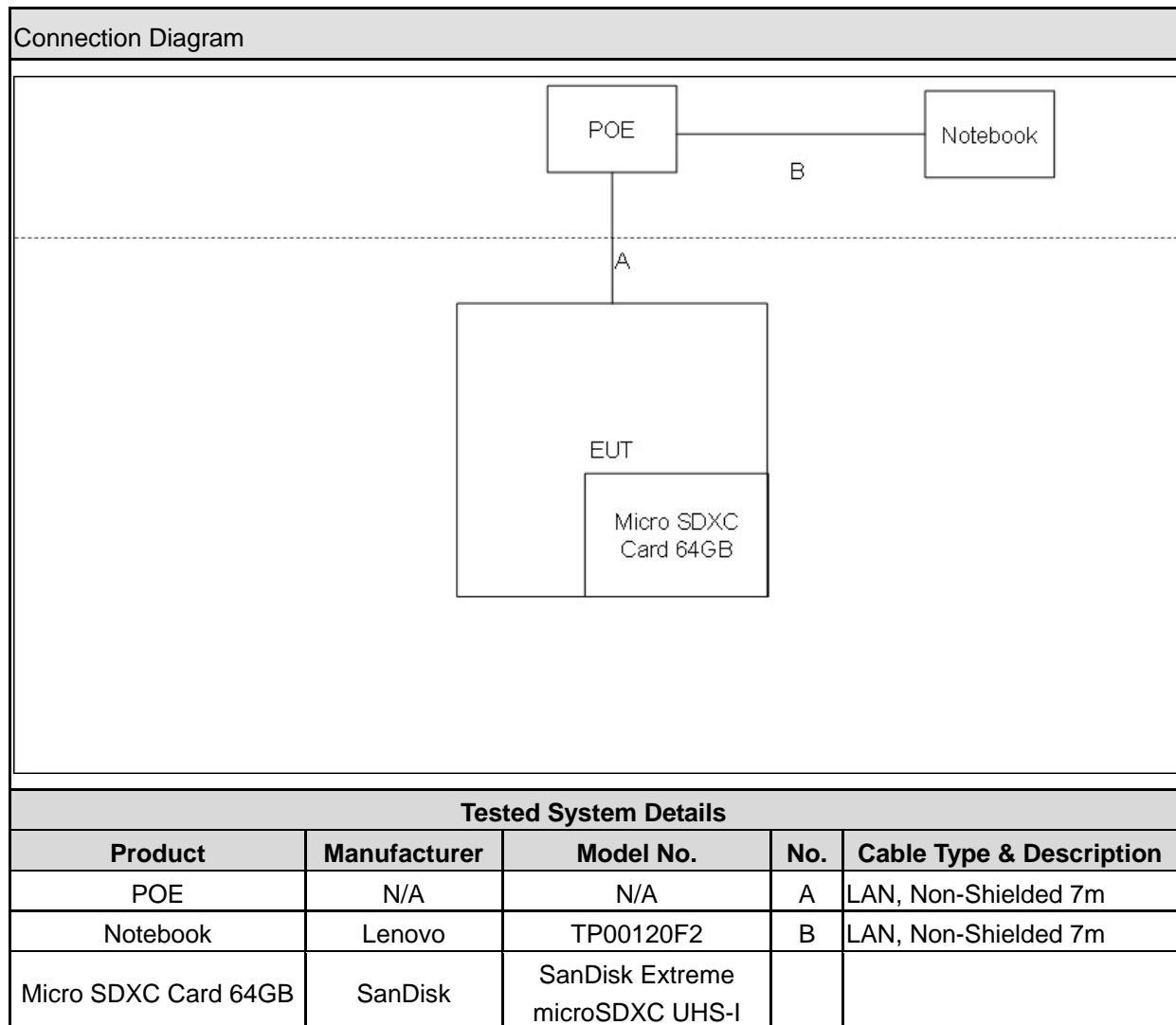
Note: The EUT is including two models for different marketing requirement.

