DECLARATION OF CONFORMITY

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We; Hanwha Techwin Co., Ltd.
DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE PRODUCT;

Report No:	**KES-E1-16T0288**
Type of equipment:	**NETWORK CAMERA**
Model Name:	**PRN-4011P**
Variant Model:	**-**
Applicant:	**Hanwha Techwin Co., Ltd.**
Address:	**1204,Changwon-daero, Seongsan-gu, Chang-won-si, Gyeongsangnam-do,Korea**
Manufacturer :	**Tianjin Samsung Techwin Opto-Electronic Co.,Ltd.**
Address:	**No.11 Weiliu Rd,Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China**
Test standards :	**AS/NZS CISPR22:2009+A1:2010**
Classification:	**C-Tick**

The above equipment was tested by EMC compliance Testing Laboratory for with the requirements of C-tick Rules and Regulations. The results of testing in this report apply to the product / system which was tested only.

Jun. 29. 2016
(Date of issue)

(Name and signature of authorized person)

EMC TEST REPORT For C-TICK

Test Report No.	:	KES-E1-16T0288
Date of Issue	:	Jun. 29, 2016
Product name	:	NETWORK VIDEO RECORDER
Model/Type No.	:	PRN-4011P
Variant Model	:	-
Applicant	:	Hanwha Techwin Co., Ltd.
Applicant Address	:	1204, Changwon-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea
Manufacturer	:	Tianjin Samsung Techwin Opto-Electronic Co.,Ltd.
Manufacturer Address	:	No.11 Weiliu Rd,Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China
Date of Receipt	:	Jun. 09, 2016
Test date	:	Jun. 25, 2016 - Jun. 27, 2016
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Dong Il, Lee
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

REPORT REVISION HISTORY

Date	Revision	Page No
Jun. 29, 2016	KES-E1-16T0288	Issued

TABLE OF CONTENTS

1.0 General Product Description

Main Specifications of EUT are:

Model		DVR(6/28)
Display		
Network Camera	Inputs	Max. 64CH
	Resolution	CIF ~ 12MP
	Protocols	Samsung, ONVIF
Live	Local Display	1x HDMI / 1x VGA Dual Monitor
	Multi-Channel Display	[Local Monitor] 1 / 2V / 3V / 4 / 9 / 16 / 25 / 36 / 64 /Sequence [Web] 1 / 4 / 9 / 16 / 25 / 36 / 64 /Sequence
	Performance	[Local Monitor] -12M (30fps). - 8.3M(120fps) - 720P(960fps) - D1(1920fps) [Web] - 12M (40fps)
Performance		
Operating System	Embedded	Linux
Record	Compression	H.265, H.264, MJPEG
	Recording Bandwidth	Max. 400Mbps(H.265 4K 64camera real-time recording) Max. 400Mbps(RAID-5/6 Mode) 300Mbps(iSCSI)
	Resolution	CIF ~ 12MP
	Type	Manual, Schedule(Continuous/Event), Event (Pre/Post)
	Event Trigger	- Alarm Input, - Video Loss, - Camera Event (Sensor, MD, Video Analytics) - Defocus Camera 별도 Event 처리
	Event Action	e-Mail, PTZ Preset, Alarm Out, Buzzer, Monitor Out

Search & Play	Playback Bandwidth	32Mbps (16CH simultaneously)
	Performance	Max. 4 Users (Local 1, Remote 3)
	Mode	Date & Time(Calendar) Event Log list Text Search ARB Search Failover Search(N+1) Smart Search (본사/SSM 연동 포함) - Virtual Line w/ direction - Enter/Exit
	Simultaneous playback	Max. 16CH(Local Monitor, CMS)
	Resolution	CIF ~ 12MP
	Fisheye Dewarping	via Web / CMS
	Playback Control	Fast/Slow Forward / Backward, Move one step Up / Down
Storage	Internal HDD	12 (Hot Swap@RAID) Max 96TB(Non-RAID), Max 80TB(RAID-5)
	External	iSCSI storage(Max. 192TB, NVR 본체 포함) ① Promise VessRaid R2600
	RAID	6-HDD x 2 Array - 빌드: 없음, 리빌드: 320Mbps 저장 보장
Backup	File backup(Via Web)	BU/Exe(GUI), JPG/AVI(Network) NVR/SEC 포맷 순서 변경
	Function	Multi channel(Upto 16CH) Play, Date-Time/Title display
Sensor	I/O	4/4 (NO/NC Selectable)
Audio	Input	64 CH (network)
	Compression	G.711, G.726, AAC(16/48KHz)
	Audio Communication	2-Way
Network		
Interface		RJ-45, Gigabit Ethernet **x4**
Protocol		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)
DDNS		Samsung iPolis DDNS
Transmission Bandwidth		300Mbps
Max Remote Users		Search (3), Live Unicast (10), Multicast (20)
IP Version		IPv4/v6

Model		DVR(6/28)
Security		User access Log, IP Filtering, 802.1x, Encryption, 2Men-Rule
Language(24)		English, French, German, Italian, Spanish, Russian, Turkish, Polish, Dutch, Swedish, Czech, Portuguese, Danish, Rumanian, Serbian, Croatian, Hungarian, Greek, Norwegian, Finnish, Korean, Chinese(Simplified), Japanese, Thai
OS		Supported OS : Window XP(service pack 2 or above), Vista, 7, 8, 10, Mac OS X(10.7 or above)
Web Browser		Non-plugin Webviewer Supported Browser: Google Chrome 47, MS Edge 20 Plug-in Webviewer Supported Browser: MS Explore 11 , Mozilla Firefox 43 , Apple Safari 9 * Mac OS X only(신기능 지원 불가)
Viewer Software	Type	SSM, Webviewer, Smart Viewer, iPolis Mobile
	CMS Support	Support SDK/CGI(SUNAPI)
Smart phone	Support Model	I-Phone, Android
	Protocol Support	RTP, RTSP, HTTP, CGI(SUNAPI)
	Control	Live(16ch) : Multi-Profile Support Playback(1ch)
	Max. Remote Users	Search (3), Live Unicast (10), Multicast (20)
Functions		
Camera Setup	Register	
	Setup Items	IP address, Add profile edit, Bitrate, Compression, GOP, Quality, Camera MD setup Camera video setup (Simple focus, Brightness/Contrast, Flip/Mirror, IRIS, WDR, D&N, SSNR, Shutter, SSDR, DIS), Fisheye Dewarping(by Web), Hallway View Setup, Camera Webpage
	PoE Power Control	
PTZ	Control	Via GUI, Webviewer, SPC-2000/6001
	Preset	255 Presets
Redundancy	Failover	N+1
	ARB	Yes
System Control		Mouse, Web, SPC-2000/6001 (Controller)

Front	Indicator	LED(Status indicator) : - SRN-4011 (18EA) HDD Action(12), RAID Status(1), Alarm(1), Power(1), Record(1), Backup(1), Network(1)
	Switch	Power Switch 1EA Key-Lock 1EA
Connectors	VGA	Sub : 1 EA (Support Live screen upto 16 div. mode)
	HDMI	Main : 1 EA (Both Support Live / PB / Setup) - Support upto 4K (3840 x 2160, Single Monitor Mode)
	Audio	Out(1EA, RCA, Line)
	Ethernet	RJ-45 4ea (LAN/WAN, 1Gbps) 1000M SFP 2ea **(RJ45 2ea 겸용)**
	Alarm	(1) In(4EA, Terminal Block) (2) Alarm Reset(1EA) (3) Out(4EA, Terminal Block) - Relay Out1(NO/NC/COM) - Relay Out2~4(NO/COM)
	USB	2EA(Front 2)
	Storage	iSCSI
	Serial	RS-232C
	Reset	Switch(1EA)
	Power Cord	2EA AC Inlet
System		
Log	Log List	Max. 20000 (System Log, Event Log each)
Environmental		
Operating Temperature / Humidity		+0°C to +40°C(+32°F to +104°F)
Humidity		20% ~ 85% RH
Electrical		
Power		100 to 240 VAC ±10%; 50/60 Hz, 3~1.5A(Dual SMPS)
Power Consumption		225W(6T HDD 12EA 장착 기준)
PoE Budget		
Mechanical		
Color / Material		검정 / 메탈
Dimension (WxHxD)		436.0 x 132.0 x 450.0mm (3U)
Weight		약 10.7Kg(HDD 미포함)
Standards		
Approvals	Safety	UL, KC
	EMC	CE, FCC, CCC, Gost-R, KC

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 ☐ 100 Vac ☐ 110 Vac ☒ 230 Vac ☐ PoE ☐ 12 Vdc

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
NETWORK VIDEO RECORDER	PRN-4011P	-	Tianjin Samsung Techwin Opto-Electronic Co.,Ltd.	E.U.T
3.5" SATA-III Hard Disk Drive	771945	-	WESTERN DIGITAL TECHNOLOGIES, INC.	-
SWITCHING POWER SUPPLY	DPS-500AB-9 F	IBLD1617000086	DELTA ELECTRONICS, INC.	-
SFP Module	SFP-LX	-	Shenzhen Gigalight Technology Co., LTD	-
MainBoard	-	-	-	-

