



EMC TEST REPORT For VCCI

Test Report No. : KES-EM-21T0253
Date of Issue : Apr. 16, 2021
Product name : NETWORK VIDEO ENCODER
Model/Type No. : SPE-1620
Variant Model : -
Applicant : Hanwha Techwin Co., Ltd.
Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, Republic of Korea
Manufacturer : 1. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.
2. D-TECH CO.,LTD.
Manufacturer Address : 1. Lot O-2, Que Vo Industrial Zone extended area,
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do,
Korea (Suwon Industrial Complex)
Date of Receipt : Mar. 15, 2021
Test date : Apr. 04, 2021
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Jun Soo, Jung
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 No.:
KES-EM-21T0253
Page (2) of (30)

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Apr. 16, 2021	KES-EM-21T0253	Issued

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Report No.:
KES-EM-21T0253
Page (3) of (30)

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)	8
1.8	Configuration.....	8
1.9	Remarks when standards applied	9
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 Mains Power Ports.....	12
2.2	Conducted Emissions at Telecommunication Ports.....	13
2.3	Radiated Electric Field Emissions(Below 1 GHz)	14
2.4	Radiated Electric Field Emissions(Above 1 GHz)	15
APPENDIX A – TEST DATA.....		16
Conducted Emissions at Mains Power Ports.....		16
Conducted Emissions at Telecommunication Ports		18
Radiated Electric Field Emissions(Below 1 GHz)		19
Radiated Electric Field Emissions(Above 1 GHz).....		20
Test Setup Photos and Configuration		21
Conducted Emissions at Mains Power Ports.....		21
Conducted Emissions at Telecommunication Ports		22
Radiated Electric Field Emissions(Below 1 GHz)		23
Radiated Electric Field Emissions(Above 1 GHz).....		24
EUT External Photographs		25
EUT Internal Photographs		26

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Report No.:
KES-EM-21T0253
Page (4) of (30)

1.0 General Product Description

Main Specifications of EUT are:

Video	
Input Channel	16CH BNC, 1.0 Vp-p / 75Ω composite NTSC/PAL
Input Signal & Resolution	CVBS, AHD/CVI/TVI (1, 2MP) Auto Detection
Video Out	1 HDMI OUT (16 multi Image, 1920x1080)
Operational	
Motion Detection	Off / On
Privacy Masking	Off / On (4ea rectangular zones)
De-Interlacing	support
Alarm I/O	16 Input/ 4 Output
Alarm Trigger	Motion Detection, Alarm Input, Video Loss, Tampering, Network disconnect
Alarm Events	File Upload Via FTP, E-mail
Audio I/O	4 Line Input / 1 Line Output (1 NO/COM/NC, 3 NO/COM)
OSD	Date&Time, Title
Remote Control Interface	1ea RS-485(Half Duplex)
RS-485 Protocol	SAMSUNG-T, PELCO-P/D
Coaxial Control	CVBS(Pelco-C) AHD, TVI, CVI
Network	
Ethernet	1 RJ-45 10/100/1000 Base-T
Video Compression Format	H.265, H.264 (MPEG-4 Part 10/AVC) : Main / Baseline / High, MJPEG
Resolution	1920x1080, 1280x720, 928x480(N), 928x240(N), 704x480(N), 704x240(N), 640x360, 352x240(N) 928x576(P), 928x288(P), 704x576(P), 704x288(P), 640x360, 352x288(P)
Max. Framerate	- Main/Sub Stream • 1080P Input 1080p/720p/WD1/4CIF/CIF : 15fps/CH(N), 12fps/CH(P) • under 720P Input 720p/WD1/4CIF/CIF : 30fps/CH(N), 25fps/CH(P) - MJPEG : 2fps @ 1920x1080, 1280x720, 960H, D1 ※ Main/Sub Stream 동시 출력 시 Max. Framerate은 1920x1080 15fps + 640x360 15fps 단, OSD 사용시 Max. Framerate 저하됨
Video-Quality Adjustment	-
Bitrate Control Method	H.265, H.264 : CBR or VBR
Streaming Capability	Multiple Streaming (Up to 2 Profiles per channel)
Audio Compression	G.711 u-law
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL/TLS, DHCP, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP, ONVIF, 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	rtsp/rtsp max. 48 users(4 Users/CH) at Unicast Mode , http max.32 users
Webpage Languages	English, French, German, Spanish, Italian, Russian, Turkish, Polish, Dutch, Swedish, Portuguese, Czech, Chinese, Japanese, Korean, Hungarian, Greek
Web Viewer	Supported OS : Windows 10 이상, Mac OS X 10.13 이상 Non-plugin WebViewer Supported Browser : Google Chrome 80 이상, MS Edge 83 이상, Mozilla Firefox 72 이상, Apple Safari 11.0.1 이상 * Web Viewer의 영상 재생 성능은 사용자의 CPU/GPU 성능에 따름
Application Programming Interface	ONVIF profile S, SUNAPI (HTTP API)
Compatible Software & Recorder	SmartViewer, NVR(Hanwha Techwin, P/X/Q series)
Environmental	
Operating Temperature / Humidity	-10°C ~ +45°C / 20% ~ 80% RH (-10°C ~ +40°C when installed in RACK)
Electrical	
Input Voltage / Current	DC12V/5A
Power Consumption	MAX : 16W (12V, 1.33A)
Mechanical	
Color / Material	Black / Metal
Dimension (WxHxD)	(W) 370.0 × (H) 44.0 × (D) 320.0(include Connector 330.9)mm
Weight	2.32kg(5.115lb)

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1.1 Test Voltage & Frequency

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

☒ AC 100 V, 60 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 ENCODER	SPE-1620	-	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD./D-TECH CO.,LTD.	EUT
Adapter	FSP060-DHAN3	-	-	EUT

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Report No.:

KES-EM-21T0253

Page (6) of (30)

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK VIDEO ENCODER 1	SPE-410	-	-	-
NETWORK VIDEO ENCODER 1 Adapter	2ACB022F	-	Channel Well Technology (Guangzhou) Co., Ltd.	-
NETWORK VIDEO ENCODER 2	SPE-410	-	-	-
NETWORK VIDEO ENCODER 2 Adapter	2ACB022F	-	Channel Well Technology (Guangzhou) Co., Ltd.	-
Note book	P95G001	9JM8HT2	Wistron Infocom (Chengdu) Company Limited	-
Note book Adapter	LA65NS2-01	-	LITE-ON TECHNOLOGY (CHANGZHOU)CO.,LTD.	-
Monitor	SMT-2232	C95V67VF900025 B	Weihai Daewoo Electronics Co., Ltd.	-
Controller	SPC-1010	C60E67WD601003	SamSung Techwin Co.,Ltd.	-
Controller Adapter	FJ-SW1203000K	-	SHENZHEN FUJIA APPLIANCE CO.,LTD.	-
MiC	MP1000	-	-	-
Camera 1	SCD-6083R	-	-	-
Camera 1 Adapter	MC12D-1200500	-	Shenzhen MaCable Technology co.,ltd	-
Camera 2	HCD-7030RA	-	Hanwha Techwin Co., Ltd.	-
Camera 2 Adapter	MC12D-1200500	-	Shenzhen MaCable Technology co.,ltd	-
Alarm	-	-	-	-
Alarm button	-	-	-	-
Speaker	E5	-	PreSonus®	-

