



EMC TEST REPORT

Test Report No. : KES-E1-19T0802
Date of Issue : Dec. 16, 2019
Product name : NVR
Model/Type No. : LRN-1610S
Variant Mode : -
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 (TIANJIN) CO.,LTD.
2. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.
3. D-TECH CO.,LTD.
Manufacturer Address : 1. No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin,
300385, People's Republic of China
2. Lot O-2, Que Vo Industrial Zone extended area,
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
3. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do,
Korea (Suwon Industrial Complex)
Equipment authorization : **Supplier's Declaration of Conformity**
Date of Receipt : Nov. 19, 2019
Test date : Dec. 08, 2019
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Dong In, 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
Dec. 16, 2019	KES-E1-19T0802	Issued

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1.0 General Product Description

Main Specifications of EUT are:

LRN-1610S			Functions	
Display			Item	IP address, Add profile edit, Bitrate, Compression, GOP, Quality, Camera MD setup, Wisestream, Dynamic GOV/FPS, VA Setup
Network camera	Inputs	Max. 16CH		Camera video setup (Simple focus, Brightness/Contrast, Flip/Mirror, IRIS, WDR, D&N, SSNR, Shutter, SDR, DIS), Fisheye Dewarping Mode, Hallway View Setup, Camera Webpage
	Resolution	5MP ~ CIF		
	Protocols	Wisenet, ONVIF		
Decoding	Local Display	HDMI: 1920x1080, 1280x720	PTZ	Control
	Resolution	5MP(90fps), 3MP(120fps), 2MP(2400fps), 720p(480fps), D1(480fps)	Smart phone	Support Model
Performance				Protocol Support
Record	Compression	H.265, H.264, MJPEG		Control
	Record Rate(Analog)			Max. Remote Users
	Recording Bandwidth	Max. 100Mbps	Redundancy	Failover
	Resolution	5MP ~ CIF		ARB
	Mode	Normal, Schedule(Continuous/Event), Event (Pre/Post), Dual track Recording	Easy configuration	P2P(QR code)
	Event Trigger	Alarm Input, Video Loss, Camera Event(Alarm, MD, Video Analytics, Defocus)	Coaxial Control	
	Event Action	e-Mail, PTZ Preset, Buzzer, Monitor Out	Interface	
			HDMI	1EA
Search & Play	Playback Bandwidth	Max. 32Mbps(16CH simultaneously)	VGA	1EA
	User	Max. 4 Users (Local 1, Remote 3)	Audio	
	Simultaneous playback	Max. 16CH(Network)	Ethernet	RJ-45(10/100/1000BASE-T) x 1 RJ-45(PoE+) x 16
	Fisheye Dewarping	WEB / CMS / Mobile	Alarm	
Storage	Supported HDD	Up to 6TB	USB	2EA(Front 1, Rear 1)
	HDD Slot	SATA 2ea(Max. 12TB)	Power inlet	AC 1EA
	External		System	
Backup	File backup	BU/Exe(GUI), JPG/AVI(Network)	System Control	Mouse, IR remocon, Web
	Function	Multi channel(Upto 8CH) Play, Date-Time/Title display	Language	English, French, German, Italian, Spanish, Russian, Turkish, Polish, Dutch, Swedish, Czech, Portuguese, Danish, Rumanian, Serbian, Croatian, Hungarian, Greek, Norwegian, Finnish, Korean, Chinese, Japanese, Thai, Vietnamese
Network			Environmental	
Protocol		IPv4, IPv6, TCP/IP, UDP/IP, RTP (UDP), RTP (TCP), RTSP, NTP, HTTP, DHCP (Server, Client), PPPoE, SMTP, ICMP, IGMP, ARP, DNS, DDNS, uPnP, HTTPS, SNMP, ONVIF (Profile-S), SUNAPI(Server, Client)	Operating Temperature	0°C to +40°C(32°F to 104°F)
			Operating Humidity	20% ~ 85% RH
			Electrical	
			Power Input	100~240VAC±10%
DDNS		Wisenet DDNS	Power Consumption	Max. 188.2W(2HDDs, PoE on) Max. 34.6W(2HDDs, PoE off)
			PoE Budget	Max. 130W
Transmission Bandwidth		Max. 100Mbps	Mechanical	
Audio	Input/Output	16CH(network)	Color / Material	Black / Metal
	Compression	G.711, G.726, AAC(16/48KHz)	Dimension (WxHxD)	W370.0 x H44.0 x D320 mm (14.57" x 1.73" x 12.6") (1U)
Audio Communication		2-Way	Weight	2.79Kg (6.15lb)
Max Remote Users		Search(3), Live Unicast(10), Multicast(20)		
Security		HTTPS(SSL) Login Authentication		
		Digest Login Authentication		
		IP Address Filtering		
		User access log		
		802.1X Authentication(EAP-TLS, EAP-...		

