



EMC TEST REPORT

Test Report No. : KES-E1-17T0737
Date of Issue : Nov. 14, 2017
Product name : THERMAL CAMERA
Model/Type No. : TNO-4051TN
Variant Mode : TNO-4041TN
Applicant : Hanwha Techwin Co., Ltd.
Applicant Address : 1204, Changwon-daero, Seongsan-gu, Changwon-si,
Gyeongsangnam-do, Korea
Manufacturer : Hanwha Techwin (Tianjin) Co., Ltd
Manufacturer Address : No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA,
Tianjin, 300385, People's Republic of China
Equipment authorization : ☐ Declaration of Conformity
☒ Verification
☐ Certification
Date of Receipt : Oct. 26, 2017
Test date : Nov. 05, 2017 ~ Nov. 06, 2017
Test Results : ☒ In Compliance ☐ Not in Compliance

Tested by

Dae Hyun, Kim
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

This test report is not related to KOLAS.

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KES-E1-17T0737
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REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Nov. 14, 2017	KES-E1-17T0737	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Video	
Imaging Device	Uncooled Micro volometer
Pixel size	17µm
Effective Pixels	640x480(Scale up 800x600)
Sensitivity	NETD < 50mK
Video Out	CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P), for installation
Lens	
Focal Length (Zoom Ratio)	35mm fixed
Max. Aperture Ratio	1.0
Angular Field of View	H: 17°
Min. Object Distance	TBD
Focus Control	Fixed
Lens Type	TBD
Mount Type	Board-in type
Operational	
Camera Title	Off / On - W/W : English/Numeric/Special Characters - China : English/Numeric/Special/Chinese Characters - Common : Multi-line (Max 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto Scale by Resolution
Digital Image Stabilization	Off / On(with Gyro)
Motion Detection	Off/ On(8ea, 8point Polygonal zones), Handover Off / On (32ea, polygonal zones)
Privacy Masking	- Color : Grey/Green/Red/Blue/Black/White - Mosaic
Gain Control	Off / Low / Middle / High
Electronic Shutter Speed	Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec)
Pan/Tilt	Pelco D/P, Samsung T/E, Honeywell, Bosch, Panasonic, Sungin, AD, Vicon, GE
Flip / Mirror	Flip : On/Off Mirror : On/Off Hallway view : 90°/270°
Video & Audio Analytics	Tampering, Loitering, Directional Detection, Virtual Line, Fence detection, Enter/Exit, Appear / Disappear, Audio Detection, Motion Detection, Sound Classification, Shock detection, drastic temperature swings
Alarm I/O	Input 2ea / Output 2ea
Alarm Triggers	Alarm Input, Motion Detection, Video & Audio Analytics, Network Disconnect
Alarm events	File upload via FTP, E-Mail Notification via E-mail local storage(SD/SDHC/SDXC) or NAS recording at Event Triggers External output
Audio In	Selectable (Mic IN/Line IN), Supply voltage: 2.5VDC(4mA), Input impedance: approx. 2K Ohm
Audio out	Line out, Max output level: 1 Vrms
Pixel count	support
Digital zoom	-
Remote control	RS485, RS422
Network	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.265/H.264 (MPEG-4 Part 10/AVC) : Main/Baseline/High . Motion JPEG
Resolution	800x600, 640x480, 640x360, 320x240
Max. Framerate	H.265/H.264 : Max. 30fps at all resolutions Motion JPEG : Max. 30fps
Smart Codec	Manual Mode (area-based : 5EA)
WiseStream II	Support
Video Quality Adjustment	H.264/H.265 : Target Bitrate Level Control MJPEG : Target Bitrate Level Control
Bitrate Control Method	H.264/H.265 : CBR or VBR MJPEG : VBR
Streaming Capability	Multiple Streaming (Up to 10 Profiles)
Audio Compression Format	G.711 u-law / G.726 Selectable G.726 (ADPCM) 8KHz, G.711 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps AAC-LC : 48Kbps at 8/16/32/48KHz
Audio Communication	Bi-directional (2-Way)
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1X Authentication (EAP-TLS, EAP-LEAP)
Streaming Method	Unicast / Multicast
Max. User Access	20 users at Unicast Mode
Edge Storage	SD/SDHC/SDXC (up to 256 GB) - Motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS(Network Attached Storage) Local PC for Instant Recording
Application Programming Interface	ONVIF Profile S/G SUNAPI(HTTP API) Open Platform
Webpage Language	English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
Web Viewer	TBD
Central Management Software	SmartViewer, SSM
Environmental	
Operating Temperature / Humidity	-40°C ~ +60°C (-40°F ~ +131°F) / Less than 90% RH
Storage Temperature / Humidity	-50°C ~ +60°C (-58°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66, NEMA 4X
Vandal Resistance	IK10
Electrical	
Input Voltage / Current	24VAC ± 10%, 12VDC ± 10%, PoE(IEEE802.3af)
Power Consumption	TBD
Mechanical	
Color / Material	TBD
Dimension (WxHxD)	TBD
Weight	TBD
7IEI	Palette 7mode

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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.

Voltage ☐ 230 Vac ☐ 120 Vac ☒ 24 Vac ☒ 12 Vdc ☒ PoE

Frequency ☐ 50 Hz ☐ 60 Hz ☐ Hz

1.2 Variant Model Differences

Lens size difference

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
THERMAL CAMERA	TNO-4051TN	-	Hanwha Techwin (Tianjin) Co.,Ltd.	E.U.T

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE Adapter	ANY4805C-LT1	10H300002	ANY ELECTRONICS CO., LTD	-
Notebook	ProBook4430s	-	HP	-
Notebook Adapter	SeriesPPP0009H	-	CHICONY POWER TECHNOLOGY (SUZHOU) CO.,LTD,	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	-
Alarm Jig	SIP-1201DD D0	-	SAMSUNG TECHWIN CO., LTD.	-
PTZ CONTROLLER	SPC-1010	-	-	
AC/DC Adapter	RS-AB1000	-	XEGPIS	
Phone	A1429	-	Apple	
Micro SD Card	-	-	Sandisk	

1.6 External I/O Cabling

■ AC 24 V , DC 12 V Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
THERMAL CAMERA (E.U.T)	RJ-45(LAN)	Notebook Phnoe	RJ-45(LAN)	3.0	U
	Audio In (2 Pin)		3.5 mm	1.6	U
	Audio Out (2 Pin)	Speaker	3.5 mm	1.5	U
	Alarm (2 Pin)	Alarm Jig	Alarm	3.0	U
	RS-485 (2 Pin)	PTZ CONTROLLER	RS-485	3.0	U
	Micro SD Card Slot	Micro SD Card	Micro SD Card Slot	-	-

* Unshielded=U, Shielded=S

■ PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
THERMAL CAMERA (E.U.T)	RJ-45(PoE)	PoE Adapter	RJ-45(PoE)	3.0	U
PoE Adapter	RJ-45(LAN)	Notebook	RJ-45(LAN)	1.6	U
THERMAL CAMERA (E.U.T)	Audio In (2 Pin)	Phone	3.5 mm	1.6	U
	Audio Out (2 Pin)	Speaker	3.5 mm	1.5	U
	Alarm (2 Pin)	Alarm Jig	Alarm	3.0	U
	RS-485 (2 Pin)	PTZ CONTROLLER	RS-485	3.0	U
	Micro SD Card Slot	Micro SD Card	Micro SD Card Slot	-	-

