TEST REPORT

This laboratory is accredited by Voluntary Control Council for Interference and National Voluntary Laboratory Accreditation Program.
The tests reported herein have been performed in accordance with its terms of accreditation.

Test Report No.	:	**LR500172108F**
Issue Date	:	**August 10, 2021**
Applied Standard	:	**VCCI-CISPR 32:2016**
Applicant Name	:	**Hanwha Techwin Co., Ltd.**
Equipment Name	:	**NETWORK CAMERA**
Model Name	:	**QNV-6082R**
Additional Model Name	:	**QNV-6072R, QNV-6072R1, QNV-6082R1**

This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
This test report is not related to KS Q ISO/IEC 17025 and KOLAS accreditation.

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TESTING NVLAP LAB CODE 200723-0

Revision history

Revision	Date of issue	Test report No.	Description
0	01.05.2019	LR500171905A	Initial
1	10.08.2021	LR500172108F	Delete China Factory, Add Additional Models (QNV-6072R1, QNV-6082R1)

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LTA Certification

Applicant / Manufacture

Company name	:	Hanwha Techwin Co., Ltd.
Address	:	6, Pangyo-ro 319 Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488, KOREA
Telephone / Facsimile	:	+82-70-7147-8753(http://hanhwa-security.com)

Factory #1

Company name	:	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.
Address	:	Lot O-2, Que Vo Industrial Zone extended area ,Nam Son commune, Bac Ninh city,Bac Ninh province, Vietnam

Factory #2

Company name	:	D-TECH CO.,LTD.
Address	:	173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea (Suwon Industrial Complex)

Equipment Under Test (EUT)

Equipment name	:	NETWORK CAMERA
Model name	:	QNV-6082R
Additional Model name	:	QNV-6072R, QNV-6072R1, QNV-6082R1 Additional Models are different only lens specification.
Serial number	:	Identification
Intended environment	:	Residential area
Date of receipt	:	April 09, 2019
EUT condition	:	Pre-production, not damaged
Interface Ports	:	DC IN, LAN, ALARM IN, GND, ALARM OUT, Micro SD Card, MIC Video OUT Port is a management Port.
Power Source	:	DC 12 V (Adapter), DC 48 V (POE)
Test Voltage	:	AC 100 V, 50 Hz

Model Description

- None

Test Performed

Test started & completed	:	April 23 - 24, 2019
Location	:	LTA Co., Ltd.

*** To be continued next page ***

Test Specification

Purpose of the test	:	Compliance test to the following standard
Applied standard	:	VCCI-CISPR 32:2016

Test Results

Measurement	Results*	Test method
Conducted disturbance	Complies	VCCI-CISPR 32:2016
Conducted disturbances at telecommunication ports	Complies	VCCI-CISPR 32:2016
Radiated disturbance	Complies	VCCI-CISPR 32:2016
Radiated disturbance at above 1 GHz	Complies	VCCI-CISPR 32:2016

* : The compliance statement is based on nominal value only.

Laboratory's Certificate

Report number	:	LR500172108F
Issue date	:	August 10, 2021

This test report is issued under the authority of:

Young Kyu Shin, Technical Manager

The test was supervised by:

Joo Hyung Cho, Test Engineer

General information's

Purpose

This document is based on the Electromagnetic Interference (EMI) tests performed on the **"QNV-6082R".**

The measurements were performed according to the measurement procedure described in VCCI-CISPR 32:2016

Test Performed

Company name	:	LTA Co., Ltd.
Address	:	4, Songju-ro 236beon-gil, Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, 17159, Korea
Web site	:	http://www.ltalab.com
E-mail	:	chahn@ltalab.com
Telephone	:	+82-31-323-6008
Facsimile		+82-31-323-6010

Measurement uncertainty

Conducted disturbance	(0.15 to 30 MHz) :	±2.80 [dB] (k=2)	
Radiated disturbance	(30 to 1,000 MHz) :	H : ±4.84 [dB] (k=2)	V : ±5.00 [dB] (k=2)
	(1 GHz to 6 GHz) :	H : ±5.97 [dB] (k=2)	V : ±5.96 [dB] (k=2)
	(6 GHz to 18 GHz) :	H : ±6.20 [dB] (k=2)	V : ±6.20 [dB] (k=2)

The coverage factor k=2 yields approx. a 95% level of confidence for near-normal distribution typical of most measurement results.

Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
NVLAP	U.S.A	200723-0	2021-09-30	ECT accredited Lab.
RRA	KOREA	KR0049	-	RRA accredited Lab.
	U.S.A		2023-04-08	
	CANADA		2022-10-18	
VCCI	JAPAN	C-14948	2023-09-10	VCCI registration
		T-12416	2023-09-10	
		R-14483	2023-10-15	
		G-10847	2021-12-13	
KOLAS	KOREA	KT551	2021-08-20	KOLAS accredited Lab.

Brief Information

1-1 Test Summary

Parameter	Applied Standard	Status (note 1)
I. Emission		
Conducted disturbance	VCCI-CISPR 32:2016	C
Conducted disturbances at telecommunication ports	VCCI-CISPR 32:2016	C
Radiated disturbance	VCCI-CISPR 32:2016	C
Radiated disturbance at above 1 GHz	VCCI-CISPR 32:2016	C
Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable * The data in this test report are traceable to the national or international standards.		

Frequency range to be scanned:

0.15 MHz - 30 MHz as conducted measurement

30 MHz – 1 000 MHz (1 GHz) as radiated measurement

1 000 MHz(1 GHz)-6 000 MHz (6 GHz) as radiated measurement

Bandwidth:

Measured by the CISPR quasi-peak function Bandwidth is 9 kHz in the frequency 0.15 MHz to 30 MHz, 120 kHz in the frequency 30 MHz to 1,000 MHz., 1,000 MHz to 6,000 MHz.

A sample calculation:

COR. F (correction factor)= Antenna factor + Cable loss- Amp.gain- Distance correction

Emission Level= meter reading + COR.F

1-2 Operating Mode of the EUT

The tests have been conducted with the following operational mode(s) of the EUT.

Name of mode in the report

REC mode (Adapter), REC mode (POE)

1-3 Modification

- NONE

1-4 List of EUT and accessory

EUT				
Category	**Model Name**	**Serial No.**	**Manufacturer**	**Remarks**
NETWORK CAMERA	**QNV-6082R**	**N/A**	**HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. D-TECH CO.,LTD.**	**-**
ACCESSORY / REC mode (Adapter)				
Category	**Model Name**	**Serial No.**	**Manufacturer**	**Remarks**
Notebook	N16Q2	NXGRYSJ0017300B5F77600	Acer	-
Notebook Adapter	PA-1650-86	N/A	Acer	-
Mobile Phone	SM-J700K	N/A	SAMSUNG	-
ALARM #1	N/A	N/A	N/A	-
ALARM #2	SPL-0030	N/A	SECOM	-
Micro SD Card	N/A	N/A	Sandisk	-
Adapter	F12L2-120100SPAK	N/A	SHENZHEN FRECOM ELECTRONICS CO.,LTD.	-
/ REC mode (POE)				
Category	**Model Name**	**Serial No.**	**Manufacturer**	**Remarks**
Notebook	N16Q2	NXGRYSJ0017300B5F77600	Acer	-
Notebook Adapter	PA-1650-86	N/A	Acer	-
Mobile Phone	SM-J700K	N/A	SAMSUNG	-
ALARM #1	N/A	N/A	N/A	-
ALARM #2	SPL-0030	N/A	SECOM	-
Micro SD Card	N/A	N/A	Sandisk	-
PoE Injector	POE16R-1AFG	N/A	PHIHONG	-

1-5 Cable List

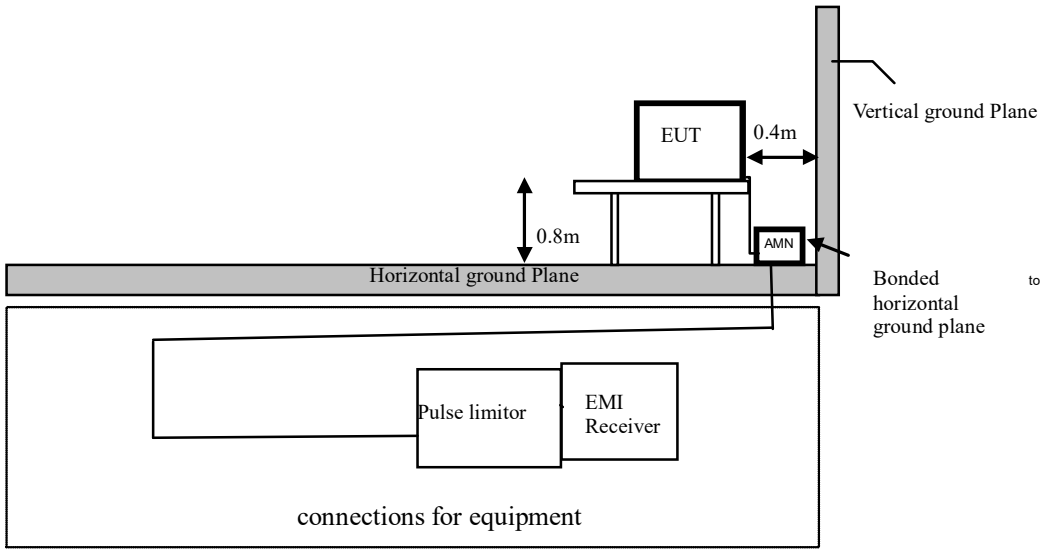
Cable List / REC mode (Adapter)						
From		To		Length	Shielding	
Type	I/O Port	Type	I/O Port	(m)	Cable	backshell
EUT	DC IN	Adapter	DC OUT	1.2	NO	Plastic
	LAN	Notebook	LAN	3.0	NO	Plastic
	ALARM IN,GND	ALARM #1	-	1.5	NO	Plastic
	ALARM OUT, GND	ALARM #2	-	1.5	NO	Plastic
	Micro SD Card	Micro SD Card	-	-	-	-
	MIC	Mobile Phone	-	1.3	NO	Plastic
Notebook	DC IN	Notebook Adapter	DC OUT	1.1	NO	Plastic
Notebook Adapter	AC IN	AC Power Source	3 Pin AC Line	1.2	NO	Plastic
Adapter	AC IN	AC Power Source	2 Pin AC Line	1.4	NO	Plastic
/ REC mode (POE)						
From		To		Length	Shielding	
Type	I/O Port	Type	I/O Port	(m)	Cable	backshell
EUT	LAN	PoE Injector	LAN #1	3.0	NO	Plastic
	ALARM IN,GND	ALARM #1	-	1.5	NO	Plastic
	ALARM OUT, GND	ALARM #2	-	1.5	NO	Plastic
	Micro SD Card	Micro SD Card	-	-	-	-
	MIC	Mobile Phone	-	1.3	NO	Plastic
Notebook	DC IN	Notebook Adapter	DC OUT	1.1	NO	Plastic
Notebook Adapter	AC IN	AC Power Source	3 Pin AC Line	1.2	NO	Plastic
PoE Injector	LAN #2	Notebook	LAN	3.0	NO	Plastic
	AC IN	AC Power Source	2 Pin AC Line	1.4	-	Plastic