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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

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NVR	LRN-1610S	-	HANWHA TECHWIN (TIANJIN) CO., LTD	EUT
HDD	WD10EURX- 63C57Y0	-	Western Digital	-
PSU	DPS-200PB185 C	HAPD194104036	DELTA ELECTRONICS, INC.	-

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1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Notebook	NT730U3E	JJRE91CF200065A	SAMSUNG	-
Notebook Adaptor	PA-1600-66	AD-6019P	LITEON	-
Monitor	24M47VQ	702NTQDA3604	LG	-
Monitor Adaptor	ADS-40FSG-19 19025GPG-1	EAY62768621	Shenzhen Honor Electronic Co., Ltd.	-
Network Camera 1	QNV-6023R	-	HANWHA TECHWIN (TIANJIN) CO., LTD	4 EA
Network Camera 2	SNV-6012MP	-	HANWHA TECHWIN (TIANJIN) CO., LTD	4 EA
Network Camera 3	XND-6081V	-	HANWHA TECHWIN (TIANJIN) CO., LTD	4 EA
Network Camera 4	SNV-6012M	-	HANWHA TECHWIN (TIANJIN) CO., LTD	4 EA
Mouse	-	-	-	-
USB Memory	-	-	Transcend	16G

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1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NVR (EUT)	RJ-45 1	Notebook	RJ-45 1	3.0	U
	HDMI	Monitor	HDMI	1.4	S
	RJ-45 2	Network Camera 1	RJ-45 2	3.0	U
	RJ-45 3	Network Camera 1	RJ-45 3	3.0	U
	RJ-45 4	Network Camera 1	RJ-45 4	3.0	U
	RJ-45 5	Network Camera 1	RJ-45 5	3.0	U
	RJ-45 6	Network Camera 2	RJ-45 6	0.3	U
	RJ-45 7	Network Camera 2	RJ-45 7	0.3	U
	RJ-45 8	Network Camera 2	RJ-45 8	0.3	U
	RJ-45 9	Network Camera 2	RJ-45 9	0.3	U
	RJ-45 10	Network Camera 3	RJ-45 10	3.0	U
	RJ-45 11	Network Camera 3	RJ-45 11	3.0	U
	RJ-45 12	Network Camera 3	RJ-45 12	3.0	U
	RJ-45 13	Network Camera 3	RJ-45 13	3.0	U
	RJ-45 14	Network Camera 4	RJ-45 14	3.0	U
	RJ-45 15	Network Camera 4	RJ-45 15	3.0	U
	RJ-45 16	Network Camera 4	RJ-45 16	3.0	U
	RJ-45 17	Network Camera 4	RJ-45 17	3.0	U
	USB Slot	Mouse	USB	1.2	U
	USB Slot	USB Memory	USB	-	U

* Unshielded=U, Shielded=S

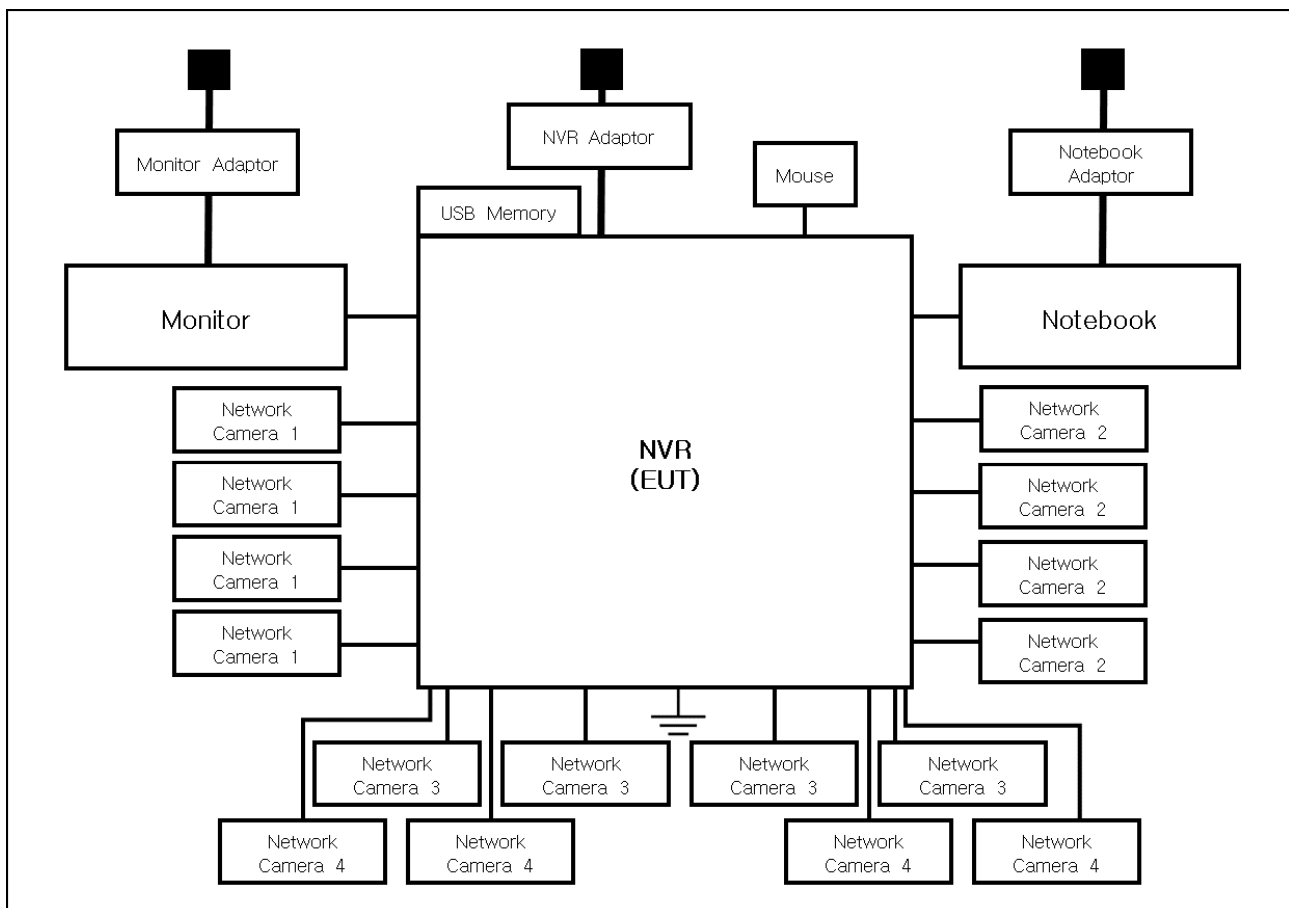
1.7 EUT Operating Mode(s)