* Unshielded=U, Shielded=S



1.7 EUT Operating Mode(s)

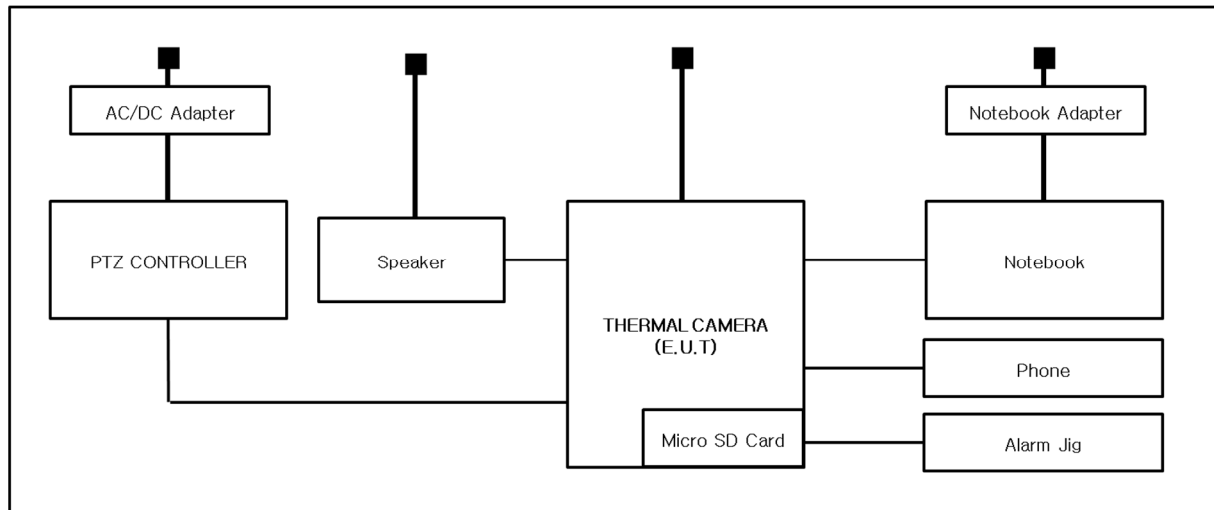
Test mode	operating
AC 24 V	E.U.T Monitoring, Ping Test
DC 12 V	
PoE	

E.U.T Test operating S/W		
Name	Version	Manufacture Company
WebViewer	-	Hanwha Techwin Co., Ltd.

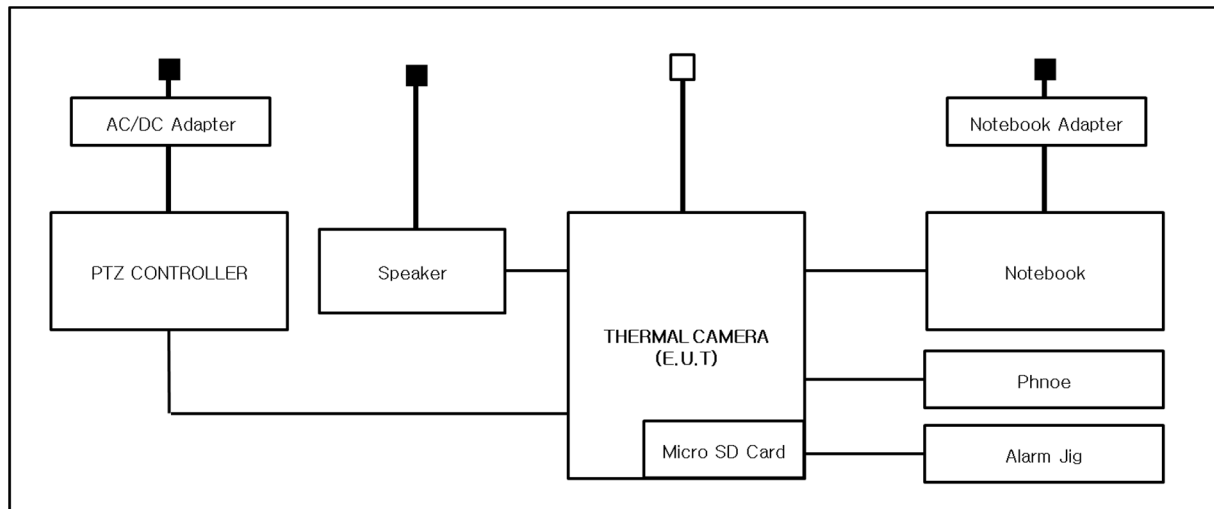
1.8 Configuration

■ AC Main
□ DC Main

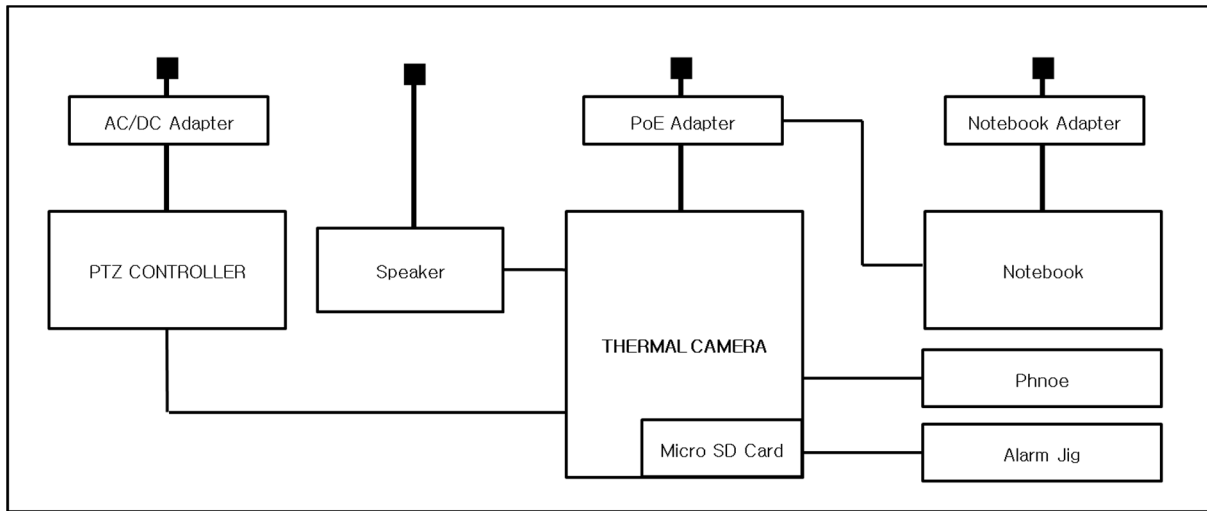
■ AC 24 V Mode



■ DC 12 V Mode



■ PoE Mode



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, Yeosu-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

1.12 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	
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-4308, C-4798, T-2311, G-914
KOREA	MSIP	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
Canada	IC	3 & 10 meter Open Area Test Sites and one conducted site	 4769B-1
Europe	CE	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	
International	KOLAS	EMI (10 meter Open Area Test Site and two conducted sites) Radio(3 & 10 meter Open Area Test Sites and one conducted site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	

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2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1
☐ Class A

