

MAXI 180SL/100L/80S

User's Guide

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How to use this guide

This manual is written to help you use MAXI 180SL. The manual describes how to arrange various settings on the Pentium CPU board to meet your requirements. It's briefed as follows:

Chapter 1, "Introduction" gives an overview of the product's specifications. It also tells you what are included in the product package.

Chapter 2, "Switches and Connectors" describes the definitions and positions of Switches and Connectors that you may easily configure and set up per your requirement.

Chapter 1

Introduction

The MAXI180SL is the high performance I/O controller complied with the Compact PCI standard. Two major functions are supported by this brand new design—the 10 base T/ 100 base TX Fast Ethernet and the revolutionary Ultra 2 SCSI interface. Both features create the new performance standard in the Compact PCI industry. It also overwhelmingly edges out the old & slow VME I/O solution which the Compact PCI is supposed to take over.

The MAXI180SL uses the latest Intel 82558 single chip Ethernet controller. The 82558 chip is the first in the world that integrates the MAC chip (Media Access Controller) and the PHY chip (the PHYSical layer interface). The Intel Ethernet solutions are becoming the standard in the market, because it's the integral portion in the series of network standards proposed by Intel. The 82558 is a sophisticated PCI bus master with enhanced scatter-gather bus mastering capabilities. It also provides the NWay Auto-Negotiation capability that could detect the speed and duplex (mode of operation) automatically. The 82558's true 32 bit architecture enables it to perform high speed data transfer on the PCI bus using 4 DMA channels. Its sophisticated microcode-based engine enables the 82558 to process high level commands and perform multiple operations without CPU intervention. Its 3 Kbytes Transmit and Receive FIFOs provide large on-chip storage of multiple transmit and receive frames.

The MAXI180SL also uses the SYMBIOS SYM53C895, the PCI-Ultra 2 SCSI controller. The Ultra 2 SCSI protocol is the brand new standard promoted by the whole industry. It doubles the performance of the Ultra Wide SCSI. The Ultra 2 SCSI transfer rate now is 80 MB per second (max.), compared to the max. 40 MB/s of the Ultra Wide SCSI controller. The SYM 53C895 is the first Ultra 2 SCSI controller in the world, and so is the MAXI180SL. Accompanied with the Ultra 2 SCSI is the LVD link technology (Low Voltage Differential). The LVD is built on the 53C895 and make possible the higher data rate (80 MB/s) as well as much longer SCSI cable tolerance up to 12 meters, comparing to the limited 3 meters in the past. The 53C895 is backward compatible with all the SCSI standards. It could auto-detect the devices connected to the subsystem. If the devices are Ultra 2 SCSI complied, the 53C895 runs in the highest mode and the LVD link is enabled. However, if the devices connected are not the Ultra 2 SCSI complied, the 53C895 will fall back to the older mode automatically.

Since both the Intel 82558 and the SYMBIOS SYM 53C895 are the heavy-duty PCI masters. We have to have a PCI bridge to maintain the signal integrity among these masters. The DEC 21152 PCI bridge is selected to make the MAXI180SL the high performance as well as very reliable I/O module. The DEC 21152 could support up to 4 PCI devices, so it' s well under its spec. to support only two PCI masters.

The MAXI180SL is best for the intensive I/O applications. With the Compact PCI package, it could be used as the key module of the specialized server like the communication server, the video server, or any purpose hooked to the stand alone RAID subsystems. With the advanced 100 base TX and the Ultra 2 SCSI, the RAID will fly by the powerful wings.

There are six models out from the MAXI180SL design as follows :

<u>Model</u>	<u>Ultra 2 SCSI</u>	<u>10/ 100 Base T/TX</u>	<u>Panel &</u>
Holder			
MAXI 180SL (STD)	yes	yes	yes
MAXI 180SLK (OEM)	yes	yes	no
MAXI 100L (STD)	no	yes	yes
MAXI 100LK (OEM)	no	yes	no
MAXI 80S (STD)	yes	no	yes
MAX 80SK (OEM)	yes	no	no

1-1 Specifications

1. Specifications for MAXI 180SL

- **System architecture**

High-speed Compact PCI I/O BOARD

Advanced Ultra 2 SCSI protocol, Advanced 10 Base T/100 Base TX Ethernet

Fully complied with Compact PCI V2.0

3U Eurocard formactor

- **The ULTRA 2 SCSI**

SYMBIOS SYM 53C895 advanced SCSI controller

ULTRA 2 SCSI protocol up to 80MB/S transfer rate (max)

LVDlink (Low Voltage Differential) to extend cable length and performance

Cable length extended to 12 meter (vs <1 meter in Ultra wide SCSI mode)

On-CHIP SCSI clock quadrupler to achieve 160MHZ frequency with external 40MHz oscillator.