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
monitor1	S24E370DL	0NTWHTPH200179Y	Samsung Eelectronics Co., Ltd.	-
monitor2	P2314Ht	CN-02XPJH-74445-57H-CW0S	WISTRON CORPORATION (Wistron Infocomm (Zhongshan) Corporation)	-
notebook	X56K	HN11N5151FJ0045W	HANSUNG Computer Co., Ltd.	-
notebook adapter	A12-120P1A	F180271552011758	CHICONY POWER TECHNOLOGY CO.,LTD.	-
speaker	BR10000A CUVE	SN128458795701	BEIJING EDIFIER HI-TECH GROUP.	-
Giga Ethernet Media Converter	SFC2000-SFP	-	SOL TECH	-
NETWORK CAMERA	SND-L6013RN	-	SAMSUNG TECHWIN CO., LTD.	-
PoE adapter	PD3001GC/AC	RD9356082016964200	Power Dsine	-
mouse	M-U0026	1505HS0687B8	Logiech	-
Alarm Jig	-	-	-	-

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK VIDEO RECORDER (E.U.T)	HDMI	monitor1	HDMI	1.4	S
	D-SUB	monitor2	D-SUB	1.7	S
	RJ-45	notebook	RJ-45	3.0	U
	USB	mouse	USB	1.8	U
	optical	Giga Ethernet Media Converter	optical	3.0	U
	Auodio Out	speaker	Audio Out	1.9	U
	Alarm	Alarm Jig	Alarm	3.0	U
	RJ-45	PoE adapter	RJ-45	1.9	U
	RJ-45	Giga Ethernet Media Converter	RJ-45	1.2	U

* Unshielded=U, Shielded=S

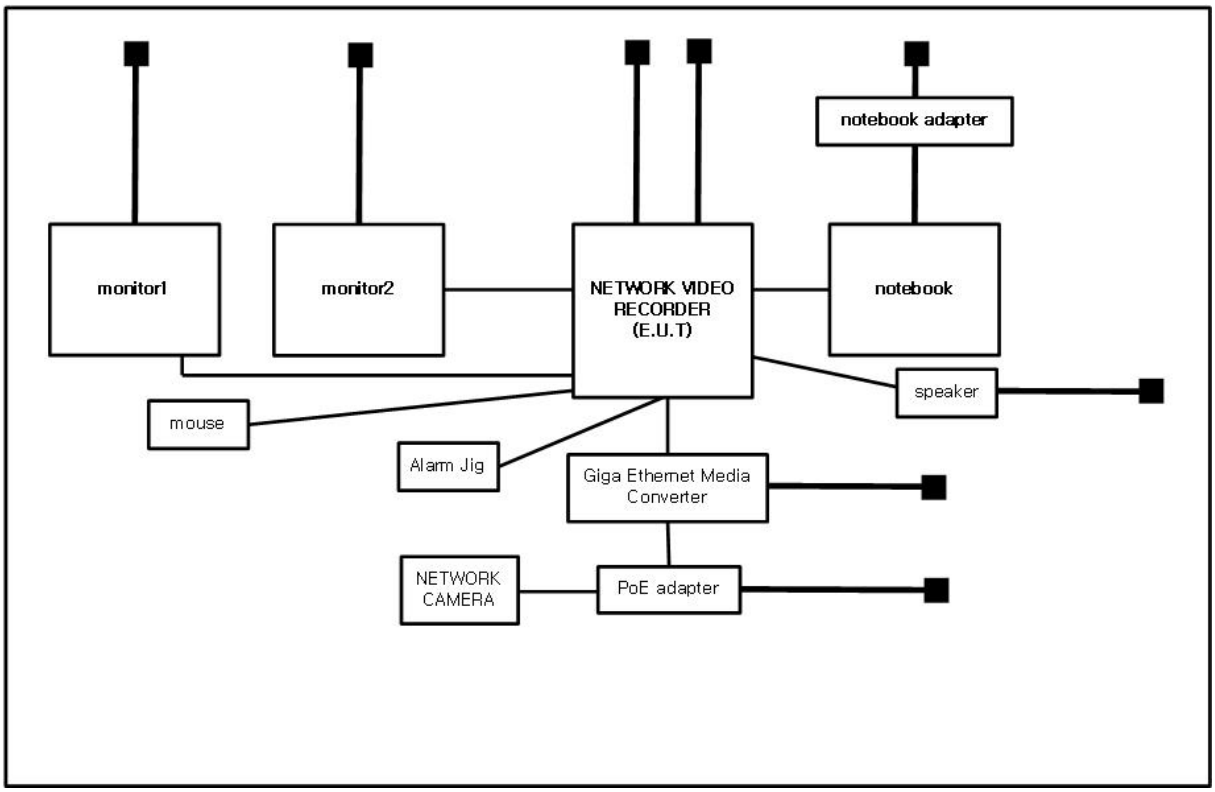
1.7 EUT Operating Mode(s)

Equipment under test was operated during the measurement under the following conditions:

Test mode	Normal operating
OP	MONITORING PING TEST

1.8 Configuration

■ AC Main
□ DC Main



1.9 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.

1.10 Test Facility

The measurement facility is located at 473-29 Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

1.11 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)	KOREA LABORATORY ACCREDITATION SCHEME KOLAS TESTING NO. 489

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 55022:2010 ☐ 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 C63.4-2009

☐ **IC Regulation ICES-003 : 2016**

- ☐ CISPR 22:2009 +A1:2010 ☐ 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
Jun. 25, 2016

Test Location
Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESR3	R & S	101783	05, 03, 2017
☒	LISN	ENV216	R & S	101137	02, 04, 2017
☒	LISN	ENV216	R & S	101786	05, 02, 2017
☒	Electro wave Shieldroom	-	SEMITEC	-	-

Test Conditions
Temperature: 25,4 ℃
Relative Humidity: 52,1 %

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

TestResults
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.2 Conducted Emissions at Telecommunication Ports

Test Date
Jun. 25, 2016

Test Location
Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESR3	R & S	101783	05, 03, 2017
☒	LISN	ENV216	R & S	101137	02. 04. 2017
☒	LISN	ENV216	R & S	101786	05, 02, 2017
☒	8-Wire ISN CAT3	CAT3 8158	Schwarzbeck Mess	8158-0019	04. 01. 2017
☒	8-Wire ISN CAT5	CAT5 8158	Schwarzbeck Mess	8158-0030	04. 01. 2017
☒	8-Wire ISN CAT6	NTFM 8158	Schwarzbeck Mess	8158-0029	08. 14. 2016
☒	Electro wave Shieldroom	-	SEMITEC	-	-

Test Conditions
Temperature: 25,4 ℃
Relative Humidity: 52,1 %

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

TestResults
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.3 Radiated Electric Field Emissions(Below 1 ㎓)

Test Date
Jun. 25, 2016

Test Location
☒ Open Area Test Site #1 ☐ Open Area Test Site #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI TEST Receiver	ESU26	R&S	100551	04, 18, 2017
☒	Trilog-Broadband Antenna	VULB 9163	SCHWARZBECK	9163-715	04, 14, 2018
☒	Open Area Test Site	-	KES	-	-
☒	Antenna Mast	1070/1080	EMCO	-	-
☒	Turn Table	-	DAEIL EMC	-	-

Test Conditions
Temperature: 29,5 ℃
Relative Humidity: 43,0 %

Frequency Range of Measurement
30 ㎒ to 1 ㎓

Instrument Settings
IF Band Width: 120 ㎑

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

2.4 Radiated Electric Field Emissions(Above 1 ㎓)

Test Date
Jun. 27, 2016

Test Location
Semi Anachoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESU26	R&S	100552	04, 24, 2017
☒	Broadband Coaxial Preamplifier	BBV 9718	Schwarzbeck Mess - Elektronik	9718-246	10. 23. 2016
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05. 07. 2017
☒	Semi Anachoic Chamber #2	-	SEMITEC	-	-
☒	Antenna Mast	-	AUDIX	-	-
☒	Turn Table	-	AUDIX	-	-

Test Conditions
Temperature: 24,9 ℃
Relative Humidity: 42,1 %

Frequency Range of Measurement
1 ㎓ to 6 ㎓

Instrument Settings
IF Band Width: 1 ㎒

Test Results
The requirements are:

☒ PASS
☐ NOT PASS
☐ NOT APPLICABLE

Remarks
See Appendix A for test data.