1.2. Mode of Operation

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
Mode 1: Normal Operation, PoE In	
Final Test Mode	
Emission	Mode 1

1.3. Configuration & Details of Tested System



Note:

- ☒ Use Full system setup configuration determines Worst-Case Mode.
- ☐ Use 2dB law program determines Max. Cable Configuration and Worst-Case Mode.
- ☒ Radiated emission item test: Performed using the Horn Antenna 3dB Beamwidth to 3m from the EUT size sufficient to cover the procedure.
- ☐ Radiated emission item test: Performed using the Horn Antenna 3dB Beamwidth non 3m distance sufficient to cover the size of the EUT program.

1.4. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.3.
2	Turn on the power of all equipment.
3	All the features of the EUT operation normally.

2. Technical Test

2.1. Summary of Test Result

- ☒ No deviations from the test standards
☐ Deviations from the test standards as below description:

Emission				
Performed Item	Normative References	Test Performed	Test Site	Verdict
Conducted Emission	FCC CFR Title 47 Part 15 Subpart B:2022, Class A CISPR 22:2008, ANSI C63.4-2014 ANSI C63.4a-2017	No	--	N/A
Radiated Emission	FCC CFR Title 47 Part 15 Subpart B:2022, Class A CISPR 22:2008, ANSI C63.4-2014 ANSI C63.4a-2017	Yes	FS-CB01 FS-CB03	Pass

Note:

1. Test Site information refers to test Laboratory Information.

Test Laboratory:	DEKRA Testing and Certification Co., Ltd. Linkou Laboratory
Address:	No.5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan, R.O.C
Phone number:	+886-2-8601-3788
Fax number:	+886-2-8601-3789
Test Site	
LK:	No.5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan, R.O.C
FS:	No.6, Lane 75, Wenlin St., Linkou Dist., New Taipei City, 244017, Taiwan, R.O.C No. 85, Wenlin St., Linkou Dist., New Taipei City, 244017, Taiwan, R.O.C
HY:	No.26, Huaya 1 st Rd., Guishan Dist., Taoyuan City 333411, Taiwan, R.O.C

2.2. List of Test Equipment

Radiated Emission (Below 1GHz) / FS-CB01

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Due Date
Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	01124	2023/9/18	2024/9/17
Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	01126	2023/9/18	2024/9/17
EMI Test Receiver	R&S	ESR7	102255	2023/3/27	2024/3/26
EMI Test Receiver	R&S	ESR7	102254	2023/12/7	2024/12/6
Coaxial Cable	SUHNER	SUCOFLEX 106	AC043-SF AC044-SF AC045-SF AC046-SF AC047-SF AC049-SF AC051-SF AC052-SF	2023/7/7	2024/7/6
Preamplifier	SGH	EM330	20200921-5	2023/6/19	2024/6/18
Preamplifier	SGH	EM330	20200921-3	2023/6/19	2024/6/18
NSA	DEKRA	N/A	N/A	2023/7/8	2024/7/7
Test Software version : e3 V9					

Note: Test Receiver Detector: Quasipeak Bandwidth: 120kHz

Radiated Emission (Above 1GHz) / FS-CB03

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Due Date
Double Ridged Guide Horn Antenna	ETS-Lindgren	3117	00240055	2023/12/14	2024/12/13
Horn Antenna	COM-POWER	AH-840	101087	2023/6/30	2024/6/29
EMI Test Receiver	R&S	ESR26	101706	2023/4/24	2024/4/23
Signal Analyzer	R&S	FSV40	101148	2023/5/16	2024/5/15
Coaxial Cable	SUHNER	SUCOFLEX 106	RF003/B	2023/7/5	2024/7/4
Coaxial Cable	SUHNER	SUCOFLEX 106	RF003/C	2023/7/5	2024/7/4
Coaxial Cable	RON SOL	R-Test EW0630	RF003/D	2023/7/5	2024/7/4
Coaxial Cable	RON SOL	MP533A	AC030-MP	2023/7/5	2024/7/4
Microwave Preamplifier	EMCI	EMC051835SE	980311	2023/2/4	2024/2/3
Microwave Preamplifier with cable	EMCI	EMC184045SE	980314	2023/8/30	2024/8/29
VSWR	DEKRA	N/A	N/A	2023/7/4	2024/7/3
Test Software version : e3 V9					

2.3. Measurement Uncertainty

Test Items	Uncertainty
Radiated Emission (Below 1GHz)	± 5.5 dB
Radiated Emission (Above 1GHz)	± 4.7 dB

2.4. Test Environment

Performed Item	Items	Required
Radiated Emission	Temperature (°C)	10-40
	Humidity (%RH)	10-90

