



EMC TEST REPORT For VCCI

Test Report No. : KES-E1-16T0118
Date of Issue : Mar. 25, 2016
Product name : Digital Video Recorder
Model/Type No. : SRD-494N
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 : Mar. 14, 2016
Test date : Mar. 17, 2016
Test Results : ☒ **In Compliance** ☐ **Not in Compliance**

Tested by

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EMC Test Engineer

Reviewed by

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REPORT REVISION HISTORY

Date	Revision	Page No
Mar. 25, 2016	KES-E1-16T0118	Issued

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1.0 General Product Description

Main Specifications of EUT are:

Video	Inputs	4channel BNC 1080P/720P AHD Camera NTSC/PAL
	Resolution	1920 x 1080, 1280 x 720, 960 x 480, 704 x 480 / 960 x 576, 704 x 576
Live	Frame rate	120fps, 100fps
	Resolution	1920 x 1080, 1280 x 720, 960 x 480, 704 x 480 / 960 x 576, 704 x 576
	Multi Screen display	1/4/PIP
Performance		
Operating System	Embedded	Linux
Recording	Compression	H.264
	Record Rate	Up to 120fps@1920 x 1080 / Up to 100fps@1920 x 1080
		Up to 120fps@1280 x 720 / Up to 100fps@1280 x 720
		NTSC: Up to 120fps @ 960x480 / PAL: Up to 100fps @ 960x576
		NTSC: Up to 120fps @ 704x480 / PAL: Up to 100fps @ 704x576
		NTSC: Up to 120fps @ 704x240 / PAL: Up to 100fps @ 704x288
		NTSC: Up to 120fps @ 352x240 / PAL: Up to 100fps @ 352x288
	Mode	NTSC: Manual, Schedule (Continuous/Event), Event(Pre/Post), Time lapse (1~30 fps) PAL: Manual, Schedule (Continuous/Event), Event(Pre/Post), Time lapse (1~25 fps)
	Event	Video Loss, Motion(Level 1~10), Alarm, Tampering(Level 1~3)
	Overwrite modes	Continuous
	Pre-alarm	Up to 30 sec (5,10,20,30 Sec)
Search & Playback	Post-Alarm	Up to 6 hour (5,10,20,30 sec,1,3,5,10,20 min,1,2,3,4,5,6 hour)
	Search mode	Date/time, Event, Back up, Pos, 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) Step Forward/Backward (x2, x4,x8,x16,x32,x64) ※ Backward Play with I-frame Only
Network (IPv4)	Transmission speed	Option 1) 1M ~ 2M (120fps, 100fps), 4CIF (NTSC : 120fps, 100fps) Option 2) 4CIF / 2CIF / CIF (NTSC : 120fps, PAL : 100fps)
	Bandwidth	Up to 64Mbps
	Bandwidth control	Selectable
	Stream	H.264(1080P/720p/4CIF/2CIF/CIF Selectable)
	Remote users Maximum	Search(3)/Live Unicast(10)/Live Multicast(20)
	Protocol support	TCP/IP,DHCP,PPPoE,SMTP,NTP,HTTP,DDNS,RTP,RTSP,SNMP
	Monitoring	Smart viewer,Web viewer, SSM(CMS)
Smart phone	Platform	Android, iOS
	Protocol support	RTSP,RTSP,HTTP,CGI
	Remote users Maximum	Live 4, Play back 1CH
Storage	Internal HDD	Up to 2 SATA HDDs (MAX:6Tx2=12T)
	External (e-SATA Interface)	N/A
	DVD Writer (Back-up)	N/A
	USB (Mouse/Back-up)	USB 2.0, 2 ports (Front)
	File Format (Back-up)	BU(DVR Player), EXE(Include Player), AVI
Security	Password Protection	1 Admin, 10 Group, 10 User per 1 Group
	Data Authentication	Watermark



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Interface		
Monitors	VGA	1 VGA (1280x720, 1280x1024, 1920x1080)
	HDMI	1 HDMI (1280x720, 1280x1024, 1920x1080)
	Main Composite	N/A
	Spot(Composite)	Digital Spot (2CH) * Included OSD On Screen, Multi mode Support(1CH)
	Loop Outputs	N/A
Audio	Inputs/Output	4CH line in / 1CH line out
	Compression	G.711
	Sampling rate	8KHz
Alarm	Inputs/Outputs	Terminal 4 Inputs (NO/NC) / Terminal 2 relay Outputs (NO/NC), Rating : 30V DC/2A, 250V AC/0.25A
	Remote notification	Notification via e-mail
Connections	Ethernet	1 RJ45 10/100/1000 Base-T
	Serial interface	RS-232/RS-485(Full Duplex) for PTZ, Samsung System Keyboard
	USB	USB 2.0, 2 ports
	e-SATA	N/A
	Application Support	Mouse, Remote Controller
	Protocol support	Samsung-E/Samsung-T/Pelco-D/Pelco-p/Panasonic/ Phillips/ AD/ DIAMOND/ ERNA/ KALATEL/ VCL TPWICON/ ELMO/GE PTZ Control via Coaxial Cable (ACP, Pelco-C (Coaxitron))
General		
Electrical	Input Voltage/Current	DC12V Adaptor, 4A, 100~250VAC, 50~60Hz, 48watt
	Power consumption	SET : MAX. 13W (1x1T HDD)
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 H 44.0 x D 320(14.57" x 1.73" x 12.6")
	Weight (With hard disks)	4.483Kg(9.8626lb)
	Rack mount kit	2 EA
Language		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)
HW Factory Reset		Main B'D HW Reset Key

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1.1 Test Voltage & Frequency

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

Voltage ☐ 100 Vac ☐ 110 Vac ☒ 120 Vac ☐ 24 Vac ☐ 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
Digital Video Recorder	SRD-494N	-	Tianjin Samsung Techwin Opto-Electronic Co.,Ltd.	E.U.T
HDD	WD10PRUX	WCC4J7ZD0E0J	WD	-
Adapter	KPL-048F-VI	-	Channel Well Technology(guanzhou) Co., Ltd.	-
Mouse	MOEIUOA,AA-SM2PCPB	1423004527	-	-

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Monitor	LS23C340	ZXPCHTMF B01032M	SAMSUNG	-
Adapter	A2514_DPN	CN07BN4400591BSK2 8F6NF841	11ssan Elecom(shen yang) Co., Ltd	-
Monitor	LS23C340	ZXPCHTMF B01032M	SAMSUNG	-
Adapter	A2514_DPN	CN07BN4400591BSK2 8F6NF841	11ssan Elecom(shen yang) Co., Ltd	-
Monitor	SMT-2232	C95V67VF900025B	Weihai Daewoo Electronics Co., Ltd.	-
Notebook	NT-R410Y	Z9YJ93CS300631H	SAMSUNG	-
Adapter	AD-6019	-	LI SHIN INTERNATIONAL ENTERPRISE CORP.	-
Camera	5131/HBB89F	1503050001	-	-
Adapter	W&T-AD60120B500	-	JET	-
Mouse	CC-93-9F	LU139006416	Logitech	-
MIC	CMK-303	-	CAMAC	-
Speaker	-	-	MASS	-
Alarm	-	-	-	-

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
Digital Video Recorder (E.U.T)	RJ-45	NOTEBOOK	RJ-45	4.0	U
	D-SUB	Monitor	D-SUB	1.5	S
	HDMI	Monitor	HDMI	1.7	S
	BNC	Monitor	BNC	10.0	S
	Audio In	Spearker	Audio Out	1.2	U
	Audio Out	MIC	Audio In	1.2	U
	USB	Mouse	USB	1.3	U
	RS-232	Mouse	RS-232	2.0	U
	BNC	Camera	BNC	10.0	S
	2Pin	Alarm	2Pin	1.0	U