APPENDIX A – TEST DATA

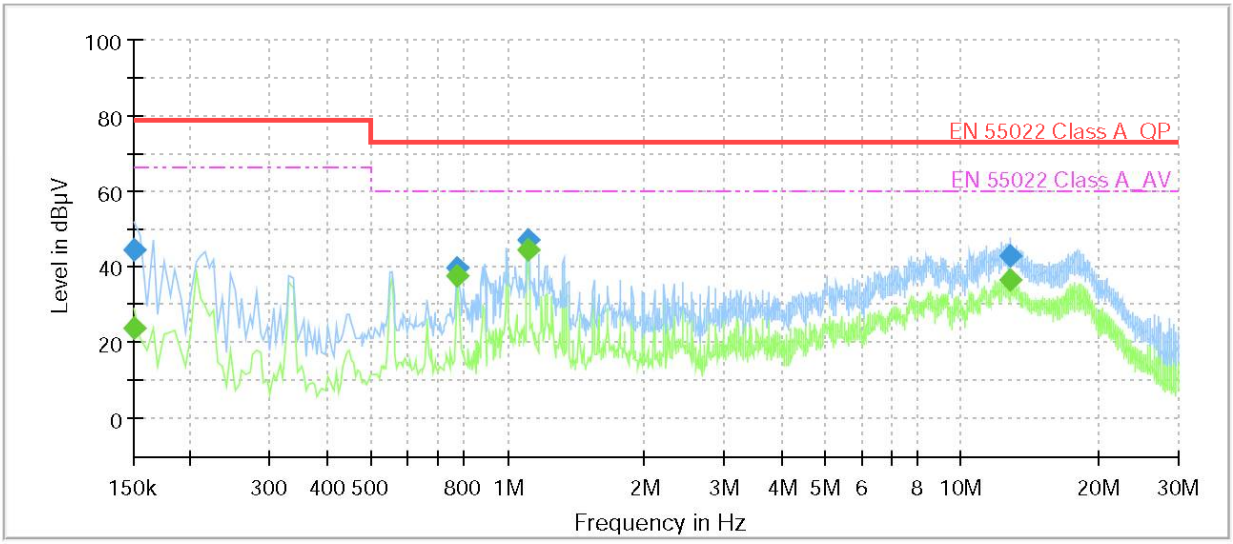
Conducted Emissions at Mains Power Ports

- P1

[HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	PRN-4011P
Mode	P1
Operator Name:	KES



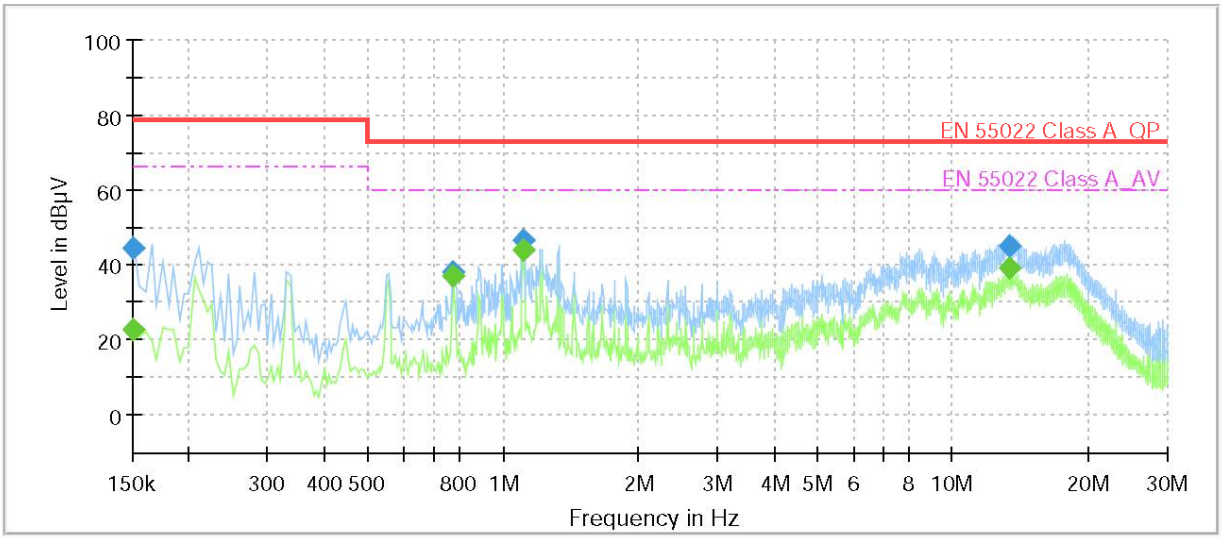
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	23.65	66.00	42.35	1000.0	9.000	L1	9.7
0.150000	44.61	---	79.00	34.39	1000.0	9.000	L1	9.7
0.775000	---	37.51	60.00	22.49	1000.0	9.000	L1	9.7
0.775000	39.65	---	73.00	33.35	1000.0	9.000	L1	9.7
1.105000	---	44.31	60.00	15.69	1000.0	9.000	L1	9.7
1.105000	47.08	---	73.00	25.92	1000.0	9.000	L1	9.7
12.810000	---	36.77	60.00	23.23	1000.0	9.000	L1	10.0
12.810000	42.88	---	73.00	30.12	1000.0	9.000	L1	10.0

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	PRN-4011P
Mode	P1
Operator Name:	KES



Final_Result

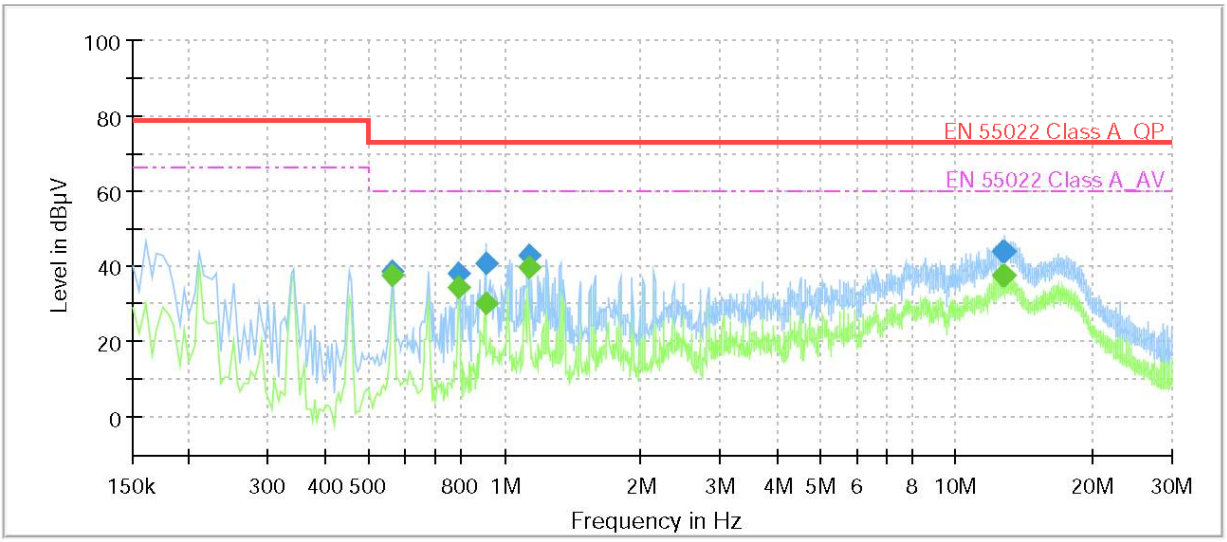
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	23.05	66.00	42.95	1000.0	9.000	N	9.6
0.150000	44.72	---	79.00	34.28	1000.0	9.000	N	9.6
0.775000	---	36.81	60.00	23.19	1000.0	9.000	N	9.7
0.775000	38.02	---	73.00	34.98	1000.0	9.000	N	9.7
1.105000	---	43.75	60.00	16.25	1000.0	9.000	N	9.7
1.105000	46.46	---	73.00	26.54	1000.0	9.000	N	9.7
13.360000	---	39.23	60.00	20.77	1000.0	9.000	N	10.1
13.360000	44.83	---	73.00	28.17	1000.0	9.000	N	10.1

- P2

[HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	PRN-4011P
Mode	P2
Operator Name:	KES



