EMC TEST REPORT

Test Report No.	:	KES-EM-22T0022-R1
Date of Issue	:	Feb. 17, 2022
Product name	:	NETWORK CAMERA
Model/Type No.	:	PNM-9085RQZ
Variant Model	:	PNM-9085RQZ1
Applicant	:	Hanwha Techwin Co., Ltd.
Applicant Address	:	6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Manufacturer	:	1. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD. 2. D-TECH CO.,LTD.
Manufacturer Address	:	1. Lot O-2, Que Vo Industrial Zone extended area, Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam 2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do, Korea (Suwon Industrial Complex)
Equipment authorization	:	**Supplier's Declaration of Conformity**
Date of Receipt	:	Dec. 22, 2021
Test date	:	Dec. 28, 2021
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Kang Hyeon, Kim
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.

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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Jan. 07, 2022	KES-EM-22T0022	Issued
Feb. 17, 2022	KES-EM-22T0022-R1	Reissuance due to the addition of a derivative

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1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	1/1.8" 5MP CMOS: each CH
Effective Pixels	2616(H)x1976(V): each CH
Min. Illumination	Color: 0.11lux(F1.6,30 IRE) BW: 0Lux(IR LED on)
Lens	
Focal Length (Zoom Ratio)	4.13~9.4mm(2.3x)motorized varifocal
Max. Aperture Ratio	F1.92(Wide)~F2.67(Tele)
Angular Field of View	H: 87.58°(Wide)~37.34°(Tele) / V: 64.58°(Wide)~28.04°(Tele) / D: 112.46°(Wide)~46.85°(Tele)
Min. Object Distance	1.2m
Focus Control	Simple focus
Pan / Tilt / Rotate	
Pan / Tilt / Rotate Range	Remote adjustment (Max. 200cycles) 0~360˚ / 30~90˚ / 0~90˚
Operational	
IR Viewable Length	30m
Camera Title	Displayed up to 85 characters
Day & Night	Auto(ICR)
Backlight Compensation	BLC, HLC, WDR, SSDR
Wide Dynamic Range	120dB
Digital Noise Reduction	SSNR V
Digital Image Stabilization	Support
Defog	Support
Motion Detection	8ea, 8point polygonal zones
Privacy Masking	32ea, polygonal zones - Color: Grey, Green, Red, Blue, Black, White - Mosaic
Gain Control	Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
LDC	Support
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2~1/12,000sec)
Video Rotation	Flip, Mirror, Hallway view(90˚/270˚)
Analytics	Defocus detection, Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Audio detection
Alarm I/O	Input 1ea / Output 1ea
Alarm Triggers	Analytics, Network disconnect, Alarm input
Alarm Events	File upload via FTP and e-mail Notification via e-mail SD/SDHC/SDXC or at event triggers Alarm output Handover
Audio In	Selectable(mic in/line in) Supply voltage: 2.5VDC(4mA), Input impedance: 2K Ohm
Audio Out	Line out, Max.output level: 1Vrms

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Network	
Ethernet	RJ-45(10/100/1000BASE-T)
Video Compression	H.265/H.264: Main/Baseline/High, MJPEG
Resolution	2560x1920, 2560x1440, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264 : Max. 30fps/25fps(60Hz/50Hz) MJPEG: Max. 30fps/25fps(60Hz/50Hz)
Smart Codec	Manual(5ea area), WiseStreamⅡ
Bitrate Control	H.264/H.265: CBR or VBR MJPEG: VBR
Streaming	Unicast(20 users) / Multicast Multiple streaming(Up to 10 profiles)
Audio Compression	G.711 u-law /G.726 Selectable G.726(ADPCM) 8KHz, G.711 8KHz G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC: 48Kbps at 16KHz
Protocol	IPv4, IPv6, TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour, LLDP
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access log 802.1X Authentication(EAP-TLS, EAP-LEAP)
Edge Storage	Micro SD/SDHC/SDXC 4slot 256GB(Each CH)
Application Programming Interface	ONVIF Profile S/T SUNAPI(HTTP API) Wisenet open platform
Web Viewer	Supported OS: Windows 7, 8.1, 10, Mac OS X 10.13 Recommended Browser: Google Chrome Supported Browser: MS Explore11, MS Edge, Mozilla Firefox(Window 64bit only), Apple Safari(Mac OS X only)
Memory	5GB RAM, 1280MB Flash
Environmental	
Operating Temperature / Humidity	-40°C~+55°C(-40°F~+131°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C~+60°C(-58°F~+140°F) / Less than 90% RH
Certification	IP66, IK10, NEMA4X
Electrical	
Input Voltage	HPoE, 12VDC
Power Consumption	Max : 45W Typical : 32W
Mechanical	
Color / Material	White / Aluminum
RAL Code	RAL9003
Product dimensions / weight	∮315x145.9mm / 5.2kg

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1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

☒ AC 120 V, 60 Hz

1.2 Variant Model Differences

Adding derivatives due to the deletion of GYRO SENSOR.

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	PNM-9085RQZ	-	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.	EUT
PoE INJECTOR	PT-PSE109GBRO-AH	PT2138221217	Dongguan PROCET Network Technology Co.,Ltd	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
AC/DC Adaptor	2ACB022F	-	Channel Well Technology Co., Ltd.	-
Notebook	HSN-Q07C	5CD8367KND	HP	-
Notebook Adaptor	HSTNN-CA40	WFTKU0ERLB4QCH	HP	-
MIC	MP1000	-	-	-
Speaker	BR1000A Cuve Black 2	-	DONGGUAN EDIFIER TECHNOLOGY Co., Ltd	-
Alarm	PRO-SL	-	SENSOR PRO	-
Button Alarm	-	-	-	-
Micro SD Card	-	-	Sandisk	8 GB
Smart Phone	-	-	Apple	-

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1.6 External I/O Cabling

■ AC/DC Adaptor Mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
NETWORK CAMERA (EUT)	DC 2Pin	AC/DC Adaptor	DC 2Pin	1.3	U
	RJ-45 (LAN)	Notebook	RJ-45 (LAN)	4.0	S
	3.5 ㎜	MIC	3.5 ㎜	2.0	U
	3.5 ㎜	Speaker	3.5 ㎜	1.5	U
	Alarm IN	Alarm	Alarm OUT	3.5	U
	Alarm OUT	Button Alarm	Alarm IN	3.0	U
	Card Slot	Micro SD Card	Card Slot	-	-
Notebook	3.5 ㎜	Smart Phone	3.5 ㎜	2.0	U
	DC Jack	Notebook Adaptor	DC Jack	1.5	U

* Unshielded=U, Shielded=S

■ PoE Mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
NETWORK CAMERA (EUT)	RJ-45 (PoE)	PoE INJECTOR (EUT)	RJ-45 (PoE)	2.8	S
	3.5 ㎜	MIC	3.5 ㎜	2.0	U
	3.5 ㎜	Speaker	3.5 ㎜	1.5	U
	Alarm IN	Alarm	Alarm OUT	3.5	U
	Alarm OUT	Button Alarm	Alarm IN	3.0	U
	Card Slot	Micro SD Card	Card Slot	-	-
Notebook	RJ-45 (LAN)	PoE INJECTOR (EUT)	RJ-45 (LAN)	3.0	S
	3.5 ㎜	Smart Phone	3.5 ㎜	2.0	U
	DC Jack	Notebook Adaptor	DC Jack	1.5	U

* Unshielded=U, Shielded=S

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1.7 EUT Operating Mode(s)

operating
EUT Monitoring, Ping Test

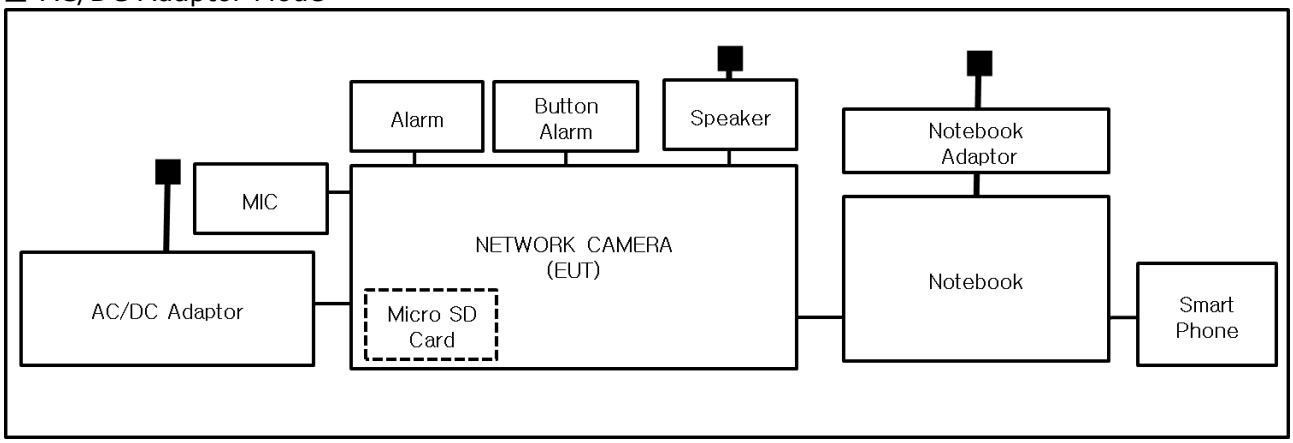
EUT Test operating S/W		
Name	**Version**	**Manufacture Company**
Web Viewer	-	Hanwha Techwin Co., Ltd.