☐ Group 2
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 55032:2015

☐ Class A

☐ Class B

☐ EN 55024:2010

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



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☐ **VCCI V-3 / 2015.04**

☐ Class A

☐ Class B

☐ **AS/NZS:2013**

☐ Class A

☐ Class B

☒ **47 CFR Part 15, Subpart B**

☒ CISPR 22:2009 +A1:2010

☒ Class A

☐ Class B

☐ ANSI C63.4-2014

☐ Class A

☐ Class B

☒ **IC Regulation ICES-003 : 2016**

☒ CAN/CSA CISPR 22-10

☒ Class A

☐ Class B

☐ ANSI C63.4-2014

☐ **RE- Directive 2014/53/EU**

☐ EN 301 489-1 V1.9.2

☐ Equipment for fixed use

☐ Equipment for vehicular use

☐ Equipment for portable use

☐ EN 301 489-3 V1.6.1

☐ EN 301 489-17 V2.2.1

☐ EN 60945:2002

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2.1 Conducted Emissions at Mains Power Ports

Test Date

Nov. 06, 2017

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	ESR3	R & S	101781	04, 27, 2018
☒	LISN	ENV216	R & S	101787	01, 11, 2018
☒	LISN	ESH2-Z5	R & S	100450	04, 27, 2018
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 13, 2017
☐	LISN	NNBM8124	SCHWARZBECK	8124-1002	08, 07, 2018
☐	LISN	NNBM8124	SCHWARZBECK	8124-1003	08, 07, 2018

Test Conditions

Temperature: 20,2 °C

Relative Humidity: 42,0 %

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.



2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Nov. 06, 2017

Test Location

☐ OPEN AREA TEST SITE #2 ☒ SAC #4(10 m)

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, 18, 2018
☒	AMPLIFIER	SCU 01	R & S	100603	12, 13, 2017
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	716	11, 28, 2018

Test Conditions

Temperature: 20,2 °C

Relative Humidity: 41,3 %

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.



2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Nov. 06, 2017

Test Location

SEMI ANECHOIC CHAMBER #4(10 m)

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, 17, 2018
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	05, 31, 2017
☐	ATTENUATOR	8491A	HP	32173	03, 24, 2018
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 02, 2019

Test Conditions

Temperature: 20,2 °C
Relative Humidity: 41,3 %

Frequency Range of Measurement

1 GHz to 5 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks

See Appendix A for test data.

APPENDIX A – TEST DATA

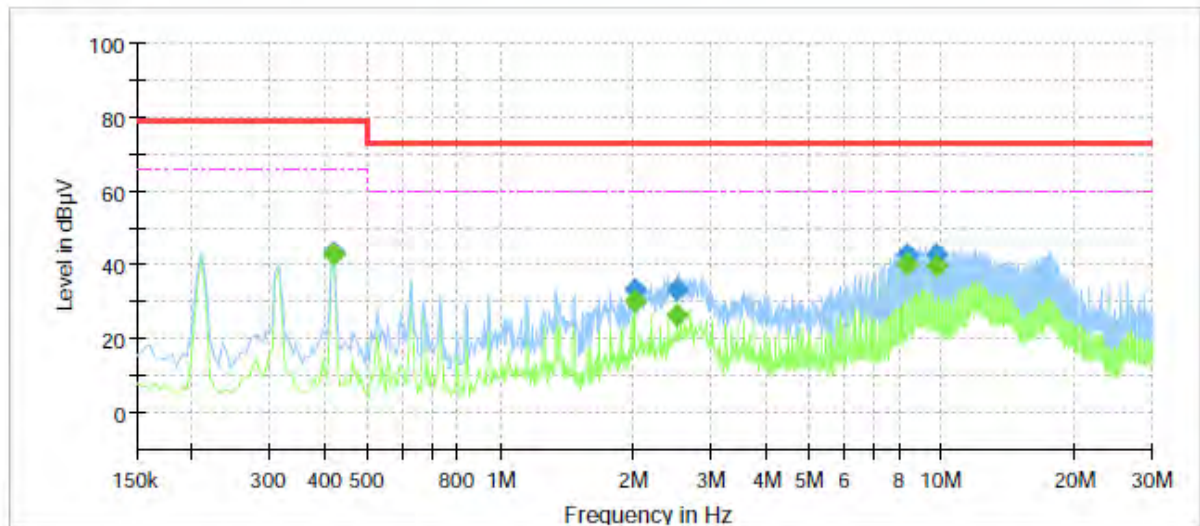
Conducted Emissions at Mains Power Ports

■ AC 24 V Mode

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	TNO-4051TN
Mode	AC 24 V
Operator Name:	KES



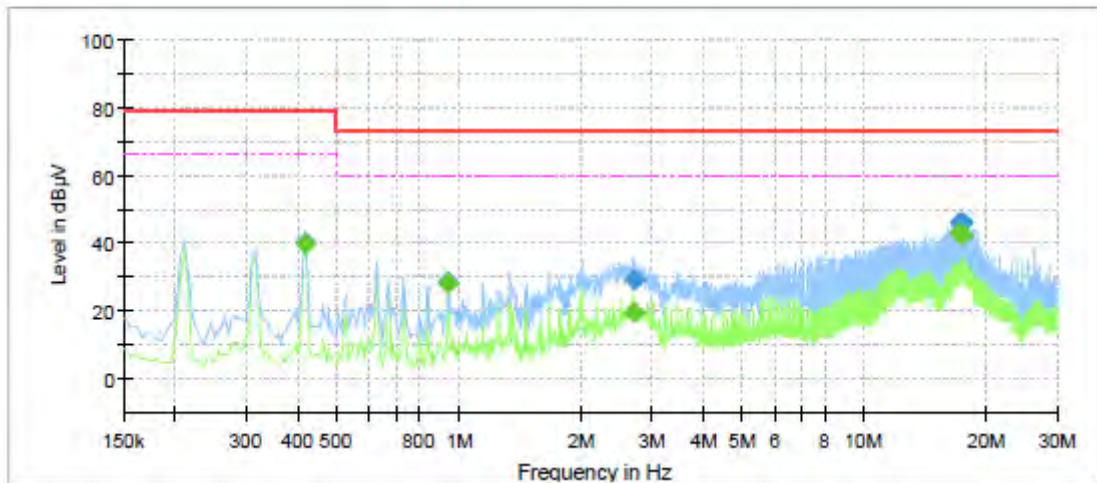
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.420000	---	42.75	66.00	23.25	1000.0	9.000	L1	19.7
0.420000	43.24	---	79.00	35.76	1000.0	9.000	L1	19.7
2.010000	---	30.38	60.00	29.62	1000.0	9.000	L1	20.3
2.010000	33.56	---	73.00	39.44	1000.0	9.000	L1	20.3
2.510000	---	26.40	60.00	33.60	1000.0	9.000	L1	20.2
2.510000	33.41	---	73.00	39.59	1000.0	9.000	L1	20.2
8.375000	---	40.28	60.00	19.72	1000.0	9.000	L1	19.9
8.375000	42.99	---	73.00	30.01	1000.0	9.000	L1	19.9
9.735000	---	39.64	60.00	20.36	1000.0	9.000	L1	20.0
9.735000	42.66	---	73.00	30.34	1000.0	9.000	L1	20.0

NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Model No.: TNO-4051TN
Mode: AC 24 V
Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.420000	---	39.75	66.00	26.25	1000.0	9.000	N	19.7
0.420000	40.18	---	79.00	38.82	1000.0	9.000	N	19.7
0.940000	---	28.24	60.00	31.76	1000.0	9.000	N	20.1
0.940000	28.78	---	73.00	44.22	1000.0	9.000	N	20.1
2.700000	---	19.87	60.00	40.13	1000.0	9.000	N	20.2
2.700000	29.17	---	73.00	43.83	1000.0	9.000	N	20.2
17.270000	---	42.78	60.00	17.22	1000.0	9.000	N	20.2
17.270000	46.05	---	73.00	26.95	1000.0	9.000	N	20.2
17.480000	---	42.54	60.00	17.46	1000.0	9.000	N	20.3
17.480000	46.03	---	73.00	26.97	1000.0	9.000	N	20.3

◆ 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))



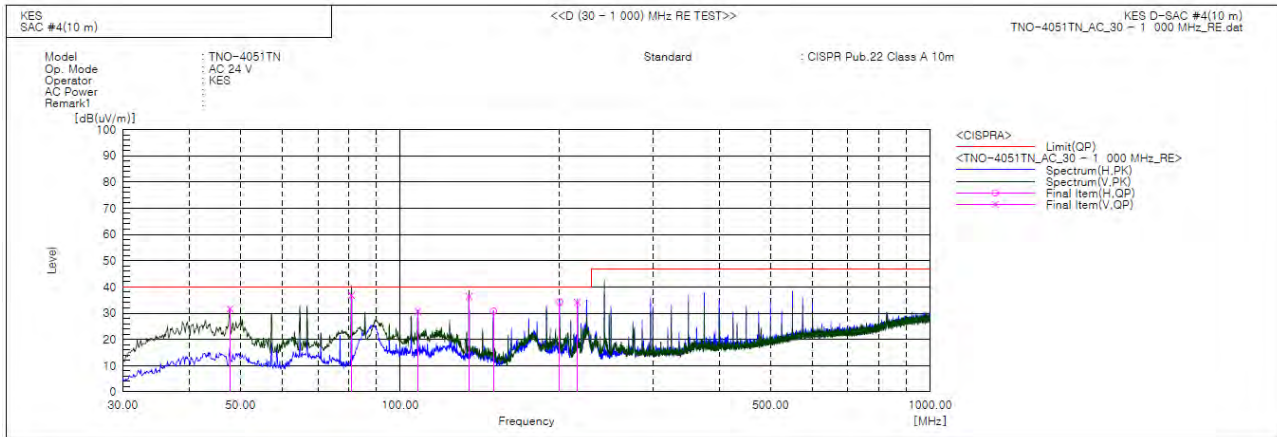
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Radiated Electric Field Emissions(Below 1 GHz)

■ AC 24 V 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	47.762	V	59.4	-27.8	31.6	40.0	8.4	118.0	75.0	
2	80.894	V	70.4	-33.6	36.8	40.0	3.2	108.0	199.0	
3	108.062	V	59.5	-28.9	30.6	40.0	9.4	172.0	340.0	
4	135.006	V	68.2	-31.8	36.4	40.0	3.6	124.0	246.0	
5	149.992	H	62.1	-31.3	30.8	40.0	9.2	200.0	210.0	
6	200.030	H	61.0	-26.7	34.3	40.0	5.7	284.0	236.0	
7	216.097	V	60.5	-26.4	34.1	40.0	5.9	156.0	318.0	

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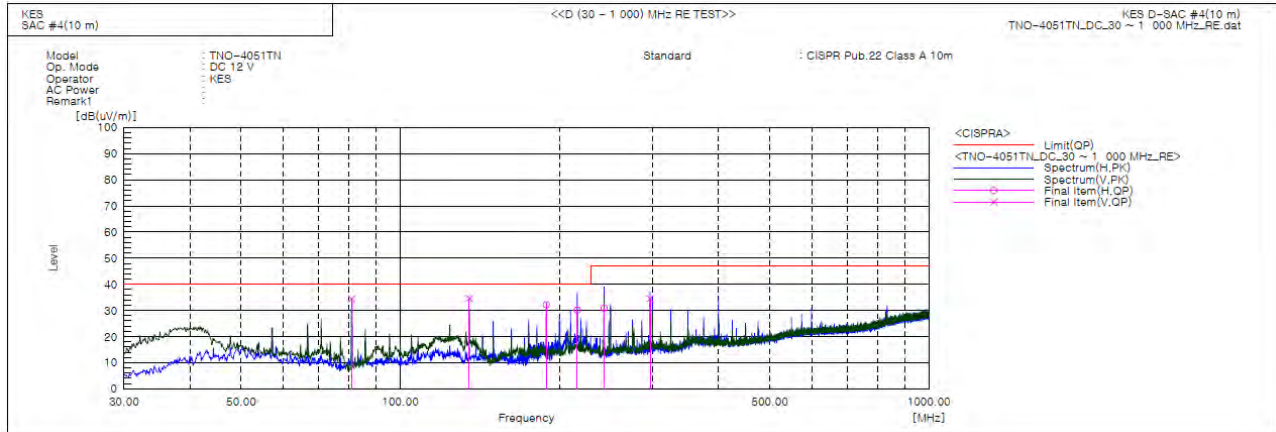


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■ DC 12 V Mode



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	80.925	V	68.0	-33.6	34.4	40.0	5.6	131.0	239.0	
2	135.003	V	66.4	-31.8	34.6	40.0	5.4	100.0	181.0	
3	188.959	H	60.2	-28.0	32.2	40.0	7.8	191.0	217.0	
4	216.162	H	56.5	-26.4	30.1	40.0	9.9	200.0	71.0	
5	243.066	H	56.4	-25.5	30.9	47.0	16.1	200.0	200.0	
6	296.993	V	58.4	-23.9	34.5	47.0	12.5	194.0	237.0	

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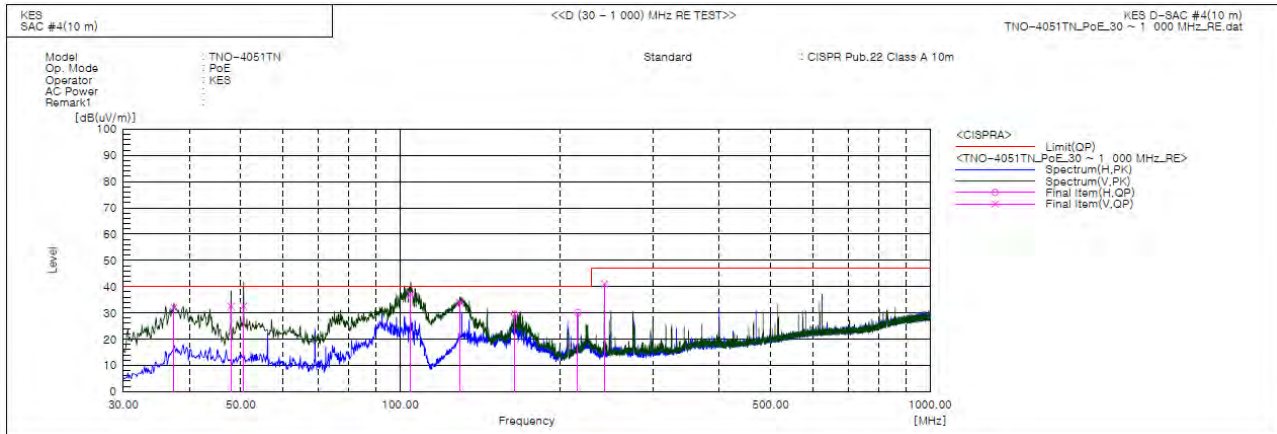


