Test Report Model : YY-A2XX

Tested to EN55022(1995) Results from Preliminary Scan in 3 meter Chamber

Date: Jan 07, 2004

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Tested by CWT

Date:Jan.07, 2004

Approved by YYT WALLACE

Date: Jan.07, 2004

1. Introduction

The purpose of this evaluation is to present the results of the EMC Emissions tests on the Yeong Yang chassis. The testing was carried out by CWT at Advance Data Technology Inc test facilities located at Advance Data Technology Inc 47, 14th Lin, Chiapao Tsuen, Linkou 235 Taipei, Taiwan ROC

2. References

Radiated Emissions (as per EN55022:1995) Power Line Conduction ((as per EN55022:1995)

3. Equipment Under Test (EUT)

3.1. EUT: Yeong Yang YY-A2XX Personal Computer Chassis



3.2. EUT Configuration

Description	Supplier	Model/Part Number				
Chassis	Yeong Yang	YY-A2XX(PANEL:04)				
Power Supply	CWT	250MDP12				
Processor	Intel	Intel P4 3G, Quantity:1				
Chipset	Intel					
Processor Thermal solution	Glacialtech	Igloo 4200, speed 3200RPM				
Motherboard	AOPEN	MX4 GER				
Memory	Kingston	DDR400 512MB, Quantity: 2				
Hard Drive	Seagate	40G, Quantity: 1				
CD ROM	CYBER	CD526D, Quantity: 1				
Floppy Drive	Mitsumi	D359M3, Quantity: 1				
Graphics Card	None					

Supplier	Description	Model/Part Number
AST	Keyboard	PS2/SK2000
AST	Keyboard	USB/SK2695
Logitech	Mouse	PS2/MS34
Logitech	Mouse	USB/BJ58
Hitachi	Monitor	CM769ET
HP	Printer	DJ400
ACEEX	Modem	1414
JASS	Speaker	J008

3.3. Support Equipment - 3 meter Chamber

3.4. EUT Comments

EUT tested with, 3.0GHz Intel Pentium 4 Processors with active heat sink and fan. An I/O shield was supplied with motherboard and used in this chassis.

3.5. Software

The program used to exercise the EUT was the EMC test software EMCTEST.exe and EMITEST.exe which was running under Microsoft Windows XP. Video resolution was set at 800x600.*The EMC test software version is designed to exercise the various EUT components in a manner similar to typical use*



4. Test Result (Radiated Emissions) 4.1. Test Setup



Figure 4.1.1. Generic Test set up for the Yeong Yang YY-A2XX Personal Computer chassis



Figure 4.1.2. Generic Test set up at 3-Meter Chamber

Environmental Status

22.5 degree C Temperature, 62%Humidity and 1010mB Barometric Pressure

4.2. Test Facilities - Conducted	power line test/Radiated Emissions Test
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Description	Supplier	Model/Date of Cal.
EMI Receiver	ROHDE & SCHWARZ	ESHS30 / Mar 2000
LISN	SCHWARZ BECK	NNLK 8121/Mar 2000
LISN	ROHDE & SCHWARZ	ESH3-Z5/Mar 2000
ESXS-K1	ROHDE & SCHWARZ	1082.9678.02 840.913/246
Cables	10Khz~30Mhz	No.10/Jul 2000
Antenna	ROHDE & SCHWARZ	HZ-12 842899/08 30~300Mhz / Jul 2000
Antenna	ROHDE & SCHWARZ	HZ-13 842007/0004 300~1000Mhz / Jul 2000

4.3. Test Procedure - EUT is tested in 3 meter Anechoic Chamber as outlined below

4.3.1. Conductive power line test

4.3.1.1.. The EUT was placed 0.4 meter from the conducting wall of shielding room and 0.8 meters above the ground plane

4.3.1.2. The frequency range from 0.15Mhz to 30Mhz ware investigated

4.3.1.3. The LISN used was 500hm / 50 uHenry as specified by EN55022

4.3.1.4. All the support peripherals are connect to the other LISN.

4.3.1.5. Cables and peripherals ware moved to find the maximum emission levels for each frequency.

4.3.2. Radiated Emission Test

4.3.2.1. The EUT was placed on a table. The top of the table was 0.8 meters above the ground plane and 3 meters from the antenna. The antenna was positioned 1.5 meters up from the ground plane.

