

ISO-9001 Certified
Automation with PCs
ADVANTECH CO., LTD.

Design Verification Test Report

PCA-6751

Report No: 1999C004

08 - Feb - 1999

Issue Stamp

Albert Lee

**QA Associate
Vice President**

Shung Chiang

QE Manager

Shane G.H.

Test Engineer

Notice

The information in this report is issued by the Quality Assurance Department of Advantech .

The report covers some of the testing information as follows:

☛ **Margin**

Includes temperature , DC voltage and IDE cable length tests.

☛ **Stability**

Includes burn-in and booting tests .

☛ **Performance**

Includes performance indexes using various performance test software programs .

☛ **Hardware compatibility**

Includes CPU , DRAM , adapter card and HDD compatibility tests.

☛ **Software compatibility**

Includes various OS and application software tests .

☛ **Add test**

Latest add's software / hardware test

In this document , there are 4 types of test results , PASS , N/A¹ , N/A² and N/A³ . They are described as follows:

PASS : It worked perfectly

N/A¹ : Test failed , to be modified in the next version

N/A² : No test data , under study

N/A³ : Outside of specifications

The test results in this report reflect the compatibility of this product on the test date shown at the head of each page. The test report may be updated after revision change . For more information about this test report please contact us:

Q.A. Department of Advantech Co., Ltd.

Fl.4, No.108-3 , Ming-chuan Road,

Shing-Tien City, Taipei, Taiwan , ROC

Tel: 886-2-2184567

Fax:886-2-2184566

1. MARGIN TESTING

A. Temperature Test (QAPlus/fe V5.50)

Testing Condition	Results	Note
High temperature Margin (Burn-In 2 Hours)	70°C J	
Low temperature Margin (Burn-In 2 Hours)	-30°C J	

B. DC Voltage Test (QAPlus/fe V5.50)

Testing Condition	Results	Note
VDC High Voltage Margin (Burn-In 2 Hours)	5.6VDC	
VDC Low Voltage Margin (Burn-In 2 Hours)	4.4VDC	

C. IDE Drive Capability

Test Equipment : Primary Master Device: HDD IBM DHEA 34330
 Slave Device: CD-ROM Teac CD-524X

Testing Condition	Results	Note
Primary IDE Port Flat-Cable Length Margin	75cm	

2. STABILITY TESTING

A. Burn-In Stability Testing

Test condition: Room Temp. 12 hours

Test Software	Results	Note
OS/2 Warp 4.0	Pass	
Windows NT 4.0	Pass	
SCO UNIX 5.0.4	Pass	
Windows 95 OSR2	Pass	
Windows 98	Pass	
NWTest	Pass	

B. Booting Stability Testing

Test Method	Results	Note
Power On/Off 1000 Times	Pass	
KB Reset 20 Times	Pass	
H/W Reset 1000 Times	Pass	

C. Continuous Burn-In Booting Stability Testing

Test condition: Burn-In Under Temp. 60C J

Test Method	Results	Note
Power On/Off 1000 Times	Pass	
H/W Reset 1000 Times	Pass	

D. Continuous Burn-In Booting Stability Testing

Test condition: Burn-In Under Temp. 0C J

Test Method	Results	Note
Power On/Off 1000 Times	Pass	
H/W Reset 1000 Times	Pass	

F. CMOS RAM/RTC Stability Testing

Test Method	Results	Note
Power On/Off 1000 Times	Pass	

3. PERFORMANCE TESTING

SYSTEM INFORMATION:

DRAM Type & Capacity	64MB S DRAM (SODIMM)
VGA Card	Onboard C&T F69000 2MB ON-CHIP
HDD Type	IBM DDRS-34560 UDMA2
VGA Testing Mode	1024X768X256 colors (For WinStone & WinBench)
O.S.	DOS 6.22 & Windows NT 4.0

Operating System Environment (DOS Only)

