FCC Verification
TEST REPORT

for

Medical Station

MODEL: xxxxxONYX-195HTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank);
xxxxxONYX-175HTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank);
xxxxxONYX-195XTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank);
xxxxxONYX-175XTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank)

Test Report Number:
90515206-D

Issued to:

AAEON Technology Inc.

5F, No.135, Lane 235, Pao Chiao Rd., Hsin-Tien City,
Taipei, Taiwan, R.O.C.

Issued by:

Compliance Certification Services Inc.

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Issued Date: June 02, 2009

Testing Laboratory
1108

ACCREDITED
TESTING CERT #0824.01

Revision History

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00				Initial Issue	ALL	

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1 TEST RESULT CERTIFICATION

Product:	Medical Station
Brand:	AAEON
Model:	xxxxxONYX-195HTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank); xxxxxONYX-175HTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank); xxxxxONYX-195XTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank); xxxxxONYX-175XTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank)
Applicant:	**AAEON Technology Inc.** 5F, No.135, Lane 235, Pao Chiao Rd., Hsin-Tien City, Taipei, Taiwan, R.O.C.
Manufacturer:	**AAEON Technology Inc.** 5F, No.135, Lane 235, Pao Chiao Rd., Hsin-Tien City, Taipei, Taiwan, R.O.C.
Tested:	March 02, 2007 ~ June 02, 2009

Applicable Standard	Class / Limit	Test Result
FCC Part 18	---	No non-compliance noted

Note: *1. The statements of test result on the above are decided by the request of test standard only; the measurement uncertainties are not factored into this compliance determination.*
2. The information of measurement uncertainty is available upon the customer's request.

Deviation from Applicable Standard
None

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:

Vince Chiang
Assistant Manager of Sindian BU.

Reviewed by:

Vesta Hsu
Supervisor of report document dept. of Sindian BU.

2 EUT DESCRIPTION

Product	Medical Station
Trade Name	AAEON
Model	xxxxxONYX-195HTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank); xxxxxONYX-175HTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank); xxxxxONYX-195XTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank); xxxxxONYX-175XTy-xxxxxxx (Where y is T or blank and x is 0-9，A-Z，-or blank)
Applicant	AAEON Technology Inc.
Housing Type	Plastic w/ metal plate
EUT Power Rating	100-240VAC
AC Power During Test	120VAC / 60Hz
Power Supply Manufacturer	FSP
Power Supply Model Number	FSP180-50MP
OSC/Clock Frequencies	25MHz; 24.576MHz; 16MHz; 12MHz; 14.31818MHz; 32.768kHz

I/O PORT

I/O PORT TYPES	Q'TY	TESTED WITH
1) PIO Port	1	1
2) SIO Port	4	4
3) PS/2 Keyboard Port	1	1
4) PS/2 Mouse Port	1	1
5) VGA Port	1	1
6) Audio In Port	1	1
7) Earphone Port	1	1
8) Microphone Port	1	1
9) USB Port	5	5
10) LAN Port	2	2
11) S-VIDEO Port	1	1
12) MS / CF / SD / SM / SIM Slot	1/1/1/1/1	1/1/1/1/1

Note: *The differences between of these models are listed as below.*

Model Number	*Panel size*	*Differences*	*Tested (Checked)*
ONYX-195X	*19"*	*They are the same, except for the device.*	☒
ONYX-195			☒
ONYX-175X	*17"*	*They are the same, except for the device.*	☒
ONYX-175			☒

3 TEST METHODOLOGY

3.1. DECISION OF FINAL TEST MODE

The EUT was tested together with the above additional components, and a configuration, which produced the worst emission levels, was selected and recorded in this report.

The test configuration/ modes is as the following:

Conduction Modes:

1.	ONYX-195X	CPU: Intel / Intel Core 2 Duo T7200 2.0GHz 19" TFT LCD PANEL: AUO / M190EG01 Hard Disk: Fujitsu / MHZ2080BH 80GB Memory: ELPIDA / E5108AG-6E-E 1GB Power Supply: FSP / FSP180-50MP	1280X1024, VF=60Hz / EUT + CRT MODE
2.	ONYX-195	CPU: Intel / Intel Core 2 Duo T5500 1.6GHz 19" TFT LCD PANEL: AUO / M190EN04.1.400 nits Hard Disk: Fujitsu / MHV2080GH 80GB Memory: ELPIDA / E5108AGBG-6E-E 512MB Power Supply: FSP / FSP180-50MP	1280X1024, VF=60Hz / EUT + CRT MODE
3.			1024X768,VF=60Hz / EUT + CRT MODE
4.			800X600, VF=60Hz / EUT + CRT MODE
5.			1024X768,VF=60Hz / TV MODE
6.			800X600, VF=60Hz / TV MODE
7.	ONYX-175X	CPU: Intel / Intel Core 2 Duo T7200 2.0GHz 17" TFT LCD PANEL: CPT / CLAA170EA Hard Disk: Fujitsu / MHZ2080BH 80GB Memory: Transcend / SEC K4T51083QC 1GB Power Supply: FSP / FSP180-50MP	1280X1024, VF=60Hz / EUT + CRT MODE
8.			1024X768, VF=70Hz / EUT + CRT MODE
9.			800X600, VF=75Hz / EUT + CRT MODE
10.			1024X768, VF=60Hz / TV MODE
11.			800X600, VF=60Hz / TV MODE
12.	ONYX-175	CPU: Intel / Intel Core 2 Duo T5500 1.6GHz 17" TFT LCD PANEL: CPT / CLAA170EA07 / 4 LAMP Hard Disk: Fujitsu / MHV2080GH 80GB Memory: ELPIDA / E5108AGBG-6E-E 512MB Power Supply: FSP / FSP180-50MP	1280X1024, VF=60Hz / EUT + CRT MODE

Radiation Modes:

1.	ONYX-195X	CPU: Intel / Intel Core 2 Duo T7200 2.0GHz 19" TFT LCD PANEL: AUO / M190EG01 Hard Disk: Fujitsu / MHZ2080BH 80GB Memory: ELPIDA / E5108AG-6E-E 1GB Power Supply: FSP / FSP180-50MP	1280X1024, VF=60Hz / EUT + CRT MODE
			1280X1024, VF=60Hz / EUT + CRT MODE / 1-10GHz
2.	ONYX-195	CPU: Intel / Intel Core 2 Duo T5500 1.6GHz 19" TFT LCD PANEL: AUO / M190EN04.1.400 nits Hard Disk: Fujitsu / MHV2080GH 80GB Memory: ELPIDA / E5108AGBG-6E-E 512MB Power Supply: FSP / FSP180-50MP	1280X1024, VF=60Hz / EUT + CRT MODE
3.			1024X768,VF=60Hz / EUT + CRT MODE
4.			800X600, VF=60Hz / EUT + CRT MODE
5.			1024X768,VF=60Hz / TV MODE
6.			800X600, VF=60Hz / TV MODE
7.	ONYX-175X	CPU: Intel / Intel Core 2 Duo T7200 2.0GHz 17" TFT LCD PANEL: CPT / CLAA170EA Hard Disk: Fujitsu / MHZ2080BH 80GB Memory: Transcend / SEC K4T51083QC 1GB Power Supply: FSP / FSP180-50MP	1280X1024, VF=60Hz / EUT + CRT MODE
8.			1024X768, VF=70Hz / EUT + CRT MODE
9.			800X600, VF=75Hz / EUT + CRT MODE
10.			1024X768, VF=60Hz / TV MODE
11.			800X600, VF=60Hz / TV MODE
12.	ONYX-175	CPU: Intel / Intel Core 2 Duo T5500 1.6GHz 17" TFT LCD PANEL: CPT / CLAA170EA07 / 4 LAMP Hard Disk: Fujitsu / MHV2080GH 80GB Memory: ELPIDA / E5108AGBG-6E-E 512MB Power Supply: FSP / FSP180-50MP	1280X1024, VF=60Hz / EUT + CRT MODE

Conduction: Mode 7

Radiation: Mode 1

3.2. EUT SYSTEM OPERATION

1. Windows XP boots system.
2. Run Emctest.exe to activate all peripherals and display “H” pattern on monitor screen.
3. Run Winemc.exe and choose media player to play music.
4. Run Winemc.exe and choose “E:/ & F:/ & G:/ & H:/ & I:/” to test USB 2.0 port.
5. Press the start menu, select executive and type ping 192.168.1.1~2 –t (EUT), ping 192.168.1.10 –t (Server Notebook).

