



VCCI Test Report

Issued date: Jun. 18, 2021

Project No.: 21Q052805

Product : Network Camera

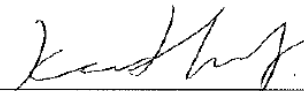
Model : FE9192-H, FE912-H

Applicant : VIVOTEK INC.

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

Report No: WD-EV-R-210167-A0

According to
VCCI-CISPR32: 2016, Class B

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-EV-R-210167-A0	Jun. 18, 2021	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-EV-R-210167-A0	Jun. 18, 2021	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: FE9192-H, FE912-H

Applicant: VIVOTEK INC.

Tested: Jun. 04 ~ Jun. 08, 2021

Standard: VCCI-CISPR32: 2016, Class B

The above equipment (Model: FE9192-H) 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
VCCI-TECHNICAL REQUIREMENTS (VCCI-CISPR 32: 2016) CISPR 32: 2015	Conducted disturbance at mains terminals	-	N/A	Without AC main power port of the EUT
	Conducted disturbance at telecommunication ports test	Class B	Pass	Meets the requirements
	Radiated disturbance	Class B	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 and Conducted disturbance at telecommunication ports Tests

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

Conducted disturbance at mains terminals, Conducted disturbance at telecommunication ports 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})	VCCI Site Registration No.	Note
W01	150 kHz~30 MHz	2.72	C-14684	N/A
W08	150 kHz ~ 30 MHz	2.70	C-20088	N/A

2.2.2 Conducted emission at telecom port test

Test Site	Measurement Freq. Range	dB (U_{lab})	VCCI Site Registration No.	Note
W01	150 kHz~30 MHz	2.72	T-12224	N/A
W08	150 kHz ~ 30 MHz	2.64	T-20089	N/A

2.2.3 Radiated Emission test

Test Site	Measurement Freq. Range	Ant	dB (U_{lab})	VCCI Site Registration No.	Note
W08	30 MHz ~ 200 MHz	V	3.68	R-20086	N/A
	30 MHz ~ 200 MHz	H	2.70		N/A
	200 MHz ~ 1000 MHz	V	5.19		N/A
	200 MHz ~ 1000 MHz	H	3.26		N/A
W08	1 GHz ~ 6 GHz	V	4.98	G-20086	N/A
	1 GHz ~ 6 GHz	H	5.07		N/A



3 General Information

3.1 Description of EUT

Product	Network Camera
Brand	VIVOTEK
Model	FE9192-H, FE912-H
Applicant	VIVOTEK INC.
Received Date	May 28, 2021
EUT Power Rating	55Vdc (from POE injector)
Model Differences	The models are electrically identical, different models no. are for marketing purpose. This series model information is provided by client.
Operating System	N/A
Data Cable Supplied	N/A
Accessory Device	N/A
I/O Port	Please refer to the User's Manual

Note:

1. The EUT's highest operating frequency is 2133MHz. Therefore the radiated emission is tested up to 6GHz.



3.2 Description of Test Modes

Test results are presented in the report as below.

Test Mode	Test Condition
Conducted emission test at telecom port test	
-	PoE mode, LAN (10Mbps/100Mbps)
Radiated emission 30MHz ~ 1GHz test	
-	PoE mode
Radiated emission above 1GHz test	
-	PoE mode

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.
- The communication partner sent data to EUT by command “ping” via LAN.
- The EUT sent video signal to PC via LAN cable.
- The server PC show IPCAM’s image on browser.
- The EUT write data with Micro SD card.

3.4 Description of Support Unit

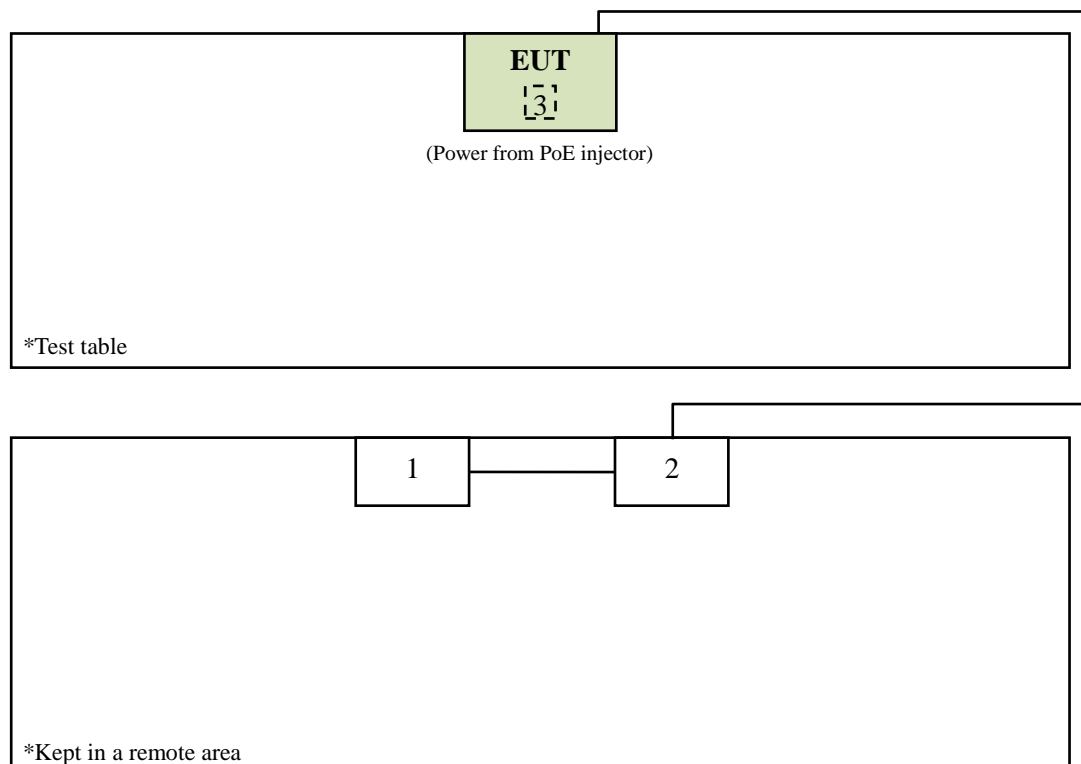
The EUT has been conducted testing with other necessary accessories or support units.

Item	Equipment	Brand	Model No.	Serial No.	FCC ID	Data Cable	Power Cord	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	CISCO	MA-INJ-4	N/A	N/A	20m CAT.5E non-shielded RJ45 cable	1.8m non-shielded cable	-
3	Micro SD card	ADATA	32GB	N/A	N/A	N/A	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 adapter and PoE:

PoE injector (support unit only)	
Brand	CISCO
Model	MA-INJ-4
Input Power	100-240Vac, 0.67A, 50/60Hz
Output Power	55Vdc, 0.6A
Power line	1.8m non-shielded cable

3.5 Configuration of System Under Test





4 Emission Test

4.1 Conducted Emission Measurement (Frequency Range 150 KHz-30MHz)

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 Conducted Emission at Telecommunication Ports Test

4.2.1 Limit of Conducted Emission at Telecommunication Ports Test

Class A equipment:

Requirements for asymmetric mode conducted emissions from Class A equipment			
Frequency (MHz)	Measurement		Class A limits dB(μV)
	Coupling device	Detector type/ bandwidth	
0.15 to 0.5	AAN	Quasi Peak / 9 kHz	97 to 87*
0.5 to 30			87
0.15 to 0.5	AAN	Average / 9 kHz	84 to 74*
0.5 to 30			74

* Decreases with the logarithm of the frequency.

