



EMC TEST REPORT For FCC

Test Report No. : KES-E1-17T0519
Date of Issue : Aug, 14, 2017
Product name : DVR
Model/Type No. : HRD-1641N
Variant Model : -
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 : Jul, 10, 2017

Test date : Aug, 04, 2017 - Aug, 05, 2017

Test Results : ☒ In Compliance ☐ Not in Compliance

Tested by

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EMC Test Engineer

Reviewed by

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EMC Technical Manager

This test report is not related to KOLAS.



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Test report No.:
KES-E1-17T0519
Page (2) of (27)

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Aug, 14, 2017	KES-E1-17T0519	Issued

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TABLE OF CONTENTS

1.0	General Product Description.....	4
1.1	Test Voltage & Frequency	5
1.2	Variant Model Differences.....	5
1.3	Device Modifications	5
1.4	Equipment Under Test.....	5
1.5	Support Equipments	6
1.6	External I/O Cabling	7
1.7	EUT Operating Mode(s)	7
1.8	Configuration.....	8
1.9	Remarks when standards applied	8
1.10	Calibration Details of Equipment Used for Measurement.....	9
1.11	Test Facility	9
1.12	Laboratory Accreditations and Listings	9
2.0	Test Regulations.....	10
2.1	Conducted Emissions at Mains Power Ports	12
2.2	Radiated Electric Field Emissions(Below 1 GHz)	13
2.3	Radiated Electric Field Emissions(Above 1 GHz)	14
APPENDIX A	– TEST DATA.....	15
	Conducted Emissions at Mains Power Ports.....	15
	Radiated Electric Field Emissions(Below 1 GHz)	17
	Radiated Electric Field Emissions(Above 1 GHz)	18
	Test Setup Photos and Configuration	19
	Conducted Voltage Emissions	19
	Radiated Electric Field Emissions(Below 1 GHz)	20
	Radiated Electric Field Emissions(Above 1 GHz)	21
	EUT External Photographs	22
	EUT Internal Photographs	23



1.0 General Product Description

Main Specifications of EUT are:

HRD-1641		
Video	Inputs	16channel BNC : AHD(2MP, 4MP), HDTV(Only 2MP), HDCVI(Only 2MP), NTSC/PAL
	Resolution	2560x1440, 1920 x 1080, 960 x 480, 704 x 480 / 960 x 576, 704 x 576
Live	Frame rate	480fps , 400fps
	Resolution	2560x1440, 1920 x 1080, 960 x 480, 704 x 480 / 960 x 576, 704 x 576
	Multi Screen display	1/4/7/9/13/16/16A/PIP/Sequence
Performance		
Operating System	Embedded	Linux
Recording	Compression	H.264, Wisestream
	Record Rate(Analog)	NTSC : Up to 240fps@4MP / PAL : Up to 200fps@4MP
		NTSC : Up to 480fps@1920 x 1080 / PAL : Up to 400fps@1920 x 1080
		NTSC: Up to 480fps @ 1280 x 720, 928x480, 704X480, 704X240, 352X240
	Mode	PAL: Up to 400fps @ 1280 x 720, 928x576, 704x576, 704x288, 352x288
	Event	Manual, Schedule (Continuous/Event), Event(Pre/Post), Time lapse (1~30 fps(N), 1~25fps(P))
	Overwrite modes	Video Loss, Motion(Level 1~10), Alarm, Tampering(Level Low,Medium, High)
	Pre-alarm	Continuous
	Post-Alarm	Up to 30 sec (5,10,20,30 Sec)
	Search mode	Up to 6 hour (5,10,20,30 sec,1,3,5,10,20 min,1,2,3,4,5,6 hour)
Search & Playback	Search mode	Date/time, Event, Back up, Motion (* All Search Included Preview Function)
	Playback function	Fast Forward/Backward (x2,x4,x8,x16,x32,x64,) * Backward Play with I-frame Only, Slow Forward/Backward (x1/2,x1/4,x1/8)
	Simultaneous playback	Step Forward/Backward * Backward Play with I-frame Only 16CH(Local Monitor, CMS)
Network(IPv4)	Transmission speed	Record(Main) Stream) 4MP : 15fps/CH, 1080p/720p/WD1/4CIF/2CIF/CIF : 30fps/CH(N), 25fps/CH(P)
	Transmission Bandwidth	Network(Sub) Stream) WD1/4CIF : 12fps/CH, 2CIF/CIF/QVGA/QCUCF : 30fps/CH(N), 25fps/CH(P)
	Bandwidth control	Up to 64Mbps
	Stream	Selectable
	Remote users Maximum	Record Stream and Network Stream Selectable (at monitoring Viewer)
	Protocol support	Search(3)/Live Unicast(10)/Live Multicast(20)
	Web Browser	TCP/IP,DHCP,PPPoE,SMTP,FTP,HTTP,DDNS,RTP,RTSP,SNMP
	Viewer Software	Windows OS : Internet Explorer 8, 9, 10, Firefox 3.6 or higher, Chrome 12 or higher
	Platform	Mac OS : Safari 5 or higher, Firefox 3.6 or higher
	Control	SSM, Webviewer, SmartViewer, iPOLiS mobile viewer
Smart phone	Protocol support	Android , iOS
	Control	RTP, RTSP, HTTP
	Remote users Maximum	Live(8ch) : Multi-Profile Support Playback(1ch)
Storage	Internal	Search (3), Live Unicast (10), Multicast (20)
	External (e-SATA Interface)	Up to 2 SATA HDDs (0~6TB HDD)
	File Format (Back-up)	e-SATA, USB(for Backup)
Security	Password Protection	BU(DVR Player), SEC(Include Player), AVI
	Data Authentication	1 Admin, 10 Group , 10 User per 1 Group
Easy Configuration		Watermark
Interface		N/A
Monitors	VGA	1 VGA (1920x1080, 1280x1024, 1280x720)
	HDMI	1 HDMI (4K(3840 x 2160), 2K(2560 x 1440), 1920x1080, 1280x1024, 1280x720)
	Composite(Spot)	1 HDMI(4K) * Included OSD On Screen, Multi mode Support
	Loop Outputs	BNC(1CH) * Included OSD On Screen, Multi mode Support
Audio	Inputs/Output	N/A
	Compression	4CH line in / 1CH line out
	Sampling rate	G.711
Alarm	Inputs/Outputs	8KHz
	Remote notification	Terminal 16 Inputs (NO/NC) / Terminal 4 relay Outputs (NO/NC), Rating : 30V DC/2A, 250V AC/0.25A
	Connections	Notification via e-mail
Connections	Ethernet	1 RJ45 10/100/1000 Base-T
	Serial interface	RS-485(Half Duplex) for PTZ, Samsung System Keyboard
	USB	1 ports(USB 3.0, Rear), 2 ports(USB 2.0, Front)
	e-SATA	1 External SATA ports
	Application Support	Mouse, IR Remocon
	Protocol support(RS-485)	Samsung-E/Samsung-T/Pelco-D/Pelco-p/Panasonic/ Phillips/ AD/ DIAMOND/ ERNA/ KALATEL/ VCL TP/VICON/ ELMO/GE
	Protocol support(Coaxial)	NTSC/PAL : Pelco-C (Coaxitron)
	General	AHD : ACP(AHD Coax Protocol)
Electrical		
Electrical	Input Voltage/Current	DC12V Adaptor(100~250V AC $\pm$ 10% , 50/60Hz)
	Power consumption	Max. 52W
Environmental	Operating Temperature/Humidity	+0°C to +40°C (+32°F to +104°F) / 20% to 85% RH
Mechanical	Dimension (W x H x D)	W370.0x H44.0 x D320(14.57" x 1.73" x 12.6")
	Weight (no hard disks)	Approx. 2.328kg
Language	GUI	English, French, German, Spanish, Italian, Russian, Polish, Czech, Turkish, Netherlands Portuguese, Swedish, Danish, Rumania, Serbia, Croatia, Hungary, Greek, Finnish, Norwegian, Korean, Japanese, Chinese(Traditional), Thai , Chinese(Simplified)(25 Language) * For Korean Model : Korean
	Web Browser	English, French, German, Spanish, Italian, Russian, Polish, Czech, Turkish, Netherlands Portuguese, Swedish, Danish, Rumania, Serbia, Croatia, Hungary, Greek, Finnish, Norwegian, Korean, Japanese, Chinese(Traditional), Thai , Chinese(Simplified)(25 Language) * For Korean Model : Korean