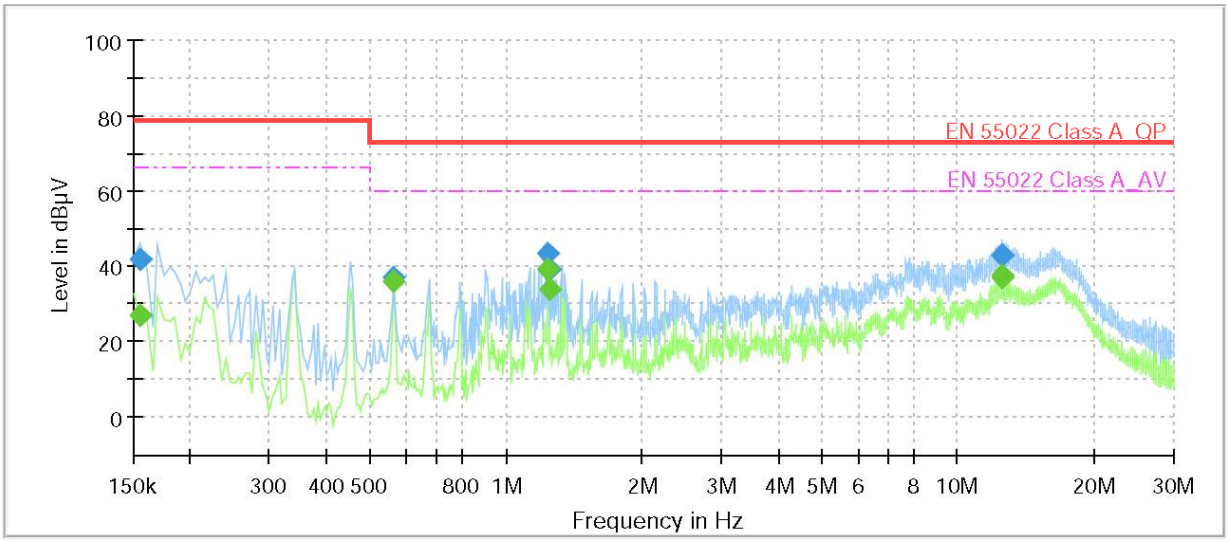
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.565000	---	37.80	60.00	22.20	1000.0	9.000	L1	9.7
0.565000	38.53	---	73.00	34.47	1000.0	9.000	L1	9.7
0.790000	---	34.43	60.00	25.57	1000.0	9.000	L1	9.7
0.790000	38.33	---	73.00	34.67	1000.0	9.000	L1	9.7
0.905000	---	29.98	60.00	30.02	1000.0	9.000	L1	9.7
0.905000	41.02	---	73.00	31.98	1000.0	9.000	L1	9.7
1.130000	---	39.62	60.00	20.38	1000.0	9.000	L1	9.7
1.130000	42.98	---	73.00	30.02	1000.0	9.000	L1	9.7
12.685000	---	37.37	60.00	22.63	1000.0	9.000	L1	10.0
12.685000	44.18	---	73.00	28.82	1000.0	9.000	L1	10.0
12.745000	---	37.43	60.00	22.57	1000.0	9.000	L1	10.0
12.745000	43.72	---	73.00	29.28	1000.0	9.000	L1	10.0

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	PRN-4011P
Mode	P2
Operator Name:	KES



Final_Result

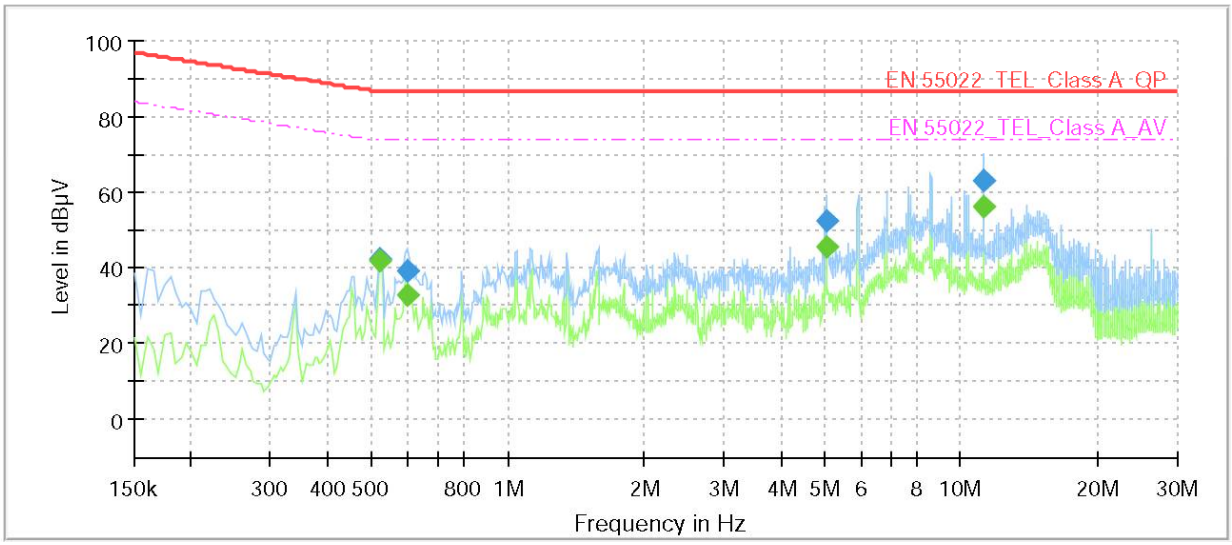
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.155000	---	27.25	66.00	38.75	1000.0	9.000	N	9.6
0.155000	42.05	---	79.00	36.95	1000.0	9.000	N	9.6
0.565000	---	36.05	60.00	23.95	1000.0	9.000	N	9.7
0.565000	36.82	---	73.00	36.18	1000.0	9.000	N	9.7
1.240000	---	39.36	60.00	20.64	1000.0	9.000	N	9.7
1.240000	43.57	---	73.00	29.43	1000.0	9.000	N	9.7
1.245000	---	34.13	60.00	25.87	1000.0	9.000	N	9.7
1.245000	38.96	---	73.00	34.04	1000.0	9.000	N	9.7
12.500000	---	37.00	60.00	23.00	1000.0	9.000	N	10.0
12.500000	43.08	---	73.00	29.92	1000.0	9.000	N	10.0
12.505000	---	37.54	60.00	22.46	1000.0	9.000	N	10.0
12.505000	42.82	---	73.00	30.18	1000.0	9.000	N	10.0

Conducted Emissions at Telecommunication Ports

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	PRN-4011P
Mode	10 Mbps
Operator Name:	KES



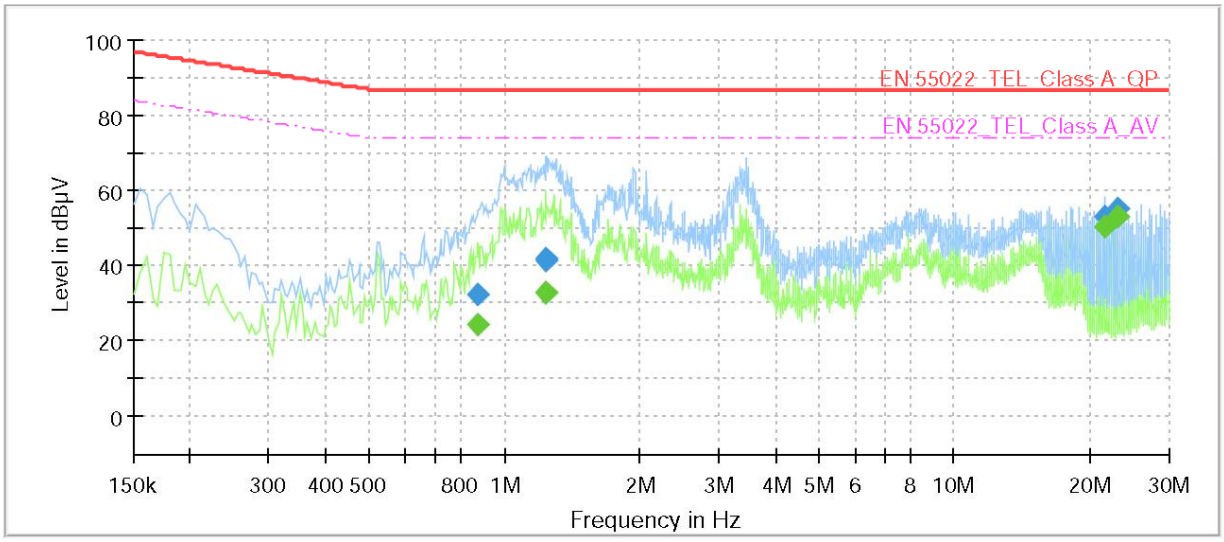
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.520000	---	41.87	74.00	32.13	1000.0	9.000	Single Line	10.0
0.520000	42.44	---	87.00	44.56	1000.0	9.000	Single Line	10.0
0.600000	---	32.62	74.00	41.38	1000.0	9.000	Single Line	9.9
0.600000	39.19	---	87.00	47.81	1000.0	9.000	Single Line	9.9
5.055000	---	45.70	74.00	28.30	1000.0	9.000	Single Line	9.9
5.055000	52.18	---	87.00	34.82	1000.0	9.000	Single Line	9.9
11.250000	---	56.23	74.00	17.77	1000.0	9.000	Single Line	10.1
11.250000	63.20	---	87.00	23.80	1000.0	9.000	Single Line	10.1

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	PRN-4011P
Mode	100 Mbps
Operator Name:	KES