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1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK VIDEO ENCODER (EUT)	RJ-45	Note book	RJ-45	3.0	U
	HDMI	Monitor	HDMI	1.4	S
	RS-485	Controller	RS-485	3.0	U
	BNC1	NETWORK VIDEO ENCODER 1	BNC1	0.5	S
	BNC2		BNC2	0.5	S
	BNC3		BNC3	0.5	S
	BNC4		BNC4	0.5	S
	BNC5		BNC5	0.5	S
	BNC6		BNC6	0.5	S
	BNC7		BNC7	0.5	S
	BNC8		BNC8	0.5	S
	BNC9	NETWORK VIDEO ENCODER 2	BNC9	0.5	S
	BNC10		BNC10	0.5	S
	BNC11		BNC11	0.5	S
	BNC12		BNC12	0.5	S
	BNC13		BNC13	0.5	S
	BNC14		BNC14	0.5	S
	BNC15		BNC15	0.5	S
	BNC16		BNC16	0.5	S
	RCA	Speaker	RCA	1.6	U
	RCA	MiC	3.5 mm	1.7	U
	Alarm OUT	Alarm	Alarm OUT	3.0	U
	Alarm IN	Alarm button	Alarm IN	3.0	U
NETWORK VIDEO ENCODER 1	BNC	Camera 1	BNC	1.2	S
NETWORK VIDEO ENCODER 2	BNC	Camera 2	BNC	1.5	S

* Unshielded=U, Shielded=S

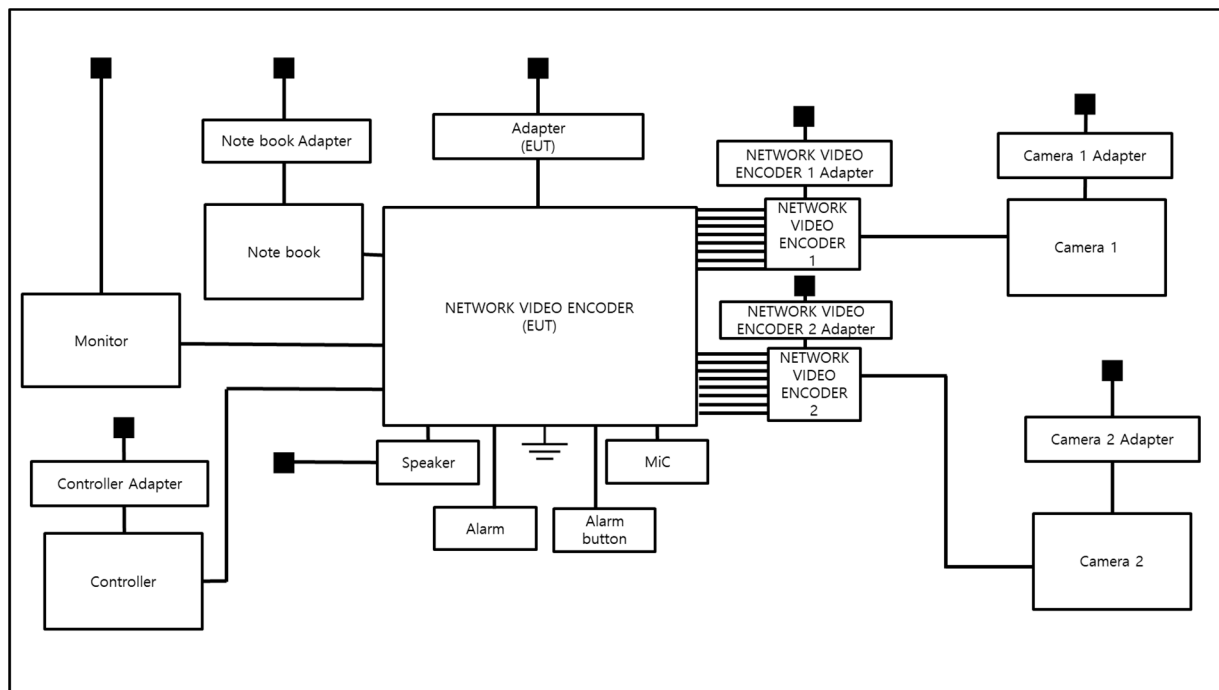
1.7 EUT Operating Mode(s)

Test Mode	operating
Operation mode	1. Make sure that the camera's images are output normally from the Notebook and monitor. 2. Continuous PING test between EUT and Notebook was conducted to verify that the network was connected properly.

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

1.8 Configuration

■ AC Main
 □ DC Main



1.9 Remarks when standards applied

Since the VGA OUT port is not used, it was excluded from the test.

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 16-1-4:2019

1.12 Laboratory Accreditations and Listings

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

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 61547 :2009

☐ EN 55032:2015

☐ Class A

☐ Class B

☐ EN 55024:2010 +A1:2015

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013



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Report No.:
KES-EM-21T0253
Page (11) of (30)

-
- | | | |
|---|---|----------------------------------|
| ☒ 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 C63.4-2009 | | |
| ☐ 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 Mains Power Ports

Test Date

Apr. 04, 2021

Test Location

Electro wave Shieldroom #6

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	01, 15, 2022
☒	LISN	ENV216	R & S	101787	12, 29, 2021
☒	LISN	ESH2-Z5	R & S	100450	12, 29, 2021
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 29, 2021

Test Conditions

Temperature: (24,0 ± 0,1) °C

Relative Humidity: (45,2 ± 0,2) % 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.

2.2 Conducted Emissions at Telecommunication Ports

Test Date

Apr. 04, 2021

Test Location

Electro wave Shieldroom #6

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	01, 15, 2022
☒	LISN	ENV216	R & S	101787	12, 29, 2021
☒	LISN	ESH2-Z5	R & S	100450	12, 29, 2021
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	12, 29, 2021
☐	8-WIRE ISN CAT3,5	ENY81	R & S	100174	12, 30, 2021
☒	8-WIRE ISN CAT6	ENY81-CAT6	R & S	101665	12, 30, 2021
☐	CDN	CDNS502A	TESEQ	40431	12, 29, 2021

Test Conditions

Temperature: (24,0 ± 0,1) °C
Relative Humidity: (45,2 ± 0,2) % 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.