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KES-E1-17T0737
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■ PoE Mode



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	37.396	V	62.5	-30.4	32.1	40.0	7.9	126.0	333.0	
2	47.945	V	60.3	-27.8	32.5	40.0	7.5	100.0	12.0	
3	50.613	V	60.2	-27.7	32.5	40.0	7.5	150.0	23.0	
4	104.662	V	65.5	-28.5	37.0	40.0	3.0	192.0	158.0	
5	129.668	V	65.5	-31.7	33.8	40.0	6.2	220.0	132.0	
6	164.466	H	60.2	-30.6	29.6	40.0	10.4	226.0	4.0	
7	216.240	H	56.5	-26.4	30.1	40.0	9.9	400.0	218.0	
8	243.036	V	66.5	-25.5	41.0	47.0	6.0	100.0	33.0	

◆ Calculation - SAC #4(10 m)

Result(QP) [dB(μ V/m)] = (Reading(QP)[dB(μ V)] + c.f[dB(1/m)])

Margin(QP)[dB] = Limit[dB(μ V/m)] - Result(QP) [dB(μ V/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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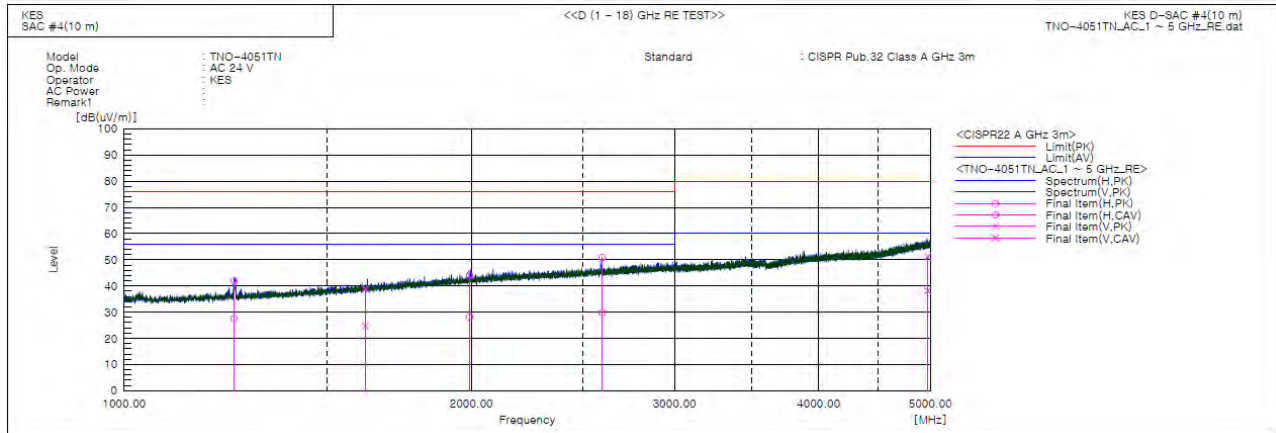
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Radiated Electric Field Emissions(Above 1 GHz)

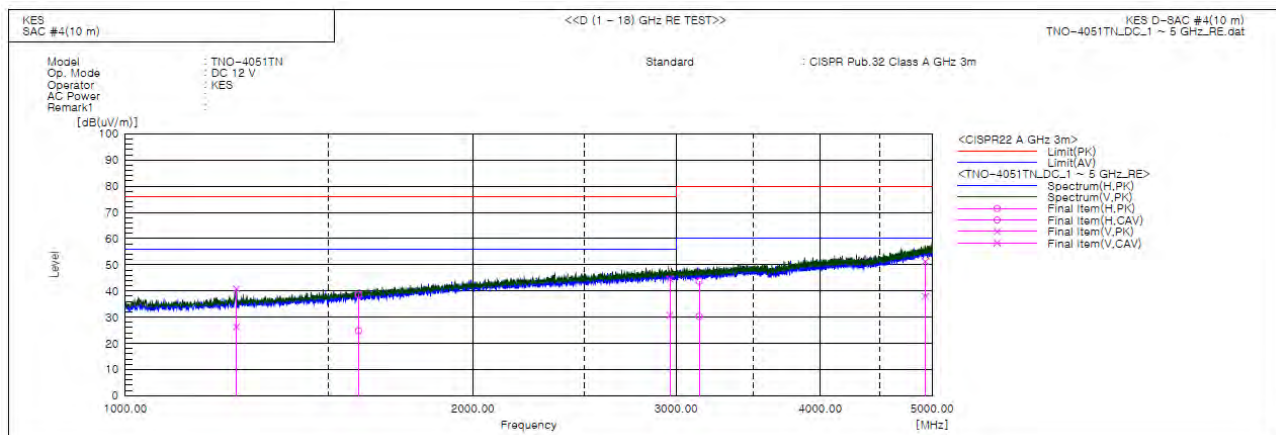
■ AC 24 V Mode



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	1245.155	H	46.5	32.2	-4.6	41.9	27.6	76.0	56.0	34.1	28.4	141.0	339.0	
2	1618.215	V	39.9	25.8	-1.0	38.9	24.8	76.0	56.0	37.1	31.2	276.0	46.0	
3	1992.995	H	41.5	25.5	2.7	44.2	28.2	76.0	56.0	31.8	27.8	1135.0	194.0	
4	2597.315	H	44.9	23.8	6.0	50.9	29.8	76.0	56.0	25.1	26.2	100.0	294.0	
5	4973.840	V	33.7	20.6	17.5	51.2	38.1	80.0	60.0	28.8	21.9	109.0	57.0	

■ DC 12 V 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	1248.760	V	45.4	30.9	-4.6	40.8	26.3	76.0	56.0	35.2	29.7	127.0	142.0	
2	1592.455	H	39.8	26.1	-1.3	38.5	24.8	76.0	56.0	37.5	31.2	123.0	341.0	
3	2964.435	V	36.8	23.0	7.7	44.5	30.7	76.0	56.0	31.5	25.3	244.0	348.0	
4	3142.050	H	35.7	22.3	8.0	43.7	30.3	80.0	60.0	36.3	29.7	145.0	188.0	
5	4932.830	V	34.0	20.6	17.3	51.3	37.9	80.0	60.0	28.7	22.1	132.0	82.0	

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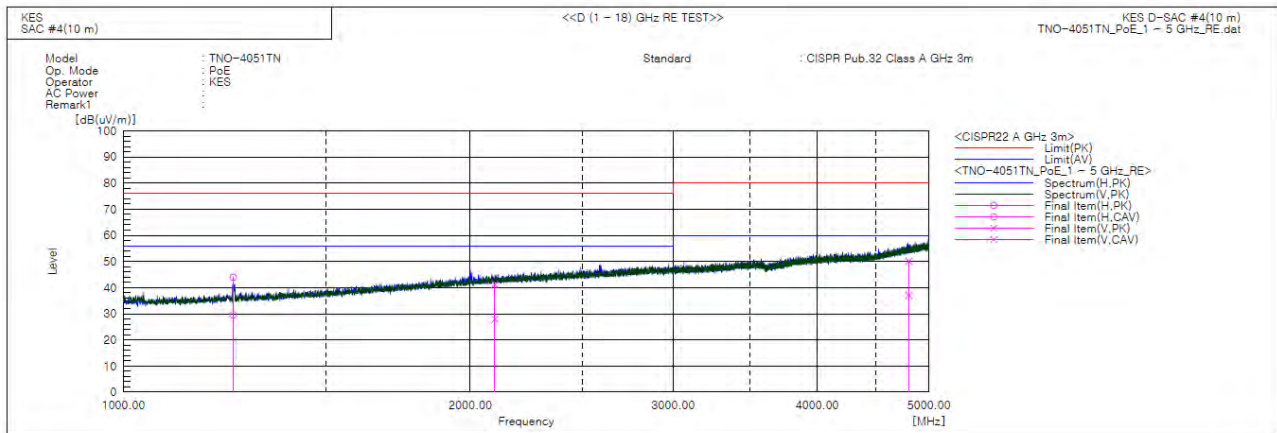


