DreamSpeed 1310

Versatile 1U Platform for New Network Architects
Technical Rererence Manual
Version 1.0, Aug 2002

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NOTE

DreamSpeed is a trade mark name. Some specifications, technical information, and certifications described in the present manual may be referred to and under the T9203 model number.

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DOCUMENTATION SURVEY

DS-1310 – 1U Open Platform – Technical Reference Manual, Rev. 1.0

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_____

ADDITIONAL COMMENTS

READ ME FIRST

WARNING

Danger of explosion when replacing with wrong type of battery. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabriquant. Mettre au rebut les batteries usagées conformément aux instructions du fabriquant.

ACHTUNG

Explosions gefahr bei falschem batteriewechsel. Verwenden sie nur die empfohlenen batterietypen des herstellers. Entsorgen sie die verbrauchten batterien laut gebrauchs anweisung des herstellers.

ATENCION

Hay un peligro de explosion si la pila no ha si bien remplazada. Remplace la pila con el mismo tipo o con aquellas recomendadas por el fabricante. Para desacerce de las pilas usadas, siga las instructiones del fabricante.

Instructions for the Installation and Removal of Assemblies and Components



Repairs on the device may only be carried out by authorized qualified personnel. Unauthorized opening or unqualified repairs can result in considerable risk to the user (electrocution, fire).



Assemblies with electrostatically sensitive devices (ESD) can be identified by the illustrated sticker:

This applies especially to ISA/PCI cards.

When handling assemblies with ESD warnings, the following instructions must be observed:

1. You must discharge static electricity (e.g., by touching an earthen object) before working with assemblies.
2. Devices and tools used must be free from static charges.
3. Pull out the main plug before connecting or disconnecting assemblies.
4. Only hold the assemblies at the edge.
5. Do not touch any connection pins or conductors on the assembly.

Safety Instructions

Please read carefully and observe the instructions for your own safety and correct use of the device.
In order to maintain this condition and ensure safe operation, the instructions and warnings contained in this manual and on the device must be observed.

The unit is built and tested in accordance with EN60950/UL1950/CSA22.2 No.950 and left the works in a safe condition.

We shall be exempted from our guarantee obligations if the user fails to observe the safety instructions.
We can only guarantee the safety, reliability, and performance of the system if all of the following safety instructions are observed:

1. Maximum recommended ambient temperature (Tmra) = 50°C

   Elevated Operating Ambient Temperature - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the Tmra = 50°C.
2. **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
3. **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
4. **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
5. **Reliable earthling** - Reliable earthling of rackmounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).
6. The system must be used in accordance with the instructions for use.
7. The electrical installations in the room must correspond to the requirements of the respective regulations.
8. Make sure that there are no cables, particularly main cables, in areas where people can trip over them.
9. Keep the main power inlet connector of the system or the main socket, from which the system is powered, easily accessible, so at least one can be used as disconnect device.
10. Only use the main cable supplied with the system.

11. Make sure that the DC/AC operation voltage cited in the manual corresponds to the DC/AC voltage supplied and that the maximum value is not exceeded even briefly.
12. When setting up the unit and accessories, observe the local or national regulations for workstation ergonomics.
13. Do not set up the system where it is exposed in the proximity of heat sources, or in a damp location. Make sure the system has adequate ventilation and that the ambient temperature is in the range specified for the system (see specification sheet).
14. Properly secure cables and connectors.
15. It must be assumed that safe operation is no longer possible if the system:
    - has visible damage or
    - no longer operates.

    In these cases the system must be shut down and secured against unintentional operation.
16. If extensions are made to the system, legal stipulations and system specifications must be observed.
17. Assembly, extensions, new settings, alterations, or repairs may only be carried out by qualified people.
18. Adjustment, maintenance, or repair on the open system may only be carried out by qualified personnel familiar with the associated dangers.
19. The system must be switched off before removing and/or installing any components.
20. Only original accessories approved by the company may be used.
21. The safety of the system must be re-evaluated by competent authorities when adding components that were not part of the delivered configuration.

FCC Rules

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



This is a Class B product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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PART 1

1. PRODUCT OVERVIEW

1. INTRODUCTION

2. PCI-949 SBC DESCRIPTION

1.1 INTRODUCTION

The DreamSpeed, a 1U open platform is targeting the next-generation System Integrators and independent hardware/software vendors who supply dedicated Internet infrastructure solutions deployed in B2B e-commerce sites, portals, server farms, and ISP/ASP data centers. Providing a significantly faster time to market, the DreamSpeed can be configured into a customized turnkey solution that is dedicated to several Internet network applications including, among others, SSL acceleration, load balancing, Virtual Private Networks (VPNs), firewalls, caching, and Web and Application servers.

DreamSpeed features many innovations and design advantages that are simply more practical for network deployment. Size is the first consideration, as DreamSpeed is only 18" deep, which makes it an extremely easy fit in any 600 mm deep rack and, as for height, this 1U small form factor allows for up to 42 units to be stacked in one cabinet. The outcome is more power in a smaller work environment, which appropriately saves both valuable floor and rack space. Inside each unit are three convenient PCI extension slots that offer the highest scalability in today's market. Each slot can be employed by any standard PCI hardware dedicated to nearly any imaginable Internet infrastructure application- from firewalls and VPNs to load balancing and Web and Application servers.

At the heart of DreamSpeed is an ultra high-performance SBC, the PCI-990. It is designed to accommodate the endless demands for a high performance engine in platforms used in the embedded datacom/telecom market. An ideal SBC for high performance Internet security and data center solutions, as well as mission-critical CTI and demanding embedded computing applications.

The DS-1310 has an AC 200W power supply. The key to DreamSpeed's design is its front bezel access to two USB port, two 10/100 Base-TX Ethernet ports based on Intel® 82559ER Ethernet controller and a 15-pin SVGA connector.
Two fans attached to an airflow channel provide an efficient cooling system to the SBC. In addition, four positive pressure DC fans provide cooling; two are equipped with a removable, washable foam filter to protect the unit from dust and dirt particles. Standard controls include reset switch, power ON LED, and one hard disk activity LED.

With a focus on low cost of ownership, time-to-market and superior customer integration, the DreamSpeed is compatible with the following operating systems: MS-DOS 6.22, Microsoft Windows NT 4.0, Microsoft Windows 98 SE, Microsoft Windows ME, Microsoft Windows XP Pro, Microsoft Windows 2000 Professional, Microsoft Windows 2000 Server, Linux Red Hat 7.2, QNX RTP 6.1.0, FreeBSD 4.4, Sun Solaris 8, OS/2 WARP 4.5 E-Buniness Server.

1.2 PCI-949 SBC DESCRIPTION

Key Features for the SBC PCI-949:

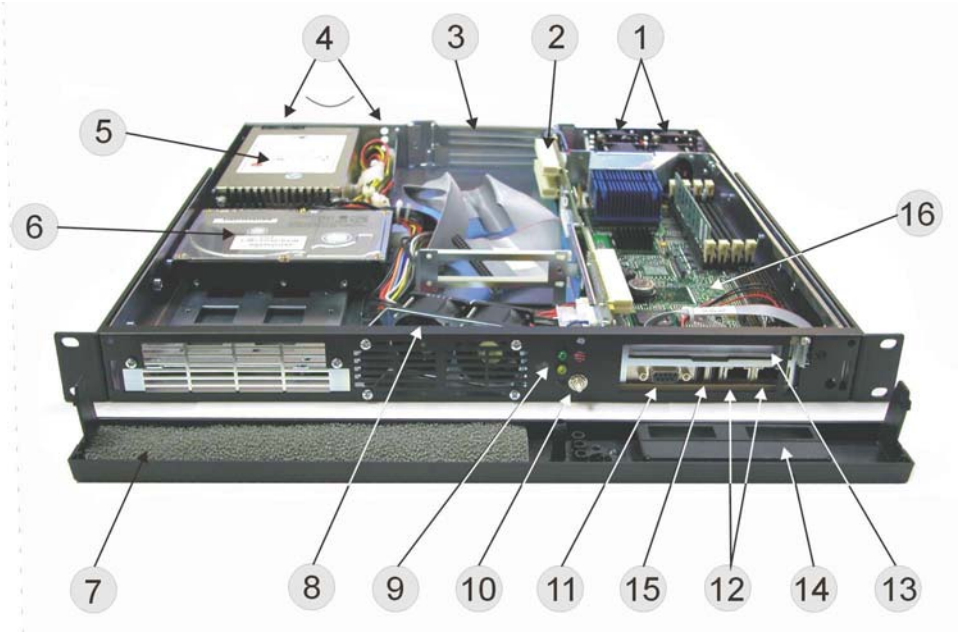
- Intel® Pentium® III processors at 850MHz and Celeron processor at 733MHz
- Up to 1GB of SDRAM on 4 DIMM sockets (2GB SDRAM with optional Intel 440BX AGPset)
- Two 10/100Base-TX Ethernet support
- Ultra-2 SCSI LVD/SE (80MB/s)
- Option for AGP video with 2MB SDRAM 64-bit

PART 2

2. DESCRIPTION

1. **DREAMSPEED – 1U OPEN PLATFORM**
2. **MECHANICAL SPECIFICATIONS**
3. **ENVIRONMENTAL SPECIFICATIONS**
4. **ELECTRICAL SPECIFICATIONS**
5. **REGULATION SPECIFICATIONS**

2.1 DreamSpeed – 1U OPEN PLATFORM



DreamSpeed	

1	Rear fans
2	Butterfly backplane
3	Back panel docking slots
4	Power supply fan, main AC power inlet, DB-9 cutout, ground stud, Power On/Off switch
5	Power supply
6	Drive bay
7	Filter
8	Front fans

9	Power On and HD activity LED
10	Reset switch
11	SVGA connector
12	Ethernet connectors
13	Optional faceplate for serial port
14	Bezel
15	USB connectors
16	SBC board

2.1.1 Front Panel

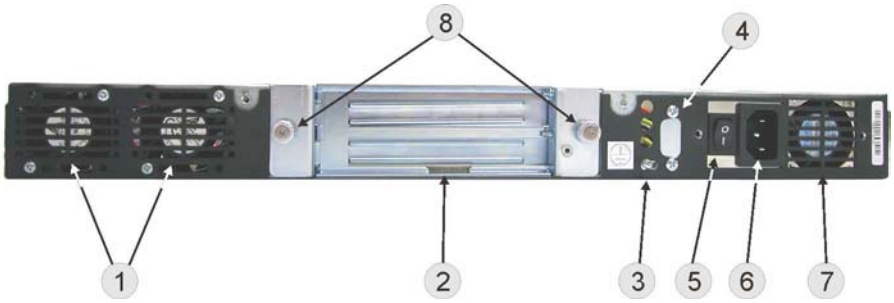


DreamSpeed

1	Power On and HDD activity LED
2	Fan/Filter assemblies / Air intake
3	Bezel

4	Reset switch
5	SVGA connector
6	USB ports
7	Ethernet connectors

2.1.2 Rear Panel



DreamSpeed

1	Rear panel fans
2	Docking slots
3	Ground stud
4	DB-9 cutout

5	Power On/Off switch
6	Main AC power inlet
7	Power supply fan
8	Captive-panel fasteners

2.2 MECHANICAL SPECIFICATIONS

DreamSpeed		
Dimensions	**Height**	1.75” (44 mm)
	Width	16.90“ (430.2 mm)
	Depth	18” (457.2 mm)
Weight		19 lbs / 8.8 kg app (with power supply)
Enclosure		Cold roll steel (CRS) with zinc plating, black mat powder coat, black ear-brackets
PCI expansion slots		One half-size (front panel) and two full-size (back panel)
Main Power On switch		Yes (back panel)
Reset switch		Yes (front panel)
System power ON LED		Green (front panel)
Disk activity LED		One –Amber (front panel)
Rear panel cutout		DB-9
AC power inlet		Yes (rear panel)
Backplane		One half-size PCI, one PICMG CPU, and two full-size PCI
Conforms to PCI bus rev 2.1 & PICMG PCI/ISA rev 2.0 spec.		