Test mode	operating
Operate	Monitoring EUT, Ping Test

EUT Test operating S/W		
Name	Version	Manufacture Company
-	-	-

1.8 Configuration

■ AC Main
 □ DC Main



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 C63.4:2014 and CISPR 16-1-4:2012

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 0003

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-CISPR 32:2016 | ☐ Class A | ☐ Class B |
| ☐ AS/NZS CISPR32:2015 | ☐ 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 | ☒ Class A | ☐ Class B |
| ☐ 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

Dec. 08, 2019

Test Location

Electro wave Shieldroom

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, 22, 2020
☒	LISN	ENV216	R & S	101787	01, 04, 2020
☒	LISN	ESH2-Z5	R & S	100450	04, 22, 2020
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 25, 2020

Test Conditions

Temperature: 21,8 °C
Relative Humidity: 50,2 % R.H.

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.

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2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Dec. 08, 2019

Test Location☐ OPEN AREA TEST SITE #2 ☒ 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, 09, 2020
☒	AMPLIFIER	SCU 01	R & S	100603	11, 25, 2020
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 29, 2020
☒	ATTENUATOR	8491A	HP	32173	03, 11, 2020

Test Conditions

Temperature: 22,2 °C
Relative Humidity: 49,9 % R.H.

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

RemarksSee Appendix A for test data.

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2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Dec. 08, 2019

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, 09, 2020
☒	PREAMPLIFIER	8449B	AGILENT	3008A01742	01, 08, 2020
☐	ATTENUATOR	8491A	HP	35496	03, 11, 2020
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	03, 12, 2020

Test Conditions

Temperature: 22,5 °C
Relative Humidity: 50,1 % R.H.

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.



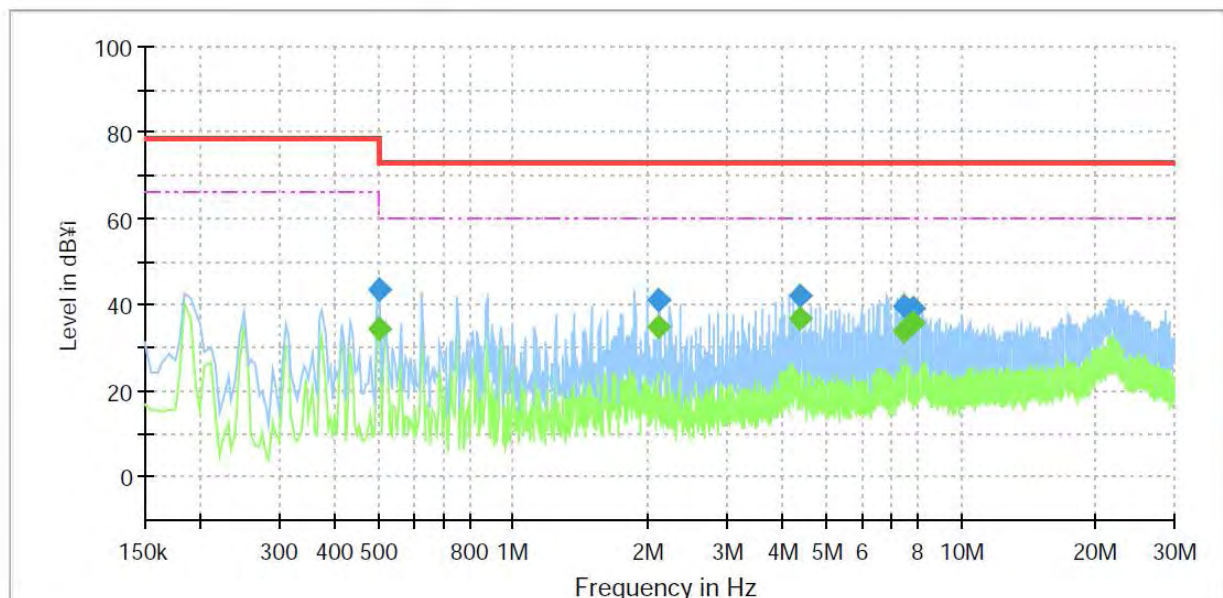
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