* Unshielded=U, Shielded=S

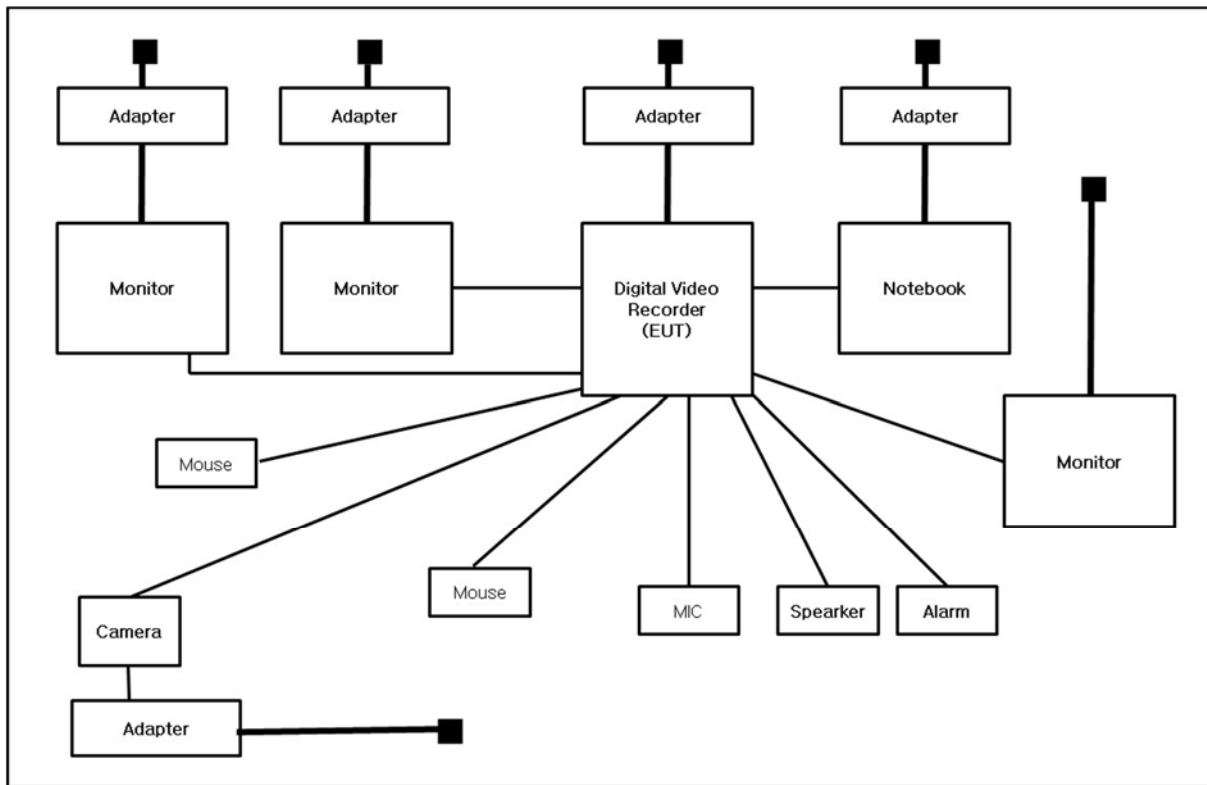
1.7 EUT Operating Mode(s)

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

Test mode	Normal operating
Normal	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, Yeosu-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)	

2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2004/108/EC**

☐ 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-3/2013.04

☒ Class A

☐ Class B

☐ AS/NZS CISPR22:2009 +A1:2010

☐ Class A

☐ Class B

☐ 47 CFR Part 15, Subpart B / ANSI C63.4-2009

☐ Class A

☐ Class B

☐ IC Regulation ICES-003 : 2012
/ ANSI C63.4-2014

☐ Class A

☐ Class B

☐ CISPR 22:2009 +A1:2010

☐ Class A

☐ Class B



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☐ **R&TTE- Directive 1999/5/EC**

☐ EN 301 489-1 V1.9.2

- ☐ Equipment for fixed use
- ☐ Equipment for vehicular use
- ☐ Equipment for portable use

☐ EN 301 489-3 V1.6.1

☐ EN 301 489-17 V2.2.1

☐ EN 60945:2002

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2.1 Conducted Emissions at Mains Power Ports

Test Date

Mar. 17, 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, 06, 2016
☒	LISN	ENV216	R & S	101137	02, 04, 2017
☒	LISN	ENV216	R & S	101786	05, 06, 2016
☒	Electro wave Shieldroom	-	AONE SEMITEC	-	-

Test Conditions

Temperature: 24.2 °C

Relative Humidity: 42.5 %

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

Mar. 17, 2016

Test Location

Electro wave Shieldroom

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Tesr Receiver	ESR3	R & S	101783	05. 06. 2016
☒	LISN	ENV216	R & S	101137	02. 04. 2017
☒	LISN	ENV216	R & S	101786	05. 06. 2016
☒	8-Wire ISN CAT3	CAT3 8158	Schwarzbeck Mess	8158-0019	04. 02. 2016
☒	8-Wire ISN CAT5	CAT5 8158	Schwarzbeck Mess	8158-0030	04. 02. 2016
☐	8-Wire ISN CAT6	NTFM 8158	Schwarzbeck Mess	8158-0029	08. 14. 2017
☒	Electro wave Shieldroom	-	AONE SHIELD	-	-

Test Conditions

Temperature: 24.2 °C

Relative Humidity: 42.5 %

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

Mar. 17, 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	ESR3	R&S	101781	05. 06. 2016
☒	Trilog-Broadband Antenna	VULB 9163	SCHWARZBECK	9168-713	05. 15. 2017
☒	Open Area Test Site	-	KES	-	-
☒	Antenna Mast	-	EMCO	-	-
☒	Turn Table	-	DAEIL EMC	-	-

Test Conditions

Temperature: 15.8 °C

Relative Humidity: 38.0 %

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

Mar. 17, 2016

Test Location

Semi Anchoic Chamber #2

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
☒	EMI Test Receiver	ESU26	R&S	100552	05. 06. 2016
☒	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 Anchoic Chamber #2	-	SEMITEC	-	-
☒	Antenna Mast	-	AUDIX	-	-
☒	Turn Table	-	AUDIX	-	-

Test Conditions

Temperature: 24.2 °C
Relative Humidity: 42.5 %

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.

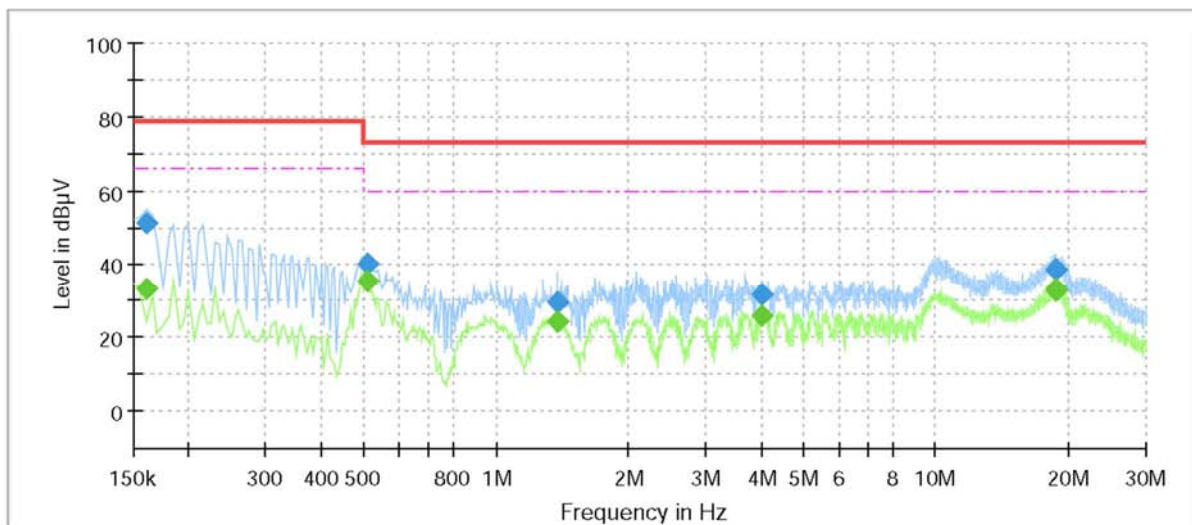
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