Config.sys	Autoexec.bat
Device=c:\dos\himem.sys dos=high files=35 Buffers=40	Prompt \$p\$g c:\dos\smartdrv.exe /x

Testing Software

Testing Utility	CPU Configuration		
	Intel Tillamook 266MMX	Intel Tillamook 166MMX	Unit
LandMark Speed 2.0			
CPU	1749.07	1093.16	MHz
FPU	5347.54	3342.42	MHz
VIDEO	10134	10134	Chs/Sec
Norton 8.0 SI	907.5	567.2	ID
Power Meter 2.02	129.3	88.9	Mips
PcBench 9.0 CPUmark 16	589.16	390.87	
Businese WinStone99Ver 1.0	15.6	12.7	
H.E. WinStone 99 1.0	14.5	10.9	
WinBench 99 Ver 1.0			
H-E Graphic WinMark 99	152	116	MP/s
H-E Disk WinMark 99	7970	7810	TB/s
CPUMark 32	501	381	
Coretest 3.02			
DTR (Buffered Read)	13600	13520	KB/sec
Performance ID	86.99	86.65	
WINTECH 1.2	164.74	137.72	C8
Power Consumption (+5v)			
Standard Mode	2.75	2.08	Amp
Doze Mode	2.73	2.04	Amp
Sleep Mode	2.68	2.02	Amp
Suspend Mode	1.67	1.49	Amp

4. HARDWARE COMPATIBILITY

A. Component Compatibility- CPU

Pentium CPU Device List:

Brand	Device Model	Results	Note
Intel	Tillamook 166MMX	Pass	
Intel	Tillamook 266MMX	Pass	

B. Component Compatibility- RAM Module

SODIMM Module (SDRAM) List:

Capacity	Type	Device Model	Results	Note
16MB	SO DIMM	Mitsubish M5M4V16S30DTP Taiwan 82199doc-8	Pass	
32MB	SO DIMM	Mosel V54C365164VBT10	Pass	
32MB	SO DIMM	Hyndai HY57V651620A TC-10	Pass	
32MB	SO DIMM	Sec KM416S4030AT-F10	Pass	
32MB	SO DIMM	Sec KM416S4030CT-F10	Pass	
64MB	SO DIMM	Hyndai HY57V658020 TC-10	Pass	
64MB	SO DIMM	LGS GM72V661641CT7J	Pass	
64MB	SO DIMM	Mosel V54C365804VBT8	Pass	

C. Adapter Compatibility- VGA

VGA Adapter List:

Brand	BUS	Device Model	Results	Note
On-board	PCI	C&T B69000	Pass	

D. Adapter Compatibility- LAN

LAN Adapter List:

Brand	BUS	Device Model	Results	Note
3COM	ISA	3C515 (100 BT)	Pass	
D-Link	ISA	DE-220PCT	Pass	
On-board	PCI	I82558	Pass	

E. Adapter Compatibility- SCSI Card

SCSI Adapter List:

Brand	BUS	Device Model	Results	Note
AHA	ISA	1542CF	Pass	
AHA	ISA	1542CP	Pass	

F. Adapter Compatibility- Sound Card

Sound Adapter List:

Brand	BUS	Device Model	Results	Note
Creative	ISA	AWE 64 Gold	Pass	
Creative	ISA	AWE 32	Pass	
Creative	ISA	SB 16 Value PNP	Pass	

G. Adapter Compatibility- Industry Control Card

Industry Control Card List:

Brand	BUS	Device Model	Results	Note
Advantech	PC-104	PCM-3110 A1	Pass	
Advantech	PC-104	PCM-3111 A1	Pass	
Advantech	PC-104	PCM-3840 (DOC Only)	Pass	

H. Peripheral Compatibility-HDD Device

HDD List:

Brand	Type	Mode	Capacity	Device Model	Results	Note
IBM	IDE	UDMA2	4.3GB	DHEA-34331	Pass	
IBM	IDE	UDMA2	6.4GB	DTTA-350640	Pass	
Maxtor	IDE	UDMA2	3.2GB	83240D3	Pass	
Maxtor	IDE	UDMA2	6.8GB	90680D4	Pass	
Maxtor	IDE	UDMA2	8.4GB	90845D4	Pass	
Quantum	IDE	PIO 4	840MB	840AT	Pass	
Quantum	IDE	PIO 4	2.5GB	FBTM2550AT	Pass	
Quantum	IDE	UDMA2	3.2GB	FBST3240A	Pass	
Quantum	IDE	UDMA2	7.6GB	EL7600AT	Pass	
Seagate	IDE	PIO 4	1.7GB	ST31722A	Pass	
Seagate	IDE	PIO 4	2.1GB	ST32122A	Pass	
Seagate	IDE	UDMA2	3GB	ST33210A	Pass	
Seagate	IDE	UDMA2	6GB	ST36530A	Pass	
Seagate	IDE	UDMA2	8.4GB	ST38641A	Pass	
WD	IDE	UDMA2	4.3GB	WD Caviar 24300	Pass	
WD	IDE	UDMA2	6.4GB	WD Caviar 36400	Pass	
IBM	SCSI	Ultra Narrow	2GB	DCAS-32160	Pass	
IBM	SCSI	Ultra Narrow	4.5GB	DDRS-34560	Pass	
Quantum	SCSI	Narrow	540MB	TB540S	Pass	
Viper	PCMCIA		340MB	8340PA	Pass	

I. Peripheral Compatibility- Storage Device

Storage Device List:

Brand	Type	Rate	Device Model	Results	Note
CD-ROM					
Aopen	UDMA2	40X	CD-940E	Pass	
ASUS	UDMA2	40X	CDS-400	Pass	
Genuine	UDMA2	36X	A36T	Pass	
ASUS	UDMA2	34X	CD-320	Pass	
NEC	IDE	32X	CDR-1901A	Pass	
Sony	UDMA2	32X	CDU-711	Pass	
Toshiba	IDE	32X	XM-6202B	Pass	
Teac	IDE	32X	CD-532E	Pass	
BTC	IDE	24X	24X	Pass	
Aopen	IDE	24X	CD924E/AKO	Pass	
Teac	SCSI	32X	CD-532S	Pass	
NEC	SCSI	4X	CDR-222	Pass	

Brand	Device Model	Results	Note
FAX/Modem			
E-TEC	E288MX	Pass	
CommuPack	56K TAD	Pass	
LS-120			
Matsushita	LKM-F434-1	Pass	
Z1P100			
Iomega	Z100ATAPIZIP	Pass	

J. Peripheral Compatibility- Input Device
Input Device List:

Brand	Keys	Device Model	Results	Note
Keyboard				
Acer	101Key	6511	Pass	
ACK	101Key	ACK-700	Pass	
Chicony	101Key	KB-5311	Pass	
Focus	101Key	FKD46AK208	Pass	
Monterey	101Key	K108	Pass	
QX	101Key	QX-301H	Pass	
SK	101Key	SK-710W	Pass	
Acer	104Key	6311-TW	Pass	
Acer	104Key	6311-TW4C	Pass	
BTC	104Key	5121	Pass	
BTC	104Key	5140	Pass	
Chicony	104Key	KB-601ET	Pass	
Forwar	104Key	FDA-104 EB	Pass	
USB Keyboard				
Forward	104Key	FDA-104U	Pass	
Chicony	104Key	KU-8933	Pass	

Brand	Device Model	Results	Note
Mouse			
Microsoft	Serial Mouse	Pass	
Logitech	First Mouse Super	Pass	
IBM	PS/2 Mouse	Pass	
Logitech	First Mouse	Pass	
Logitech	MouseMan (PS/2,Serial)	Pass	
USB Mouse			
Logitech	M-UA34	Pass	
Sanyo	M-12	Pass	
IR Module			
ACTiSYS	ACT-IR210L	Pass	