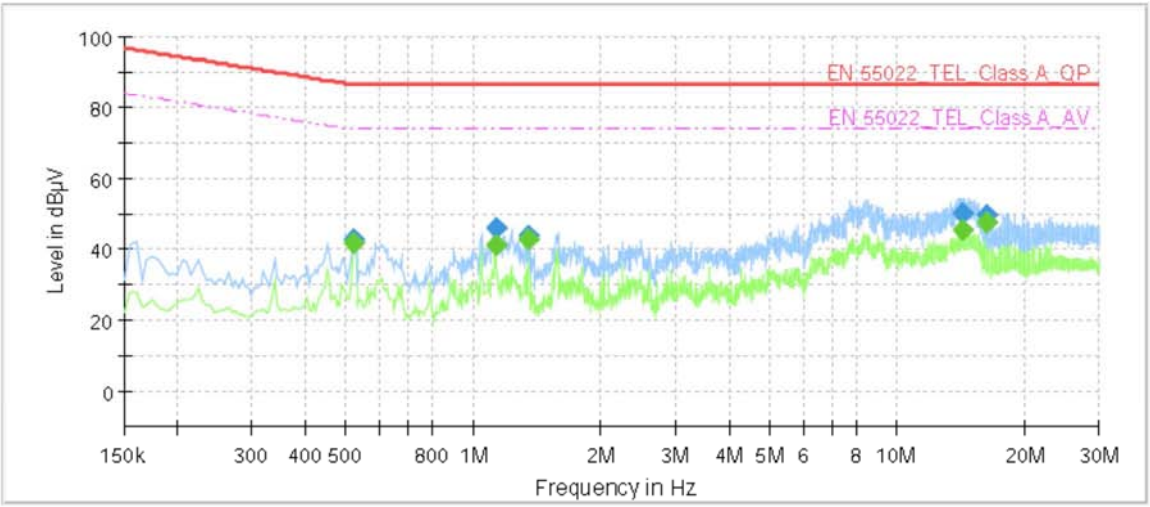
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.875000	---	24.53	74.00	49.47	1000.0	9.000	Single Line	9.4
0.875000	32.09	---	87.00	54.91	1000.0	9.000	Single Line	9.4
1.235000	---	33.05	74.00	40.95	1000.0	9.000	Single Line	9.3
1.235000	42.02	---	87.00	44.98	1000.0	9.000	Single Line	9.3
1.240000	---	33.09	74.00	40.91	1000.0	9.000	Single Line	9.3
1.240000	41.33	---	87.00	45.67	1000.0	9.000	Single Line	9.3
21.665000	---	50.11	74.00	23.89	1000.0	9.000	Single Line	9.5
21.665000	52.68	---	87.00	34.32	1000.0	9.000	Single Line	9.5
23.130000	---	52.70	74.00	21.30	1000.0	9.000	Single Line	9.5
23.130000	55.11	---	87.00	31.89	1000.0	9.000	Single Line	9.5

[1000 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	PRN-4011P
Mode	1000 Mbps
Operator Name:	KES



Final_Result

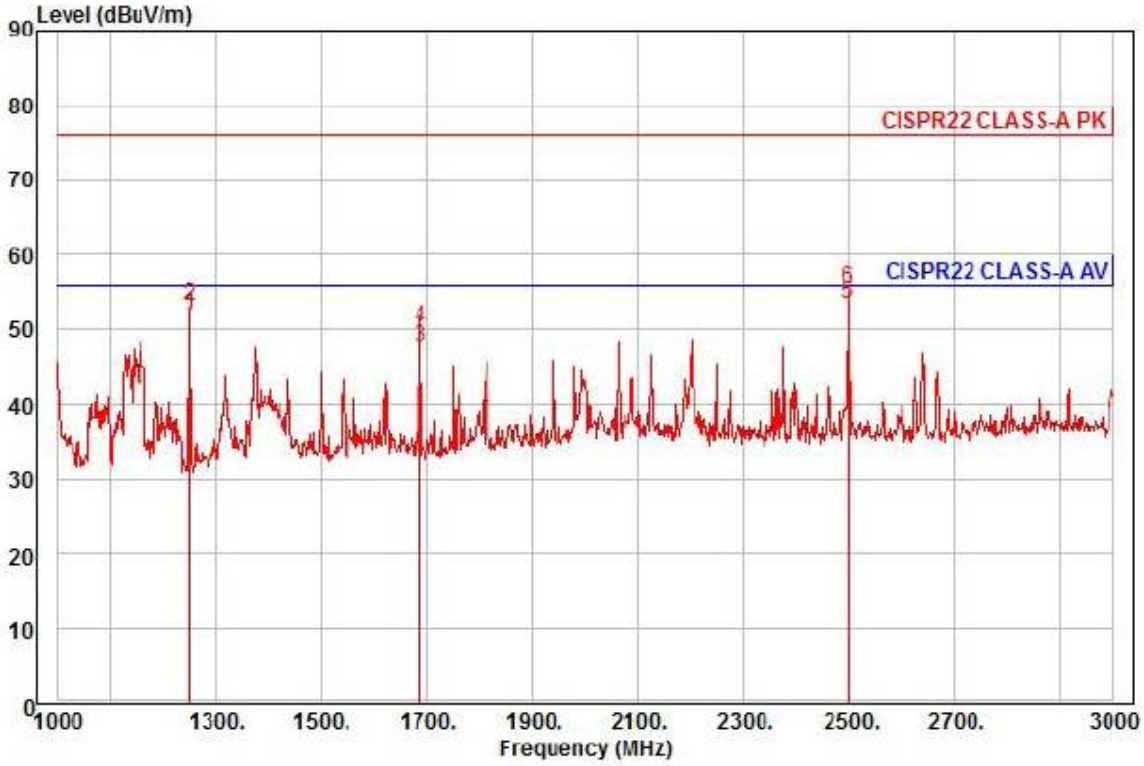
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.520000	---	41.97	74.00	32.03	1000.0	9.000	Single Line	9.4
0.520000	42.89	---	87.00	44.11	1000.0	9.000	Single Line	9.4
1.130000	---	41.09	74.00	32.91	1000.0	9.000	Single Line	9.2
1.130000	46.16	---	87.00	40.84	1000.0	9.000	Single Line	9.2
1.355000	---	42.87	74.00	31.13	1000.0	9.000	Single Line	9.2
1.355000	44.16	---	87.00	42.84	1000.0	9.000	Single Line	9.2
14.275000	---	45.35	74.00	28.65	1000.0	9.000	Single Line	9.5
14.275000	50.54	---	87.00	36.46	1000.0	9.000	Single Line	9.5
16.230000	---	47.57	74.00	26.43	1000.0	9.000	Single Line	9.5
16.230000	50.02	---	87.00	36.98	1000.0	9.000	Single Line	9.5

Radiated Electric Field Emissions(Below 1 ㎓)

Frequency	Amplitude	ANT Polar. (H/V)	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin [dB]
[㎒]	[dBμV]		[m]	ANT. [dB/m]	Cable [dB]	[dBμV/m]	[dBμV/m]	
148.59	12.58	V	1.20	8.17	2.46	23.21	40.00	16.79
224.77	14.68	H	3.90	12.01	3.10	29.79	40.00	10.21
300.03	13.59	H	4.00	13.40	3.71	30.70	47.00	16.30
400.12	16.33	V	1.10	15.57	4.22	36.12	47.00	10.88
450.55	12.77	H	4.00	16.44	4.59	33.80	47.00	13.20
474.89	14.49	V	1.12	16.87	4.77	36.13	47.00	10.87

