



Test report No: 2410697R-0E3012130012-A

VCCI 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	VCCI-CISPR 32:2016, 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-0E3012130012-A
Report Version	V1.0

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

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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-0E3012130012-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

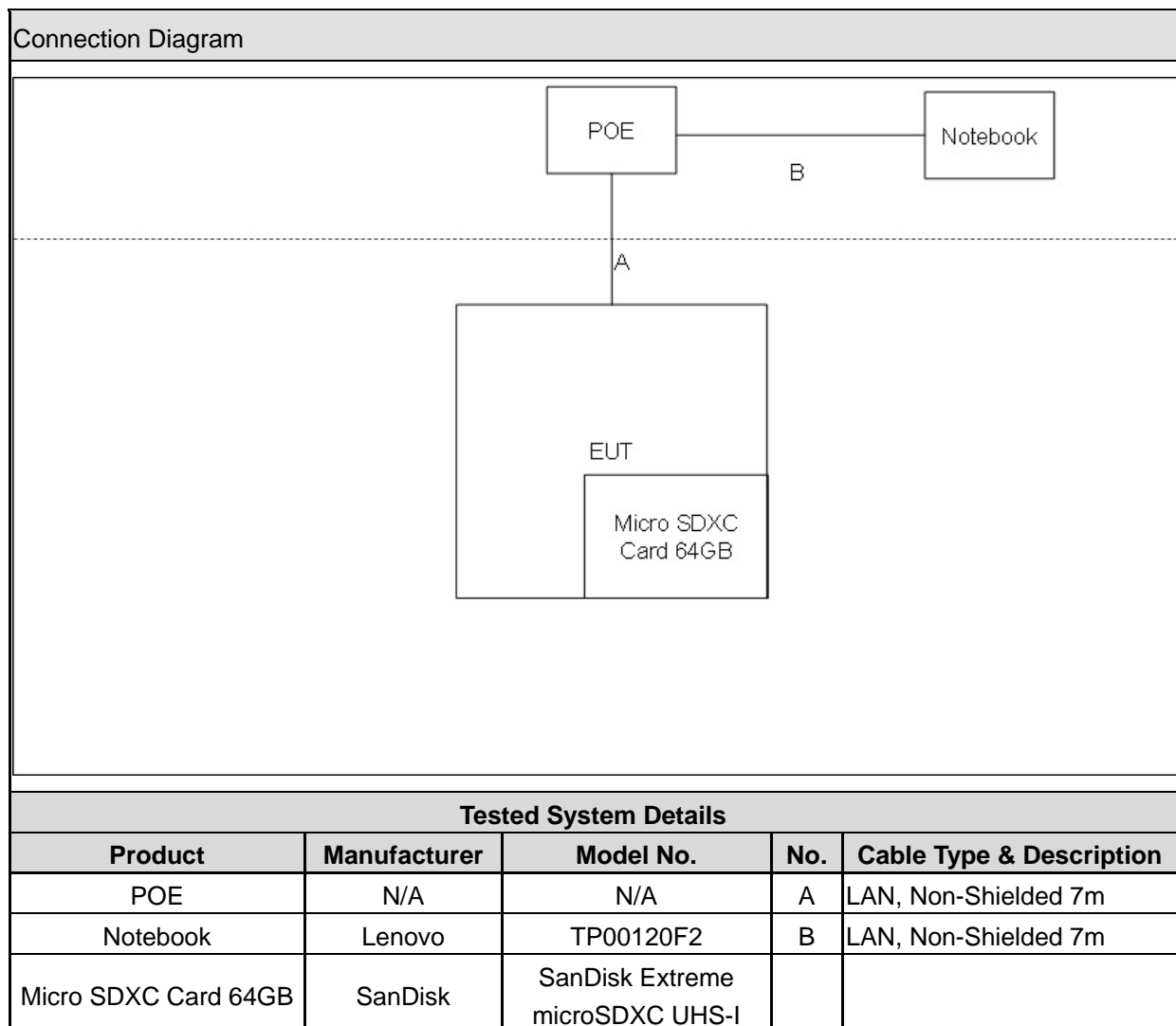
Note: The EUT is including two models for different marketing requirement.