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
DVR	HRD-1641N	-	Hanwha Techwin (Tianjin) Co.,Ltd.	E.U.T
DVR ADAPTOR	FSP060-DIBAN2	H00000212	Zhonghan Electronics (Shenzhen) Co., Ltd.	-
HDD	WD40PURX-64N960	WCC7K5PX74R4	WD	4 TB
IR REMOTE CONTROL	EP10-000331A	-	-	-
MOUSE	MOKJUO	-	Primax Electronics Ltd.	-



1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
MONITOR 1	LT23C350	009MHYCH106388P	SAMSUNG	-
MONITOR 1 ADAPTOR	A4514_DSM	CN07BN4400721ASE 38GCOY0XS	Samsung Electro- Mechanics Co.,Ltd	-
MONITOR 2	S24E370DL	0NTWHTPH200179Y	SAMSUNG	-
MONITOR 2 ADAPTOR	A3514_FPN	CN07BN4400832ASK 28GCTR235 R.D	POWERNET Technologies Crop.	-
MONITOR 3	SMT-2232	C95V67VF900038B	Weihai Daewoo Electronics Co., Ltd.	-
CCTV CAMERA * 16 ea	SDH-C74041- CAM	-	SMASUNG	-
CCTV CAMERA ADAPTOR * 2 ea	FSP060-DIBAN2	H00000195	Zhonghan Electronics (Shenzhen) Co., Ltd.	
CONTROLLER	SPC-1010	C50E67WG10100F	SamSung Techwin Co.,Ltd	-
CONTROLLER ADAPTOR	RS-AB1000	-	Dongguan Jinhuaasheng Power Technology Co.,Ltd	-
SPEAKER	BR10000A CUVE	-	BEIJING EDIFIER HI- TECH GROUP.	-
MIC	CMK-303	-	CAMAC	-
ALARM 1	-	-	-	-
ALARM 2	-	-	-	-
USB 3.0 Memory	-	-	-	16 GB
Notebook	X56K	HN11N5151FJ0045W	HANSUNG	-
Notebook ADAPTOR	A12-120P1A	F180271552011758	CHICONY POWER TECHNOLOGY CO.,LTD.	-
SSD Memory	SSD320	B12734-0373	Transcend	64 GB

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
DVR (E.U.T)	D-SUB	MONITOR 1	D-SUB	1.4	S
	HDMI	MONITOR 2	HDMI	1.4	S
	BNC	MONITOR 3	BNC	2.5	S
	BNC	CCTV CAMERA x 16 ea	BNC	10.0	S
	2 Pin	CONTROLLER	2 Pin	3.2	U
	Audio Out	SPEAKER	Audio Out	1.2	U
	Audio IN	MIC	Audio IN	1.2	U
	3 Pin	ALARM 1	3 Pin	3.2	U
	3 Pin	ALARM 2	3 Pin	3.6	U
	USB 3.0	USB 3.0 Memory	USB 3.0	-	-
	RJ-45	Notebook	RJ-45	5.2	U
	e-SATA	SSD Memory	e-SATA	0.5	U
	USB 2.0	MOUSE	USB 2.0	1.5	U