2- Test Site Description

1-Facility

All the testing facilities are periodically serviced as a daily check for equipment and cables systems, an every 6 months facility check for the facilities and a monthly check and annual calibration for testing equipment according to ISO/IEC 17025. All the testing facilities are used as the same specifications shown below. There are descriptions both for radiated disturbance measurement and conducted disturbance measurement conformed by VCCI-CISPR 32:2016

2-1 Conducted Disturbance Measurement



2-2 Conducted Disturbances at telecommunication ports

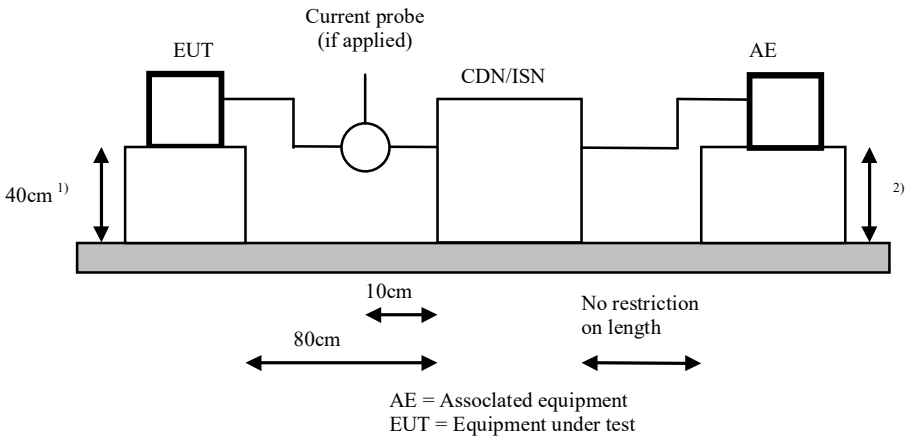
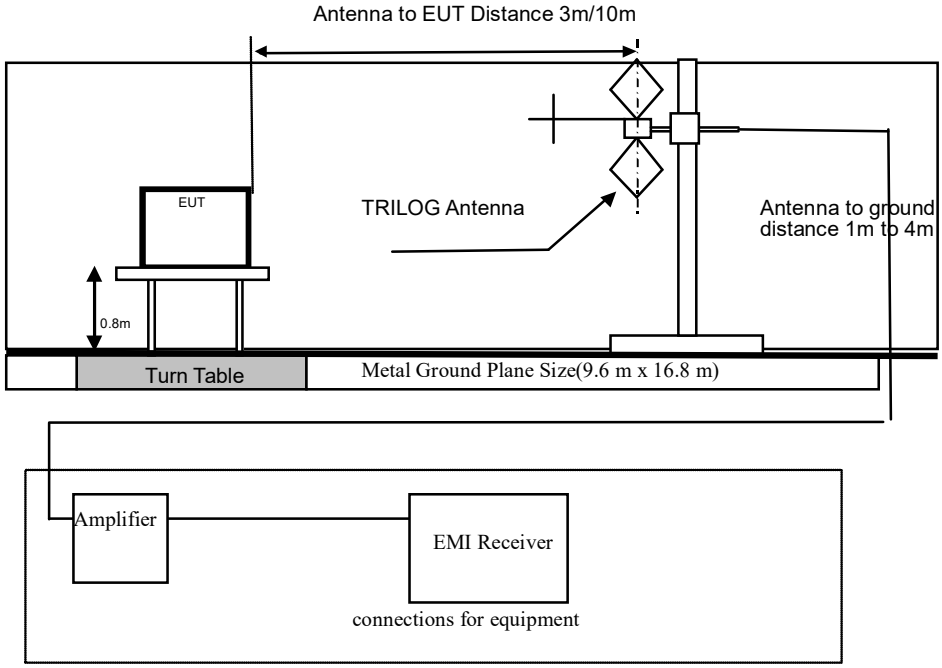
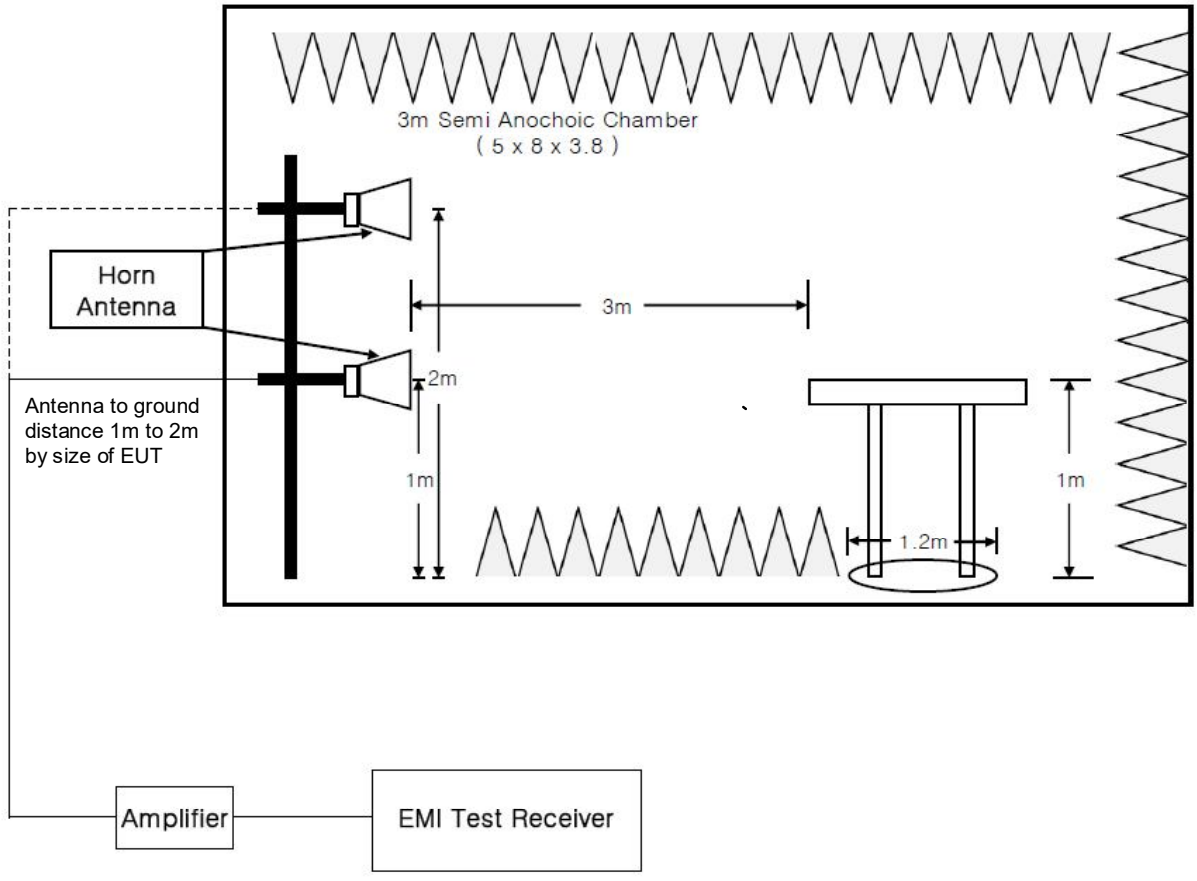


Diagram 3 : Telecom Port Conducted Emissions Test Setup

2-3 Radiated Disturbance Measurement – Below 1 GHz



2-4 Radiated Disturbance at above 1 GHz



3- Test Procedure

3-1Conducted Disturbance Measurements

- The measurement is carried out on an open site with horizontal and metallic ground plane.
- An AMN(Artificial Mains Network) with a nominal impedance (50 Ω/50 μH) as defined in VCCI-CISPR 32:2016. shall be utilized.
- The AMN is grounded on a horizontal metal ground plane.
- Measurement is carried out using a spectrum analyzer with peak detectors (10kHz bandwidth) and an EMI receiver with quasi-peak detectors and average detector. (Refer to the List of test equipment used for the test.)
- The shortest distance between the EUT and the AMN is 0.8 m.
- The EUT is placed on the non-conducting table with 0.8 m height.
- A remote switch is used for changing phases between Line (L) and Neutral (N).
- Refer to "Brief Information"(page 7 - 8) about details of the EUT and configuration of the cables.

- Measurement is carried out as manual operation.

–detecting the maximized emission level using the maxhold function after setting the spectrum analyzer bandwidth 1MHz and the frequency range from 150 kHz to 1 MHz, 1 MHz to 5 MHz and 5 MHz to 30 MHz.

–searching the maximum frequency point of the disturbance wave in each frequency range.

–reading the disturbance level of quasi-peak, average and Line (L) and Neutral (N) in 10 kHz bandwidth by the EMI receiver.

–calculating the measurement result with the following formula or equation.

(Result = Reading + Cor.F.(LISN Factor + Cable Loss + Pulse Limiter)

(ex) = 13.23 dBμV + (9.63 dB + 0.01 dB + 9.86 dB)

= 32.73 dBμV

3-2Conducted Disturbances at telecommunication ports Measurements

- In the range of 0.15 MHz to 30 MHz, the conducted disturbance was measured and set-up was made accordance with VCCI-CISPR 32:2016, CLASS A ITE.
- The EUT is placed on a non-conducting table, which is: 0.8 meters above an earth-grounded floor; 0.4 meters away from a vertical ground plane (i.e. the chamber wall); and 0.8 meter away from all other metal objects. For
- cables where there is no appropriate CDN / ISN available, measurement was done using a combination of current probe and capacitive voltage probe.

- Measure current with a current probe.
- Measure voltage with a capacitive probe
- Compare the measured voltage with the voltage limit.
- Compare the measured current with the current limit.
- The EUT shall meet both the voltage and current limits.

3-3 Radiated Disturbance Measurements

- Test site is met the requirements of VCCI-CISPR 32:2016 and the distance between the EUT and the antenna is adjusted 3 m or 10m.
- The turntable can be rotated 360 degrees.
- The antenna can be adjusted between 1m and 4m in height above the ground.
- The EUT is placed on the non-conducting table with 0.8m height on the turntable.
- Measurements are carried out using a spectrum analyzer with peak detectors (100kHz bandwidth) and an EMI receiver with quasi-peak detectors(120 kHz bandwidth).
- Refer to the list of test equipment used for the test.
- Biconical antenna and logperiodic antenna are used as wideband antenna.
- The Biconical antenna is used in the frequency range of 30 MHz to 300 MHz and the Logperiodic antenna is used in the frequency range of 300 MHz to 1 GHz.
- A variable attenuator is used for verifying amplifier's linearity.
- Rotating the turntable and adjusting the height of the antenna are carried out by control buttons on the console.
- Refer to "Brief Information"(page 7 - 8) about details of the EUT and configuration of the cables.