2.3 ENVIRONMENTAL SPECIFICATIONS

DreamSpeed		
Thermal Management		Six positive pressure, ball-bearing fans Power supply exhaust fan, washable filter
Mounting Systems		Rackmount 19" Fixed mount (with ear-brackets) Rackmount 19" – Sliding rails (option) Benchtop (without ear-brackets and with 4 rubber feet)
Operating temperature / Humidity		0°C to +40°C / 5-90% @ 40°C (32° to 113°F / 5-90% @ 104°F)
Storage/Transit Temperature / Humidity		-40°C to +70°C / 0-95% @ 40°C (-40° to 158°F / 0-95% @ 104°F)
Operating altitude		10,000ft (3,048m)
Storage/Transit altitude		30,000ft (9,144m)
Shock	**Operating**	15G max. at 11ms duration, 3 axis both directions
	Storage	30G max. at 11 ms duration, 3 axis both directions
Vibration	**Operating**	10-58Hz (+/-0.075mm), 58-500Hz 1.0G , 3 axis
	Storage	10-58Hz (+/-0.15mm), 58-500HZ 2.0G, 3 axis
Acoustic Noise		< 55 dB at 1m in front of the system at full load

2.4 ELECTRICAL SPECIFICATIONS

DreamSpeed	
Power Supply	**ATX 200 W-AC (with PFC)**: +5V/25A, +12V/8A, -5V/0.5, -12V/0.5A, +3.3V/14A, +5VSB/1.5A
Input Voltage	100-240VAC Nominal Auto-switching, 50-60Hz
M.T.B.F. (Power Supply)	>110,000 hours

2.5 REGULATION SPECIFICATIONS

DreamSpeed		
Safety	**U.S.**	UL 1950
	Canada	CSA C22.2 No. 950
	Europe	CE Mark EN60950
EMC		Designed to meet or exceed the following :
	U.S.	FCC 47 CFR Part 15, Class A
	Canada	ICES-003 Class A
	Europe	CISPR22; CE Mark to EN55022 Class A,EN61000-3-2, EN61000-3-3/ EN55024

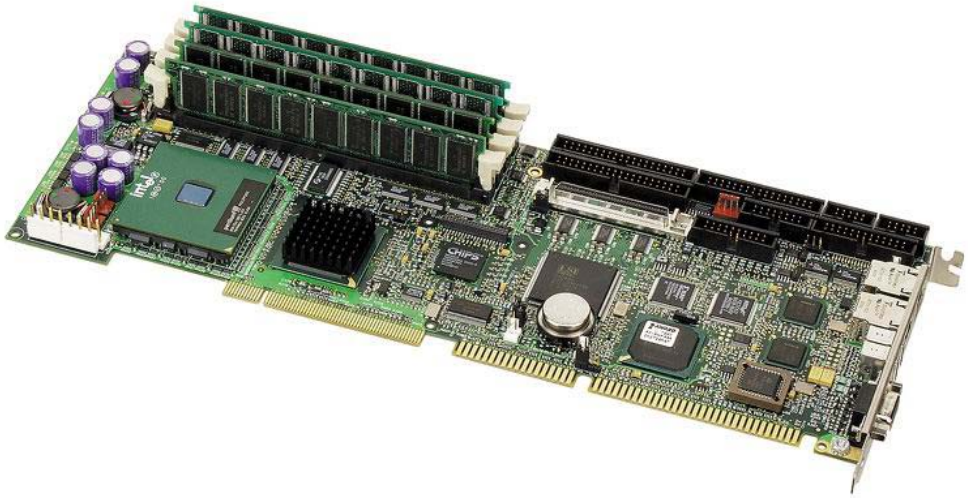
PART 3

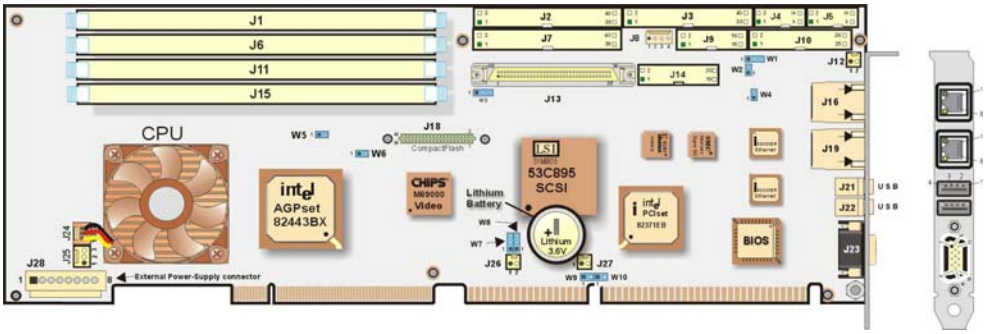
3. FEATURES

1. SBC
2. BACKPLANE
3. PERIPHERAL BOARDS
4. POWER REQUIREMENTS
5. POWER SUPPLY

3.1 SBC

The unit can be equipped with the following SBC board.





3.1.1 PCI-949 SBC TECHNICAL SPECIFICATIONS

FEATURES	DESCRIPTIONS
CPU	• Celeron® processor 566 and 733 MHz • Pentium III processor - 600MHz, 700, 850MHz and 1GHz Note : Will feature higher speeds when CPU available.
Chipset	• Intel 440BX AGPset.
Cache	• 16K/16K Instruction / Data CPU-internal Level 1 • 256KB Advanced Transfer Cache (64-bit wide on-die full speed Level 2 pipelined burst with ECC)
Memory	• Four 168-pin latching DIMM sockets, 64/72-bit • Default is 1GB with BX chipset • Up to 2GB (with GX Chipset) of SDRAM with parity or ECC (for single bit error correction and double bit error detection)
Data Path	• 64-bit between CPU and memory • 32-bit on local PCI and AGP bus. • 16-bit on the ISA bus
Bus Interfaces	• Front Side Bus 66MHz/100MHz determined by CPU • AGP Bus, 32-bit 66MHz • PCI Bus, 32-bit 33MHz • ISA Bus, 16-bit 8MHz • PCI-to-ISA non-transparent bridge; Intel's 82371EB • SMBus (for system management of CPU temperature monitoring, DRAM control, Clock buffers and power control)

PCI-949 SBC Technical Specifications (continued)

FEATURES	DESCRIPTIONS
DMA Channels (ISA)	• Four 8-bit, three 16-bit • Supports scatter / gather, Fast Type-F DMA
Interrupts	• 11 edge/level sensitive and configurable • 4 PCI level sensitive, configurable to any interrupt vector for PnP compatibility • All ISA onboard interrupts are PnP compliant
Flash Memory	• 256KB for BIOS field upgrade • 4KB Serial EEPROM for user configuration • Silicon Serial ID TAG for unique board identification accessible via software
Video	• 32-bit AGP video controller (C&T 69000) with 2MB on die 83MHz SDRAM video memory • CRT resolutions up to 1280x1024x256 colors, non-interlaced
Clock/Calendar	• Real-time clock with (replaceable) battery backup • 256-byte CMOS RAM
I/O	• **Super I/O Controller :** SMC FDC37C672 • **USB Ports** : Two • **Serial Ports** : Two (COM1: RS-232, COM2: Configurable as RS-232/422/485 • **Parallel port** : One bi-directional with all IEEE 1284 protocols supported, BIOS selectable IRQs and addressing • **Floppy Disk** : Support for two drives (360KB to 1.44MB) • **EIDE** : Two channels Bus Master PCI EIDE; support for two IDE drives (master/slave configuration); LBA, PIO Mode 0-4 and Ultra DMA/33 • **Ethernet** : Two Intel 82559ER Fast Ethernet controllers, PCI 10/100Base-TX ports • **Multifunction** : PS/2 mouse, AT and PS/2 standard keyboard, speaker, reset switch and hard disk LED • **CompactFlash™ Module**: Optional bootable CompactFlash™ disk interfaces to secondary EIDE channel, master/slave. • **Ultra2 SCSI LVD/SE** : Up to 80MB/sec

PCI-949 SBC Technical Specifications (continued)

FEATURES	DESCRIPTIONS
BIOS Features	• Award Elite BIOS in Boot Block Flash with emergency recovery code; save CMOS in Flash option, and boot from LAN capability. • Auto configuration, extended setup. • CC000-E0000 address blocking; PnP tables. • Setup console redirection to serial port (VT100 mode) with CMOS setup access. • Software enable/disable of onboard Ethernets; hardware enable/disable of onboard video. • Diskless, keyboardless, and videoless operation extensions. • Batteryless operation with CMOS copy in flash BIOS. • System, video, and LAN BIOS shadowing system, video, and option BIOS shadowing. • Programmable bus and I/0 speeds and memory wait states. • Advanced Configuration and Power Interface (ACPI 1.0), Advanced Power Management (APM 1.2), advanced thermal management (resume, overheat alarm and auto slow down), and Green support.
Supervisory	• Two-stage software programmable Watchdog timer drives NMI on first stage and system reset on second stage • Time out from 16ms to 4.25min • Programmable CPU temperature monitor alarm • Board temperature sensor • Power failure and voltage monitoring/low battery detector • Two end-user defined open-drain general purpose I/Os; SMBus, I2C Bus • LEDs: IDE activity, Ethernet activity and link status.

