

## **SNMP-1000**

Intelligent SNMP/HTTP  
remote system manager

## **User's Manual**

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# **A Message to the Customer**

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Each and every Advantech product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new Advantech equipment is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name Advantech has come to be known.

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2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return material authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

# Initial Inspection

Before you begin installing your card, please make sure materials listed in the packing list have been shipped:

## **SNMP-1000-00A1:**

One SNMP/HTTP system manager kernel board

One SNMP-1000 startup manual

One CD contains utility program, SNMP MIB file and

User's manual (in pdf format)

## **SNMP-1000-E1A1**

One SNMP/HTTP system manager kernel board mounted on a PCI/ISA carrier board

One 6-pin to 8-pin cable for CPU card connection

One 2-pin cable for watchdog timer detection

One spare bracket for use on ISA slot

One SNMP-1000 startup manual

One CD contains utility program, SNMP MIB file and

User's manual (in pdf format)

## **SNMP-1000-E2A1**

One SNMP/HTTP system manager kernel board mounted on a carrier board for chassis

One 6-pin to 8-pin cable for CPU card connection

One 2-pin cable for watchdog timer detection

One 9-pin to 12-pin serial port cable for COM2 of CPU card

One RJ-45 cable with bracket for external LAN connection

One SNMP-1000 startup manual

One CD contains utility program, SNMP MIB file and user's manual (in pdf format)

## **SNMP-1000-LCD**

One message display module

One 8-pin cable for SNMP-1000 connection

If any of those items are missing or damaged, contact your distributor or sales representative immediately.

We have carefully inspected the product mechanically and electrically before shipment. It should be free of marks and scratches and in perfect working order upon receipt.

As you unpack the product, check it for signs of shipping damage. (For example, damaged box, scratches, dents, etc.) If it is damaged or it fails to meet the specifications, notify our service department or your local sales representative immediately. Also notify the carrier. Retain the shipping carton and packing material for inspection by the carrier. After inspection, we will make arrangements to repair or replace the unit.

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CHAPTER

**1**

## **Introduction**

# Chapter 1 Introduction

## 1.1 Introduction

---

### **Introduction**

The SNMP-1000 is a platform independent server and PC-system management controller that can detect the system operating conditions and notify the user to take necessary action to avert system failure. The SNMP-1000 is web-enabled and supports multiple communication protocols. It provides a simple way to manage a number of remote servers, and also adds a dimension of reliability to critical applications such as computer telephony.

### **Powerful yet Easy to Use**

The SNMP-1000 can detect a wide variety of internal system conditions, including temperature, voltage, fan rotation, power supply or CPU operations such as watchdog timer output. Through its I2C interface it can monitor CPU temperature and voltages of Advantech's full-sized CPU cards. Depending on the alarm severity or user setup, it can generate several different alarm outputs, including SNMP trap, e-mail, pager message, acoustic signal, system reset, or digital signal output. Through the easy to use web-based user interface users can set the alarm criteria and select alarm outputs of each sense input independently to meet user requirements. The board's battery backup enables the SNMP-1000 to perform its alarm function even during total system power failure.

### **Web-enabled, No Driver Needed**

The on-board 10/100 Mbps fast Ethernet adapter enables the SNMP-1000 to be connected to your existing network. It supports multiple network protocols such as TCP/IP, SNMP, HTTP and Telnet, you can manage your systems simply using a web browser. Since it works standalone, no software driver is needed, thus eliminating the compatibility issues with different operating systems.

### **On-line Upgrade and Batch Setup**

You can upgrade the firmware on-line by using the setup utility. There is no need to go to remote site, disassemble the chassis to collect each SNMP-1000 module for firmware upgrade. The setup utility also supports "batch setup" function, which allows you to save a configuration and duplicate it to other modules. This function saves your time when you setup a number of SNMP-1000 modules.

## Flexible Modular Hardware Design

The modular design makes the SNMP-1000 hardware to be easy for customization to fit into any application. The ultra compact kernel module is only 40.5 mm wide and 93 mm long. It can be mounted on standard or customized carrier boards to meet different needs of I/O extension. It can also be easily integrated into customer's system due to its compact size.

## 1.2 Specifications

---

### 1.2.1 Hardware Specification

- CPU: 80188 compatible 20 MHz
- On-board 512KB Flash ROM and 512KB SRAM
- On-board 10/100 Mbps Ethernet adapter
- 1 RS-232 serial port up to 9600 baud rate
- 1 SM bus interface for PC system healthy status monitoring
- 1 SM bus interface for up to 8 external temperature sensors
- 9 fan tachometer inputs (7 for SNMP-1000-E2A1)
- 1 on-board temperature sensor
- 1 LCM message display interface
- Detect time-out signal of system watchdog timer
- 4 power good signals (1 for SNMP-1000-E2A1)
- 8 digital inputs (SNMP-1000-E1A1 only)
- 4 digital outputs (3 for SNMP-1000-E2A1)
- Buzzer support

### 1.2.2 Dimension

- **Kernel module:** 40.5 mm X 93 mm
- **PCI/ISA carrier module:** 175 mm X 107 mm
- **Carrier board for chassis:** 55 X 115 mm

### 1.2.3 Sensor Input Specification

#### Voltage Inputs:

+5VDC, -5VDC, 5VSB, +3.3VDC, +12VDC, -12VDC

#### Temperature Sensors:

LM75 digital temperature sensor, I2C interface, -30 ~ +125°C (-22 ~ +257°F)

**Fan Speed Monitor:**

Up to 9 fans, 700 ~ 10000 RPM

Power Good / Digital Input: .