Test Description: Conducted Emission
Model No.: LRN-1610S
Phase: L1
Mode:
Operator Name: KES



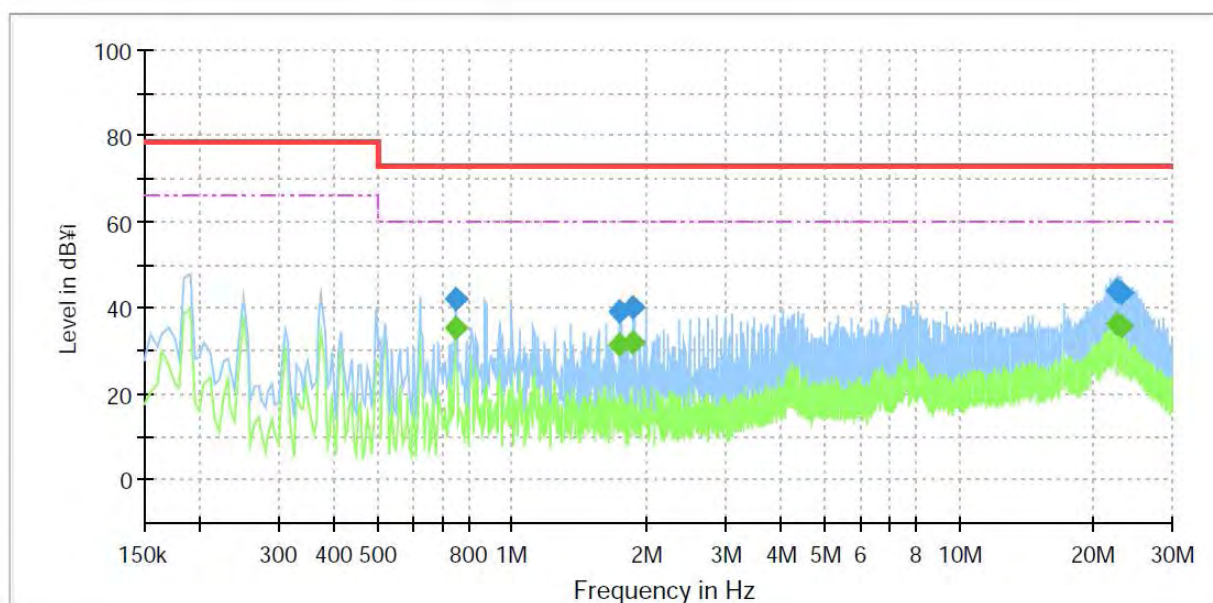
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.500000	---	34.20	60.00	25.80	1000.0	9.000	L1	19.9
0.500000	43.43	---	79.00	35.57	1000.0	9.000	L1	19.9
2.120000	---	35.05	60.00	24.95	1000.0	9.000	L1	20.4
2.120000	40.94	---	73.00	32.06	1000.0	9.000	L1	20.4
4.365000	---	37.00	60.00	23.00	1000.0	9.000	L1	19.7
4.365000	42.02	---	73.00	30.98	1000.0	9.000	L1	19.7
7.485000	---	33.85	60.00	26.15	1000.0	9.000	L1	20.0
7.485000	39.62	---	73.00	33.38	1000.0	9.000	L1	20.0
7.795000	---	35.98	60.00	24.02	1000.0	9.000	L1	20.1
7.795000	39.43	---	73.00	33.57	1000.0	9.000	L1	20.1

NEUTRAL LINE

Common Information

Test Description: Conducted Emission
 Model No.: LRN-1610S
 Phase: N
 Mode:
 Operator Name: KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.750000	---	35.24	60.00	24.76	1000.0	9.000	N	20.1
0.750000	42.17	---	73.00	30.83	1000.0	9.000	N	20.1
1.745000	---	31.66	60.00	28.34	1000.0	9.000	N	20.4
1.745000	39.13	---	73.00	33.87	1000.0	9.000	N	20.4
1.870000	---	32.20	60.00	27.80	1000.0	9.000	N	20.5
1.870000	40.13	---	73.00	32.87	1000.0	9.000	N	20.5
22.540000	---	36.47	60.00	23.53	1000.0	9.000	N	20.5
22.540000	43.96	---	73.00	29.04	1000.0	9.000	N	20.5
22.955000	---	35.73	60.00	24.27	1000.0	9.000	N	20.5
22.955000	43.54	---	73.00	29.46	1000.0	9.000	N	20.5