Class B equipment:

Requirements for asymmetric mode conducted emissions from Class B equipment			
Frequency (MHz)	Measurement		Class B limits dB(μV)
	Coupling device	Detector type/ bandwidth	
0.15 to 0.5	AAN	Quasi Peak / 9 kHz	84 to 74*
0.5 to 30			74
0.15 to 0.5	AAN	Average / 9 kHz	74 to 64*
0.5 to 30			64

* Decreases with the logarithm of the frequency.

- Note:**
1. The lower limit shall apply at the transition frequencies.
 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 = Insertion loss of ISN + Cable loss
 Margin Level = Measurement Value – Limit Value

4.2.2 Test Instrument

Test Site: W01-CE					
Item	Equipment	Manufacturer	Model	Meter No.	Calibration Date
1	TWO-LINE V-NETWORK	R&S	ENV216	CT-1-025-1	Apr. 29, 2021
2	EMI Test Receiver	R&S	ESCI	CT-1-024	Apr. 29, 2021
3	Impedance Stabilization Network	TESEQ	T8-CAT6	CT-1-105	Apr. 29, 2021
4	V-LISN	SCHWARZBECK	NSLK8127	CT-1-104-1	Apr. 29, 2021
5	Test Cable	Marvelous Microwave Inc	200200.400LL. 500A	CT-10-048-1	Apr. 27, 2021
6	50ohm Termination	N/A	N/A	CT-1-065-2	Apr. 29, 2021
7	Measurement Software	EZ-EMC	Ver: EMC-CON 3A1	CT-3-012	No calibration request

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

Test Site: W08-CE					
Item	Equipment	Manufacturer	Model	Meter No.	Calibration Date
1	TWO-LINE V-NETWORK LISN	R&S®	ENV216	CT-1-025-2	May 27, 2021
2	Test Cable	EMCI	EMCCFD300-BM-BM-5000	CT-1-107-2	May 25, 2021
3	EMI Test Receiver	R&S	ESR3	CT-1-103	May 21, 2021
4	LISN	SCHWARZBECK	NSLK 8127RC	CT-1-104-1RC	May 27, 2021
5	ISN	FCC	F-071115-1057 -1-09	CT-1-027	Jun. 01, 2021
6	50ohm Termination	HUBER+SUHNER	N/A	CT-1-109-2	May 26, 2021
7	Measurement Software	EZ-EMC	Ver: EMC-CON 3A1	CT-3-012	No calibration request

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



4.2.3 Test Procedure

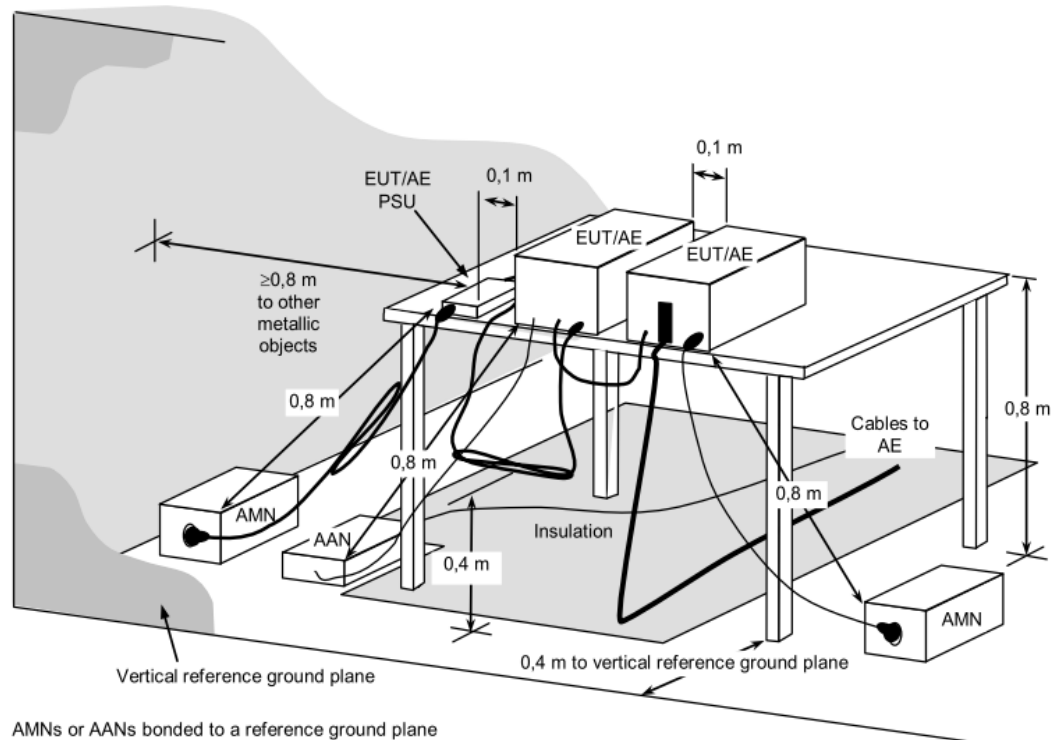
- a. The table-top EUT was placed 0.8 meter height wooden table from the horizontal ground plane with EUT being connected to power source through a line impedance stabilization network (LISN). The floor-standing EUT was placed insulation support unit from the horizontal ground plane. The LISN at least be 80 cm from nearest chassis of EUT.
- b. The line impedance stabilization network (LISN) provides 50 ohm/50uH of coupling impedance for the measuring instrument. All other support equipments powered from additional LISN(s).
- c. Interrelating cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle. All I/O cables were positioned to simulate typical usage.
- d. All I/O cables that are not connected to a peripheral shall be bundle in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- e. ISN at least 80 cm from nearest chassis of EUT. The communication function of EUT was executed in normal condition. ISN was connected between EUT and associated equipment and ISN was connected directly to reference ground plane. The actual test configuration, please refer to EUT test photos.
- f. The receiver scanned from 150kHz to 30MHz for emissions in each of test modes. The test mode included 10Mbps, 100Mbps, 1Gbps, 10Gbps and POE mode. Emission frequency and amplitude were recorded, recording at least six highest emissions.
- g. 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