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■ PoE Mode



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	1245.335	H	48.6	34.1	-4.6	44.0	29.5	76.0	56.0	32.0	26.5	114.0	215.0	
2	2100.535	V	37.7	24.4	3.5	41.2	27.9	76.0	56.0	34.8	28.1	100.0	157.0	
3	4804.570	V	33.9	20.8	16.2	50.1	37.0	80.0	60.0	29.9	23.0	100.0	221.0	

◆ 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 Voltage Emissions



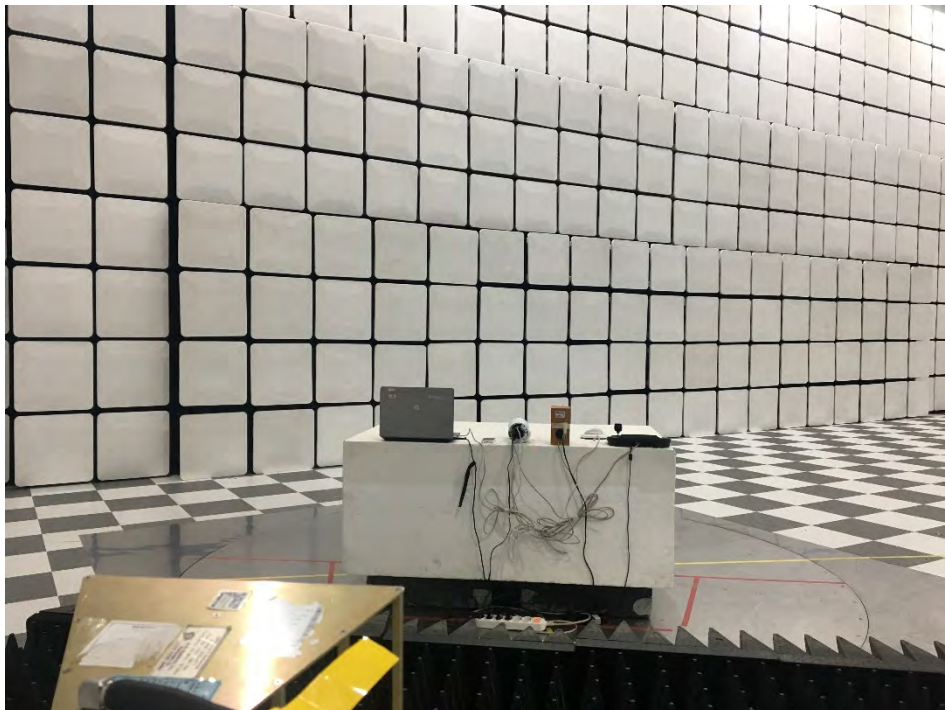
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



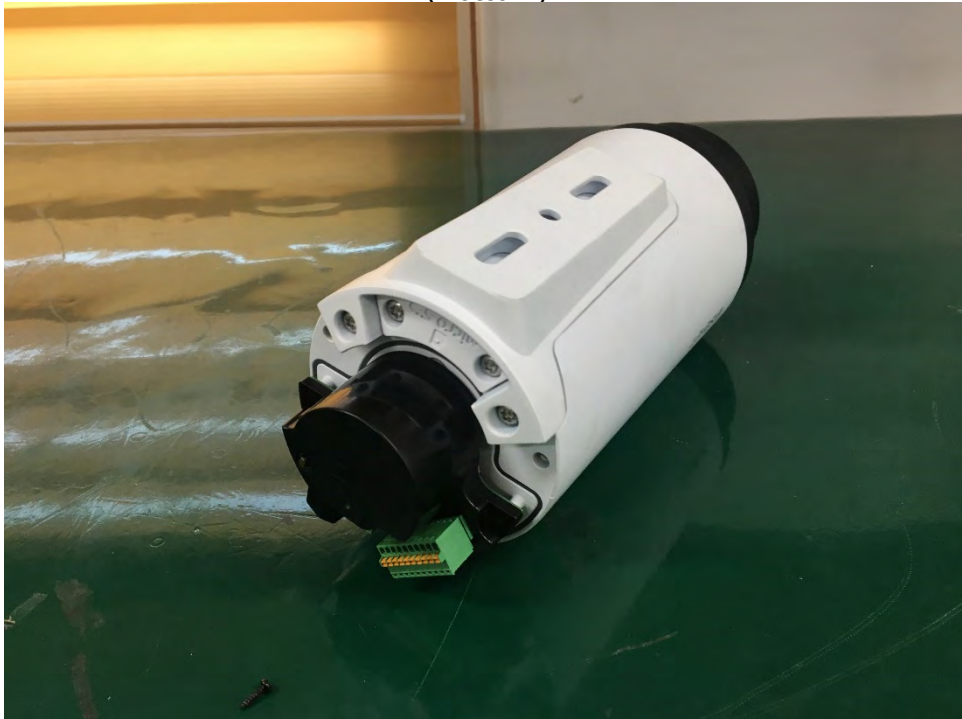
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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

(Internal View)



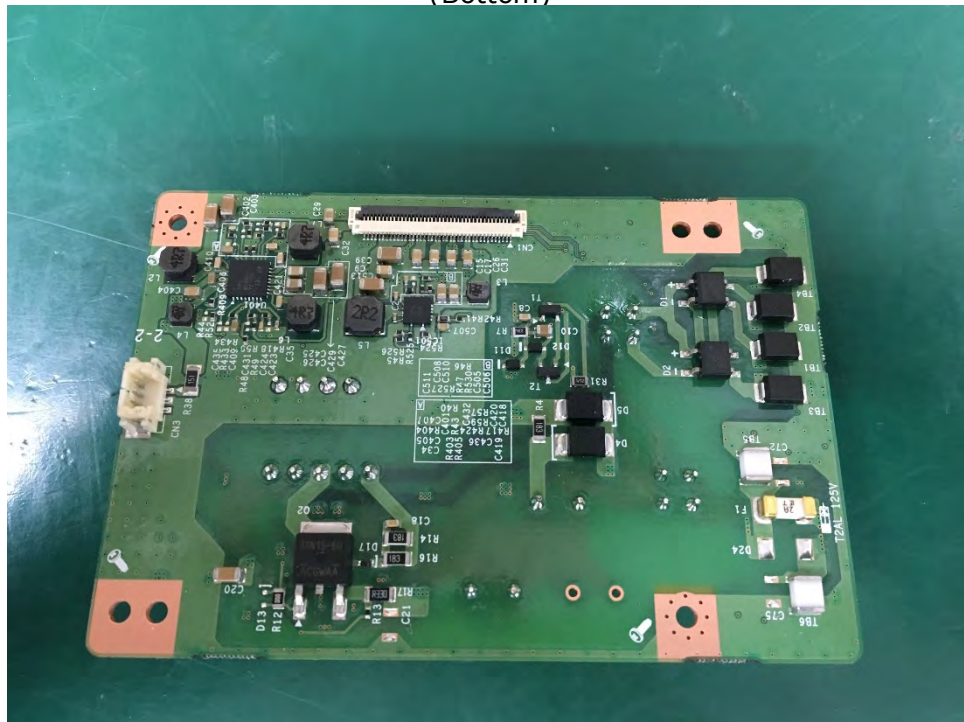
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EUT Internal View – Board 1

