DECLARATION OF CONFORMITY

DECLARATION OF CONFORMITY

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

Report No:	**KES-E1-17T0490**
Type of equipment:	**DECORDER**
Model Name:	**SPD-150P**
Variant Model:	**-**
Applicant:	**Hanwha Techwin Co., Ltd.**
Address:	**1204,Changwon-daero, Seongsan-gu, Chang-won-si, Gyeongsangnam-do,Korea**
Manufacturer :	**Hanwha Techwin (Tianjin) Co., Ltd.**
Address:	**No.11, Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China China**
Test standards :	**AS/ NZS CISPR 32:2013**
Classification:	**RCM**

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

Jul. 28, 2017
(Date of issue)

(Name and signature of authorized person)

EMC TEST REPORT For RCM

Test Report No.	:	KES-E1-17T0490
Date of Issue	:	Jul. 28, 2017
Product name	:	DECORDER
Model/Type No.	:	SPD-150P
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
Date of Receipt	:	Jul. 07, 2017
Test date	:	Jul. 21, 2017 – Jul. 24, 2017
Test Results	:	☒ **In Compliance** ☐ **Not in Compliance**

Tested by

Young Suk, Song
EMC Test Engineer

Reviewed by

Dong-Hun, Jang
EMC Technical Manager

This test report is not related to KOLAS.

REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Jul. 28, 2017	KES-E1-17T0490	Issued

TABLE OF CONTENTS

1.0 General Product Description

Main Specifications of EUT are:

H/W	CPU		Embedded CPU
	Operating System		Embedded Linux
	Output	HDMI	1ch (up-to 4K)
		VGA	1ch (DB15 1ea)
		CVBS	1ch, 704x480 (30fps), 704x576 (25fps)
	External	Ethernet	1ea (10/100/1000BASE-T)
		USB	USB 2.0 2ea
		Audio In/Out	1 out
	Environmental	Operating Temperature	+0°C to +40°C(+32°F to +104°F)
		Humidity	20% ~ 85% RH
	Electrical	Power	DC12V, PoE(IEEE802.3af)
		Power Consumption	Max. 8.4W(12VDC), Max. 8.4W(PoE)
	Mechanical	Color / Material	Dark Gray
		Dimension (WxHxD)	178 x 34 x 128mm (7.0" x 1.3" x 5.0")
		Weight	Approx. 0.68Kg
S/W	Video	Codec	H.265/H.264/MJPEG
		Network Performance	200Mbps
		Max. Channel	48@D1
		Max. Decoding Performance	30fps@8MP, up-to 12MP
		Division (/monitor)	**Clone mode** **1/4/6/8/9/13/16/25/36(32)/2V/3V** **Expand mode** **(HDMI) 1/4/6/8/9/13/16/25/36(32)/2V/3V** **(VGA) 1/4/6/8/9/13/16/2V/3V**
		Layout	Up-to 20
	Audio	Codec	G.711/G.726/AAC
	Management		Local GUI
	Time Setting		NTP/Manual
	Dynamic DNS		미지원

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 ☒ 240 Vac ☐ 100 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
DECORDER	SPD-150P	-	Hanwha Techwin (Tianjin) Co.,Ltd	E.U.T
AC / DC Adaptor	2ACB022F	-	Channel Well Technology (Guangzhou) Co., Ltd.	-
Mouse	MOEIUOA	-	PRIMAX ELECTRONICS LTD.	-

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
POE Adaptor 1	GS728TPP	-	NETGEAR, INC.	-
MONITOR 1	HSTND-7041-L	6CM6020YQQ	HP Inc.	-
MONITOR 2	E2318HN	-	DELL	-
MONITOR 3	SMT-2232	C95V67VF900015Y	Weihai Daewoo Electronics Co., Ltd.	-
Camera	SND-L6013R	-	Hanwha Techwin (Tianjin) Co.,Ltd.	-
POE Adaptor 2	ANY4805C-LT1	10H300002	ANY ELECTRONICS CO., LTD	-
Speaker	BR10000A CUVE	-	BEIJING EDIFIER HI-TECH GROUP.	-

1.6 External I/O Cabling

- AC / DC Adaptor Mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
NETWORK CAMERA (E.U.T)	D-SUB	MONITOR 1	D-SUB	1.6	S
	HDMI	MONITOR 2	HDMI	1.8	S
	BNC	MONITOR 3	BNC	3.0	S
	RJ-45 (DATA)	POE Adaptor 2	RJ-45 (DATA)	3.0	U
	3.5 ㎜	Speaker	3.5 ㎜	1.6	U
	USB	Mouse	USB	1.7	U
Camera	RJ-45 (POE)	POE Adaptor 2	RJ-45 (POE)	3.0	U

- POE Mode

Start		END		Cable Spec.	
Description	**I/O Port**	**Description**	**I/O Port**	**Length**	**Shield**
NETWORK CAMERA (E.U.T)	RJ-45 (POE)	POE Adaptor 1	RJ-45 (POE)	3.0	U
	D-SUB	MONITOR 1	D-SUB	1.6	S
	HDMI	MONITOR 2	HDMI	1.8	S
	BNC	MONITOR 3	BNC	3.0	S
	3.5 ㎜	Speaker	3.5 ㎜	1.6	U
	USB	Mouse	USB	1.7	U
Camera	RJ-45 (POE)	POE Adaptor 1	RJ-45 (POE)	3.0	U