Note: *Test program is self-repeating throughout the test.*

4 SETUP OF EQUIPMENT UNDER TEST

4.1. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

EUT Devices:

Model No.: ONYX-195X

No.	Equipment	Model No.	Trade Name
1.	CPU (2.0GHz)	Intel Core 2 Duo T7200	Intel
2.	19" TFT LCD PANEL	M190EG01	AUO
3.	Hard Disk (80GB)	MHZ2080BH	Fujitsu
4.	Memory (DSL 1GB DDR2 667MHz)	E5108AG-6E-E	ELPIDA
5.	Power Supply	FSP180-50MP	FSP
6.	Graphics Board	MXM-II E2400	ATI

Model No.: ONYX-175X

No.	Equipment	Model No.	Trade Name
1.	CPU (2.0GHz)	Intel Core 2 Duo T7200	Intel
2.	17" TFT LCD PANEL	CLAA170EA	CPT
3.	Hard Disk (80GB)	MHZ2080BH	Fujitsu
4.	Memory (1GB / DDR2 533MHz)	SEC K4T51083QC	Transcend
5.	Power Supply	FSP180-50MP	FSP
6.	Graphics Board	MXM-II E2400	ATI

Model No.: ONYX-195

No.	Equipment	Model No.	Trade Name
1.	CPU (1.6GHz)	Intel Core 2 Duo T5500	Intel
2.	19” TFT LCD PANEL	M190EN04.1.400 nits	AUO
3.	Hard Disk (80GB)	MHV2080GH	Fujitsu
4.	Memory (DSL 512MB DDR2 667MHz)	E5108AGBG-6E-E	ELPIDA
5.	Power Supply	FSP180-50MP	FSP

Model No.: ONYX-175

No.	Equipment	Model No.	Trade Name
1.	CPU (1.6GHz)	Intel Core 2 Duo T5500	Intel
2.	17" TFT LCD PANEL	CLAA170EA07 / 4 LAMP	CPT
3.	Hard Disk (80GB)	MHV2080GH	Fujitsu
4.	Memory (DSL 512MB DDR2 667MHz)	E5108AGBG-6E-E	ELPIDA
5.	Power Supply	FSP180-50MP	FSP

Peripherals Devices:

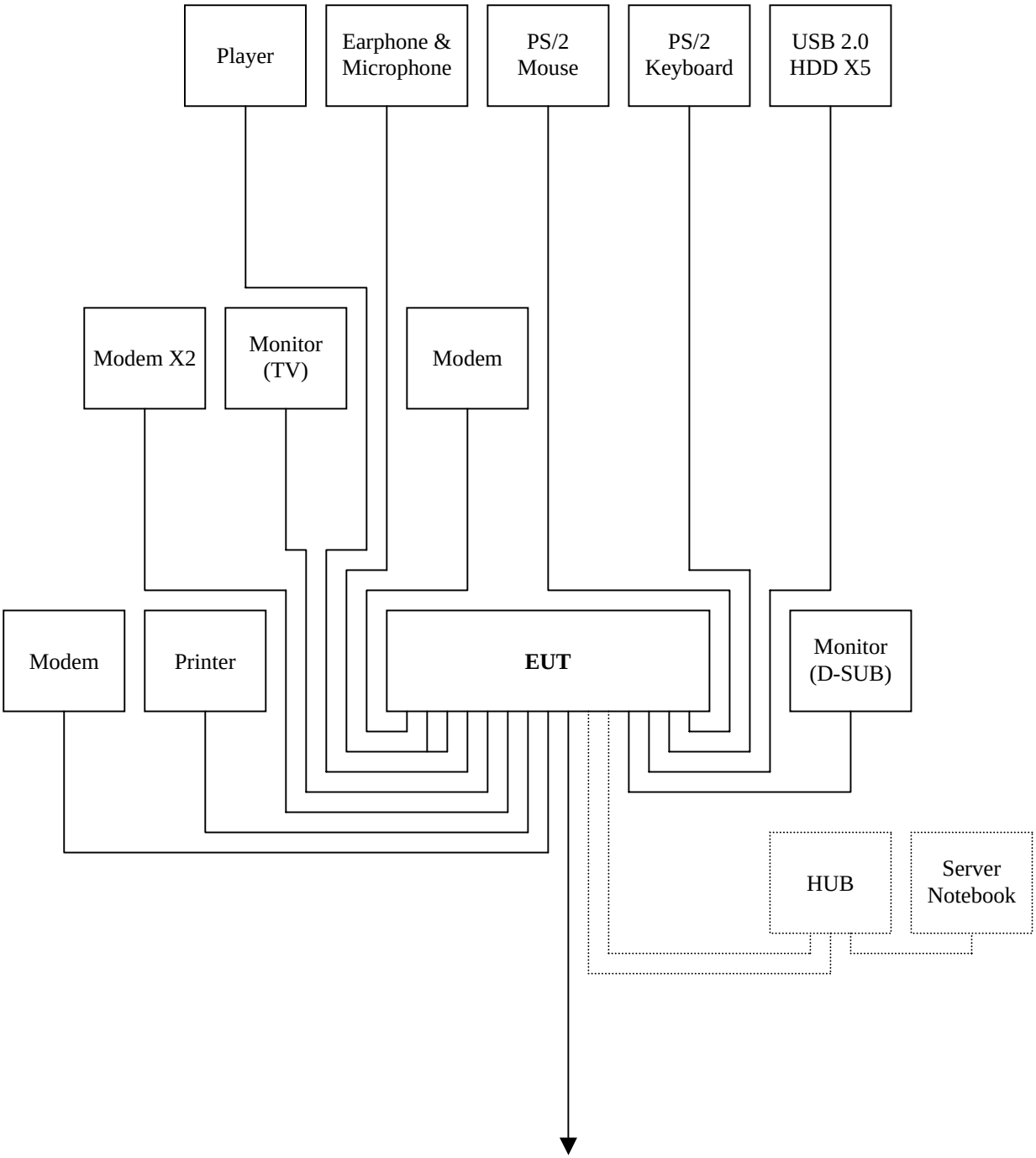
No.	Equipment	Model No.	Serial No.	FCC ID / BSMI ID	Trade Name	Data Cable	Power Cord
1.	Player	RQ-L11LT	N/A	BSMI ID: 3912A162	Panasonic	Unshielded, 1.8m	N/A
2.	Earphone & Microphone	MSB301	N/A	N/A	e-Sense	Unshielded, 1.8m	N/A
3.	PS/2 Mouse	M071KC	443029438	DOC BSMI: R41108	DELL	Shielded, 1.8m	N/A
4.	PS/2 Keyboard	SK-8110	N/A	DOC BSMI: T3A002	DELL	Shielded, 1.8m	N/A
5.	USB 2.0 HDD	F12-U	N/A	BSMI ID: 4912A002	TeraSys	Shielded, 1.8m	N/A
6.	USB 2.0 HDD	F12-U	N/A	BSMI ID: 4912A002	TeraSys	Shielded, 1.8m	N/A
7.	USB 2.0 HDD	F12-U	N/A	BSMI ID: 4912A002	TeraSys	Shielded, 1.8m	N/A
8.	USB 2.0 HDD	F12-U	N/A	BSMI ID: 4912A002	TeraSys	Shielded, 1.8m	N/A
9.	USB 2.0 HDD	F12-U	N/A	BSMI ID: 4912A002	TeraSys	Shielded, 1.8m	N/A
10.	Modem	1414	N/A	IFAXDM1414	ACEEX	Shielded, 1.2m	Unshielded, 1.8m
11.	Modem	5JEG4033MKO	N/A	5RJTAI-35500-M5-E	TOP-SOLUTION	Shielded, 1.2m	Unshielded, 1.8m
12.	Monitor (TV)	KD17NS	7728	BSMI: R33475	SAMAUNG	Unshielded, 1.8m	Unshielded, 1.5m with a core
13.	Modem	1414	N/A	IFAXDM1414	ACEEX	Shielded, 1.2m	Unshielded, 1.8m
14.	Modem	1414	N/A	IFAXDM1414	ACEEX	Shielded, 1.2m	Unshielded, 1.8m
15.	Printer	C20SX	N/A	BSMI ID: 3902E004	EPSON	Shielded, 1.8m	Unshielded, 1.8m
16.	Monitor (D-SUB)	202P40	BZ000405640006	FCC ID: A3KM107 BSMI: R33048	PHILIPS	Shielded, 1.8m with two cores	Unshielded, 1.8m
17.	HUB	DGS-1008D	042829	DoC	D-Link	Unshielded, 20m X2	Unshielded, 1.8m
18.	Server Notebook	2210B	CNV7472KG5	DoC BSMI: R33001	HP	Unshielded, 1.0m	Unshielded, 1.8m

Note:

1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2. CONFIGURATION OF SYSTEM UNDER TEST



5 FACILITIES AND ACCREDITATIONS

5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at CCS Taiwan Sindian BU. at No.163-1, Jhongsheng Rd., Sindian City, Taipei County 23151, Taiwan.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4 and CISPR 16-1-5.