- Measurement is carried out by a LTA operator as manual operation.

–searching for some of High disturbance frequency points than the other points with the following settings; bandwidth 100 kHz, frequency range 10 MHz between 30 MHz and 300 MHz and frequency range 50 MHz between 300 MHz and 1 GHz.

–searching the worst direction with the maximum level of the disturbance wave in rotating the turntable 360 degrees at each searched frequency point.

–setting the height of the antenna with the maximum level of the disturbance wave from 1m to 4 m.

–reading the disturbance level by the EMI receiver with quasi-peak detectors (120 kHz bandwidth) according to VCCI-CISPR 32:2016

–measuring to vertical and horizontal polarization.

–calculating the measurement result with the following formula or equation:

(Result = Reading +Cor.F (antenna factor + cable loss – PreAmp Gain)

(ex) = 50.6 dBμV/m + (11.08 dB(1/m) + 1.31 dB - 27.32 dB)

= 35.67 dBμV/m

3-4 Radiated Disturbance at above 1 GHz

- Test site is met the requirements of VCCI-CISPR 32:2016 and the distance between the EUT and the antenna is adjusted 3 m.
- The turntable can be rotated 360 degrees.
- The antenna can be adjusted between 1m in height above the ground.
- The EUT is placed on the non-conducting table with 1m height on the turntable.
- Measurements are carried out using a EMI test receiver with peak detectors (1 MHz bandwidth) and an EMI receiver with peak and average detectors(1 MHz bandwidth).
- Refer to the list of test equipment used for the test.
- HORN antenna are used as wideband antenna.
- The HORN antenna is used in the frequency range of 1 GHz to 18 GHz.
- A variable attenuator is used for verifying amplifier's linearity.
- Rotating the turntable and adjusting the height of the antenna are carried out by control buttons on the console.
- Refer to "Brief Information"(page 7 - 8) about details of the EUT and configuration of the cables.
- Measurement is carried out by a LTA operator as manual operation.

–searching the worst direction with the maximum level of the disturbance wave in rotating the turntable 360 degrees at each searched frequency point.

–setting the height of the antenna with the maximum level of the disturbance wave from 1m

–reading the disturbance level by the EMI receiver with peak and average detectors (1 MHz bandwidth) according to ANSI C 63.4:2003.

–measuring to vertical and horizontal polarization.

–calculating the measurement result with the following formula or equation:

(Result = Reading +Cor.F (antenna factor + cable loss – PreAmp Gain)

(ex) = 35.9 dBμV/m + (23.92 dB(1/m) + 7.01 dB - 38.33 dB)

= 28.5 dBμV/m

4- List of Equipment Used For the Tests

Conducted Disturbance Measurements

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESR	Rohde & Schwarz	101499	2019.07.11	1 year
☒	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100710	2020.03.16	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	100378	2019.09.07	1 year
☐	LISN	ESH3-Z6	Rohde & Schwarz	101468	2019.09.07	-
☒	LISN(main)	ENV216	Rohde & Schwarz	100408	2019.10.10	1 year
☒	LISN(sub)	LT32C/10	AFJ	32031518210	2019.09.06	1 year
☒	TEST PROGRAM	e3_ce 20181212a (V9)	AUDIX	-	-	1 year
☒	ISN	ISN T800	TESEQ	27109	2019.09.12	1 year
☐	ISN	ENY81-CA6	Rohde & Schwarz	101565	2019.09.12	1 year
☐	CURRENT PROBE	EZ-17	Rohde & Schwarz	100508	2019.09.06	1 year

Radiated Emission – Below 1 GHz

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESU	Rohde & Schwarz	100092	2019.09.06	1 year
☒	Amplifier (25 dB)	8447D	HP	2944A07684	2019.09.06	1 year
☒	BILOG Antenna	VULB9168	SCHWARZBECK	775	2020.03.16 (KOLAS)	2 year
☒	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

Radiated Emission – Above 1 GHz

	Item	Model Name	Manufacturer	Serial No.	Next Cal.	Interval
☒	EMI TEST Receiver	ESU	Rohde & Schwarz	100092	2019.09.06	1 year
☒	Amplifier	8449B	HP	3008A00671	2019.09.06	1 year
☒	HORN ANTENNA	3115	ETS	114105	2019.11.03 (KOLAS)	2 year
☒	TEST PROGRAM	e3 20181212a (V9)	AUDIX	-	-	-

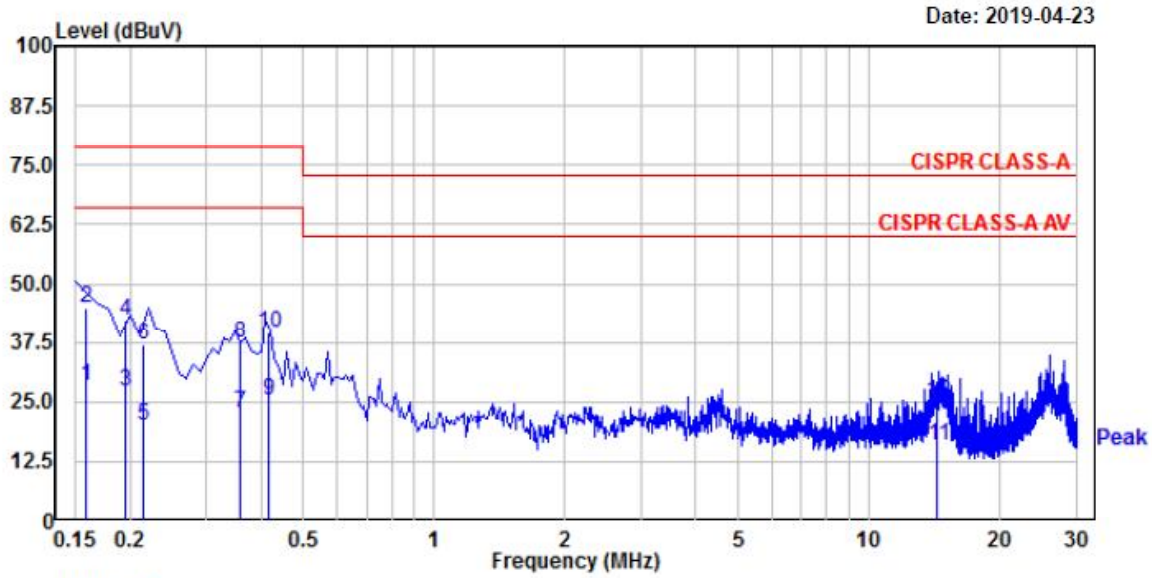
5-1 Conducted disturbance

MODE : REC mode (Adapter)

(LINE)

4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No.	: QNV-6082R	Phase	: LINE
Test Mode	: REC mode (Adapter)	Test Power	: 100 / 50
Temp./ Humi.	: 22'C / 36% R.H.	Test Engineer	: CHO J H



Trace: 1

Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.159	25.39	8.70	19.46	44.85	28.16	79.00	66.00	34.15	37.84
0.196	22.69	7.59	19.47	42.16	27.06	79.00	66.00	36.84	38.94
0.215	17.38	0.51	19.47	36.85	19.98	79.00	66.00	42.15	46.02
0.358	18.02	3.11	19.49	37.51	22.60	79.00	66.00	41.49	43.40
0.417	20.21	5.87	19.50	39.71	25.37	79.00	66.00	39.29	40.63
14.402	4.41	-4.48	20.36	24.77	15.88	73.00	60.00	48.23	44.12

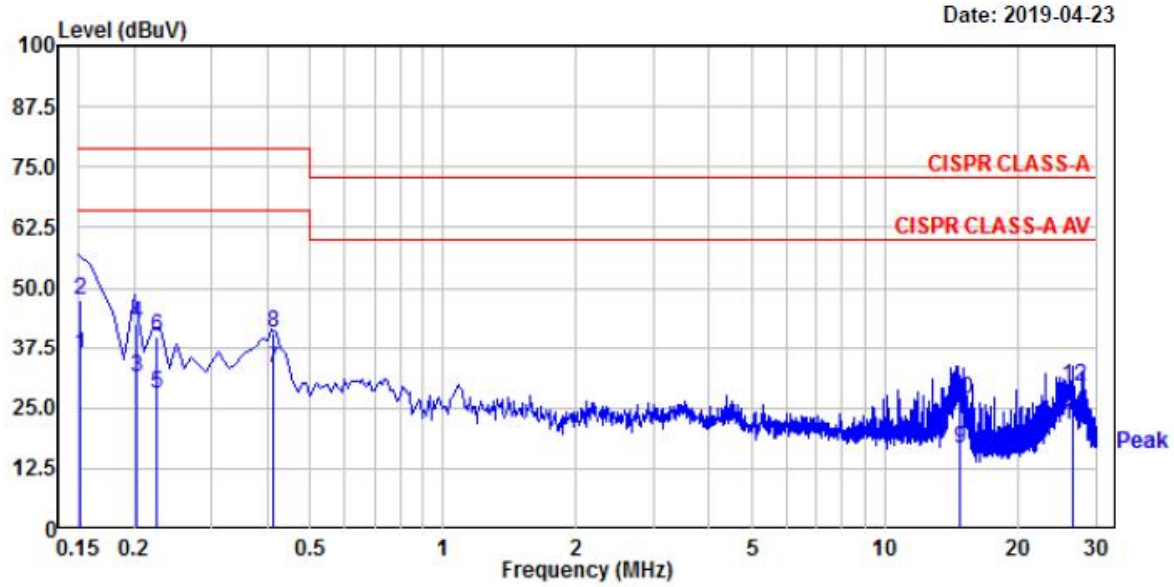
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

-Continue

(NEUTRAL)

4, Songjuro 236 Beon-gil, Yangji-myeor
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No.	: QNV-6082R	Phase	: NEUTRAL
Test Mode	: REC mode (Adapter)	Test Power	: 100 / 50
Temp./ Humi.	: 22'C / 36% R.H.	Test Engineer	: CHO J H



Trace: 1

Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.152	28.08	16.77	19.47	47.55	36.24	79.00	66.00	31.45	29.76
0.202	23.09	11.66	19.48	42.57	31.14	79.00	66.00	36.43	34.86
0.225	20.56	8.32	19.48	40.04	27.80	79.00	66.00	38.96	38.20
0.412	21.13	13.79	19.50	40.63	33.29	79.00	66.00	38.37	32.71
14.742	6.21	-3.84	20.51	26.72	16.67	73.00	60.00	46.28	43.33
26.485	8.39	0.45	20.99	29.38	21.44	73.00	60.00	43.62	38.56