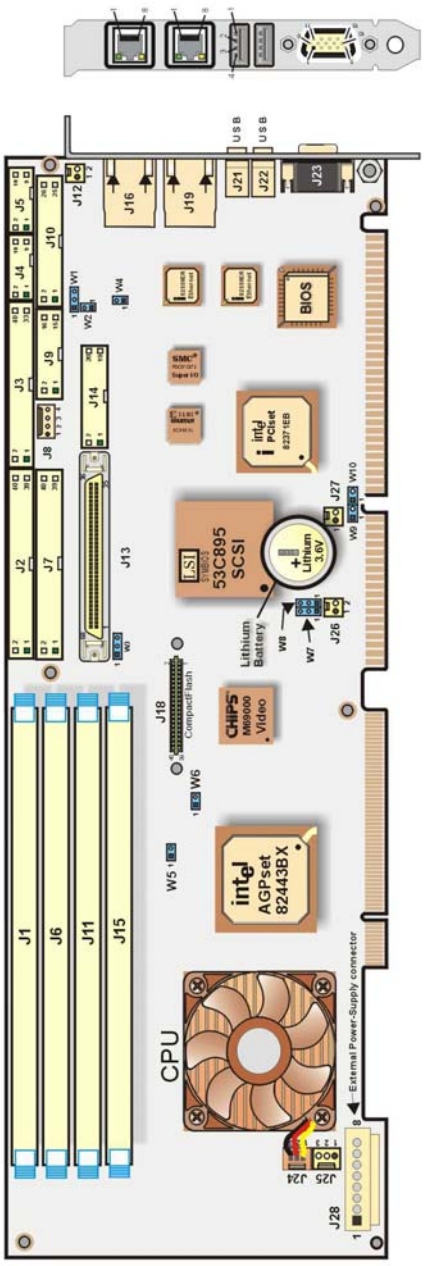
PCI-949 SBC Technical Specifications (continued)

FEATURES	DESCRIPTIONS
OS Compatibility	• MS-DOS 6.22, Microsoft Windows NT 4.0, Microsoft Windows 98 SE, Microsoft Windows ME, Microsoft Windows XP Pro, Microsoft Windows 2000 Professional, Microsoft Windows 2000 Server, Linux Red Hat 7.2, QNX RTP 6.1.0, FreeBSD 4.4, Sun Solaris 8, OS/2 WARP 4.5 E-Buniness Server.
PICMG compliance	• Mechanical : compliant to IEEE P996 PC-AT Bus, PCI Rev 2.1, and PICMG Rev. 2.0 standards
Form Factor	• 338 x 122 x 36 mm (13.32” x 4.80” x 1.40”) at CPU fan.
Power Requirements	• Supply Voltages: +5V±5% +12V±5% • Supply Current * : 5V 8.1A max. 12V 0.1A max. • Power Dissipation: ≈ 40W max. ** Pentium III processor 850MHz with 1GB SDRAM (no hard drive)*.
Environmental	**Operating** / **Storage and Transit** Temp. 0-40°/32-131°F (w/ 150LFM airflow) / -40° to +70° / -40° to 158°F **When using a CompactFlash disk, must not exceed 50°C (0-50°C/32-122°F)** Humidity 5% to 95% @ 40°C/104°F non-condensing / 5% to 95% @ 40°C/104°F non-condensing Altitude 4,572m / 15,000ft / 15,240m / 50,000ft Shock 5G, each axis Vibration 1.5G, each axis
Reliability	• Unique silicon serial number accessible via software • SCSI termination, USB, keyboard and mouse voltage protected by self-resetting fuses • 2 year limited warranty
Safety	• Designed to meet or exceed UL 1950; CSA C22.2 No 950; EN 60950; IEC950
EMI/EMC	• FCC 47 CFR Part 15/CISPR22, Class B; CE Mark to EN55022/EN50082

FEATURES	DESCRIPTIONS
Connectors	• **Faceplate** : Ethernet : Two RJ45 with link/activity indicators USB : Two USB connector Video : One 15-pin DB connector • **Headers** : Serial ports : Two 10-pin shrouded Parallel port : 26-pin shrouded Floppy : 34-pin shrouded EIDE : Two 40-pin shrouded PS/2 mouse : 4-pin locking Power-down : 2-pin locking External power : 8-pin locking SCSI : D-Sub 68-pin connector Multifunction : 16-pin shrouded (keyboard, speaker and EIDE disk LED) CPU fan : Two 3-pin locking Battery : 4-pin non-locking Ext. Battery : 2-pin locking SCSI LED : 2-pin locking Hardware Monitor : 20-pin shrouded CompactFlash™ Module header (40-pin)

3.1.2 PCI-949 Connectors and Headers

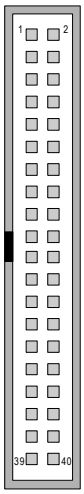
J1, J6, J11, J15	DIMM Memory
J2	Primary IDE Connector
J3	Floppy Disk Connector
J4	Serial Port 1 – RS232
J5	Serial Port 2 – RS232 / RS485/RS422
J7	Secondary IDE
J8	Mouse Port
J9	Multifunction Header (keyboard, speaker, etc.)
J10	Parallel Port
J12	Power Button
J13	SCSI
J14	Hardware Monitor Header
J16	Ethernet 0
J18	CompactFlash Disk
J19	Ethernet 1
J21	USB 0
J22	USB 1
J23	Video (SVGA)
J24	CPU Fan 2
J25	CPU Fan 1
J26	External Battery Connector
J27	SCSI LED
J28	External Power


USB
USB
J12
J16
J19
J21
J22
J23
J5
J10
J4
W1
W2
W4
J3
J9
J14
J8
BIOS
SMC
Super I/O
intel
PCIset
82371EB
J27
W10
W9
J2
J7
J13
LSI
53C895
SCSI
Lithium
3.6V
Lithium
Battery
W8
W7
J26
J18
CompactFlash
CHIPS
M65000
Video
W6
W5
intel
AGPset
82443BX
J1
J6
J11
J15
CPU
External Power-Supply connector
J24
J25
J28

3.1.2.1. J2/J7 - Primary/Secondary IDE Connectors

Pin Number	Signal
1	RESET#
3	DD7
5	DD6
7	DD5
9	DD4
11	DD3
13	DD2
15	DD1
17	DD0
19	GND
21	DMARQ
23	DIOW#
25	DIOR#
27	IORDY
29	DMACK#
31	INTRQ
33	DA1
35	DA0
37	CS0#
39	LED (DASP#)

Top View



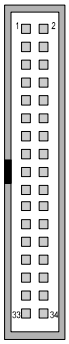
Pin Number	Signal
2	GND
4	DD8
6	DD9
8	DD10
10	DD11
12	DD12
14	DD13
16	DD14
18	DD15
20	Not Connected (KEY)
22	GND
24	GND
26	GND
28	GND (CSEL)
30	GND
32	Not Connected (IOCS16#)
34	Not Connected (PDIAG#)
36	DA2
38	CS1#
40	GND

 # Active Low Signal

3.1.2.2. J3 – Floppy Disk

Pin Number	Signal
1	GND
3	GND
5	GND
7	GND
9	GND
11	GND
13	GND
15	GND
17	Not Connected
19	GND
21	GND
23	GND
25	GND
27	Not Connected
29	PRESENT# (GND)
31	GND
33	Not Connected

Top View



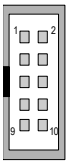
Pin Number	Signal
2	DRVEND#
4	Not Connected
6	Not Connected
8	INDEX#
10	MTR0#
12	FPDS1#
14	FPDS0#
16	MTR1#
18	FPDIR#
20	STEP#
22	WDATA#
24	WGATE#
26	TRK0#
28	WRTPRT#
30	RDATA#
32	HDSEL#
34	DSKCHG#

Active Low Signal

3.1.2.3. J4, J5 – Serial 1, 2 – RS232

Pin Number	Signal
1	DCD#
3	RXD#
5	TXD#
7	DTR#
9	GND

Top View



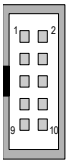
Pin Number	Signal
2	DSR#
4	RTS#
6	CTS#
8	RI#
10	Not Connected

Active Low Signal

3.1.2.4. J5– Serial Port 2 - RS-485

Pin Number	Signal
1	Leave Floating
3	RX(-)
5	TX(-)
7	Leave Floating
9	GND

Top View



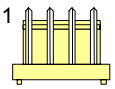
Pin Number	Signal
2	Leave Floating
4	RX(+)
6	TX(+)
8	Leave Floating
10	Not Connected

Active Low Signal

3.1.2.5. J8 – PS/2 Mouse Header

Signal	Pin
MCLK	1
GND	2
MDATA	3
5V fused	4

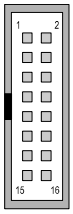
Front View



3.1.2.6. J9 – Multifunction Header

Pin Number	Signal
1	KCLK
3	KDAT
5	+5V fused
7	SPKR
9	Not connected
11	DOWNLD#
13	PBRES#
15	HDACT#

Top View



Pin Number	Signal
2	GND
4	GND
6	+5V fused
8	+5V fused
10	GND
12	GND
14	GND
16	+5V fused

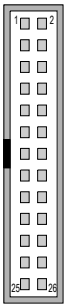
#Active Low Signal

3.1.2.7. J10 – Parallel Port

Standard Mode

Pin Number	Signal
1	STB#
3	PD0
5	PD1
7	PD2
9	PD3
11	PD4
13	PD5
15	PD6
17	PD7
19	ACK#
21	BUSY
23	PE
25	SLCT

Top View



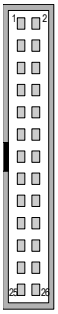
Pin Number	Signal
2	ALF#
4	ERR#
6	INIT#
8	SLCTIN#
10	GND
12	GND
14	GND
16	GND
18	GND
20	GND
22	GND
24	GND
26	GND

Active Low Signal

EPP Mode

Pin Number	Signal
1	WRITE#
3	PD0
5	PD1
7	PD2
9	PD3
11	PD4
13	PD5
15	PD6
17	PD7
19	INTR
21	WAIT#
23	N.C.
25	N.C.