[HOT]

Common Information

Test Description:	Conducted Emission
Model No.:	SRD-494N
Mode	VCCI
Operator Name:	KES



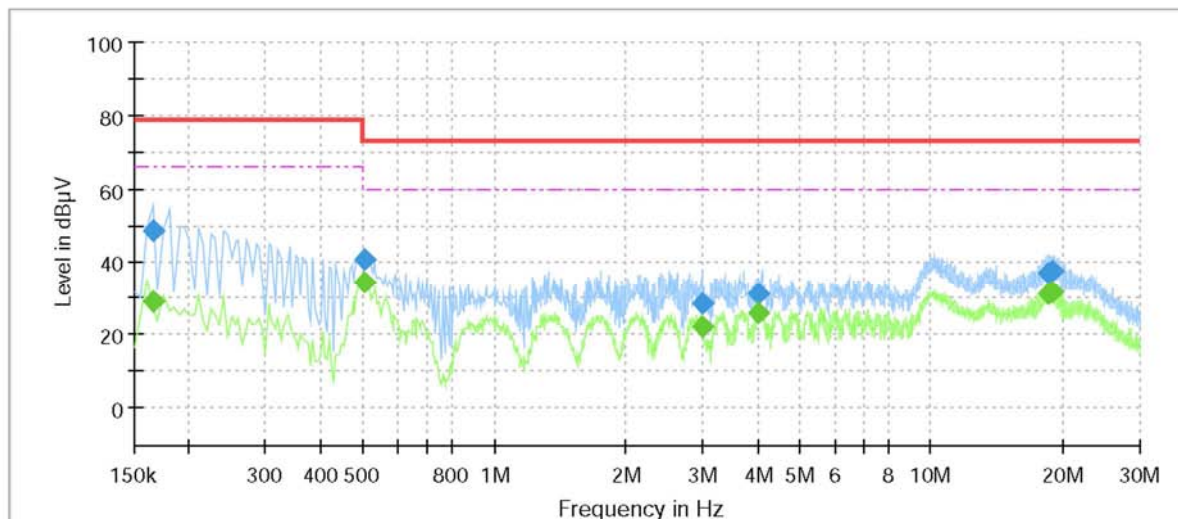
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160000	---	33.17	66.00	32.83	1000.0	9.000	L1	9.7
0.160000	51.12	---	79.00	27.88	1000.0	9.000	L1	9.7
0.510000	---	35.27	60.00	24.73	1000.0	9.000	L1	9.7
0.510000	40.47	---	73.00	32.53	1000.0	9.000	L1	9.7
1.380000	---	24.50	60.00	35.50	1000.0	9.000	L1	9.7
1.380000	29.54	---	73.00	43.46	1000.0	9.000	L1	9.7
4.020000	---	26.07	60.00	33.93	1000.0	9.000	L1	9.8
4.020000	31.53	---	73.00	41.47	1000.0	9.000	L1	9.8
18.790000	---	33.16	60.00	26.84	1000.0	9.000	L1	10.2
18.790000	38.65	---	73.00	34.35	1000.0	9.000	L1	10.2
18.835000	---	32.90	60.00	27.10	1000.0	9.000	L1	10.2
18.835000	38.39	---	73.00	34.61	1000.0	9.000	L1	10.2

[NEUTRAL]

Common Information

Test Description:	Conducted Emission
Model No.:	SRD-494N
Mode	VCCI
Operator Name:	KES



Final Result

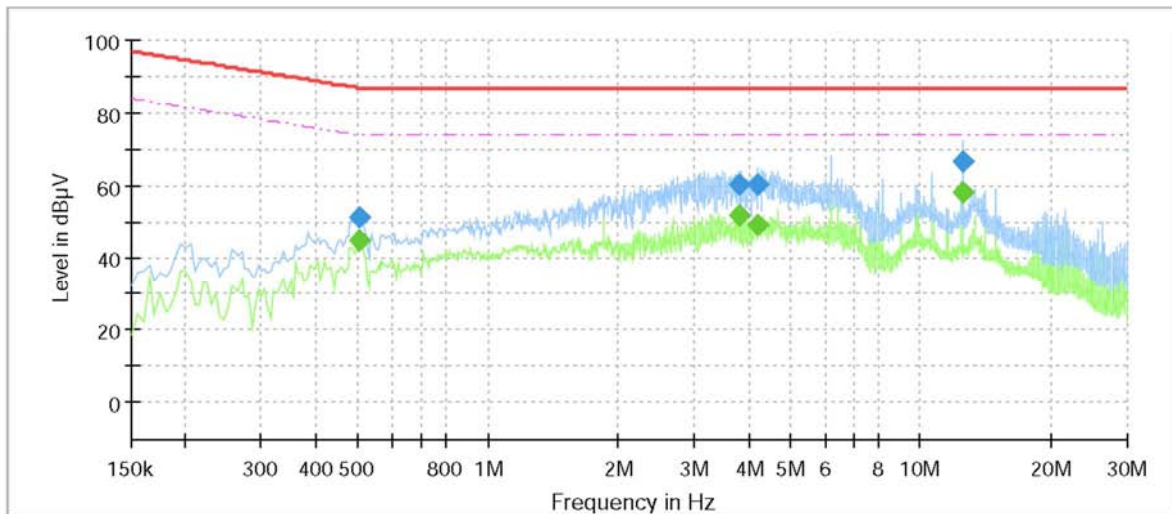
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.165000	---	28.99	66.00	37.01	1000.0	9.000	N	9.6
0.165000	48.75	---	79.00	30.25	1000.0	9.000	N	9.6
0.505000	---	34.32	60.00	25.68	1000.0	9.000	N	9.7
0.505000	40.55	---	73.00	32.45	1000.0	9.000	N	9.7
2.995000	---	22.30	60.00	37.70	1000.0	9.000	N	9.7
2.995000	28.61	---	73.00	44.39	1000.0	9.000	N	9.7
4.035000	---	26.12	60.00	33.88	1000.0	9.000	N	9.8
4.035000	31.46	---	73.00	41.54	1000.0	9.000	N	9.8
18.455000	---	31.50	60.00	28.50	1000.0	9.000	N	10.1
18.455000	37.20	---	73.00	35.80	1000.0	9.000	N	10.1
18.935000	---	31.55	60.00	28.45	1000.0	9.000	N	10.1
18.935000	37.50	---	73.00	35.50	1000.0	9.000	N	10.1

Conducted Emissions at Telecommunication Ports

[10 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	SRD-494N
Mode	VCCI-10M
Operator Name:	KES