2.3 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Apr. 04, 2021

Test Location

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

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-
☒	EMI TEST RECEIVER	ESU26	R & S	100551	04, 01, 2022
☒	AMPLIFIER	SCU 01	R & S	100603	11, 25, 2021
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	12, 08, 2022
☒	ATTENUATOR	8491A	HP	32173	03, 10, 2022

Test Conditions

Temperature: (23,7 ± 0,1) °C
Relative Humidity: (45,4 ± 0,3) % 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

Remarks

See Appendix A for test data.



2.4 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Apr. 04, 2021

Test Location

SEMI ANECHOIC CHAMBER #3

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	ESR7	R & S	101190	08, 05, 2021
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	04, 20, 2021
☐	ATTENUATOR	8491A	HP	35496	03, 10, 2022
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	03, 11, 2022

Test Conditions

Temperature: (24,0 ± 0,1) °C

Relative Humidity: (45,2 ± 0,3) % R.H.

Frequency Range of Measurement

1 GHz to 6 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.

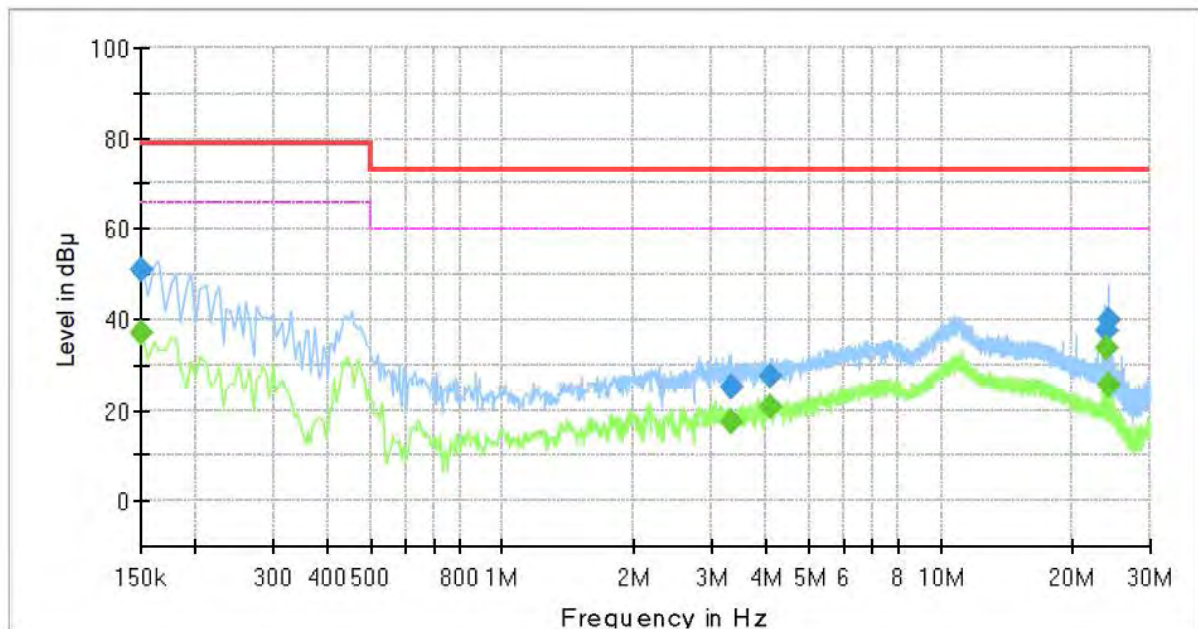
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

Test Description:	Conducted Emission
Model No.:	SPE-1620
Phase:	L1
Mode:	
Operator Name:	KES



Final_Result

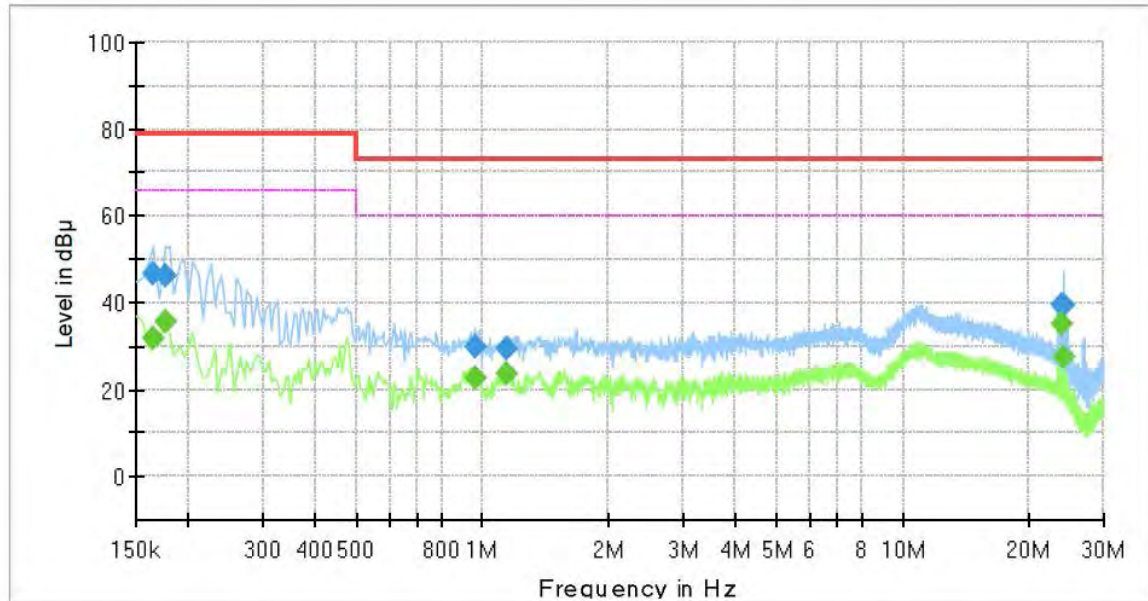
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	37.11	66.00	28.89	1000.0	9.000	L1	19.4
0.150000	50.83	---	79.00	28.17	1000.0	9.000	L1	19.4
3.335000	---	17.56	60.00	42.44	1000.0	9.000	L1	19.9
3.335000	25.22	---	73.00	47.78	1000.0	9.000	L1	19.9
4.070000	---	20.89	60.00	39.11	1000.0	9.000	L1	19.8
4.070000	27.38	---	73.00	45.62	1000.0	9.000	L1	19.8
23.980000	---	33.75	60.00	26.25	1000.0	9.000	L1	20.1
23.980000	37.67	---	73.00	35.33	1000.0	9.000	L1	20.1
24.220000	---	25.41	60.00	34.59	1000.0	9.000	L1	20.1
24.220000	39.82	---	73.00	33.18	1000.0	9.000	L1	20.1

