PCI-949

Celeron Pentium III Single Board Computer

kontron

Board Rev. 1

QUICK REFERENCE

Document version 1.3

There is a danger of explosion if the battery is incorrectly replaced.
Replace only with the sameor equivalent type.
Dispose of used batteries according to the manufacturer's instructions.

First Level Debugging

1 . Remove all peripheral boards and keep only the SBC.
2 . Remove all cables from the SBC except the video cable.
3 . Make sure the memory is working well and is properly inserted.

Connectors

J1,J6, J11,J15	DIMM Memory	J16	Ethernet 0
		J17	n/a
J2	EIDE - Primary	J18	Compact Flash
J3	Floppy	J19	Ethernet 1
J4, J5	Serial Ports 1 & 2	J20	n/a
J7	Secondary IDE	J21	USB0
J8	Mouse Port	J22	USB1
J9	Multifonction	J23	Video (SVGA)
	Keyb., speaker etc.	J24	CPU Fan 2
J10	Parallel Port	J25	CPU Fan 1
J12	Power Button	J26	Battery
J13	SCSI	J27	SCSI LED Connector
J14	Hardware Monitor	J28	External Power

JUMPER SETTINGS (* : Default Setting)

W1 - VT-100 Reset

COM2	1-2
COM1	2-3

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

W10 - VT-100 Enable

* Disabled	Off
Enabled	On

W2, W4 - COM2 RS485 Termination

	W2	W4
RS-422/485 modes only		
With termination resistors	On	On
* Without termination resistors	Off	Off

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

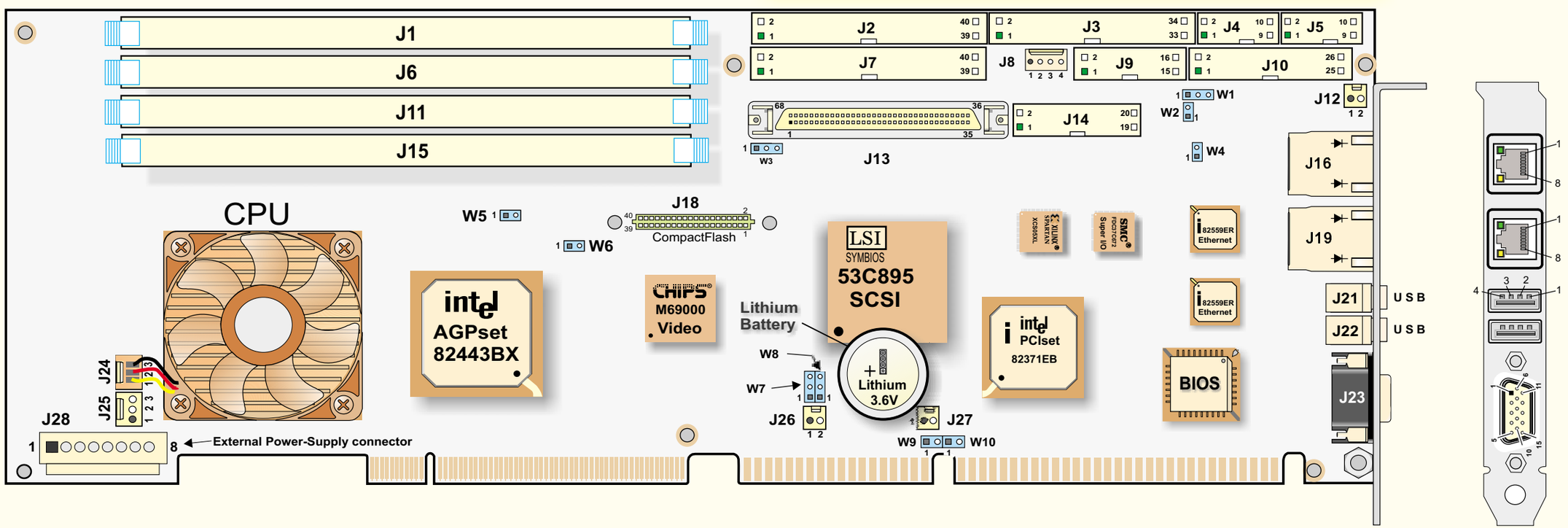
On Board	1-2
* External	2-3
Battery disconnected	Off

W9 - Reserved

Ethernet Connector

Green : Integrity
Lights ON when the link is established

AMBER: Activity
Lights ON while transferring



Connector Pinouts

Q.R. Rev. 1.3 **Board Rev. 1**

J2 - Primary IDE. J7 - Secondary IDE

Odd Pin Number		25	IOR #	39	ACT#	30	GND
1	RST#	27	IORDY	Even Pin Number		32	N.C.
3-17	D7-D0	29	DACK#	2; 22-26	GND	34	DIAG#
19	GND	31	J2 IRQ14 / J7 IRQ15	4-18	D8-D15	36	A2
21	REQ	33; 35	A1; A0	20	N.C.	38	Cs1 #
23	IOW #	37	CS0 #	28	PRIMPDI [1]	40	GND