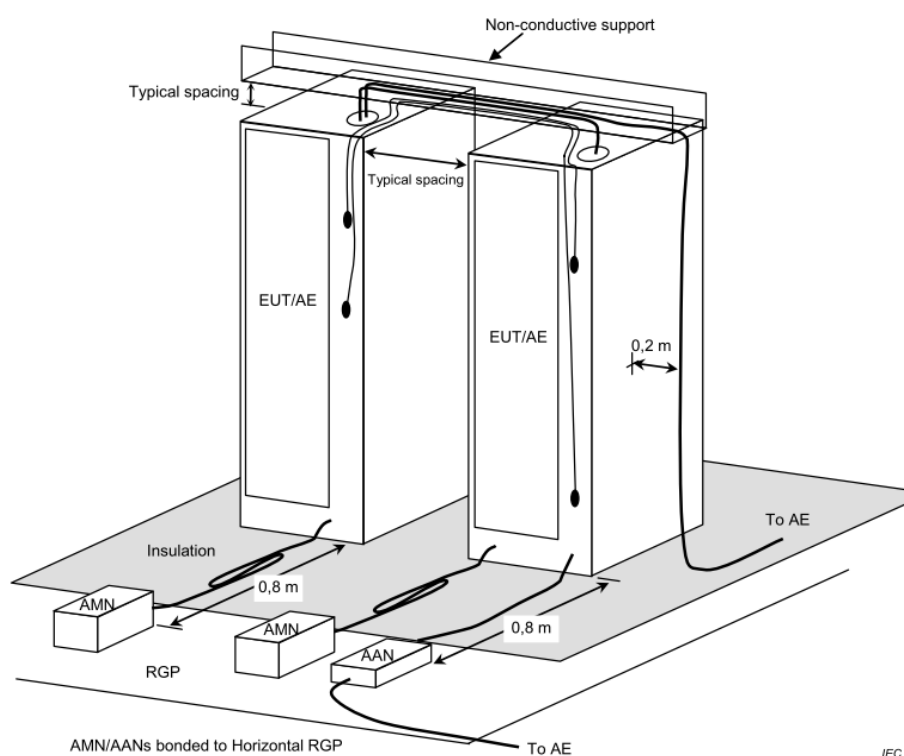
No deviation

4.2.5 Test Setup

< Table-Top equipment >



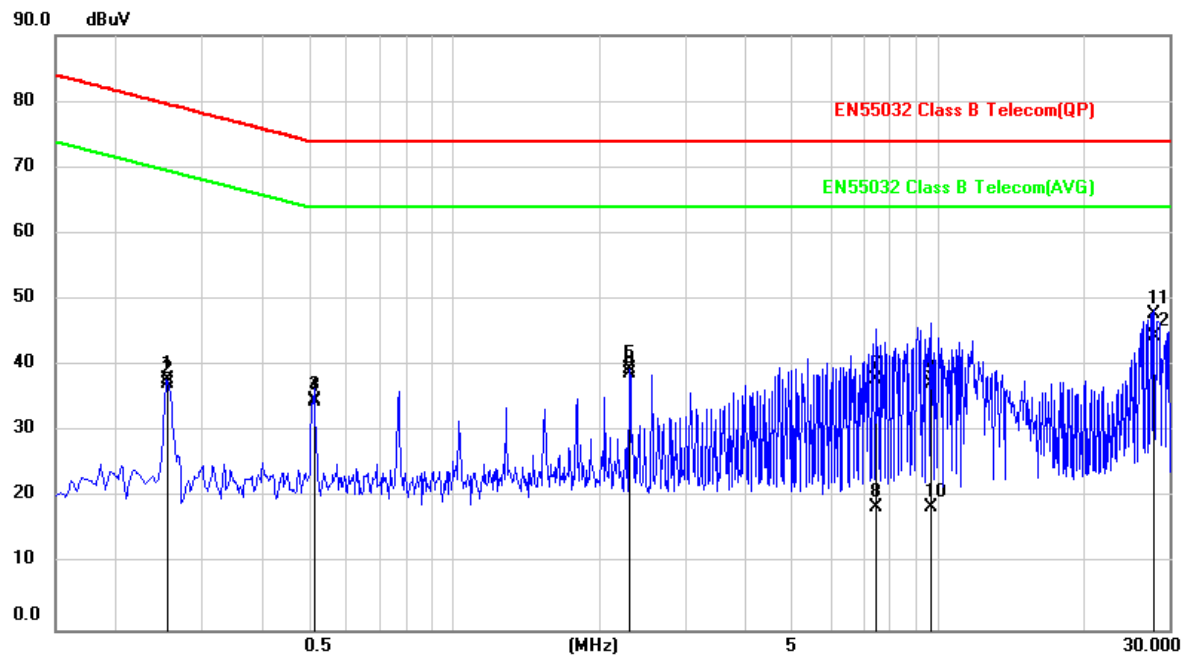
< Floor-Standing equipment >



Note: Please refer to the 4.2.7 for the actual test configuration.

4.2.6 Test Result

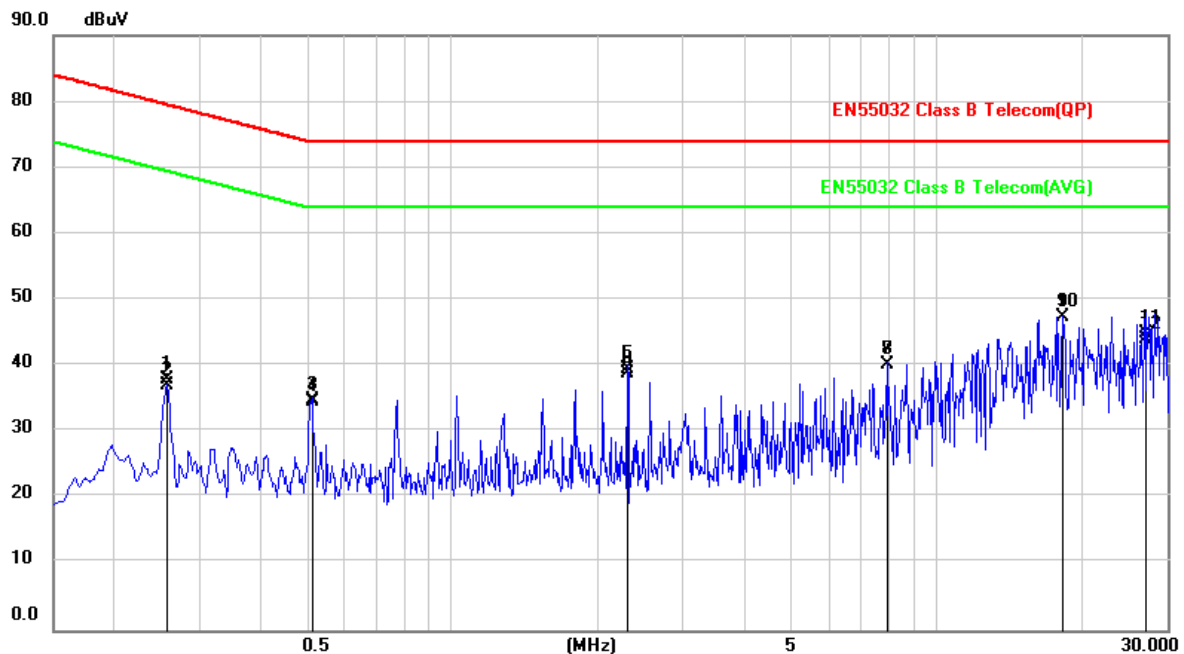
Test Voltage	55Vdc (from PoE)	Frequency Range	0.15-30 MHz
Environmental Conditions	24.6°C, 50% RH	6dB Bandwidth	9 kHz
Test Date	2021/06/04	Test Condition	LAN port with ISN (10Mbps)
Tested by	Andy Li	Test Site	W01



No.	Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measurement (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.2565	18.16	19.75	37.91	79.54	-41.63	QP
2	0.2565	17.40	19.75	37.15	69.54	-32.39	AVG
3	0.5123	15.22	19.59	34.81	74.00	-39.19	QP
4	0.5123	14.98	19.59	34.57	64.00	-29.43	AVG
5	2.3067	20.04	19.46	39.50	74.00	-34.50	QP
6	2.3067	19.27	19.46	38.73	64.00	-25.27	AVG
7	7.5002	18.37	19.49	37.86	74.00	-36.14	QP
8	7.5002	-1.00	19.49	18.49	64.00	-45.51	AVG
9	9.6911	17.80	19.52	37.32	74.00	-36.68	QP
10	9.6911	-1.05	19.52	18.47	64.00	-45.53	AVG
11	27.9407	28.15	19.76	47.91	74.00	-26.09	QP
12	27.9407	24.59	19.76	44.35	64.00	-19.65	AVG

Remark: 1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of ISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value - Limit Value