* Unshielded = U, Shielded = S

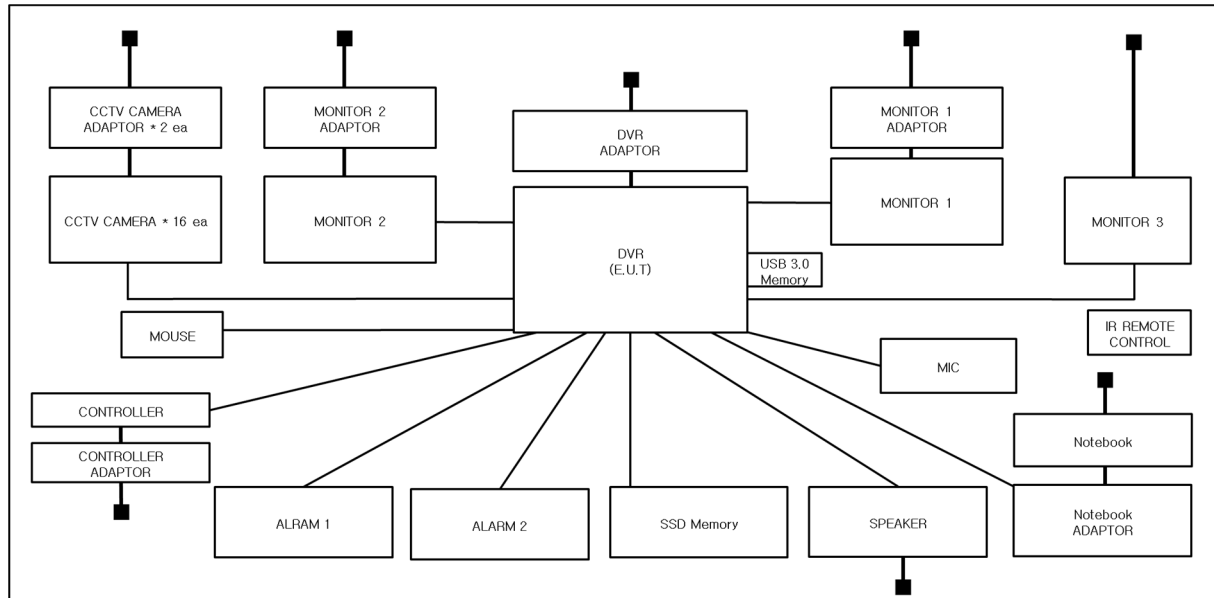
1.7 EUT Operating Mode(s)

operating
1. Check the output of the camera images on the monitor 2. Check the video output of the camera via the laptop and ping test.

E.U.T Test operating SW		
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 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)	

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



☐ **VCCI V-3 / 2015.04**

☐ Class A

☐ Class B

☐ **AS/NZS CISPR22:2009 +A1:2010**

☐ 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

2.1 Conducted Emissions at Mains Power Ports

Test Date

Aug. 04, 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	101783	04, 27, 2018
☒	LISN	ENV216	R & S	101137	02, 03, 2018
☒	LISN	ENV216	R & S	101786	04, 27, 2018
☒	PULSE LIMITER	ESH3-Z2	R & S	101914	12, 13, 2017

Test Conditions

Temperature: 23,5 °C

Relative Humidity: 45,1 %

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

RemarksSee Appendix A for test data.



2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Aug. 05, 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: 24,1 °C

Relative Humidity: 54,9 %

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

Aug. 05, 2017

Test Location

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, 17, 2018
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	05, 31, 2018
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 02, 2019

Test Conditions

Temperature: 24,1 °C
Relative Humidity: 54,9 %

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.

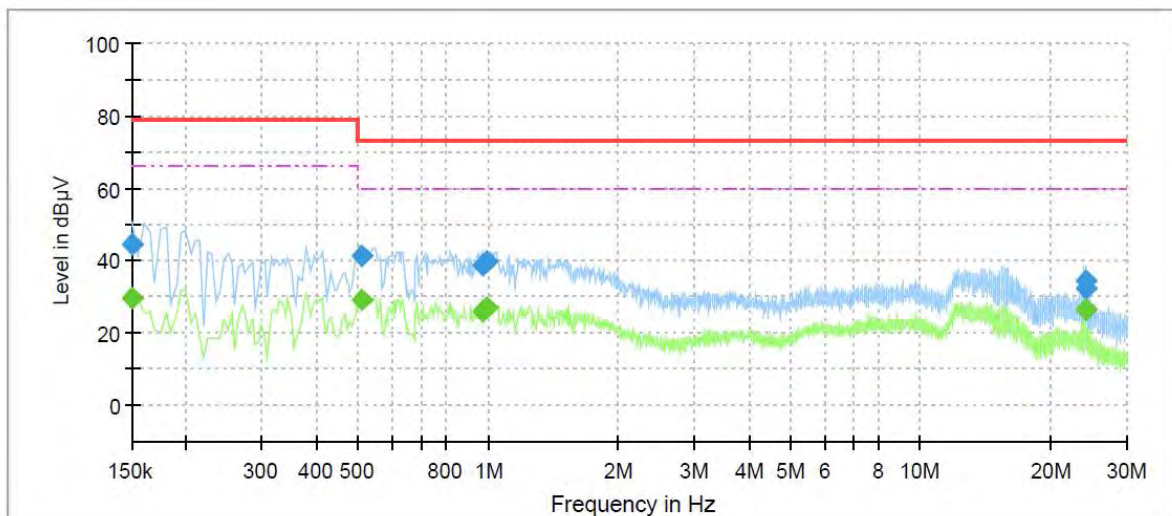
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