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



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	VCCI-CISPR 32:2016, Class A	No	--	N/A
Impedance Stabilization Network	VCCI-CISPR 32:2016, Class A	Yes	FS-SR01	Pass
Radiated Emission	VCCI-CISPR 32:2016, Class A	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

Impedance Stabilization Network / FS-SR01

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Due Date
EMI Test Receiver	R&S	ESR3	101973	2023/11/15	2024/11/14
V-LISN	Schwarzbeck	NNLK8122	8122-00165	2023/5/26	2024/5/25
Two-Line V-Network	R&S	ENV216	100097	2023/5/30	2024/5/29
Impedance Stabilization Network	TESEQ	ISN T800	42815	2023/10/24	2024/10/23
Impedance Stabilization Network	TESEQ	ISN T8-Cat6	53572	2023/8/3	2024/8/2
Impedance Stabilization Network	TESEQ	ISN ST08	56935	2023/6/19	2024/6/18
Coaxial Cable	SUHNER	RG 400	LC018-RG	2023/6/17	2024/6/16
Note : ISN T800 for LAN 10Mbps to 1Gbps, T8-Cat6 for LAN above 1Gbps, ST08 for Shielded LAN					
Test Software version : e3 V9					

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					

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					

VCCI Test Site:

Member number of a test laboratory: 1153

Test Item	Test Site	VCCI No.
Conducted Emission	FS-SR01	C-20155
Radiated Emission	FS-CB01	R-20124
Radiated Emission (Above 1GHz)	FS-CB03 (9x6x6_Chamber)	G-20135

2.3. Measurement Uncertainty

Test Items	Uncertainty
Impedance Stabilization Network	± 4.80 dB
Radiated Emission (Below 1GHz)	± 5.50 dB
Radiated Emission (Above 1GHz)	± 4.70 dB

2.4. Test Environment

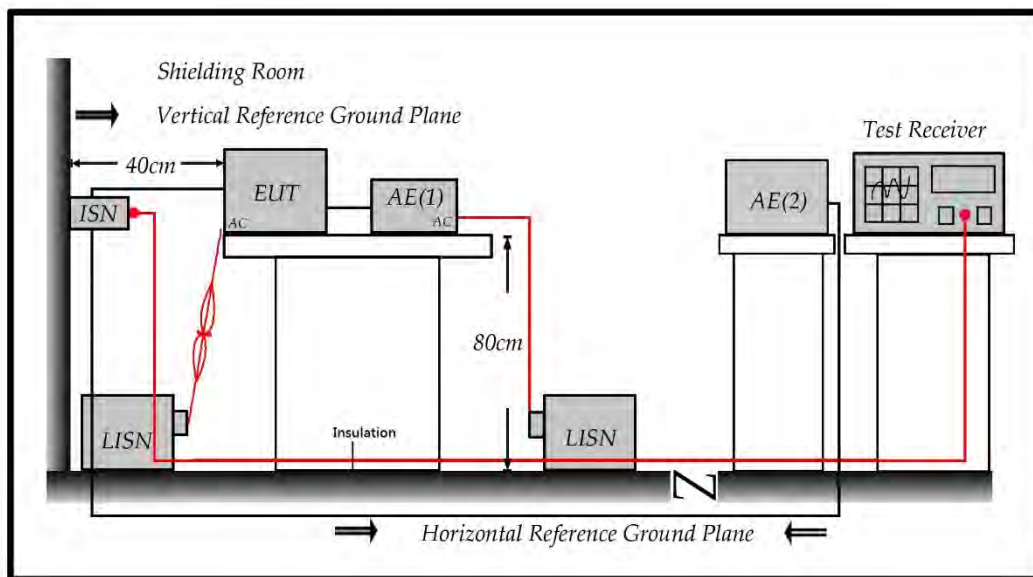
Performed Item	Items	Required
Impedance Stabilization Network	Temperature (°C)	10-40
	Humidity (%RH)	10-90
Radiated Emission	Temperature (°C)	10-40
	Humidity (%RH)	10-90