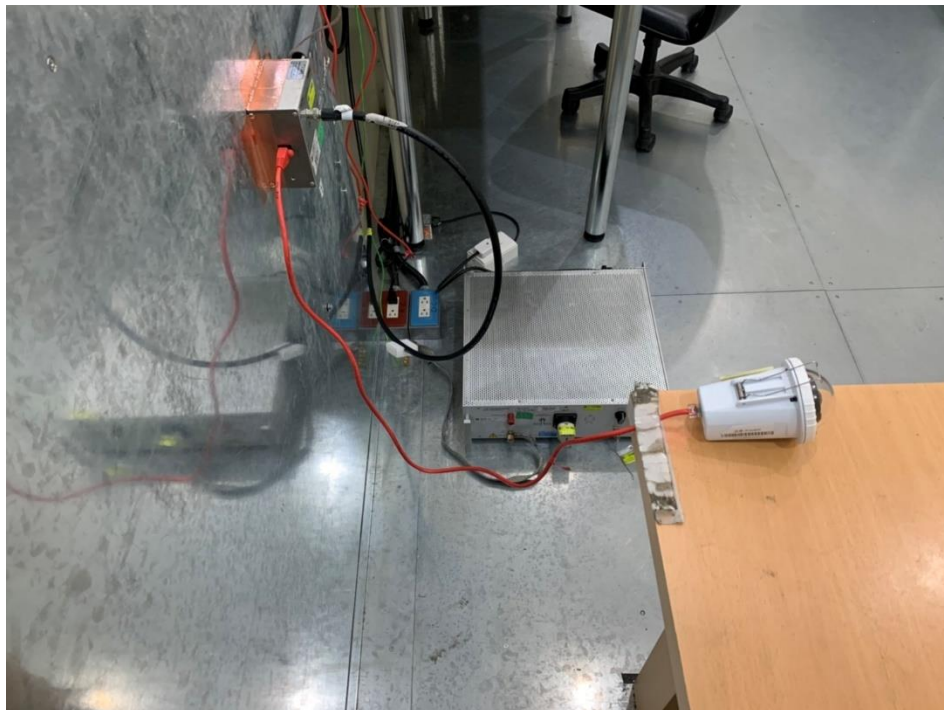
Test Voltage	55Vdc (from PoE)	Frequency Range	0.15-30 MHz
Environmental Conditions	24.6°C, 50% RH	6dB Bandwidth	9 kHz
Test Date	2021/06/04	Test Condition	LAN port with ISN (100Mbps)
Tested by	Andy Li	Test Site	W01



No.	Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measurement (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.2563	18.14	19.75	37.89	79.55	-41.66	QP
2	0.2563	17.26	19.75	37.01	69.55	-32.54	AVG
3	0.5127	15.22	19.59	34.81	74.00	-39.19	QP
4	0.5127	14.96	19.59	34.55	64.00	-29.45	AVG
5	2.3062	20.03	19.46	39.49	74.00	-34.51	QP
6	2.3062	19.25	19.46	38.71	64.00	-25.29	AVG
7	7.9236	20.71	19.50	40.21	74.00	-33.79	QP
8	7.9236	20.70	19.50	40.20	64.00	-23.80	AVG
9	18.2431	27.70	19.62	47.32	74.00	-26.68	QP
10	18.2431	27.82	19.62	47.44	64.00	-16.56	AVG
11	27.1576	25.16	19.74	44.90	74.00	-29.10	QP
12	27.1576	24.27	19.74	44.01	64.00	-19.99	AVG

Remark: 1. QP = Quasi Peak, AVG = Average
2. Correction Factor = Insertion loss of ISN + Cable loss
3. Measurement Value = Reading Level + Correct Factor
4. Margin Level = Measurement Value - Limit Value

4.2.7 Photographs of Test Configuration



4.3 Radiated Emission Measurement

4.3.1 Limits of Radiated Emission Measurement

According to VCCI-CISPR32 table1 - 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

Remark:

1. F_x : highest fundamental frequency generated or used within the EUT or highest frequency at which it operates.
2. Where F_x is unknown, the radiated emission measurements shall be performed up to 6 GHz.

Class A equipment:

Requirements for radiated emissions at frequencies up to 1 GHz for Class A equipment			
Frequency (MHz)	Measurement		Class A limits dB(μV/m)
	Distance (m)	Detector type/ bandwidth	OATS/SAC
30 to 230	10	Quasi Peak / 120 kHz	40
230 to 1000			47
30 to 230	3		50
230 to 1000			57

Requirements for radiated emissions at frequencies above 1 GHz for Class A equipment			
Frequency (MHz)	Measurement		Class A limits dB($\mu\text{V/m}$)
	Distance (m)	Detector type/ bandwidth	FSOATS
1000 to 3000	3	Average / 1 MHz	56
3000 to 6000			60
1000 to 3000		Peak / 1 MHz	76
3000 to 6000			80

Class B equipment:

Requirements for radiated emissions at frequencies up to 1 GHz for Class B equipment			
Frequency (MHz)	Measurement		Class B limits dB(μV/m)
	Distance (m)	Detector type/ bandwidth	OATS/SAC
30 to 230	10	Quasi Peak / 120 kHz	30
230 to 1000			37
30 to 230	3		40
230 to 1000			47

Requirements for radiated emissions at frequencies above 1 GHz for Class B equipment			
Frequency (MHz)	Measurement		Class B limits dB(μ V/m)
	Distance (m)	Detector type/ bandwidth	FSOATS
1000 to 3000	3	Average / 1 MHz	50
3000 to 6000			54
1000 to 3000		Peak / 1 MHz	70
3000 to 6000			74

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

4.3.2 Test Instrument

Test Site: W08-966					
Item	Equipment	Manufacturer	Model	Meter No.	Calibration Date
1	Horn Antenna	Schwarzbeck	BBHA 9120D	CT-9-031	Jul. 28, 2020
2	Horn Antenna	Schwarzbeck	BBHA 9170	CT-9-032	Dec. 03, 2020
3	TRILOG Broadband Antenna with 5 dB Attenuator	Schwarzbeck	VULB 9168 & FAT-NM5NF5T3G 2W5	CT-1-002-1	Jul. 29, 2020
4	EXA Signal Analyzer	Keysight	N9010A	CT-1-093	Apr. 21, 2021
5	EMI Test Receiver	Keysight	N9038A	CT-9-007	Jul. 28, 2020
6	Preamplifier	EM	EM 330	CT-9-024	Jul. 30, 2020
7	Preamplifier	JPT	JPA0118-55-303K	CT-1-139	Apr. 21, 2021
8	Preamplifier	EMCI	EMC051845SE	CT-9-012	Sep. 04, 2020
9	Preamplifier	EMCI	EMC184045SE	CT-9-013	Sep. 04, 2020
10	Test Cable	EMCI	EMCCFD400-NM-NM-1000	CT-1-132	Jul. 29, 2020
11	Test Cable	PEWC	CFD400NL-LW-N M-NM-3000	CT-1-141	Jul. 30, 2020
12	Test Cable	EMCI	EMCCFD400-NM-NM-15000	CT-1-133	Jul. 30, 2020
13	Test Cable	EMCI	EMC104-SM-35M-600	CT-1-134	Jul. 30, 2020
14	Test Cable	EMCI	EMC104-SM-35M-15000	CT-1-135	Jul. 30, 2020
15	Test Cable	EMCI	EMC102-KM-KM-600	CT-1-136	Jul. 30, 2020
16	Test Cable	MVE	140140.LL404.700	CT-9-066	Apr. 21, 2021
17	Measurement Software	EZ-EMC	Ver : FA-03A2 RE	CT-3-012	No calibration request

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



4.3.3 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 was placed insulation support unit from the horizontal ground plane. 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.