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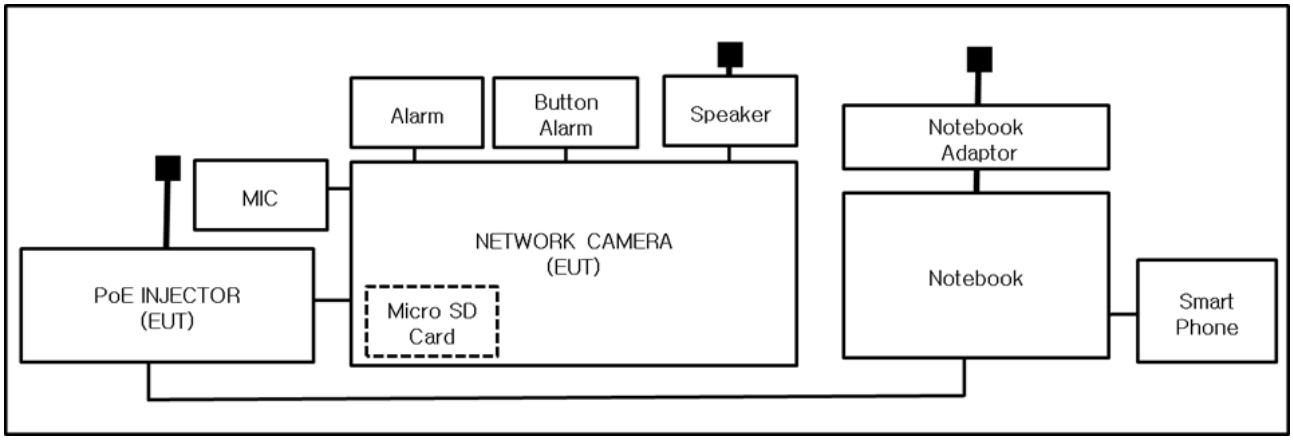
1.8 Configuration

■ AC Main
□ DC Main

■ AC/DC Adaptor Mode



■ PoE Mode



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1.9 Remarks when standards applied

N/A

1.10 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

1.11 Test Facility

The measurement facility is located at 473-21 Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4a-2017 and CISPR 16-1-4:2019

1.12 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	**RRA**	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	KR0100
International	**KOLAS**	EMI (3 m & 10 m Semi-Anechoic Chamber , and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	KT489
USA	**FCC**	3 m & 10 m Semi-Anechoic Chamber, 10 m Open Area and Conducted test site to perform FCC Part 15/18 measurements.	KR0100
Canada	**ISED**	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	23298-1
JAPAN	**VCCI**	Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz	R-20056, C-20036, T-20040, G-20057
Europe	**TÜV SÜD**	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	CARAT 001633 0004

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2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **47 CFR Part 15, Subpart B**

☐ CISPR 22:2009 +A1:2010	☐ Class A	☐ Class B
☒ ANSI C63.4a-2017	☒ Class A	☐ Class B

☒ **IC Regulation ICES-003 Issue 7**

☐ CAN/CSA-CISPR 32:17	☐ Class A	☐ Class B
☒ ANSI C63.4a-2017	☒ Class A	☐ Class B

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2.1 Conducted Emissions at Mains Power Ports

Test Date
Dec. 28, 2021

Test Location
Electro wave Shieldroom #3

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EMC32	R & S	9.12.00	-
☒	EMI TEST RECEIVER	ESU26	R & S	100517	08, 05, 2022
☒	LISN	ENV216	R & S	101786	01, 19, 2022
☒	LISN	ENV216	R & S	101137	01, 19, 2022

Test Conditions
Temperature: (22,7 ± 0,3) ℃
Relative Humidity: (43,1 ± 0,2) % R.H.

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

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2.2 Radiated Electric Field Emissions(Below 1 ㎓)

Test Date
Dec. 28, 2021

Test Location
☐ OPEN AREA TEST SITE #2 ☒ SEMI ANECHOIC CHAMBER #4(10m)

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
☒	EMI TEST RECEIVER	ESU26	R & S	100551	04, 01, 2022
☒	AMPLIFIER	SCU 01	R & S	100603	11, 24, 2022
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	12, 08, 2022
☒	ATTENUATOR	8491A	HP	32173	03, 10, 2022

Test Conditions
Temperature: (22,2 ± 0,4) ℃
Relative Humidity: (43,5 ± 0,4) % R.H.

Frequency Range of Measurement
30 ㎒ to 1 ㎓

Instrument Settings
IF Band Width: 120 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
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2.3 Radiated Electric Field Emissions(Above 1 ㎓)

Test Date
Dec. 28, 2021

Test Location
SEMI ANECHOIC CHAMBER #5

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.120	-
☒	EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	04, 01, 2022
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 11, 2022
☒	PREAMPLIFIER	8449B	HP	3008A00538	06, 21, 2022

Test Conditions
Temperature: (22,5 ± 0,6) ℃
Relative Humidity: (43,4 ± 0,5) % R.H.

Frequency Range of Measurement
1 ㎓ to 5 ㎓

Instrument Settings
IF Band Width: 1 ㎒

Test Results
The requirements are:
☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
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APPENDIX A – TEST DATA

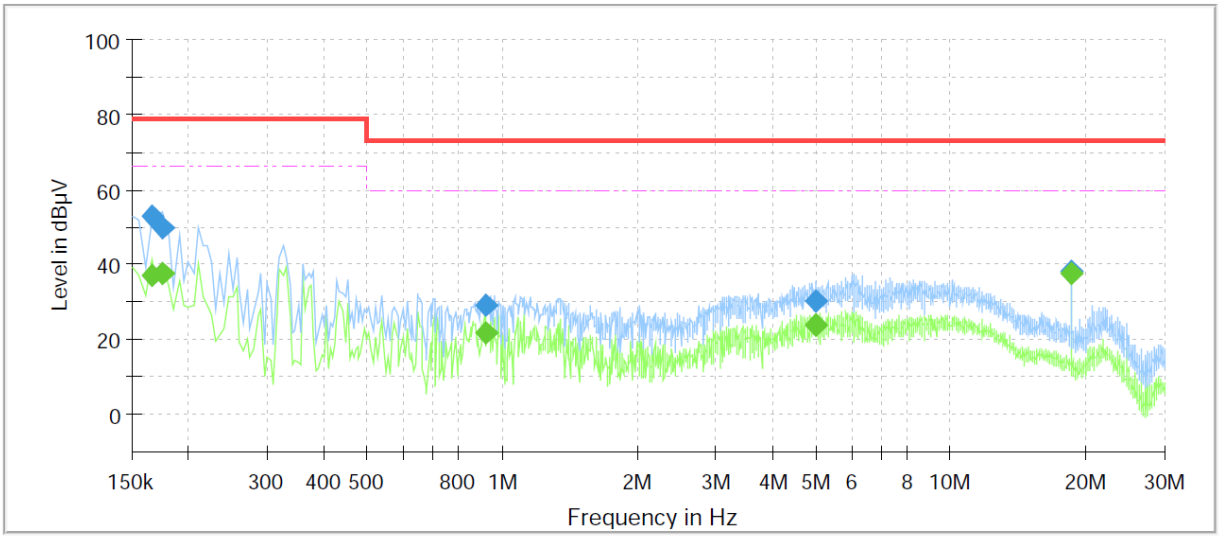
Conducted Emissions at Mains Power Ports

■ AC/DC Adaptor Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	PNM-9085RQZ
Mode	DC FCC
Operator Name:	KES



Final_Result

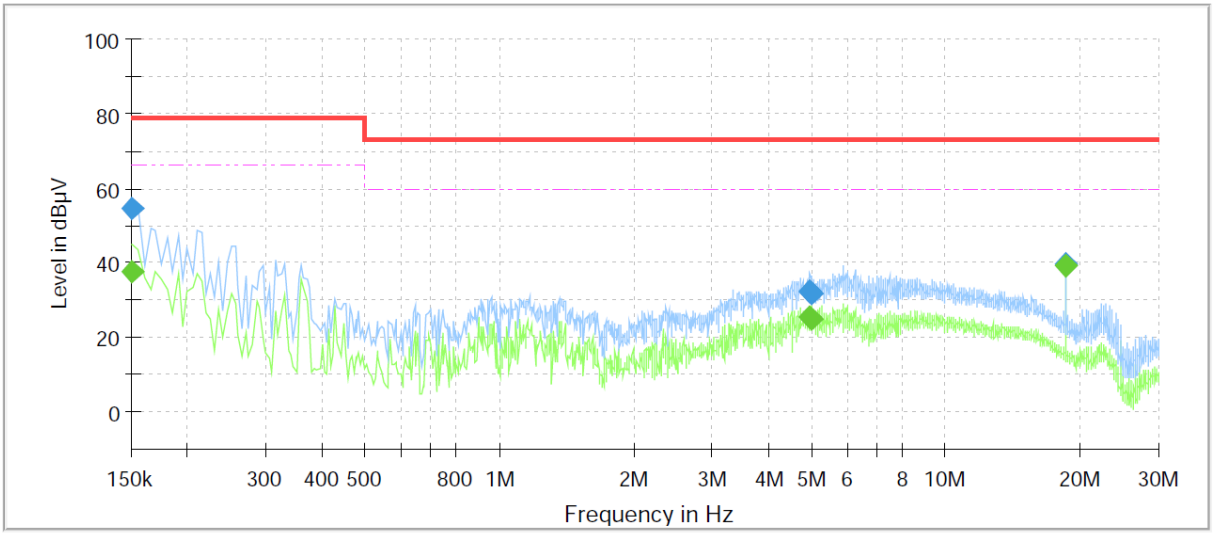
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	37.16	66.00	28.84	1000.0	9.000	L1	9.6
0.165000	52.86	---	79.00	26.14	1000.0	9.000	L1	9.6
0.175000	---	37.82	66.00	28.18	1000.0	9.000	L1	9.6
0.175000	49.95	---	79.00	29.05	1000.0	9.000	L1	9.6
0.915000	---	21.85	60.00	38.15	1000.0	9.000	L1	9.9
0.915000	29.29	---	73.00	43.71	1000.0	9.000	L1	9.9
5.020000	---	23.60	60.00	36.40	1000.0	9.000	L1	9.9
5.020000	30.08	---	73.00	42.92	1000.0	9.000	L1	9.9
18.500000	---	37.67	60.00	22.33	1000.0	9.000	L1	10.0
18.500000	37.98	---	73.00	35.02	1000.0	9.000	L1	10.0

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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	PNM-9085RQZ
Mode	DC FCC
Operator Name:	KES



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	37.68	66.00	28.32	1000.0	9.000	N	9.5
0.150000	54.38	---	79.00	24.62	1000.0	9.000	N	9.5
4.970000	---	25.23	60.00	34.77	1000.0	9.000	N	9.9
4.970000	32.07	---	73.00	40.93	1000.0	9.000	N	9.9
4.990000	---	25.13	60.00	34.87	1000.0	9.000	N	9.9
4.990000	31.91	---	73.00	41.09	1000.0	9.000	N	9.9
18.500000	---	39.28	60.00	20.72	1000.0	9.000	N	10.0
18.500000	39.69	---	73.00	33.31	1000.0	9.000	N	10.0