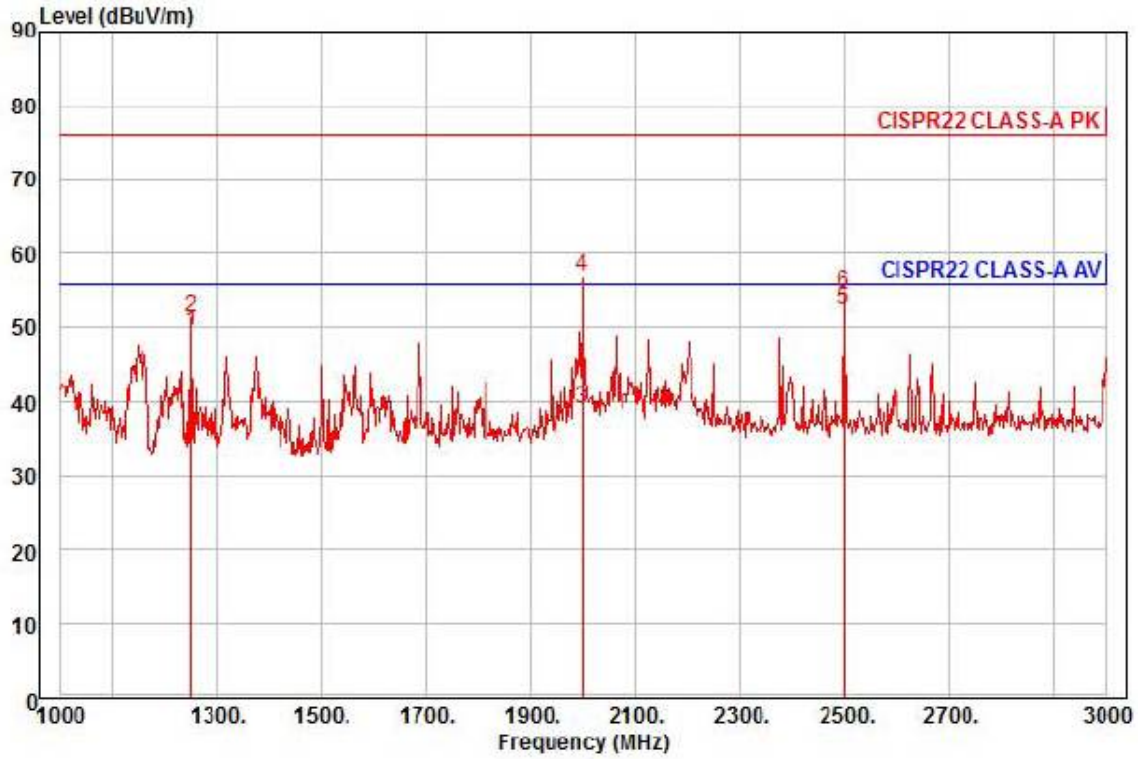
* H : Horizontal, V : Vertical

Radiated Electric Field Emissions(Above 1 ㎓)



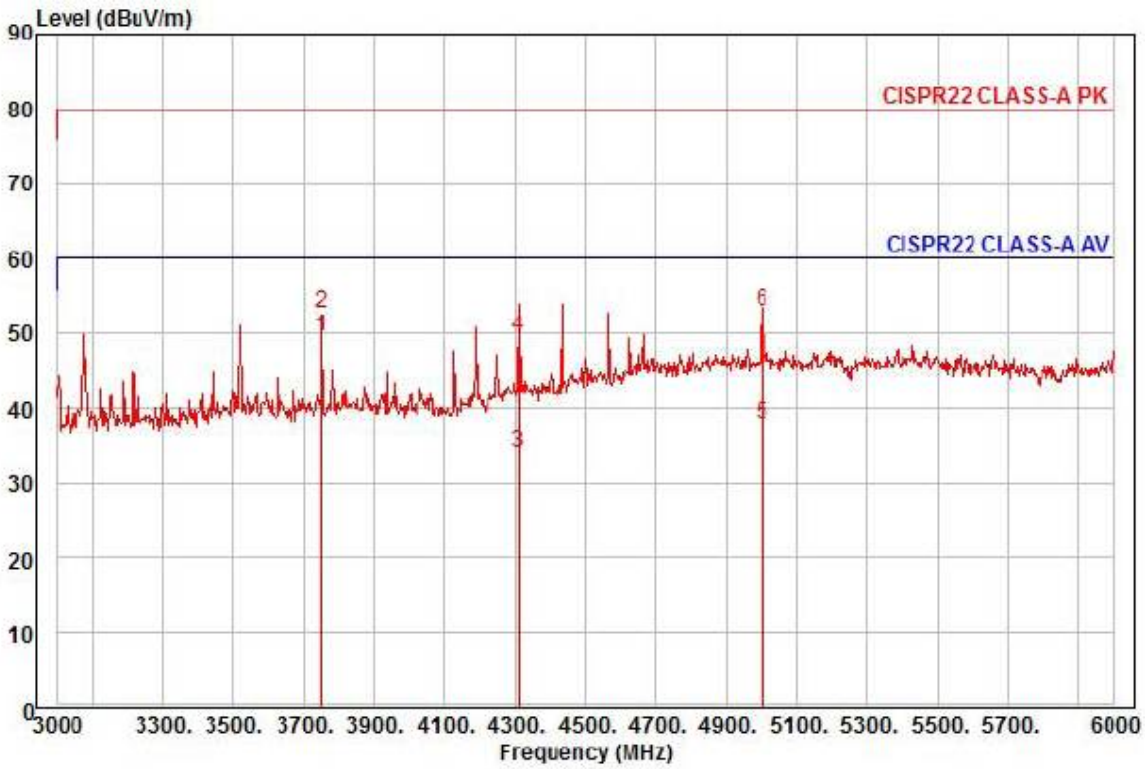
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : PRN-4011P
Mode :
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1250.00	59.76	24.90	7.24	40.00	342	56.00	-4.10	horizontal	Average
2	1250.00	60.97	24.90	7.24	40.00	342	76.00	-22.89	horizontal	Peak
3	1688.00	52.19	26.64	8.49	39.78	287	56.00	-8.46	horizontal	Average
4	1688.00	54.90	26.64	8.49	39.78	287	76.00	-25.75	horizontal	Peak
5 pp	2500.00	54.09	29.10	10.12	39.92	171	56.00	-2.61	horizontal	Average
6 pk	2500.00	56.22	29.10	10.12	39.92	171	76.00	-20.48	horizontal	Peak



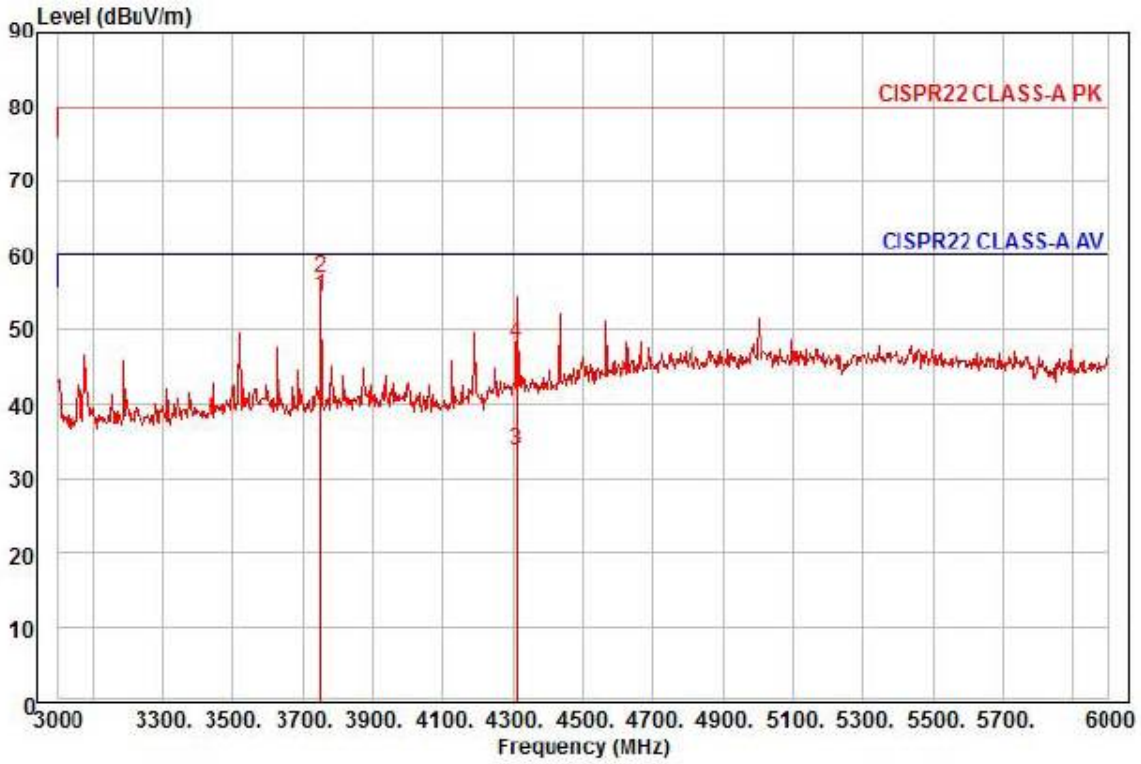
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : PRN-4011P
Mode :
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1250.00	57.42	24.90	7.24	40.00	167	56.00	-6.44	vertical	Average
2	1250.00	59.26	24.90	7.24	40.00	167	76.00	-24.60	vertical	Peak
3	2000.00	41.30	27.88	9.35	39.63	164	56.00	-17.10	vertical	Average
4 pk	2000.00	59.36	27.88	9.35	39.63	164	76.00	-19.04	vertical	Peak
5 pp	2500.00	53.26	29.10	10.12	39.92	178	56.00	-3.44	vertical	Average
6	2500.00	55.26	29.10	10.12	39.92	178	76.00	-21.44	vertical	Peak



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : PRN-4011P
Mode :
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1 pp	3750.00	45.21	31.59	13.01	40.36	303	60.00	-10.55	horizontal	Average
2	3750.00	48.46	31.59	13.01	40.36	303	80.00	-27.30	horizontal	Peak
3	4311.00	26.59	33.79	14.08	40.41	335	60.00	-25.95	horizontal	Average
4	4311.00	42.03	33.79	14.08	40.41	335	80.00	-30.51	horizontal	Peak
5	5001.00	25.14	37.72	15.33	40.41	200	60.00	-22.22	horizontal	Average
6 pk	5001.00	40.27	37.72	15.33	40.41	200	80.00	-27.09	horizontal	Peak