4.3.2.2. The frequency range from 30MHz to 1000MHz, the measurement were made at 3 meters, with a Bi-log antenna.

4.4. Test spec

4.4.1. Limit of conducted power line emission class B

Frequency Range	Quasi Peak	Average
0.15~0.5Mhz	66-56 dBuV	56-46 dBuV
0.5~5Mhz	56dBuV	46dBuV
5~30Mhz	60dBuV	50dBuV

4.4.2. Limit of Radiated emission class B

Frequency Range	Measurement Distance	Limit (cBuV/m)
30~230Mhz	10 (M)	30
230~1000Mhz	10 (M)	37

4.5. Test Results

Preliminary Scan result in 3 meter Chamber, see attachments.

4.6. Summary :

Please refer to the figures attached.

1. PC Only : PASS

No frequency were determined to be over the limited.

2. CONDUTION: PASS

No frequency were determined to be over the limited.

Advance Data Technology Corporation ______ 誠信科技股份有限公司

Linkon EMC Lab: 47 14th Lin, Chiapao Tsten, Linkon, Taipel, Taiwan, R.O.C. Tel (02) 2605-2180 Fax (02) 2605-2943 Histocht EMC Lab: 81-1 Lullaokeng, 9th Lin, Wilting Tsten, Chinglin, Histocht, Taiwan, R.O.C. . Tel (03) 593-5343 Fax (03) 593-5342

Brand / Model : A2XX PC WITH MONITOR/KEYBOARD/MOUSE/CWT250MDP12 SAMPLE1 Remark : INPUT AC230V LOAD=CPU=INTEL P4 3G, HDD: SEAGATE 40G, POWER:CWT250MDP12 SAMPLE1, RAM:KINGSTON DDR400 512MB*2, M/B AOPEN MX4 GER Tested by : JONE

Location: CHAMBER ROOM 3 Date: 2003/12/31 Time: 下午 02:38 Approved by:

Temperature (C): 21.0

Humidity (%): 60

Polarity: Horizontal



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Location: CHAMBER ROOM 3 Date: 2003/12/31 Time: 下午 02:36 Approved by:

Temperature (C): 21.0

Humidity (%): 60

Polarity: **Vertical**



This data is for evaluation purposes only. It cannot be used for EMC approvals unless it contains the approved signature. If you have any questions regarding the test data, you can write your comments to service@mail.adt.com.tw

N	0.	Freq.	Emission	Limit	Margin	No.		Freq.	Emission	Limit	Margin
		MHz	dBuV	dBuV	dB			MHz	dBuV	dBuV	dB
*	1	86.52	22.9	30.0	-7.1						
	2	99.30	22.1	30.0	-7.9						
	3	136.08	21.3	30.0	-8.7						

測試 EMI CONDUCTION TEST MODEL: CWT-250MDP12(PFC) 項目 SPECTRUM ANALYZER: ADVANTEST R3131A EN55022(CLSPR 22) 測試 使用 56~46db(0.15MHz~0.5MHz) 負載:電阻負載 $46db(0.5MHz \sim 5MHz)$ 規格 設備 50db(5MHz~30MHz) QP S/N # I 09291714 SAMPLE 1 1.AC INPUT: 環境溫度 測試 230V/60Hz 室溫 2.DC OUTPUT : SYSTEM LOAD 條件 測試結果: A.EN55022(CLSPR 22)(Vin:230Vac) LISN RF OUTPUT:LIVE Dec 31 19:28:51 Poss-Foil ATT 10dB A_wrt B_bink Norm Norm Poss-Foil Marker 329 kHz 31.61 dByV Dec 31 19:31:38 Pass-Fail CISPR 22 CLASSB CISPR 22 CLASSB REF 90.0 dB+V V «REF 90.0 dB ATT 10dB A_wrt B_blnk Norm Norm Pass-Fail Marker 1 /2 /OFF 150.0 kHz 1 /2 /OFF 46.17 dB_PY Line 1 10dB/ 10dB/ MARKER MARKER 329 kHz 150.0 kHz ON /OFF <u>ON</u> /OFF Line 2 Line 2 ON /OFF ON /OFF UNCAL × Х ABS / LFT /CTR ABS / Ŷ ABS / TOP /BOT ABS'/ TOP /BOT itala Shift X / Y Shift <u>X</u> / Y 11 Line ⊧ Edit ⊧ START 150.0 kHz Silur START 150.0 kHz *YBW 1 kHz START 150 kHz STOP 30.00 MHz *RBN 10 kHz *VBN 1 kHz *SNP 2.0 s Line ▶ Edit ▶ STOP 1.0000 MHz kHz *SWP 2.0 s LISN RF OUTPUT:NEUTRAL Dec 31 19:32:03 Pass-Fail Dec 31 19:29:18 Poss-Fail CISPR 22 CLASSB CISPR 22 CLASSB ATT 10dB A_wrt D_blok Norm Norm Pass-Fail Norm Norm Pass-Fail 269 kHz 32,19 dB/V Line 1 REF 90.0 dB,√V ATT 10dB A_wrt B_blnk REF 90.0 dB_PV Norm Norm Pass-Fail Marker 1 /2 /0FF 150.0 kHz 44.08 dB_PV Line 1 10dB/ 10dB/ Norm MARKER MARKER 269 kHz 150.0 kHz ON /OFF ON /OFF Line 2 Line 2 ON /OFF ON /OFF UNCAL x X ABS / LFT /CTR ABS / LFT /CTR Y ABS / BOT ABS / TOP /BOT Shift Shift <u>X</u> / Y X/Y in a state of the second s Т W 15 1 Line ⊧ Edit ⊧ 150.0 kHz Stor 150.0 kHz Stor *VBW 1 kHz START 150 kHz STOP 30,00 MHz *RBN 10 kHz *VBN 1 kHz *SNP 2,0 s Line 🕨 START STOP 1.0000 MHz *RBW 10 kHz *SWP 2.0 s 判定 PASS