K. Basic Function Testing
Function List:

Test Item / Software	Results	Note
Years 2000 Roll Over	Pass	
Years 2000 Leap Year	Pass	
Memory Hole	Pass	
Watch Dog	Pass	
CMOS Backup	Pass	
RS-422	Pass	
RS-485	Pass	
Compact Flash Card	Pass	

5. SOFTWARE COMPATIBILITY

A. O.S. Compatibility

O.S. / Test Item	Install		Boot		Shutdown		Function		Keyboard Function	
	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Fail
MS-DOS 6.22	✓		✓		✓		✓		✓	
SCO UNIX 5.0.4	✓		✓		✓		✓		✓	
Novell 4.11	✓		✓		✓		✓		✓	

B. Windows Compatibility

Wins / Test Item	Install		Boot		Shutdown		Function		Keyboard Function		Display Driver	
	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Fail
Windows 3.1	✓		✓		✓		✓		✓		✓	
Windows 95	✓		✓		✓		✓		✓		✓	
Windows 98	✓		✓		✓		✓		✓		✓	
WindowsNT3.51 WK	✓		✓		✓		✓		✓		✓	
WindowsNT4.0 SRV	✓		✓		✓		✓		✓		✓	
OS/2 Warp 3.0	✓		✓		✓		✓		✓		✓	
OS/2 Warp 4.0	✓		✓		✓		✓		✓		✓	

C. Windows Application

Application / Test Item	Installation		Function Test	
	Results	Note	Results	Note
Ami Pro 3.1	Pass		Pass	
MS Word 6.0c	Pass		Pass	
WordPerfect 6.1	Pass		Pass	
MS Works 3.0b	Pass		Pass	
Lotus 1-2-3 R5	Pass		Pass	
MS Excel 5.0c	Pass		Pass	
Quattro Pro 6.01	Pass		Pass	
PageMaker 5.0a	Pass		Pass	
CorelDraw 5.0e2	Pass		Pass	
PowerPoint 4.0c	Pass		Pass	
Dbase 5.0	Pass		Pass	
Paradox 5.0	Pass		Pass	
Access 2.0	Pass		Pass	

D. DOS Utility Compatibility Testing

Application / Test Result	Results	Note
Norton Utility 8.0	Pass	
Norton Commander 5.0	Pass	
Telix 3.2X	Pass	

E. Diagnostics Software Testing

Test Item / Software	QAPlus/fe V5.50		AMIDdiag V5.22A		Checkit V4.0	
	Results	Note	Results	Note	Results	Note
Main Component	Pass		Pass		Pass	
Memory	Pass		Pass		Pass	
Video Adapter	Pass		Pass		Pass	
Floppy Disk Drive	Pass		Pass		Pass	
Hard Disk Drive	Pass		Pass		Pass	
Keyboard	Pass		Pass		Pass	
COM Port	Pass		Pass		Pass	
LPT Port	Pass		Pass		Pass	

Test Item / Software	Niags	
	Results	Note
CPU	Pass	
FPU	Pass	
Misc	Pass	
Real Time Clock	Pass	

F. Windows NT 4.0 HCT (Hardware Compatibility Test)

Test Item / Test Result	Results	Note
Keyboard	Pass	
Mouse	Pass	
Parallel Port	Pass	
Sound (PC Speaker)	Pass	
Coprocessor	Pass	
Disk (FAT File I/O)	Pass	
Disk (Mapped I/O)	Pass	
Disk (NTFS File I/O)	Pass	
Floppy I/O	Pass	
Serial Port (COMx)	Pass	
Video (GDI W/Poly.Clip.)	Pass	
Video (VDM VGA)	Pass	
Virtual DOS Mach	Pass	
Coproc. (Stress)	Pass	
Disk (Stress)	Pass	
Manual Drive Change	Pass	
Virtual Memory	Pass	
System Stress	Pass	