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NEUTRAL LINE

Common Information

Test Description:	Conducted Emission
Model No.:	SPE-1620
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)
0.165000	---	31.93	66.00	34.07	1000.0	9.000	N	19.4
0.165000	46.83	---	79.00	32.17	1000.0	9.000	N	19.4
0.175000	---	35.56	66.00	30.44	1000.0	9.000	N	19.4
0.175000	46.01	---	79.00	32.99	1000.0	9.000	N	19.4
0.960000	---	22.82	60.00	37.18	1000.0	9.000	N	20.0
0.960000	29.65	---	73.00	43.35	1000.0	9.000	N	20.0
1.145000	---	23.43	60.00	36.57	1000.0	9.000	N	20.0
1.145000	29.56	---	73.00	43.44	1000.0	9.000	N	20.0
24.015000	---	35.01	60.00	24.99	1000.0	9.000	N	20.1
24.015000	39.64	---	73.00	33.36	1000.0	9.000	N	20.1
24.215000	---	27.28	60.00	32.72	1000.0	9.000	N	20.1
24.215000	39.48	---	73.00	33.52	1000.0	9.000	N	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))

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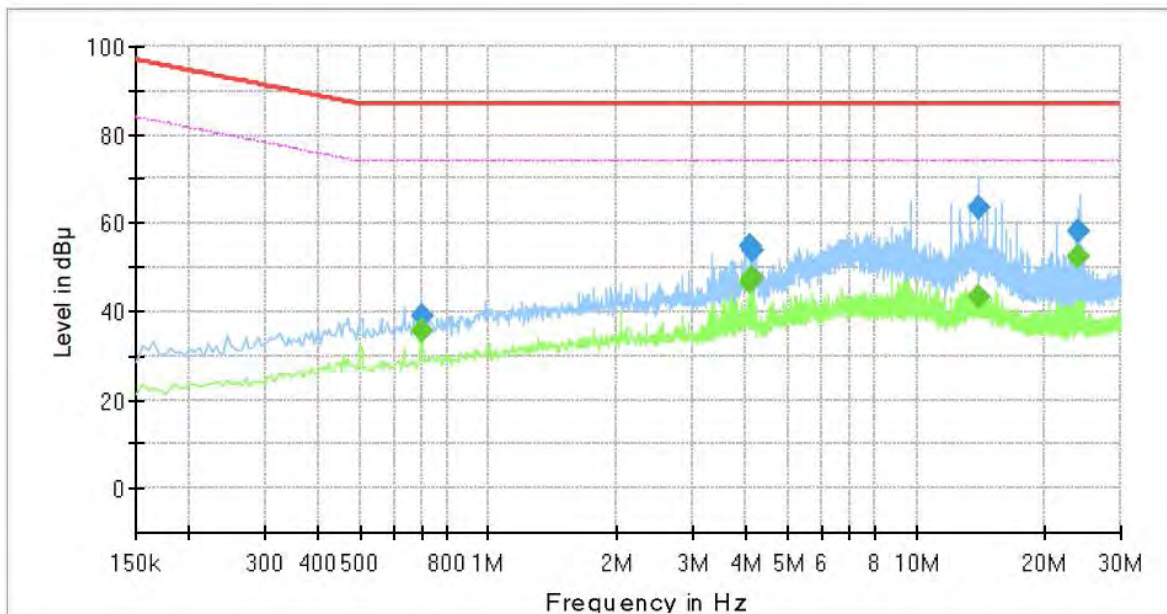
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Conducted Emissions at Telecommunication Ports

[1 000 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	SPE-1620
Mode :	
Speed :	1 000 Mbps
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.695000	---	35.64	74.00	38.36	1000.0	9.000	Single Line	19.9
0.695000	39.17	---	87.00	47.83	1000.0	9.000	Single Line	19.9
4.095000	---	46.50	74.00	27.50	1000.0	9.000	Single Line	19.6
4.095000	54.73	---	87.00	32.27	1000.0	9.000	Single Line	19.6
4.140000	---	47.75	74.00	26.25	1000.0	9.000	Single Line	19.6
4.140000	53.87	---	87.00	33.13	1000.0	9.000	Single Line	19.6
13.975000	---	43.25	74.00	30.75	1000.0	9.000	Single Line	19.7
13.975000	63.45	---	87.00	23.55	1000.0	9.000	Single Line	19.7
23.880000	---	52.46	74.00	21.54	1000.0	9.000	Single Line	19.9
23.880000	58.10	---	87.00	28.90	1000.0	9.000	Single Line	19.9

◆ 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 (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

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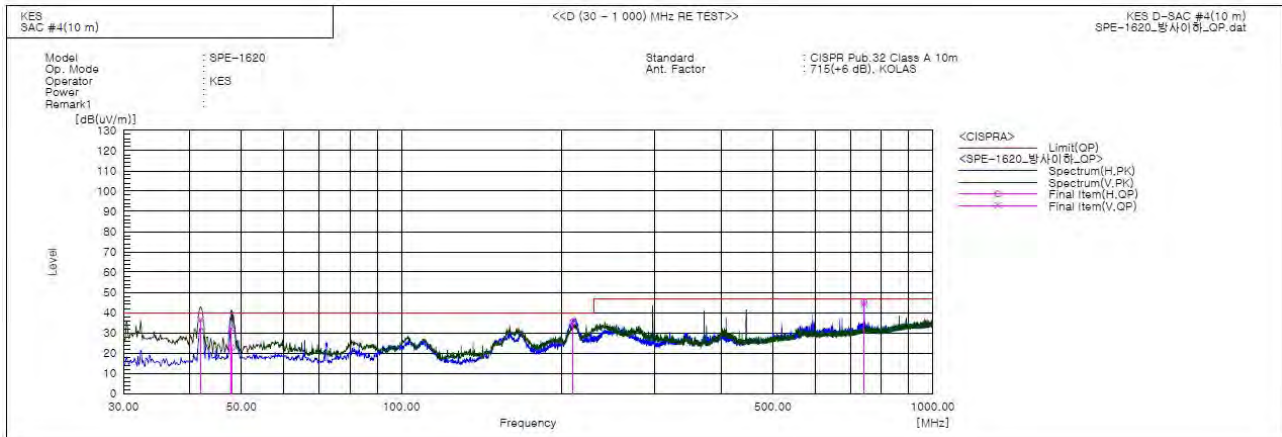
3701, 40, Simin-daero 365beon-gil,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
Tel: +82-31-425-6200 / Fax: +82-31-424-0450
www.kes.co.kr

Report No.:

KES-EM-21T0253

Page (19) of (30)