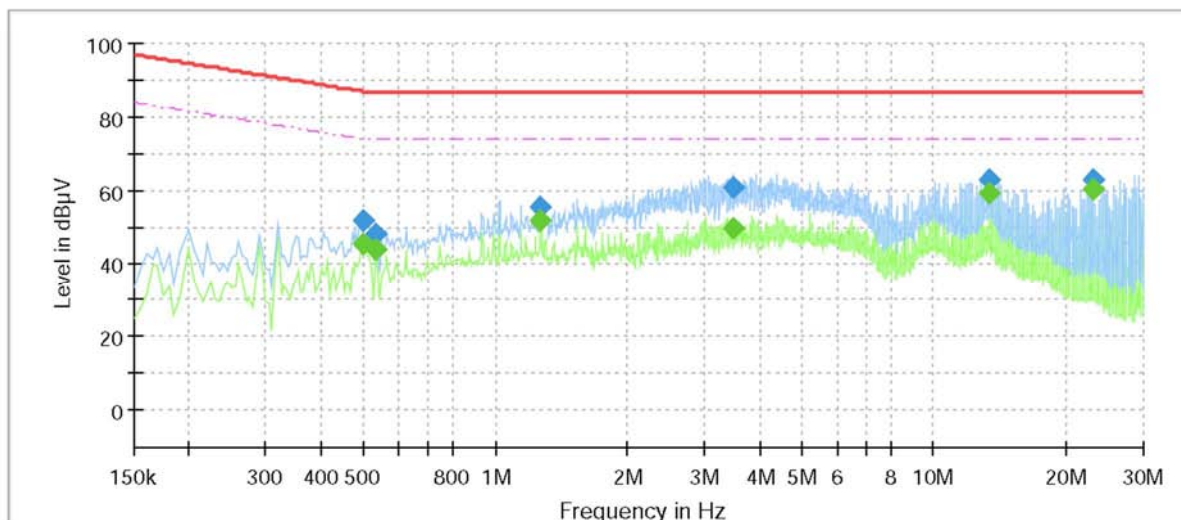
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.505000	---	44.92	74.00	29.08	1000.0	9.000	Single Line	10.1
0.505000	51.24	---	87.00	35.76	1000.0	9.000	Single Line	10.1
3.805000	---	51.70	74.00	22.30	1000.0	9.000	Single Line	9.9
3.805000	60.34	---	87.00	26.66	1000.0	9.000	Single Line	9.9
4.200000	---	49.13	74.00	24.87	1000.0	9.000	Single Line	9.9
4.200000	60.55	---	87.00	26.45	1000.0	9.000	Single Line	9.9
12.500000	---	58.39	74.00	15.61	1000.0	9.000	Single Line	10.1
12.500000	66.50	---	87.00	20.50	1000.0	9.000	Single Line	10.1

[1 00 Mbps]

Common Information

Test Description:	Telecommunication Emission
Model No.:	SRD-494N
Mode	VCCI-100M
Operator Name:	KES



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.500000	---	45.66	74.00	28.34	1000.0	9.000	Single Line	9.6
0.500000	51.70	---	87.00	35.30	1000.0	9.000	Single Line	9.6
0.535000	---	43.75	74.00	30.25	1000.0	9.000	Single Line	9.6
0.535000	48.16	---	87.00	38.84	1000.0	9.000	Single Line	9.6
1.265000	---	51.89	74.00	22.11	1000.0	9.000	Single Line	9.5
1.265000	55.60	---	87.00	31.40	1000.0	9.000	Single Line	9.5
3.495000	---	49.92	74.00	24.08	1000.0	9.000	Single Line	9.4
3.495000	61.08	---	87.00	25.92	1000.0	9.000	Single Line	9.4
13.420000	---	59.10	74.00	14.90	1000.0	9.000	Single Line	9.6
13.420000	63.20	---	87.00	23.80	1000.0	9.000	Single Line	9.6
23.130000	---	60.24	74.00	13.76	1000.0	9.000	Single Line	9.6
23.130000	62.84	---	87.00	24.16	1000.0	9.000	Single Line	9.6

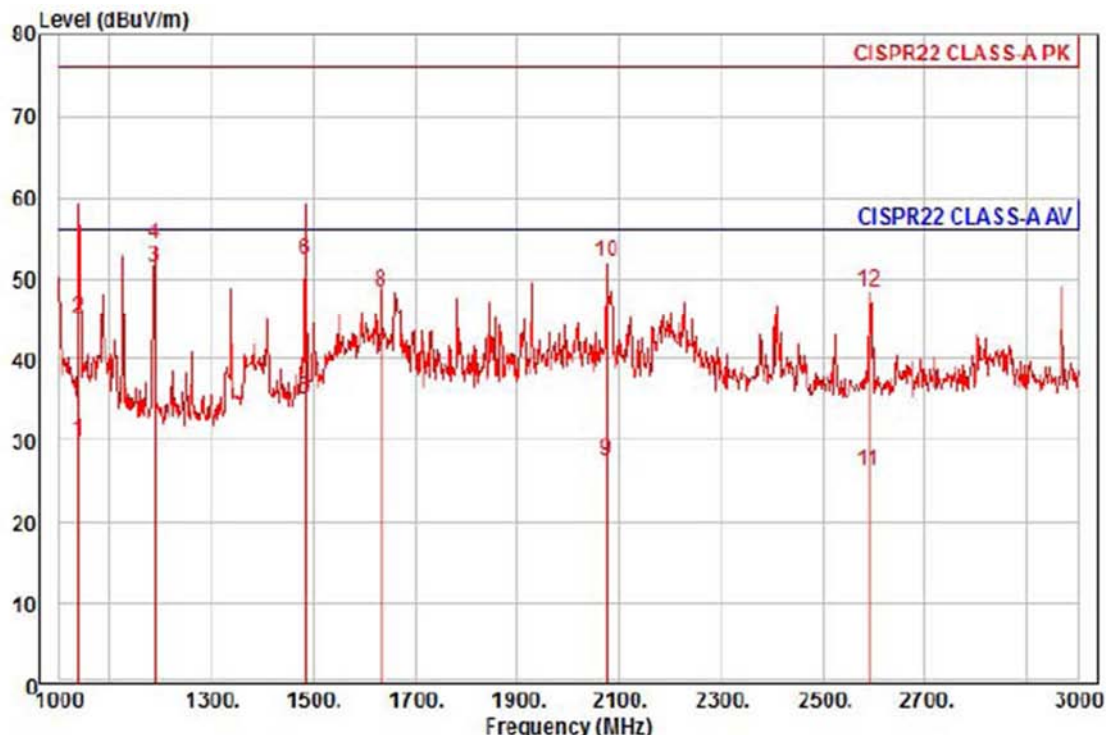


Radiated Electric Field Emissions(Below 1 GHz)

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB μ V]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dB μ V/m]	[dB μ V/m]	[dB]
148.97	16.96	H	1.23	8.16	2.46	27.58	40.00	12.42
149.99	11.95	V	1.87	8.20	2.47	22.62	40.00	17.38
188.37	10.67	V	2.08	10.20	2.79	23.66	40.00	16.34
269.37	11.87	H	1.39	12.79	3.48	28.14	47.00	18.86
292.40	11.67	V	3.01	13.23	3.65	28.55	47.00	18.45
298.33	12.36	H	1.25	13.35	3.70	29.41	47.00	17.59
354.37	10.09	V	2.33	14.64	3.92	28.65	47.00	18.35
429.74	13.08	H	1.09	16.12	4.44	33.64	47.00	13.36

* H : Horizontal, V : Vertical

Radiated Electric Field Emissions(Above 1 GHz)



Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SRD-494N
Mode : VCCI
Memo : 1 - 3 GHz