(Top)



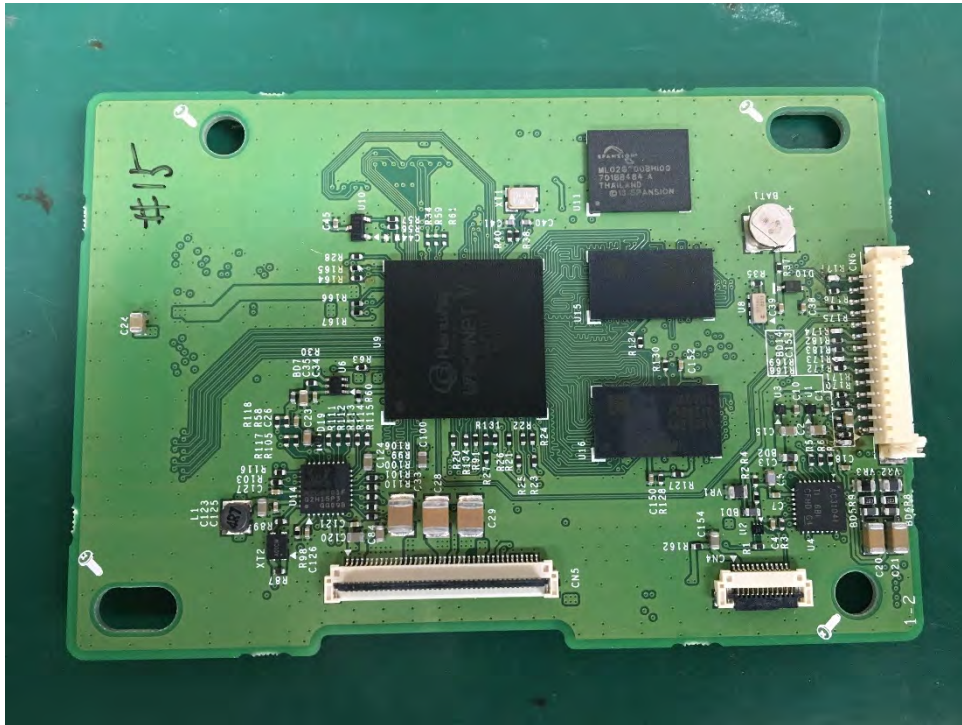
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EUT Internal View – Board 2

(Top)



(Bottom)



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EUT Internal View – Board 3

(Top)



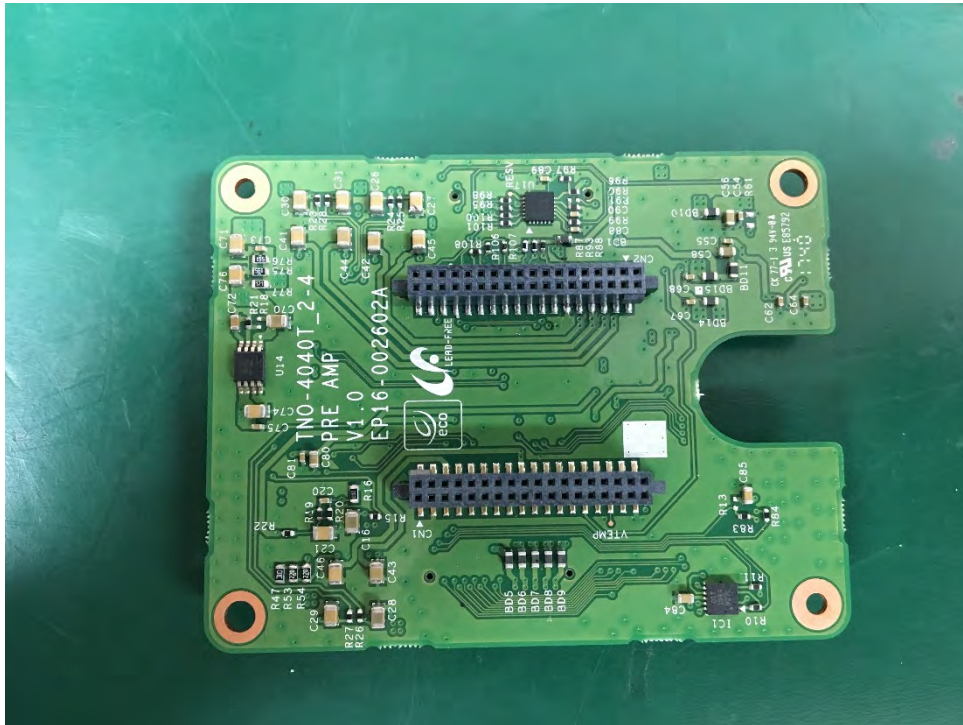
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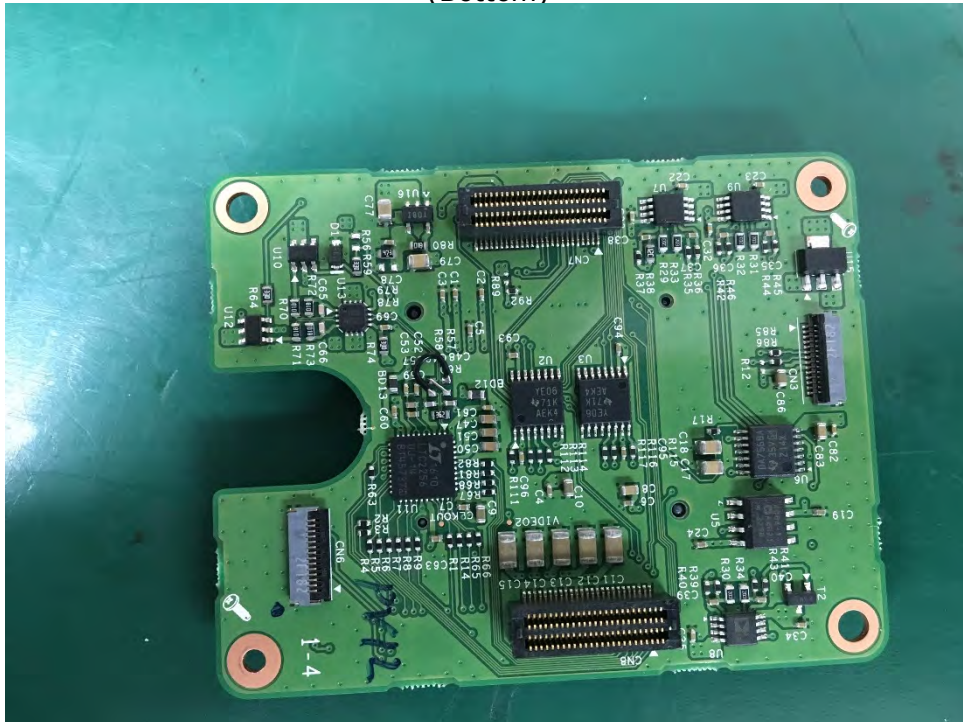
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EUT Internal View – Board 4