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

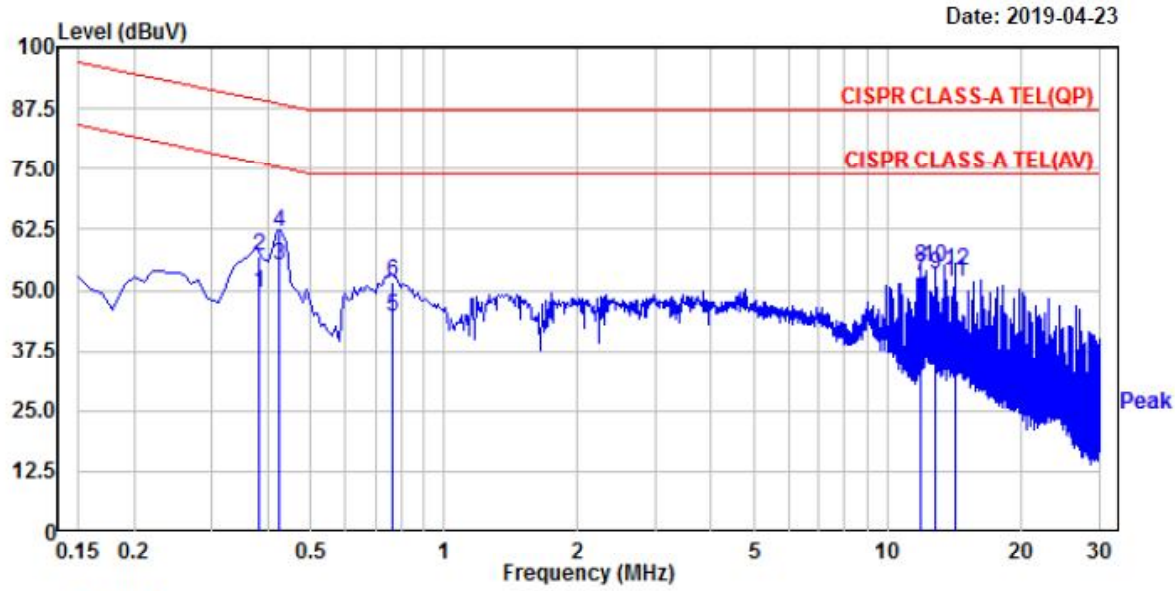
-Continue

MODE : REC mode (Adapter)

(TEL_100 M)

4, Songjuro 236 Beon-gil, Yangji-myeor
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No.	: QNV-6082R	Phase	: TEL 100M
Test Mode	: REC mode (Adapter)	Test Power	: 100 / 50
Temp./ Humi.	: 22'C / 36% R.H.	Test Engineer	: CHO J H



Trace: 1

Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.382	37.54	29.73	19.54	57.08	49.27	89.23	76.23	32.15	26.96
0.426	42.46	35.65	19.52	61.98	55.17	88.34	75.34	26.36	20.17
0.765	32.09	24.94	19.46	51.55	44.40	87.00	74.00	35.45	29.60
11.892	35.03	33.27	19.66	54.69	52.93	87.00	74.00	32.31	21.07
12.748	35.16	33.70	19.67	54.83	53.37	87.00	74.00	32.17	20.63
14.213	34.37	31.89	19.71	54.08	51.60	87.00	74.00	32.92	22.40

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

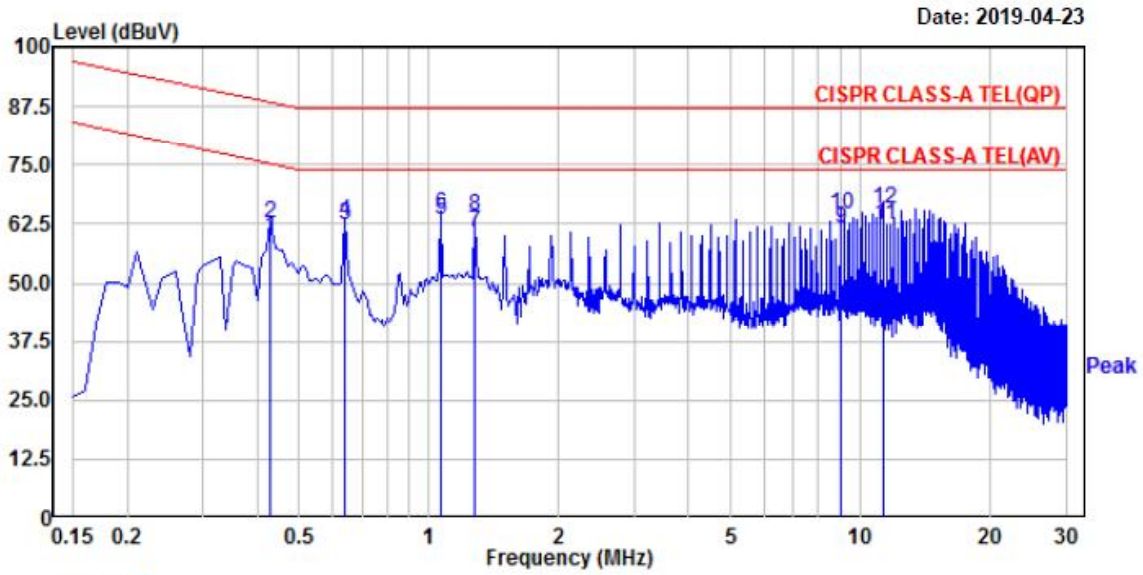
-Continue

MODE : REC mode (POE)

(TEL_100 M)

4, Songjuro 236 Beon-gil, Yangji-myeon
Cheoin-gu, Youngin-si, Gyeonggi-do
449-822 Korea
Tel:+82-31-3236008,9
Fax:+82-31-3236010

EUT /Model No.	: QNV-6082R	Phase	: TEL 100M
Test Mode	: REC mode (POE)	Test Power	: 100 / 50
Temp./ Humi.	: 22'C / 36% R.H.	Test Engineer	: CHO J H



Trace: 1

Freq	RD QP	RD AV	C.F	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
MHz	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.428	43.03	40.15	19.52	62.55	59.67	88.29	75.29	25.74	15.62
0.641	43.67	42.72	19.47	63.14	62.19	87.00	74.00	23.86	11.81
1.069	45.28	44.15	19.43	64.71	63.58	87.00	74.00	22.29	10.42
1.283	44.69	41.46	19.41	64.10	60.87	87.00	74.00	22.90	13.13
8.979	44.77	42.02	19.60	64.37	61.62	87.00	74.00	22.63	12.38
11.331	46.19	42.65	19.65	65.84	62.30	87.00	74.00	21.16	11.70

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss + Pulse Limiter

5-2 Radiated Disturbance Measurements

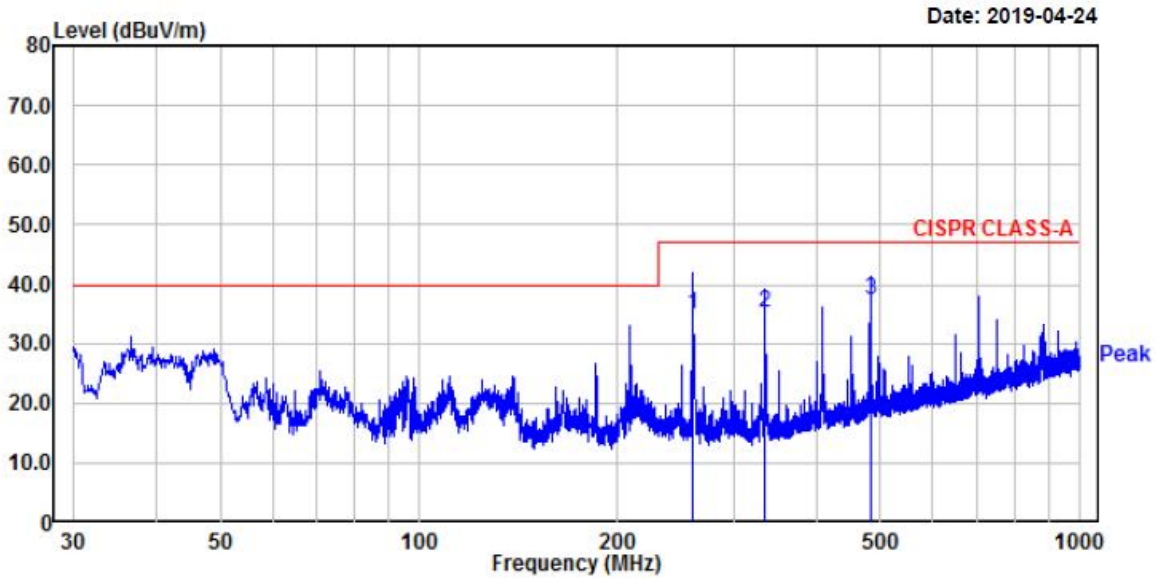
MODE : REC mode (Adapter)

(Below 1GHz) / V

4, Songjuro 236Beon-gil, yanggi-myeon,
Yongin-si, Gyeonggi-do, Korea
Tel : +82-31-3236008,9
Fax : +82-31-3236010
www.ltalab.com

EUT/Model No.: QNV-6082R Temp/Humi: 23 / 36

Test Mode : REC mode (Adapter) Tested by: CHO J H



Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
259.89	46.71	-11.70	35.01	47.00	11.99	100	77	vertical
334.10	44.59	-9.29	35.30	47.00	11.70	100	173	vertical
482.63	43.68	-6.26	37.42	47.00	9.58	100	136	vertical