驗證報告

PAGE: 1 of 6

PAGE: 2 of 6 測試 EMI CONDUCTION TEST MODEL: CWT-250MDP12(PFC) 項目 SPECTRUM ANALYZER: ADVANTEST R3131A EN55022(CLSPR 22) 測試 使用 46~36db(0.15MHz~0.5MHz) 負載:電阻負載 $36db(0.5MHz \sim 5MHz)$ 規格 設備 40db(5MHz~30MHz) AV S/N # I 09291714 SAMPLE 1 1.AC INPUT: 環境溫度 測試 230V/60Hz 室溫 2.DC OUTPUT : SYSTEM LOAD 條件 測試結果: A.EN55022(CLSPR 22)(Vin:230Vac) LISN RF OUTPUT:LIVE Dec 31 19:29:55 Pass-Fail Dec 31 19:32:31 Pass-Fail CISPR 22 CLASSB CISPR 22 CLASSB ATT 10dB A_avg B_blnk PASS-011 Sep1 Nors Pass-Fail Marker 1 /2 /OFF 1.02 PMz 22.89 dB/Y Line 1 ATT 10dB A_avg B_blnk Pass-Fail Smpl Norm Pass-Fail Marker 1 1/2 /OFF 151.7 kHz 39.11 dB_V Line 1 REF 90.0 dB,V REF 90.0 dB_AV 10dB/ 10dB/ MARKER MARKER Line 1 <u>ON</u> /OFF Line 1 <u>ON</u> /OFF 1.82 MHz 151.7 kHz AVG_A 4/20 AVG_A 4/20 Line 2 Line 2 ON /OFF ON /OFF UNCAL ж Х ABS'/ ADS'/ TOP /BOT ABS'/ TOP /BOT Shift Shift ini, gioberty X/Y <u>x</u> / Y nt: Line . Edit Line ▶ Edit ▶ STOP 30.00 MHz kHz +SMP 2.0 # START 150 kHz 150.0 kHz STO O kHz *VBW 1 kHz STOP 1.0000 MHz kHz *SWP 2.0 s +VEN 1 kHz START *REN 10 kHz *RBW 10 kHz LISN RF OUTPUT:NEUTRAL Dec 31 19:33:01 Pass-Fail Dec 31 19:31:01 Poss-Fail CTSPR 22 CLASSE CISPR 22 CLASSB ATT 10dB A_avg B_blnk Smpl Norm Pass-Fail Marker 1 /2 /0FF 153.4 kHz 39.58 dB_V Line 1 ATT 10dB A_ovg B_bink Sep1 Norm REF 90.0 dB,V REF 90.0 dB_PV Bop1 Norm Pass-Fail Marker/ 2.12 NHz 1 /2 /0FF 25.58 dB_PV Line 1 Line 1 10dB/ 10dB/ MARKER MARKER 153.4 kHz 2.12 HHz <u>ON</u> /OFF ON /OFF AVGLA 3/20 AV8_A 4/20 Line 2 Line 2 ON /OFF ON /OFF UNCAL X Х ABS / LFT /CTR ABS / TOP /BOT ABS / TOP /BOT ыĤ Shift Shift X / Y X/Y de la START 150 kHz STUP Line + Edit + STOP 30.00 MHz kHz *SMP 2.0 s Line 🕨 START 150.0 kHz STOP *RBW 10 kHz *VBW 1 kHz 1.0000 MHz *SWP 2.0 s 判定 PASS

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