◆ Calculation

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

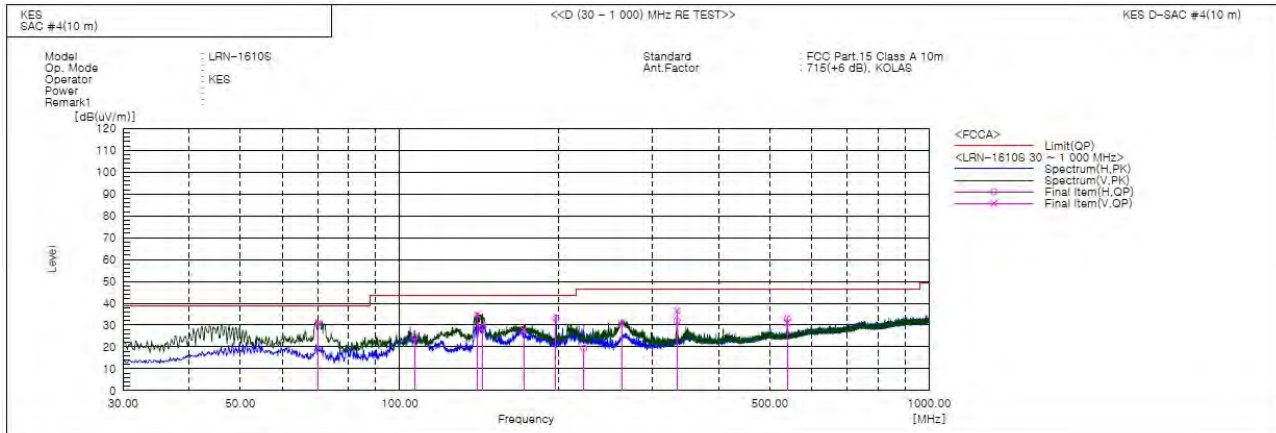
QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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



Radiated Electric Field Emissions(Below 1 GHz)



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	262.727	V	50.5	-19.8	30.7	46.5	15.8	123.0	32.0	
2	106.734	H	47.1	-22.4	24.7	43.5	18.8	399.0	323.0	
3	539.736	V	43.1	-12.1	31.0	46.5	15.5	141.0	335.0	
4	539.756	H	45.0	-12.1	32.9	46.5	13.6	375.0	323.0	
5	70.159	V	56.0	-25.0	31.0	39.0	8.0	103.0	248.0	
6	171.526	V	52.1	-24.3	27.8	43.5	15.7	111.0	203.0	
7	143.454	H	54.9	-26.0	28.9	43.5	14.6	396.0	188.0	
8	222.743	H	39.7	-20.4	19.3	46.5	27.2	394.0	166.0	
9	140.157	V	60.9	-26.1	34.8	43.5	8.7	121.0	182.0	
10	334.116	V	53.2	-16.7	36.5	46.5	10.0	128.0	89.0	
11	197.349	H	55.1	-22.0	33.1	43.5	10.4	388.0	123.0	
12	334.125	H	48.7	-16.7	32.0	46.5	14.5	379.0	33.0	

◆ Calculation – SAC #4(10 m)

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

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

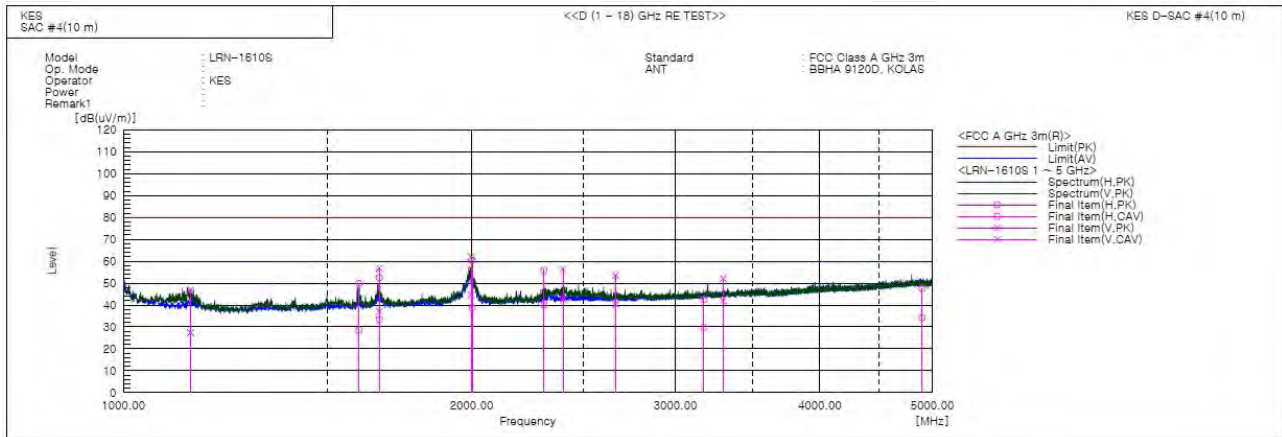


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Radiated Electric Field Emissions(Above 1 GHz)



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	1143.385	V	52.2	32.7	-5.3	46.9	27.4	80.0	60.0	33.1	32.6	133.0	183.0	
2	1598.675	H	52.2	30.8	-2.3	49.9	28.5	80.0	60.0	30.1	31.5	382.0	33.0	
3	1664.590	H	54.5	35.3	-2.0	52.5	33.3	80.0	60.0	27.5	26.7	353.0	330.0	
4	1664.875	V	58.9	39.2	-2.0	56.9	37.2	80.0	60.0	23.1	22.8	138.0	287.0	
5	1997.850	V	62.6	45.1	-0.5	62.1	44.6	80.0	60.0	17.9	15.4	172.0	332.0	
6	2002.370	H	60.9	39.3	-0.5	60.4	38.8	80.0	60.0	19.6	21.2	338.0	209.0	
7	2309.755	H	54.9	39.1	0.9	55.8	40.0	80.0	60.0	24.2	20.0	361.0	260.0	
8	2399.755	V	55.0	41.2	1.4	56.4	42.6	80.0	60.0	23.6	17.4	183.0	266.0	
9	2664.220	V	51.1	37.9	2.5	53.6	40.4	80.0	60.0	26.4	19.6	162.0	266.0	
10	3176.120	H	38.2	25.4	4.3	42.5	29.7	80.0	60.0	37.5	30.3	332.0	226.0	
11	3299.845	V	47.3	37.2	4.7	52.0	41.9	80.0	60.0	28.0	18.1	259.0	214.0	
12	4901.565	H	36.5	23.2	11.0	47.5	34.2	80.0	60.0	32.5	25.8	365.0	350.0	