* Unshielded=U, Shielded=S

1.7 EUT Operating Mode(s)

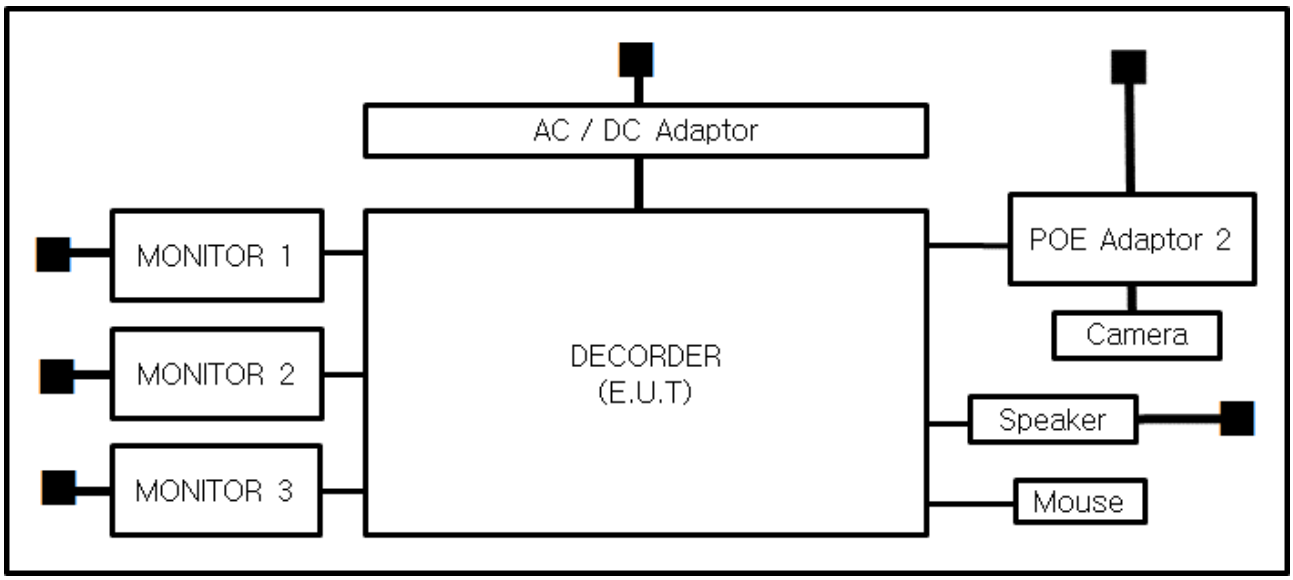
Test mode	operating
AC / DC Adaptor	E.U.T Monitoring
POE	E.U.T Monitoring

E.U.T Test operating S/W		
Name	Version	Manufacture Company
-	-	-

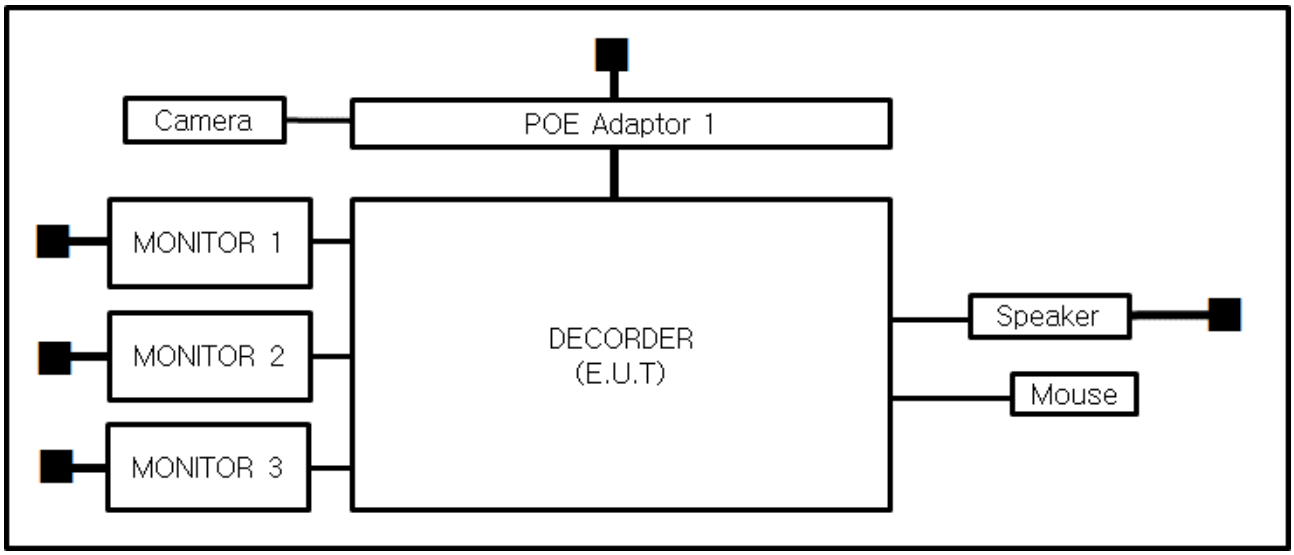
1.8 Configuration

■ AC Main
□ DC Main

- AC / DC Adaptor Mode



- POE Mode



1.9 Remarks when standards applied

- The adaptor is not included by the manufacturer.

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, Yeoju-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 CISPR 32:2013** ☒ 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

2.1 Conducted Emissions at Mains Power Ports

Test Date
Jul. 21, 2017

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	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: 21,3 ℃
Relative Humidity: 44,3 %

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

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
Jul. 21, 2017 / Jul. 23, 2017

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	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
☒	8-WIRE ISN CAT3	CAT3 8158	SCHWARZBECK	8158-0019	03, 29, 2018
☒	8-WIRE ISN CAT5	CAT5 8158	SCHWARZBECK	8158-0030	03, 29, 2018
☒	8-WIRE ISN CAT6	NTFM 8158	SCHWARZBECK	8158-0029	08, 11, 2017

Test Conditions
Temperature: 21,3 ℃ / 22,4 ℃
Relative Humidity: 44,3 % / 49,4 %

Frequency Range of Measurement
150 ㎑ to 30 ㎒

Instrument Settings
IF Band Width: 9 ㎑

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 ㎓)

Test Date
Jul. 24, 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: 23,9 ℃
Relative Humidity: 51,6 %

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
Jul. 23, 2017

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, 08, 2017
☒	PREAMPLIFIER	8449B	AGILENT	3008A01967	05, 31, 2018
☒	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 02, 2019

Test Conditions
Temperature: 23,6 ℃
Relative Humidity: 51,9 %

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

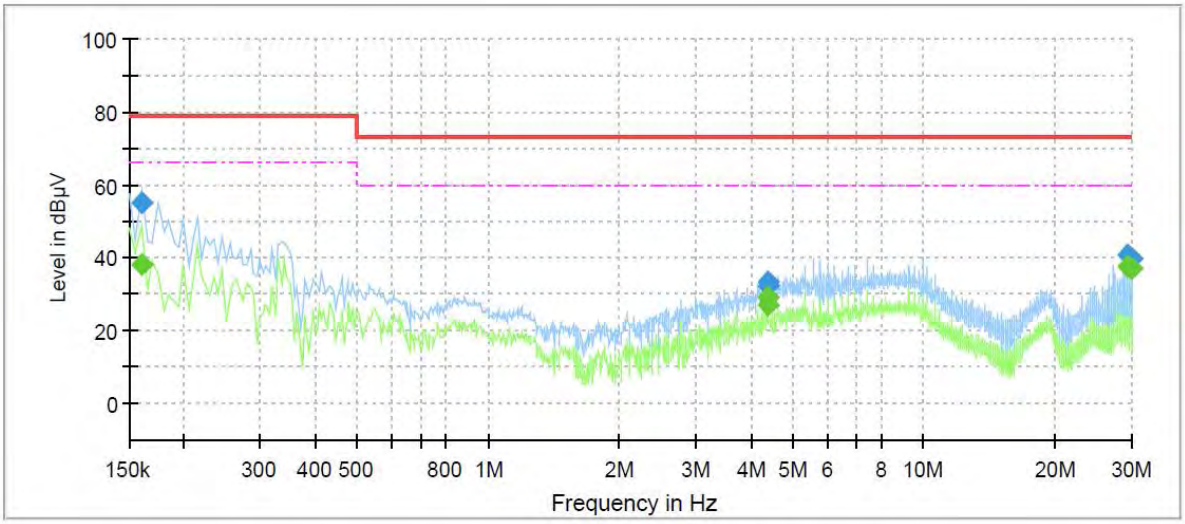
Conducted Emissions at Mains Power Ports