5.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan	TAF
USA	A2LA

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Germany	TUV Rheinland
Japan	VCCI
Taiwan	BSMI
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, http://www.ccsemc.com

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conducted emissions	0.15MHz ~ 30MHz	± 1.7376
Radiated emissions	30MHz ~ 200MHz	± 3.9041
	200MHz ~ 1000MHz	± 3.9162

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Consistent with industry standard (e.g. CISPR 22: 2006, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than U_{CISPR} which is 3.6dB and 5.2dB respectively. CCS values (called U_{Lab} in CISPR 16-4-2) is less than U_{CISPR} as shown in the table above. Therefore, MU need not be considered for compliance.

6 CONDUCTED EMISSION MEASUREMENT

6.1. LIMITS OF CONDUCTED EMISSION MEASUREMENT

Maximum permissible level of Line Conducted Emission

Frequency (MHZ)	(dBuV)	
	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:
(1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

6.2. TEST INSTRUMENTS

Conducted Emission Test Site # A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
TEST RECEIVER	R&S	ESHS20	840455/006	02/12/2010
LISN (EUT)	SCHWARZBECK	NSLK 8127	8127382	12/09/2009
LISN	SOLAR	8012-50-R-24-BNC	8305114	12/09/2009
BNC CABLE	MIYAZAKI	5D-FB	BNC A4	05/11/2010
THERMO-HYGRO METER	TECPEL	DTM-303	No.7	11/24/2009
Test S/W	EMI 32.exe			

NOTE: *1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.*
2. N.C.R = No Calibration Request.

6.3. TEST PROCEDURES (please refer to measurement standard or CCS SOP PA-031)

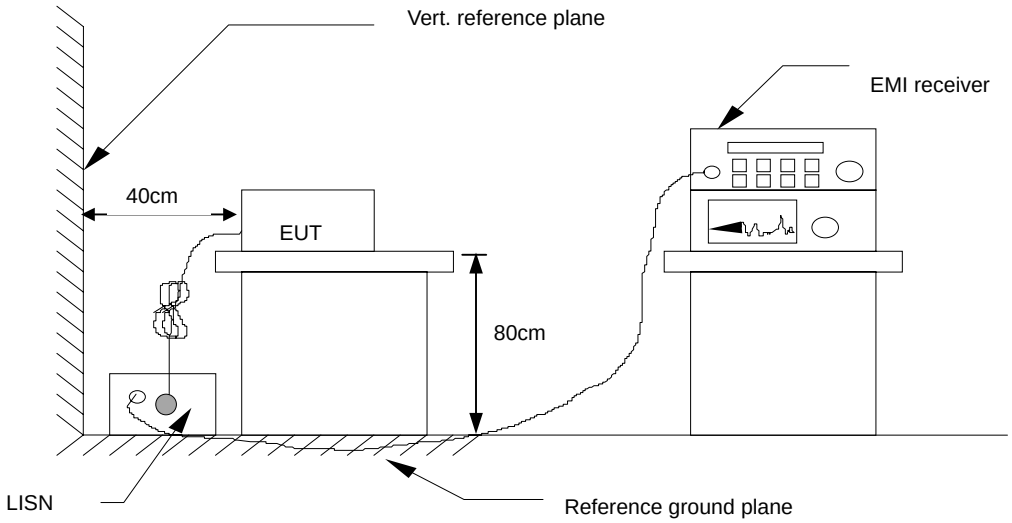
Procedure of Preliminary Test

- The EUT and Support equipment, if needed, was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor standing equipment, it is placed on the ground plane, which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- The test equipment EUT installed received AC main power, through a Line Impedance Stabilization Network (LISN), which supplied power source and was grounded to the ground plane.
- All support equipment power received from a second LISN.
- The EUT test program was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
- During the above scans, the emissions were maximized by cable manipulation.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test.
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of Final Test

- EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
- The test data of the worst-case condition(s) was recorded.