Backward compatible with Ultra wide SCSI, wide SCSI, SCSI II

Auto switch between operation modes for different kind of devices connected

- **Drivers Support**

DOS/Windows, Windows 95, OS/2, SCO UNIX, UnixWare, NetWare and Windows NT

- **The ETHERNET**

Intel single chip 82558 Ethernet controller

Combined with two Chips: PHY (PHYsical layer) and MAC (Media Access Chip)

Complied with PCI V2.1, IEEE802.3, IEEE 802.3U

True 32 bit PCI Bus master

High-speed data transfer on the PCI BUS using four DMA channels

Full Duplex support, 10 Base T/ 100 Base TX support

NWay, Auto-Negotiation capability

Backward compatible with the former 82557 Ethernet controller based net modules

Drivers support:

DOS/ Windows, NetWare, Windows 95, Windows NT

- **The PCI Bridge**

DEC 21152 PCI to PCI bridge on Board

Support two bus masters on the add on card

- **The connectors**

68pin wide SCSI connector

RJ45 Ethernet jack

- **The LEDS**

LED 1: SCSI active

LED 2: LVD/SE

LED 3: LAN active

LED 4: Link

LED 5: 10/100 M bps

- **The dimensions**

160mm (D) x 100mm (W)

- **The power requirements**

5V @2A (max)

• **The Environments**

Operation: 0°C~60°C

Storage: -20°C~80°C

Humidity: 10%~90% non condensing

2. Specification for MAXI 100L

• **The ETHERNET**

Intel single chip 82558 Ethernet controller

Combine with two Chips: PHY (PHYSical layer) and MAC (Media Access Chip)

Complied with PCI V2.1, IEEE802.3, IEEE 802.3U

True 32 bit PCI Bus master

High-speed data transfer on the PCI BUS using four DMA channels

Full Duplex support, 10 Base T/ 100 Base TX support

NWay, Auto-Negotiation capability.

Backward compatible with the former 82557 Ethernet controller based net

Modules

Drivers support: DOS/ Windows, NetWare, Windows 95, and Windows NT

• **RJ45 JACK**

• **The LEDS**

LED 3: LAN active

LED 4: Link

LED 5: 10/100 M bps

- **The dimensions**

160mm (D) x 100mm (W)

- **The power requirements**

5V @1.0A (max.)

- **The Environments**

Operation : 0°C~60°C

Storage : -20°C~80°C

Humidity : 10%~90% non condensing

3. Specification for MAXI 80S

- **The ULTRA 2 SCSI**

SYMBIOS SYM 53C895 advanced SCSI controller

ULTRA 2 SCSI protocol up to 80MB/S transfer rate (max.)

LVLink (Low Voltage Differential) to extend cable length and performance

Cable length extended to 12 meter (vs. <1 meter in Ultra wide SCSI mode)

On-CHIP SCSI clock quadrupler to achieve 160MHZ frequency with external 40MHZ oscillator

Backward compatible with Ultra wide SCSI, wide SCSI, SCSI II

Auto swith between operation modes for different kind of devices connected

- **Drivers Support**

DOS/Windows, Windows 95, OS/2, SCOUNIX, Unixware, Netware and Windows

NT 68pin wide SCSI connector

- **The LEDS**

LED 1 : SCSI active

LED 2 : LVD/SE

- **The dimensions**

160mm (D) x 100mm (W)

- **The power requirements**

5V @1.0A (max.)

- **The Environments**

Operation : 0°C~60°C

Storage : -20°C~80°C

Humidity : 10%~90% non condensing

1-2 What you'll have from the package

In addition to this manual, the MAXI 180SL package includes the following items

- MAXI 180SL high performance I/O card x 1 (or any model in the family.)
- SCSI driver diskette x 1 (For SCSI models)
- LAN driver diskette x 1 (For LAN models)
- Aluminum panel + Holder (only for standard model)

If any of these items is missed or damaged, please contact your vendor for what you want.

Chapter 2

Switches and Connectors

This chapter gives the definitions and shows where to locate the positions of switches and connectors.

2-1 Switches

Switches on the I/O card are used to select options for different components used. The switch-on or off is to accommodate the variations of the Boot ROM's. (Flash) There are two type of the flash ROMS with 5V and 12V VPP respectively. Normally, we delete the flash ROM for LAN. However, the option is reserved.