Top View



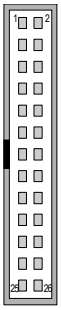
Pin Number	Signal
2	DATASTB#
4	N.C.
6	N.C.
8	ADDRSTRB#
10	GND
12	GND
14	GND
16	GND
18	GND
20	GND
22	GND
24	GND
26	GND

Active Low Signal

ECP Mode

Pin Number	Signal	Pin Number	Signal
STROBE#	1	2	AUTOFD#, HOSTACK[2]
PD0	3	4	FAULT#[1], PERIPHRQST#[2]
PD1	5	6	INIT#[1], REVERSERQST#[2]
PD2	7	8	SELECTIN#[1,2]
PD3	9	10	GND
PD4	11	12	GND
PD5	13	14	GND
PD6	15	16	GND
PD7	17	18	GND
ACK#	19	20	GND
BUSY, PERIPHACK[2]	21	22	GND
PERROR, ACKREVERSE[2]	23	24	GND
SELECT	25	26	GND

Top View



Active Low Signal, [1] Compatible Mode, [2] High Speed Mode

3.1.2.8. J12 – Power Button Connector

Signal	Pin
PWRBTN	1
GND	2

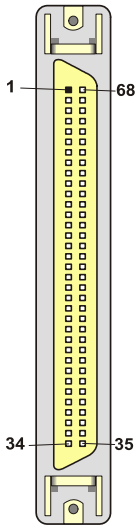
Top View



3.1.2.9. J13 - SCSI Connector

Pin Number	Signal
1	SD12+
2	SD13+
3	SD14+
4	SD15+
5	SDPH+
6	SD0+
7	SD1+
8	SD2+
9	SD3+
10	SD4+
11	SD5+
12	SD6+
13	SD7+
14	SDPL+
15	GND
16	DIFFSENS
17	TERMPWR
18	TERMPWR
19	N.C.
20	GND
21	SATN+
22	GND
23	SBSY+
24	SACK+
25	SRESET+
26	SMSG+
27	SSEL+
28	SCD+
29	SREQ+
30	SIO+
31	SD8+
32	SD9+
33	SD10+
34	SD11+

Top View

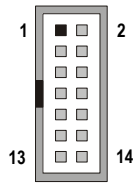


Pin Number	Signal
35	SD12-
36	SD13-
37	SD14-
38	SD15-
39	SDPH-
40	SD0-
41	SD1-
42	SD2-
43	SD3-
44	SD4-
45	SD5-
46	SD6-
47	SD7-
48	SDPL-
49	GND
50	GND
51	TERMPWR
52	TERMPWR
53	N.C.
54	GND
55	SATN-
56	GND
57	SBSY-
58	SACK-
59	SRESET-
60	SMSG-
61	SSEL-
62	SCD-
63	SREQ-
64	SIO-
65	SD8-
66	SD9-
67	SD10-
68	SD11

3.1.2.10. J14 – Hardware Monitor Header

Pin Number	Signal
1	GND
3	JS0FT0FF#
5	JGPIO1
7	JAPFLT#
9	JEXTFLT#
11	JFANFLT#
13	JCHASINT#

Top View

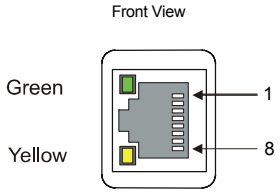


Pin Number	Signal
2	JPWRBT#
4	GND
6	JGPIO2
8	JCPUFLT#
10	GND
12	N.C.
14	GND

#Active Low Signal

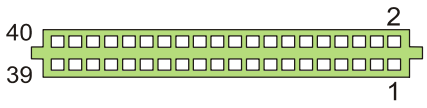
3.1.2.11. J16, J19 – Ethernet 0 and 1, RJ45 Connector (Face Plate)

Signal	Pin
TX+	1
TX-	2
RX+	3
75 ohm line termination	4
75 ohm line termination	5
RX-	6
75 ohm line termination	7
75 ohm line termination	8



3.1.2.12. J18 – CompactFlash™

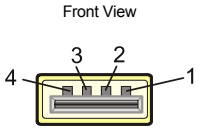
Pin Number	Signal Flow	Signal	Pin Number	Signal Flow	Signal
1	I/O	DD11	2	-	GND
3	I/O	DD12	4	I/O	DD3
5	I/O	DD13	6	I/O	DD4
7	I/O	DD14	8	I/O	DD5
9	I/O	DD15	10	I/O	DD6
11	O	CS1#	12	I/O	DD7
13	-	DMA ACK#	14	O	CS0#
15	-	DMA RQ	16	O	D IOR#
17	I/O	PDIAG#	18	O	D IOW#
19	I	IRQ15	20	-	VCC (+5V)
21	-	VCC (+5V)	22	-	VCC (+5V)
23	-	GND	24	-	GND
25	O	RESET#	26	-	GND
27	O	C Select	28	O	DA2
29	O	DA1	30	I	DASP#
31	O	DA0	32	-	I/ORDY
33	I/O	DD0	34	I/O	DD8
35	I/O	DD1	36	I/O	DD9
37	I/O	DD2	38	I/O	DD10
39	-	IOCS16#	40	-	GND



Active low signal

3.1.2.13. J21, J22 – USB 1 and 2 Connectors (Face Plate)

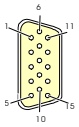
Signal	Pin
USB1_VCC	1
USB1_D-	2
USB1_D0+	3
USB1_GND	4



3.1.2.14. J23 - CRT VGA Connector (Face Plate)

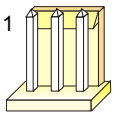
Signal		Signal		Signal	
RED	1	Analog GND	6	Not Connected	11
GREEN	2	Analog GND	7	DDC data	12
BLUE	3	Analog GND	8	HSYNC	13
Not Connected	4	Not Connected	9	VSYNC	14
GND	5	GND	10	DDC clock	15

Front View



3.1.2.15. J24, J25 – CPU Fan 2 and 1

Note : J24 initiates an NMI if the CPU fan stops. This option is not available on J25.

Signal	Pin	Front View
SENSE	1	
+5V	2	
GND	3	

3.1.2.16. J26 – External Battery Connector

Signal	Pin
Battery (+)	1
Battery (-)	2

Front View



3.1.2.17. J27 – SCSI LED Connector

Signal	Pin
Anode (+)	1
Cathode (-)	2

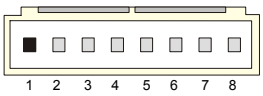
Front View



3.1.2.18. J28 – External Power Supply Connector

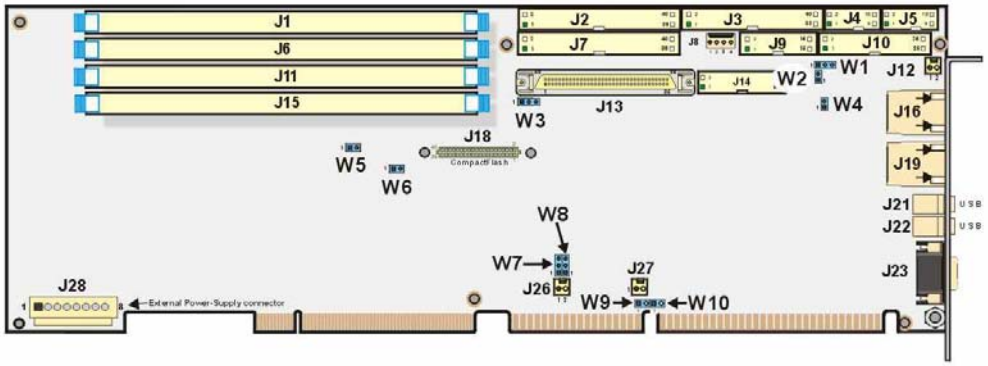
Signal	Pin
VCC	1
VCC	2
-5V	3
GND	4

Top View



Pin	Signal
5	GND
6	GND
7	-12V
8	+12V

3.1.3 SBC Board Jumpers



W1 - VT-100 Reset	
COM2	1-2
COM1	2-3

W2, W4 - COM2 RS485 Termination		
RS-422/485 only	W2	W4
With term. resistors	On	On
*Without term. resistors	Off	Off

W3- SCSI Termination	
No termination	Off
Controlled by software	1-2
Hardware terminated	2-3

W5 - AGP Enable	
* Enabled	Off
Disabled	On

W6 - Compact Flash Disk	
* Slave	Off
Master	On

W7 - Power Fail : Source Detection	
* Offboard Battery	1-2
Onboard Battery	2-3

NOTE 1

To prevent the board from spurious PFI (Power Fail Interrupt), the jumper cap W7 must always be installed at either 1-2 or 2-3 position.

W8 - Battery Source	
* On Board	1-2
External	2-3
Battery disconnected	Off

W9 - Reserved

W10 - VT-100 Enable	
* Disabled	Off
Enabled	On

* Default Setting

3.2 BACKPLANE

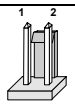
The backplane's features are summarized below:

Butterfly Backplane	Specifications
Number of Slots	Four: One PICMG CPU slot, one half-size PCI slot, and two full-size PCI slots.
Mounting Holes	Seven.
Power Connectors	One 20-pin ATX power connector: 5A max. per pin for +5V, -5V, +12V, and -12V power rails. Ground and Power Good signals.
Dimensions	404 mm (15.90 inches) x 36 mm (1.42 inches).



J1 – J4	Fan connectors	**J9**	Power LED connector
J5	Power On connector	**J11**	ATX power connector
J6, J7	PICMG slot	**J12 – J15**	Fan connectors
J8, J10	32-bit PCI slots		

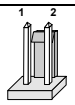
3.2.1.1. Fan connectors (J1-J4, J12-J15)

Pin #	Signal name	
1	Ground	
2	+12V	

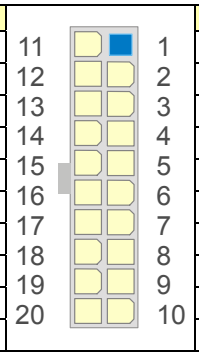
3.2.1.2. Power On/Off connector (J5)

Pin #	Signal name		Pin #	Signal name
1	PWR-OK		3	PS-ON
2	+5VSB		4	Ground

3.2.1.3. Power On Led (J9)

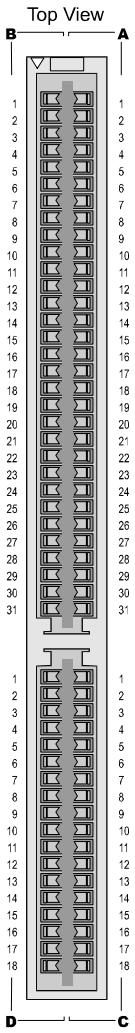
Pin #	Signal name	
1	+5V	
2	Ground	

3.2.1.4. ATX Power Connector (J11)

Pin #	Signal name		Pin #	Signal name
11	+3.3V		1	+3.3V
12	-12V		2	+3.3V
13	GND		3	GND
14	PS-ON		4	VCC
15	GND		5	GND
16	GND		6	VCC
17	GND		7	GND
18	-5V		8	PW-OK (power good)
19	VCC		9	+5VSB
20	VCC		10	+12V