[HOT]

Common Information

Test Description: Conducted Emission
Model No.: HRD-1641N
Mode: FCC_H
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	---	29.41	66.00	36.59	1000.0	9.000	L1	19.4
0.150000	44.71	---	79.00	34.29	1000.0	9.000	L1	19.4
0.510000	---	29.09	60.00	30.91	1000.0	9.000	L1	19.6
0.510000	41.37	---	73.00	31.63	1000.0	9.000	L1	19.6
0.970000	---	25.77	60.00	34.23	1000.0	9.000	L1	19.8
0.970000	38.77	---	73.00	34.23	1000.0	9.000	L1	19.8
0.990000	---	27.19	60.00	32.81	1000.0	9.000	L1	19.8
0.990000	39.77	---	73.00	33.23	1000.0	9.000	L1	19.8
24.050000	---	26.64	60.00	33.36	1000.0	9.000	L1	20.1
24.050000	32.44	---	73.00	40.56	1000.0	9.000	L1	20.1
24.215000	---	26.29	60.00	33.71	1000.0	9.000	L1	20.1
24.215000	34.28	---	73.00	38.72	1000.0	9.000	L1	20.1

◆ Calculation

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

QuasiPeak / CAverage : The Final Value

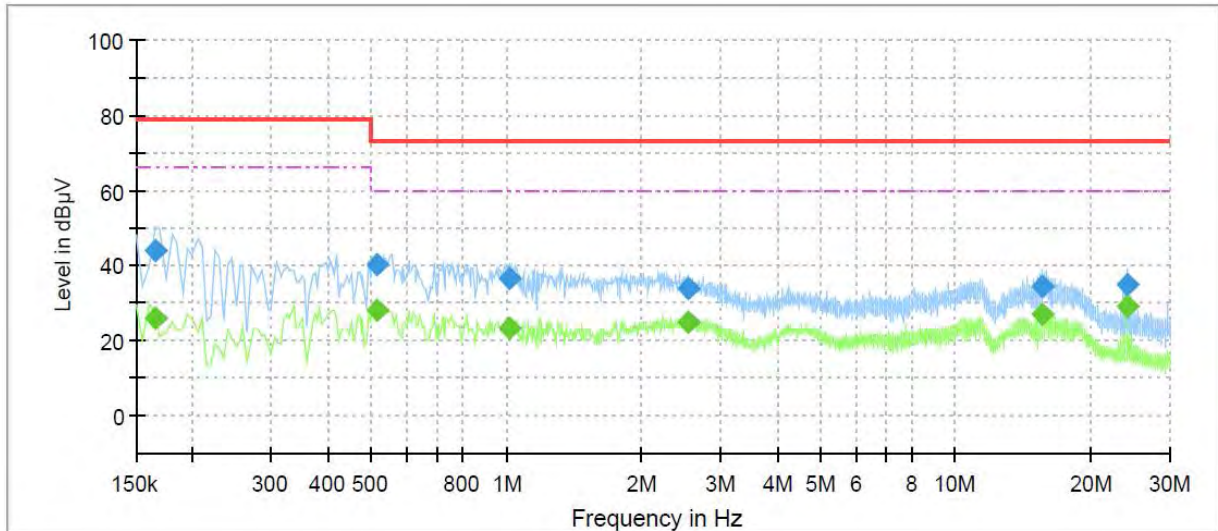
Reading Value : Not shown in the table.

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

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	HRD-1641N
Mode	FCC _ N
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	---	26.11	66.00	39.89	1000.0	9.000	N	19.4
0.165000	43.72	---	79.00	35.28	1000.0	9.000	N	19.4
0.515000	---	28.24	60.00	31.76	1000.0	9.000	N	19.6
0.515000	40.45	---	73.00	32.55	1000.0	9.000	N	19.6
1.015000	---	23.58	60.00	36.42	1000.0	9.000	N	19.8
1.015000	36.64	---	73.00	36.36	1000.0	9.000	N	19.8
2.535000	---	25.11	60.00	34.89	1000.0	9.000	N	20.0
2.535000	33.66	---	73.00	39.34	1000.0	9.000	N	20.0
15.615000	---	26.84	60.00	33.16	1000.0	9.000	N	20.0
15.615000	34.26	---	73.00	38.74	1000.0	9.000	N	20.0
24.010000	---	29.14	60.00	30.86	1000.0	9.000	N	20.0
24.010000	35.09	---	73.00	37.91	1000.0	9.000	N	20.0

◆ Calculation

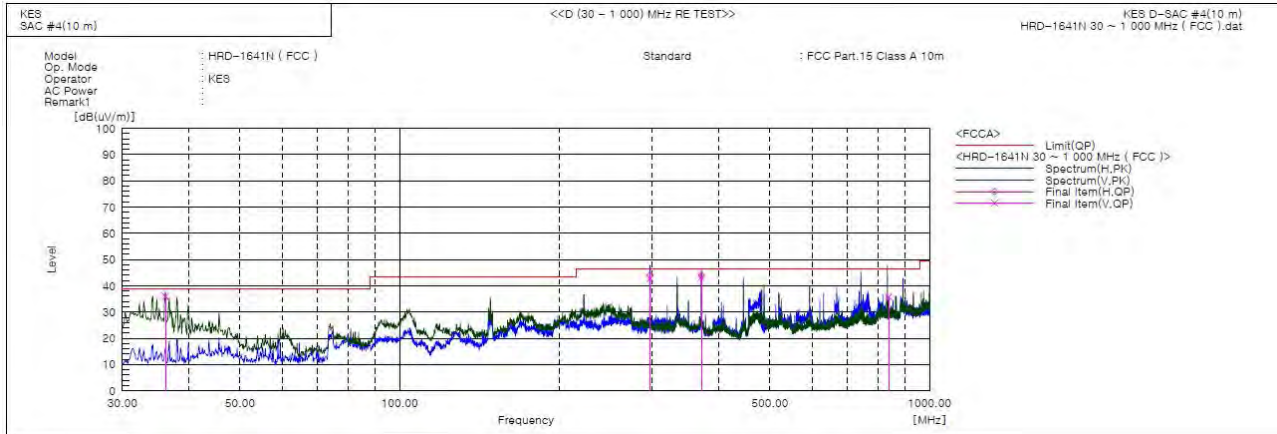
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