◆ Calculation

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

Margin(PK/CAV)[dB] = Limit[dB(uV/m)] - Result(PK/CAV) [dB(uV/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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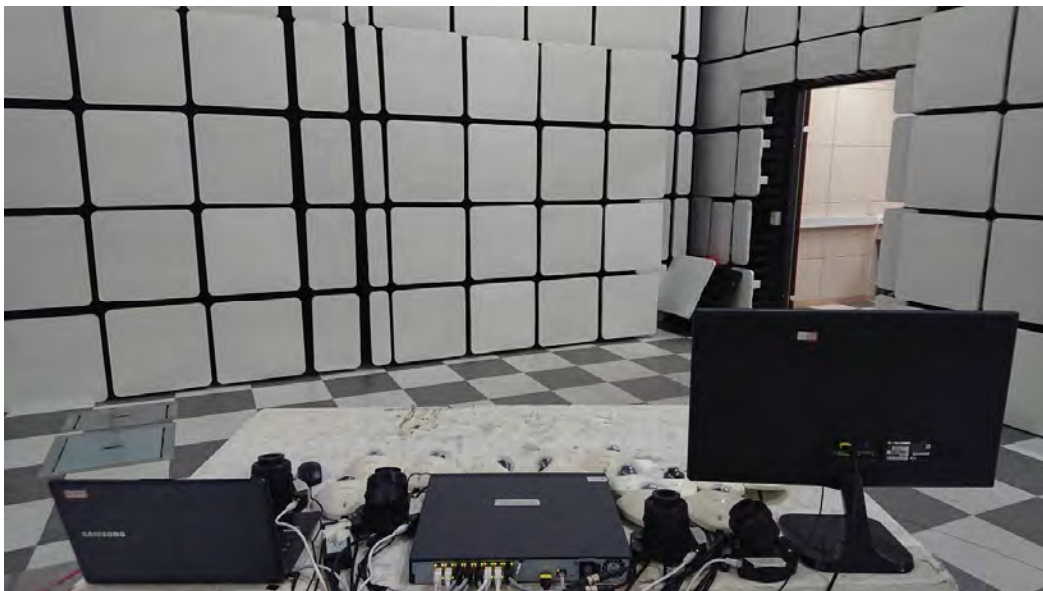
Test Setup Photos and Configuration

Conducted Emissions at Mains Power Ports



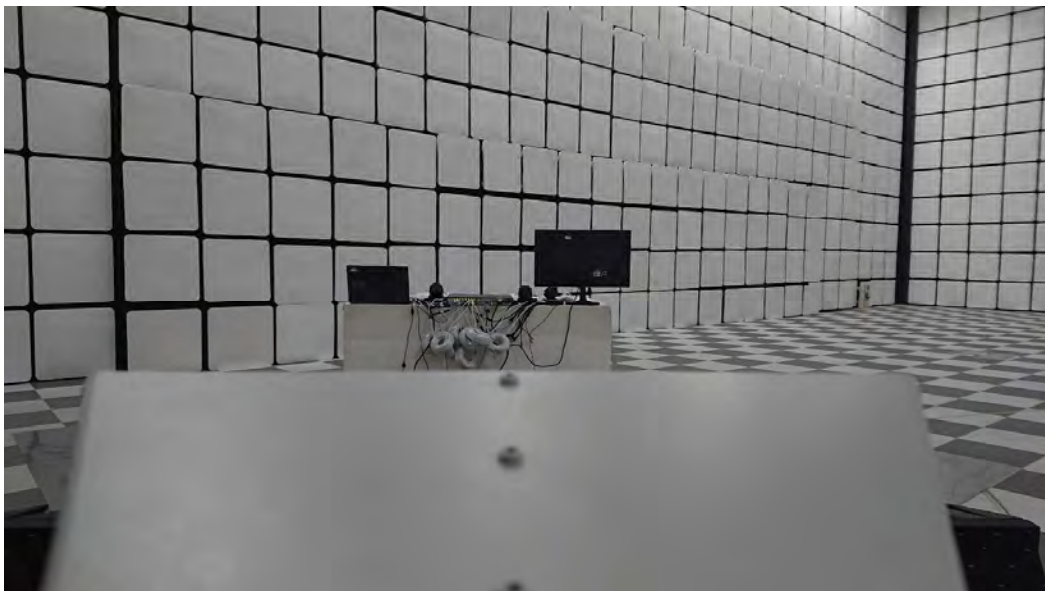
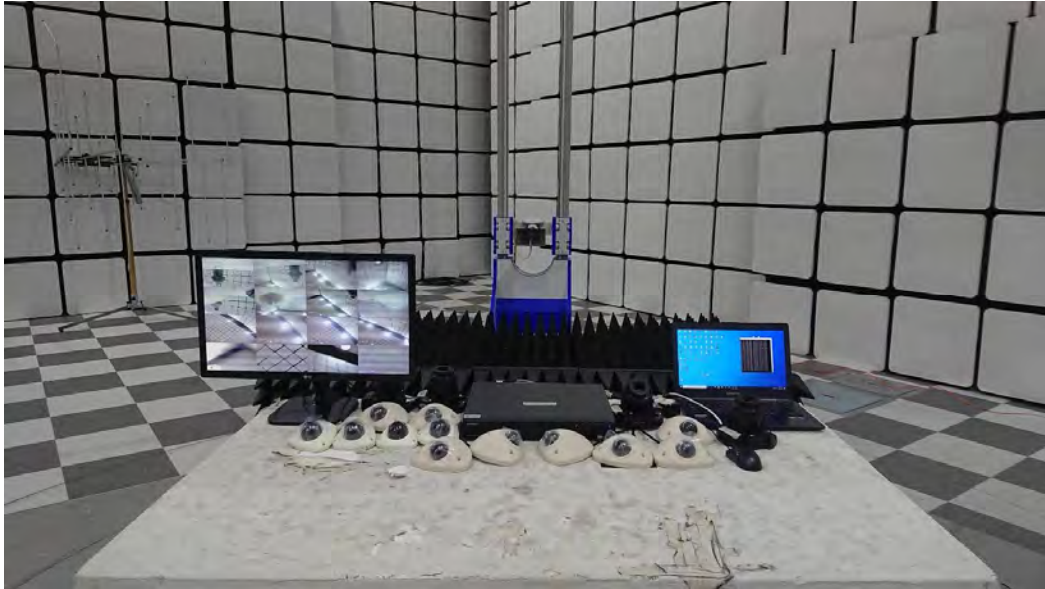
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Radiated Electric Field Emissions(Below 1 GHz)