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	41.883	V	58.4	-22.0	36.4	40.0	3.6	337.0	265.0	
2	47.824	V	53.3	-21.2	32.1	40.0	7.9	111.0	205.0	
3	47.945	H	43.9	-21.2	22.7	40.0	17.3	395.0	68.0	
4	210.299	H	55.9	-20.5	35.4	40.0	4.6	383.0	170.0	
5	742.586	H	51.1	-5.9	45.2	47.0	1.8	399.0	314.0	
6	742.586	V	50.2	-5.9	44.3	47.0	2.7	366.0	166.0	

◆ Calculation

Corrected Amplitude [dBuV] = Amplitude[dBuV] + Correction Factor [dB]

Corrected Amplitude : The Final Value, Amplitude : Reading Value,

Correction Factor : ANT FACTOR + Cable loss

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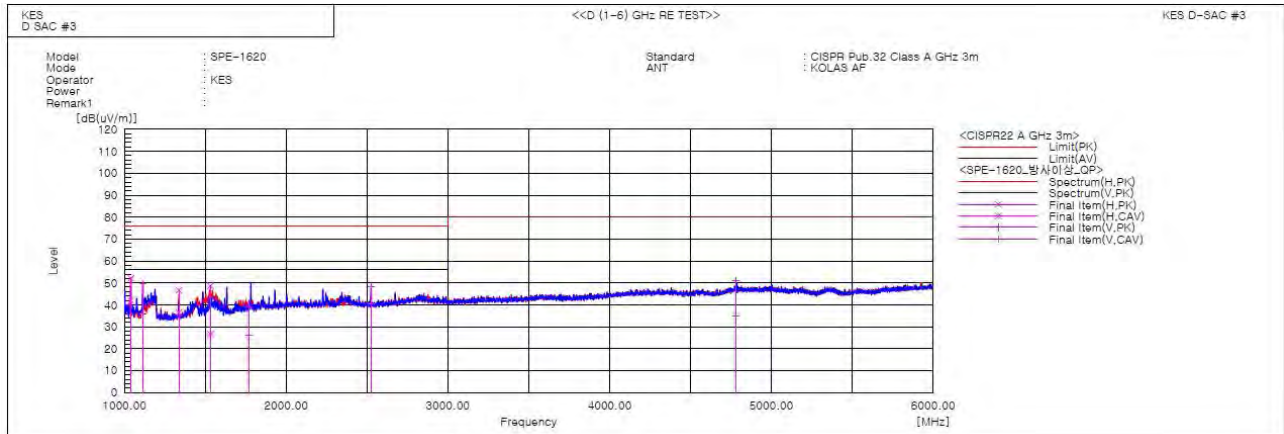
3701, 40, Simin-daero 365beon-gil,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea
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Report No.:

KES-EM-21T0253

Page (20) of (30)

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	1039.150	H	61.4	51.3	-9.3	52.1	42.0	76.0	56.0	23.9	14.0	100.0	44.5	
2	1114.140	V	58.7	44.8	-9.0	49.7	35.8	76.0	56.0	26.3	20.2	100.0	105.6	
3	1336.400	H	54.4	44.0	-7.6	46.8	36.4	76.0	56.0	29.2	19.6	100.0	341.7	
4	1530.680	H	54.6	32.7	-6.0	48.6	26.7	76.0	56.0	27.4	29.3	100.0	42.0	
5	1770.662	V	42.6	29.6	-3.4	39.2	26.2	76.0	56.0	36.8	29.8	100.0	320.3	
6	2524.470	V	48.1	40.4	0.1	48.2	40.5	76.0	56.0	27.8	15.5	100.0	354.1	
7	4779.322	V	42.8	26.4	8.3	51.1	34.7	80.0	60.0	28.9	25.3	100.0	180.0	

◆ Calculation

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

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

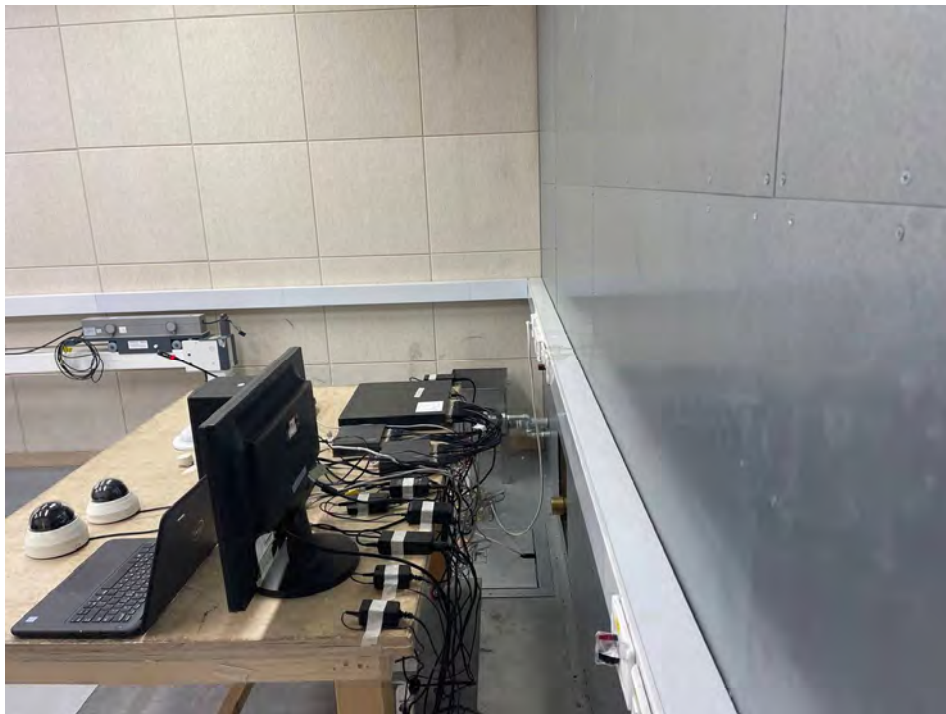
Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