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : PRN-4011P
Mode :
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1 pp	3750.00	50.11	31.59	13.01	40.36	183	60.00	-5.65	vertical	Average
2 pk	3750.00	52.61	31.59	13.01	40.36	183	80.00	-23.15	vertical	Peak
3	4311.00	26.31	33.79	14.08	40.41	348	60.00	-26.23	vertical	Average
4	4311.00	40.62	33.79	14.08	40.41	348	80.00	-31.92	vertical	Peak

Test Setup Photos and Configuration

Conducted Voltage Emissions

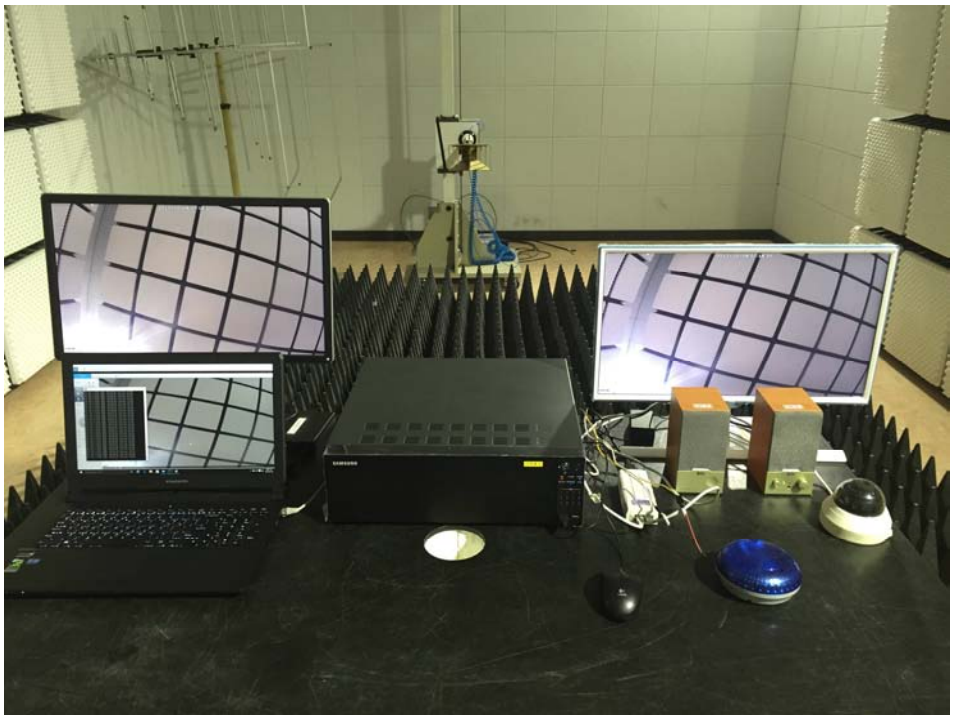
- P1

- P2

Conducted Telecommunication Emissions

Radiated Electric Field Emissions(Below 1 ㎓)

Radiated Electric Field Emissions(Above 1 ㎓)



EUT External Photographs

(Top)

(Bottom)

EUT Internal Photographs

(Internal View)

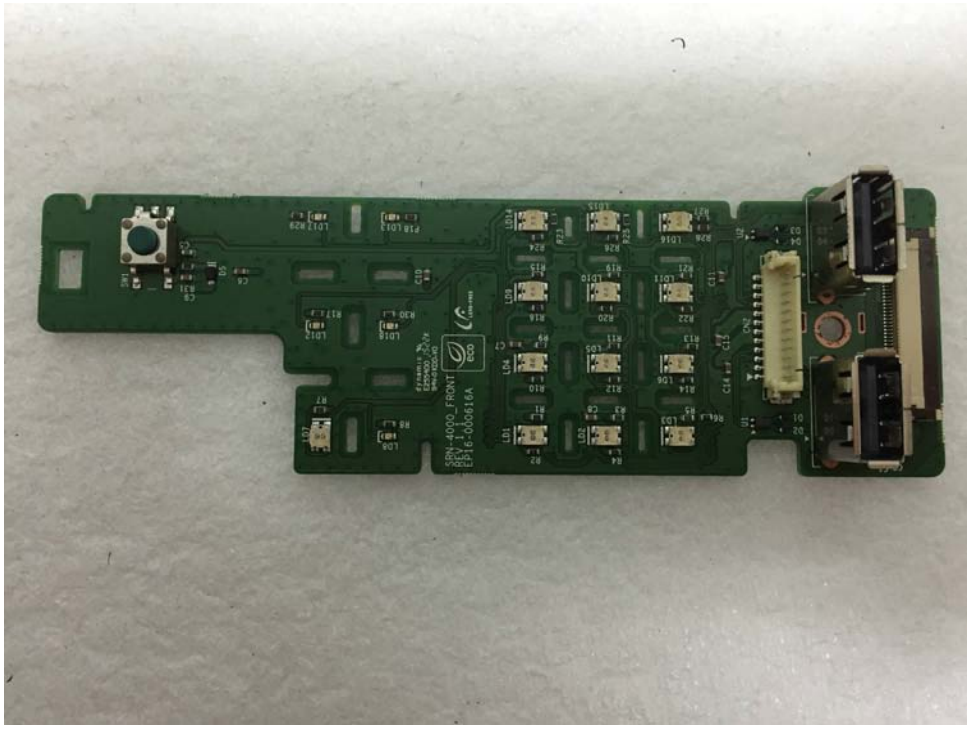
EUT Internal View – Main Board

(Top)

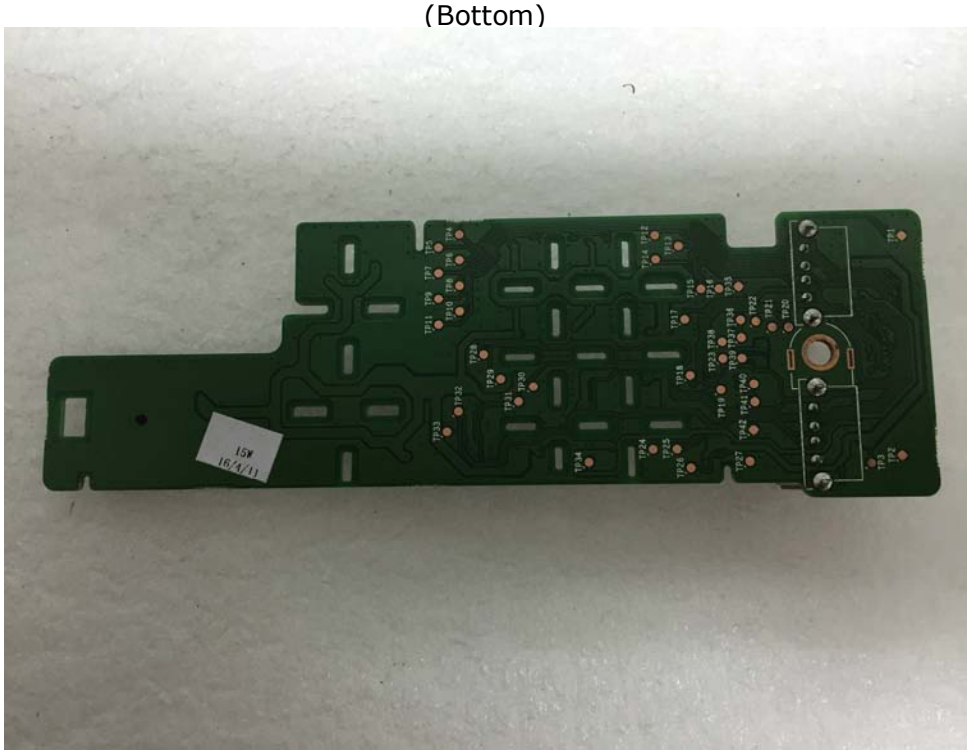
(Bottom)

EUT Internal View – Sub Board 1

(Top)