- AC / DC Adaptor Mode

[HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	SPD-150P
Mode	DC_H
Operator Name:	KES



Final_Result

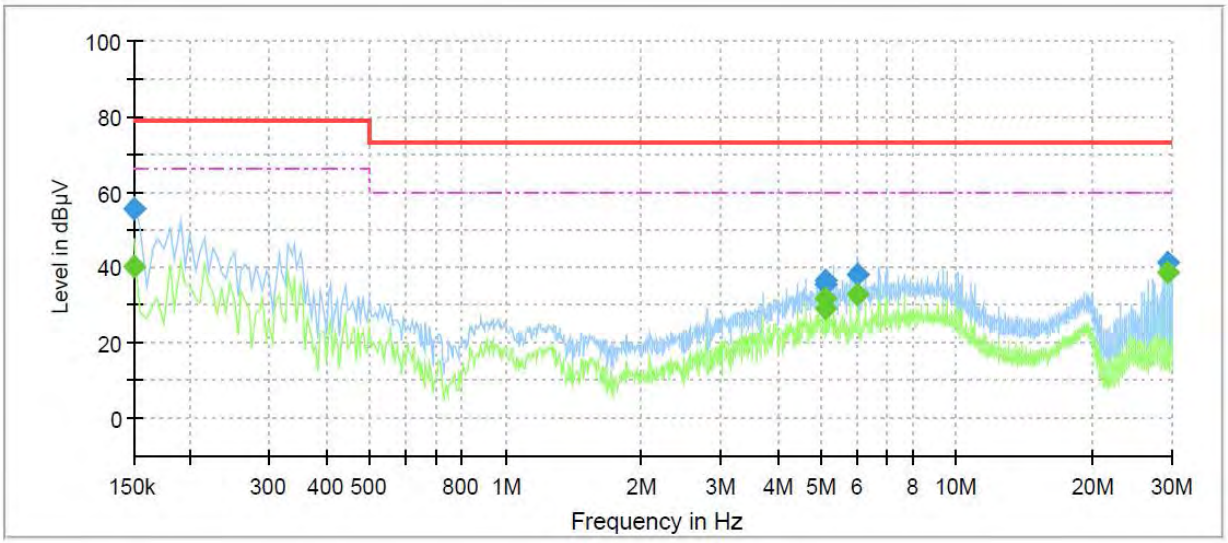
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	38.22	66.00	27.78	1000.0	9.000	L1	21.0
0.160000	54.95	---	79.00	24.05	1000.0	9.000	L1	21.0
4.400000	---	27.20	60.00	32.80	1000.0	9.000	L1	19.7
4.400000	32.30	---	73.00	40.70	1000.0	9.000	L1	19.7
4.405000	---	29.14	60.00	30.86	1000.0	9.000	L1	19.7
4.405000	33.55	---	73.00	39.45	1000.0	9.000	L1	19.7
29.235000	---	37.74	60.00	22.26	1000.0	9.000	L1	20.3
29.235000	40.64	---	73.00	32.36	1000.0	9.000	L1	20.3
29.905000	---	36.98	60.00	23.02	1000.0	9.000	L1	20.3
29.905000	39.62	---	73.00	33.38	1000.0	9.000	L1	20.3

♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	SPD-150P
Mode	DC_N
Operator Name:	KES



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	40.12	66.00	25.88	1000.0	9.000	N	21.0
0.150000	55.48	---	79.00	23.52	1000.0	9.000	N	21.0
5.120000	---	31.54	60.00	28.46	1000.0	9.000	N	19.8
5.120000	36.79	---	73.00	36.21	1000.0	9.000	N	19.8
5.125000	---	28.92	60.00	31.08	1000.0	9.000	N	19.8
5.125000	35.74	---	73.00	37.26	1000.0	9.000	N	19.8
6.050000	---	32.84	60.00	27.16	1000.0	9.000	N	19.8
6.050000	38.18	---	73.00	34.82	1000.0	9.000	N	19.8
29.235000	---	38.87	60.00	21.13	1000.0	9.000	N	20.3
29.235000	41.42	---	73.00	31.58	1000.0	9.000	N	20.3

♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

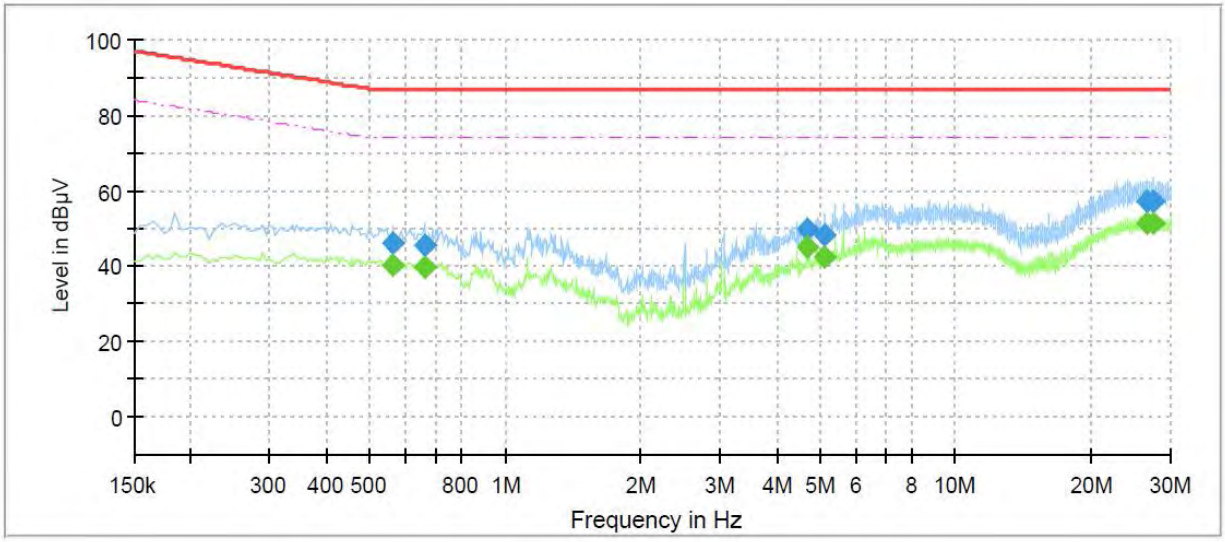
Conducted Emissions at Telecommunication Ports