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



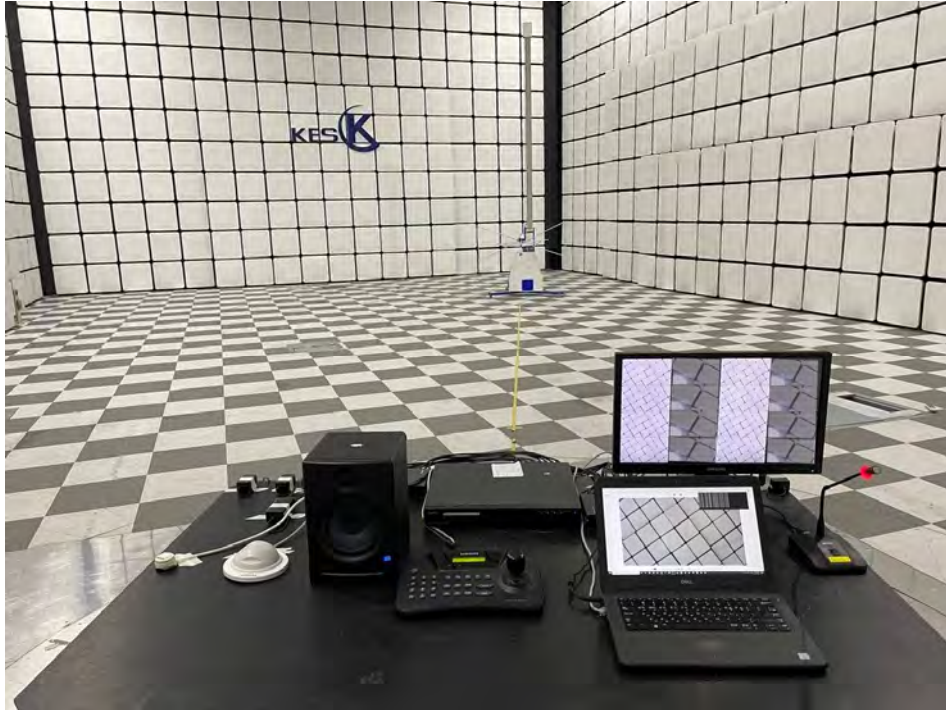
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Conducted Emissions at Telecommunication Ports



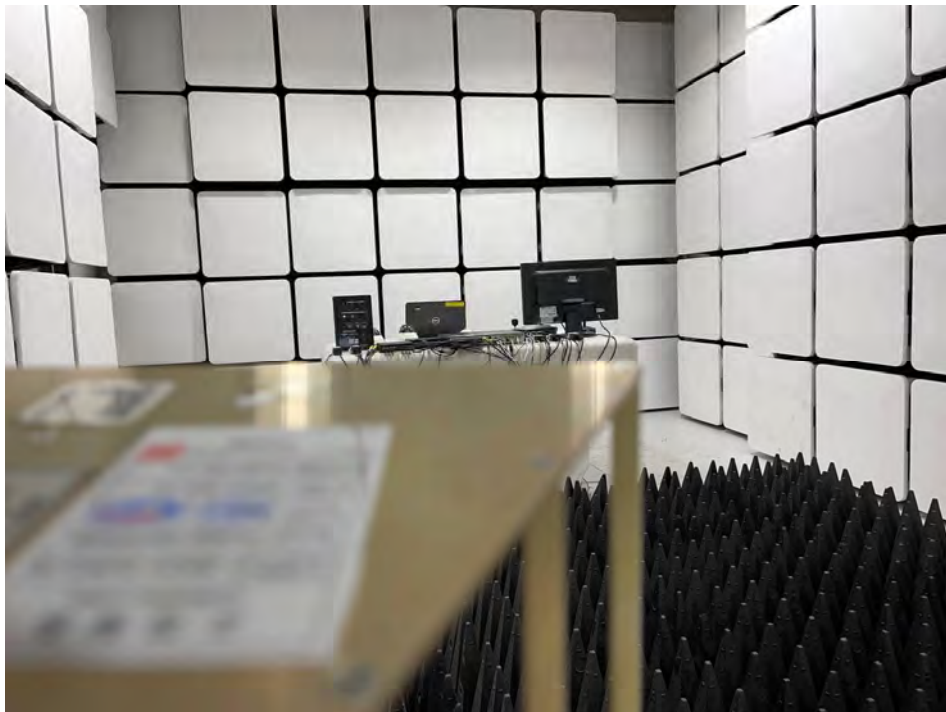
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Radiated Electric Field Emissions(Below 1 GHz)



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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

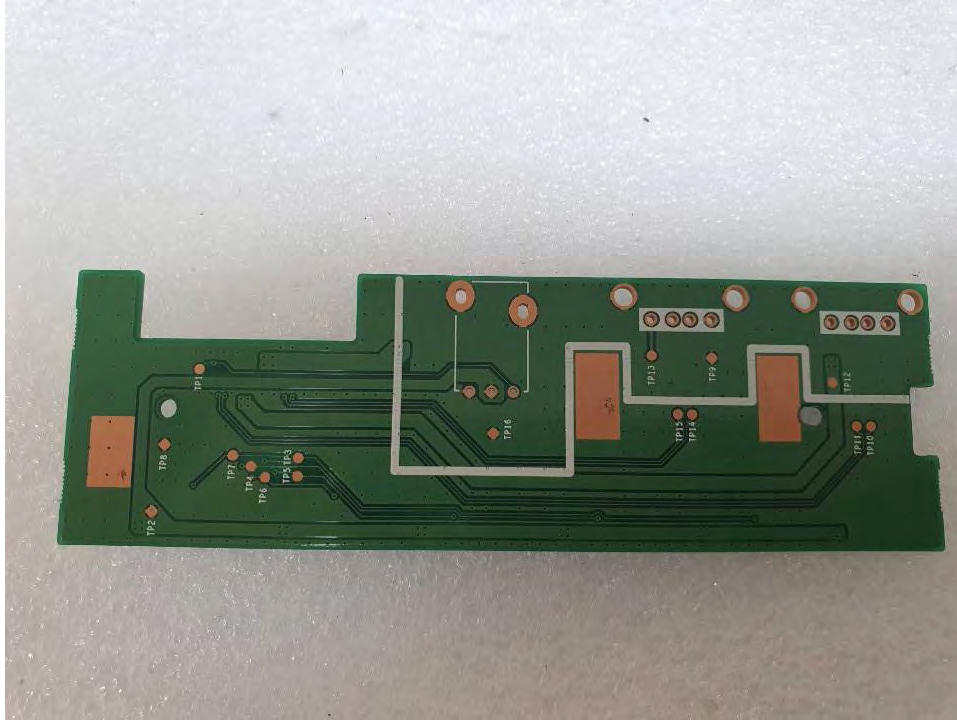
(Internal View)