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

-Continue

(Below 1GHz) / H

4, Songjuro 236Beon-gil, yanggi-myeon,
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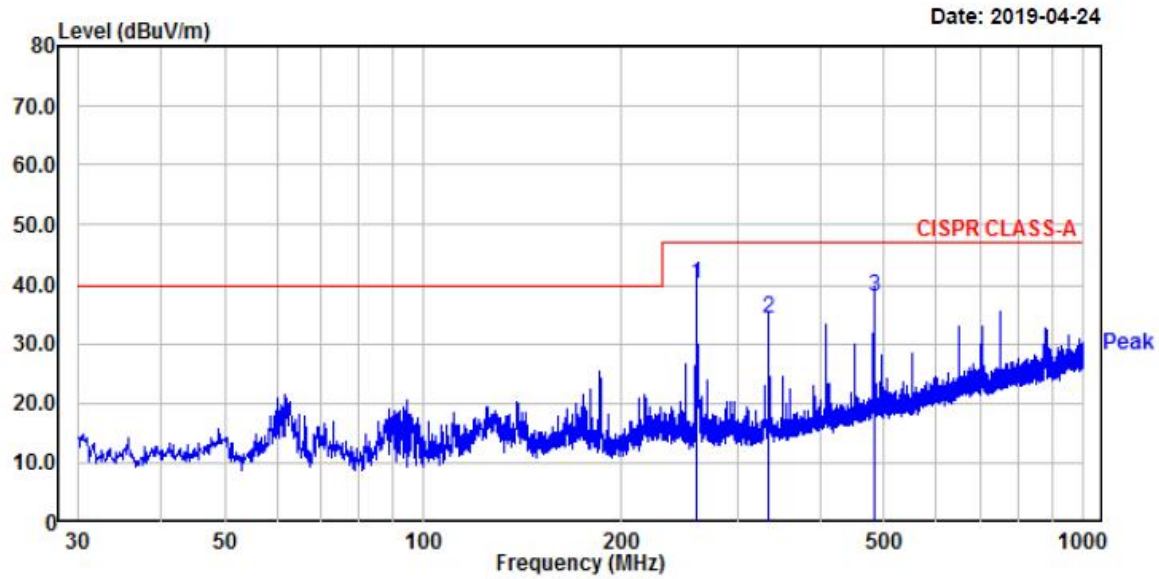
Fax : +82-31-3236010
www.ltalab.com

EUT/Model No.: QNV-6082R Temp/Humi: 23 / 36

Test Mode : REC mode (Adapter) Tested by: CHO J H



Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
259.89	51.83	-11.70	40.13	47.00	6.87	400	263	horizontal
334.10	43.85	-9.29	34.56	47.00	12.44	400	160	horizontal
482.63	44.22	-6.26	37.96	47.00	9.04	100	34	horizontal

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

-Continue

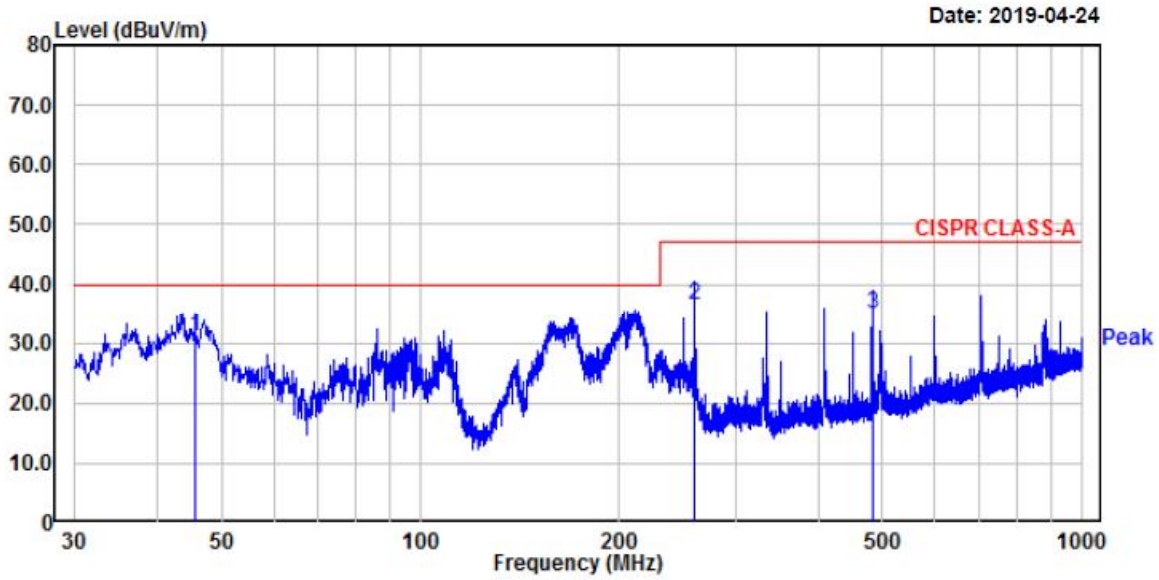
MODE : REC mode (POE)

(Below 1GHz) / V

4, Songjuro 236Beon-gil, yanggi-myeon,
Yongin-si, Gyeonggi-do, Korea
Tel : +82-31-3236008,9
Fax : +82-31-3236010
www.ltalab.com

EUT/Model No.: QNV-6082R Temp/Humi: 23 / 36

Test Mode : REC mode (POE) Tested by: CHO J H



Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
45.64	44.68	-13.54	31.14	40.00	8.86	100	190	vertical
259.89	48.11	-11.70	36.41	47.00	10.59	100	61	vertical
482.63	41.27	-6.26	35.01	47.00	11.99	100	123	vertical

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

-Continue

(Below 1GHz) / H

4, Songjuro 236Beon-gil, yanggi-myeon,
Yongin-si, Gyeonggi-do, Korea
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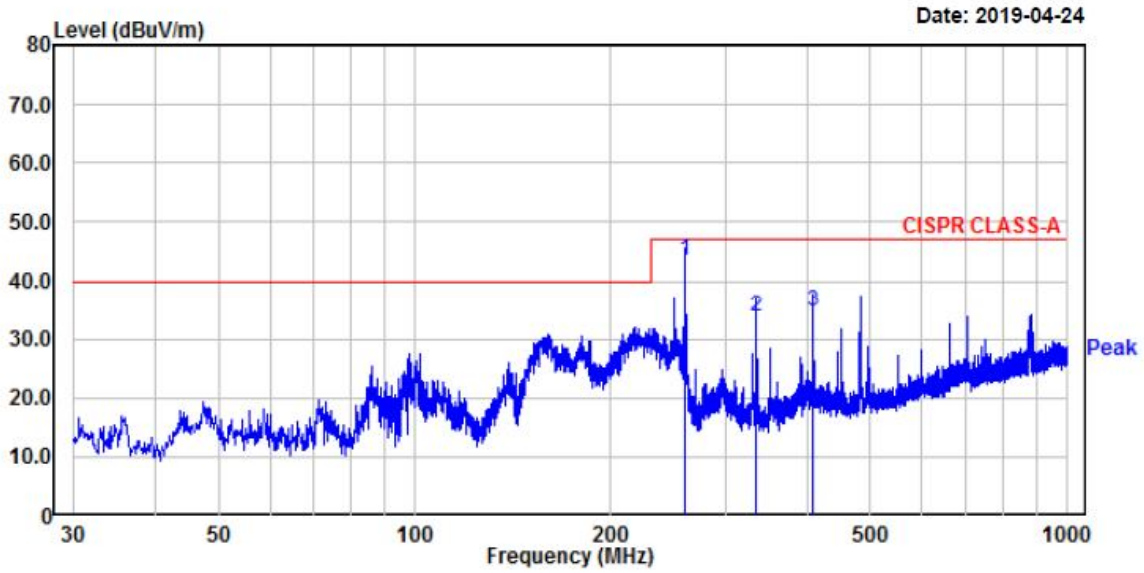
EUT/Model No.: QNV-6082R Temp/Humi: 23 / 36

Test Mode : REC mode (POE) Tested by: CHO J H



Freq	Reading	C.F	Result QP	Limit	Margin	Height	Angle	Polarity
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	deg	
259.89	55.30	-11.70	43.60	47.00	3.40	400	283	horizontal
334.10	43.13	-9.29	33.84	47.00	13.16	400	330	horizontal
408.42	42.27	-7.68	34.59	47.00	12.41	100	312	horizontal

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

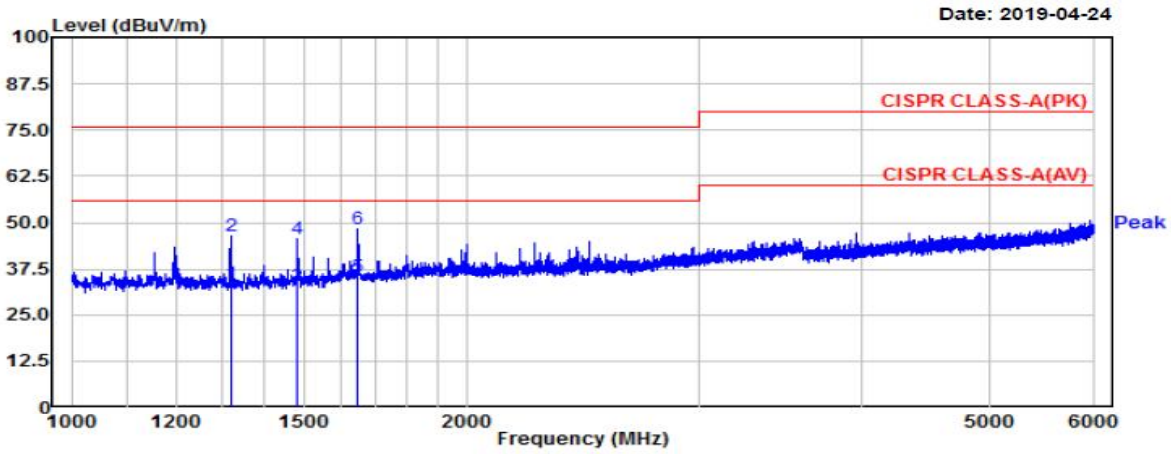
5-3 Radiated Disturbance Measurements

MODE : REC mode (Adapter)

(Above 1GHz) / V

EUT/Model No.: QNV-6082R Temp/Humi: 23 / 36

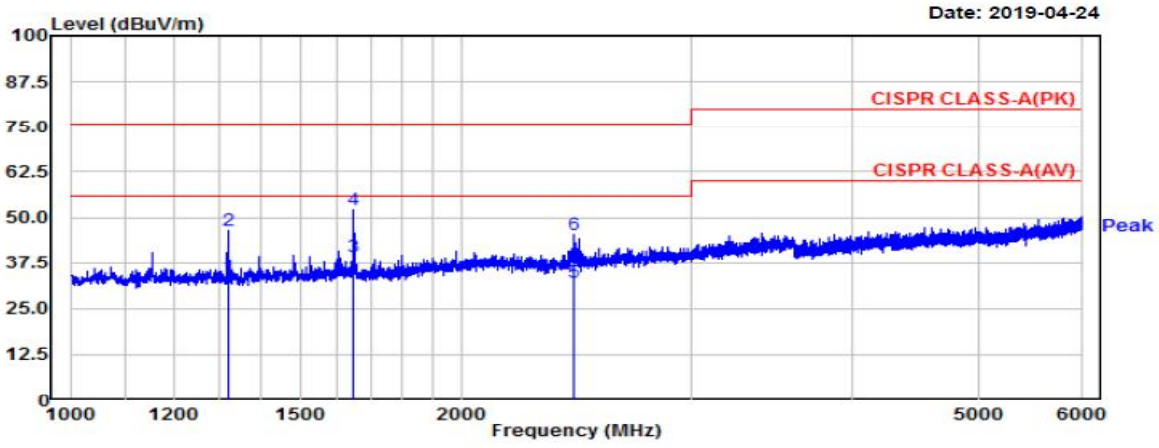
Test Mode : REC mode (Adapter) Tested by: CHO J H