3.2.1.5. ISA Bus Connector (J6)

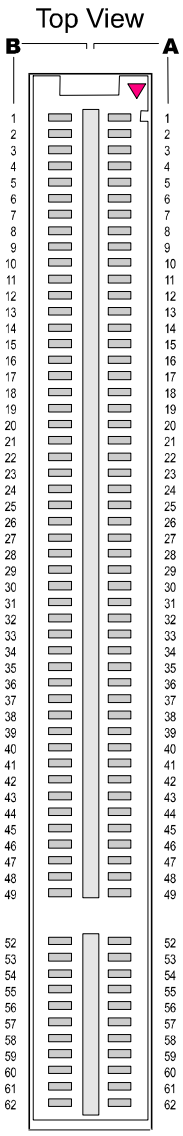
PIN	Signal name	I/O	PIN	Signal name	I/O
A Side			**B Side**		
A1	IOCHCHK*	I	B1	GND	-
A2	SD7	I/O	B2	RESETDRV	O
A3	SD6	I/O	B3	VCC	-
A4	SD5	I/O	B4	IRQ9	I
A5	SD4	I/O	B5	-5V	-
A6	SD3	I/O	B6	DRQ2	I
A7	SD2	I/O	B7	-12V	-
A8	SD1	I/O	B8	ZEROWS*	I
A9	SD0	I/O	B9	+12V	-
A10	IOCHRDY	I	B10	GND	-
A11	AEN	O	B11	SMEMW*	O
A12	SA19	I/O	B12	SMEMR*	O
A13	SA18	I/O	B13	IOW*	I/O
A14	SA17	I/O	B14	IOR*	I/O
A15	SA16	I/O	B15	DACK3*	O
A16	SA15	I/O	B16	DRQ3	I
A17	SA14	I/O	B17	DACK1*	O
A18	SA13	I/O	B18	DRQ1	I
A19	SA12	I/O	B19	REFRESH*	I/O
A20	SA11	I/O	B20	SYSCLK	O
A21	SA10	I/O	B21	IRQ7	I
A22	SA9	I/O	B22	IRQ6	I
A23	SA8	I/O	B23	IRQ5	I
A24	SA7	I/O	B24	IRQ4	I
A25	SA6	I/O	B25	IRQ3	I
A26	SA5	I/O	B26	DACK2*	O
A27	SA4	I/O	B27	TC	O
A28	SA3	I/O	B28	BALE	O
A29	SA2	I/O	B29	VCC	-
A30	SA1	I/O	B30	OSC	O
A31	SA0	I/O	B31	GND	-
C Side	----------	--------	**D Side**	----------	--------
C1	SBHE*	I/O	D1	MEMCS16*	I
C2	LA23	I/O	D2	IOCS16*	I
C3	LA22	I/O	D3	IRQ10	I
C4	LA21	I/O	D4	IRQ11	I
C5	LA20	I/O	D5	IRQ12	I
C6	LA19	I/O	D6	IRQ15	I
C7	LA18	I/O	D7	IRQ14	I
C8	LA17	I/O	D8	DACK0*	O
C9	MEMR*	I/O	D9	DRQ0	I
C10	MEMW*	I/O	D10	DACK5*	O
C11	SD08	I/0	D11	DRQ5	I
C12	SD09	I/O	D12	DACK6*	O
C13	SD10	I/O	D13	DRQ6	I
C14	SD11	I/O	D14	DACK7*	O
C15	SD12	I/O	D15	DRQ7	I
C16	SD13	I/O	D16	VCC	-
C17	SD14	I/O	D17	MASTER*	I
C18	SD15	I/O	D18	GND	-



** Active low signal*

3.2.1.6. PICMG Bus Connector (J7)

Pin	Signal name	I/O	PIN	Signal name	I/O
A1	TRST*	I	B1	-12V	-
A2	+12V	-	B2	TCK	I
A3	TMS	I	B3	GND	-
A4	TDI	I	B4	TDO	O
A5	VCC	-	B5	VCC	-
A6	INTA*	O	B6	VCC	-
A7	INTC*	O	B7	INTB*	O
A8	VCC	-	B8	INTD*	O
A9	CLKC	-	B9	REQ3*	-
A10	VCCI0	-	B10	REQ1*	-
A11	CLKD	-	B11	GNT3*	-
A12	GND	-	B12	GND	-
A13	GND	-	B13	GND	-
A14	GNT1*	-	B14	CLKA	-
A15	RST*	I	B15	GND	-
A16	VCCI0	-	B16	CLKB	I
A17	GNT0*	I	B17	GND	-
A18	GND	-	B18	REQ0*	O
A19	REQ2*	-	B19	VCCIO	-
A20	AD30	I/O	B20	AD31	I/O
A21	+3.3V	-	B21	AD29	I/O
A22	AD28	I/O	B22	GND	-
A23	AD26	I/O	B23	AD27	I/O
A24	GND	-	B24	AD25	I/O
A25	AD24	I/O	B25	+3.3V	-
A26	GNT2*	I	B26	C/BE3*	I/O
A27	+3.3V	-	B27	AD23	I/O
A28	AD22	I/O	B28	GND	-
A29	AD20	I/O	B29	AD21	I/O
A30	GND	-	B30	AD19	I/O
A31	AD18	I/O	B31	+3.3V	-
A32	AD16	I/O	B32	AD17	I/O
A33	+3.3V	-	B33	C/BE2*	I/O
A34	FRAME*	I/O	B34	GND	-
A35	GND	-	B35	IRDY*	I/O
A36	TRDY*	I/O	B36	+3.3V	-
A37	GND	-	B37	DEVSEL*	O
A38	STOP*	I/O	B38	GND	-
A39	+3.3V	-	B39	LOCK*	I/O
A40	SDONE	I/O	B40	PERR*	I/O
A41	SBO*	I/O	B41	+3.3V	-
A42	GND	-	B42	SERR*	O
A43	PAR	I/O	B43	+3.3V	-
A44	AD15	I/O	B44	C/BE1*	I/O
A45	+3.3V	-	B45	AD14	I/O
A46	AD13	I/O	B46	GND	-
A47	AD11	I/O	B47	AD12	I/O
A48	GND	-	B48	AD10	I/O
A49	AD09	I/O	B49	GND	-
	Connector Key			Connector Key	
	Connector Key			Connector Key	
A52	C/BE0*	I/O	B52	AD08	I/O
A53	+3.3V	-	B53	AD07	I/O
A54	AD06	I/O	B54	+3.3V	-
A55	AD04	I/O	B55	AD05	I/O
A56	GND	-	B56	AD03	I/O
A57	AD02	I/O	B57	GND	-
A58	AD00	I/O	B58	AD01	I/O
A59	VCCIO	-	B59	VCCIO	-
A60	REQ64*[1]	-	B60	ACK64*[1]	-
A61	VCC	-	B61	VCC	-
A62	VCC	-	B62	VCC	-

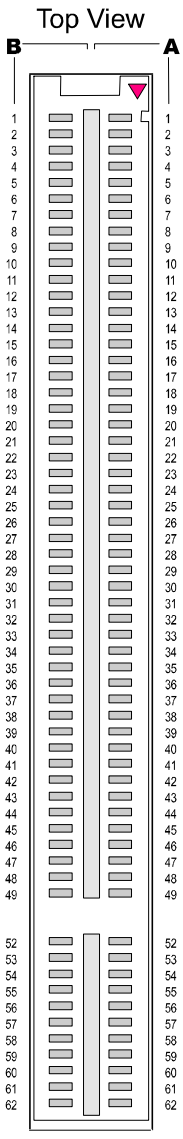


** Active low signal - [1] Pull-up*

3.2.1.7. PCI Bus Connectors (J8, J10)

There are three PCI slots and one PCI/ISA (PICMG) slot on the backplane. The PCI bus supports up to three bus masters.

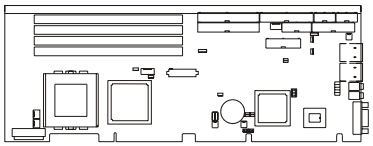
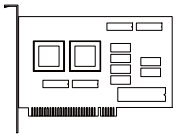
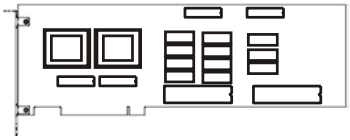
Pin	Signal name	I/O	PIN	Signal name	I/O
A1	TRST*	I	B1	-12V	-
A2	+12V	-	B2	TCK	I
A3	TMS	I	B3	GND	-
A4	TDI	I	B4	TDO	O
A5	VCC	-	B5	VCC	-
A6	**INTn***	O	B6	VCC	-
A7	**INTn***	O	B7	**INTn***	O
A8	VCC	-	B8	**INTn***	O
A9	Reserved	-	B9	PRSNT1*	-
A10	VCCI0	-	B10	Reserved	-
A11	Reserved	-	B11	PRSNT2*	-
A12	GND	-	B12	GND	-
A13	GND	-	B13	GND	-
A14	+3.3V AUX	-	B14	Reserved	-
A15	RST*	I	B15	GND	-
A16	VCCI0	-	B16	**CLKn**	I
A17	**GNTn***	I	B17	GND	-
A18	GND	-	B18	**REQn***	O
A19	PME*	-	B19	VCCI0	-
A20	AD30	I/O	B20	AD31	I/O
A21	+3.3V	-	B21	AD29	I/O
A22	AD28	I/O	B22	GND	-
A23	AD26	I/O	B23	AD27	I/O
A24	GND	-	B24	AD25	I/O
A25	AD24	I/O	B25	+3.3V	-
A26	**IDSELn**	I	B26	C/BE3*	I/O
A27	+3.3V	-	B27	AD23	I/O
A28	AD22	I/O	B28	GND	-
A29	AD20	I/O	B29	AD21	I/O
A30	GND	-	B30	AD19	I/O
A31	AD18	I/O	B31	+3.3V	-
A32	AD16	I/O	B32	AD17	I/O
A33	+3.3V	-	B33	C/BE2*	I/O
A34	FRAME*	I/O	B34	GND	-
A35	GND	-	B35	IRDY*	I/O
A36	TRDY*	I/O	B36	+3.3V	-
A37	GND	-	B37	DEVSEL*	O
A38	STOP*	I/O	B38	PCIXCAP	-
A39	+3.3V	-	B39	LOCK*	I/O
A40	Reserved	I/O	B40	PERR*	I/O
A41	Reserved	I/O	B41	+3.3V	-
A42	GND	-	B42	SERR*	O
A43	PAR	I/O	B43	+3.3V	-
A44	AD15	I/O	B44	C/BE1*	I/O
A45	+3.3V	-	B45	AD14	I/O
A46	AD13	I/O	B46	GND	-
A47	AD11	I/O	B47	AD12	I/O
A48	GND	-	B48	AD10	I/O
A49	AD09	I/O	B49	GND	-
	Connector Key			Connector Key	
	Connector Key			Connector Key	
A52	C/BE0*	I/O	B52	AD08	I/O
A53	+3.3V	-	B53	AD07	I/O
A54	AD06	I/O	B54	+3.3V	-
A55	AD04	I/O	B55	AD05	I/O
A56	GND	-	B56	AD03	I/O
A57	AD02	I/O	B57	GND	-
A58	AD00	I/O	B58	AD01	I/O
A59	VCCI0	-	B59	VCCI0	-
A60	REQ64*[1]	-	B60	ACK64*[1]	-
A61	VCC	-	B61	VCC	-
A62	VCC	-	B62	VCC	-



** Active low signal - [1] Pull-up - n Refer to Point-to-Point Signals Table*

Point-to-Point Signals			
Signal name	**Slot #**		
	J7	J8	J10
IDSEL (A26)	AD31	AD30	AD29
REQ (B18)	0	1	2
GNT (A17)	0	1	2
CLK (B16)	A	B	C
INTA	B8	A7	B7
INTB	A6	B8	A7
INTC	B7	A6	B8
INTD	A7	B7	A6

3.3 PERIPHERAL BOARDS

Form Factor	Board Types
	**Full-size SBC** On the backplane, the SBC must be installed into the dedicated system slot (combination of PCI and ISA slots). Full-size SBCs must only be installed on full-size backplanes.
	**Half-size PCI Peripheral Board** 174.63 mm (6.875”) x 106.68 mm (4.20”) PCI peripheral boards are supported on PICMG backplanes only. PCI peripheral boards differ from the ISA boards in the fact that when facing the component side; the mounting bracket is located at the left side of the board. The mounting method remains the same.
	**Full-size PCI Peripheral Board** 312 mm (12.28”) x 106.68 mm (4.20”) Same as a half-size PCI board, it is supported on PICMG backplanes only.