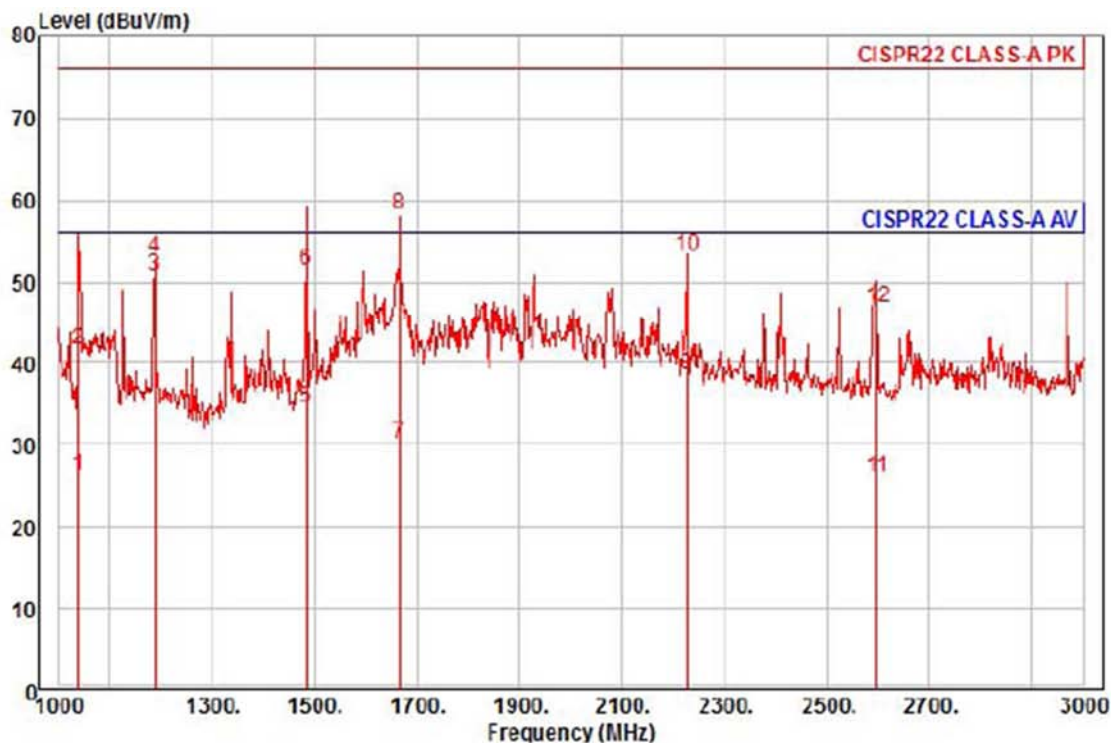
	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1038.00	39.38	24.06	6.62	40.10	44	56.00	-26.04	horizontal	Average
2	1038.00	54.64	24.06	6.62	40.10	44	76.00	-30.78	horizontal	Peak
3 pp	1188.00	59.66	24.66	7.06	40.03	64	56.00	-4.65	horizontal	Average
4 pk	1188.00	62.50	24.66	7.06	40.03	64	76.00	-21.81	horizontal	Peak
5	1484.00	41.33	25.83	7.91	39.88	24	56.00	-20.81	horizontal	Average
6	1484.00	58.36	25.83	7.91	39.88	24	76.00	-23.78	horizontal	Peak
7	1634.00	45.38	26.43	8.34	39.81	58	56.00	-15.66	horizontal	Average
8	1634.00	53.41	26.43	8.34	39.81	58	76.00	-27.63	horizontal	Peak
9	2076.00	29.52	28.07	9.47	39.67	176	56.00	-28.61	horizontal	Average
10	2076.00	54.32	28.07	9.47	39.67	176	76.00	-23.81	horizontal	Peak
11	2590.00	26.61	29.33	10.25	39.97	164	56.00	-29.78	horizontal	Average
12	2590.00	48.86	29.33	10.25	39.97	164	76.00	-27.53	horizontal	Peak



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Test report No.:
KES-E1-16T0118
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Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SRD-494N
Mode : VCCI
Memo : 1 - 3 GHz

	Read Freq	Ant Level	Cable Factor	Preamp Loss	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB	
1	1038.00	35.57	24.06	6.62	40.10	324	56.00	-29.85	vertical Average
2	1038.00	50.98	24.06	6.62	40.10	324	76.00	-34.44	vertical Peak
3 pp	1188.00	59.08	24.66	7.06	40.03	169	56.00	-5.23	vertical Average
4	1188.00	61.38	24.66	7.06	40.03	169	76.00	-22.93	vertical Peak
5	1484.00	40.59	25.83	7.91	39.88	13	56.00	-21.55	vertical Average
6	1484.00	57.48	25.83	7.91	39.88	13	76.00	-24.66	vertical Peak
7	1666.00	34.81	26.55	8.43	39.79	52	56.00	-26.00	vertical Average
8 pk	1666.00	62.92	26.55	8.43	39.79	52	76.00	-17.89	vertical Peak
9	2228.00	40.21	28.44	9.70	39.76	27	56.00	-17.41	vertical Average
10	2228.00	54.75	28.44	9.70	39.76	27	76.00	-22.87	vertical Peak
11	2600.00	26.31	29.35	10.27	39.98	154	56.00	-30.05	vertical Average
12	2600.00	47.16	29.35	10.27	39.98	154	76.00	-29.20	vertical Peak

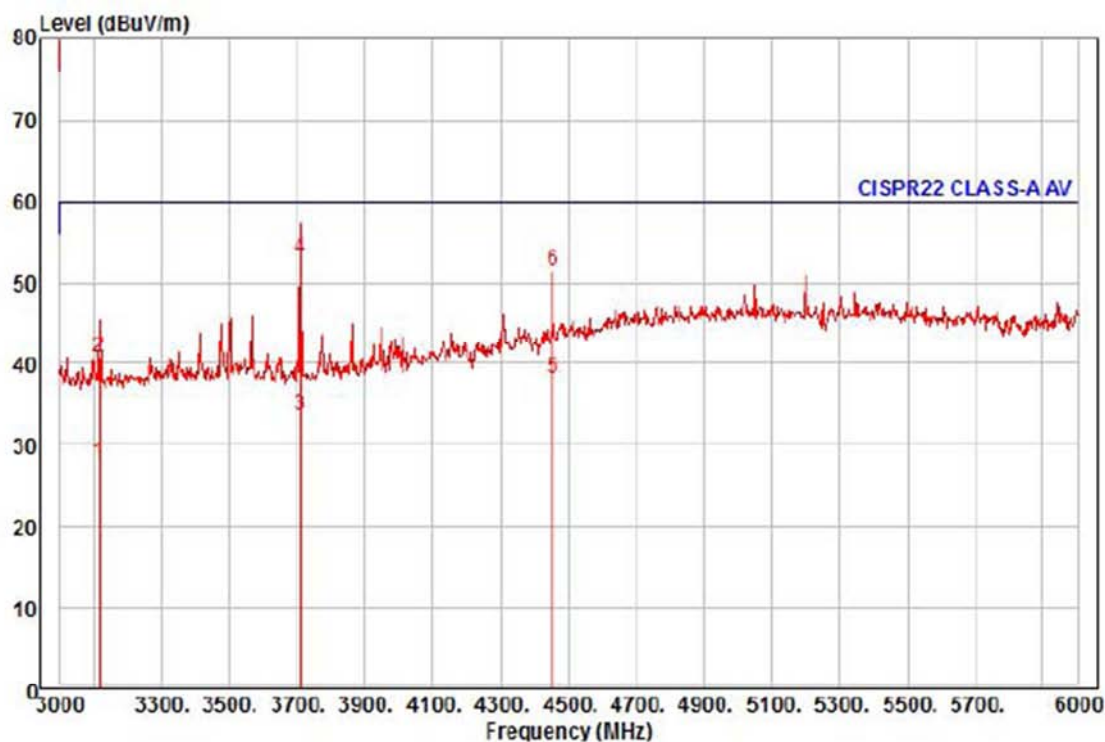
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Test report No.:
KES-E1-16T0118
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Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) horizontal
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SRD-494N
Mode : VCCI
Memo : 3 - 6 GHz

	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	3117.00	25.81	30.53	11.52	40.23	44	60.00	-32.37	horizontal	Average
2	3117.00	38.84	30.53	11.52	40.23	44	80.00	-39.34	horizontal	Peak
3	3711.00	29.50	31.52	12.93	40.35	55	60.00	-26.40	horizontal	Average
4 pk	3711.00	48.84	31.52	12.93	40.35	55	80.00	-27.06	horizontal	Peak
5 pp	4455.00	29.56	34.61	14.35	40.41	352	60.00	-21.89	horizontal	Average
6	4455.00	42.84	34.61	14.35	40.41	352	80.00	-28.61	horizontal	Peak