(Above 1GHz) / H

EUT/Model No.: QNV-6082R Temp/Humi: 23 / 36

Test Mode : REC mode (Adapter) Tested by: CHO J H



Manufacture : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. Test Date: 2019-04-24 Temp.: [℃] 23 Humidity: [%] 36 Distance (m) 3.75

Model : QNV-6082R

TEST mode : REC mode (Adapter)

Freq.(MHz) MHz	Reading(PK) dBuV	Reading(AV) dBuV	C.F dB	Result(PK) dBuV/m	Result(AV) dBuV/m	Limit(PK) dBuV/m	Limit(AV) dBuV/m	Margin(PK) dB	Margin(AV) dB	Height cm	Angle deg	Polarity Hor/Ver
1320.0	53.7	40.7	-5.34	48.35	35.35	76.0	56.0	27.65	20.65	100	219	H
1649.0	57.5	44.5	-3.48	54.00	41.00	76.0	56.0	22.00	15.00	100	25	H
2439.4	45.6	32.6	1.49	47.10	34.10	76.0	56.0	28.90	21.90	100	146	H
1320.0	53.5	40.5	-5.2	48.35	35.35	76.0	56.0	27.65	20.65	100	267	V
1484.4	51.8	38.8	-4.05	47.73	34.73	76.0	56.0	28.27	21.27	100	254	V
1649.4	53.0	40.0	-2.64	50.41	37.41	76.0	56.0	25.59	18.59	100	69	V

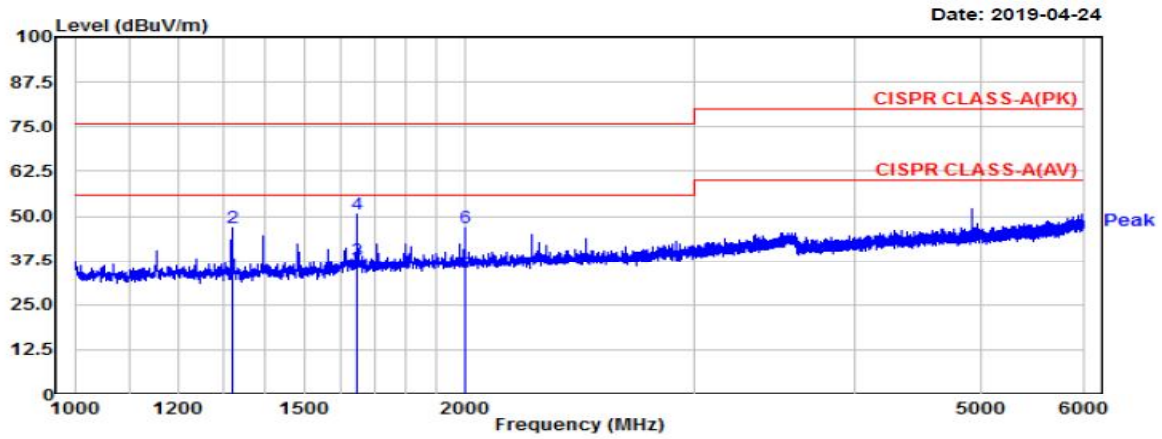
-Continue

MODE : REC mode (POE)

(Above 1GHz) / V

EUT/Model No.: QNV-6082R Temp/Humi: 23 / 36

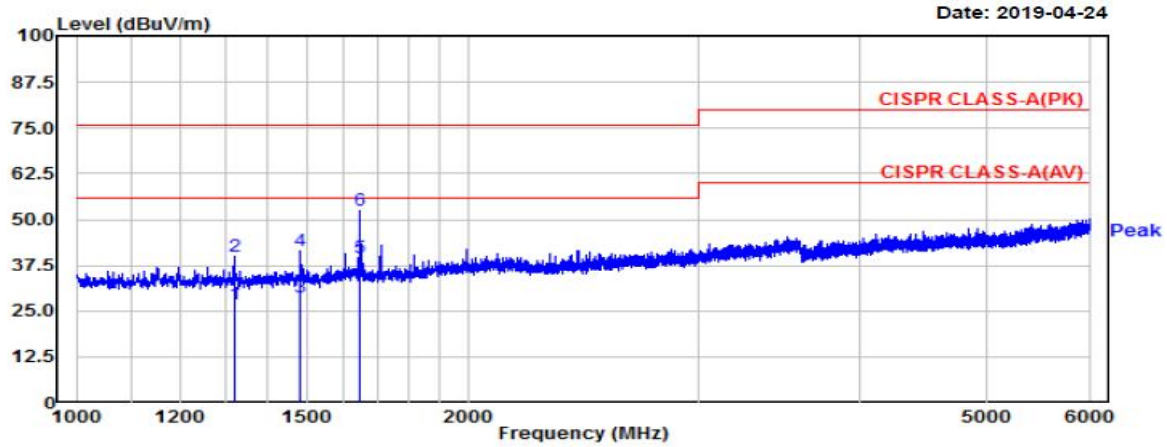
Test Mode : REC mode (POE) Tested by: CHO J H



(Above 1GHz) / H

EUT/Model No.: QNV-6082R Temp/Humi: 23 / 36

Test Mode : REC mode (POE) Tested by: CHO J H



Manufacture : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. Test Date: 2019-04-24 Temp.: [℃] 23 Humidity: [%] 36 Distance (m) 3.75

Model : QNV-6082R

TEST mode : REC mode (POE)

Freq.(MHz) MHz	Reading(PK) dBuV	Reading(AV) dBuV	C.F dB	Result(PK) dBuV/m	Result(AV) dBuV/m	Limit(PK) dBuV/m	Limit(AV) dBuV/m	Margin(PK) dB	Margin(AV) dB	Height cm	Angle deg	Polarity Hor/Ver
1320.0	52.8	39.8	-5.34	47.44	34.44	76.0	56.0	28.56	21.56	100	53	H
1484.4	49.7	36.7	-4.21	45.52	32.52	76.0	56.0	30.48	23.48	100	232	H
1649.4	50.0	37.0	-3.48	46.57	33.57	76.0	56.0	29.43	22.43	100	314	H
1319.4	53.7	40.7	-5.2	48.55	35.55	76.0	56.0	27.45	20.45	100	185	V
1650.0	55.2	42.2	-2.64	52.53	39.53	76.0	56.0	23.47	16.47	100	95	V
1997.5	48.4	35.4	0.4	48.84	35.84	76.0	56.0	27.16	20.16	100	232	V

Conclusions

Product models **" QNV-6082R "** meets all of the CLASS A requirements of the VCCI-CISPR 32:2016 (Limits of radio disturbance characteristics of ITE).

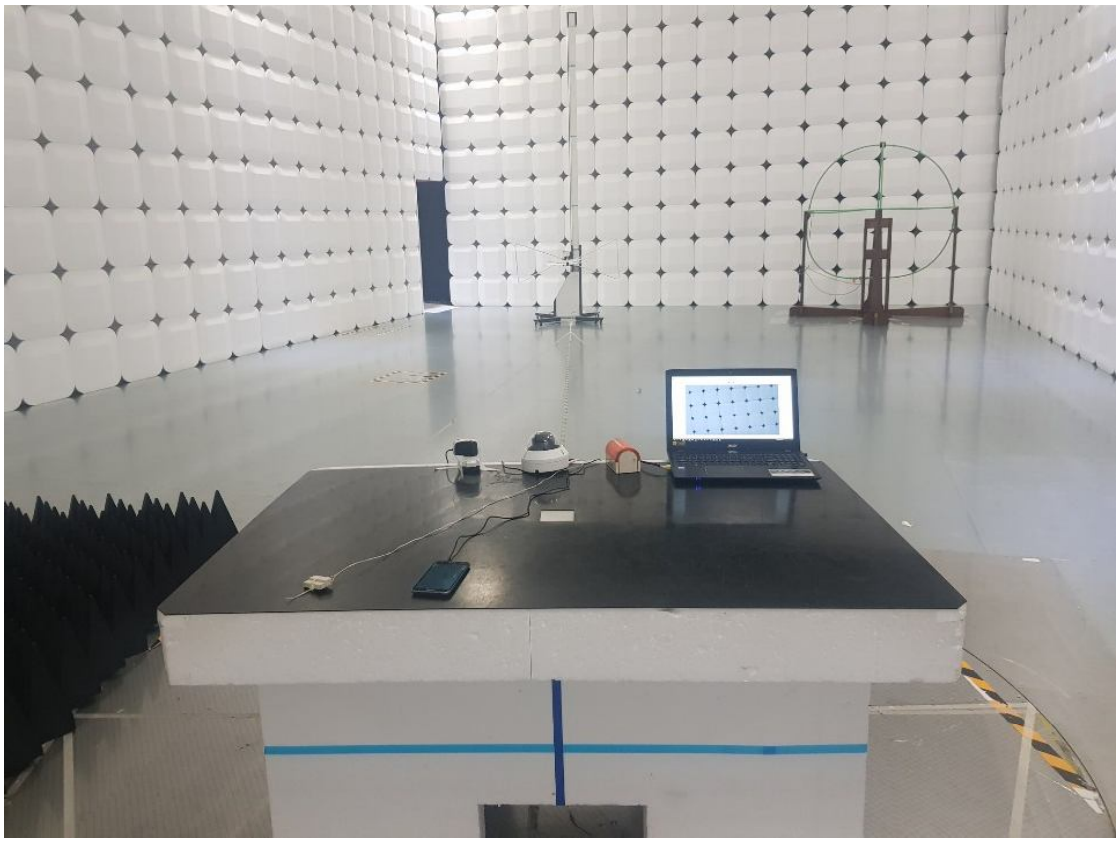
(Refer to Test Specification and Test Results in the "LTA certification", page 4 and 5.)