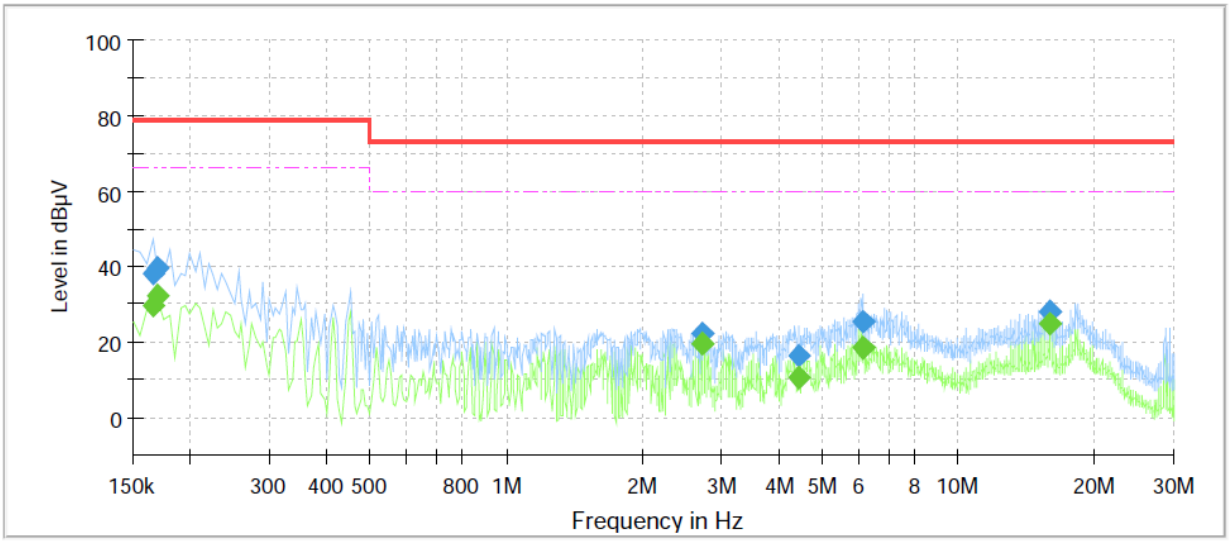
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■ PoE Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	PNM-9085RQZ
Mode	PoE FCC
Operator Name:	KES



Final_Result

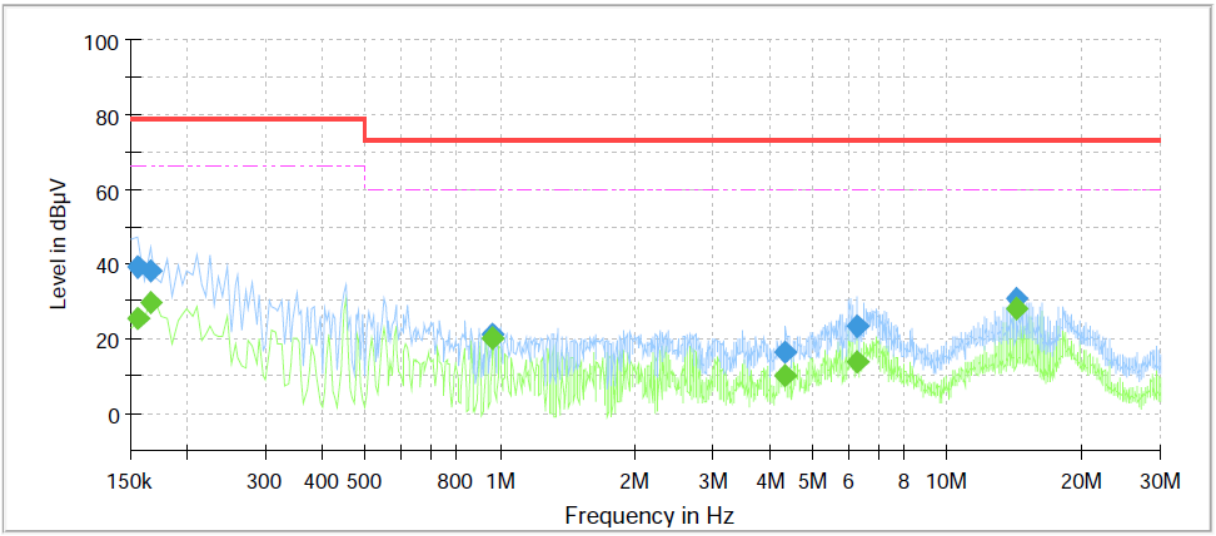
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	29.62	66.00	36.38	1000.0	9.000	L1	9.6
0.165000	38.13	---	79.00	40.87	1000.0	9.000	L1	9.6
0.170000	---	32.24	66.00	33.76	1000.0	9.000	L1	9.6
0.170000	39.84	---	79.00	39.16	1000.0	9.000	L1	9.6
2.725000	---	19.73	60.00	40.27	1000.0	9.000	L1	10.1
2.725000	22.22	---	73.00	50.78	1000.0	9.000	L1	10.1
4.420000	---	10.66	60.00	49.34	1000.0	9.000	L1	10.0
4.420000	16.47	---	73.00	56.53	1000.0	9.000	L1	10.0
6.180000	---	18.47	60.00	41.53	1000.0	9.000	L1	9.8
6.180000	25.19	---	73.00	47.81	1000.0	9.000	L1	9.8
16.005000	---	25.06	60.00	34.94	1000.0	9.000	L1	9.9
16.005000	28.05	---	73.00	44.95	1000.0	9.000	L1	9.9

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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	PNM-9085RQZ
Mode	PoE FCC
Operator Name:	KES



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	25.62	66.00	40.38	1000.0	9.000	N	9.5
0.155000	39.34	---	79.00	39.66	1000.0	9.000	N	9.5
0.165000	---	29.90	66.00	36.10	1000.0	9.000	N	9.5
0.165000	38.31	---	79.00	40.69	1000.0	9.000	N	9.5
0.965000	---	20.07	60.00	39.93	1000.0	9.000	N	9.8
0.965000	21.43	---	73.00	51.57	1000.0	9.000	N	9.8
4.360000	---	9.98	60.00	50.02	1000.0	9.000	N	10.0
4.360000	16.68	---	73.00	56.32	1000.0	9.000	N	10.0
6.305000	---	14.06	60.00	45.94	1000.0	9.000	N	9.8
6.305000	23.26	---	73.00	49.74	1000.0	9.000	N	9.8
14.275000	---	28.21	60.00	31.79	1000.0	9.000	N	9.8
14.275000	30.47	---	73.00	42.53	1000.0	9.000	N	9.8

◆ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

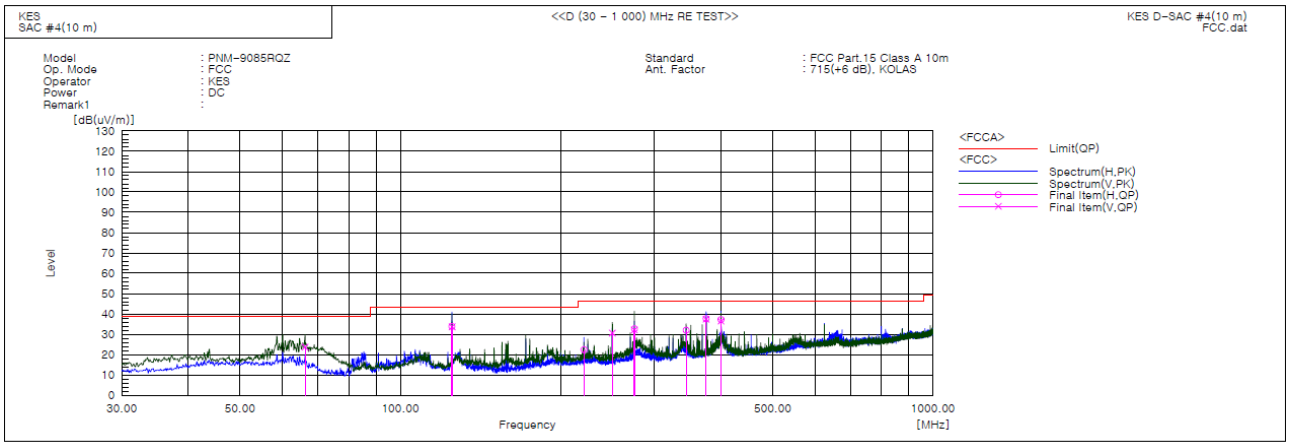
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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Radiated Electric Field Emissions(Below 1 ㎓)

- 47 CFR Part 15, Subpart B

■ AC/DC Adaptor Mode

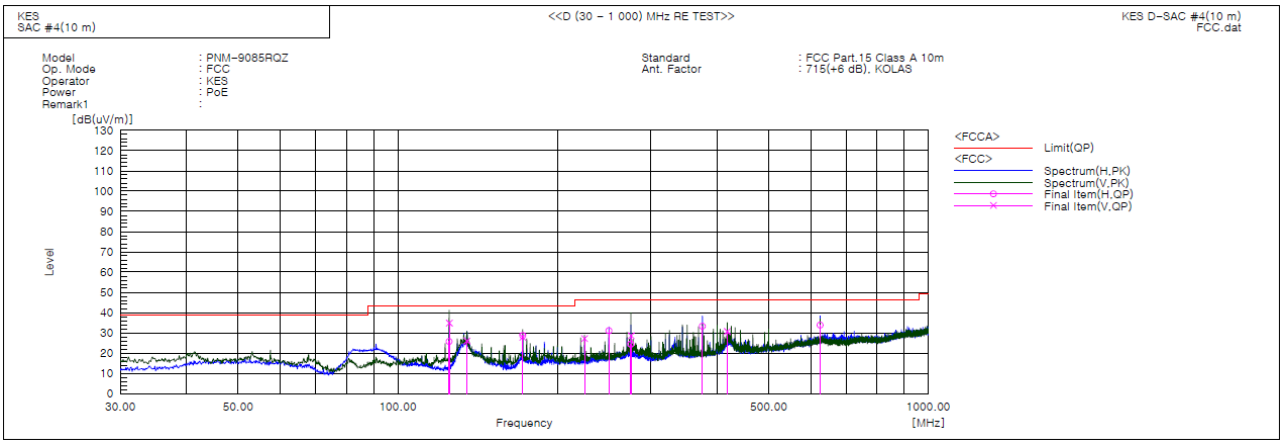


Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	66.254	V	47.2	-23.5	23.7	39.0	15.3	142.0	155.0	
2	124.939	H	58.6	-24.8	33.8	43.5	9.7	400.0	142.0	
3	125.060	V	58.5	-24.8	33.7	43.5	9.8	100.0	144.0	
4	221.211	H	42.6	-20.2	22.4	46.5	24.1	355.0	179.0	
5	249.948	V	49.7	-19.1	30.6	46.5	15.9	100.0	166.0	
6	274.925	V	50.8	-18.6	32.2	46.5	14.3	152.0	137.0	
7	275.146	H	51.3	-18.6	32.7	46.5	13.8	400.0	53.0	
8	344.038	H	47.3	-15.3	32.0	46.5	14.5	399.0	331.0	
9	374.956	H	52.3	-14.6	37.7	46.5	8.8	398.0	131.0	
10	374.956	V	52.0	-14.6	37.4	46.5	9.1	100.0	177.0	
11	399.896	H	51.3	-14.1	37.2	46.5	9.3	370.0	257.0	
12	400.055	V	50.5	-14.0	36.5	46.5	10.0	100.0	37.0	