(See figure 2-1 for switch position)

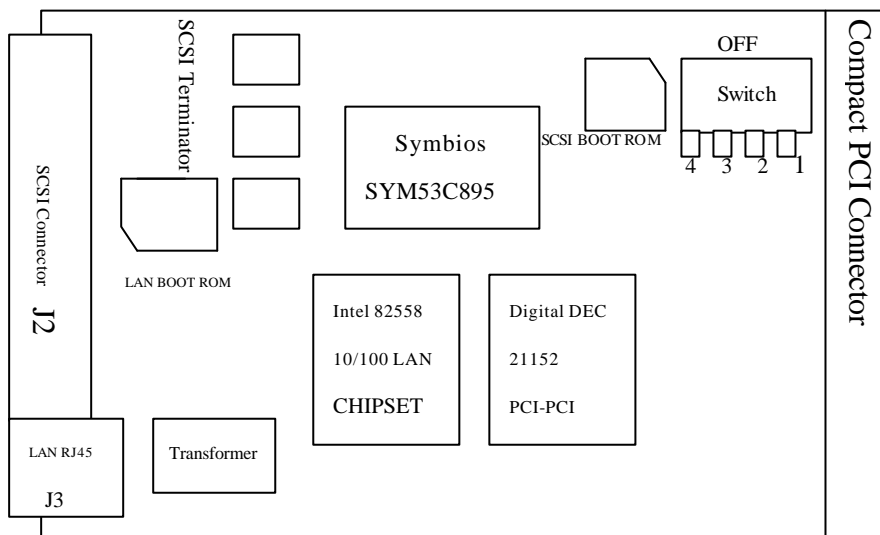


Figure 2-1 Switches Position

Switch Setting

For +12V flash ROM type

	Switch 1	Switch 2	Switch 3	Switch 4
SCSI	ON	OFF	OFF	OFF
LAN	OFF	ON	OFF	OFF

For 5v flash ROM type

	Switch 1	Switch 2	Switch 3	Switch 4
SCSI	OFF	OFF	OFF	OFF
LAN	OFF	OFF	OFF	OFF

2-2 Connectors

Connectors on the CPU Board provide interfaces to other devices.

(See figure 2-2 for connector position)

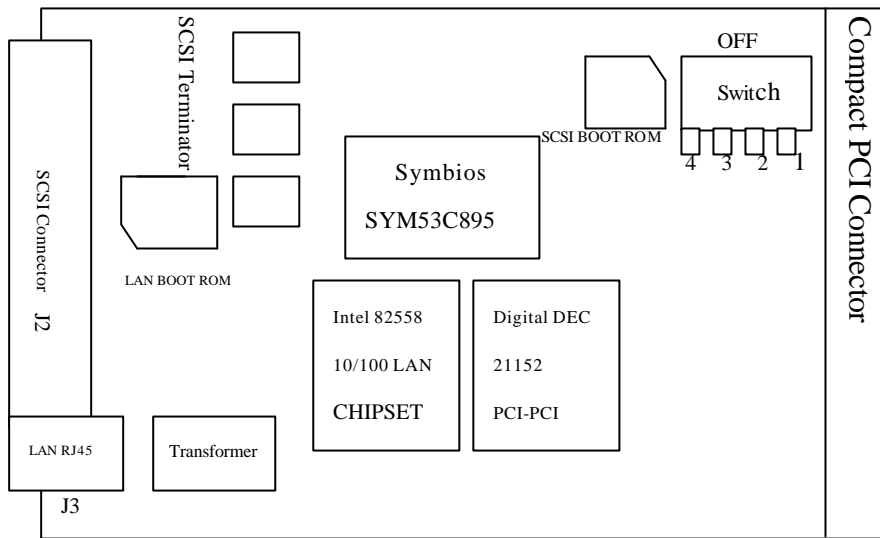


Figure 2-2 Connector Position

Connector	Function	Remark
J2	SCSI connector	
J3	LAN RJ45	

Pin definitions of connectors

- J2: SCSI connector

PIN No.	Description	PIN No.	Description
1	+SD12	35	-SD12
2	+SD13	36	-SD13
3	+SD14	37	-SD14
4	+SD15	38	-SD15
5	+SDP1	39	-SDP1
6	+SD0	40	-SD0
7	+SD1	41	-SD1
8	+SD2	42	-SD2
9	+SD3	43	-SD3
10	+SD4	44	-SD4
11	+SD5	45	-SD5
12	+SD6	46	-SD6
13	+SD7	47	-SD7
14	+SDP0	48	-SDP0
15	GND	49	GND
16	DIFFSEN	50	Internal Sense
17	TPW	51	TPW
18	TPW	52	TPW
19	REV	53	REV
20	GND	54	GND
21	+SATN	55	-SATN
22	GND	56	GND
23	+SBSY	57	-SBSY
24	+SACK	58	-SACK
25	+SRST	59	-SRST
26	+SMMSG	60	-SMMSG
27	+SSEL	61	-SSEL
28	+SCD	62	-SCD
29	+SREG	63	-SREQ
30	+SI0	64	-SI0
31	+SD8	65	-SD8
32	+SD9	66	-SD9
33	+SD10	67	-SD10
34	+SD11	68	-SD11

- J3: LAN RJ45

PIN No.	Description	PIN No.	Description
1	TX+	2	TX-
3	RX+	4	GND
5	GND	6	RX-
7	GND	8	GND