High: > 2.4VDC

Low: < 0.8VDC

**1.2.4 Firmware Specification****System Status Monitoring and Management**

- Real-time healthy status monitoring: Provides real-time status display in HTTP/Java graphical format
- History log graphic display and data down load
- Alarm event log

**Alarm Notification**

- E-mail: Can set up to 4 addresses to receive e-mails
- Alarm message display on the optional LCD display module
- SNMP trap: Notify up to 8 SNMP administrators
- Pager notification: Dial out through external modem to send message to up to 8 pagers.
- Audible alarm sound

**Supported Protocols**

TCP, UDP, IP, ICMP, DHCP, BOOTP, ARP, SNMP, HTTP, Telnet

**Management Function**

- Web-based remote configure, control and monitor
- Remote reset, power down and power up.
- Remote digital output signal control
- Remote message display control
- Firmware upgrade from serial port and Ethernet port
- Modem dial in (console mode only)

**1.2.5 LCD Message Display Module with Keys**

- LCD module: 2 rows, 16 characters, with backlight
- Dimension: 147 mm (W) X 42 mm (H) X 158 mm (L), fits into a 5.25" drive bay and can carry a 3.5" HDD
- 5 Keys: Up, down, enter, escape, alarm sound off

**Optional backup battery:**

- Charge time: 24 hr
- Battery type: Ni-MH, 3.6 V
- Battery capacity: 1500 mA-H (full charged, for 15~20 minutes operation, depends on the output used)
- Battery life: 6 years@20°C, 80% capacity after 1000 cycles of charge and discharge

**Power Consumption**

- 5V @ 550 mA

**1.2.6 Environmental Specifications**

**Storage temperature:** -20 ~ 70°C (4°F ~ 158°F)

**Operating temperature:** 0 ~ 60°C (32°F ~ 140°F)

**Relative humidity:** 5 ~ 95% RH non-condensing





CHAPTER  
**2**

**Hardware Installation**

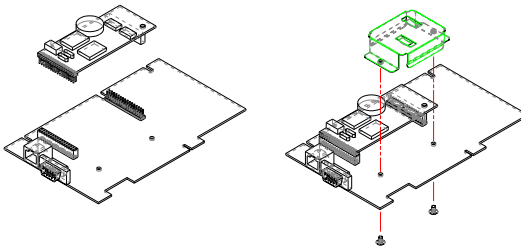
# Chapter 2 Hardware Installation

## 2.1 Kernel Module Installation

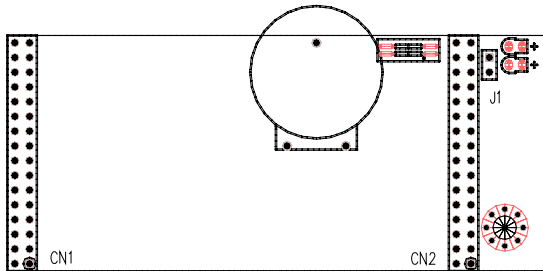
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The SNMP-1000 modular design eases the I/O connection. The kernel module is to be mounted on an I/O extension/carrier module. There are several available extension modules designed for specific application needs. If your extension module is not identical as the one depicted in this section, please refer to the user's note of your extension module for the detail.

The kernel module has two 32-pin connectors, named as CN1 and CN2. The extension module has two 32-pin connectors, named as CN11 and CN12. CN1 of kernel module is to be mounted on CN 11 of extension module, and CN2 of kernel module is to be mounted on CN12 of extension module. After mounting the kernel module, secure it to the extension module with stud and screws



***Figure 2.1: Installing the kernel module and battery to the extension module***



**Figure 2.2: Location of the connectors on the kernel module**

J1: Restores the username and password to default. It is used when users forget their username and password. It should be left open under normal operation.

Operation procedure:

1. Fully turn SNMP-1000 off, remove the backup battery.
2. Short J1 by a jumper
3. Power up SNMP-1000 and wait until it is ready to work.
4. Power it off.
5. Remove J1. The username and password is restored to "admin" and "advantech".

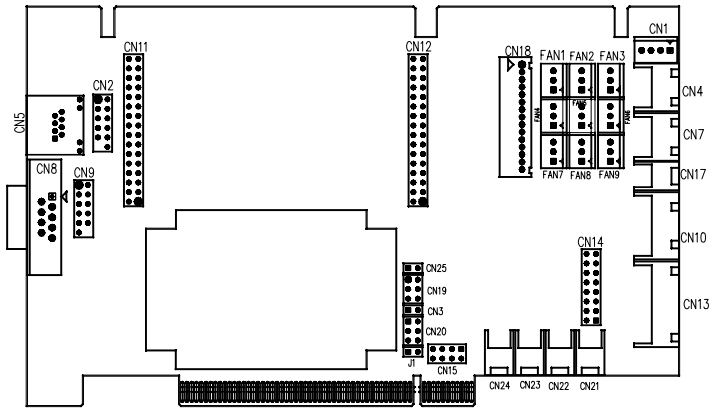
CN1 and CN2: Sensor and I/O interface (Please refer to Appendix B for the pin assignments)

## **2.2 Connecting sensors and I/O ports**

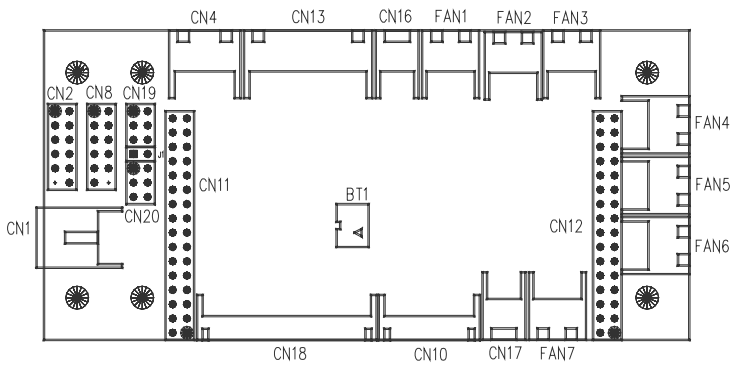
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This section illustrates how to connect sensors and I/O ports using PCI/ISA full-function extension board as an example. Your extension board may not have all the I/O functions.