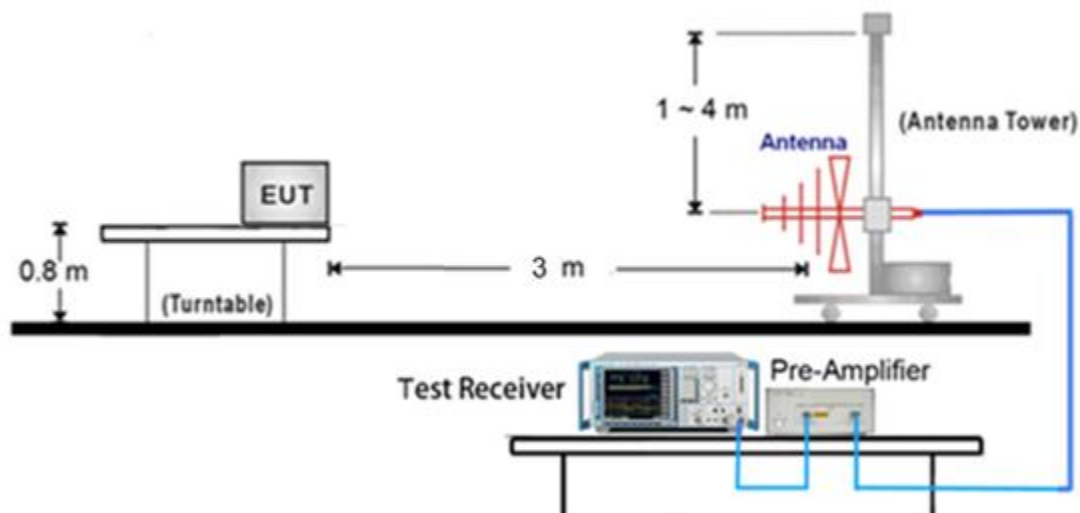
- e. Emission frequency and amplitude were recorded, recording at least six highest emissions. The EUT and cable configuration of the above highest emission levels were recorded. The test data of the worst case was recorded.

4.3.4 Deviation from Test Standard

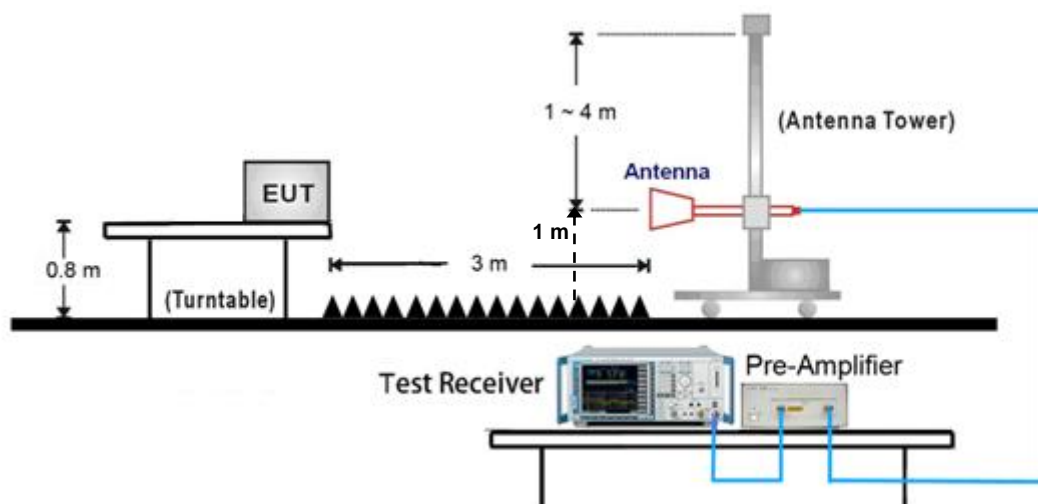
No deviation

4.3.5 Test Setup

< Radiated Emissions Frequency: 30 MHz to 1000 MHz >



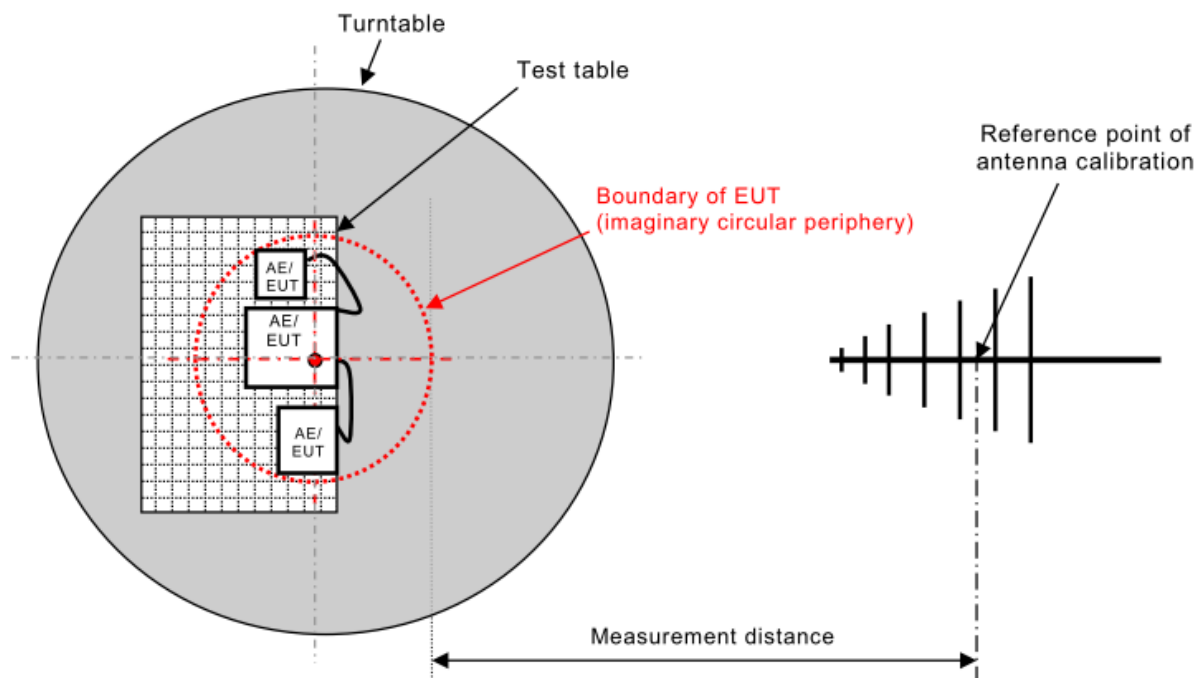
< Radiated Emissions Frequency: above 1GHz >



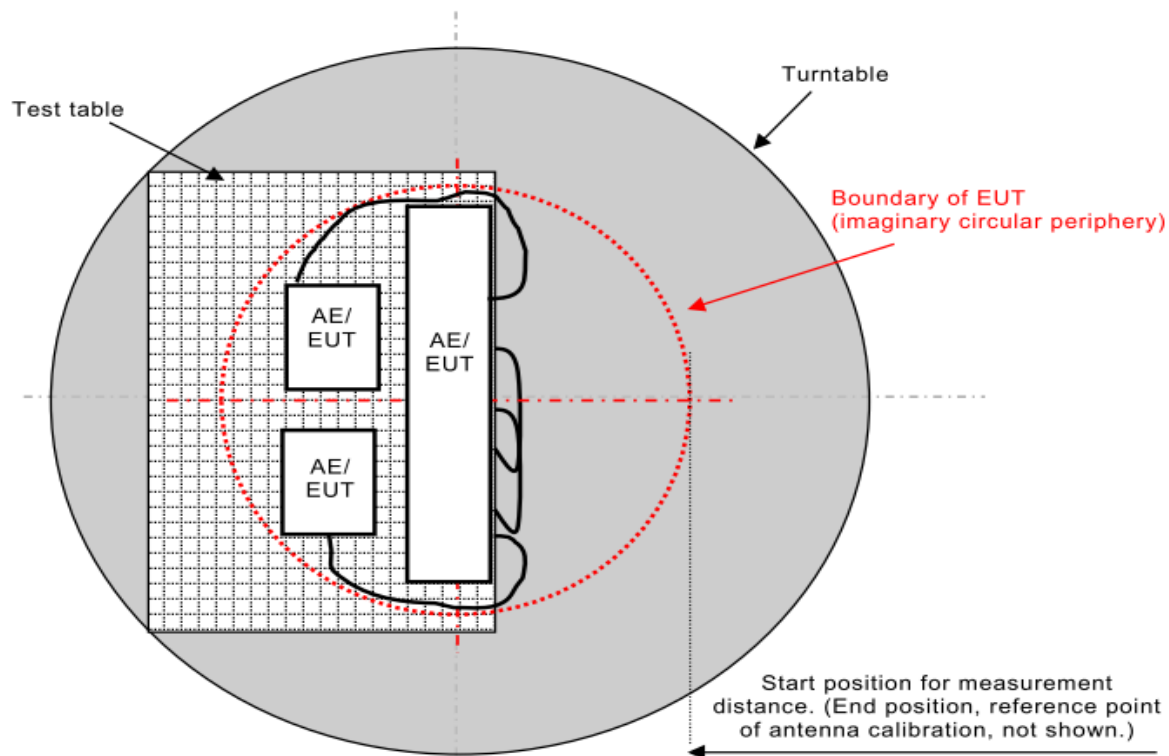
Note:

- (1) Please refer to the 4.3.7 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

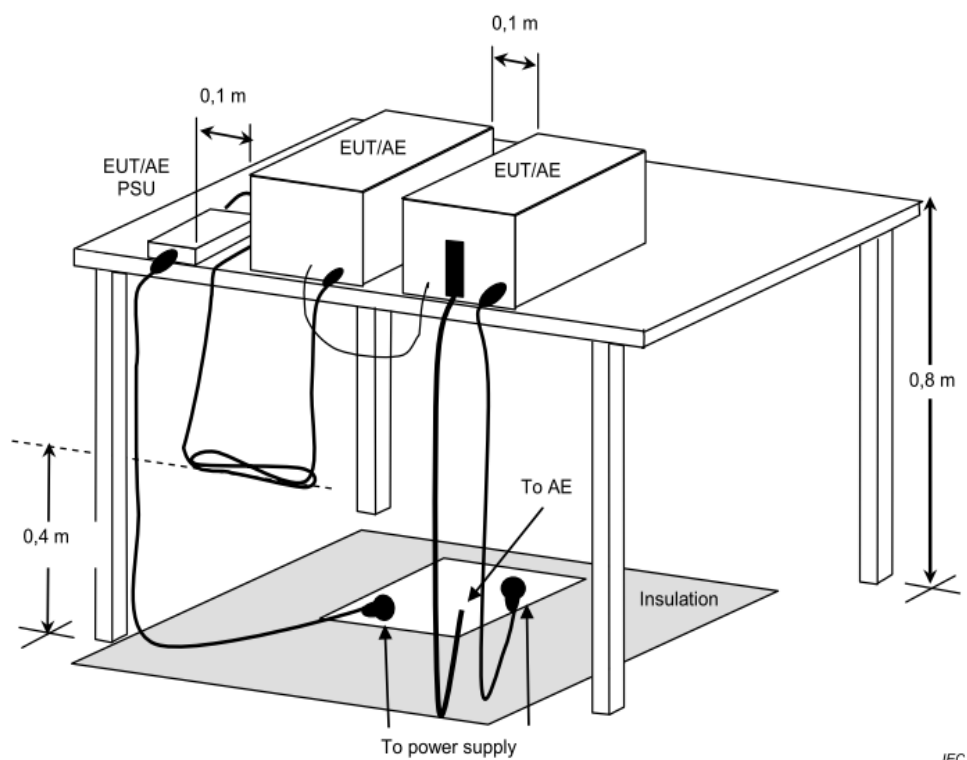
< EUT placement top view and measurement distance >



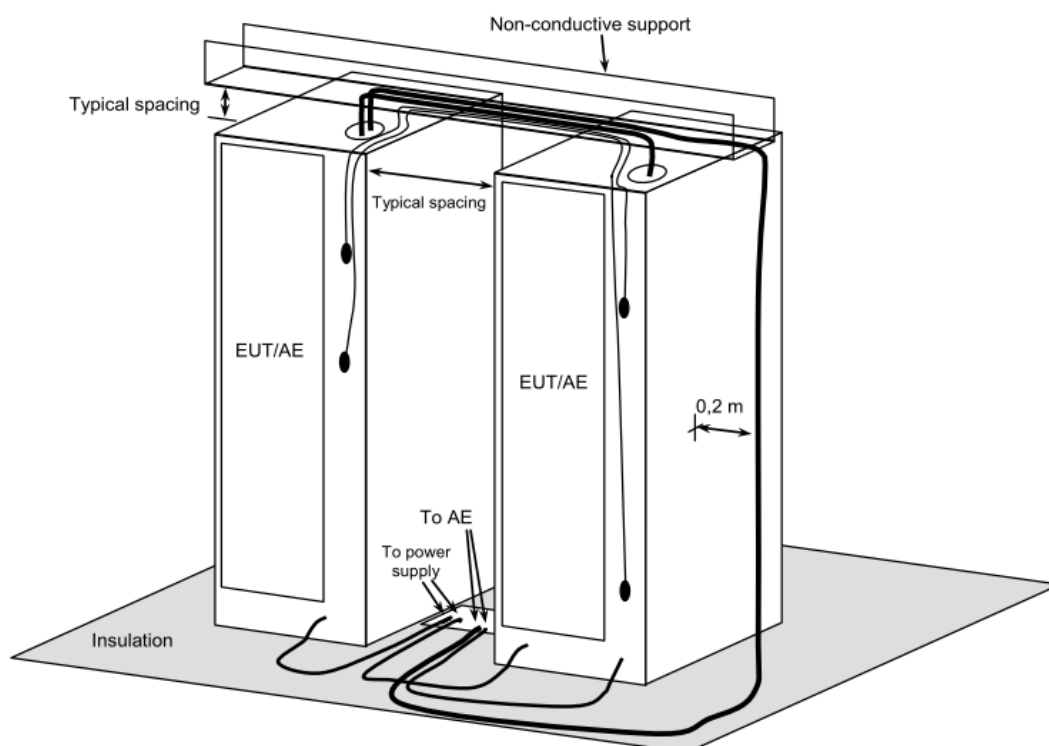
< Boundary of EUT, Local AE and associated cabling >



< Table-Top equipment >



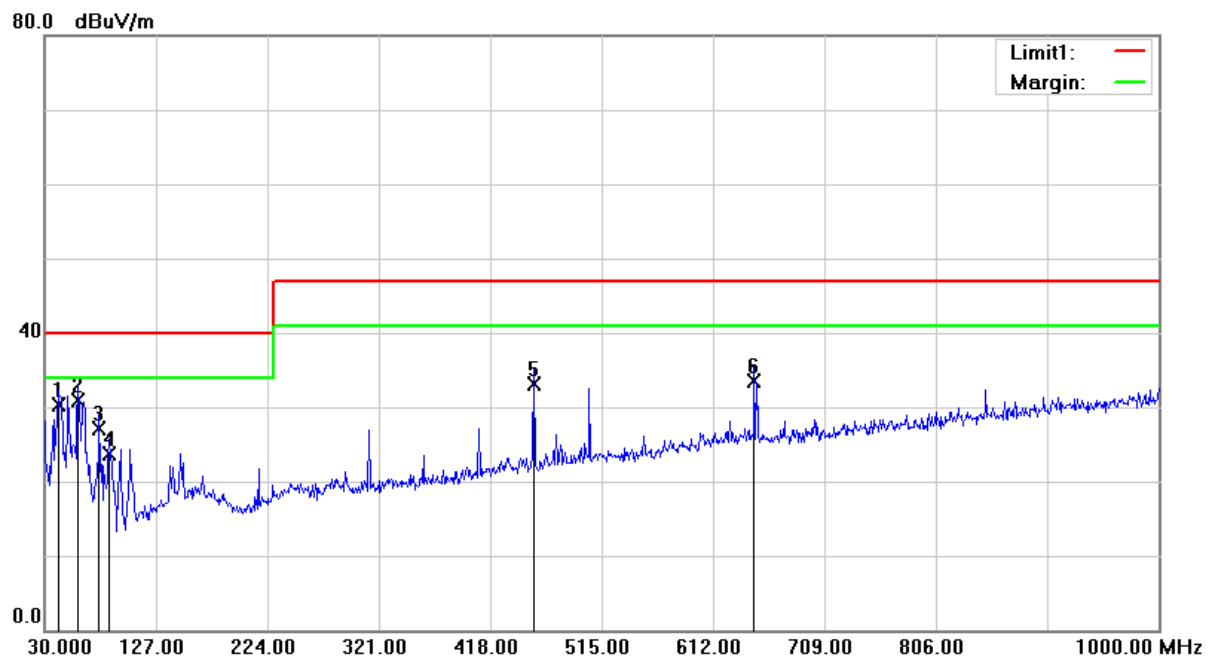
< Floor-Standing equipment >



Note: Please refer to the 4.3.7 for the actual test configuration.