6.4. TEST SETUP



- For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

6.5. DATA SAMPLE

Freq. (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark (P/Q/A)	Line (L1/L2)
x.xx	42.95	0.55	43.50	56	-12.50	Q	L1

Freq. = Emission frequency in MHz
Read Level = Uncorrected Analyzer/Receiver reading
Factor = Insertion loss of LISN + Cable Loss
Level = Read Level + Factor
Limit Line = Limit stated in standard
Over Limit = Reading in reference to limit
P = Peak Reading
Q = Quasi-peak Reading
A = Average Reading
L1 = Hot side
L2 = Neutral side

Calculation Formula

Over Limit (dB) = Level (dBuV) – Limit Line (dBuV)

6.6. TEST RESULTS

Model No.	ONYX-175X	**6dB Bandwidth**	10 KHz
Environmental Conditions	25°C, 60% RH, 1010mbar	**Test Mode**	Mode 7
Tested by	Alee Shen		

(The chart below shows the highest readings taken from the final data.)

Six Highest Conducted Emission Readings							
Frequency Range Investigated				**150 KHz to 30 MHz**			
Freq. (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark (P/Q/A)	Line (L1/L2)
0.644	**44.78**	**0.09**	**44.87**	**56.00**	**-11.13**	**P**	**L1**
0.899	**45.25**	**0.10**	**45.35**	**56.00**	**-10.65**	**P**	**L1**
1.418	**45.58**	**0.13**	**45.71**	**56.00**	**-10.29**	**P**	**L1**
11.621	**47.66**	**0.73**	**48.39**	**60.00**	**-11.61**	**P**	**L1**
11.080	**47.94**	**0.55**	**48.49**	**60.00**	**-11.51**	**P**	**L2**
12.649	**46.98**	**0.63**	**47.61**	**60.00**	**-12.39**	**P**	**L2**

NOTE: *1. 0.15MHz to 30MHz test is Applicable Part 15.107 standard.*
2. The emission level was or more than 2dB below the Average limit, so no re-check anymore.

7 RADIATED EMISSION MEASUREMENT

7.1. LIMITS OF RADIATED EMISSION MEASUREMENT

Maximum permissible level of Radiated Emission measured at 3meter

Frequency (MHZ)	Maximum Field Strength Limit (dBu V/m/ Q.P.)
30-88	40
88-216	43.5
216-960	46
Above 960	53.9

Note: *The lower limit shall apply at the transition frequency.*

Frequency (MHz)	dBuV/m (At 3m)	
	Average	Peak
Above 960	54	74

NOTE: *(1) The lower limit shall apply at the transition frequencies.*
(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

7.2. TEST INSTRUMENTS

Open Area Test Site # I				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
MEASURE RECEIVER	SCHAFFNER	SCR3501	338	07/07/2009
SPECTRUM ANALYZER	ADVANTEST	R3132	120900008	No Calibration Required
ANTENNA	SCHAFFNER	CBL 6112B	2809	09/08/2009
AMPLIFIER	SCHAFFNER	CPA9231A	3626	10/12/2009
CABLE	BELDEN	9913	N-TYPE #I2	02/22/2010
THERMO-HYGRO METER	TECPEL	DTM-303	NO.3	11/24/2009
Test S/W	Lab VIEW 7.1			
Above 1GHz Used				
SPECTRUM ANALYZER (9kHz-30GHz)	R&S	FSP 30	100112	10/16/2009
ANTENNA (1-18GHz)	EMCO	3115	00022256	01/22/2010
AMPLIFIER (1-18GHz)	HP	8449B	3008A01266	01/19/2010
CABLE (1-18GHz)	JYEBAO	LL142	SMA#RS1	01/19/2010
CABLE (1-18GHz)	HUBER +SUHNER	SUCOFLEX 104	SMA#RS3	01/19/2010
CABLE (1-18GHz)	JYEBAO	LL142	SMA#C1	01/19/2010
Test S/W	EZ-EMC			

NOTE: *1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.*
2. N.C.R = No Calibration Request.