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■ PoE Mode



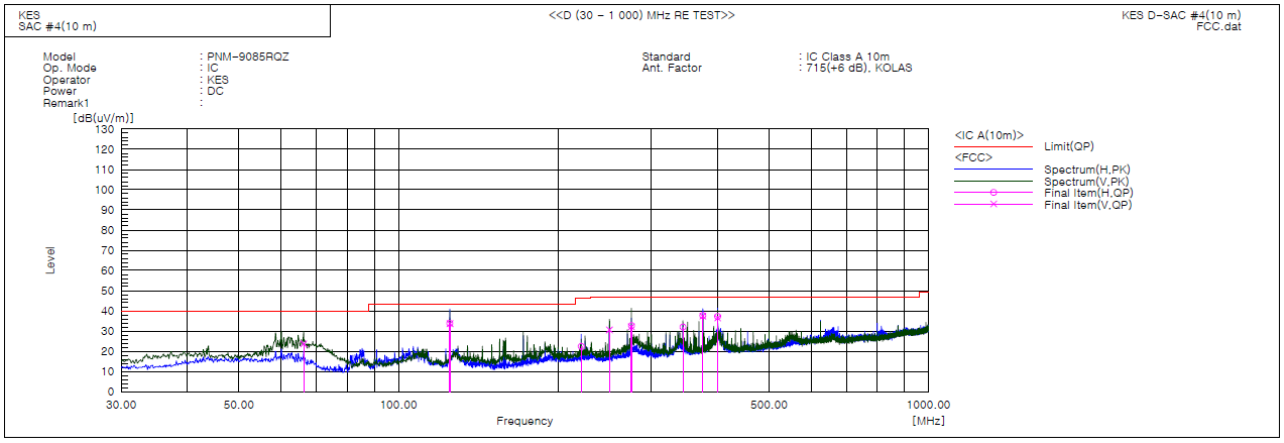
Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	124.939	H	50.5	-24.8	25.7	43.5	17.8	365.0	350.0	
2	125.013	V	59.6	-24.8	34.8	43.5	8.7	100.0	325.0	
3	135.003	V	51.3	-25.3	26.0	43.5	17.5	103.0	153.0	
4	171.984	H	52.7	-24.0	28.7	43.5	14.8	400.0	155.0	
5	171.984	V	51.9	-24.0	27.9	43.5	15.6	100.0	195.0	
6	224.970	V	47.3	-20.1	27.2	46.5	19.3	112.0	131.0	
7	249.948	H	50.2	-19.1	31.1	46.5	15.4	372.0	181.0	
8	274.925	H	43.1	-18.6	24.5	46.5	22.0	329.0	181.0	
9	275.412	V	47.2	-18.6	28.6	46.5	17.9	100.0	123.0	
10	374.956	H	47.9	-14.6	33.3	46.5	13.2	400.0	129.0	
11	417.758	V	44.4	-13.7	30.7	46.5	15.8	100.0	142.0	
12	625.095	H	42.0	-8.2	33.8	46.5	12.7	400.0	28.0	

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- IC Regulation ICES-003 Issue 7

■ AC/DC Adaptor Mode

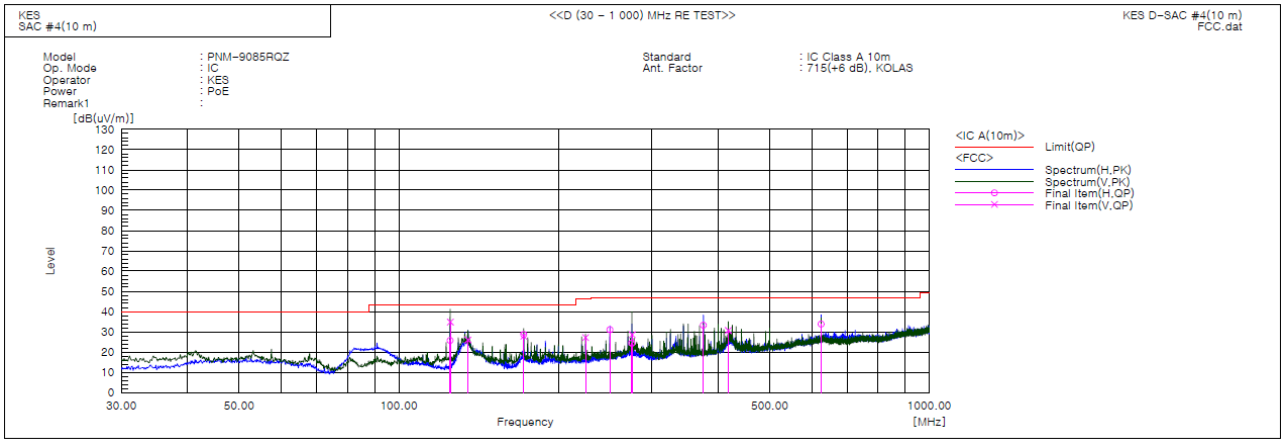


Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	66.254	V	47.2	-23.5	23.7	40.0	16.3	142.0	155.0	
2	124.939	H	58.6	-24.8	33.8	43.5	9.7	400.0	142.0	
3	125.060	V	58.5	-24.8	33.7	43.5	9.8	100.0	144.0	
4	221.211	H	42.6	-20.2	22.4	46.4	24.0	355.0	179.0	
5	249.948	V	49.7	-19.1	30.6	47.0	16.4	100.0	166.0	
6	274.925	V	50.8	-18.6	32.2	47.0	14.8	152.0	137.0	
7	275.146	H	51.3	-18.6	32.7	47.0	14.3	400.0	53.0	
8	344.038	H	47.3	-15.3	32.0	47.0	15.0	399.0	331.0	
9	374.956	H	52.3	-14.6	37.7	47.0	9.3	398.0	131.0	
10	374.956	V	52.0	-14.6	37.4	47.0	9.6	100.0	177.0	
11	399.896	H	51.3	-14.1	37.2	47.0	9.8	370.0	257.0	
12	400.055	V	50.5	-14.0	36.5	47.0	10.5	100.0	37.0	

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■ PoE Mode



Final Result

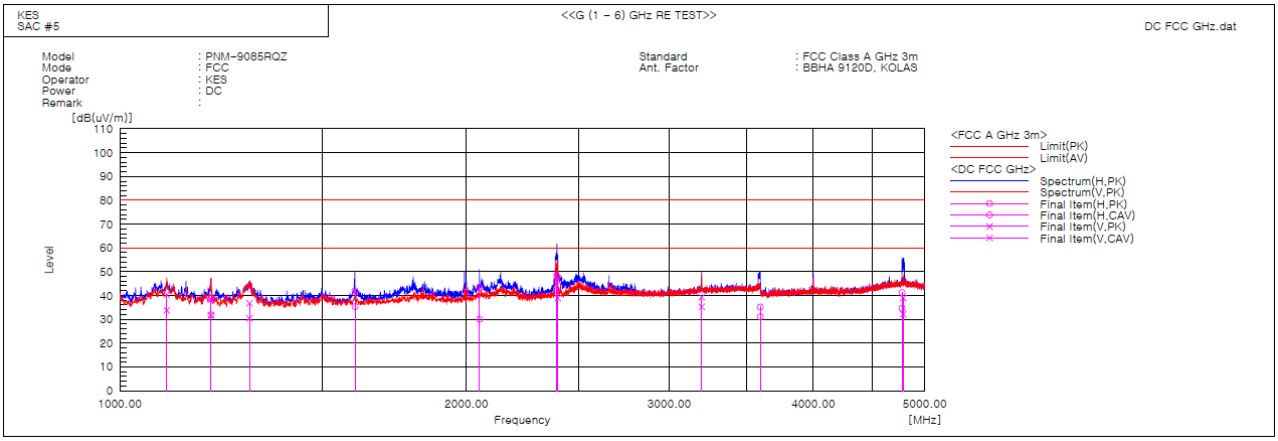
No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	124.939	H	50.5	-24.8	25.7	43.5	17.8	365.0	350.0	
2	125.013	V	59.6	-24.8	34.8	43.5	8.7	100.0	325.0	
3	135.003	V	51.3	-25.3	26.0	43.5	17.5	103.0	153.0	
4	171.984	H	52.7	-24.0	28.7	43.5	14.8	400.0	155.0	
5	171.984	V	51.9	-24.0	27.9	43.5	15.6	100.0	195.0	
6	224.970	V	47.3	-20.1	27.2	46.4	19.2	112.0	131.0	
7	249.948	H	50.2	-19.1	31.1	47.0	15.9	372.0	181.0	
8	274.925	H	43.1	-18.6	24.5	47.0	22.5	329.0	181.0	
9	275.412	V	47.2	-18.6	28.6	47.0	18.4	100.0	123.0	
10	374.956	H	47.9	-14.6	33.3	47.0	13.7	400.0	129.0	
11	417.758	V	44.4	-13.7	30.7	47.0	16.3	100.0	142.0	
12	625.095	H	42.0	-8.2	33.8	47.0	13.2	400.0	28.0	

♦ Calculation – SAC #4(10 m)
Result(QP) [dB(㎶/m)] = (Reading(QP)[dB(㎶)] + c.f[dB(1/m)]
Margin(QP)[dB] = Limit[dB(㎶/m)] - Result(QP) [dB(㎶/m)]
Reading(QP) : Reading value, Result(QP) : Reading value + Factor value
Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

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Radiated Electric Field Emissions(Above 1 ㎓)