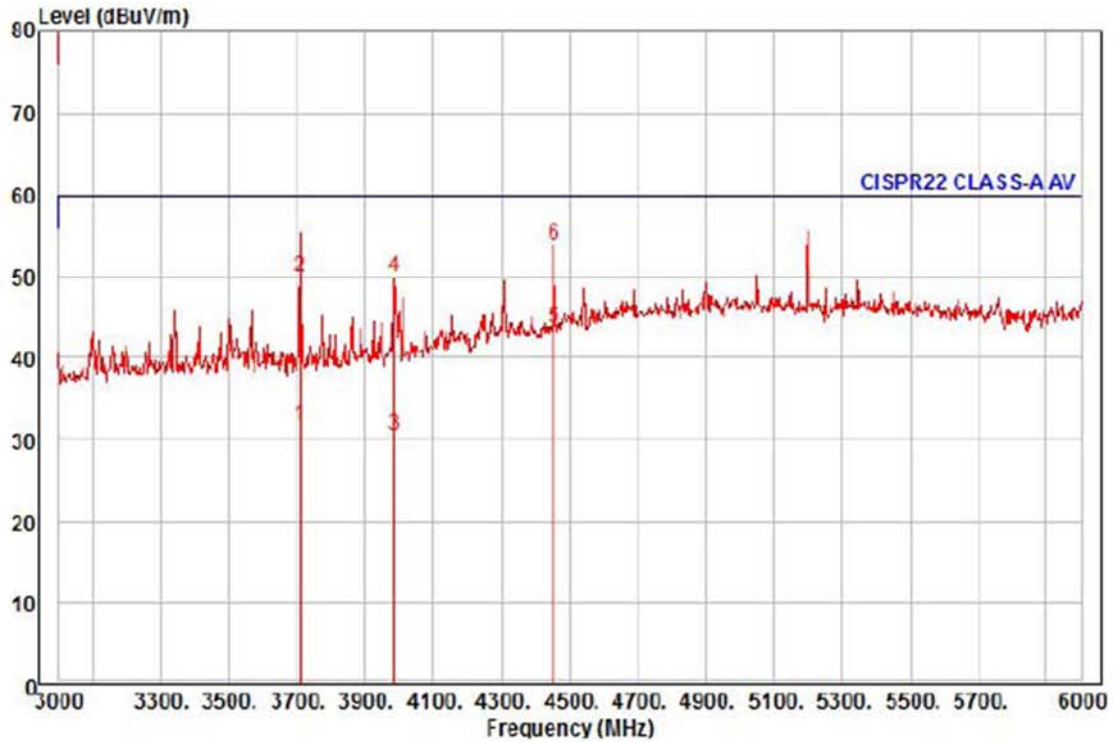
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Test report No.:
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Page (25) of (35)



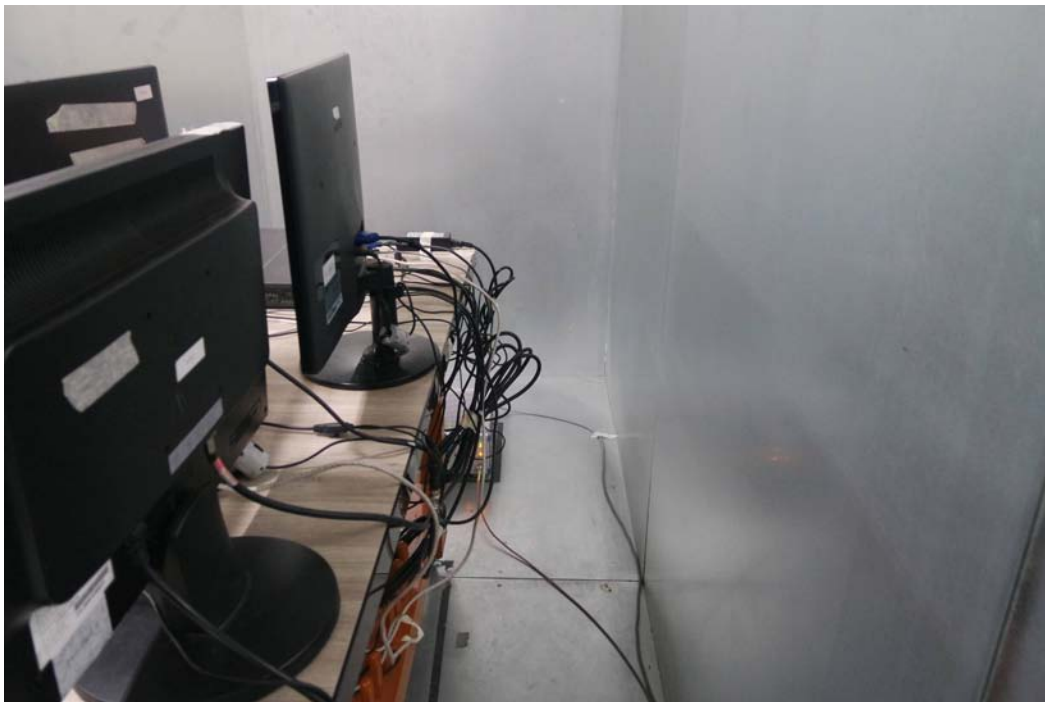
Site : chamber
Condition: CISPR22 CLASS-A PK 3m HORN781(2015.05.07) vertical
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto
Project :
Model : SRD-494N
Mode : VCCI
Memo : 3 - 6 GHz

		Read	Ant	Cable	Preamp	TPos	Limit	Over		
	Freq	Level	Factor	Loss	Factor		Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3711.00	27.52	31.52	12.93	40.35	330	60.00	-28.38	vertical	Average
2	3711.00	45.80	31.52	12.93	40.35	330	80.00	-30.10	vertical	Peak
3	3984.00	25.53	31.98	13.48	40.41	111	60.00	-29.42	vertical	Average
4	3984.00	44.81	31.98	13.48	40.41	111	80.00	-30.14	vertical	Peak
5 pp	4455.00	34.94	34.61	14.35	40.41	44	60.00	-16.51	vertical	Average
6 pk	4455.00	45.35	34.61	14.35	40.41	44	80.00	-26.10	vertical	Peak

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Test Setup Photos and Configuration

Conducted Voltage Emissions



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Conducted Telecommunication Emissions



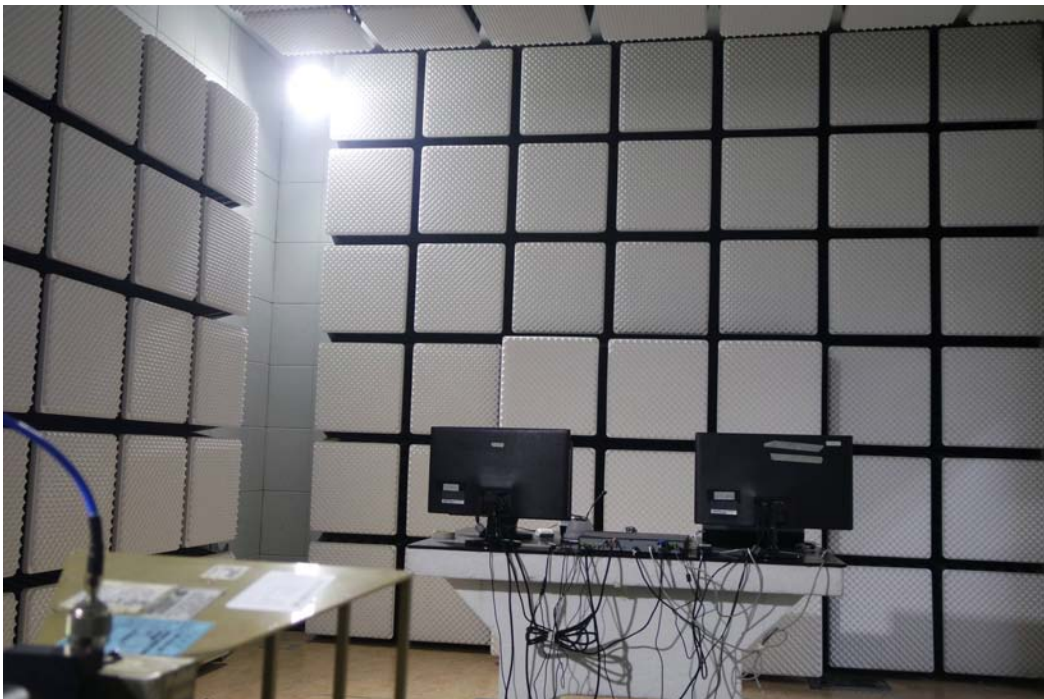
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Radiated Electric Field Emissions(Below 1 GHz)



