



**Spectrum Research  
& Testing Lab., Inc.**  
No. 101-10, Ling 8,  
Shan-Tong Li, Chung-Li  
City, Taoyuan, Taiwan,

## TEST REPORT

Reference No.:A04071502  
Report No.:FCBA04071502  
Page:1 of 12  
Date:Aug. 17, 2004

Product Name: 5.7" Ethernet Operator Panel  
Model No.: AOP-8060  
Applicant: AAEON TECHNOLOGY INC.  
5F, NO. 135, LANE 235, PAO CHIAO RD., HSIN-TIEN  
CITY, TAIPEI, TAIWAN, R.O.C.  
Date of Receipt: Jul. 15, 2004  
Finished date of Test: Aug. 16, 2004  
Applicable Standards: 47 CFR Part 15, Subpart B, Class B  
ANSI C63.4:2003

We, **Spectrum Research & Testing Laboratory Inc.**, hereby certify that one sample of the above was tested in our laboratory with positive results according to the above-mentioned standards. The records in the report are an accurate account of the results. Details of the results are given in the subsequent pages of this report.

Checked By :

Sunyou Chen  
( Sunyou Chen )

Date:

8/17/2004

Approved By :

J. H.  
( Johnson Ho, Director )

Date:

8/19/2004

NVLAQ®

Lab Code: 200099-0



## Table of Contents

1. DOCUMENT POLICY AND TEST STATEMENT.....	3
1.1 DOCUMENT POLICY.....	3
1.2 TEST STATEMENT.....	3
1.3 EUT MODIFICATION.....	3
2. DESCRIPTION OF EUT AND TEST MODE.....	4
2.1 GENERAL DESCRIPTION OF EUT.....	4
2.2 DESCRIPTION OF EUT INTERNAL DEVICE.....	4
2.3 DESCRIPTION OF TEST MODE.....	4
2.4 DESCRIPTION OF SUPPORT UNIT.....	5
3. DESCRIPTION OF APPLIED STANDARDS.....	5
4. CONDUCTED EMISSION TEST.....	6
5. RADIATED EMISSION TEST.....	7
5.1 RADIATED EMISSION LIMIT.....	7
5.2 TEST EQUIPMENT.....	7
5.3 TEST SET-UP.....	8
5.4 TEST PROCEDURE.....	9
5.5 EUT OPERATING CONDITION.....	9
5.6 RADIATED EMISSION TEST RESULT.....	10
6. PHOTOS OF TESTING.....	11
7. TERMS OF ABRIVATION.....	12

 <b>Spectrum Research &amp; Testing Lab., Inc.</b> No. 101-10, Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan, Taiwan,	<h1>TEST REPORT</h1>	Reference No.:A04071502 ReportNo.:FCBA04071502 Page:3 of 12 Date:Aug. 17, 2004
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## 1. DOCUMENT POLICY AND TEST STATEMENT

### 1.1 DOCUMENT POLICY

- The report shall not be reproduced except in full, without the written approval of SRT Lab, Inc.
- The report must not be used by the applicant to claim that the product is endorsed by NVLAP, TÜV, NEMKO and SRT.
- The NVLAP logo applies only to the applicable standards specified in this report.

### 1.2 TEST STATEMENT

- The test results in the report apply only to the unit tested by SRT Lab.
- There was no deviation from the requirements of test standards during the test.
- DC 24V (for EUT) and AC 120V/60Hz (for support units) were used for all the test items.

### 1.3 EUT MODIFICATION

- No modification in SRT Lab.



 <b>Spectrum Research &amp; Testing Lab., Inc.</b> No. 101-10, Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan, Taiwan,	<h1>TEST REPORT</h1>	Reference No.:A04071502 ReportNo.:FCBA04071502 Page:4 of 12 Date:Aug. 17, 2004
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## 2. DESCRIPTION OF EUT AND TEST MODE

### 2.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	5.7" Ethernet Operator Panel
<b>MODEL NO.</b>	AOP-8060
<b>POWER SUPPLY</b>	DC 24V
<b>CABLE</b>	Shielded power cable (1.5m) with one ferrite core, Unshielded PS/2 cable (0.15m)

#### NOTE :

For more detailed information, please refer to the EUT' s specification or user' s manual provided by manufacturer.

### 2.2 DESCRIPTION OF EUT INTERNAL DEVICE

DEVICE	BRAND / MAKER	MODEL #	FCC ID/DOC	REMARK
PANEL	HITACHI	SX14Q004	N/A	
CF CARD	SanDisk	SDCFB	N/A	

#### NOTE :

1. The highest clock is 32MHz.
2. The CPU installed on main board is 200MHz, clock chip is 100MHz.
3. Max. resolution is 320 x 240.
4. Frequency range to be measured.  
Radiated emission is 30MHz to 1GHz.

### 2.3 DESCRIPTION OF TEST MODE

N/A (It is only applicable to more than one test mode.)