■ AC/DC Adaptor Mode

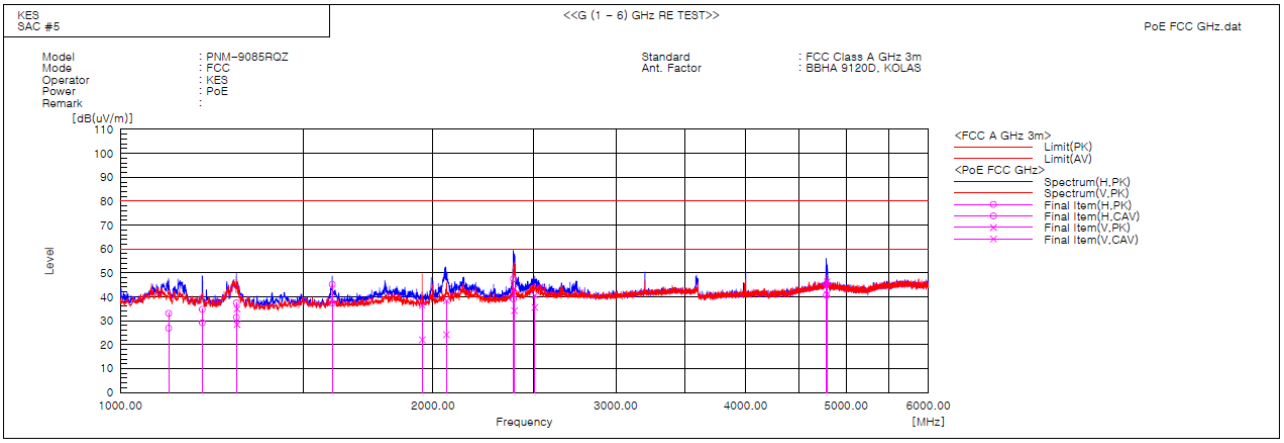


Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1098.125	V	47.8	41.2	-7.4	40.4	33.8	80.0	60.0	39.6	26.2	142.0	326.0	
2	1199.856	V	45.2	38.6	-6.9	38.3	31.7	80.0	60.0	41.7	28.3	136.0	58.0	
3	1200.119	H	45.6	38.8	-6.9	38.7	31.9	80.0	60.0	41.3	28.1	400.0	345.9	
4	1295.625	V	43.2	36.8	-6.4	36.8	30.4	80.0	60.0	43.2	29.6	124.0	53.6	
5	1600.168	H	46.9	40.2	-4.9	42.0	35.3	80.0	60.0	38.0	24.7	320.0	20.8	
6	2051.875	H	46.7	33.4	-3.4	43.3	30.0	80.0	60.0	36.7	30.0	312.0	95.6	
7	2395.625	H	50.3	44.4	-2.0	48.3	42.4	80.0	60.0	31.7	17.6	378.0	131.1	
8	2400.993	V	49.2	40.9	-2.0	47.2	38.9	80.0	60.0	32.8	21.1	100.0	329.6	
9	3200.625	V	38.8	34.8	0.5	39.3	35.3	80.0	60.0	40.7	24.7	102.0	75.9	
10	3598.750	H	34.3	30.2	0.9	35.2	31.1	80.0	60.0	44.8	28.9	286.0	169.6	
11	4778.125	H	36.1	29.5	5.1	41.2	34.6	80.0	60.0	38.8	25.4	387.0	343.4	
12	4787.500	V	33.9	27.1	5.1	39.0	32.2	80.0	60.0	41.0	27.8	100.0	292.6	

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■ PoE Mode



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1113.125	H	40.5	34.3	-7.4	33.1	26.9	80.0	60.0	46.9	33.1	324.0	355.4	
2	1199.375	H	41.7	36.1	-6.9	34.8	29.2	80.0	60.0	45.2	30.8	400.0	314.5	
3	1293.750	H	43.9	37.8	-6.4	37.5	31.4	80.0	60.0	42.5	28.6	364.0	174.1	
4	1295.131	V	41.3	34.9	-6.4	34.9	28.5	80.0	60.0	45.1	31.5	111.0	41.8	
5	1600.000	H	50.1	42.3	-4.9	45.2	37.4	80.0	60.0	34.8	22.6	200.2	10.9	
6	1953.125	V	40.2	25.8	-3.7	36.5	22.1	80.0	60.0	43.5	37.9	100.0	130.4	
7	2061.250	V	41.7	27.5	-3.3	38.4	24.2	80.0	60.0	41.6	35.8	149.8	159.4	
8	2390.625	H	49.5	41.1	-2.0	47.5	39.1	80.0	60.0	32.5	20.9	400.0	127.9	
9	2395.741	V	45.6	36.2	-2.0	43.6	34.2	80.0	60.0	36.4	25.8	99.9	334.1	
10	2506.875	V	42.1	37.1	-1.5	40.6	35.6	80.0	60.0	39.4	24.4	149.8	10.5	
11	4784.375	H	40.4	35.5	5.1	45.5	40.6	80.0	60.0	34.5	19.4	99.8	174.1	
12	4791.875	V	41.2	35.9	5.2	46.4	41.1	80.0	60.0	33.6	18.9	149.8	331.1	

♦ Calculation

Result(PK/CAV) [dB(μV/m)] = (Reading(PK/CAV)[dB(μV)] + c.f[dB(1/m)]

Margin(PK/CAV)[dB] = Limit[dB(μV/m)] - Result(PK/CAV) [dB(μV/m)]

Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

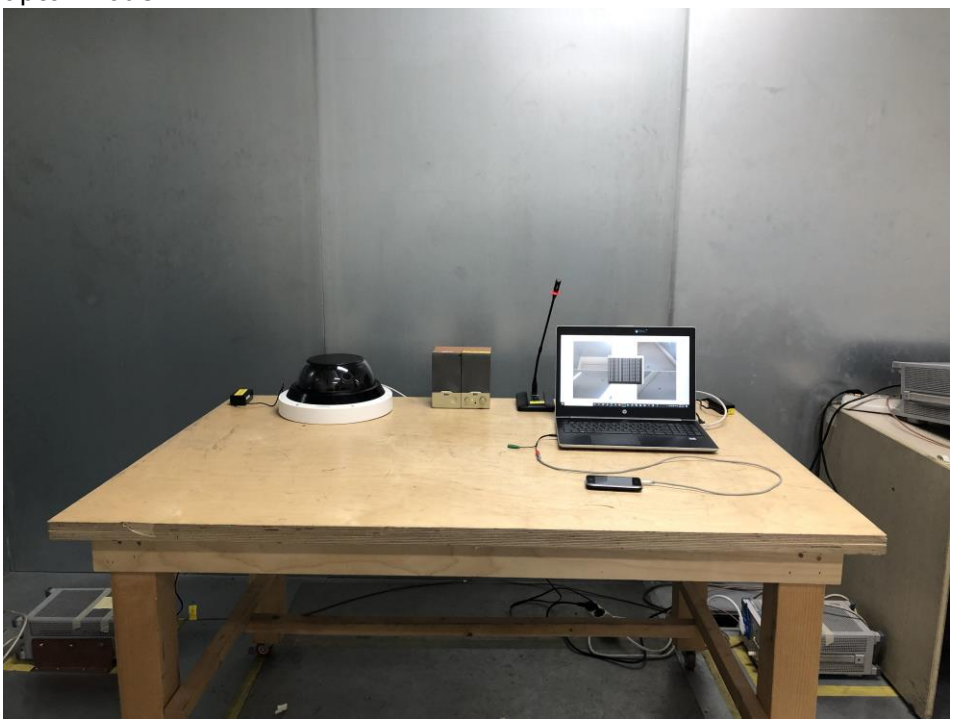
Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

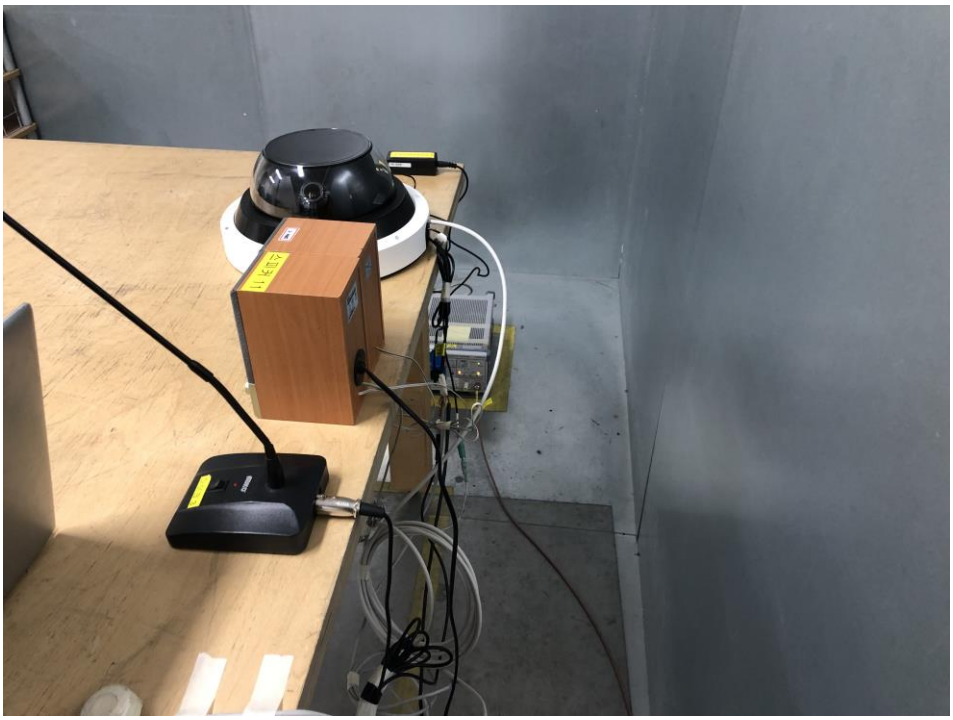
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Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports

■ AC/DC Adaptor Mode





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■ PoE Mode

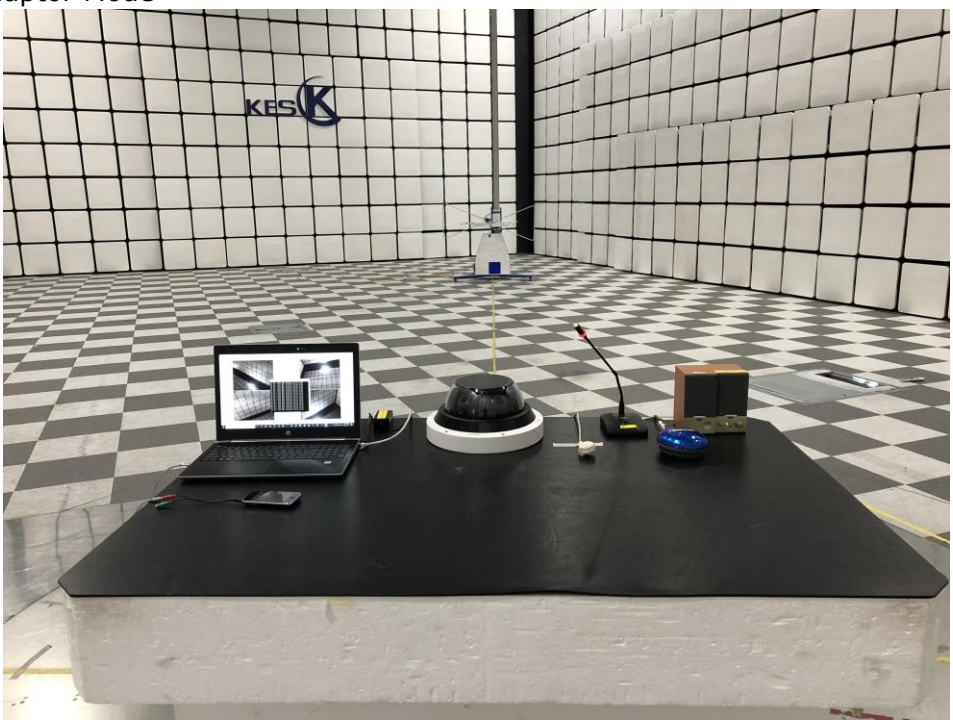


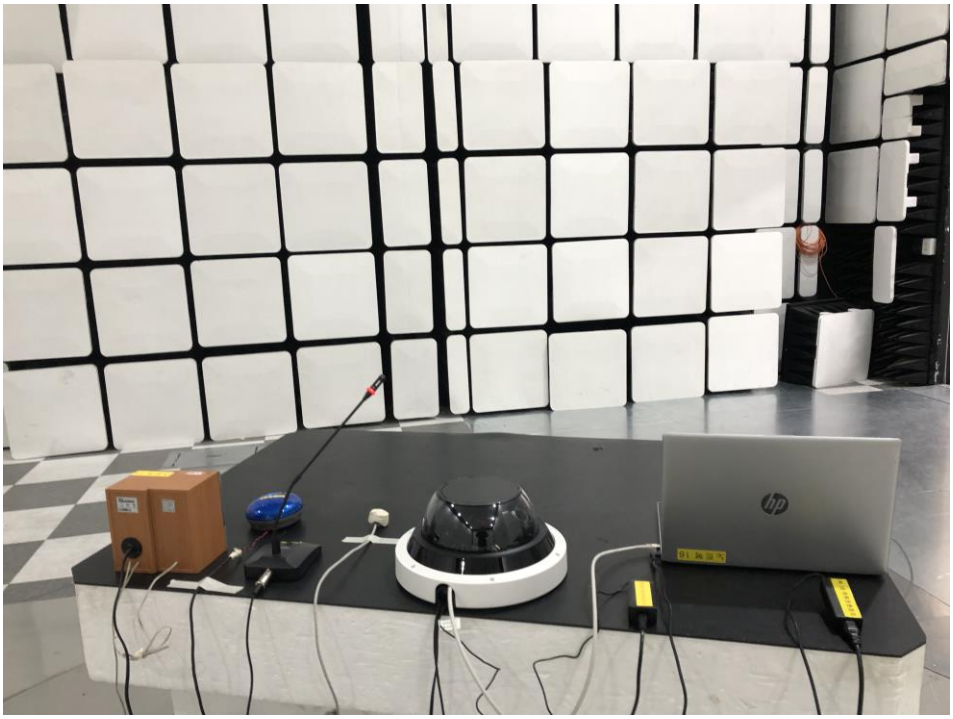


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Radiated Electric Field Emissions(Below 1 ㎓)

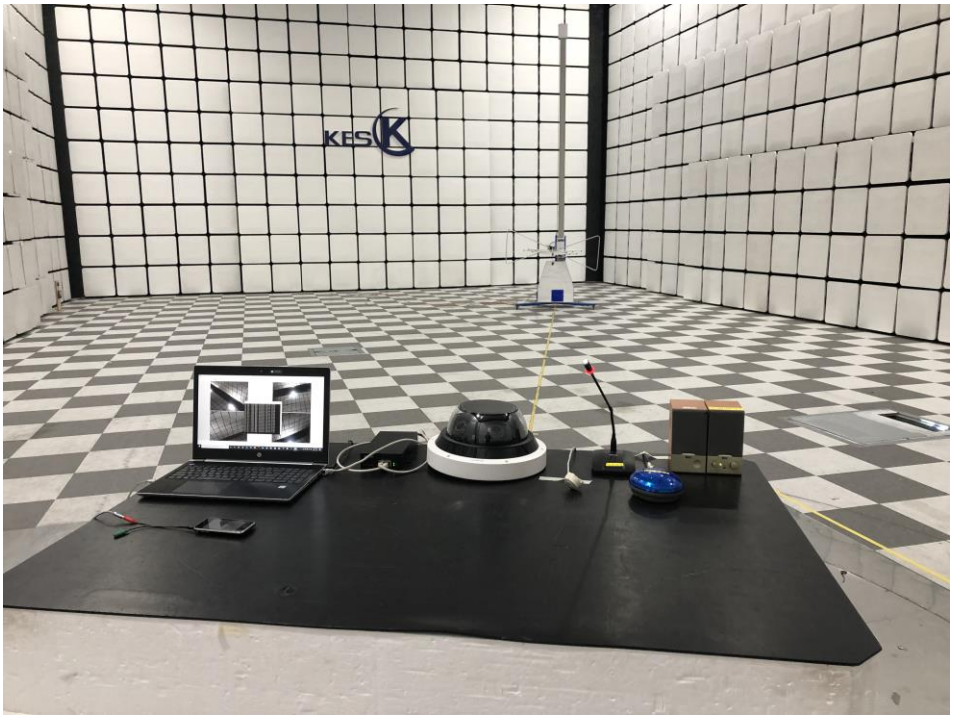
■ AC/DC Adaptor Mode





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■ PoE Mode

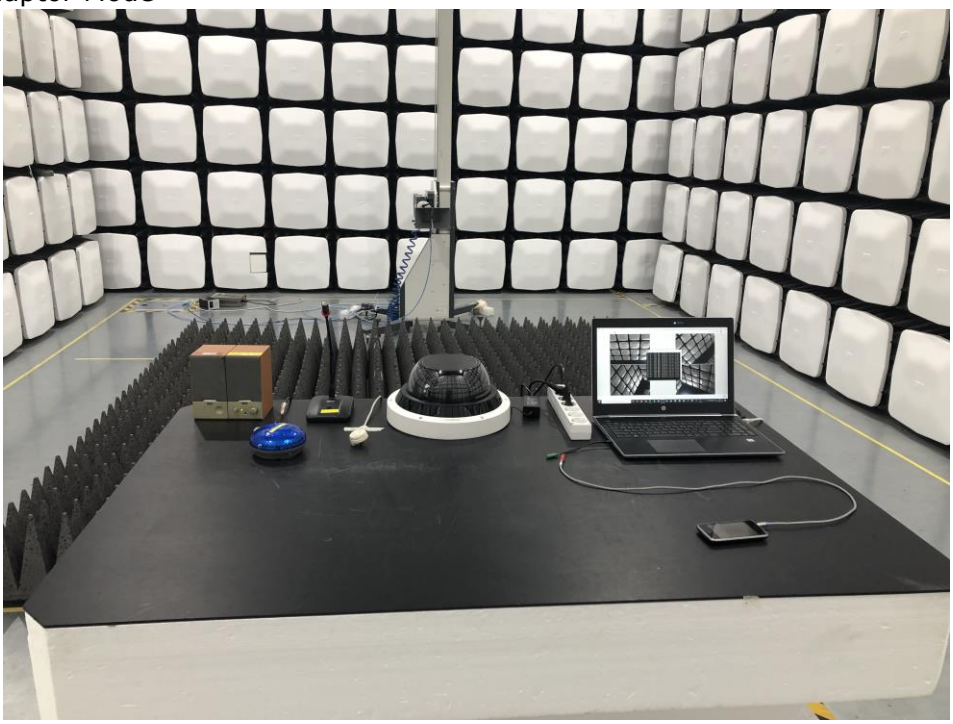


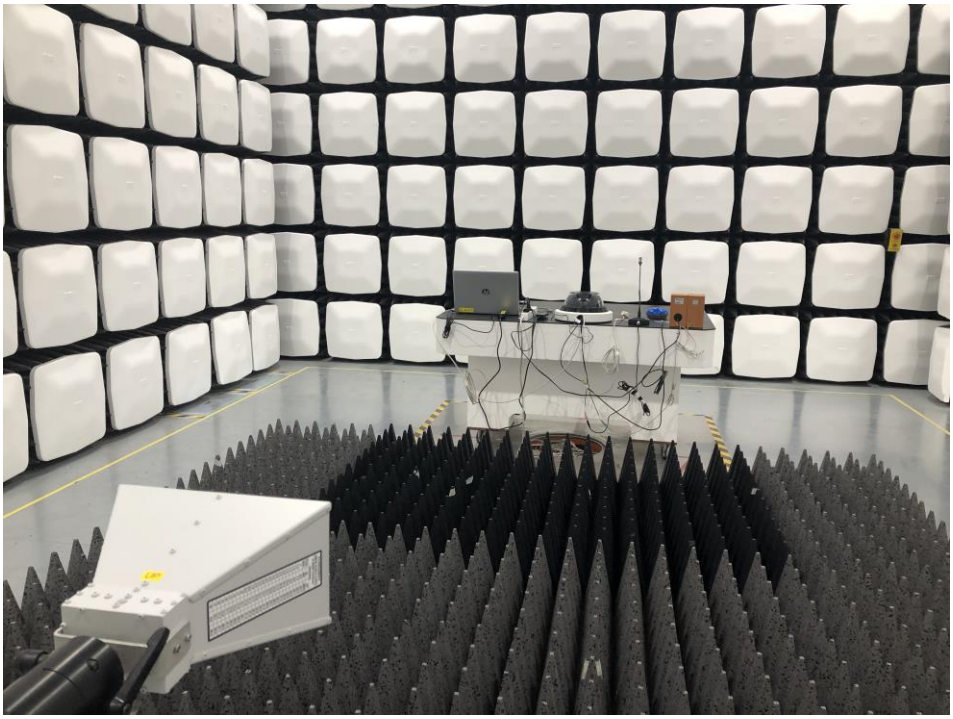


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Radiated Electric Field Emissions(Above 1 ㎓)