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Radiated Electric Field Emissions(Above 1 GHz)



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EUT External Photographs

(Top)



(Bottom)



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EUT Internal Photographs

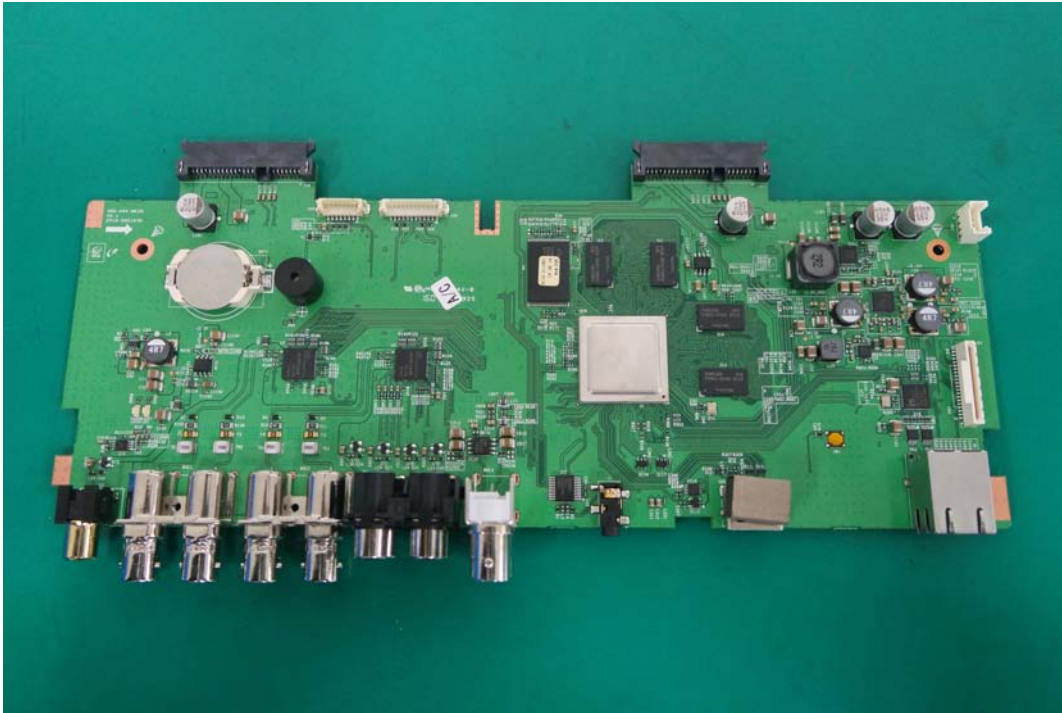
(Internal View)



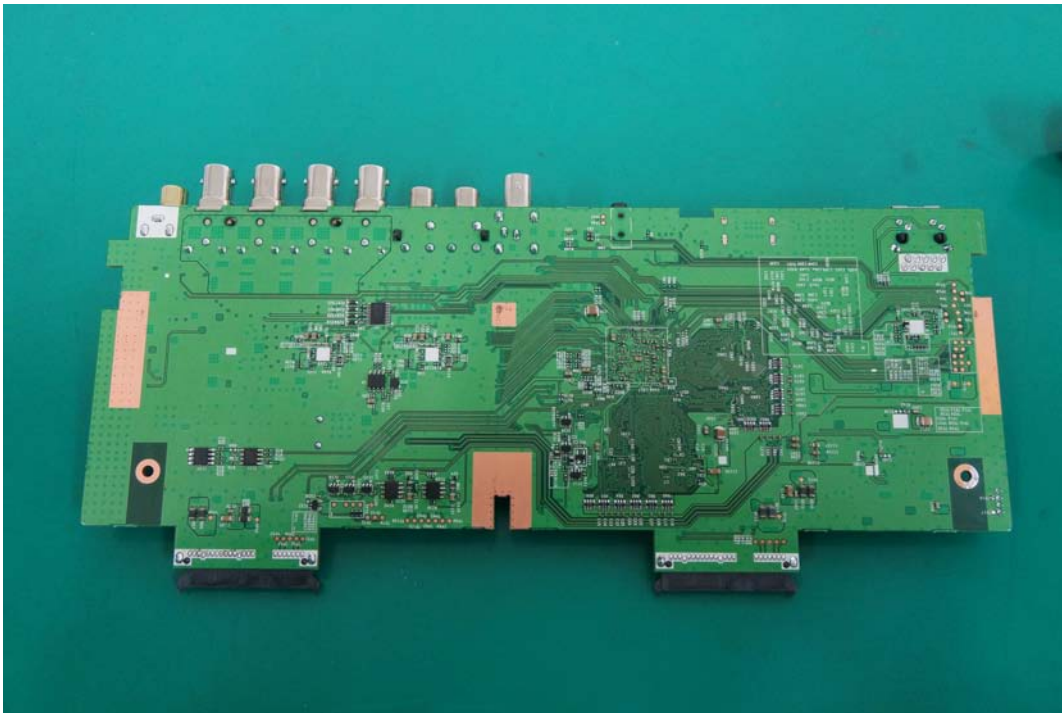
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Main Board EUT Internal View – Main Board

(Top)