3. Conducted Emissions (Telecommunication Ports)

3.1. Test Specification

According to EMC Standard : VCCI-CISPR 32

3.2. Test Setup



3.3. Limit

Applicable to				
1. wired network ports				
2. optical fibre port with metallic shield or tension members				
3. antenna ports				
Frequency range MHz	Coupling device	Detector type / Bandwidth	Class A voltage limits dB(μV)	Class A current limits dB(μA)
0.15 – 0.5	AAN	Quasi Peak / 9 kHz	97 – 87	N / A
0.5 – 30			87	
0.15 – 0.5	AAN	Average / 9 kHz	84 – 74	
0.5 – 30			74	
0.15 – 0.5	CVP And current probe	Quasi Peak / 9 kHz	97 – 87	53 – 43
0.5 – 30			87	43
0.15 – 0.5	CVP And current probe	Average / 9 kHz	84 – 74	40 – 30
0.5 – 30			74	30
0.15 – 0.5	Current Probe	Quasi Peak / 9 kHz	N / A	53 – 43
0.5 – 30				43
0.15 – 0.5	Current Probe	Average / 9 kHz		40 – 30
0.5 – 30				30

3.4. Test Procedure

Telecommunication Port:

The mains voltage shall be supplied to the EUT via the LISN when the measurement of telecommunication port is performed. The common mode disturbances at the telecommunication port shall be connected to the ISN, which is 150ohm impedance.

Both alternative cables are tested related to the LCL requested. The measurement range is from 150kHz to 30MHz. The bandwidth of measurement is set to 9kHz.

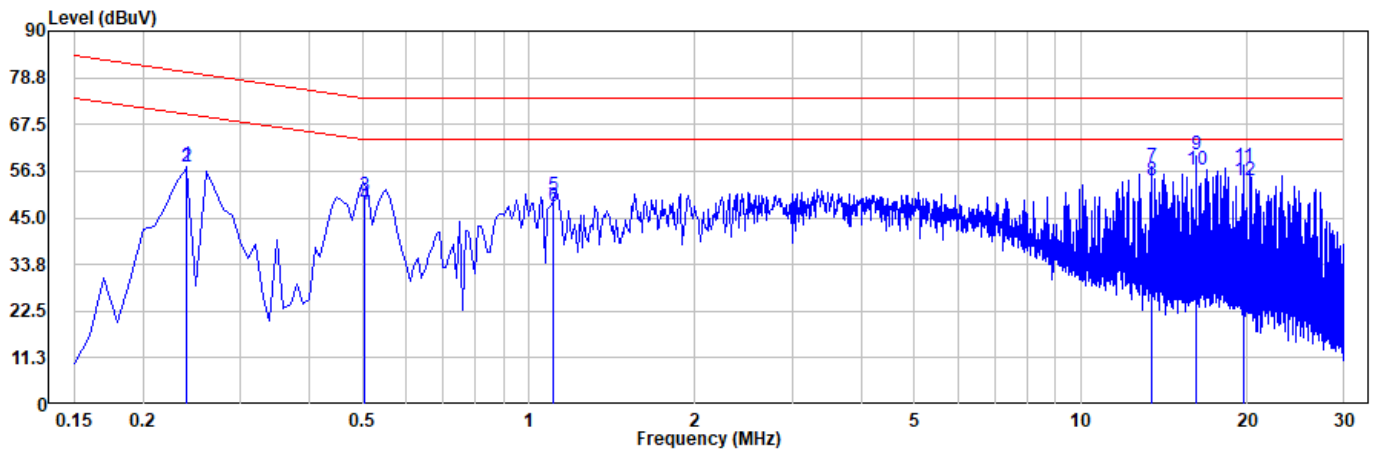
The 75dB LCL ISN is used for cat. 6 cable, the 65dB LCL ISN is used for cat. 5 cable, 55dB LCL ISN is used for cat. 3.