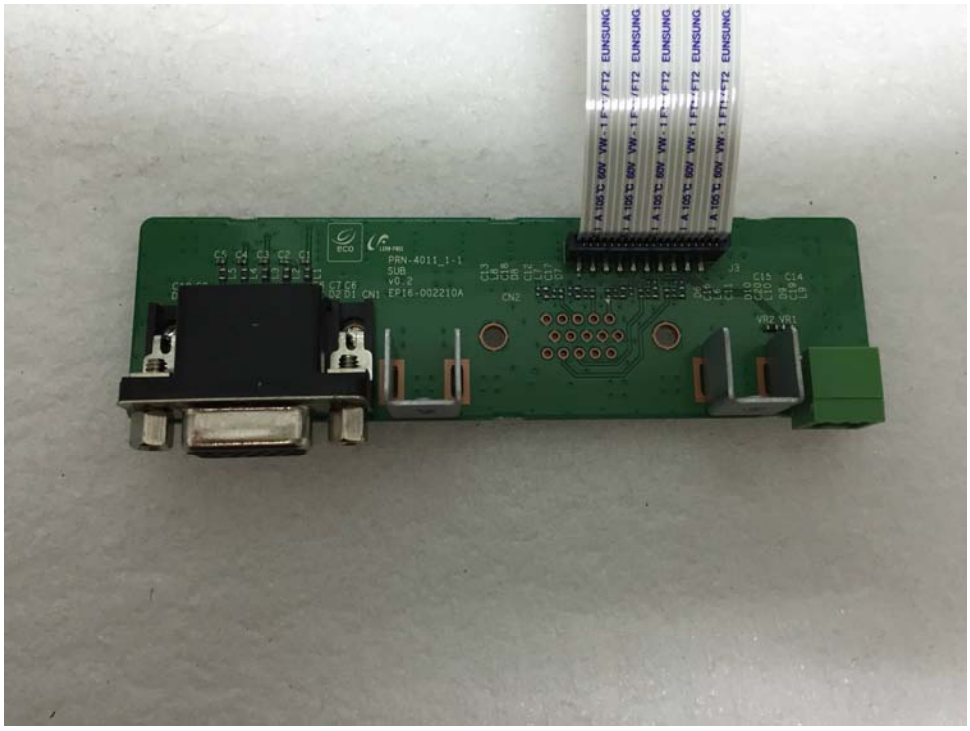


(Bottom)

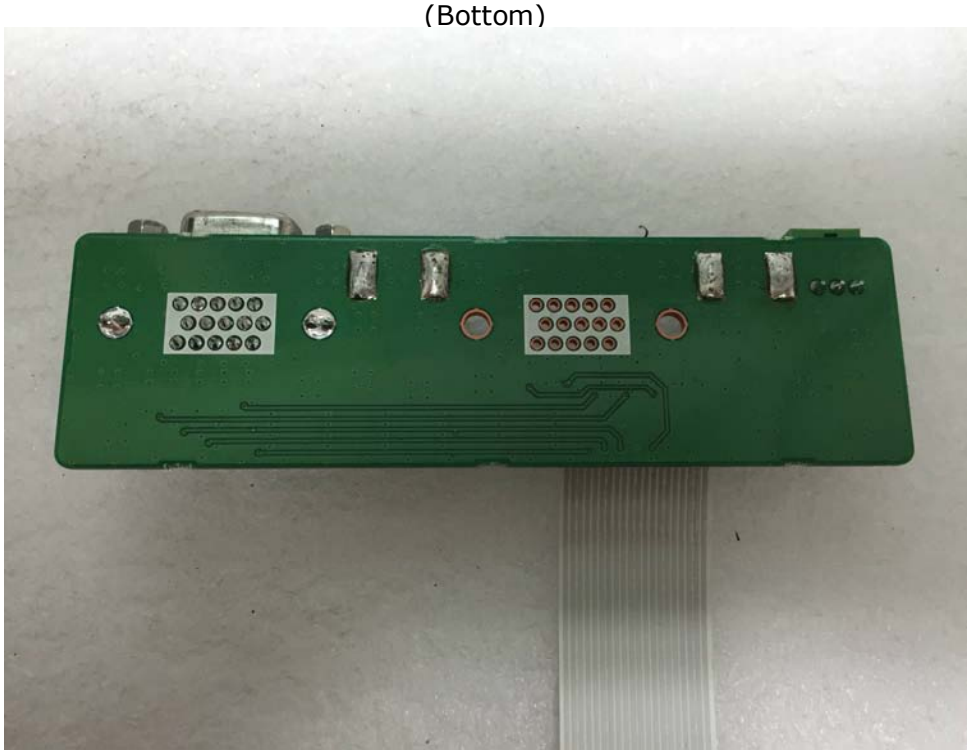


EUT Internal View – Sub Board 2

(Top)

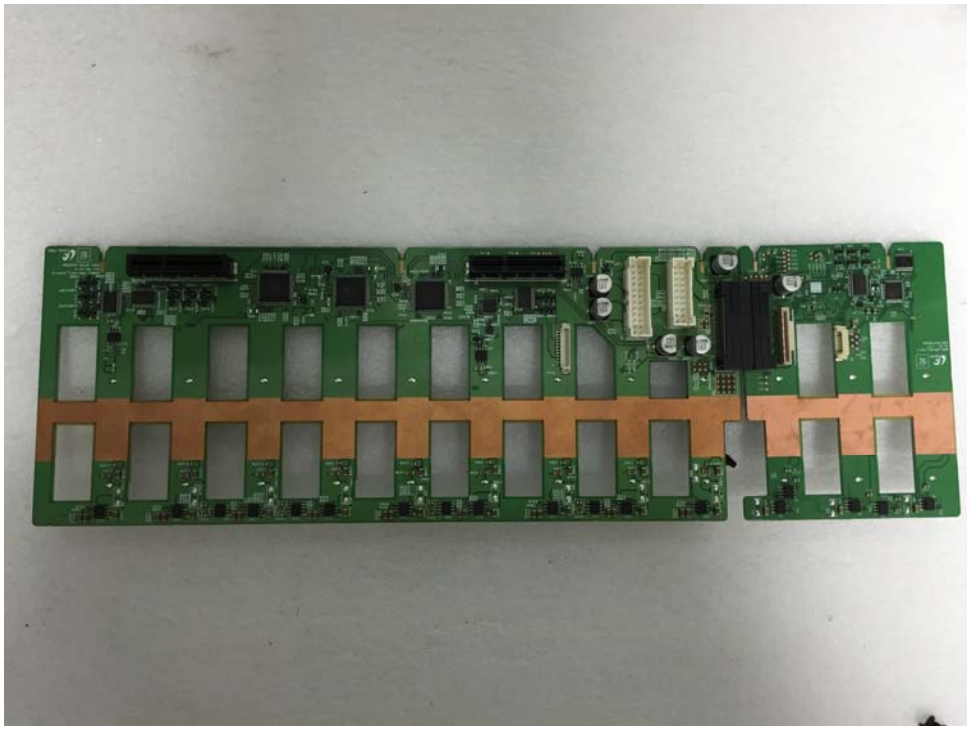


(Bottom)

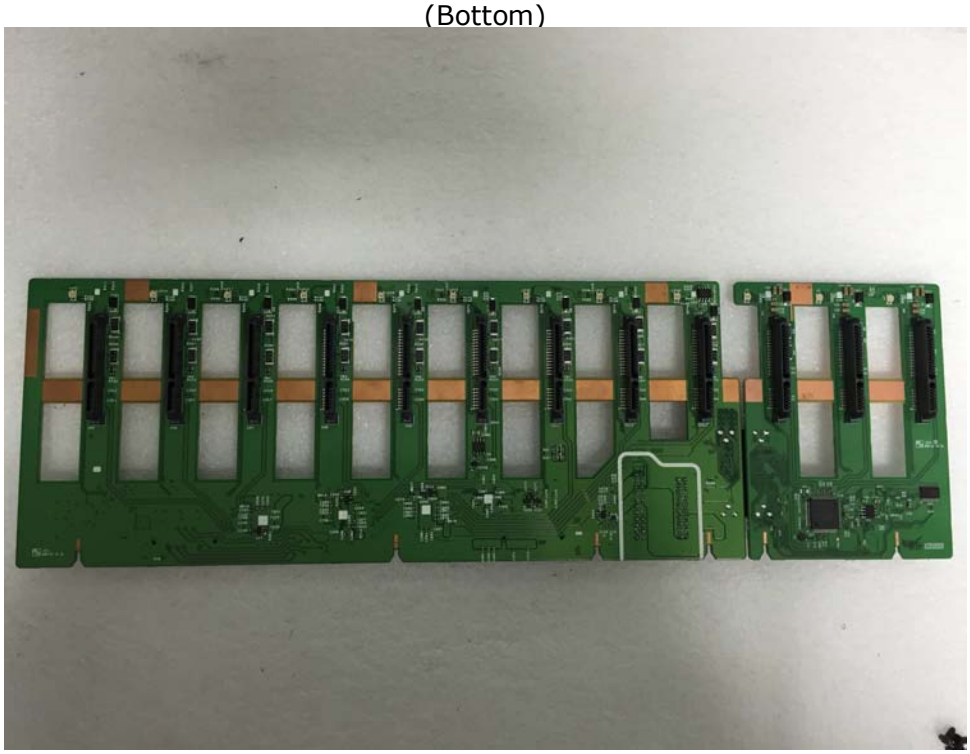


EUT Internal View – Sub Board 3

(Top)



(Bottom)



Main Board EUT Internal View – HDD

(Top)

(Bottom)