The PCI/ISA extension module is designed to have an ISA edge and a PCI edge. It can be inserted to an ISA bus slot or a PCI bus slot to detect the bus voltages. However, the SNMP-1000 does not communicate with the system through the ISA or PCI bus, therefore no driver is required.



**Figure 2.3: Connector locations of PCI/ISA I/O extension board**



**Figure 2.4: Connector locations of carrier board for IPC chassis**

### 2.2.1 External Buzzer (J1)

This connector connects to an external buzzer.

### 2.2.2 External Power Connector (CN1)

This connector is used to provide auxiliary power input to SNMP-1000. This connector is only needed when the extension board is not plugged in the PCI or ISA slot.




### 2.2.3 10/100-BaseT LAN Connector (CN2 & CN5)






CN5 is a standard RJ-45 connector for Ethernet connection. A box header (CN2) is also available for internal connection.

The chassis carrier board comes with a special cable (P/N 1703120900). This cable has a box header at one end and an RJ-45 at the other end. An adaptor bracket allows users to fix the RJ-45 at chassis by using an existing DB-9 COM port opening.

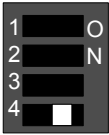
### 2.2.4 Temperature Sensor Connector (CN4 & CN7)

These connectors interface with LM75 digital temperature sensors through SM bus. Up to 9 temperatures can be monitored by SNMP-1000. One sensor located on the kernel module is designated as Temp. 0, and up to 8 external sensors can be connected. The external temperature sensor and cable are available from Advantech. Sensors can be connected in series in any order to either connectors, but each sensor has to be set to a unique ID ranging 1 ~ 8 by setting the DIP switch located at the sensor board.

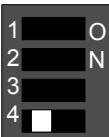
Sensor ID	1-3 of DIP switch	
Temp. 1		Off Off Off
Temp. 2		Off Off On
Temp. 3		Off On Off

Temp. 4		Off On On
Temp. 5		On Off Off
Temp. 6		On Off On
Temp. 7		On On Off
Temp. 8		On On On

The last digit (4) of this DIP switch is used to enable or disable this temperature sensor.



Enable



Disable

### **2.2.5 RS-232 Serial Port (CN8 & CN9)**

The serial port can be used as a console port or connected to an external modem for phone line connection. CN8 is a standard DB-9 connector for external wiring; CN9 is a box header for internal wiring.

*Notice: A special "null modem" cable is required to connect its serial port to a PC's serial port. Please make sure that the cable has reversed Tx & Rx signals at one end, and only pin 2, 3, & 5 are connected. This cable is available from Advantech. (Part number: 1700091801). If other pins are connected, the SNMP-1000 will detect your RS-232 connection as a modem so it will stop immediately.*

### **2.2.6 LCM Message Display Interface (CN10)**

An optional LCM message display module is available for message display. The input key on the LCM module can be used for on-site setup. CN10 is the interface to the LCM module.

### **2.2.7 Kernel Module Interface (CN11 & CN12)**

CN11 & CN12 are used to piggyback the kernel module.

### **2.2.8 Backplane Voltage Connector (CN13)**

This connector is used in detecting the voltages on the backplane. An 8-pin connector on Advantech's backplane can be cabled to CN13 directly to simplify the wiring.

### **2.2.9 Digital Input (CN14)**

Up to 8 TTL-level digital signals can be monitored by SNMP-1000. You can use these digital inputs to detect external devices or other healthy status such as chassis intrusion.

This connector is not available on the carrier board for chassis.

### **2.2.10 Digital Output (CN15)**

Four digital output signals can be triggered by any of the alarm event independently. They can be used to control external devices to recover the system health or notify users about the alarm. This connector is not available on the carrier board for chassis.

### **2.2.11 Alarm Reset Connector (CN17)**

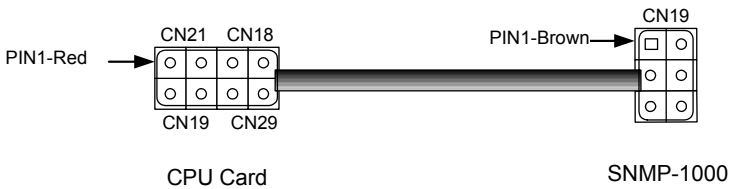
This connector is used to reset the alarm sound when an alarm occurs. It can be connected to an auto-recovery push button (momentary on while being pushed).

### 2.2.12 LED Connector (CN18)

System status can be shown through LED indicators. CN18 is connected to a LED indicator board. Please refer to Appendix B for the pin assignments.

### 2.2.13 CPU card Interface (CN19)

This connector monitors the CPU card health status. Use the 8-pin to 6-pin cable enclosed in the SNMP-1000 package to connect to CPU card.



**Figure 2.5: Connect SNMP-1000 to a CPU card**

**Note:** Only Advantech's new full-sized CPU cards can be monitored, including PCA-6002, PCA-6003, PCA-6004, PCA-6005, PCA-6181, PCA-6183, PCA-6184, PCA-6185, PCA-6186, PCA-6277 (rev. B), and newer. The Following CPU cards cannot be monitored: PCA-6155V, PCA-6168, PCA-6175, PCA-6176, PCA-6178, PCA-6179, PCA-6180, PCA-6275, PCA-6276, PCA-6277 (rev. A), PCA-6278, PCA-6359, and earlier.