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

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	36.184	V	66.8	-30.9	35.9	39.0	3.1	100.0	224.0	
2	296.994	V	66.7	-23.9	42.8	46.5	3.7	103.0	26.0	
3	297.005	H	67.9	-23.9	44.0	46.5	2.5	245.0	186.0	
4	371.251	V	64.5	-21.2	43.3	46.5	3.2	100.0	107.0	
5	371.257	H	65.1	-21.2	43.9	46.5	2.6	204.0	111.0	
6	836.981	V	46.6	-10.9	35.7	46.5	10.8	186.0	191.0	

◆ Calculation

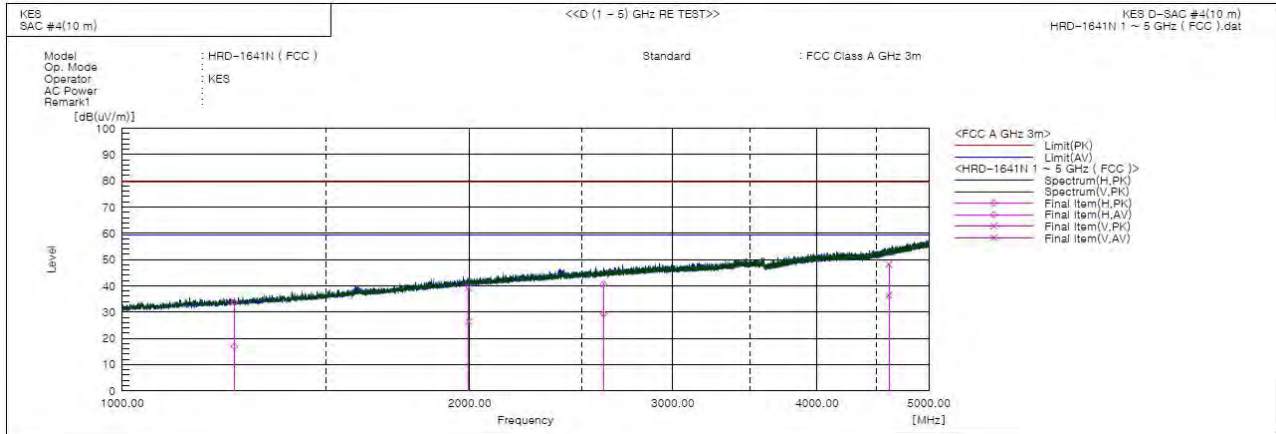
Result(QP) [dB(μV/m)] = (Reading(QP)[dB(μV)] + c.f[dB(1/m)])

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

Radiated Electric Field Emissions(Above 1 GHz)



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading AV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Height [cm]	Angle [deg]	Remark
1	1250.500	H	38.3	21.5	-4.6	33.7	16.9	79.5	59.5	45.8	42.6	349.0	287.0	
2	1996.000	V	36.6	23.7	2.7	39.3	26.4	79.5	59.5	40.2	33.1	183.0	162.0	
3	2613.500	H	34.5	23.2	6.1	40.6	29.3	79.5	59.5	38.9	30.2	400.0	164.0	
4	4618.000	V	33.5	21.7	14.7	48.2	36.4	79.5	59.5	31.3	23.1	100.0	184.0	

◆ Calculation

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

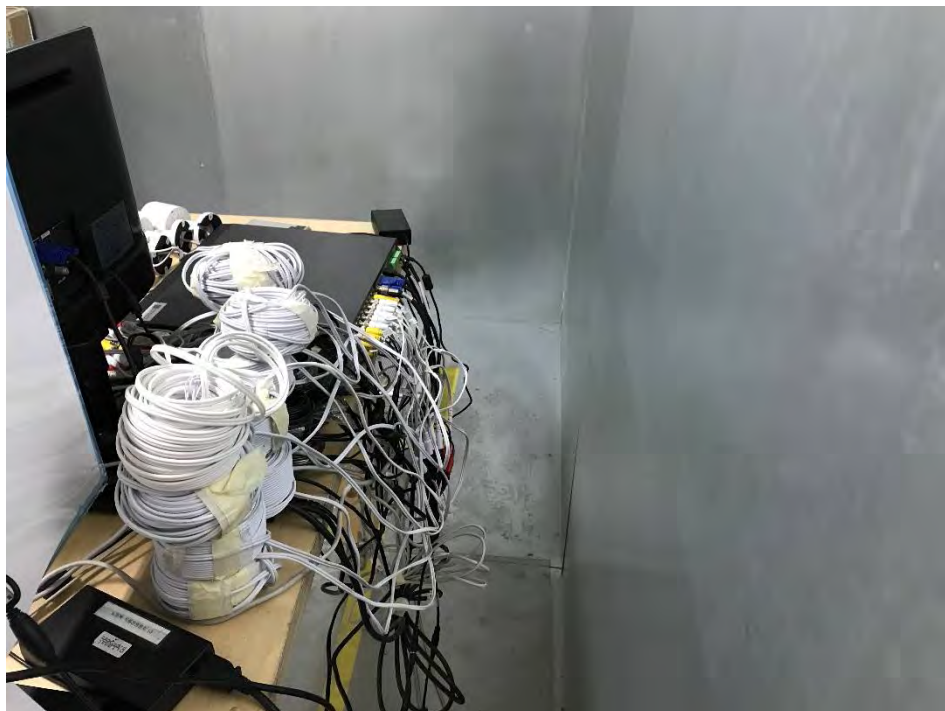
Margin(PK/CAV)[dB] = Limit[dB(μV/m)] - Result(PK/CAV) [dB(μV/m)]