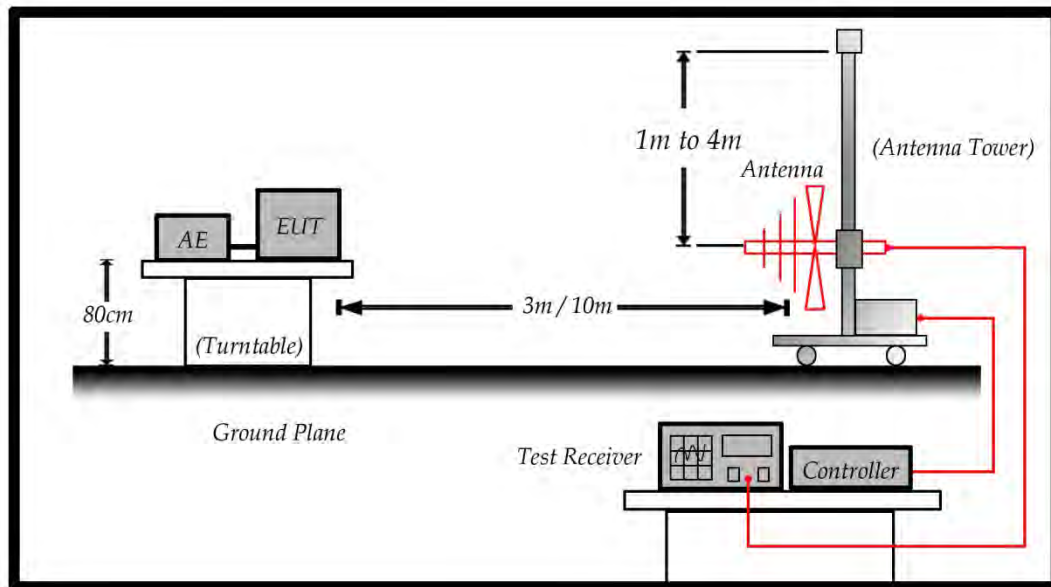
3. Radiated Emission

3.1. Test Specification

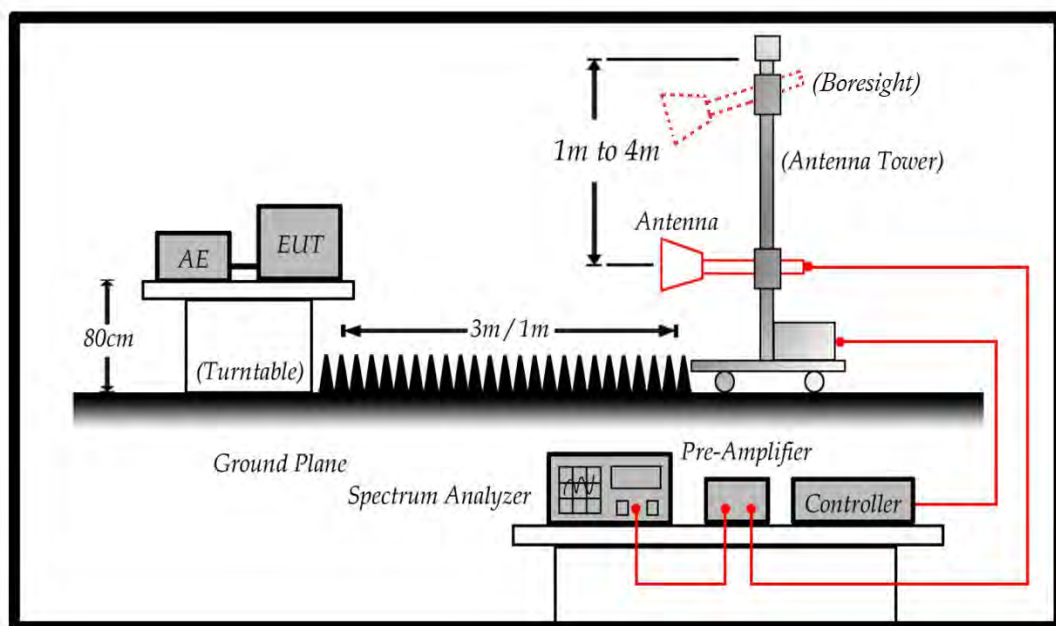
According to Standard : FCC Part 15 Subpart B & CISPR 22

3.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



3.3. Limit

Above 1GHz test shall not exceed the following value:

FCC Part 15 Subpart B Paragraph 15.109 Limits (dBuV/m)		
Frequency (MHz)	Distance(m)	dBuV/m
30-88	10	39
88-216	10	43.5
216-960	10	46.4
960-1000	10	49.5
1000-40000	3	60
18000-40000	1	69.5

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
3. $\text{RF Voltage (dBuV/m)} = 20 \log \text{RF Voltage (uV/m)}$

3.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground.