3.5. Deviation from Test Standard

No deviation.

3.6. Test Result

Model No	FD9383-HV	Site	FS-SR01
Test Voltage	POE	Test Date	2024-01-25
Test Mode	Mode 1	Engineer	Jackal Chen
Phase	Line	Temperature (°C)	18.1
Test Condition	100Mbps	Humidity (%RH)	56



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.240	57.52	80.10	-22.58	47.54	9.98	QP
2	0.240	57.40	70.10	-12.70	47.42	9.98	Average
3	0.504	50.21	74.00	-23.79	40.40	9.81	QP
4	0.504	48.30	64.00	-15.70	38.49	9.81	Average
5	1.109	50.31	74.00	-23.69	40.56	9.75	QP
6	1.109	47.78	64.00	-16.22	38.03	9.75	Average
7	13.419	57.48	74.00	-16.52	47.55	9.93	QP
8	13.419	53.88	64.00	-10.12	43.95	9.93	Average
9	16.227	60.20	74.00	-13.80	50.20	10.00	QP
10*	16.227	56.64	64.00	-7.36	46.64	10.00	Average
11	19.709	57.47	74.00	-16.53	47.40	10.07	QP
12	19.709	53.93	64.00	-10.07	43.86	10.07	Average

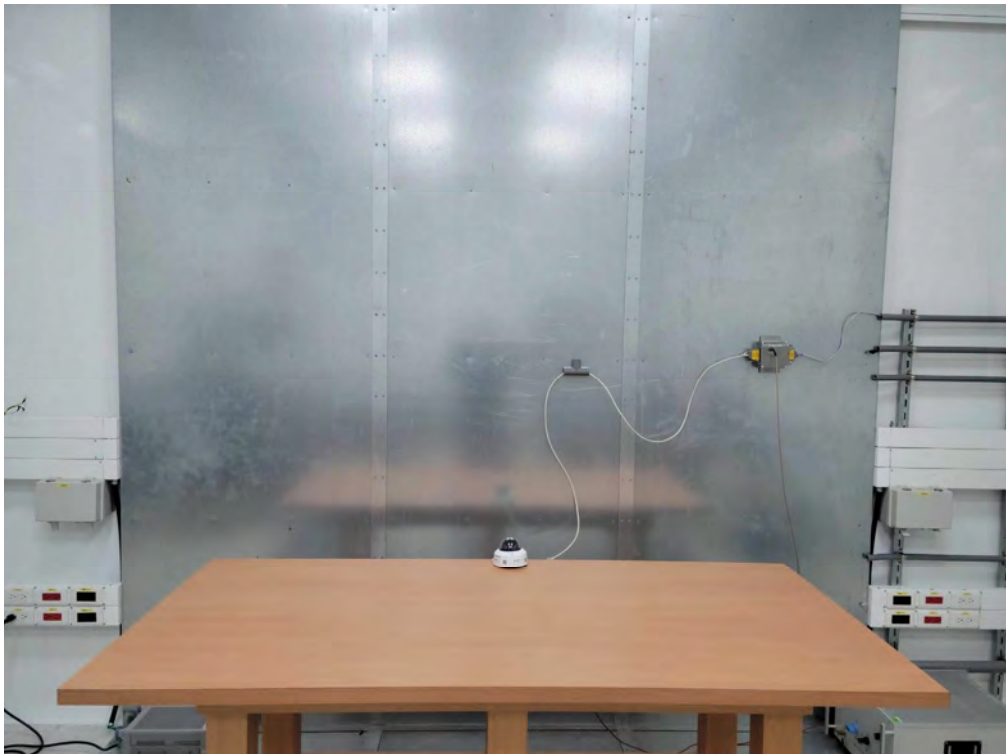
Remark:

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

3.7. Test Photograph

Test Mode : Mode 1

Description : Front View of ISN Test



Test Mode : Mode 1

Description : Back View of ISN Test



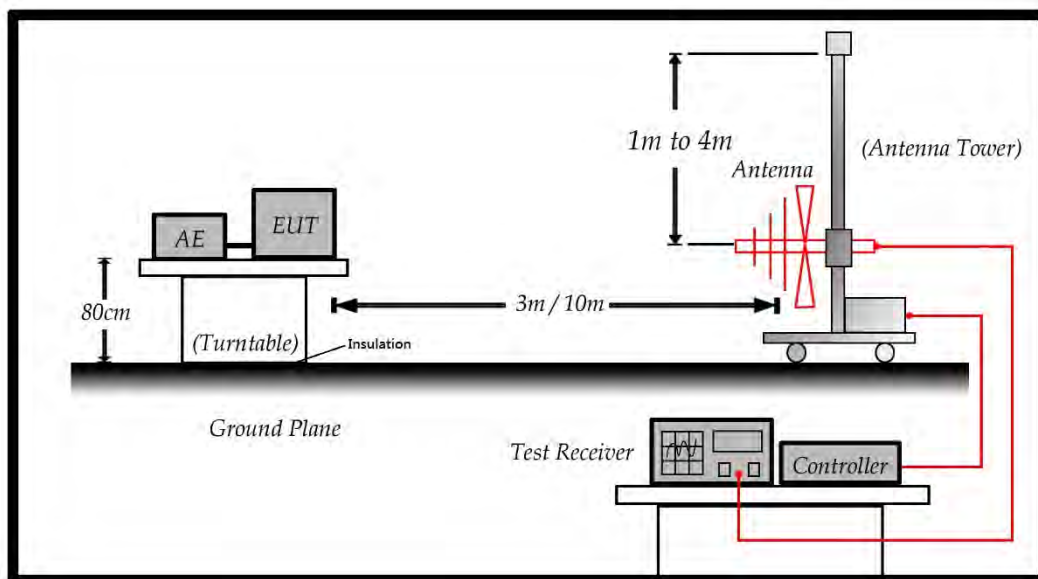
4. Radiated Emission

4.1. Test Specification

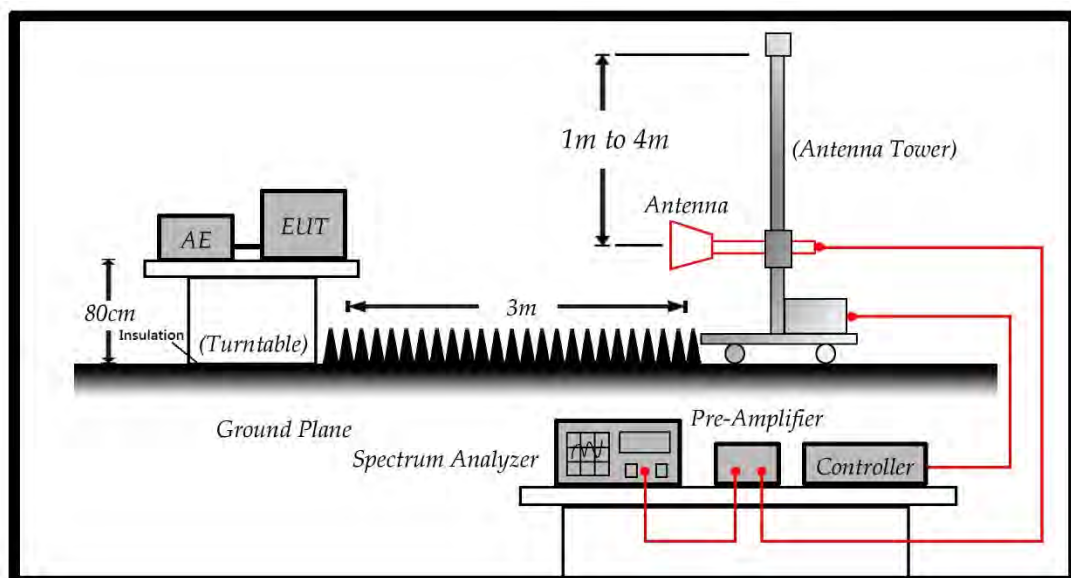
According to EMC Standard : VCCI-CISPR 32