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

Test Setup Photos and Configuration

Conducted Voltage Emissions



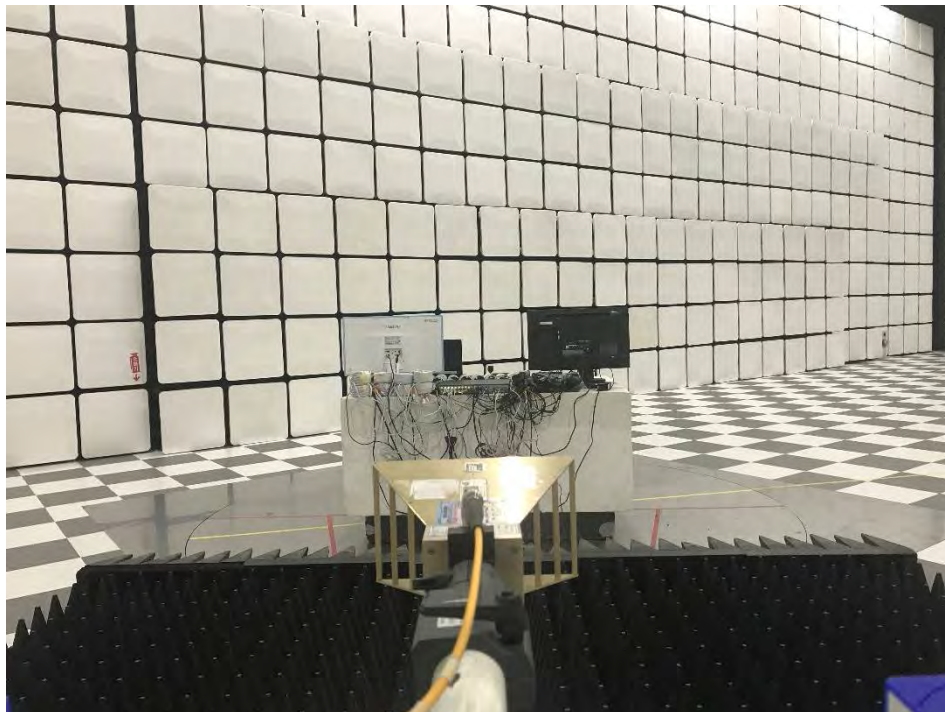
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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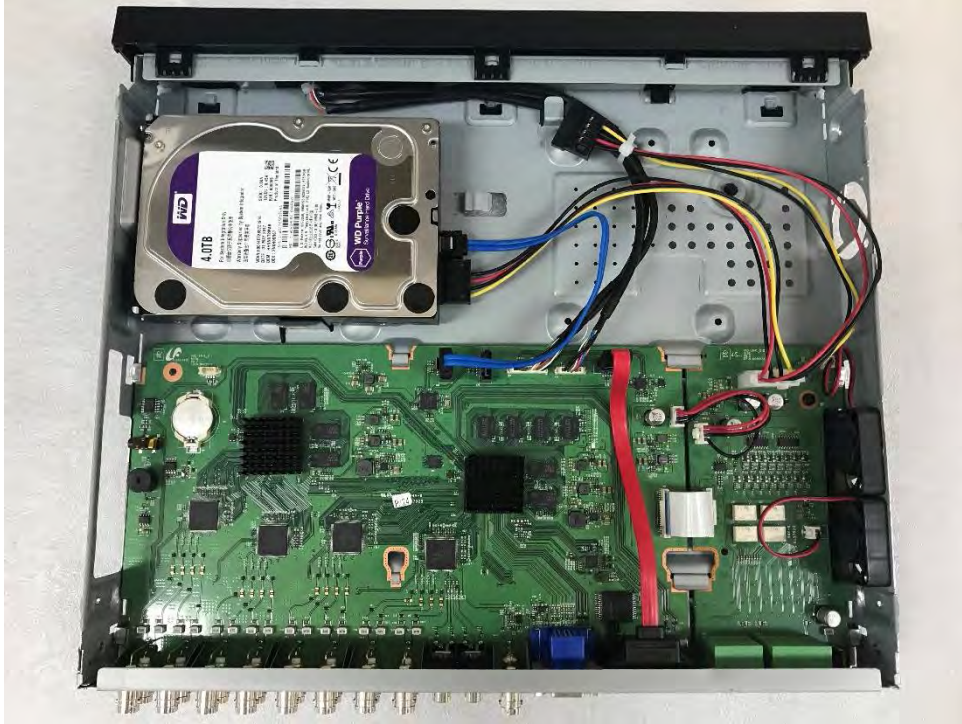
EUT External Photographs