WARNING

The safety of the system must be validated by qualified personnel when adding boards or other components that were not part of the delivered configuration.

When populating the backplane with peripheral boards, ensure that the power consumption, on each expansion slot, does not exceed 20 Watts. Exceeding this power level will require a thermal evaluation of the specific configuration and may complicate safety validation.

3.4 POWER REQUIREMENTS

The power requirements for the PCI-949 are specified as follows:

CPU	Pentium III 600	Pentium III 850
VCORE	1.65V	1.65V
Frequency (Int / Ext)	600 / 100	850 / 100
Power MAX 5V/12V	33.1 / 1W	40.3 / 1 W
Power TYP 5V/12V	27.8 / 1W	31.8 / 1W
Power SUS 5V/12V	14.9 / 1W	14.85 / 1W
Ambient temp MAX	40°C	40°C
TEST CONDITIONS		
Power MAX	Running KPower in Windows	
Power TYP	Idle in Windows	
Power SUS	Suspend mode in Windows	
Test setup	1GB SDRAM, running Windows 98 with 3.2GB hard disk.	

Note: The 3.3V is generated from +5V.

NOTE	Refer to the PCI-949 Technical Reference Manual for a complete description of the board.

3.5 POWER SUPPLY

The system is equipped with a power supply with the following specifications:



DreamSpeed	
Power Supply with power factor correction	**ATX 200 W-AC**: +5V/25A, +12V/8A, -5V/0.5, -12V/0.5A, +3.3V/14A, +5VSB/1.5A
Input Voltage	100-/240VAC Nominal Auto-switching, 50-60Hz
M.T.B.F. (Power Supply)	>110,000 hours

PART 4

4. INSTALLATION AND REMOVAL

1. ACCESSING INTERNAL COMPONENTS
2. CARD CAGE
3. OPENING THE UNIT
4. SYSTEM SOFTWARE UPGRADE PROCEDURE
5. POWER SUPPLY
6. DRIVE BAY
7. FAN FILTER ASSEMBLY
8. RACKMOUNT / BENCHTOP OPTIONS
9. POWER CORD CONNECTION

4.1 ACCESSING INTERNAL COMPONENTS

This section contains important information that you must read before accessing the internal components. You must follow these procedures properly when installing, removing or handling any boards.

4.1.1 Electronic Discharge (ESD)

A sudden discharge of electrostatic electricity can destroy static-sensitive systems or micro-circuitry. Proper packaging and grounding techniques are necessary precautions to prevent damage. Always take the following precautions:

1. Transport boards in static-safe containers such as boxes or bags.
2. Keep electrostatic sensitive parts in their containers until they arrive at static-free stations.
3. Always be properly grounded when touching a sensitive board, component, or assembly.
4. Store electrostatic-sensitive boards in protective packaging or on conductive foam.

4.1.2 Grounding Methods

Guard against electrostatic damage at workstations by following these steps:

1. Cover workstations with approved anti-static material. Provide a wrist strap connected to a work surface and properly grounded tools and equipment.
2. Use anti-static mats, heel straps, or air ionizers to give added protection.
3. Handle electrostatic-sensitive components, boards, and assemblies by the case or the PCB edge.
4. Avoid contact with pins, leads, or circuitry.
5. Turn off power and input signals before inserting and removing connectors or test equipment.
6. Keep work area free of non-conductive materials such as ordinary plastic assembly aids and styrofoam.
7. Use field service tools, such as cutters, screwdrivers, and vacuums that are conductive.
8. Always place drives and boards PCB-assembly-side down on the foam.

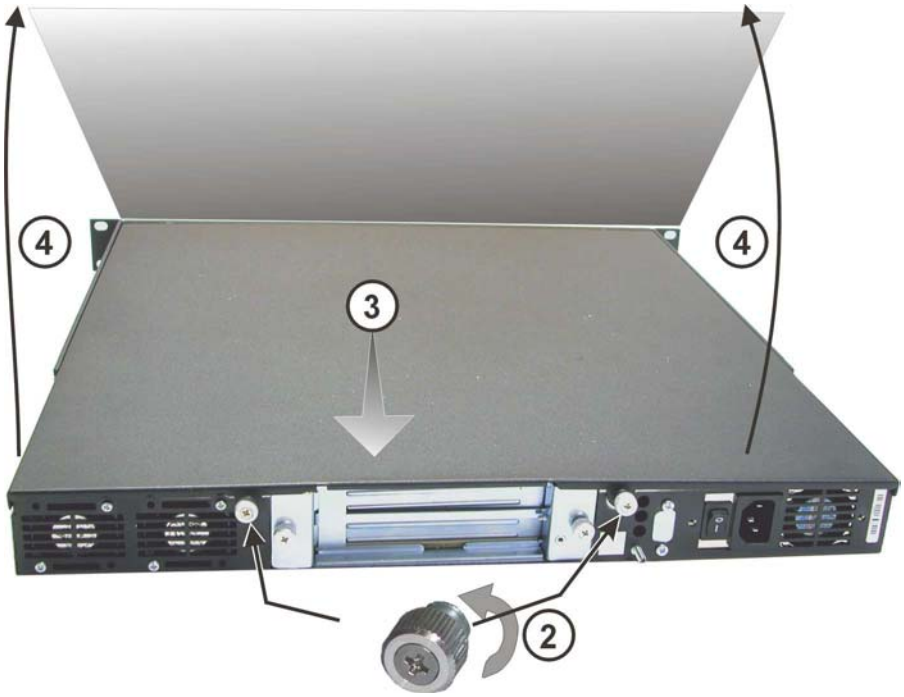
4.1.3 Tools Requirements

To properly complete the procedures of this section, you must have the following equipment:

1. Philips screwdriver (4 mm tip size or similar).

4.2 CARDCAGE

The backplane and all peripheral boards are secured to the system inside a cardcage. To access these boards, you need to remove the top cover as follows:



1. Power off the system and disconnect the power cable.
2. Unscrew the two captive-panel fasteners located at the back of the system.
3. Pull back the top cover.
4. Lift the back of the cover and pull it out.
5. Refer to the following sections for instructions on how to remove the backplane and peripheral boards.

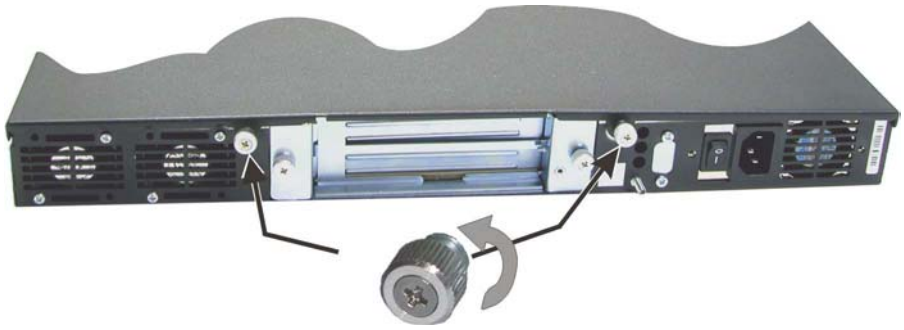
4.3 OPENING THE UNIT

4.3.1 Removing the SBC Board

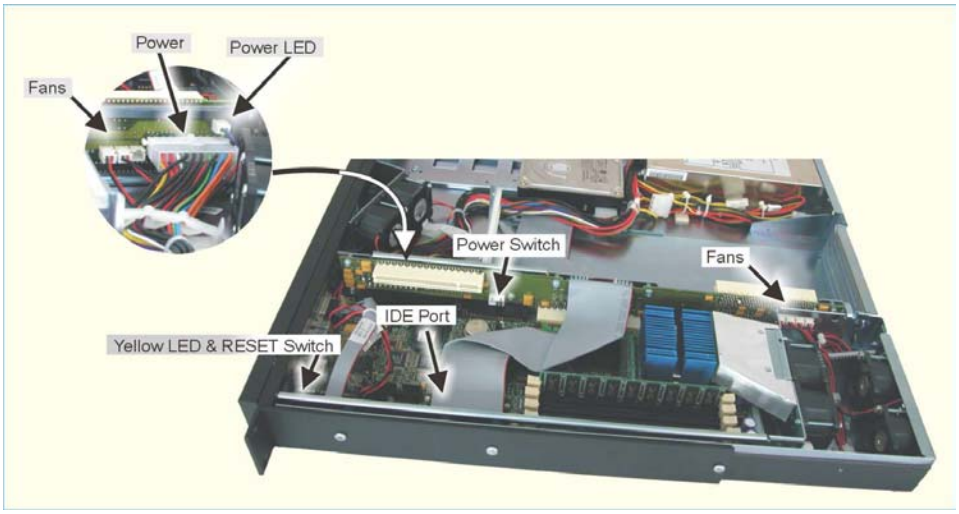
The backplane is secured to the unit inside a cardcage.