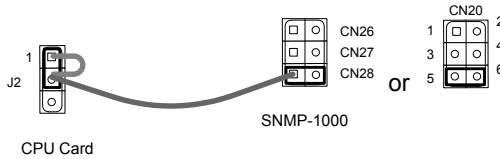
### 2.2.14 Chassis and Watchdog Timer connectors (CN20, CN26, CN27, CN28)

CN26 (or pin 1 and pin 2 of CN20) connects to chassis ATX power on/off button.

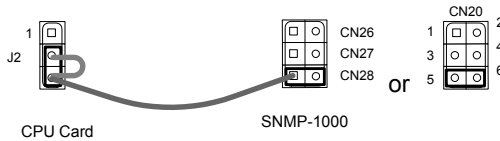
CN27 (or pin 3, and pin 4 of CN20) connects to chassis reset button.



CN28 (or pin 5 and pin 6 of CN20) connects to the watchdog timer output pins of CPU card (J2). The SNMP-1000 can detect the output signal of the watchdog timer when there is a time-out signal. A cable (part number 1703020558) is shipped with the SNMP-1000 to connect to the Watchdog timer output. Connect CN28 to pin 1 & pin 2 of J2 to generate an interrupt to the CPU card when there is a time-out, or connect to Pin.2 & pin 3 of J2 to reset the CPU card.



**Figure 2.6: Connect the watchdog timer signal to "interrupt"**



**Figure 2.7: Connect the watchdog timer signal to "reset"**

**2.2.15 Power Fail Signal Input (CN16; CN21 ~ CN24)**

Up to four power fail signals can be detected. The SNMP-1000 can detect the power good or power fail signal if the power supply unit provides this output signal to be detected.

**2.2.16 Fan Connectors (FAN1 ~ FAN9)**

These connectors provide +12 V power to fans and receive tachometer signals from fans. Notice that the SNMP-1000 can only detect fans with tachometer output. This kind of fan generates two pulses per revolution.

## **2.2.17 External Backup Battery (BT1)**

SNMP-1000 supports an external backup battery to allow the alarm notification under a total system power failure.

CHAPTER  
**3**

**Getting Started**

# Chapter 3 Getting Started

## 3.1 Configuring the SNMP-1000

---

Before using your SNMP-1000 SNMP/HTTP intelligent system manager, you will need to configure it. Configuration can be done through a PC serial port with terminal emulator software such as Hyperterminal of Windows 98/NT. You can also configure it from the Ethernet port by using Telnet or using a browser such as Netscape Communicator or Microsoft Internet Explorer. Due to security reasons, some parameters can only be set through the serial port.

A setup software utility can be found in the utility CD-ROM shipped with the SNMP-1000. It will help you to setup a number for the SNMP-1000 system managers with same configuration. You can save current configuration to a file and copy it to other modules.

Before you can configure your SNMP-1000 module, you need to first install your SNMP-1000 and power it up. Please refer to Chapter 2 for installation instruction. You can connect it to a network through its LAN port, or connect its serial port to a PC's serial port. Due to security reason, the administrator name and password can be changed only with direct serial port connection to a PC.

*Note: A special "null modem" cable is required to connect its serial port to a PC's serial port. Please make sure that the cable has reversed Tx & Rx signals at one end, and only pin 2, 3, & 5 are connected. This cable is available from Advantech. (Part number: 1700091801). If other pins are connected, the SNMP-1000 will detect your RS-232 connection as a modem so it will stop immediately.*

When all the cables are well connected, you can power up the SNMP-1000. A green LED on the kernel module indicates that 5V power is supplied to SNMP-1000. Then it starts a self-testing procedure. It takes around 5 seconds, then it is ready to work.

## 3.2 Configuration through the serial port

---

Take the following Hyperterminal of Windows (95, 98, Me, NT, 2000 or XP) as an example.

1. Start Hyperterminal by clicking on "Accessories" program group.
2. Enter a name and choose an icon for the connection.
3. In the "Connect using" box, select "Direct to COMx". Here x is the number of COM port you are using to connect to the SNMP-1000.
4. Set the serial port of your PC to be 9600 bps, 8 data bits, no parity, 1 stop bit with no flow control.
5. Press "Enter" key of your PC then the SNMP-1000 will prompt you for entering administrator user name and password. The default administrator user name is "advantech" and password is "admin".

*Note: Access through Telnet or serial port is permitted only with the "Admin User Name" and "Admin User Password" set in Control Group.*

```
+-----+
|           [ SNMP Agent Configuration Utility Main Menu ]           |
+-----+

Enter User Name: advantech

Enter Password: *****
```

After entering password, you can choose one of following items:

```
+-----+
|           [ SNMP Agent Configuration Utility Main Menu ]           |
+-----+
1. Agent Configuration
2. Remote Control
3. Restart Agent
4. Reset Configuration To Default
5. Access Agent Command
0. Exit

Please Enter Your Choice => 1
```

### 3.2.1 Agent Configuration

Select "1" to enter the Agent Configuration function.

```
-----
|                               [ Agent Configuration Menu ]                               |
-----
  1. Agent Group
  2. Control Group
  3. Parameter Group
  4. Access Control Table
  5. Trap Receiver Table
  6. Email Notification
  0. Return to previous menu

Please Enter Your Choice => 1
```

#### 3.2.1.1 Agent group:

The following items can be set under this command:

- **SNMP Agent Model Name:** The model name of the SNMP controller. Default value is SNMP-1000. It is advisable not to change the default model name.
- **IP Address:** The IP address of the SNMP-1000.
- **Gateway Address:** The network default gateway address.
- **Network Mask:** The sub-net mask setting
- **SNMP Agent Date:** The internal date of SNMP-1000. Format: mm/dd/yyyy
- **SNMP Agent Time:** The internal time of SNMP-1000. Format: hh:mm:ss