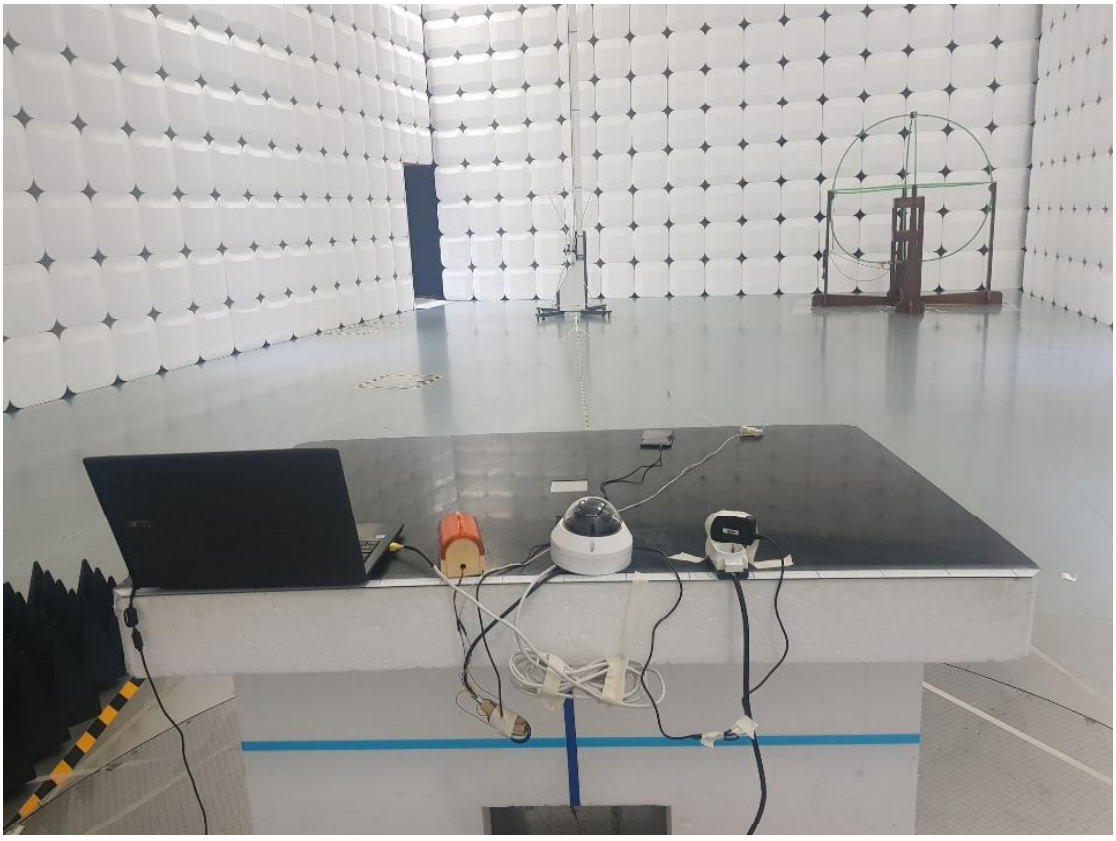
Photograph of the Conducted disturbance / REC mode (Adapter)

Photograph of the Conducted disturbance (TEL) / REC mode (Adapter)

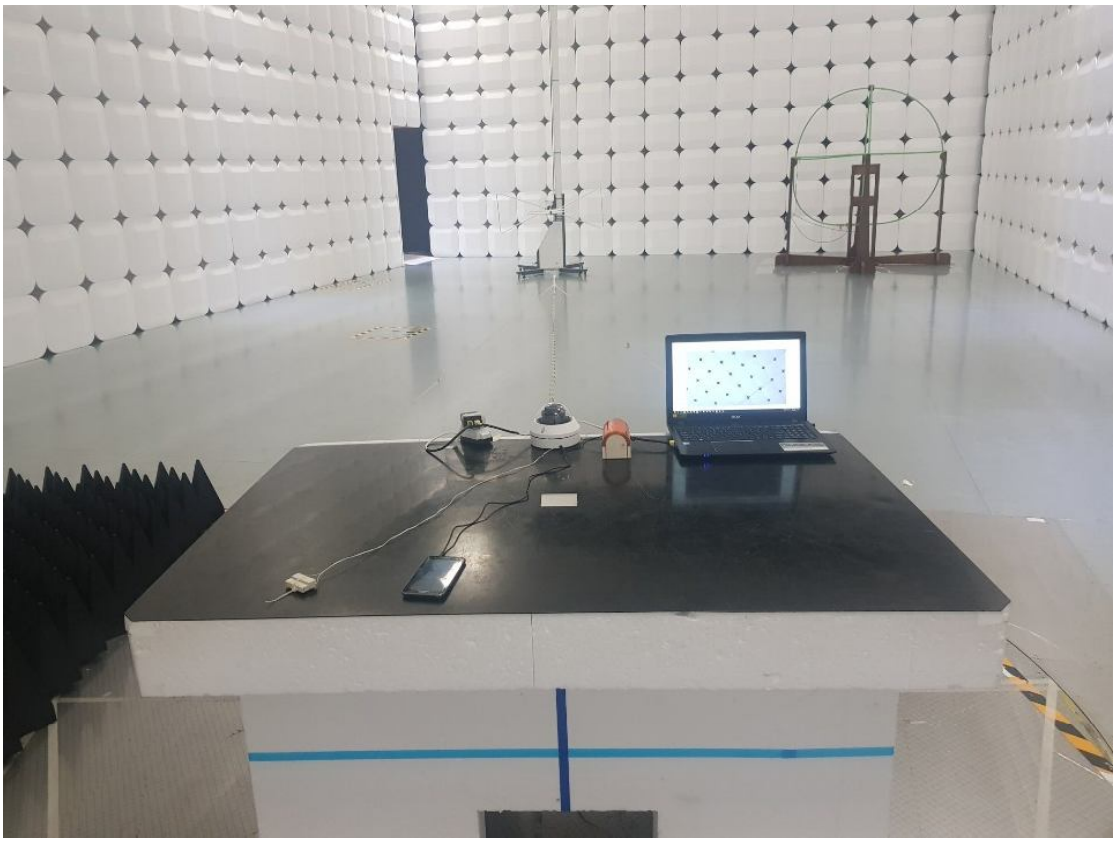
Photograph of the Conducted disturbance (TEL) / REC mode (POE)

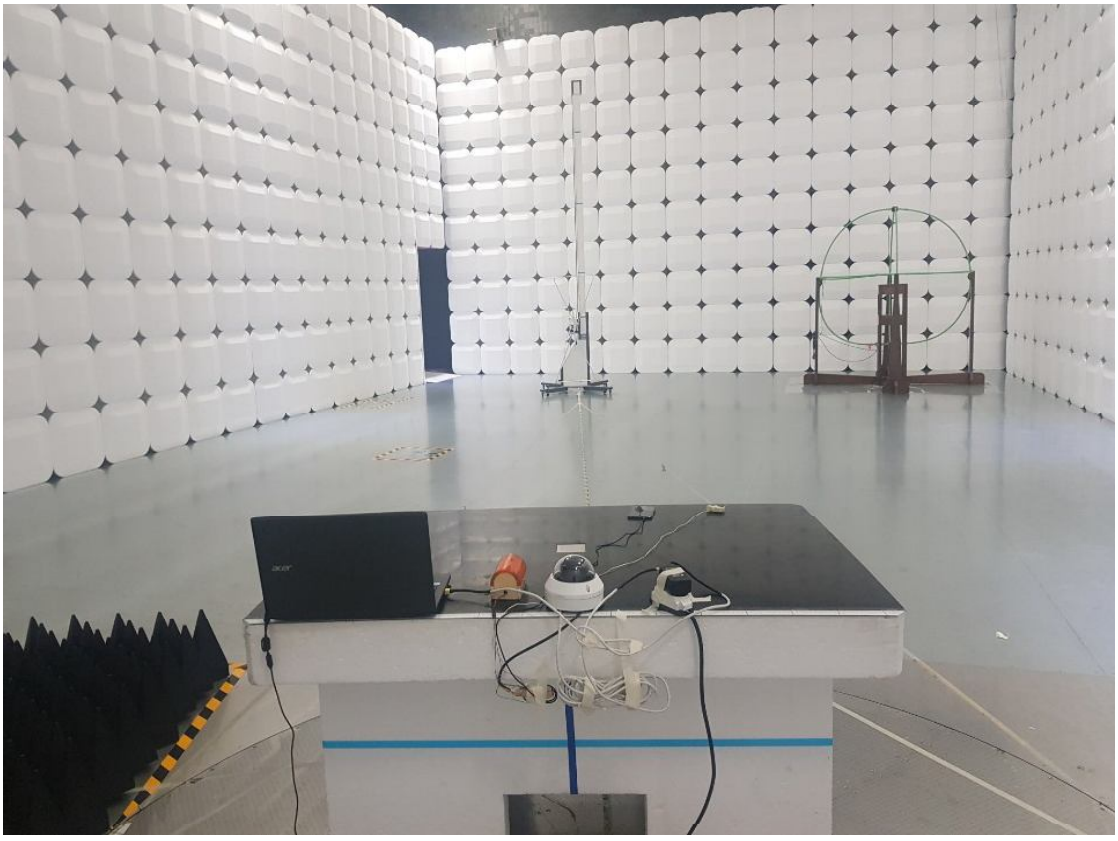
Photograph of the Radiated Disturbance Measurements (Below 1GHz) / REC mode (Adapter)