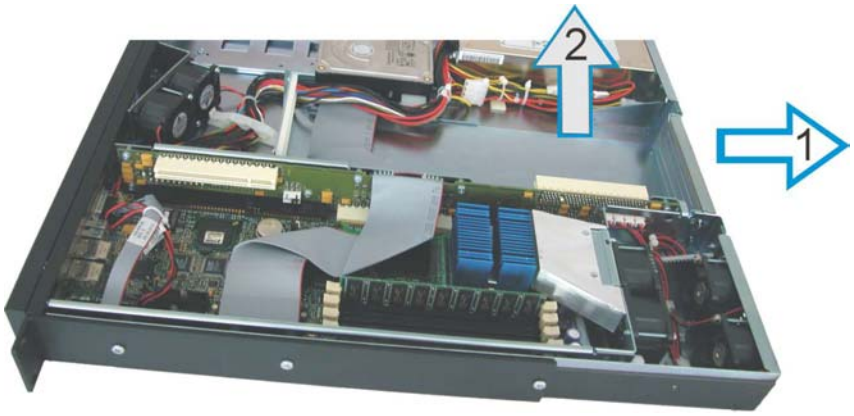
To remove the backplane, complete the following steps:

1. Unscrew the two captive-panel fasteners located at the back of the system.



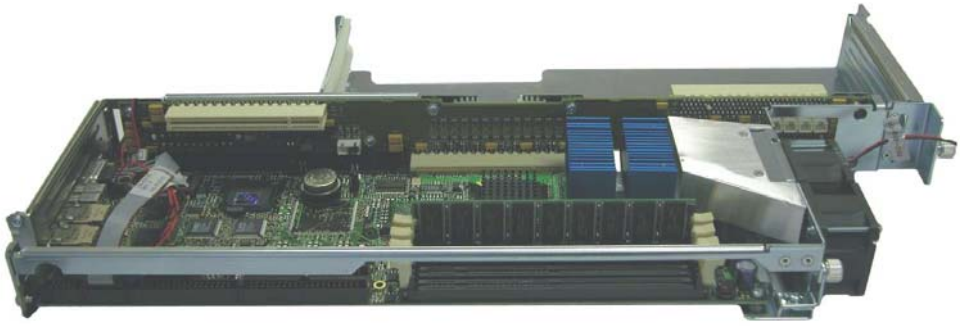
2. Once the cover is removed (see previous section CARDCAGE) disconnect all cables from the backplane.

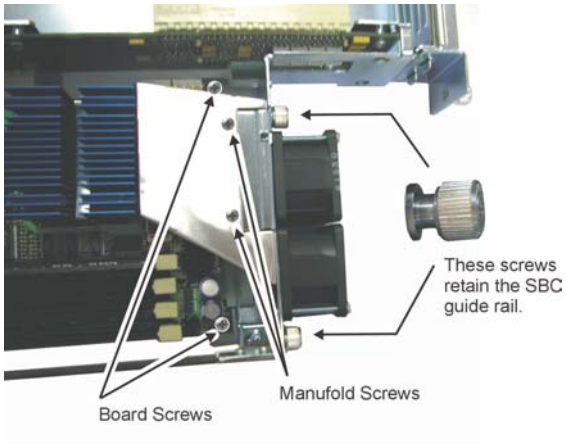




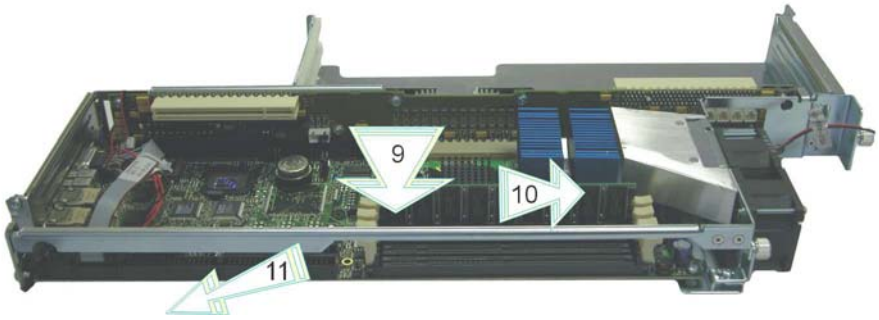
3. Slide the board cardcage in the direction of arrow #1.

4. Pull up the board cardcage in the direction of arrow #2.





5. Unscrew the two captive fasteners located on each side of the fans.
6. Remove the two screws located on top of the airflow plate.
7. Remove the two screws located at the right end of the SBC.
8. Remove the RDRAM module(s).



9. Gently slide the board out of the edge connectors.
10. Push the board toward the fans. This will free the faceplate from the front panel.
11. Remove the board from the cardcage by pulling it down and out.

WARNING

The safety of the system must be re-evaluated by qualified personnel when adding components that were not part of the delivered configuration.

4.4 SYSTEM SOFTWARE UPGRADE PROCEDURE

4.4.1 Single System Software Update

Primarily, for single system update, it is recommended to temporary add an additional hard drive in the unit that will contain the software to update, first:

1. Power off the system and disconnect the power cable.
2. Remove the cover of the system by unscrewing the two captive-panel fasteners located at the back of the system. Lift the back of the cover and pull it out.
3. Connect the source hard rive to the IDE and POWER connectors.
4. Set the hard drive source as Primary Master. If you are using a bootable CD-ROM, then ensure that CMOS settings reflect this option under "BIOS Settings / Boot Sequence", where the boot sequence may be set as "CDROM,A,C".
5. You can boot from the source device (HD or CD-ROM) and then proceed with a new installation on the destination drive, either on the local CompactFlash or on the local hard drive.
6. If you have a binary image of the installation, you can also upgrade the local drive using Ghost (DOS based application) or DD (Unix based application).

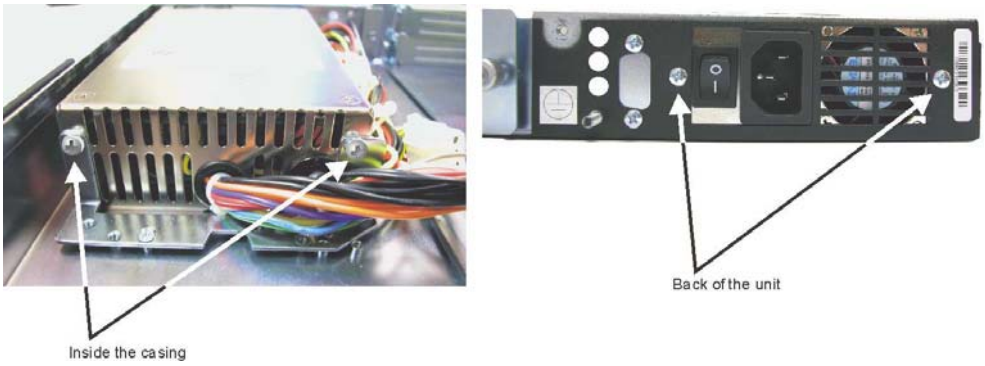
4.4.1.1. Boot from LAN Support Using Linux TFTP Server for Remote Image Update

Consult the “Linux Remote-Boot mini HOW TO” located on your installation CD-ROM or from your local drive.

4.5 POWER SUPPLY

The system is equipped with an AC 200W ATX power supply (with PFC).

To remove the power supply, follow these steps:



1. Power off the system and disconnect the power cable.
2. Remove the cover of the system by unscrewing the two captive-panel fasteners located at the back of the system. Lift the back of the cover and pull it out.
3. Disconnect all power supply cables.
4. Remove the three screws (6-32x1/4) located at the back of the system and the two screws located at the other end of the power supply (inside the system).
5. Slide out the power supply from its location and pull it out.

> **NOTE**
>
> For approved replacement parts (i.e., Memory, CompactFlash, Hard Disk Drives, Power Supplies, Cables) please contact our Technical Support Dept. for more assistance.

4.6 DRIVE BAY

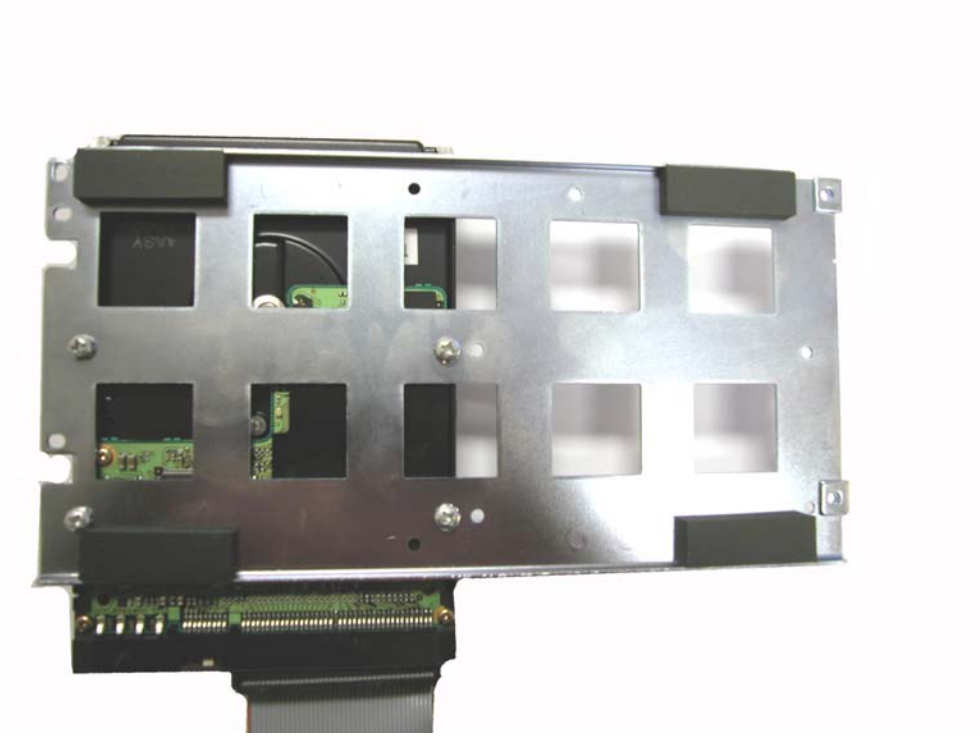
The hard drive unit is mounted onto a drive bay to simplify installation and maintenance operations.

To remove the hard disk:

1. Power off the system and disconnect the power cable.
2. Remove the cover of the system by unscrewing the two captive-panel fasteners located at the back of the system. Lift the back of the cover and pull it out.



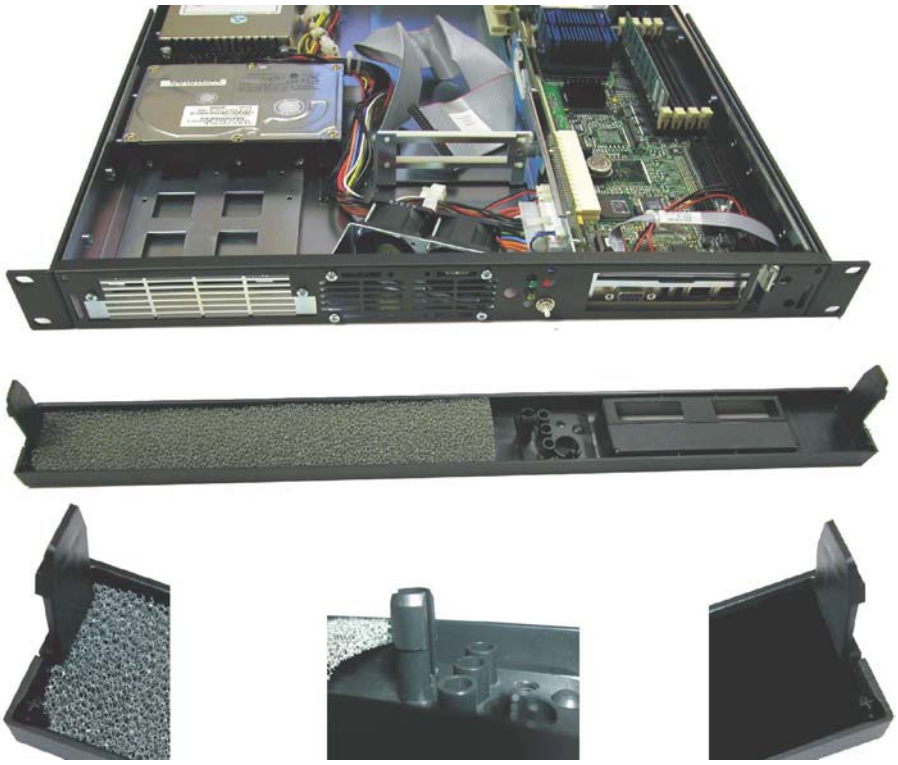
3. Remove the four screws retaining the drive carrier (see above illustration).