(Top)



(Bottom)



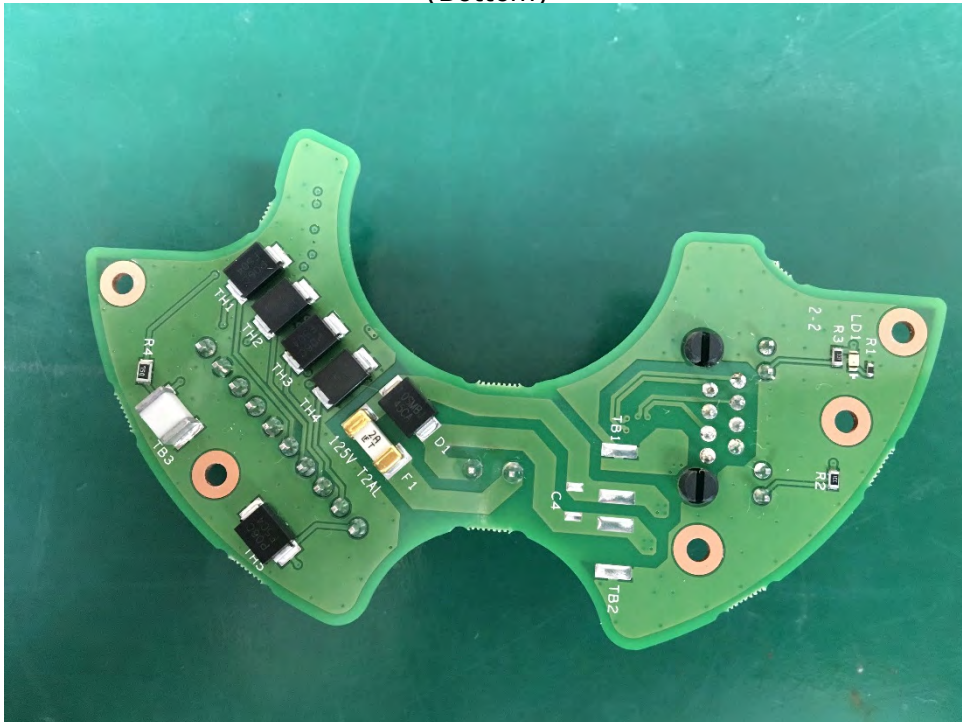
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EUT Internal View – Board 5

(Top)



(Bottom)



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EUT Internal View – Lens 1

(Top)



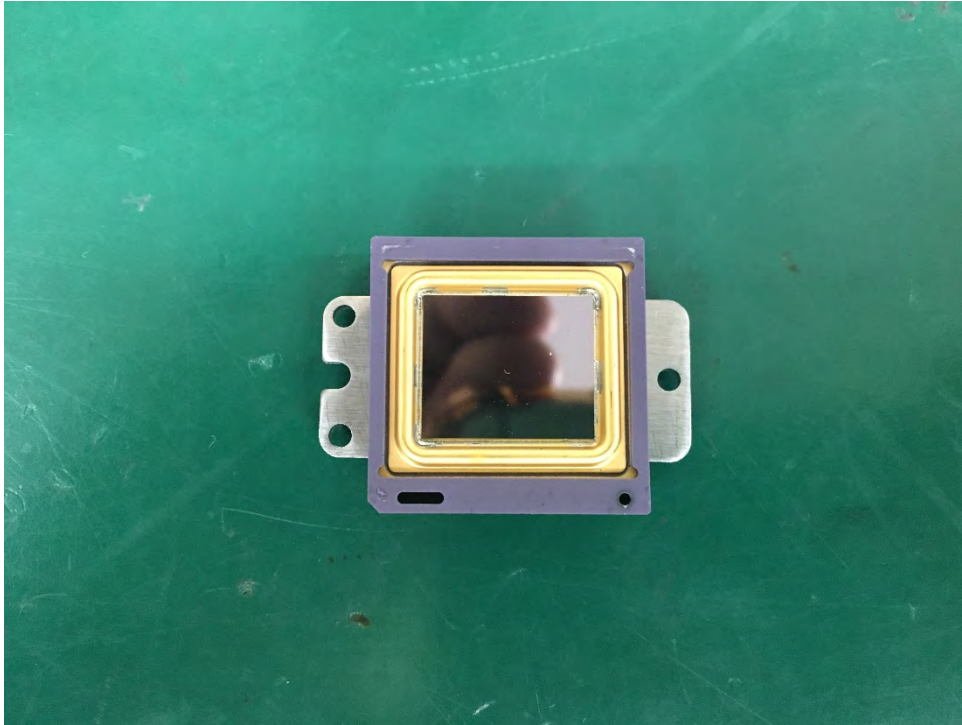
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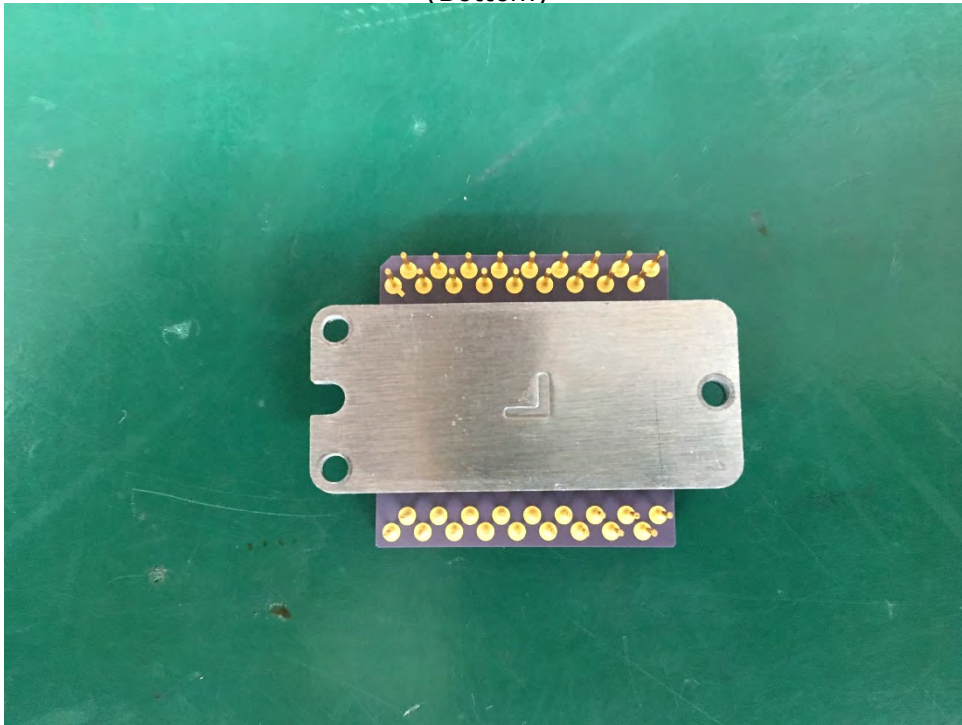
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EUT Internal View – Lens 2

(Top)



(Bottom)



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Label Photographs



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

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