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

Radiated emissions at frequencies up to 1 GHz

for Class A equipment

Frequency range MHz	Measurement		Class A limits dB(μV/m)
	Distance m	Detector type/ Bandwidth	OATS / SAC
30-230	10	Quasi Peak / 120 kHz	40
230-1000			47
30-230	3		50
230-1000			57
Apply only 3m or 10m across the entire frequency range			

Radiated emissions at frequencies above 1 GHz

for Class A equipment

Frequency range MHz	Measurement		Class A limits dB(μV/m)
	Distance m	Detector type/ Bandwidth	OATS / SAC
1000-3000	3	Average / 1 MHz	56
3000-6000			60
1000-3000		Peak / 1 MHz	76
3000-6000			80
Both apply across the frequency range from 1000 MHz to the highest required frequency of measurement derived from			

Required highest frequency for radiated measurement

Highest internal frequency (F_x)	Highest measured frequency
$F_x \leq 108 \text{ MHz}$	1 GHz
$108 \text{ MHz} < F_x \leq 500 \text{ MHz}$	2 GHz
$500 \text{ MHz} < F_x \leq 1 \text{ GHz}$	5 GHz
$F_x > 1 \text{ GHz}$	$5 \times F_x$ up to a maximum of 6 GHz

4.4. 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. The EUT was positioned such that the distance from antenna to the EUT was 3/10 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

All cable leaving the table-top EUT for a connection outside the test site (for example, mains cable, telephone lines, connections to auxiliary equipment located outside the test area) shall be fitted with ferrite clamps placed on the floor at the point where the cable reached the floor.

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.

Radiated emissions were investigated over the frequency range from 30MHz to 1GHz using a receiver bandwidth of 120kHz and above 1GHz using a receiver bandwidth of 1MHz.

30MHz to 1GHz Radiated was performed at an antenna to EUT distance of 10 meters.

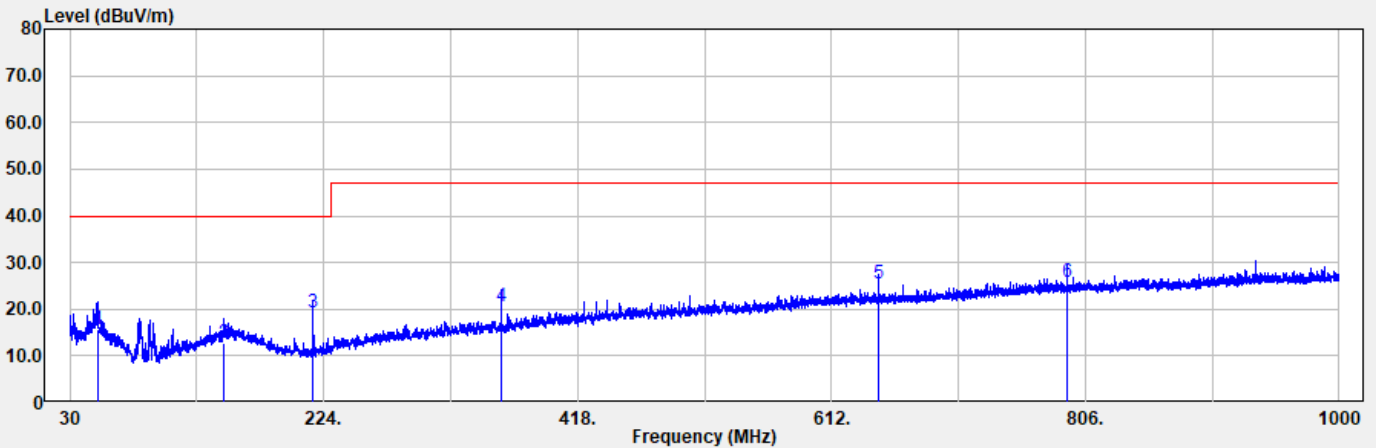
Above 1GHz Radiated was performed at an antenna to EUT distance of 3 meters.