 <b>Spectrum Research &amp; Testing Lab., Inc.</b> No. 101-10, Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan, Taiwan,	<h1>TEST REPORT</h1>	Reference No.:A04071502 ReportNo.:FCBA04071502 Page:5 of 12 Date:Aug. 17, 2004
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## 2.4 DESCRIPTION OF SUPPORT UNIT

The EUT was configured by the requirement of ANSI C63.4:2003 and CISRP 22:2003. All interface ports were connected to the appropriate support units via specific cables. The support units and cables are listed below.

NO	DEVICE	BRAND	MODEL #	FCC ID/DOC	CABLE
1	DC POWER SUPPLY	SHENG 1	SPS-300	N/A	1.8m unshielded power cable
2	PRINTER	EPSON	STYLUS C20SX	DOC	1.5m unshielded power cord 1.5m shielded data cable
3	SPEAKER	JS	J-205A	N/A	1.8m unshielded power cable 1.2m unshielded data cable
4	KEYBOARD	ACER	6312-TA4C/6	DOC	1.5m shielded data cable
5	MOUSE	HP	M-S34	DZL211029	1.5m shielded data cable
6	USB MOUSE	LOGITECH	M-BE58	DOC	1.5m shielded data cable
7	USB MOUSE	HP	MO19UCA	DOC	1.5m shielded data cable

**NOTE:** For the actual test configuration, please refer to the photos of testing.

## 3. DESCRIPTION OF APPLIED STANDARDS

The EUT is a kind of ITE and according to the specifications provided by the applicant, it must comply with the requirements of the following standards:

47 CFR Part 15 Subpart B, Class B

All tests have been performed and recorded as per the above standards.

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#### 4. CONDUCTED EMISSION TEST

The conducted emission test were not measured, because the EUT' s power source is DC 24V from an external power supply.



## 5. RADIATED EMISSION TEST

### 5.1 RADIATED EMISSION LIMIT

CISPR 22:2003 limits of radiated emission measurement for frequency below 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 10m)
	dB $\mu$ V/m	dB $\mu$ V/m
30 – 230	40	30
230 - 1000	47	37

#### NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m).

### 5.2 TEST EQUIPMENT

The following test equipment was used during the radiated emission test:

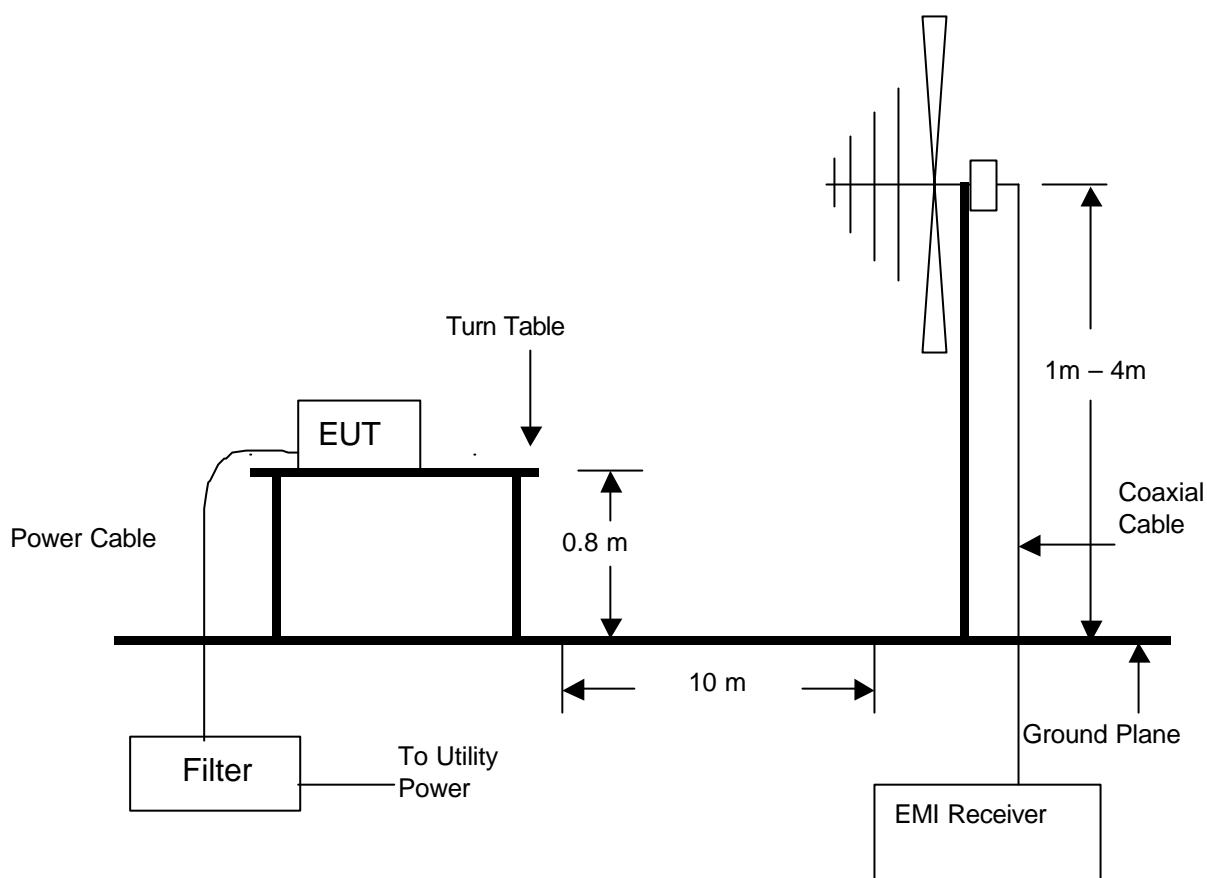
EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUE DATE OF CAL. & CAL. CENTER
EMI TEST RECEIVER	20 MHz TO 1 GHz	ROHDE & SCHWARZ	ESVS30/ 841977/003	AUG. 2004 ETC
BI-LOG ANTENNA	25 MHz TO 2 GHz	EMCO	3142/ 9701-1124	APR. 2005 SRT
OATS	3 – 10 M MEASUREMENT	SRT	SRT-1	APR. 2005 SRT
COAXIAL CABLE	25M	SUNCITY	J400/ 25M	AUG. 2004 SRT
FILTER	2 LINE, 30A	FIL.COIL	FC-943/ 869	N/A
FREQUENCY CONVERTER	N/A	APC	AFC-2KBB/ F100030031	AUG. 2005 SRT