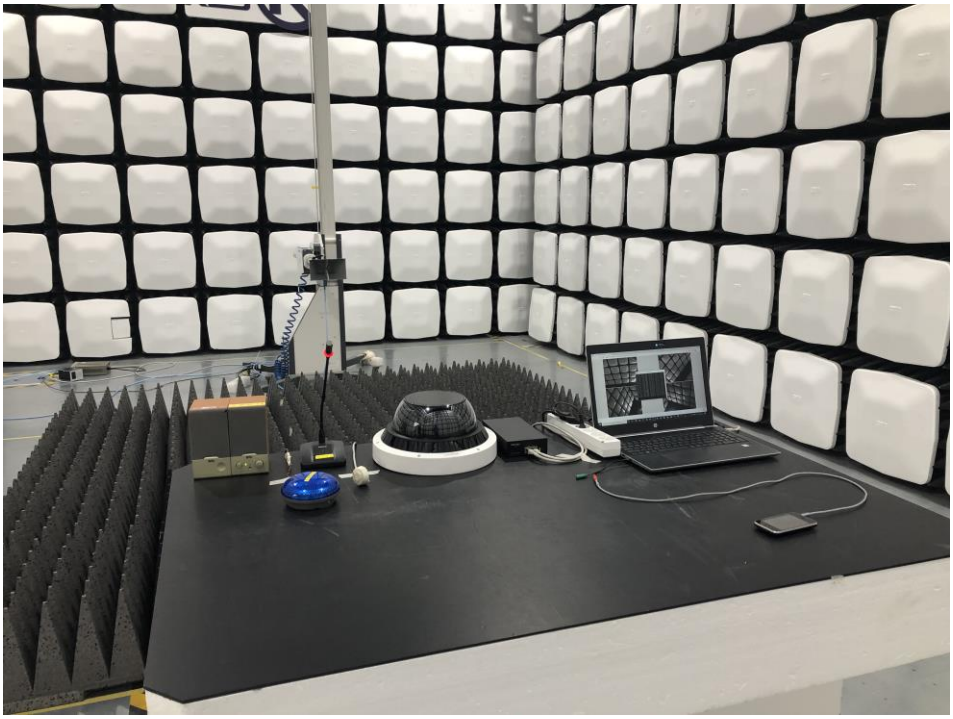
■ AC/DC Adaptor Mode

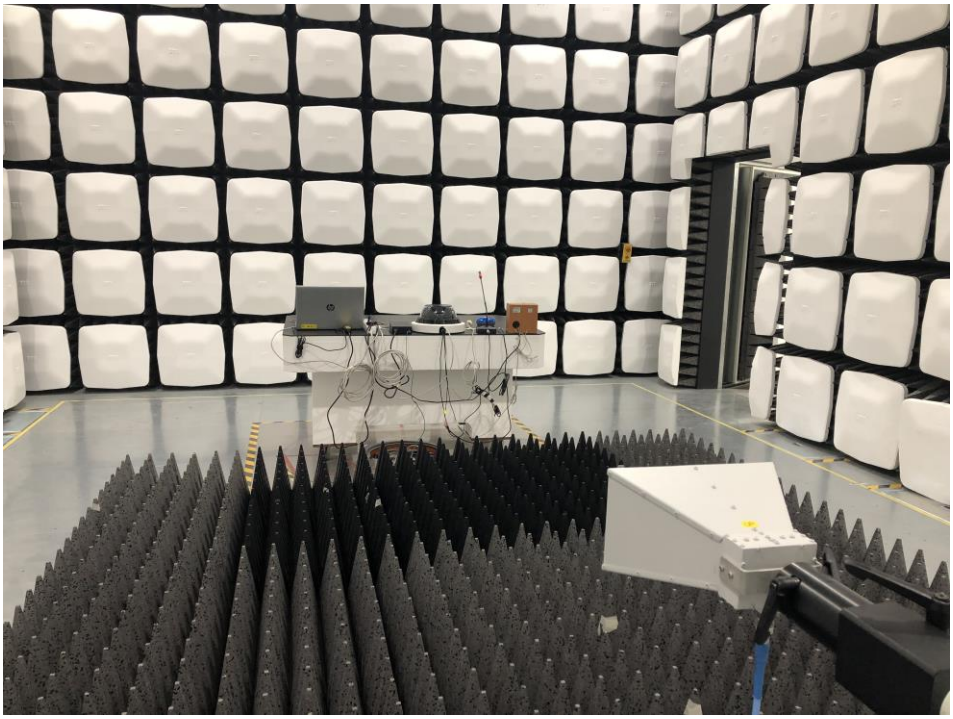




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■ PoE Mode





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EUT External Photographs

(Top)



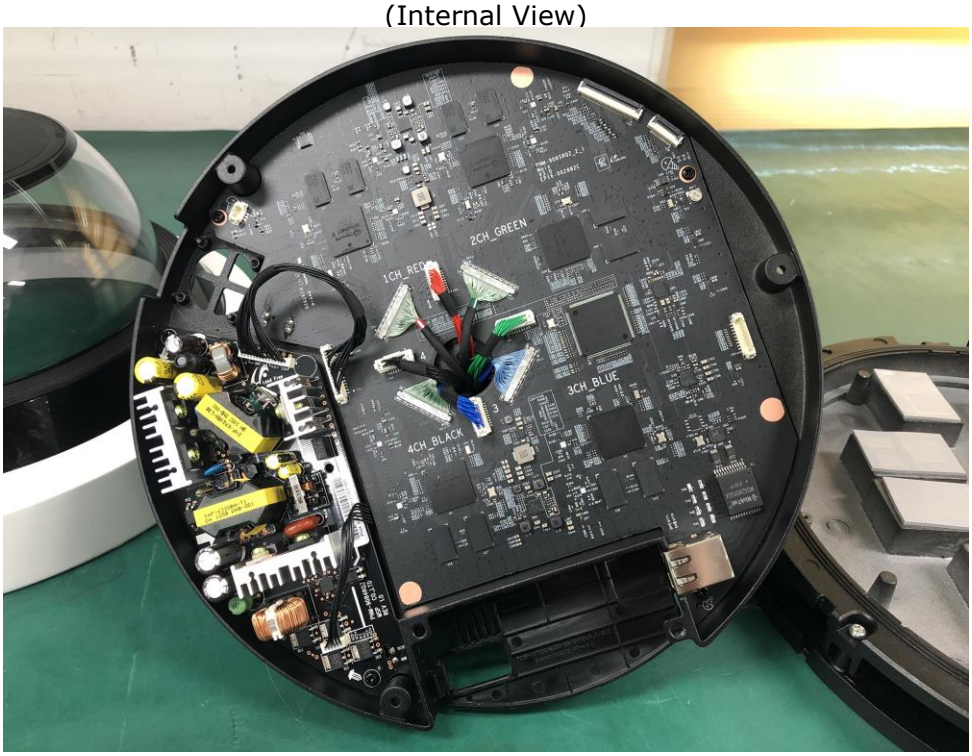
(Bottom)



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EUT Internal Photographs

(Internal View)



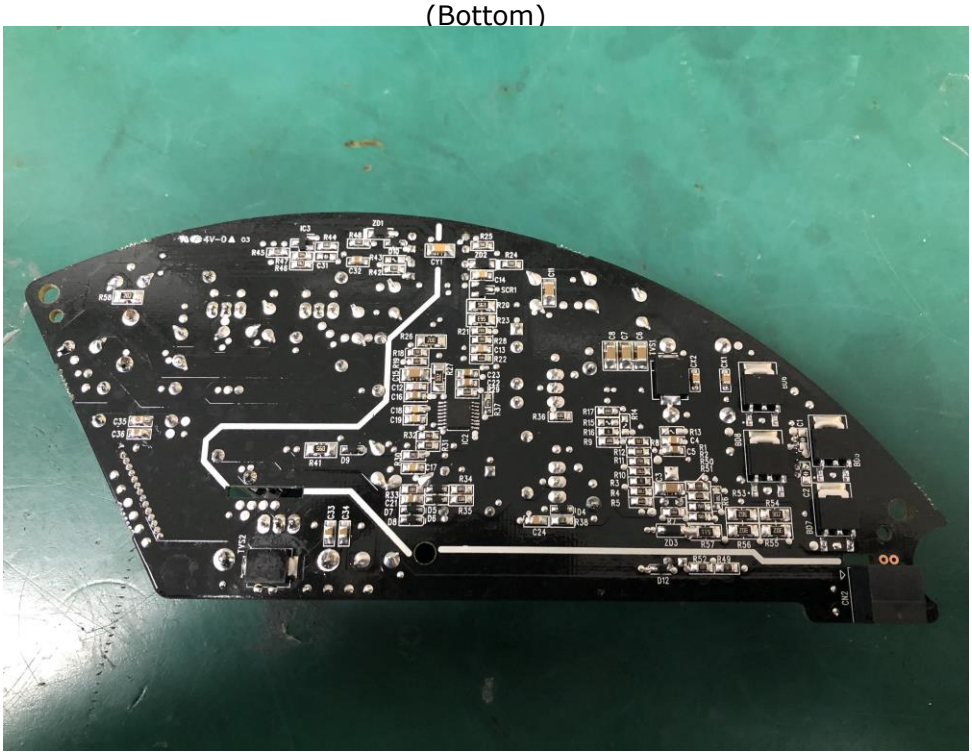
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EUT Internal View – Board 1

(Top)



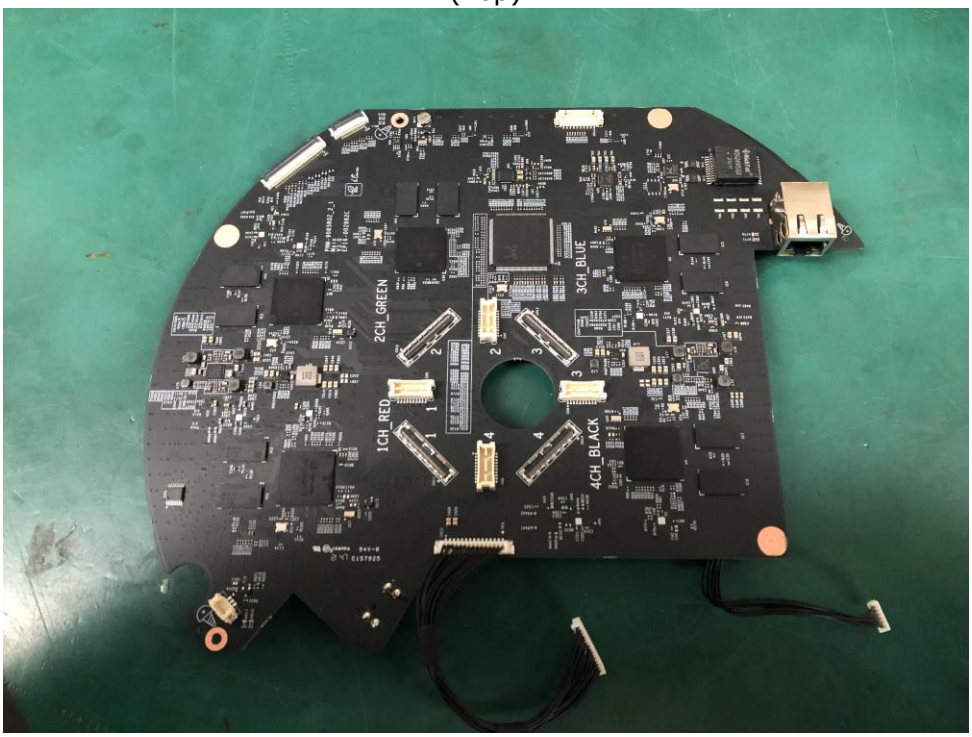
(Bottom)