- AC / DC Adaptor Mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	SPD-150P
Mode	DC_10 Mbps
Operator Name:	KES



Final_Result

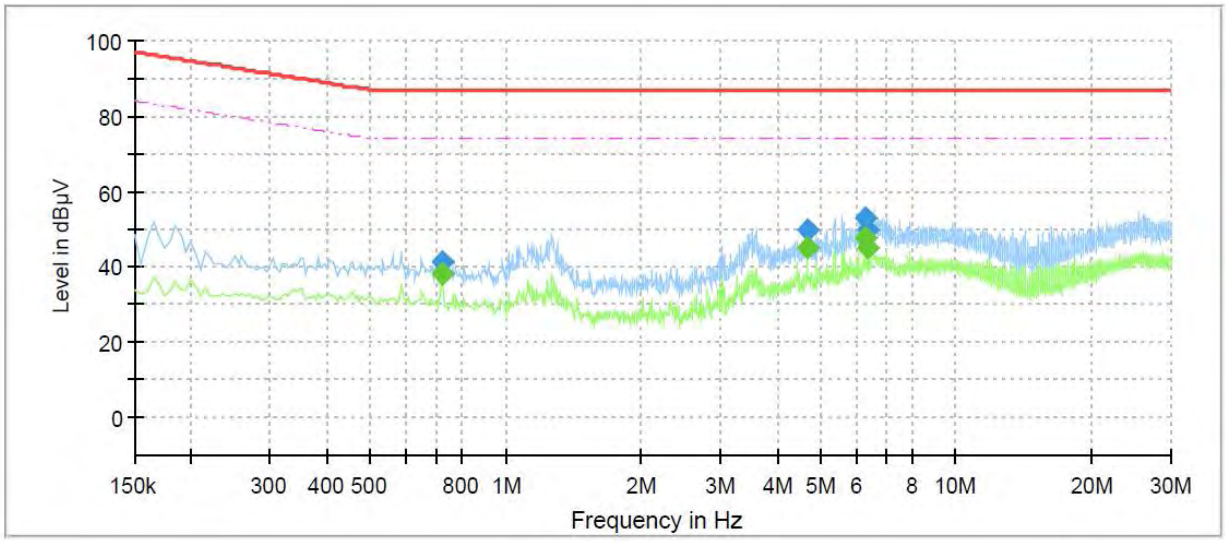
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.560000	---	40.34	74.00	33.66	1000.0	9.000	Single Line	20.8
0.560000	46.07	---	87.00	40.93	1000.0	9.000	Single Line	20.8
0.660000	---	39.67	74.00	34.33	1000.0	9.000	Single Line	20.7
0.660000	45.38	---	87.00	41.62	1000.0	9.000	Single Line	20.7
4.680000	---	44.96	74.00	29.04	1000.0	9.000	Single Line	19.8
4.680000	49.63	---	87.00	37.37	1000.0	9.000	Single Line	19.8
5.110000	---	42.34	74.00	31.66	1000.0	9.000	Single Line	19.8
5.110000	48.01	---	87.00	38.99	1000.0	9.000	Single Line	19.8
26.485000	---	51.47	74.00	22.53	1000.0	9.000	Single Line	20.1
26.485000	57.37	---	87.00	29.63	1000.0	9.000	Single Line	20.1
27.590000	---	51.28	74.00	22.72	1000.0	9.000	Single Line	20.1
27.590000	57.16	---	87.00	29.84	1000.0	9.000	Single Line	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 (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	SPD-150P
Mode	DC_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)
0.720000	---	37.88	74.00	36.12	1000.0	9.000	Single Line	20.1
0.720000	41.36	---	87.00	45.64	1000.0	9.000	Single Line	20.1
4.670000	---	44.93	74.00	29.07	1000.0	9.000	Single Line	19.3
4.670000	49.61	---	87.00	37.39	1000.0	9.000	Single Line	19.3
6.305000	---	47.50	74.00	26.50	1000.0	9.000	Single Line	19.4
6.305000	53.19	---	87.00	33.81	1000.0	9.000	Single Line	19.4
6.335000	---	44.93	74.00	29.07	1000.0	9.000	Single Line	19.4
6.335000	50.02	---	87.00	36.98	1000.0	9.000	Single Line	19.4

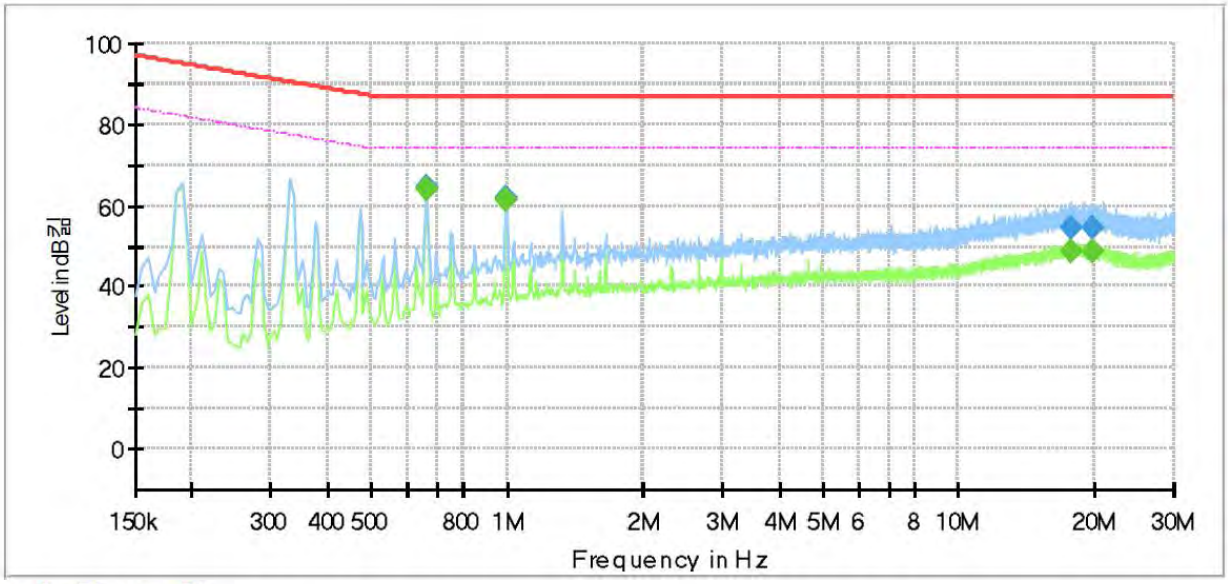
♦ Calculation
QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]
QuasiPeak / CAverage : The Final Value
Reading Value : Not shown in the table.
Corr. : Correction values (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