#### NOTE:

1. The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.
2. The Open Area Test Site (SRT-1) is registered by FCC with No. 90957 and VCCI with No. R-1081.
3. The Open Area Test Site (SRT-2) is registered by FCC with No. 98458 and VCCI with No. R-1168.



## 5.3 TEST SET-UP



### NOTE :

1. The EUT system was put on a wooden table with 0.8m heights above a ground plane.
2. For the actual test configuration, please refer to the photos of testing.





## 5.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.4:2003 and CISPR 22:2003. The measurements were made at an open area test site with 10 meter measurement distance under 1 GHz and with 3m distance above 1GHz. The frequency spectrum measured started from 30 MHz. Under 1 GHz, all readings were quasi-peak values with 120 kHz resolution bandwidth of the test receiver. Above 1 GHz, the measurements were made at an open area test site with 3 meter measurement distance and all readings were peak or average values with 1 MHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. The cables connected to EUT and support units were moved to find the maximum emission levels for each frequency. First, Find the margin or higher points at least 6 points by software, then use manual to find the maximum data. The procedure is referred on the test procedure of SRT LAB.

## 5.5 EUT OPERATING CONDITION

Under Win CE ran “Media Player” program.



## 5.6 RADIATED EMISSION TEST RESULT

Temperature:	29°C	Humidity:	54 %RH
Frequency Range:	30 – 1000 MHz	Measured Distance:	10m
Receiver Detector:	Q.P.	Tested Mode:	N/A
Tested By:	Yvonne Chen	Tested Date:	Aug. 12, 2004

Antenna Polarization:Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
133.6600	2.01	7.37	17.8	27.2	30.0	-2.8	165.3	4.0
402.8900	4.45	15.84	11.2	31.5	37.0	-5.5	247.8	3.5
501.5700	4.98	21.26	8.6	34.8	37.0	-2.2	100.2	2.0
565.2950	5.48	19.72	6.3	31.5	37.0	-5.5	98.7	2.0
577.5750	5.55	20.06	9.4	35.0	37.0	-2.0	130.9	1.5
668.1550	6.02	21.28	6.2	33.5	37.0	-3.5	321.4	1.5

Antenna Polarization:Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ(°)	EL(m)
51.7480	1.18	8.40	16.2	25.8	30.0	-4.2	255.1	1.2
402.8910	4.45	15.84	10.7	31.0	37.0	-6.0	231.2	1.4
501.4775	4.98	21.26	8.3	34.5	37.0	-2.5	50.0	2.1
533.9500	5.25	19.98	8.0	33.2	37.0	-3.8	198.6	2.1
565.2830	5.48	19.72	6.2	31.4	37.0	-5.6	121.2	2.5
577.5720	5.55	20.06	7.0	32.6	37.0	-4.4	174.8	2.5

### NOTE :

1. Measurement uncertainty is +/-2dB.
2. "\*": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



## 6. PHOTOS OF TESTING

- Radiated test



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# TEST REPORT

Reference No.:A04071502  
ReportNo.:FCBA04071502  
Page:12 of 12  
Date:Aug. 17, 2004

## 7. TERMS OF ABRIVATION

AV.	Average detection
AZ(°)	Turn table azimuth
Correct.	Correction
EL(m)	Antenna height (meter)
EUT	Equipment Under Test
Horiz.	Horizontal direction
LISN	Line Impedance Stabilization Network
NSA	Normalized Site Attenuation
Q.P.	Quasi-peak detection
SRT Lab	Spectrum Research & Testing Laboratory, Inc.
Vert.	Vertical direction