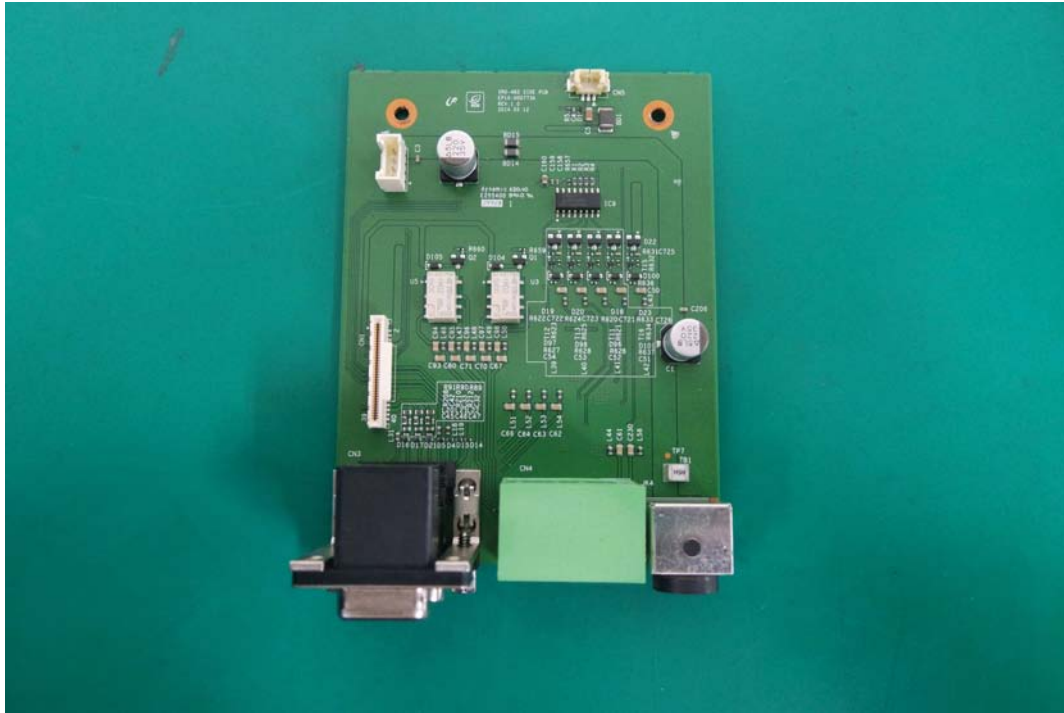
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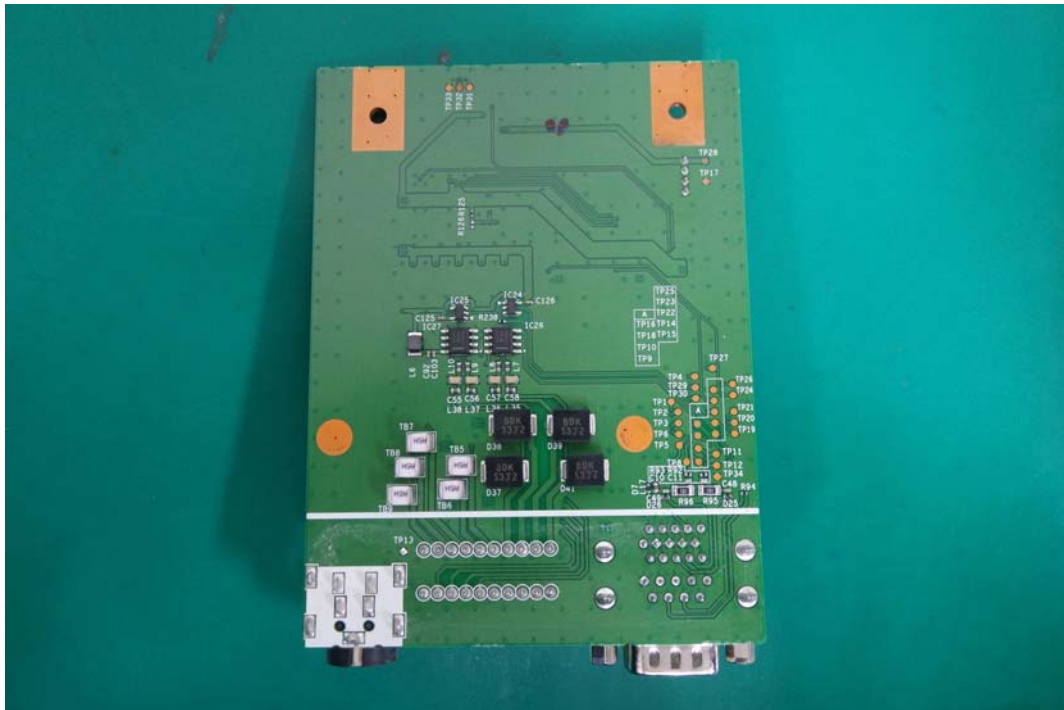
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Main Board EUT Internal View – Sub Board

(Top)



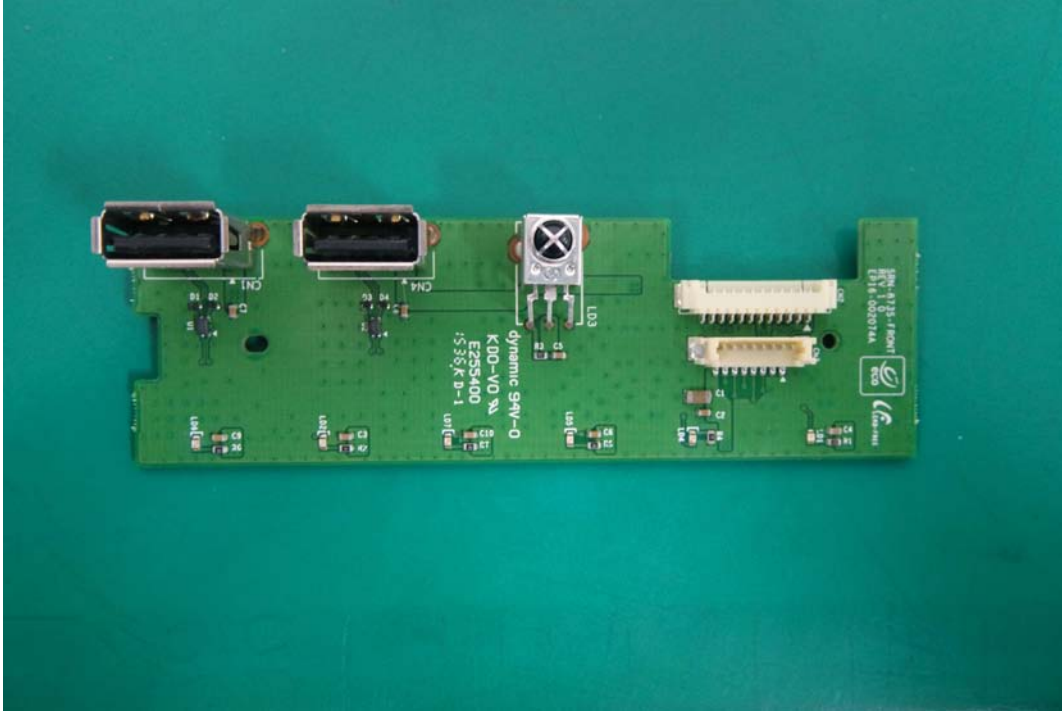
(Bottom)



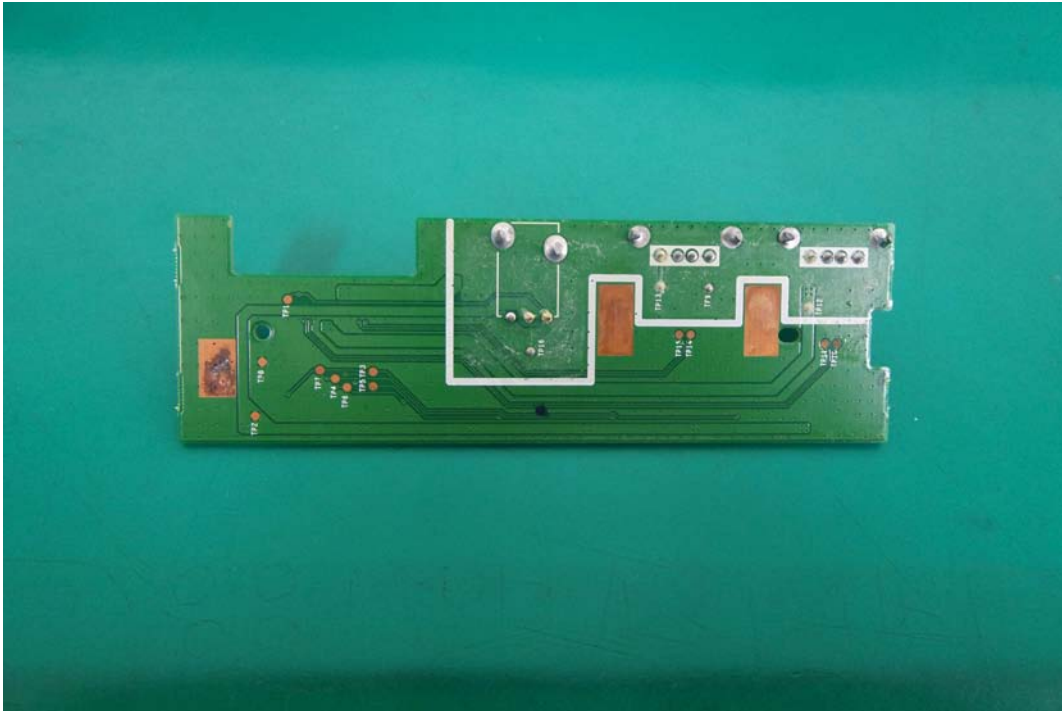
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Main Board EUT Internal View – USB Board

(Top)



(Bottom)



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Main Board EUT Internal View – HDD

(Top)



(Bottom)



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