- POE Mode

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	SPD-150P
Mode	POE_10 Mbps
Operator Name:	KES



Final_Result

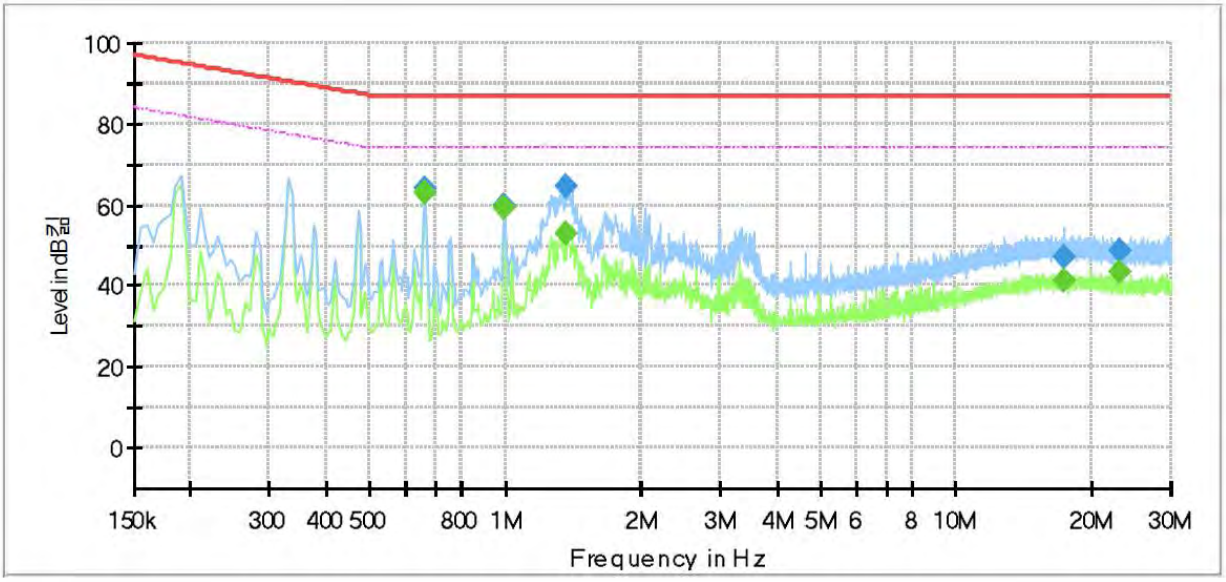
Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.660000	---	64.07	74.00	9.93	1000.0	9.000	Single Line	19.9
0.660000	64.83	---	87.00	22.17	1000.0	9.000	Single Line	19.9
0.995000	---	61.37	74.00	12.63	1000.0	9.000	Single Line	20.0
0.995000	61.69	---	87.00	25.31	1000.0	9.000	Single Line	20.0
17.710000	---	48.92	74.00	25.08	1000.0	9.000	Single Line	20.0
17.710000	54.72	---	87.00	32.28	1000.0	9.000	Single Line	20.0
19.710000	---	48.96	74.00	25.04	1000.0	9.000	Single Line	20.0
19.710000	54.72	---	87.00	32.28	1000.0	9.000	Single Line	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 (ISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

[100 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	SPD-150P
Mode	POE_100 Mbps
Operator Name:	KES



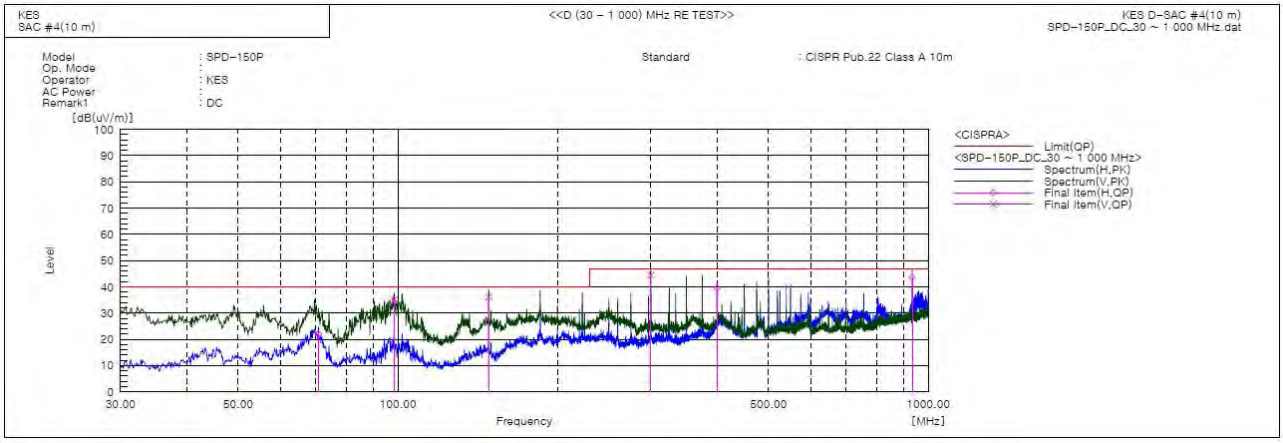
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.660000	---	63.21	74.00	10.79	1000.0	9.000	Single Line	19.4
0.660000	63.97	---	87.00	23.03	1000.0	9.000	Single Line	19.4
0.995000	---	59.54	74.00	14.46	1000.0	9.000	Single Line	19.5
0.995000	59.75	---	87.00	27.25	1000.0	9.000	Single Line	19.5
1.360000	---	52.80	74.00	21.20	1000.0	9.000	Single Line	19.5
1.360000	64.54	---	87.00	22.46	1000.0	9.000	Single Line	19.5
17.410000	---	41.49	74.00	32.51	1000.0	9.000	Single Line	19.5
17.410000	47.17	---	87.00	39.83	1000.0	9.000	Single Line	19.5
23.130000	---	43.43	74.00	30.57	1000.0	9.000	Single Line	19.4
23.130000	48.84	---	87.00	38.16	1000.0	9.000	Single Line	19.4