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EUT Internal Photographs

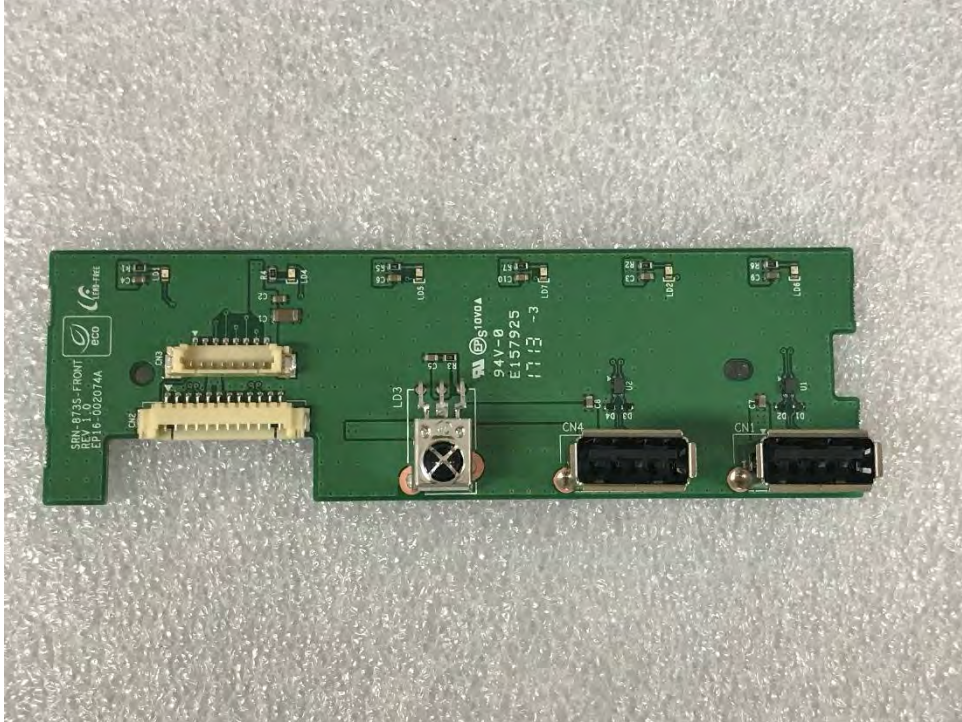
(Internal View)



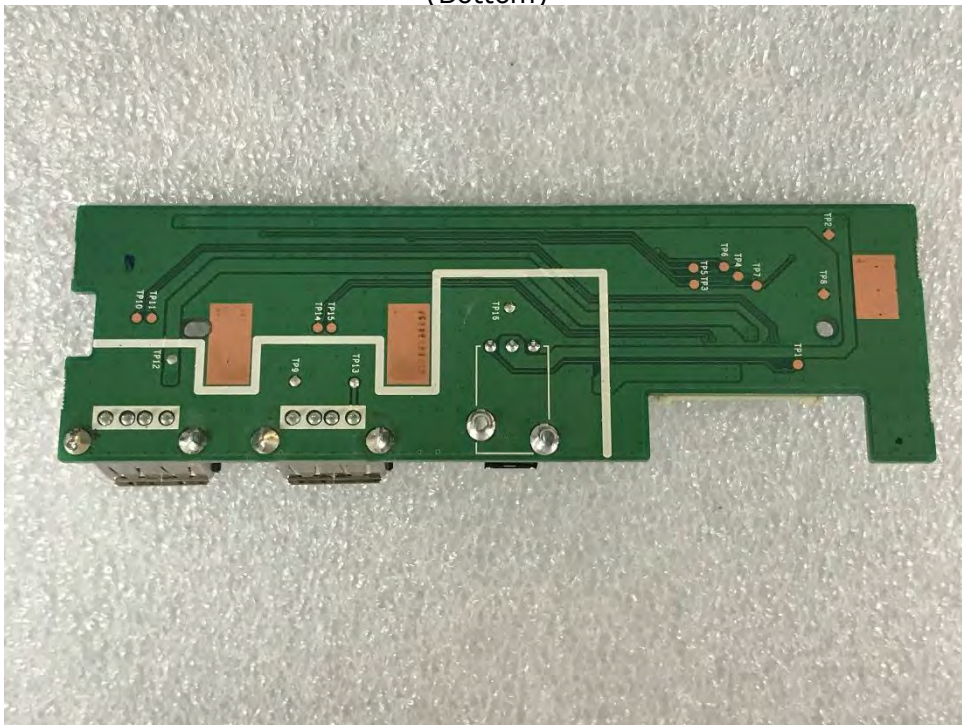
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EUT Internal View – Board 1

(Top)



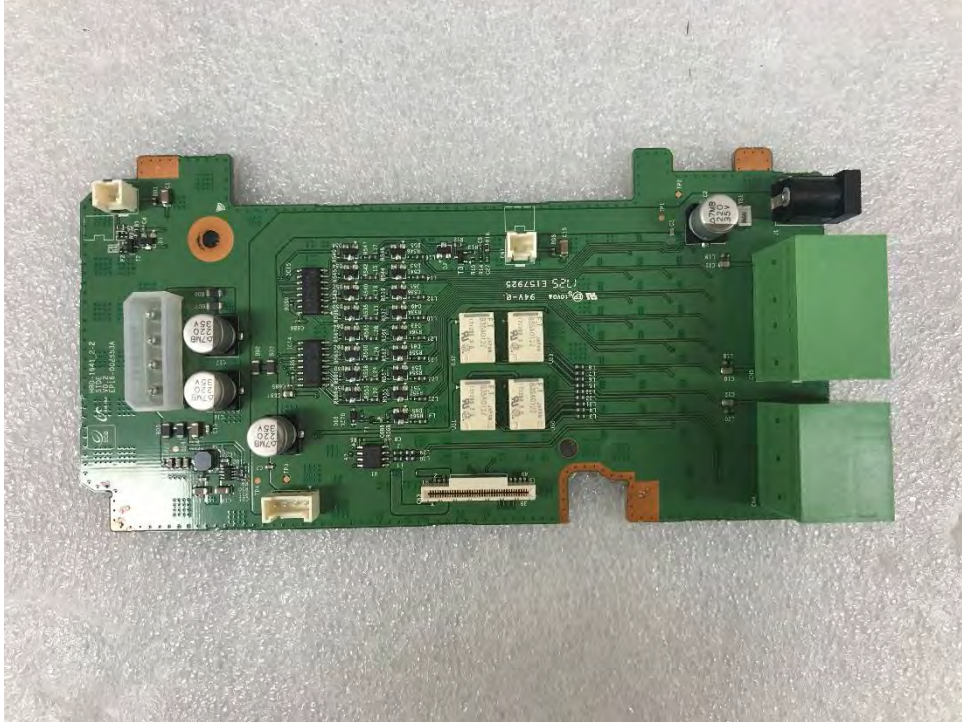
(Bottom)