[1]470 ohm pull-down

J3 - Floppy Disk

Odd Pin Number		8	INDEX #	22	WDATA #
1-15; 19-25	GND	10	MTR0#	24	WGATE#
17; 27	N.C.	12	DSEL1#	26	TRK0 #
29	FDETECT	14	DSEL0#	28	WRPROT#
Even Pin Number		16	MTR1#	30	RDATA#
2	DENSEL#	18	DIR#	32	HDSEL#
4; 6	Not Conn.	20	STEP #	34	DSKCHG#

J4, J5 - Serial 1/2 - RS-232

DCD	1	2	DSR
RXD	3	4	RTS
TXD	5	6	CTS
DTR	7	8	RI
GND	9	10	Not Conn.

J5 - Serial Port 2 - RS-485

RSV	1	2	RSV
RX(-)	3	4	RX(+)
TX(-)	5	6	TX(+)
RSV	7	8	RSV
GND	9	10	N.C.

J8 - MOUSE

1	CLOCK
2	GND
3	DATA
4	VCC

J9 - Keyboard / Speaker

KB:CLK	1	2	GND
KB:DATA	3	4	GND
VCC	5	6	VCC
SPEAKER	7	8	VCC
SOFTOFF#	9	10	GND
DOWNLD#	11	12	GND
PBRES#	13	14	GND
IDE:ACT#	15	16	VCC

J10 - Parallel Port /Standard

STB#	1	2	ALF#
[D0-D7]	3-17	4	ERR#
ACK#	19	6	INIT#
BUSY	21	8	SLCTIN#
PE	23	10-18	GND
SELECT	25	20-26	GND

J11 - Video SVGA

Row 1 (1-5)		9	N.C.
1	RED	10	GND
2	GREEN	Row 3 (11-15)	
3	BLUE	11	N.C.
4	N.C.	12	SDATA
5	GND	13	HSYNC
Row 2 (6-10)		14	VSYNC
6-8	A_GND	15	SCLK

J12 - Power Button

1	PWRBTR#	2	GND

J14 - Hardware Monitor

GND	1	2	PWRBT#
JS0FT0FF#	3	4	GND
JGPIO1	5	6	JGPIO2
JAPFLT#	7	8	JCPUFLT#
JEXTFLT#	9	10	GND
JFANFLT#	11	12	GND
JCHASINT#	13	14	GND
FAN_TACH1	15	16	FAN_TACH2
FAN_TACH3	17	18	FAN_TACH4
FAN_TACH5	19	20	FAN_TACH6

J16, J19 - Ethernet

1	TX+	5	RJ1 [1]
2	TX-	6	RX-
3	RX+	7	RJ2 [1]
4	RJ1 [1]	8	RJ2 [1]

[1]Lines terminated with 75 ohm resistors

J21, J22 - USB PORT

1	VCC
2	DATA-
3	DATA+
4	GND

J18 - CompactFlash

1	D11	2	GND
3	D12	4	D3
5	D13	6	D4
7	D14	8	D5
9	D15	10	D6
11	CS1#	12	D7
13	DMACK#	14	CS0#
15	DMARQ	16	IOR#
17	PDIAG#	18	IOW#
19	IRQ15	20	VCC
21	VCC	22	VCC
23	GND	24	GND
25	RESET#	26	GND
27	CSEL	28	A2
29	A1	30	DASP#
31	A0	32	IORDY
33	D0	34	D8
35	D1	36	D9
37	D2	38	D10
39	IOCS16#	40	GND

J24, J25 - CPU FAN

1	Sense
2	+12V
3	GND

J26 - External Battery

1	EXTBAT	2	GND

J27 - SCSI LED

1	LED +	2	LED -

J28 - External Power

VCC	1	2	VCC
N.C.	3	4	GND
GND	5	6	GND
N.C.	7	8	+12V

J13 - HD68 SCSI

1	D12+	35	D12-
2	D13+	36	D13-
3	D14+	37	D14-
4	D15+	38	D15-
5	DPH+	39	DPH-
6	D0+	40	D0-
7	D1+	41	D1-
8	D2+	42	D2-
9	D3+	43	D3-
10	D4+	44	D4-
11	D5+	45	D5-
12	D6+	46	D6-
13	D7+	47	D7-
14	DPL+	48	DPL-
15	GND	49	GND
16	DIFFSENS	50	GND
17	TERMPWR	51	TERMPWR
18	TERMPWR	52	TERMPWR
19	N.C.	53	N.C.
20	GND	54	GND
21	ATN+	55	ATN-
22	GND	56	GND
23	BSY+	57	BSY-
24	ACK+	58	ACK-
25	RESET+	59	RESET-
26	MSG+	60	MSG-
27	SEL+	61	SEL-
28	CD+	62	CD-
29	REQ+	63	REQ-
30	IO+	64	IO-
31	D8+	65	D8-
32	D9+	66	D9-
33	D10+	67	D10-
34	D11+	68	D11-