♦ 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))

Radiated Electric Field Emissions(Below 1 ㎓)

- AC / DC Adaptor Mode



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	70.861	H	54.0	-32.0	22.0	40.0	18.0	100.0	170.0	
2	98.385	V	63.3	-28.4	34.9	40.0	5.1	100.0	234.0	
3	148.461	V	67.5	-31.4	36.1	40.0	3.9	100.0	166.0	
4	299.992	V	68.2	-23.8	44.4	47.0	2.6	100.0	327.0	
5	400.055	H	59.8	-20.2	39.6	47.0	7.4	100.0	233.0	
6	933.070	H	52.7	-9.2	43.5	47.0	3.5	100.0	10.0	

♦ Calculation – SAC #4(10 m)

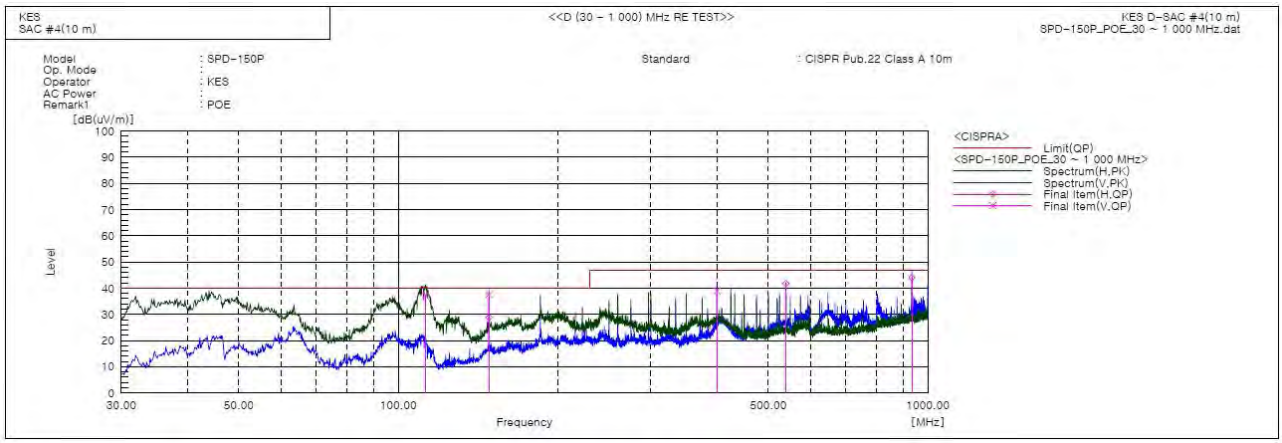
Result(QP) [dB(μV/m)] = (Reading(QP)[dB(μV)] + c.f[dB(1/m)]

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

- POE Mode



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	112.571	V	66.8	-29.6	37.2	40.0	2.8	100.0	129.0	
2	148.461	H	60.2	-31.4	28.8	40.0	11.2	100.0	142.0	
3	148.483	V	68.9	-31.4	37.5	40.0	2.5	100.0	167.0	
4	400.055	V	59.2	-20.2	39.0	47.0	8.0	100.0	237.0	
5	539.978	H	57.8	-16.0	41.8	47.0	5.2	100.0	218.0	
6	933.070	H	53.2	-9.2	44.0	47.0	3.0	100.0	24.0	

♦ Calculation – SAC #4(10 m)

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

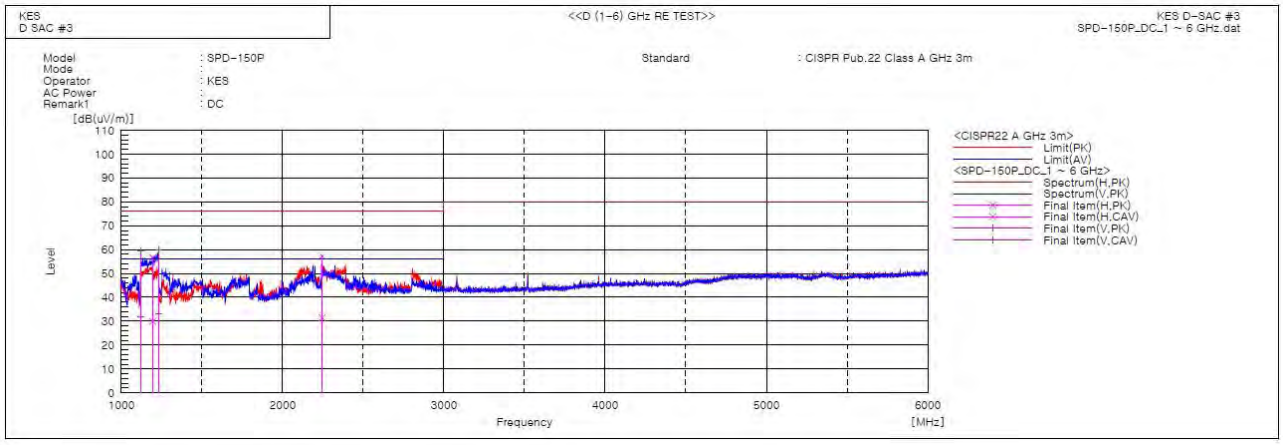
Margin(QP)[dB] = Limit[dB(μV/m)] - Result(QP) [dB(μV/m)]

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

Radiated Electric Field Emissions(Above 1 ㎓)

- AC / DC Adaptor Mode



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1121.762	V	68.5	41.0	-9.1	59.4	31.9	76.0	56.0	16.6	24.1	100.0	24.0	
2	1194.610	H	65.2	38.5	-8.6	56.6	29.9	76.0	56.0	19.4	26.1	100.0	10.3	
3	1230.380	V	68.2	41.5	-8.3	59.9	33.2	76.0	56.0	16.1	22.8	100.0	20.4	
4	2244.850	H	57.7	31.8	-0.4	57.3	31.4	76.0	56.0	18.7	24.6	100.0	72.3	