Enter the number you desire to change and follow the instruction to enter the changed value

```
+-----+
| [ Agent Group Menu ] |
+-----+
SNMP Agent F/W Version : v0.17
Ethernet address       : 00 E0 D8 F1 00 07
1. SNMP Agent Model Name : SNMP-1000
2. Ip Address          : 172.17.0.7
3. Gateway Address     : 0.0.0.0
4. Network Mask        : 255.255.0.0
5. SNMP Agent Date     : 11/28/2001
6. SNMP Agent Time     : 13:37:21
0. Return to previous menu

Please Enter Your Choice => 1
Enter SNMP Agent Model Name : [SNMP-1000] SNMP-1000
```

### 3.2.1.2 Control Group:

The following items can be set under this command:

- Admin User Name: The user name of SNMP-1000 administrator. Only the administrator is allowed to enter the console mode. Default user name is "advantech".
- Admin User Password: The administrator password. With this password a user is allowed to read and write to SNMP-1000. Default password is "admin".
- Community Read-Only: A general password for read-only access. Default read only password is "public".
- BOOTP/DHCP Control: Enables/disables the BOOTP/DHCP protocol.
- Telnet Control: Enables/Disables the Telnet protocol.
- TFTP Upgrade Control: Enables/disables the TFTP protocol for firmware upgrade through the local network

- HTTP Security Control: Enables/disables the HTTP login password request.

```

-----
|                               [ Control Group Menu ]                               |
-----
1. Admin User Name      : advantech
2. Admin User Password : *
3. Community Read-Only : public
4. BOOTP/DHCP Control  : Disable
5. Telnet Control       : Enable
6. TFTP Upgrade Control : Disable
7. HTTP Security Control : Enable
0. Return to previous menu

Please Enter Your Choice ->

```

### 3.2.1.3 Parameter Group:

The following items can be set under this command:

```

-----
|                               [ Parameter Group Menu ]                               |
-----
1. sysDescription :
2. sysContact     :
3. sysName        : Advantech
4. sysLocation    : TPE01
0. Return to previous menu

Please Enter Your Choice -> 1
Enter System Description : []

```

- sysDescription: A description to this system. This is an alphanumeric string up to 31 bytes. Default is empty.
- sysContact: The contact information of the entity that manages the system. This is an alphanumeric string up to 15 bytes. Default is empty.
- sysName: The name of this system. This is an alphanumeric string up to 15 bytes. Default name is "Advantech".
- sysLocation: The location of this system. This is an alphanumeric string up to 15 bytes. Default is empty.

### 3.2.1.4 Access Control Table

This table allows you to set restrictions to some IP addresses to access the SNMP-1000. You can add IP addresses and set an access control. Available choices are: NotAccess, Read Only, or Read/Write. A workstation will not be able to display any information when its IP address is set as "NotAccess".



Press "1" to modify a line in the table. Press "2" to delete data on a line. Note this table is used for the access using SNMP and HTTP. Access through Telnet or serial port is permitted only with the "Admin User Name" and "Admin User Password" in Control Group.

```

+-----+
| IP Address      Community String      Access      |
+-----+
[1] 0.0.0.0       public                NotAccess
[2] 0.0.0.0       public                NotAccess
[3] 0.0.0.0       public                NotAccess
[4] 0.0.0.0       public                NotAccess
[5] 0.0.0.0       public                NotAccess
[6] 0.0.0.0       public                NotAccess
[7] 0.0.0.0       public                NotAccess
[8] 0.0.0.0       public                NotAccess

COMMANDS -
1. Modify - Modify an entry of table
2. Reset - Reset an entry to default from table
0. Return to previous menu

Please Enter Your Choice => 1
Entry Number : 1
Enter IP address : [0.0.0.0] 192.168.11.219
Enter Community String : [public] admin
Select Access Type - [NotAccess]
1. Not Access
2. Read Only
3. Read/Write

Please Enter Your Choice => 3

```

### 3.2.1.5 Trap Receiver Table

The SNMP-1000 can be managed by an SNMP compatible software from a remote server connected to the network. The IP addresses of SNMP trap receivers can be added in this list if SNMP compatible management software is available at these addresses.

Press "1" to modify a line in the table. Press "2" to delete data on a line.

The "Severity Level" allow you to specify an alarm level. Trap will not be sent if the alarm severity is lower than specified level.

```

+-----+
| IP Address      Community String  NMS-Severity  |
+-----+
[1] 0.0.0.0      public          Disable
[2] 0.0.0.0      public          Disable
[3] 0.0.0.0      public          Disable
[4] 0.0.0.0      public          Disable
[5] 0.0.0.0      public          Disable
[6] 0.0.0.0      public          Disable
[7] 0.0.0.0      public          Disable
[8] 0.0.0.0      public          Disable

COMMANDS -
1. Modify - Modify an entry of table
2. Reset - Reset an entry to default from table
0. Return to previous menu

Please Enter Your Choice -> 1
Entry Number : 1
Enter IP address : [0.0.0.0] 192.168.11.219
Enter Community String : [public] admin
Select Severity Level : [Disable]
1. Disable
2. Critical
3. Major
4. Minor

Please Enter Your Choice -> 2

```

### 3.2.1.6 E-mail Notification Menu

The SNMP-1000 can send e-mail to specified mail addresses daily at a fixed time or upon an alarm.

```

+-----+
| [ Email Notification Menu ] |
+-----+
1. DNS Address      :
2. Mail Server      :
3. Mail Account     :
4. Password         :
5. Mail Status Daily at : 00:00
6. Mail Receivers Table
7. Test Email Configuration
0. Return to previous menu

Please Enter Your Choice => 1
Enter DNS Address : [ ] 168.95.192.1

```

Under this menu you can set the following items:

- DNS Address: The IP address of the network domain name server in dotted format.