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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

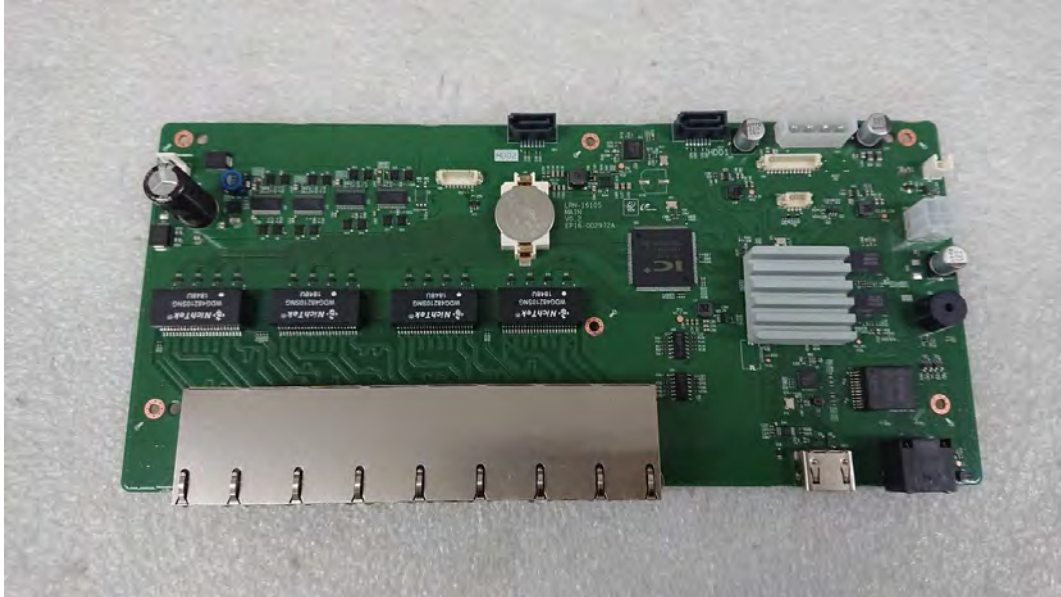
(Internal View)



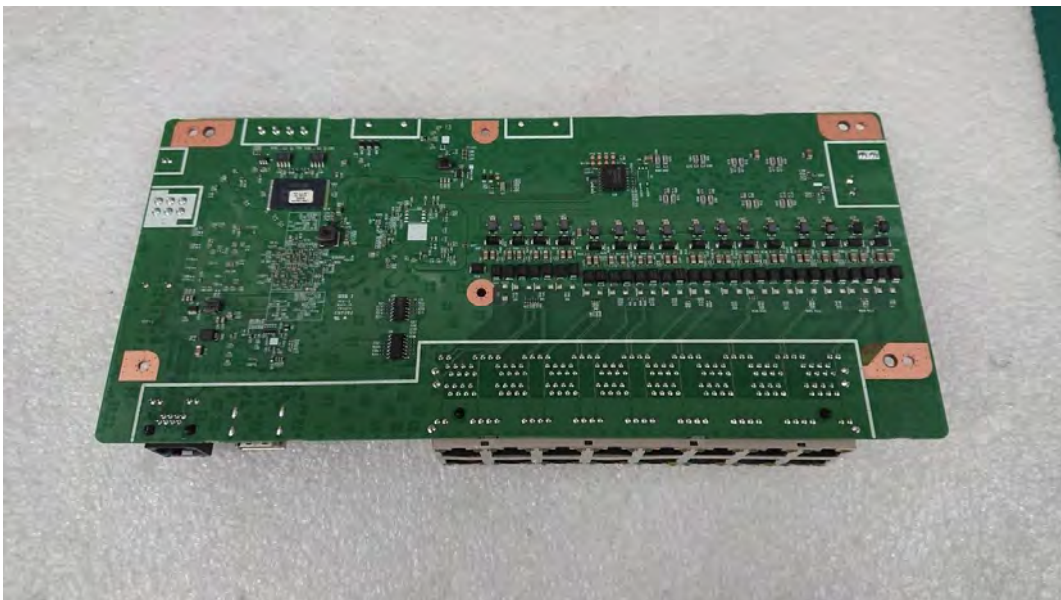
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EUT Internal View – Main Board