4.3.6 Test Result

Test Voltage	55Vdc (from PoE)	Frequency Range	30 – 1000 MHz
Environmental Conditions	22°C, 55% RH	6dB Bandwidth	120 kHz
Test Date	2021/06/07	Test Distance	3m
Tested by	Karwin Kao	Polarization	Vertical
Test Site	W08		

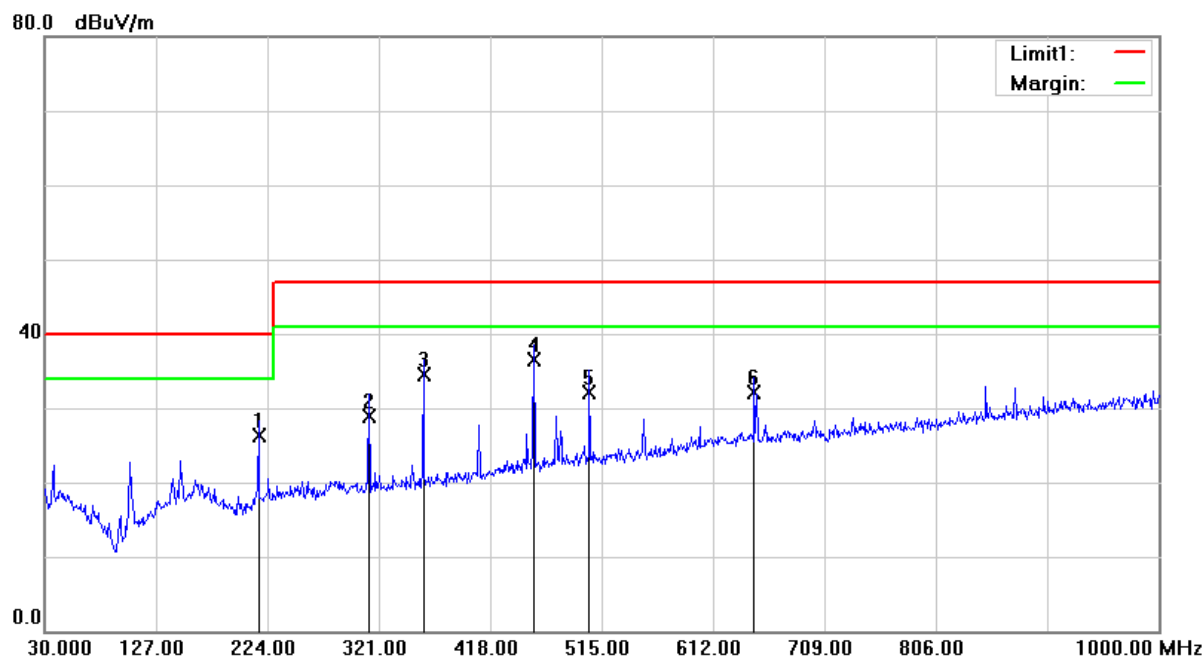


No.	Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB/m)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	41.6400	39.59	-9.36	30.23	40.00	-9.77	291	100	QP
2	59.1000	41.13	-10.29	30.84	40.00	-9.16	359	100	QP
3	77.5300	40.52	-13.35	27.17	40.00	-12.83	284	100	QP
4	86.2600	39.12	-15.50	23.62	40.00	-16.38	321	100	QP
5	455.8300	37.82	-4.75	33.07	47.00	-13.93	62	200	QP
6	647.8900	34.62	-1.12	33.50	47.00	-13.50	168	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

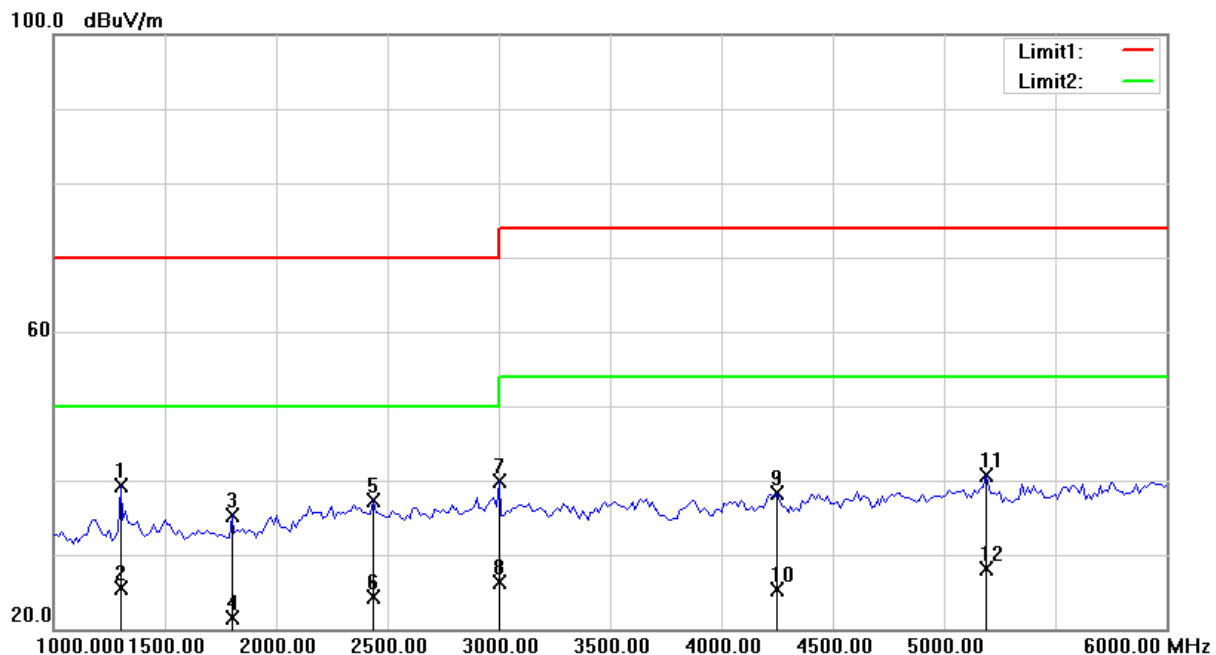
Test Voltage	55Vdc (from PoE)	Frequency Range	30 – 1000 MHz
Environmental Conditions	22°C, 55% RH	6dB Bandwidth	120 kHz
Test Date	2021/06/07	Test Distance	3m
Tested by	Karwin Kao	Polarization	Horizontal
Test Site	W08		



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	216.2400	36.71	-10.39	26.32	40.00	-13.68	74	200	QP
2	312.2700	36.89	-7.90	28.99	47.00	-18.01	235	100	QP
3	359.8000	41.40	-6.94	34.46	47.00	-12.54	288	100	QP
4	455.8300	41.16	-4.75	36.41	47.00	-10.59	278	200	QP
5	504.3300	35.98	-3.83	32.15	47.00	-14.85	261	200	QP
6	647.8900	33.28	-1.12	32.16	47.00	-14.84	252	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	55Vdc (from PoE)	Frequency Range	1 – 6GHz
Environmental Conditions	22°C, 55% RH	6dB Bandwidth	1MHz
Test Date	2021/06/08	Test Distance	3m
Tested by	Karwin Kao	Polarization	Vertical
Test Site	W08		