4.5. Deviation from Test Standard

No deviation.

4.6. 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

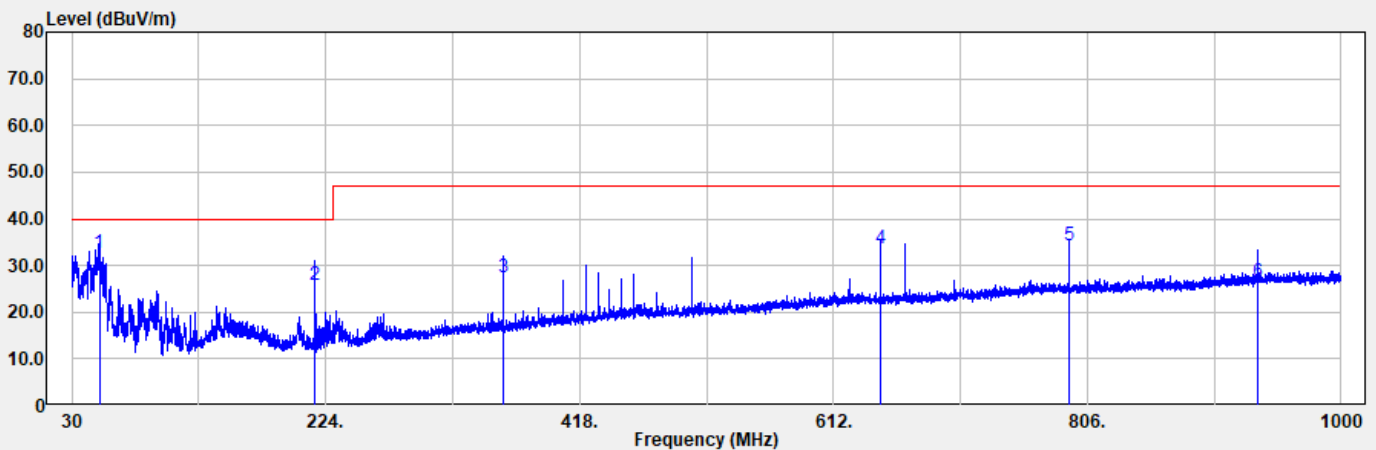


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	51.144	15.63	40.00	-24.37	38.43	-22.80	200	87	QP
2	148.072	12.84	40.00	-27.16	35.60	-22.76	400	221	QP
3*	216.000	19.15	40.00	-20.85	45.11	-25.96	400	136	QP
4	359.989	20.55	47.00	-26.45	40.64	-20.09	300	207	QP
5	648.016	25.48	47.00	-21.52	38.39	-12.91	400	314	QP
6	792.020	25.73	47.00	-21.27	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