(Top)



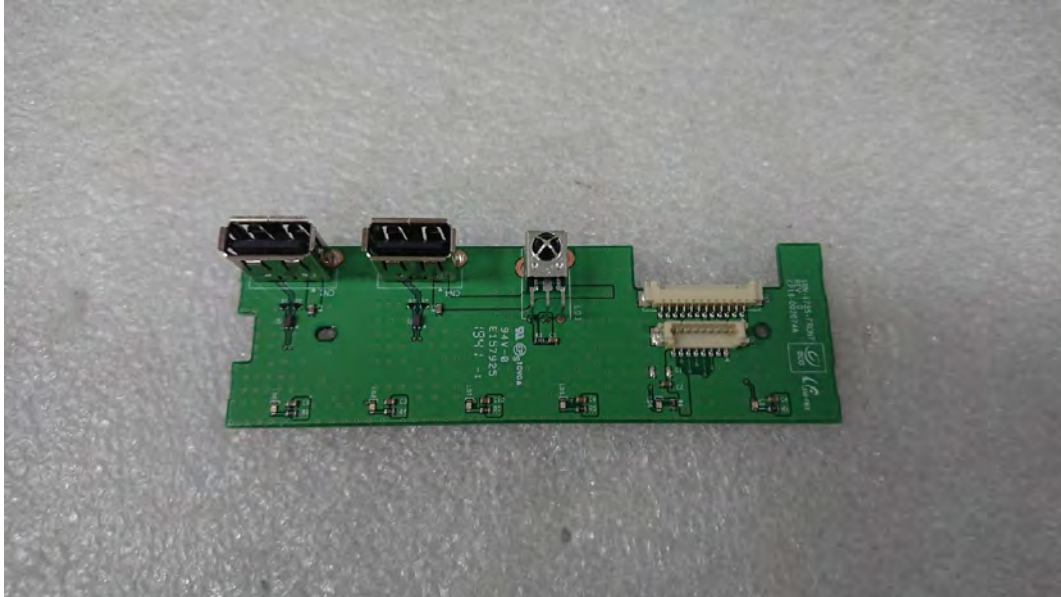
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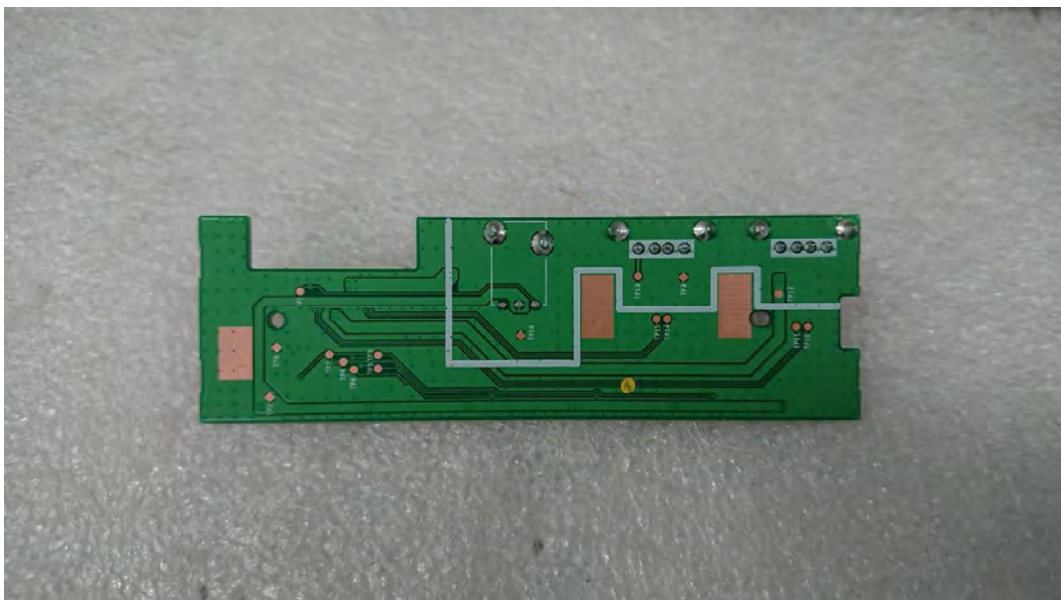
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EUT Internal View – Sub Board

(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.