♦ Calculation

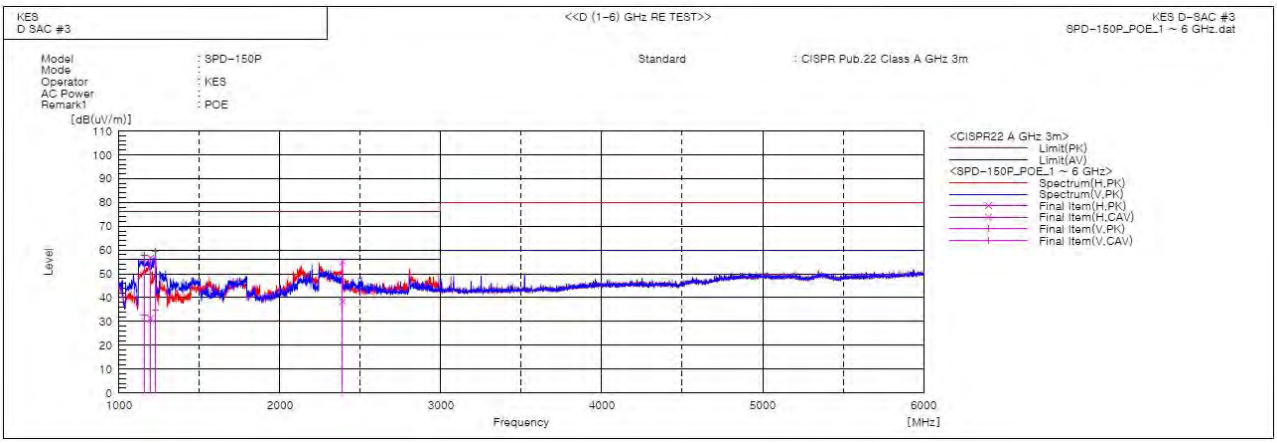
Result(PK/CAV) [dB(μV/m)] = (Reading(PK/CAV)[dB(μV)] + c.f[dB(1/m)]

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

- POE Mode



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]	Remark
1	1157.405	V	66.5	41.5	-8.8	57.7	32.7	76.0	56.0	18.3	23.3	100.0	19.6	
2	1195.581	H	65.2	39.8	-8.6	56.6	31.2	76.0	56.0	19.4	24.8	100.0	4.6	
3	1227.268	V	67.6	43.2	-8.3	59.3	34.9	76.0	56.0	16.7	21.1	100.0	11.5	
4	2389.372	H	55.1	38.3	0.1	55.2	38.4	76.0	56.0	20.8	17.6	100.0	50.5	

♦ 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

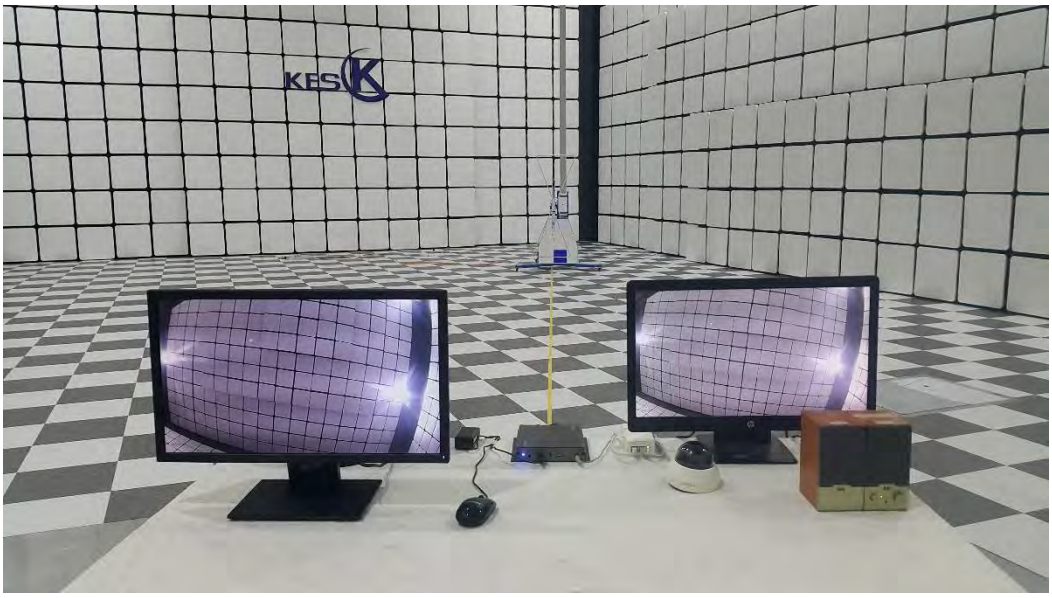
Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