7.3. TEST PROCEDURES (please refer to measurement standard or CCS SOP PA-031)

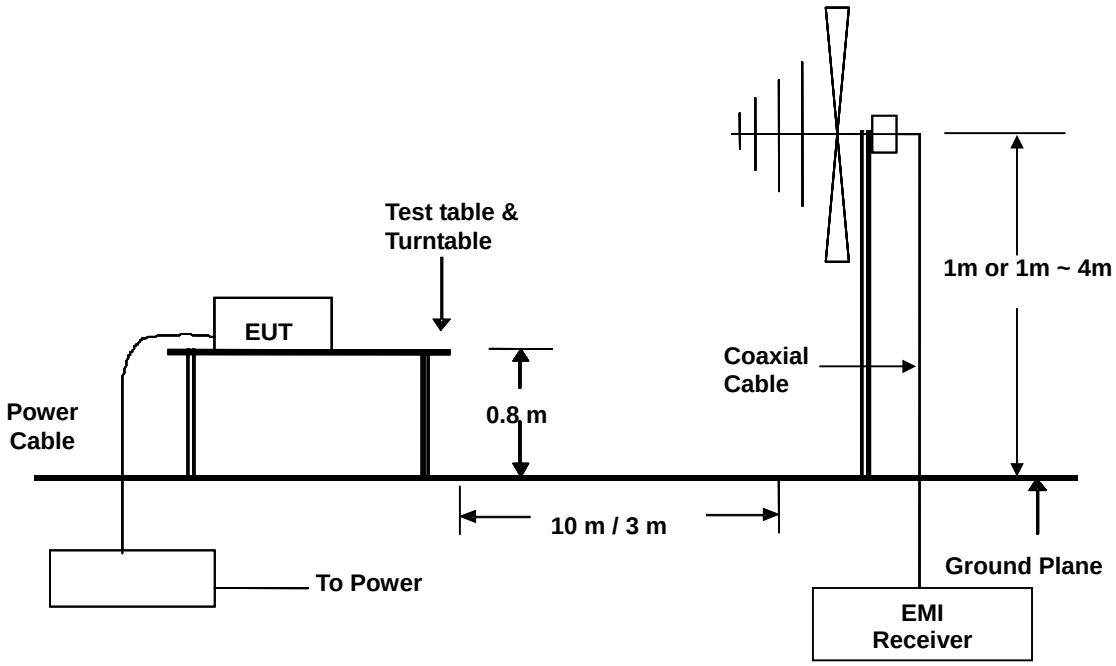
Procedure of Preliminary Test

- The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane. When the EUT is a floor standing equipment, it is placed on the ground plane which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- Support equipment, if needed, was placed as per ANSI C63.4.
- All I/O cables were positioned to simulate typical usage as per ANSI C63.4.
- The EUT received AC power source from the outlet socket under the turntable. All support equipment power received from another socket under the turntable.
- The antenna was placed at 10/3 meter away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
- The Analyzer / Receiver quickly scanned from 30MHz to 10000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test:
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the final test.

Procedure of Final Test

- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 10000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and only Q.P. reading is presented.
- The test data of the worst-case condition(s) was recorded.

7.4. TEST SETUP



- For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.5. DATA SAMPLE

Below 1GHz

Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark (P/Q)	Pol. (H/V)
x.xx	14.0	12.2	26.2	40	-13.8	Q	H

Freq. = Emission frequency in MHz
Reading = Uncorrected Analyzer/Receiver reading
Factor = Antenna Factor + Cable Loss + Attenuator (3/6/10dB) – Amplifier Gain
Amptd = Uncorrected Analyzer/Receiver reading + Factor
Limit = Limit stated in standard
Margin = Reading in reference to limit
P = Peak Reading
Q = Quasi-peak Reading
H = Antenna Polarization: Horizontal
V = Antenna Polarization: Vertical

Calculation Formula

Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)

Above 1GHz

Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
x.xx	42.95	0.55	43.50	54	-10.50	A	H

Freq. = Emission frequency in MHz
Reading = Uncorrected Analyzer/Receiver reading
Factor = Antenna Factor + Cable Loss - Amplifier Gain
Result = Reading + Factor
Limit = Limit stated in standard
Margin = Result – Limit
P = Peak Reading
A = Average Reading
H = Antenna Polarization: Horizontal
V = Antenna Polarization: Vertical

7.6. TEST RESULTS

Below 1GHz

Model No.	ONYX-195X	**Test Mode**	Mode 1
Environmental Conditions	25°C, 80% RH, 1010mbar	**6dB Bandwidth**	120 KHz
Antenna Pole	Vertical / Horizontal	**Antenna Distance**	3 m
Detector Function	Quasi-peak.	**Tested by**	Willy Shu

(The chart below shows the highest readings taken from the final data.)