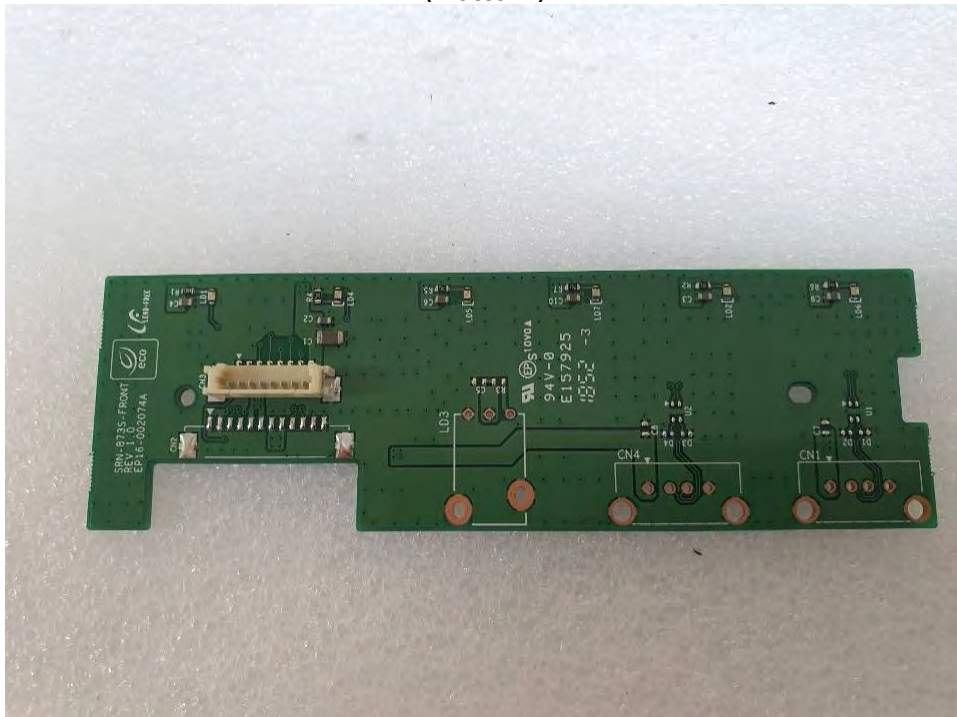
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EUT Internal View – Board 1

(Top)



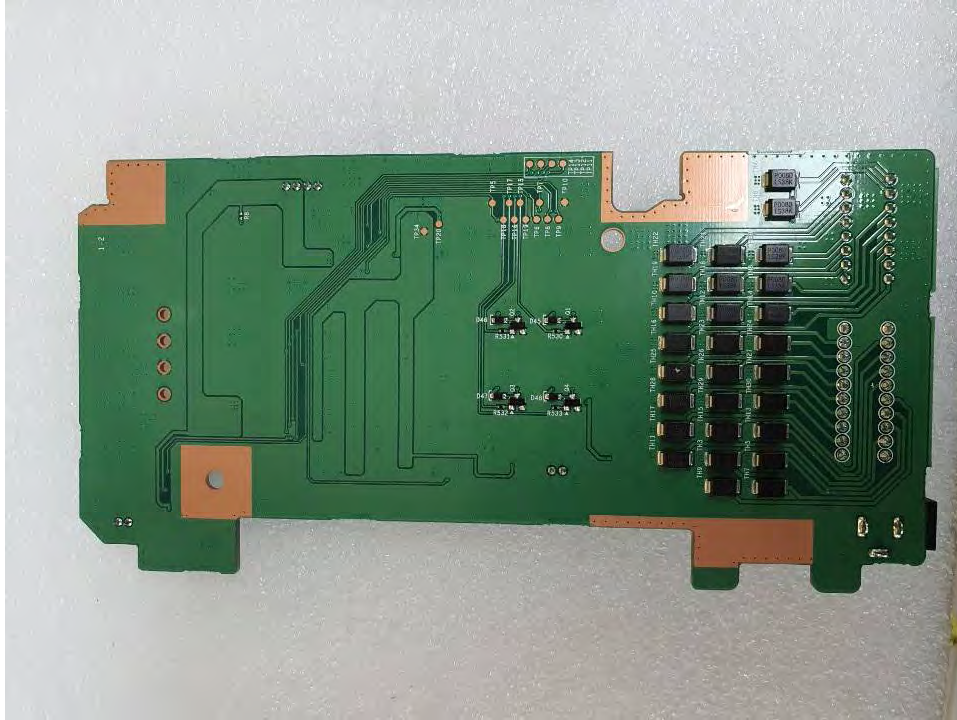
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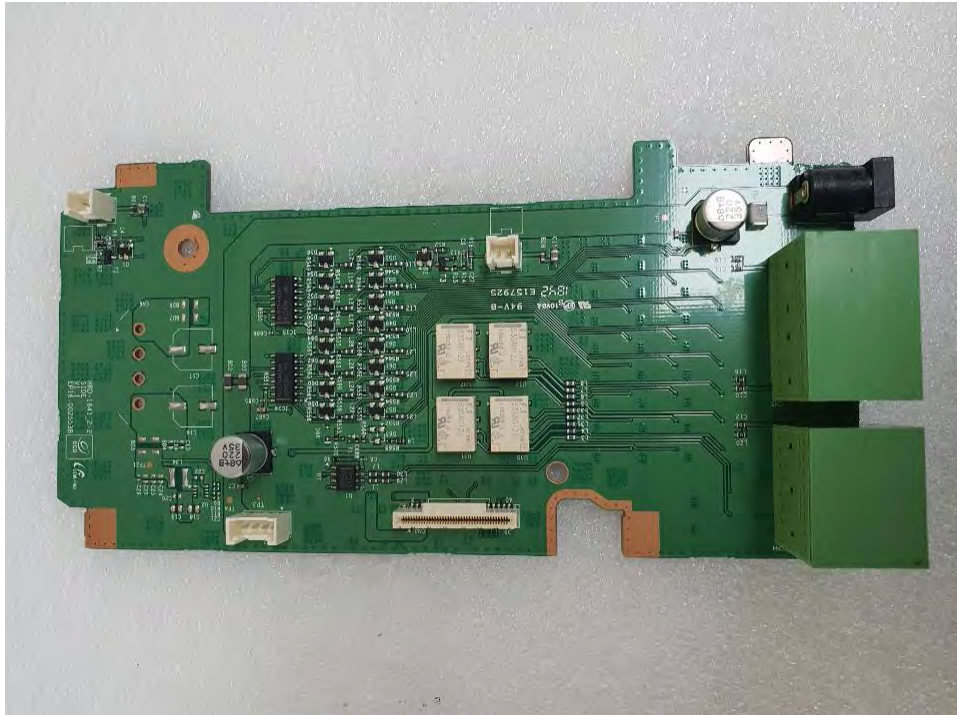
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EUT Internal View – Board 2

(Top)