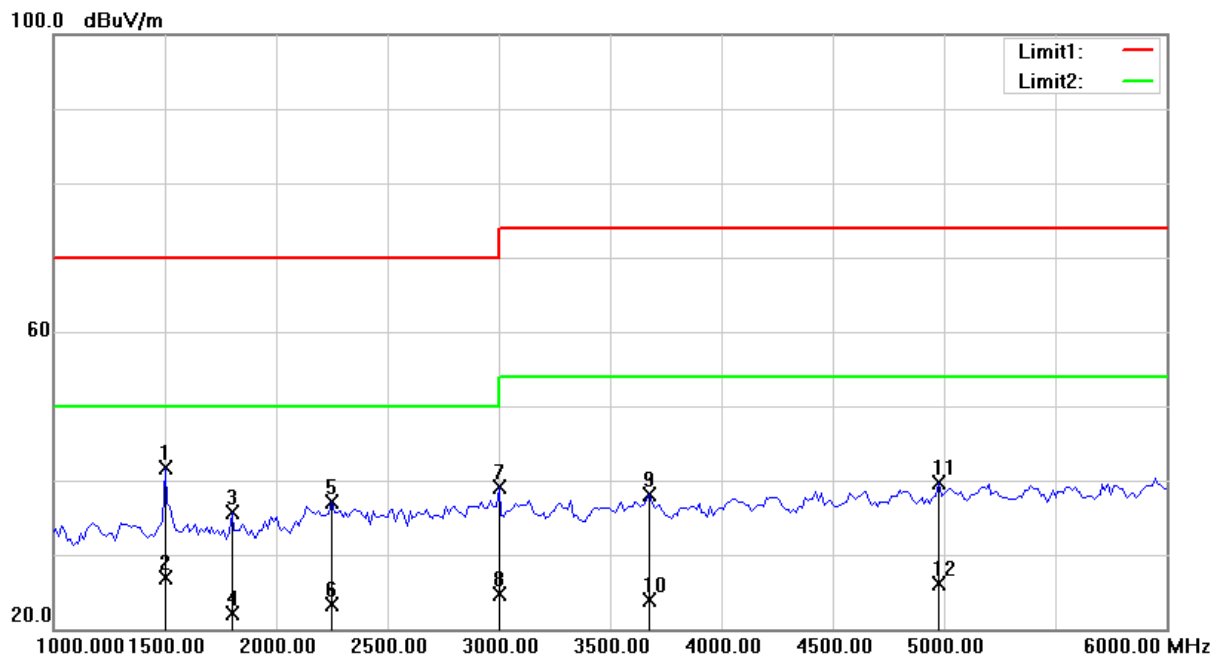


No.	Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB/m)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	1300.000	58.38	-19.15	39.23	70.00	-30.77	27	100	peak
2	1300.000	44.56	-19.15	25.41	50.00	-24.59	27	100	AVG
3	1800.000	54.05	-18.70	35.35	70.00	-34.65	357	100	peak
4	1800.000	40.29	-18.70	21.59	50.00	-28.41	357	100	AVG
5	2437.500	53.01	-15.67	37.34	70.00	-32.66	49	100	peak
6	2437.500	39.88	-15.67	24.21	50.00	-25.79	49	100	AVG
7	3000.000	53.57	-13.73	39.84	70.00	-30.16	342	100	peak
8	3000.000	40.09	-13.73	26.36	50.00	-23.64	342	100	AVG
9	4250.000	49.86	-11.47	38.39	74.00	-35.61	40	100	peak
10	4250.000	36.71	-11.47	25.24	54.00	-28.76	40	100	AVG
11	5187.500	49.63	-9.00	40.63	74.00	-33.37	56	100	peak
12	5187.500	37.08	-9.00	28.08	54.00	-25.92	56	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

Test Voltage	55Vdc (from PoE)	Frequency Range	1 – 6GHz
Environmental Conditions	22°C, 55% RH	6dB Bandwidth	1MHz
Test Date	2021/06/08	Test Distance	3m
Tested by	Karwin Kao	Polarization	Horizontal
Test Site	W08		



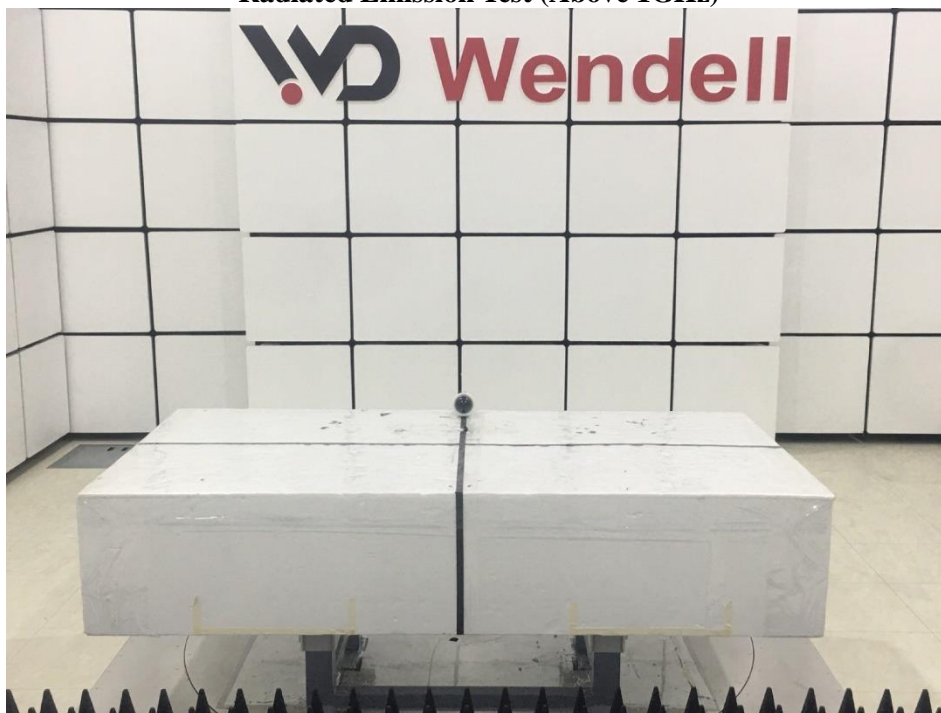
No.	Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB/m)	Measurement (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Table Degree (degree)	Antenna Height (cm)	Detector
1	1500.000	60.75	-19.03	41.72	70.00	-28.28	0	100	peak
2	1500.000	45.88	-19.03	26.85	50.00	-23.15	0	100	AVG
3	1800.000	54.40	-18.70	35.70	70.00	-34.30	39	100	peak
4	1800.000	40.82	-18.70	22.12	50.00	-27.88	39	100	AVG
5	2250.000	52.50	-15.44	37.06	70.00	-32.94	89	100	peak
6	2250.000	38.81	-15.44	23.37	50.00	-26.63	89	100	AVG
7	3000.000	52.78	-13.73	39.05	70.00	-30.95	212	100	peak
8	3000.000	38.49	-13.73	24.76	50.00	-25.24	212	100	AVG
9	3675.000	50.73	-12.70	38.03	74.00	-35.97	8	100	peak
10	3675.000	36.68	-12.70	23.98	54.00	-30.02	8	100	AVG
11	4975.000	49.30	-9.55	39.75	74.00	-34.25	265	100	peak
12	4975.000	35.58	-9.55	26.03	54.00	-27.97	265	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

4.3.7 Photographs of Test Configuration

Radiated Emission Test (30MHz~1GHz)



Radiated Emission Test (Above 1GHz)

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