The turn table can rotate 360 degrees to determine the position of the maximum emission level and the antenna (boresight antenna tower) can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

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	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

On any frequency or frequencies below or equal to 1000MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

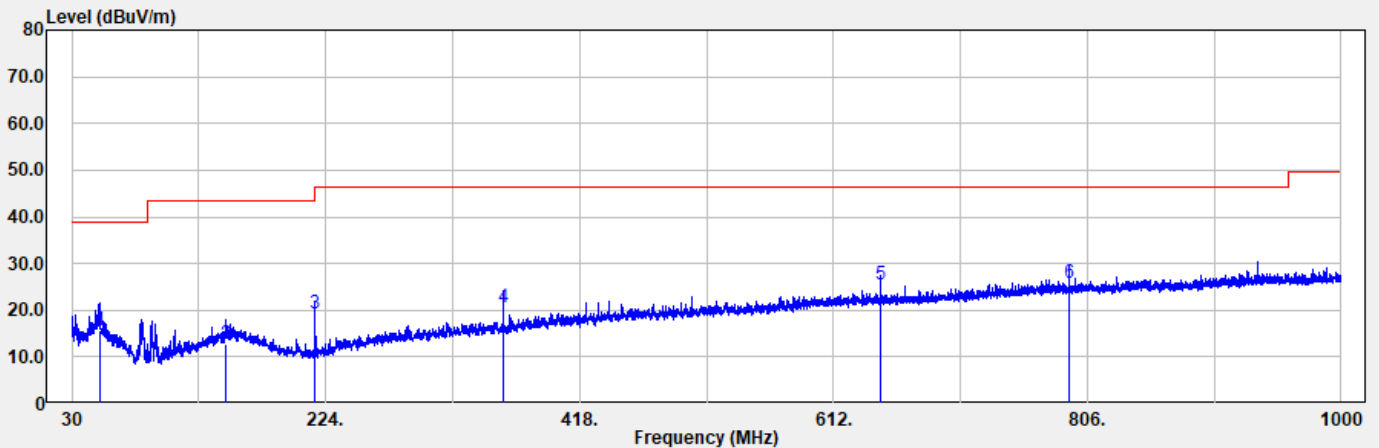
For class A, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and above 1GHz.

For class B, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and 3 meters for above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (Test Receiver) is 120kHz and above 1GHz is 1MHz.

3.5. Test Result

Model No	FD9383-HV	Site	FS-CB01
Test Voltage	PoE	Test Date	2024-01-25
Test Mode	Mode 1	Engineer	ZhengLam Yap
Polarity	Horizontal	Temperature (°C)	17.8
Test Condition	--	Humidity (%RH)	66.9