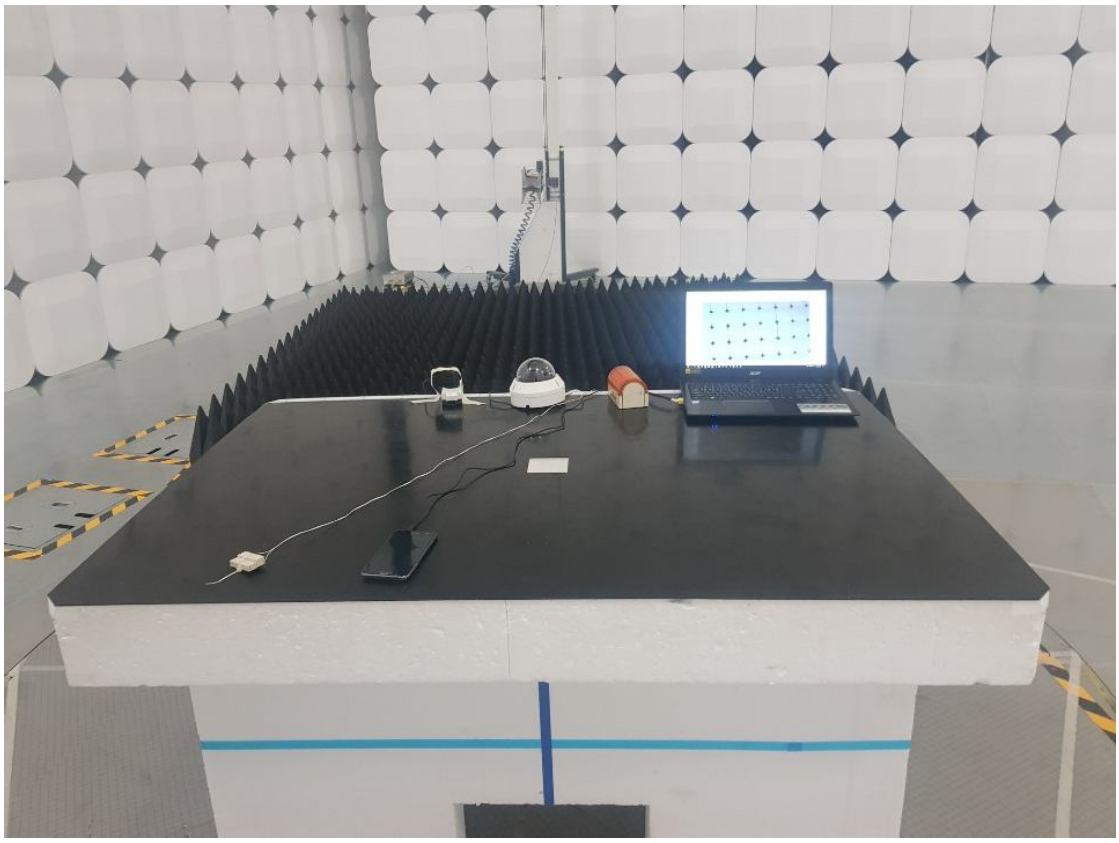


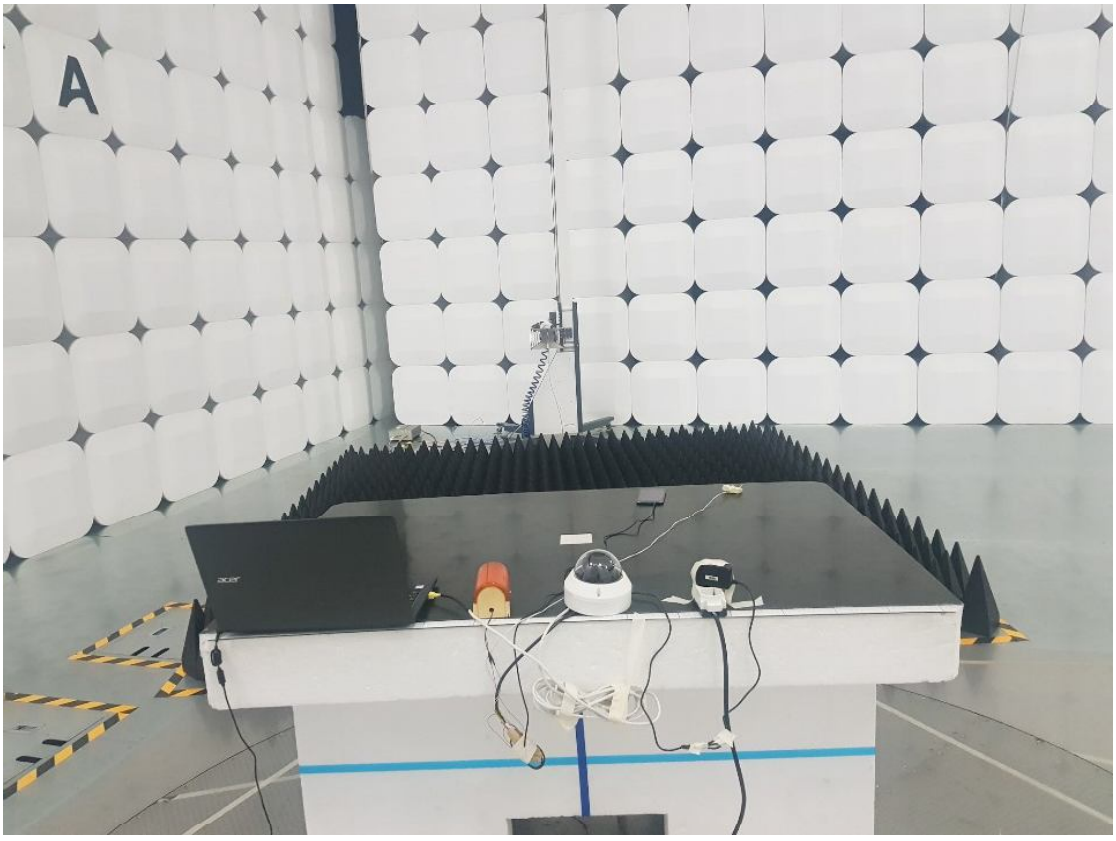
Photograph of the Radiated Disturbance Measurements (Below 1GHz) / REC mode (POE)



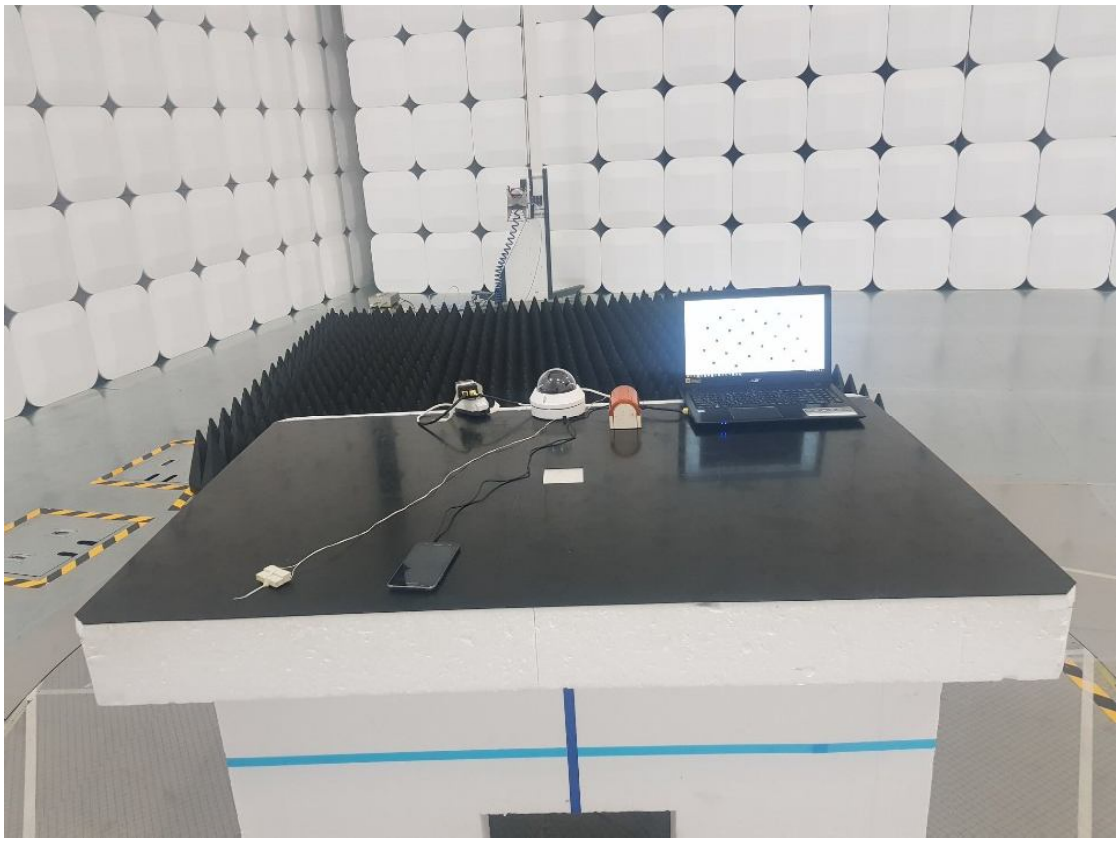


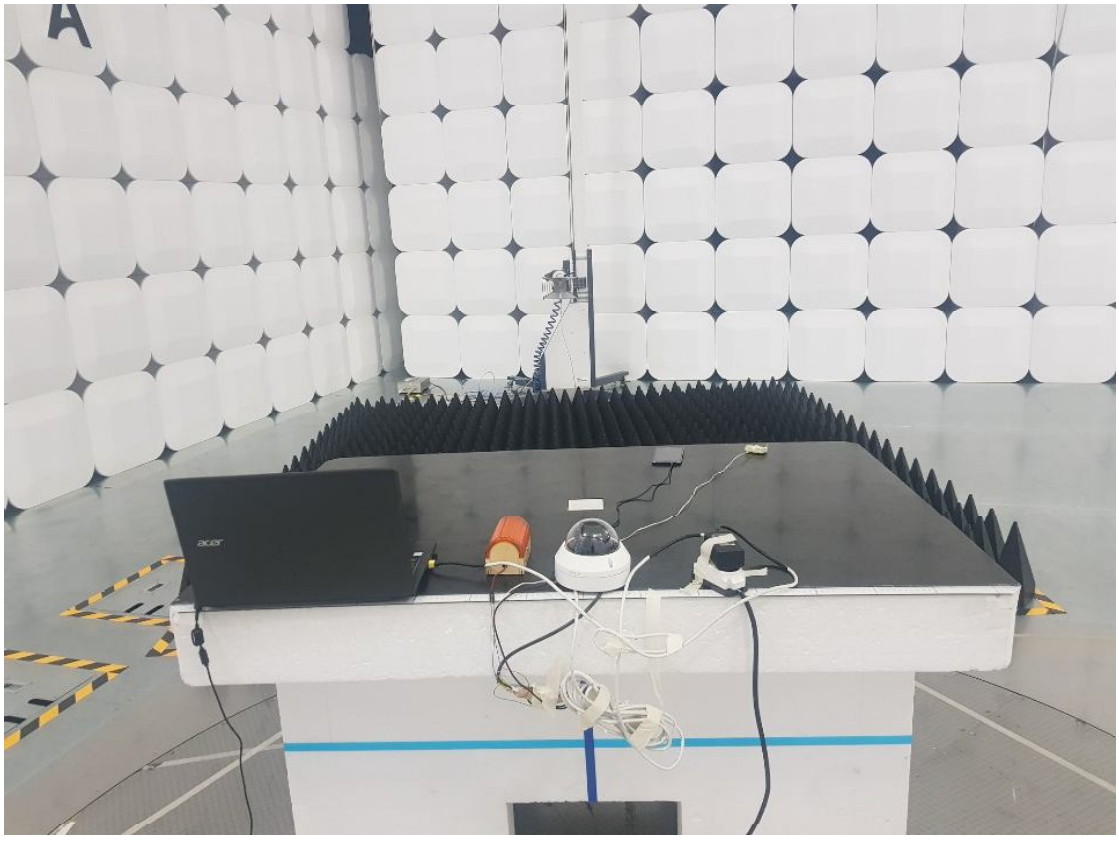
Photograph of the Radiated Disturbance Measurements (Above 1GHz) / REC mode (Adapter)





Photograph of the Radiated Disturbance Measurements (Above 1GHz) / REC mode (POE)





Photograph of the Equipment Under Test

Photograph of the Equipment Under Test