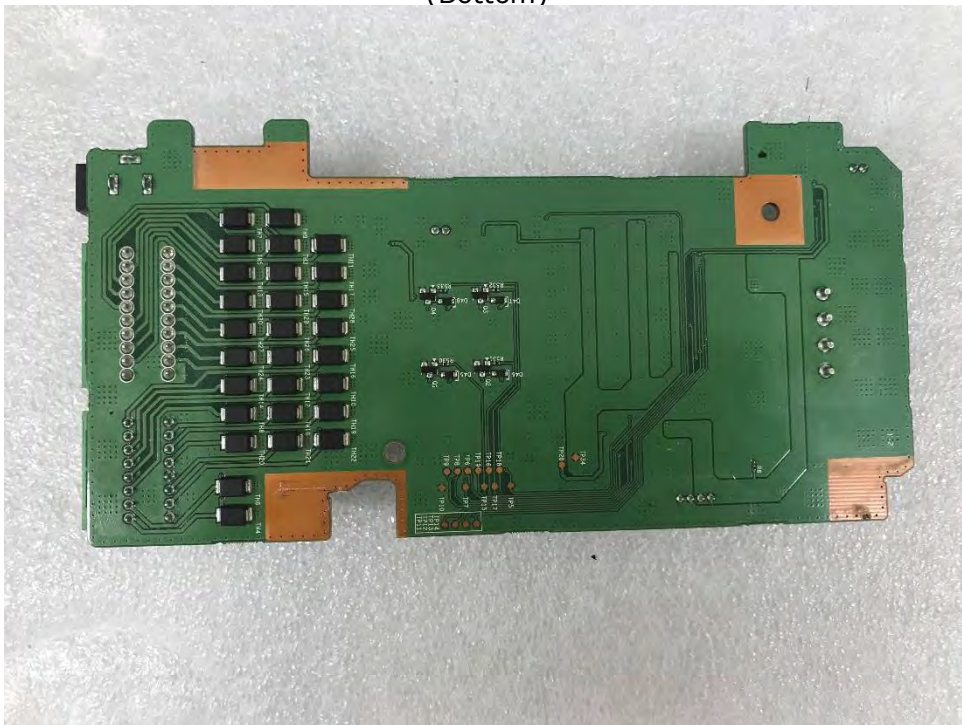
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EUT Internal View – Board 2

(Top)



(Bottom)



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EUT Internal View – Board 3

(Top)

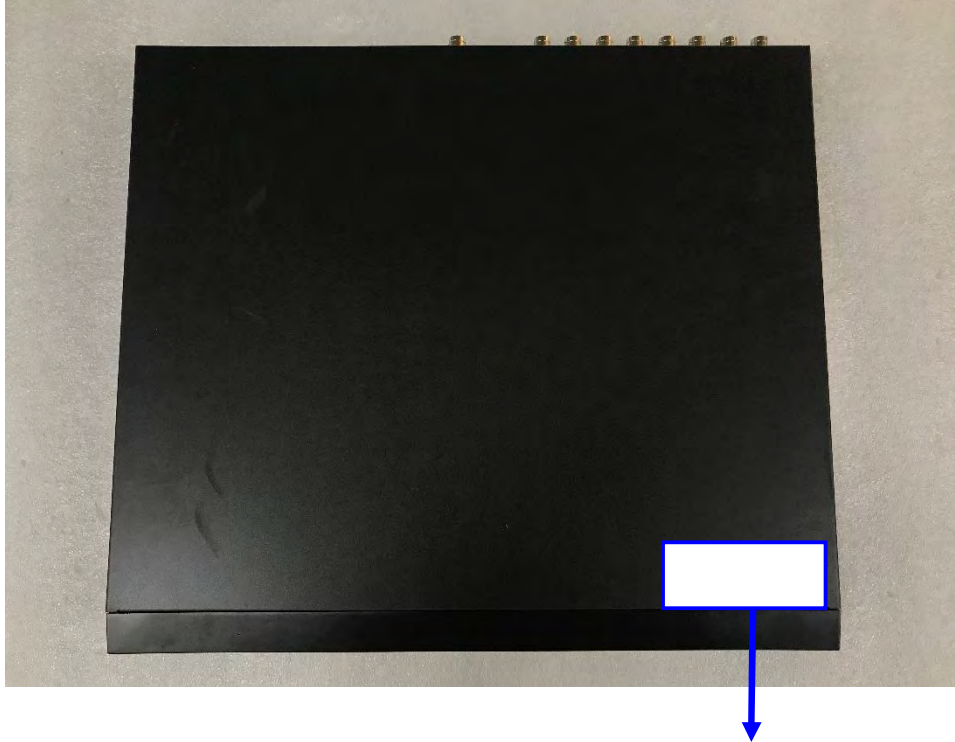


(Bottom)



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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.