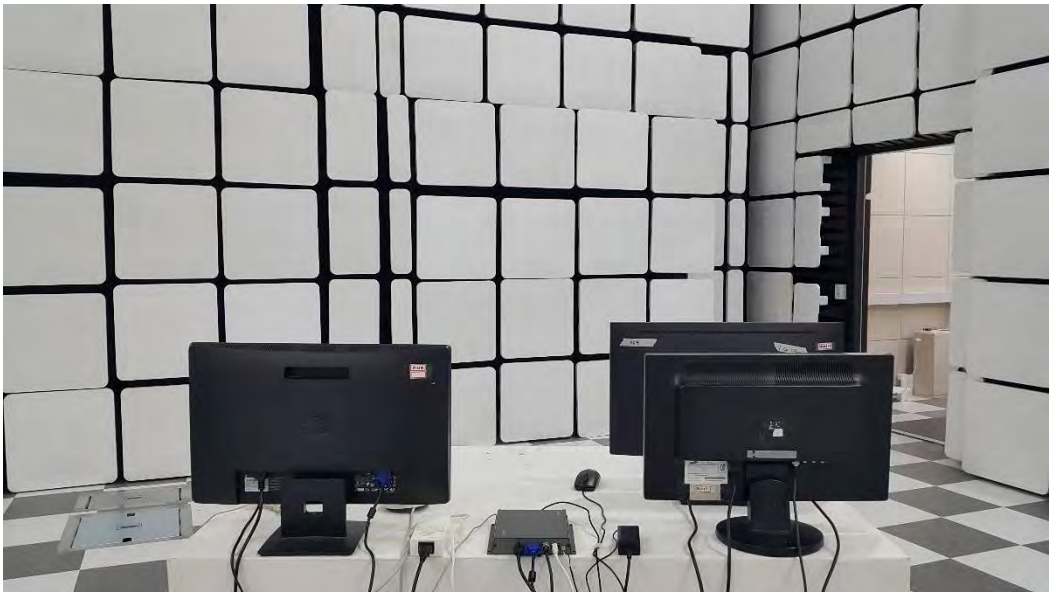
Test Setup Photos and Configuration

Conducted Voltage Emissions

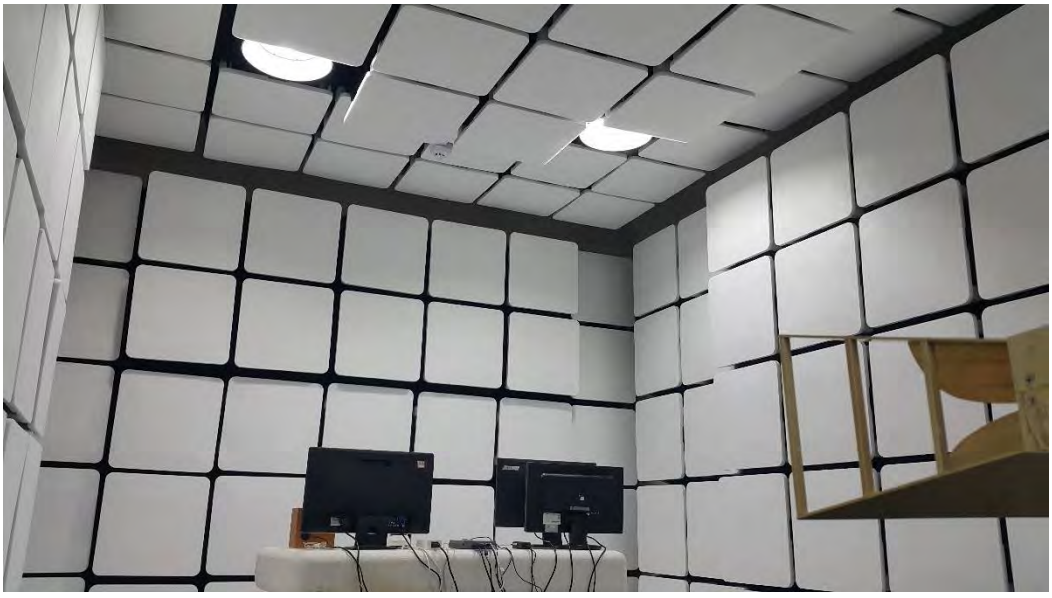
Conducted Telecommunication Emissions

Radiated Electric Field Emissions(Below 1 ㎓)





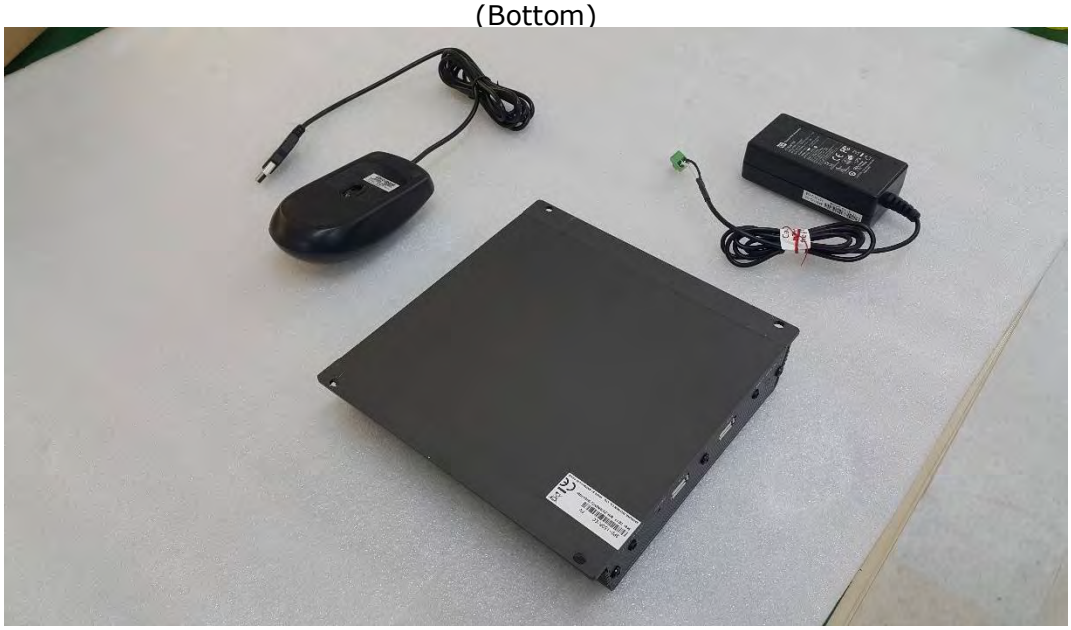
Radiated Electric Field Emissions(Above 1 ㎓)



EUT External Photographs

(Top)

(Bottom)

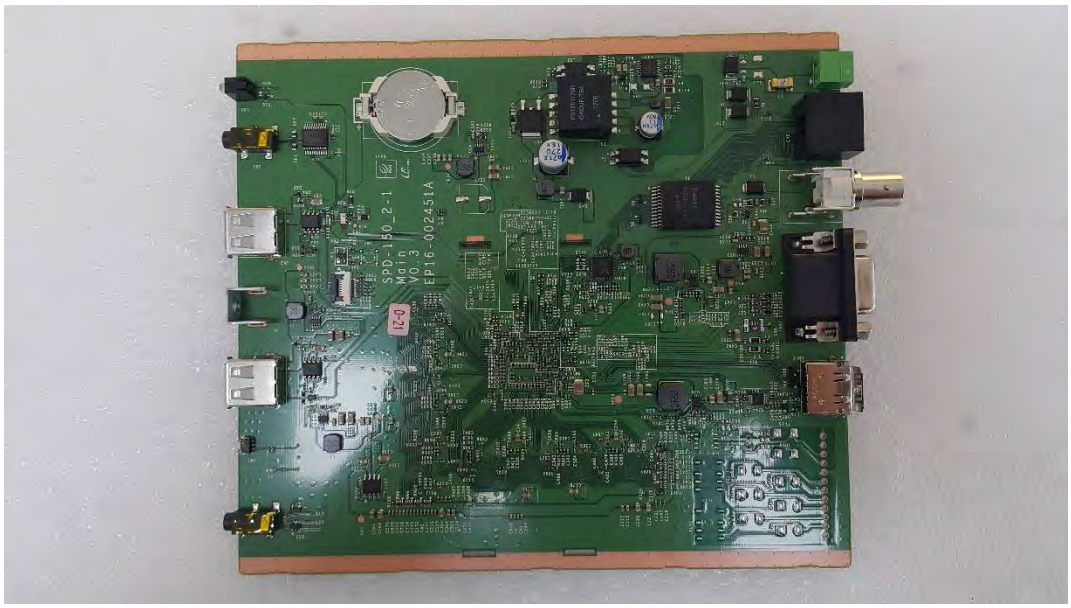


EUT Internal Photographs

(Internal View)

EUT Internal View – Board

(Top)



(Bottom)