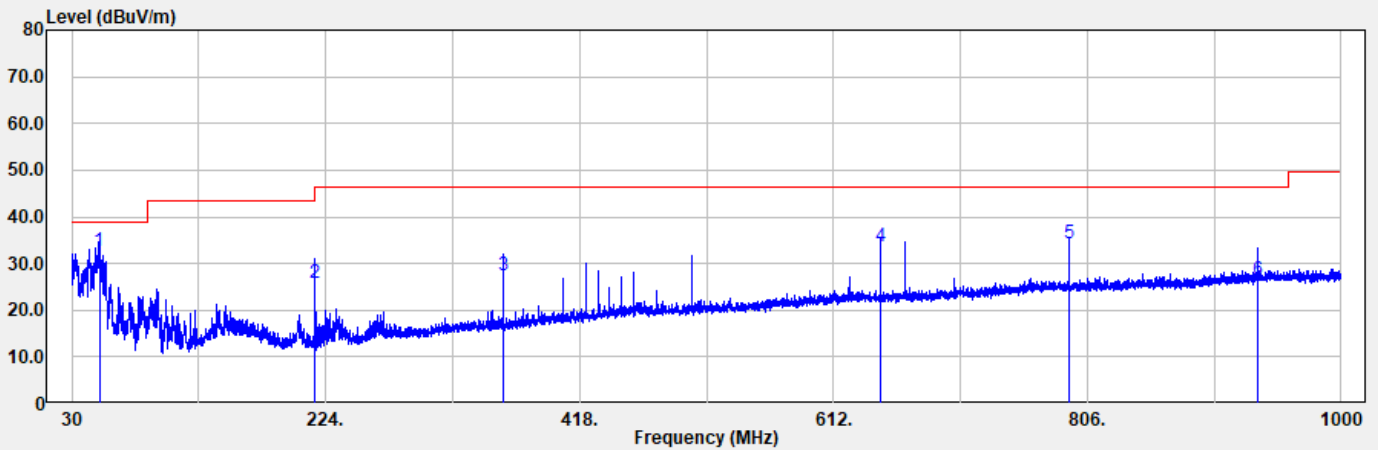


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	51.144	15.63	39.00	-23.37	38.43	-22.80	200	87	QP
2	148.072	12.84	43.50	-30.66	35.60	-22.76	400	221	QP
3	216.000	19.15	43.50	-24.35	45.11	-25.96	400	136	QP
4	359.989	20.55	46.40	-25.85	40.64	-20.09	300	207	QP
5	648.016	25.48	46.40	-20.92	38.39	-12.91	400	314	QP
6*	792.020	25.73	46.40	-20.67	35.69	-9.96	400	281	QP

Remark:

1. "*" means this data is the worst margin; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
3. Margin=Emission Level - Limit.

Model No	FD9383-HV	Site	FS-CB01
Test Voltage	PoE	Test Date	2024-01-25
Test Mode	Mode 1	Engineer	ZhengLam Yap
Polarity	Vertical	Temperature (°C)	17.8
Test Condition	--	Humidity (%RH)	66.9

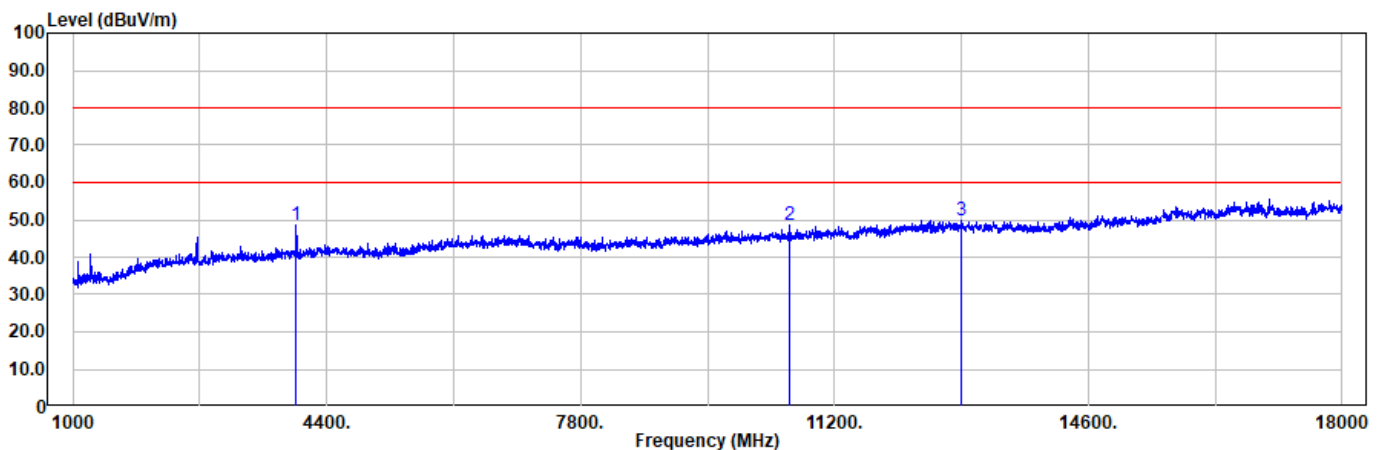


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1*	51.069	32.57	39.00	-6.43	54.83	-22.26	100	1	QP
2	216.008	25.78	46.40	-20.62	51.01	-25.23	100	213	QP
3	360.003	27.40	46.40	-19.00	46.91	-19.52	100	324	QP
4	647.999	33.70	46.40	-12.70	45.96	-12.26	300	238	QP
5	792.014	34.36	46.40	-12.04	43.87	-9.51	200	248	QP
6	935.995	26.60	46.40	-19.80	33.76	-7.17	100	285	QP

Remark:

1. "*" means this data is the worst margin; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
3. Margin=Emission Level - Limit.