- Mail Server: The IP address of the mail server in dotted format.

```
+-----+
| [ Email Notification Menu ] |
+-----+
1. DNS Address      : 168.95.192.1
2. Mail Server     :
3. Mail Account    :
4. Password        :
5. Mail Status Daily at : 00:00
6. Mail Receivers Table
7. Test Email Configuration
0. Return to previous menu

Please Enter Your Choice => 2
Enter Mail Server : [ ] pop.mail.yahoo.com.tw
```

- Mail Account: The account name for the SNMP-1000 to log into the mail server.

```
+-----+
| [ Email Notification Menu ] |
+-----+
1. DNS Address      : 168.95.192.1
2. Mail Server     : pop.mail.yahoo.com.tw
3. Mail Account    :
4. Password        :
5. Mail Status Daily at : 00:00
6. Mail Receivers Table
7. Test Email Configuration
0. Return to previous menu

Please Enter Your Choice => 3
Enter Mail Account : [ ] guest
```

- Mail Status Daily at: By pressing 5, users can specify the time for the SNMP-1000 to send out daily log in e-mail to the specified accounts.

- Mail Receivers Table: Press 6, users can set the e-mail addresses under this entry.

```

+-----+
| Mail Receiver          Mail Condition  Alarm Level  Status      |
+-----+-----+-----+-----+
[1]                      Alarm          Major        Disable
[2]                      Alarm          Major        Disable
[3]                      Alarm          Major        Disable
[4]                      Alarm          Major        Disable

COMMANDS -
1. Modify - Modify a table entry
2. Reset - Reset a table entry to default
0. Return to previous menu

Please Enter Your Choice => 1
Entry Number : 1
Enter Mail Account : [ ] support@advantech.com
Select Mail Condition - [Alarm]
1. Alarm
2. Daily Logs
3. Alarm and Log

Please Enter Your Choice => 1
Select Alarm Level - [Major]
1. Critical
2. Major
3. Minor

Please Enter Your Choice => 2
Select Status - [Disable]
1. Enable
2. Disable

Please Enter Your Choice => 1

```

Mail condition: The condition to send e-mail. Choices are:

- Alarm: Send e-mail when there is an alarm.
- Daily Logs: Send daily log at specified time.
- Alarm and Log: Send both alarm notification and daily log.
- Alarm Level: The severity to send alarm notification. This item is useful when the Mail Condition is set as "Alarm" or "Alarm and Log"
- Status: The status of this mail address. You can set it as Disable when this address is temporarily not in use.

### 3.3 Communication through Ethernet

---

To communicate with the SNMP-1000 through Ethernet, you need a computer with an Ethernet and a TCP/IP network installed.

You need to know the IP address of the SNMP-1000 before you can communicate with it through the Ethernet.

You have four ways to know current IP address:

A. The default IP address is 172.20.x.x, where x.x comes from last four digits of the Ethernet MAC address. The MAC address is labeled on the kernel module. For example, if the MAC address is 00 E0 d8 03 15 36 (hexadecimal), the IP address is then 172.20.21.54.

B. You can read the IP address in the console mode under "Agent Configuration" as described in 3.2.1.1 and chapter 5.

C. You can read the IP address through the LCM display if your SNMP-1000 is connected to the LCM display module.

D. You can find out all SNMP-1000s connected in the same network by using the setup utility.

### **3.3.1 Configuration using Telnet**

Configuration using Telnet is basically same as using serial port connection. First make sure your computer has a TCP/IP network and a web browser installed. In the address line type in "xxx.xxx.xxx.xxx", here xxx.xxx.xxx.xxx is the IP address of the SNMP-1000. Then the SNMP-1000 will prompt you for entering user name and password, same as described in section 3.2.

### **3.3.2 Configuration using a Web Browser**

Using a web browser is the easiest way to configure the SNMP-1000. Type in the URL "http://xxx.xxx.xxx.xxx", here xxx.xxx.xxx.xxx is the IP address of the SNMP-1000. Then the SNMP-1000 will prompt you for entering user name and password.

### **3.3.3 Remote access through a phone line**

SNMP-1000's command mode can be accessed remotely through a phone line. The SNMP-1000 has to be connected to a phone line through a modem. And your PC has to be connected to a phone line through a modem, too.

You can use HyperTerminal of Windows system or other dialing software tools. Please refer to the user's manual of your dialing program for the setting details.

### **3.3.4 Setup using the LCD message display module**

The LCD message display module is equipped with 5 buttons. It can be used for on-site service without a PC with network connection.

The up-arrow key ↑ and the down-arrow key ↓ on the LCD display panel allow users to scroll up and down in the configuration setup menu. The ↵ icon represents enter or OK and the ESC icon stands for escape or cancel.

When users make changes of the settings and/or would like to go to the lower level of the menu, they need to press ENTER to confirm it. If users press ESC, the system won't save any changes made and will go back to a higher level of the menu. When an alarm is detected and the buzzer release warning sounds, users may press the alarm reset button