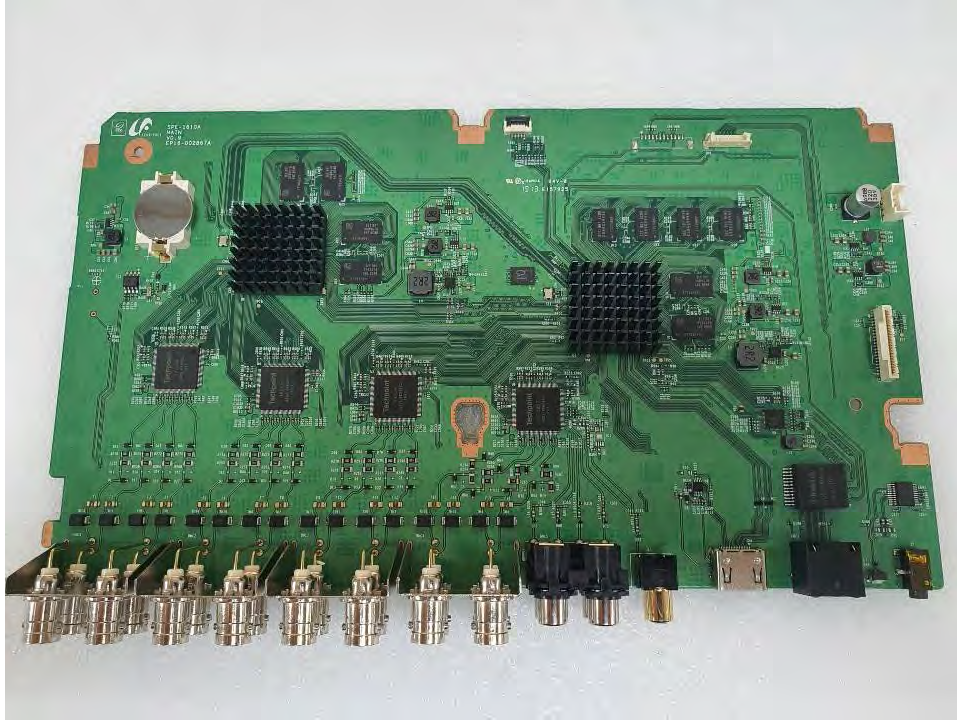
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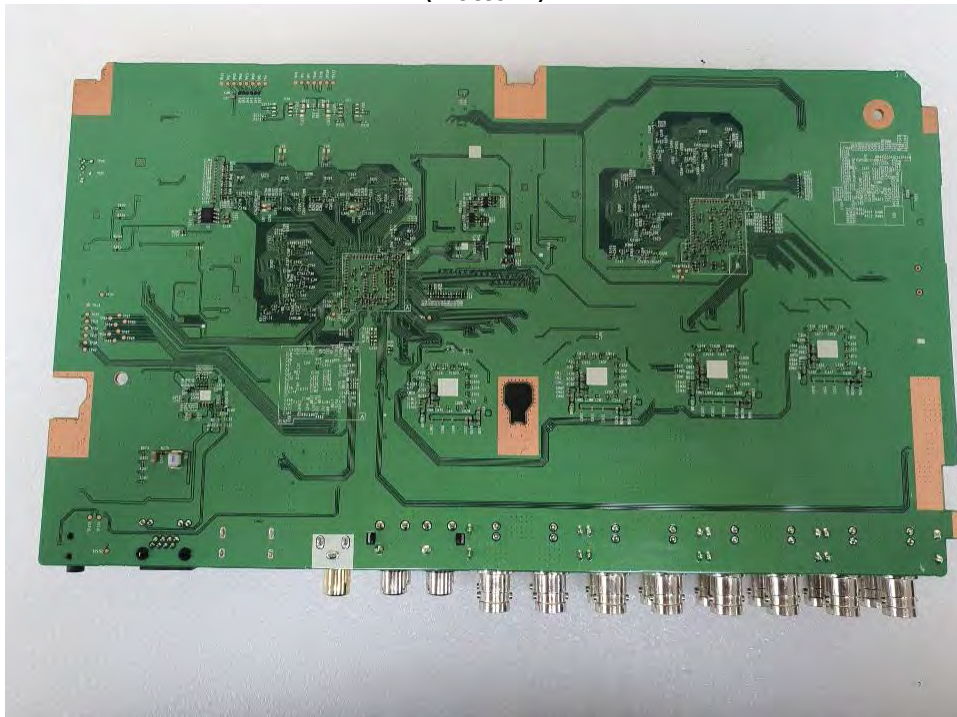
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EUT Internal View – Board 3

(Top)

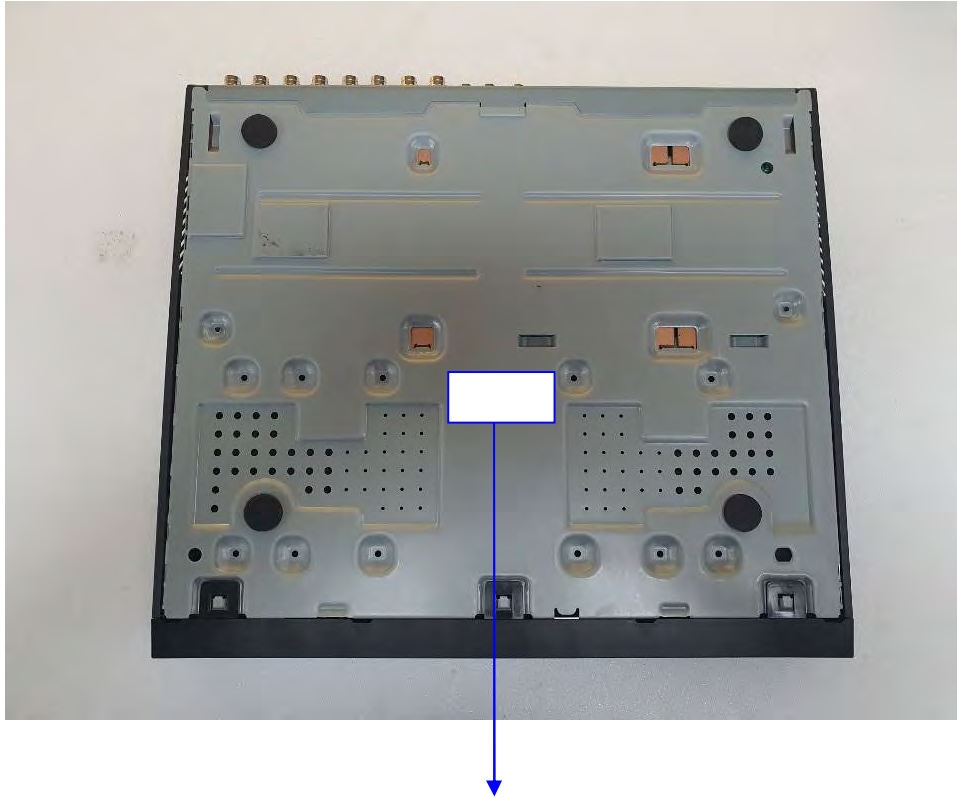


(Bottom)



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Label Photographs



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VCCI-A