I/O MAPPING

000-01F	DMA Controller 1
020-03F	Interrupt controller 1
040-05F	Timer
060-06F	Keyboard
070-07F	Real Time Clock
080-09F	DMA Page Register
0A0-0BF	Interrupt controller 2
0C0-0DF	DMA controller 2
0F0-0FF	Math Coprocessor
190-19F	Teknor Control Port
170-177, 376	Secondary IDE
1F0-1F7, 3F6	Primary IDE
278-27A	Parallel Port (option)
2F8-2FF	COM2
370-377	Floppy Disk (option)
378-37A	Parallel Port (LPT1)
3BC-3BE	Parallel Port (option)
3F0-3F7	Floppy Disk
3F8-3FF	COM1
3C0-3CF/3D0 3DF/3B0-3BB	Graphic Controller

MEMORY MAPPING

00000-9FFFF	0-640KB DRAM
A0000-BFFFF	Video DRAM
C0000-CBFFF	Video BIOS
CC000-DFFFF	Optional BIOS
E0000-FFFFF	Main BIOS
100000 to top	1MB to top of RAM

M9004_QR

For Technical Support please contact:

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The Technical Reference Manual can be downloaded from the Kontron FTP site at:
ftp://ftp.kontron.ca/Support/Product_Manuals/
The Quick Reference can be downloaded from:
ftp://ftp.kontron.ca/Support/Product_Manuals QuickRef/
To order a hard copy of the Technical Reference Manual, contact Customer Service at ***(450) 437-5682.***

PCI-949 Specifications

CPU
Celeron, Pentium III Single Board Computer.

Bus Interfaces
Front side bus at 66 or 100MHz
33MHz PCI Bus
ISA Bus (8.33MHz)
AGP 2X Bus (66 MHz)

Memory
Four 168-pin latching DIMM sockets, 64/72-bit
Up to 1GB of SDRAM
16/16KB Instruction / Data Level 1 Cache
256KB Advanced Tranfer Cache Level 2

Data Path
64-bit CPU Bus, 32-bit AGP and PCI bus, 16-bit ISA bus

I/O
SERIAL: Two (One RS-232 COM1, COM2 configurable as RS-232/422/485)
PARALLEL: One bi-directional with all IEEE 1284 protocols supported
ETHERNET: Two 10Base-T/100Base-TXthroughRJ-45, Bus Master PCI Rev. 2.1compliant (82559ER)
EIDE: Two channel Bus Master PCI EIDE; supports up to four EIDE type 4 drives (master/slave configuration); LBA, PIO Modes 0-4 and Ultra DMA/33
FLOPPY DISK: Up to 2 floppy drives (1.44MB)
USB: Two ports, serial transfers up to 1.5MB/s

CompactFlash™ Module :Optional bootable CompactFlash module

OS Compatibility
Windows 95/98, Windows NT 4.0, Windows 2000, QNX™, Linux, and FreeBSD

Mechanical
338 x 122 x 36mm at CPU / fan (13.32 x 4.80 x 1.40in. at CPU / fan)
Conforms to IEEE P996 PC/AT bus, PCI Rev. 2.1, and PICMG Rev. 2.0

Power Specifications
Supply Voltages : +5V ±5%; +12V ±5%
Supply Currents* : 5V 8.1A max. 12V 0.1A max.
External Power-Supply connector
*Pentium III processor 850 MHz with 1GB SDRAM (no hard drive)

Environmental

	Operating	Storage and Transit
Temp.:	0 to 55°C/32 to 131°F (with 100 CFM minimum airflow)	-40 to +70°C/-40 to +158°F
Humidity:	5% to 95% @ 40°C/104°F non-condensing	5% to 95% @ 40°C/104°F non-condensing

Reliability
MTBF : > 100,000 hours @ 55°C/131°F (MIL- HDBK-217F)
Board serial number in EEPROM
USB, keyboard, mouse voltage protected by self-resetting fuses
2 years limited warranty

Designed to meet or exceed:
Safety : UL 1950; CSA C22.2 No 950; EN 60950; IEC950
EMI/EMC : FCC 47 CFR Part 15/PISPR22, Class B;
CE Mark to EN55022