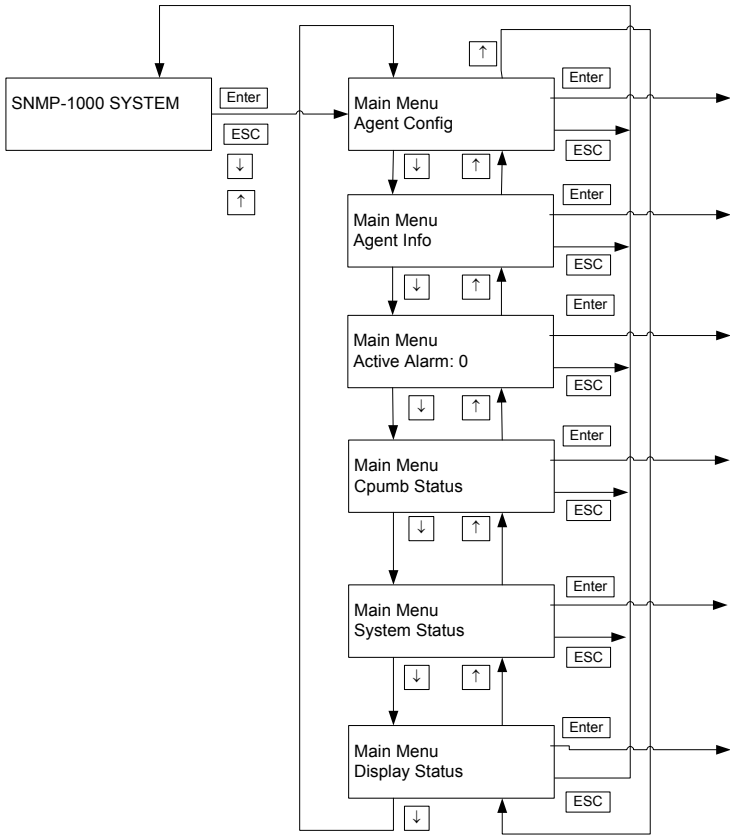
to stop the audible alarm.

**Table 1: Function Keys of LCD Display Module**

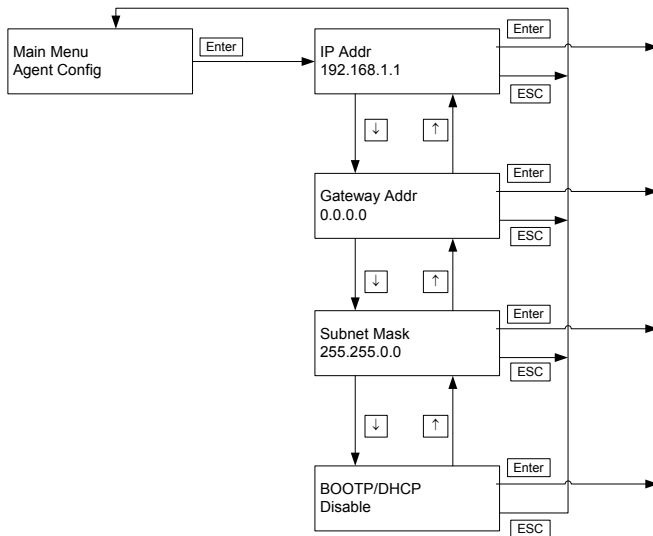
Keys	Function
▲	Scroll Up
▼	Scroll Down
↵	Enter
ESC	Escape
🔊X	Alarm Reset

The next pages show the flow chart of each function. Please notice that not all settings are available from the LCD module. Some parameters can be set only under command mode or through the web page.