Six Highest Radiated Emission Readings							
Frequency Range Investigated				**30 MHz to 1000 MHz at 3m**			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark (P/Q)	Pol. (H/V)
125.030	**41.08**	**-15.43**	**25.65**	**43.50**	**-17.85**	**Q**	**V**
159.860	**40.12**	**-16.87**	**23.25**	**43.50**	**-20.25**	**Q**	**V**
166.720	**43.76**	**-17.28**	**26.48**	**43.50**	**-17.02**	**Q**	**V**
217.510	**42.78**	**-17.17**	**25.61**	**46.00**	**-20.39**	**Q**	**V**
766.740	**34.23**	**-3.34**	**30.89**	**46.00**	**-15.11**	**Q**	**V**
800.070	**34.01**	**-2.87**	**31.14**	**46.00**	**-14.86**	**Q**	**V**

(The chart below shows the highest readings taken from the final data.)

Six Highest Radiated Emission Readings							
Frequency Range Investigated				**30 MHz to 1000 MHz at 3m**			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark (P/Q)	Pol. (H/V)
159.820	**42.73**	**-16.87**	**25.86**	**43.50**	**-17.64**	**Q**	**H**
166.690	**43.64**	**-17.27**	**26.36**	**43.50**	**-17.14**	**Q**	**H**
250.000	**46.28**	**-13.97**	**32.31**	**46.00**	**-13.69**	**Q**	**H**
500.010	**39.36**	**-7.43**	**31.93**	**46.00**	**-14.07**	**Q**	**H**
766.680	**35.56**	**-3.34**	**32.22**	**46.00**	**-13.78**	**Q**	**H**
900.030	**34.77**	**-1.45**	**33.32**	**46.00**	**-12.68**	**Q**	**H**

REMARKS: *1. 30MHz to 1000MHz test is Applicable Part 15.109 standard.*
2. The other emission levels were very low against the limit.
3. P= Peak Reading; Q= Quasi-peak Reading.

Above 1GHz

Model No.	ONYX-195X	**Test Mode**	Mode 1
Environmental Conditions	25°C, 80% RH, 1010mbar	**6dB Bandwidth**	1000 KHz
Antenna Pole	Vertical / Horizontal	**Antenna Distance**	3m
Detector Function	Peak oraverage.	**Tested by**	David Cheng

(The chart below shows the highest readings taken from the final data.)

Highest Radiated Emission Readings							
Frequency Range Investigated				**30 MHz to 10000 MHz at 3m**			
Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1170.000	**57.40**	**-10.65**	**46.75**	**74.00**	**-27.25**	**P**	**V**
1476.000	**57.61**	**-9.12**	**48.49**	**74.00**	**-25.51**	**P**	**V**
2462.000	**52.37**	**-4.42**	**47.95**	**74.00**	**-26.05**	**P**	**V**
3142.000	**45.62**	**-1.80**	**43.82**	**74.00**	**-30.18**	**P**	**V**
3890.000	**41.59**	**0.53**	**42.12**	**74.00**	**-31.88**	**P**	**V**
5182.000	**41.75**	**3.36**	**45.11**	**74.00**	**-28.89**	**P**	**V**
6168.000	**42.34**	**4.20**	**46.54**	**74.00**	**-27.46**	**P**	**V**
7222.000	**41.30**	**6.07**	**47.37**	**74.00**	**-26.63**	**P**	**V**

(The chart below shows the highest readings taken from the final data.)

Highest Radiated Emission Readings							
Frequency Range Investigated				**30 MHz to 10000 MHz at 3m**			
Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1476.000	**53.25**	**-9.12**	**44.13**	**74.00**	**-29.87**	**P**	**H**
2496.000	**46.51**	**-4.31**	**42.20**	**74.00**	**-31.80**	**P**	**H**
3006.000	**45.99**	**-2.18**	**43.81**	**74.00**	**-30.19**	**P**	**H**
3448.000	**44.07**	**-0.95**	**43.12**	**74.00**	**-30.88**	**P**	**H**
5216.000	**40.09**	**3.48**	**43.57**	**74.00**	**-30.43**	**P**	**H**
6304.000	**38.26**	**4.20**	**42.46**	**74.00**	**-31.54**	**P**	**H**
7460.000	**37.77**	**6.78**	**44.55**	**74.00**	**-29.45**	**P**	**H**

NOTE: *1. The other emission levels were very low against the limit.*

2. P= Peak Reading; A= Average Reading.

8 PHOTOGRAPHS OF THE TEST CONFIGURATION

LINE CONDUCTED EMISSION TEST

RADIATED EMISSION TEST