Model No	FD9383-HV	Site	FS-CB03
Test Voltage	PoE	Test Date	2024-01-25
Test Mode	Mode 1	Engineer	Chris Hu
Polarity	Horizontal	Temperature (°C)	21.6
Test Condition	--	Humidity (%RH)	53.7

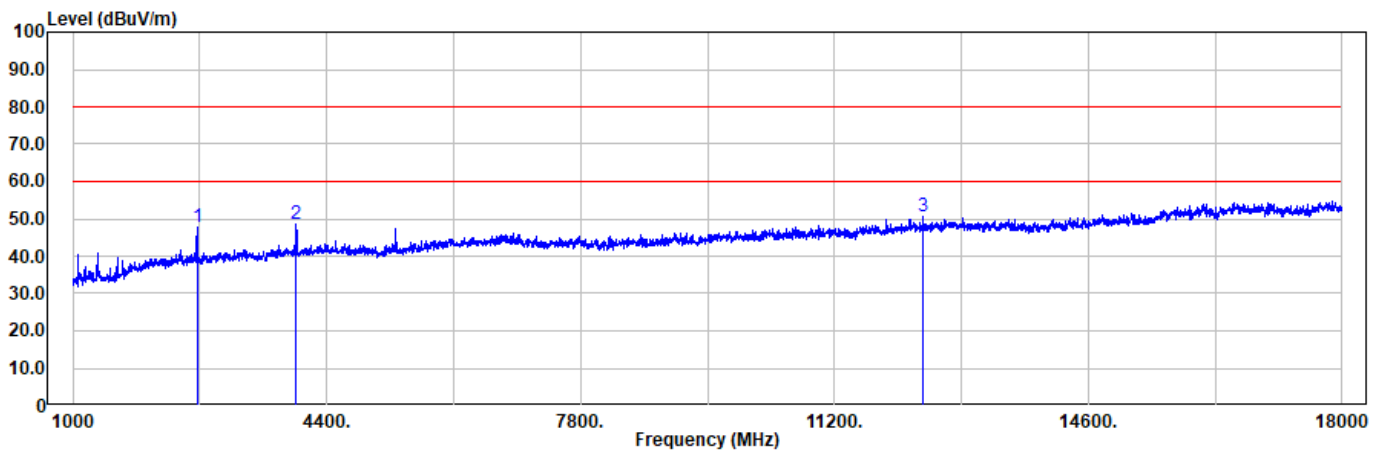


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	3996.250	48.38	80.00	-31.62	48.52	-0.14	200	33	Peak
2	10600.750	48.51	80.00	-31.49	40.16	8.35	200	291	Peak
3*	12900.000	49.77	80.00	-30.23	38.11	11.66	136	360	Peak

Remark:

1. "*" means this data is the worst margin; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
3. Margin=Emission Level - Limit.
4. The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	FD9383-HV	Site	FS-CB03
Test Voltage	PoE	Test Date	2024-01-25
Test Mode	Mode 1	Engineer	Chris Hu
Polarity	Vertical	Temperature (°C)	21.6
Test Condition	--	Humidity (%RH)	53.7



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	2666.000	47.65	80.00	-32.35	50.83	-3.18	200	268	Peak
2	3996.250	48.41	80.00	-31.59	48.55	-0.14	200	84	Peak
3*	12381.500	50.41	80.00	-29.59	39.36	11.05	100	360	Peak

Remark:

1. "*" means this data is the worst margin; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
3. Margin=Emission Level - Limit.
4. The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

3.6. Test Photograph

Test Mode : Mode 1

Description : Front View of Radiated Test



Test Mode : Mode 1

Description : Back View of Radiated Test



Test Mode : Mode 1

Description : Front View of High Frequency Radiated Test