4. Remove the four screws retaining the hard drive to the carrier (see above illustration).

4.7 FAN FILTER ASSEMBLY

The unit contains six fan assemblies for optimum cooling.



To remove the filter located at the front of the system, proceed as follows:

1. Squeeze the plastic peg and push outward of its location.
2. Remove the bezel by pressing the two side latches inward and pressing on the middle peg.
3. Pull out the filter from its location.

4.8 RACKMOUNT / BENCHTOP OPTIONS

The DreamSpeed is built with flexibility in mind; it is available in rackmount, sliding rails, and benchtop versions.

If the system is to be used within a rack, follow these steps to install the ear-brackets:



1. To install the ear-brackets, position the ear-brackets directly over the appropriate mounting holes.
2. Install the six screws (M4x6) on the ear-brackets and secure them to the system.

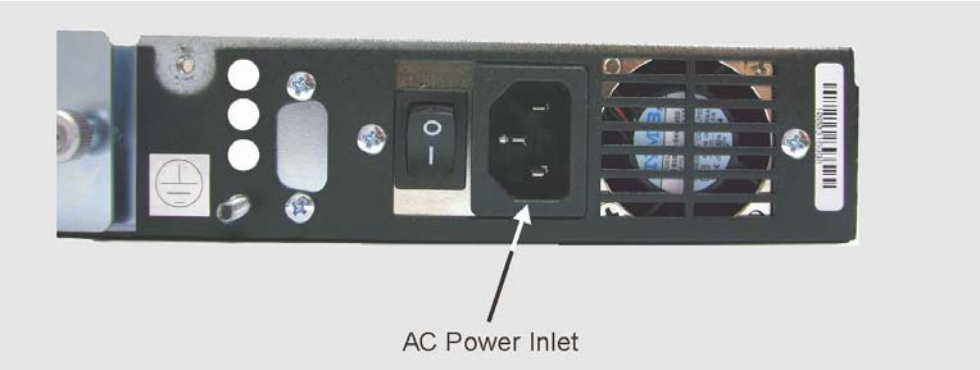
If the system is to be used as a benchtop unit, follow these steps to install the rubber feet:



1. First, make sure that all boards are secured in the unit and that the cover of the system is installed and secured.
2. Turn the system upside down.
3. Make sure the surface is free from dust by cleaning each area where the rubber feet will be secured.
4. Position the four rubber feet onto the system.
5. Insert one screw (M3x6) inside each rubber foot and secure them to the system.

4.9 POWER CORD CONNECTION

To connect the power cord, follow these steps:
1. Connect the AC power cord into the system inlet.
2. Connect the AC power cord into a wall outlet.



WARNING

Do not remove or alter the grounding prong on the power cord. In situations where a two-slot receptacle is present, have it replaced with a properly grounded three-prong grounding type receptacle.

PART 5

5. MAINTENANCE

1. MAINTENANCE AND PREVENTION
2. FAN FILTER CLEANING
3. GROUND STUD
4. REPLACEMENT PARTS

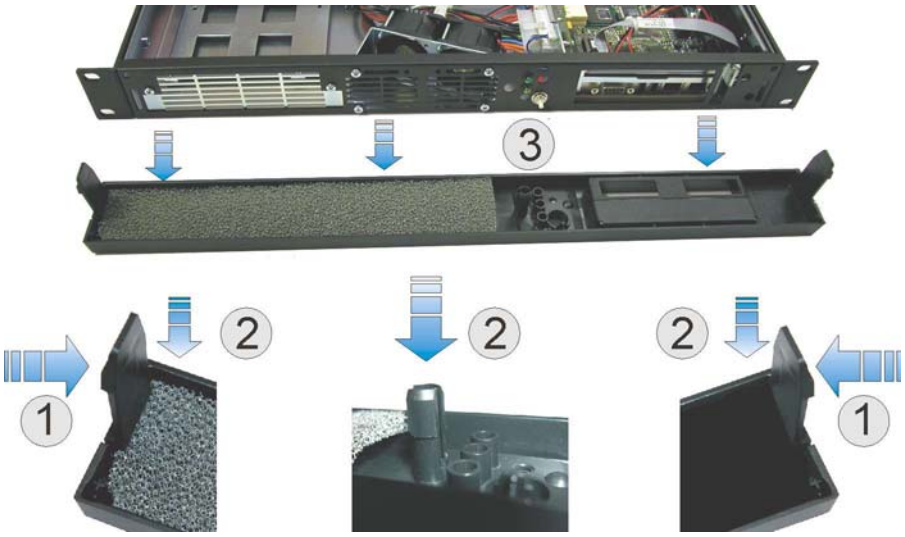
5.1 MAINTENANCE AND PREVENTION

The DreamSpeed system requires minimal maintenance and care to keep it operating properly. After the installation is complete, proper system maintenance by the operator is important to keep it functioning normally. Regularly clean the filters and removable-media systems.

5.2 FAN FILTER CLEANING

It is recommended that the filter be cleaned at least once every three months. If the system's operational environment is extremely dusty, clean the filter more often. The filter can be easily cleaned by vacuuming or washing with mild soap, detergent, or cleaning solvent.

The unit contains six fan assemblies for optimum cooling.

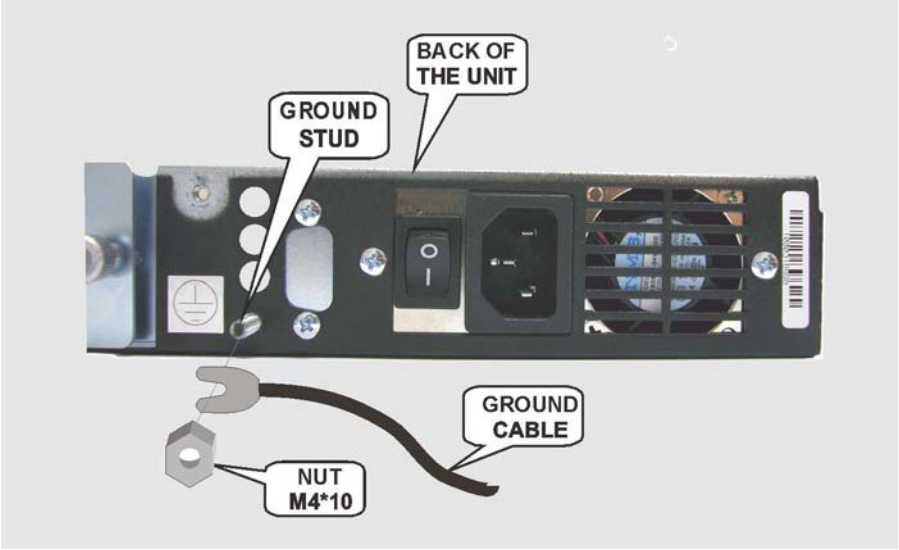


To remove the filter located at the front of the system, proceed as follows:

1. Squeeze the plastic peg and push outward of its location.
2. Remove the bezel by pressing the two side latches inward and pressing on the middle peg.
3. Pull out the filter from its location.

5.3 GROUND STUD

In order to insure proper grounding, it is recommended to verify that the ground cable is appropriately secured to the ground stud. Therefore, tighten the nut, without overstressing it, every time you service the unit.



5.4 REPLACEMENT PARTS

For approved replacement parts (i.e., Memory, CompactFlash, Hard Disk Drives, Power Supplies, Cables, etc.) please contact our Technical Support Dept. for more assistance.

PART 6

6. GETTING HELP

1. LIMITED WARRANTY
2. RETURN DEFECTIVE MERCHANDISE

We take pride in our customer's success. We strongly believe in providing full support at all stages of your product development.

If at any time you encounter difficulties with your application or with this product, we are ready to assist you. Should you need guidance on system setups and capabilities, please contact our Technical Support department at:

CANADIAN HEADQUARTERS

TEL: (450) 437 5682
FAX: (450) 437-8053

If you have any questions about our products and services, you may reach us at the aforementioned numbers above or by writing to:

Kontron Inc.
616 Curé Boivin
Boisbriand, Québec
J7G 2A7 Canada

6.1 LIMITED WARRANTY

We ("the seller") warrant our single-board computers to be free from defects in material and workmanship for a period of two (2) years and all the other Platform components for a period of one (1) year commencing on the date of shipment. The liability of the seller shall be limited to replacing or repairing, at seller's option, any defective unit. Equipment or parts, which have been subject to abuse, misuse, accident, alteration, neglect, or unauthorized repair are not covered by this warranty. This warranty is lieu of all other warranties expressed or implied.

6.2 RETURNING DEFECTIVE MERCHANDISE

Before returning any merchandise please do the following if your product malfunctions:

1. Call our **Technical Support** department in Canada at **(450) 437-5682**. Make sure you have the following on hand: **our Invoice #,** your **Purchase Order #,** and the **Serial Number** of the defective unit.

2. Provide the serial number found on the back of the unit and explain the nature of your problem to a service technician.

3. The technician will instruct you on the return procedure if the problem cannot be solved over the telephone.

4. Make sure that you receive an **RMA #** from **our Technical Support** before returning any merchandise. Clearly write or mark this number on the outside of the package you are returning. Please follow these instructions on how to request an RMA number:

   i) Make a copy of the request form on the following page

   ii) Fill it out and fax it to us.

5. Include the name and telephone number of a person whom we can contact for further explanations if necessary when returning goods. **Where applicable, always include all duty papers and invoice(s) associated with the item(s) in question.**

6. When returning a unit.

   i) Ensure that the unit is properly packed. Pack it in a rigid cardboard box.

   ii) Ship prepaid. We take care of insuring incoming units.

Kontron Inc.
616 Curé Boivin
Boisbriand, Québec
J7G 2A7 Canada



RETURN TO MANUFACTURER AUTHORIZATION REQUEST

Contact Name	:			
Company name	:			
Street Address	:			
City	:		Province/State	:
Country	:		Postal/Zip Code	:
Phone Number	:		Extension	:
Fax Number	:			

Serial Number	Failure or Problem Description	P.O.# (if not under warranty)

Fax this form to our Technical department in Canada at (450) 437-8053