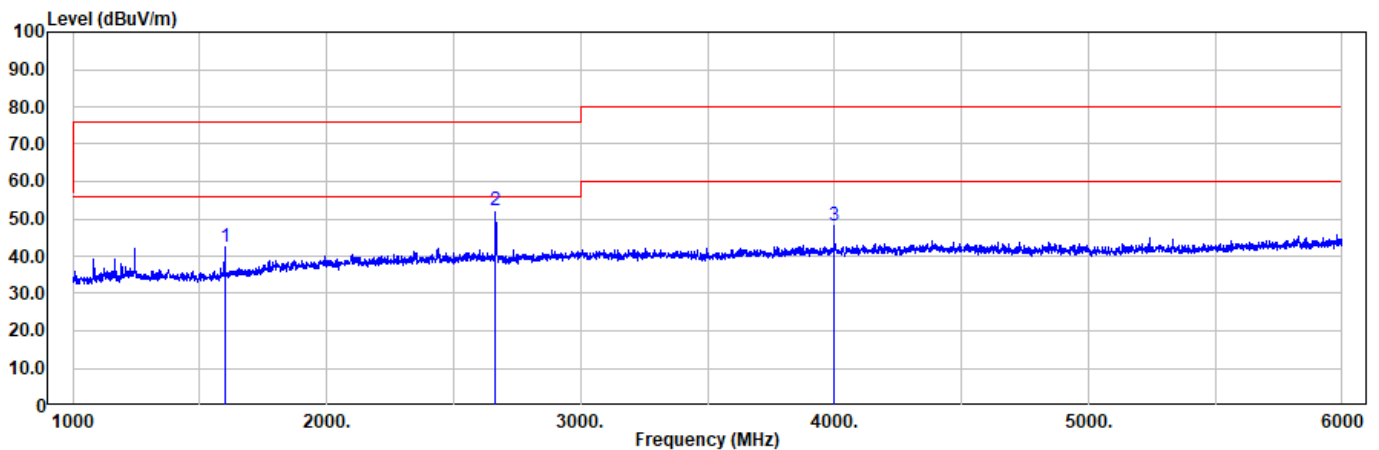


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1*	51.069	32.57	40.00	-7.43	54.83	-22.26	100	1	QP
2	216.008	25.78	40.00	-14.22	51.01	-25.23	100	213	QP
3	360.003	27.40	47.00	-19.60	46.91	-19.52	100	324	QP
4	647.999	33.70	47.00	-13.30	45.96	-12.26	300	238	QP
5	792.014	34.36	47.00	-12.64	43.87	-9.51	200	248	QP
6	935.995	26.60	47.00	-20.40	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

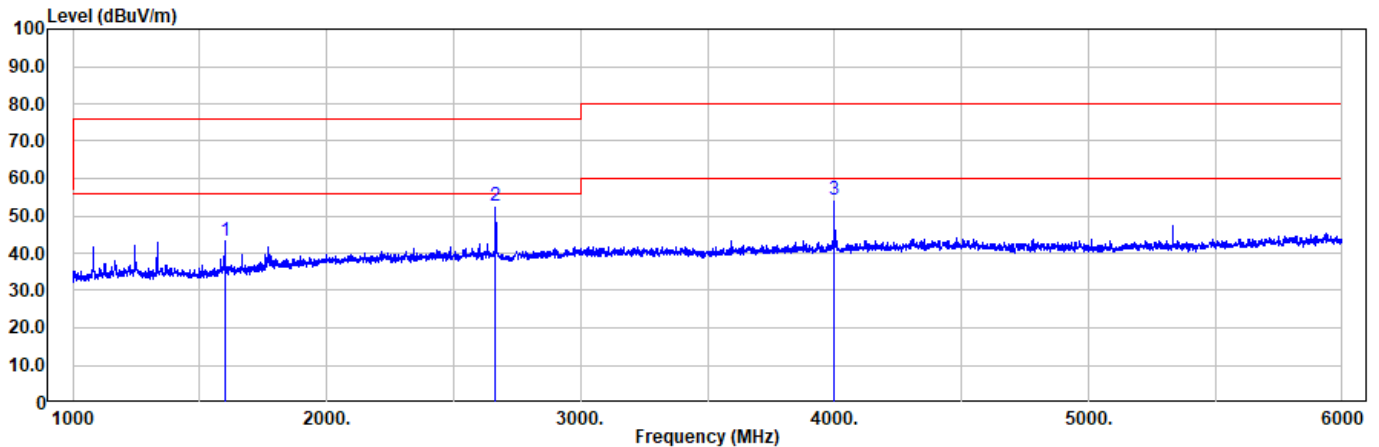


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	1600.000	42.30	76.00	-33.70	51.23	-8.93	200	101	Peak
2*	2666.155	52.24	76.00	-23.76	55.43	-3.19	200	235	Peak
3	4000.000	48.08	80.00	-31.92	48.23	-0.15	200	323	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	1600.000	43.29	76.00	-32.71	52.22	-8.93	100	360	Peak
2*	2665.875	52.57	76.00	-23.43	55.75	-3.18	200	341	Peak
3	3999.080	54.11	80.00	-25.89	54.26	-0.15	200	178	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.

4.7. 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