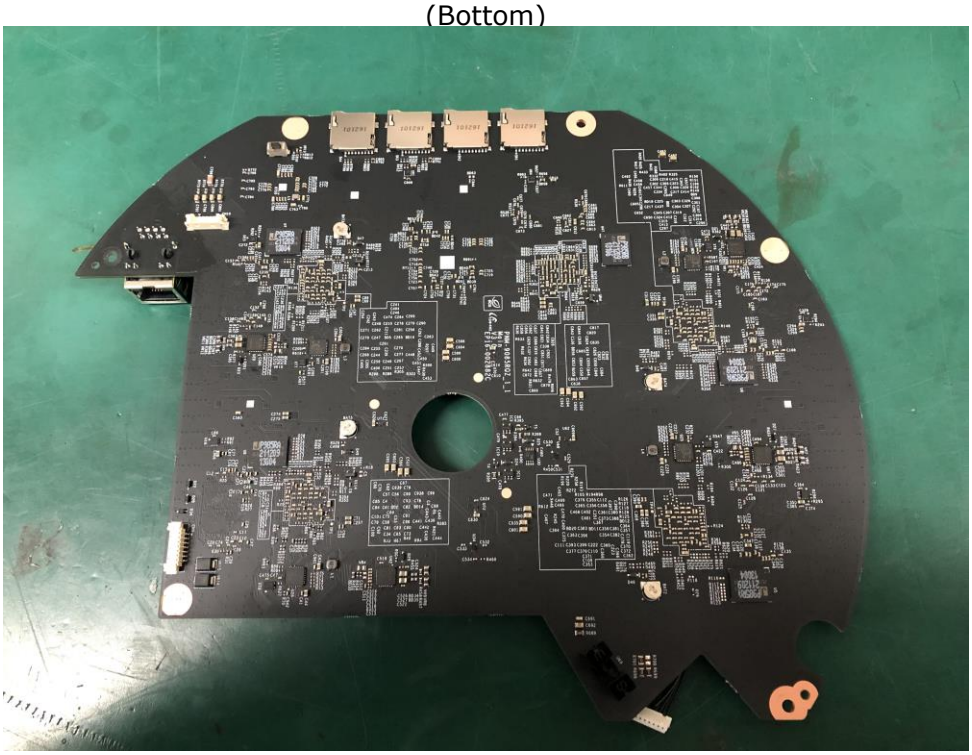
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EUT Internal View – Board 2

(Top)



(Bottom)



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EUT Internal View – Board 3

(Top)



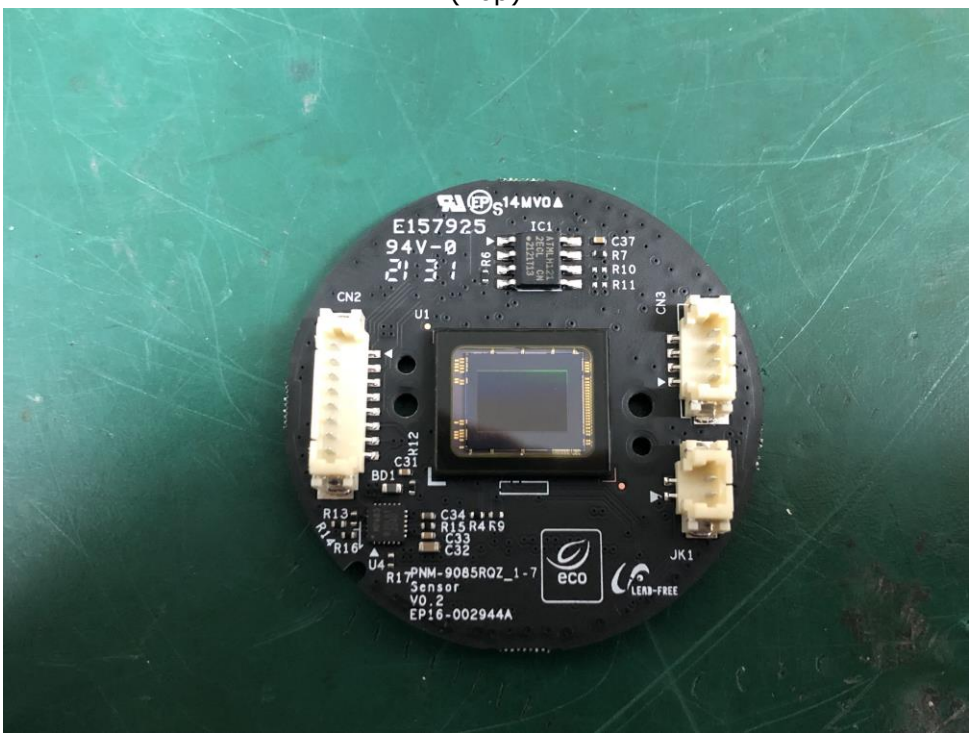
(Bottom)



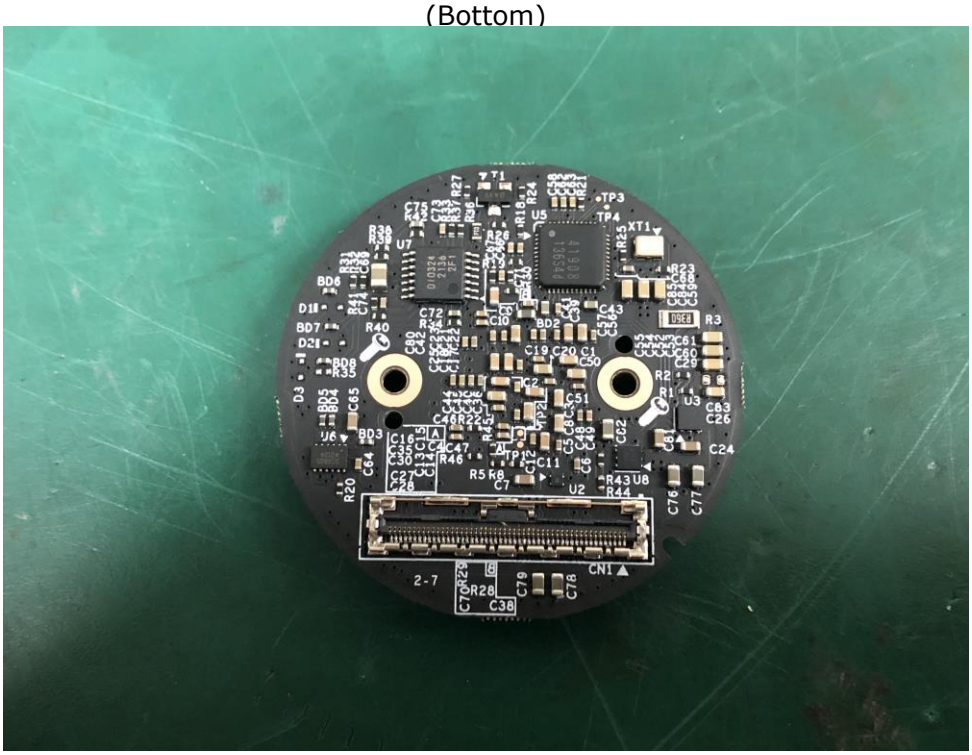
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EUT Internal View – Board 4

(Top)



(Bottom)



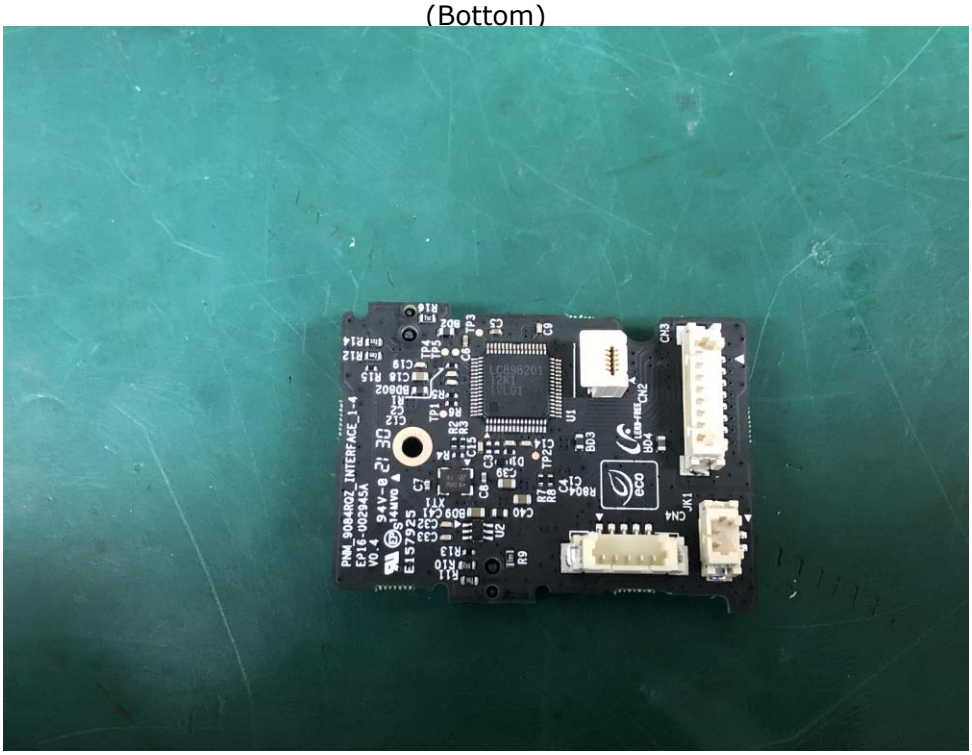
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EUT Internal View – Board 5

(Top)



(Bottom)



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Label Photographs



CAN ICES-3(A) / NMB-3(A)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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