### 3.3.5 Main Menu

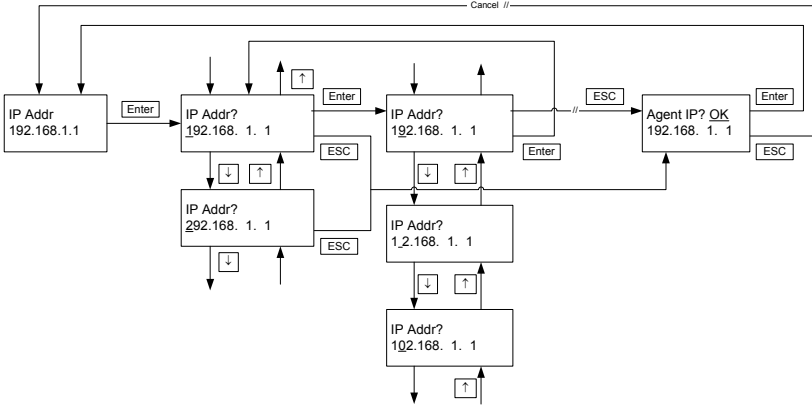


### 3.3.6 Agent configuration

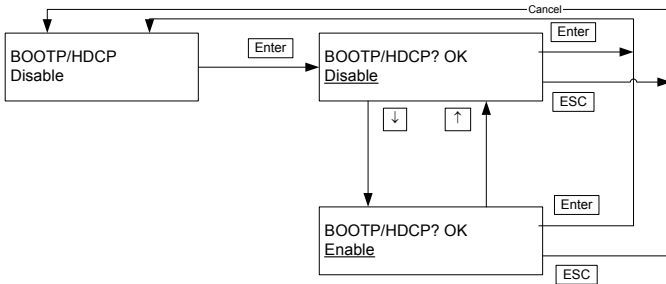




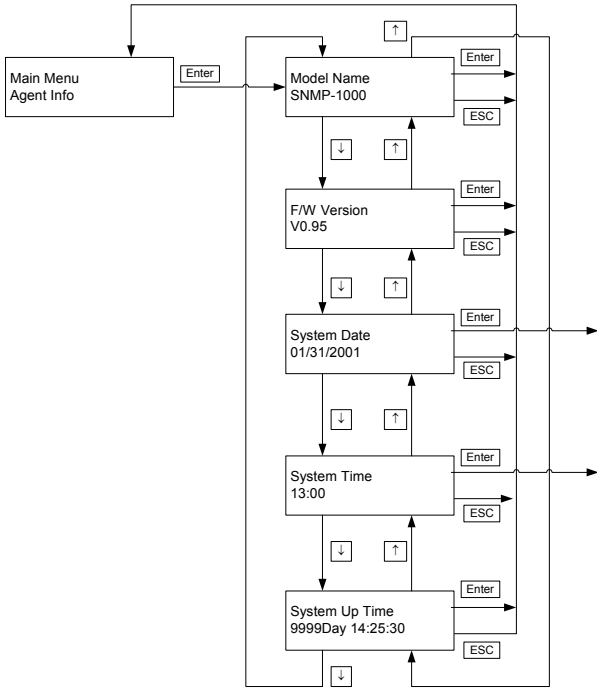
### 3.3.7 Setting the IP address



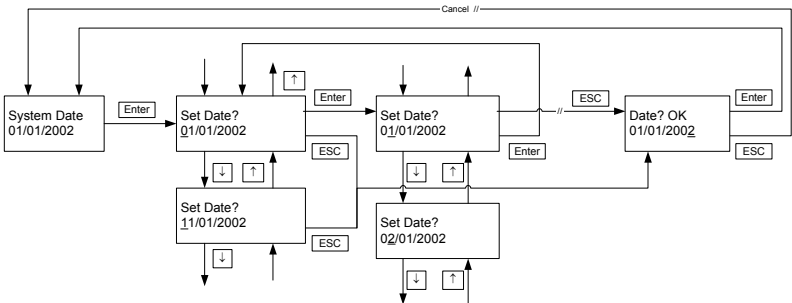
### 3.3.8 Enable/Disable BOOTP/HDPC function



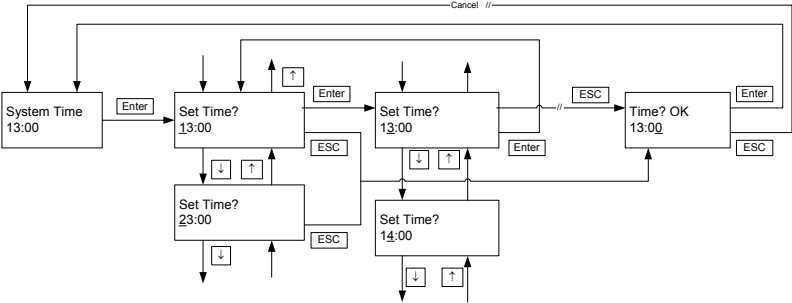
### 3.3.9 Agent Information



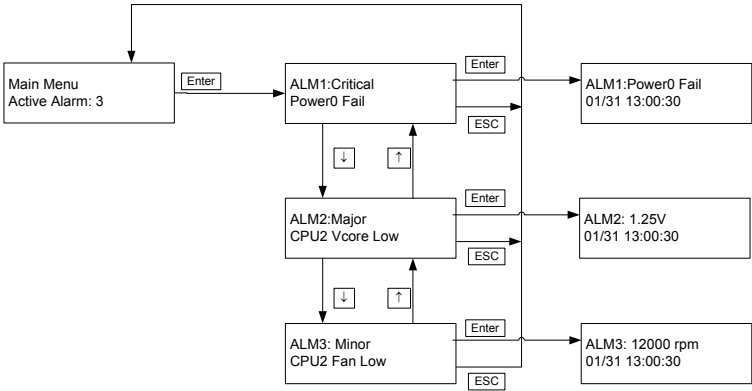
### 3.3.10 Set System Date



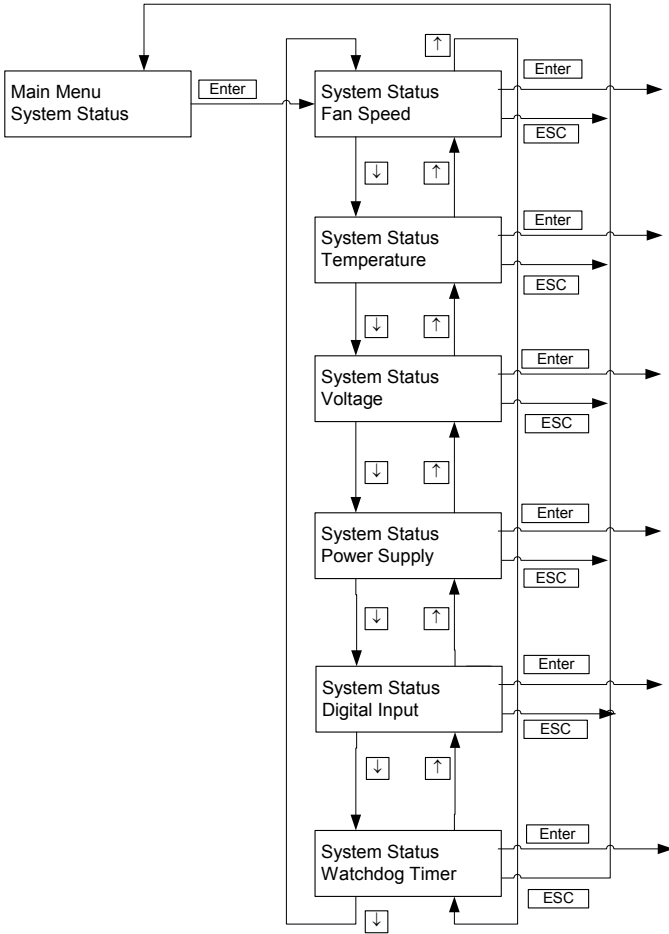
### 3.3.11 Set System Time



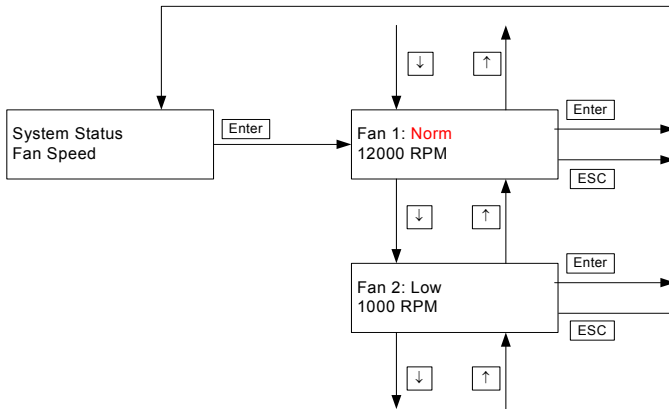
### 3.3.12 View Active Alarms



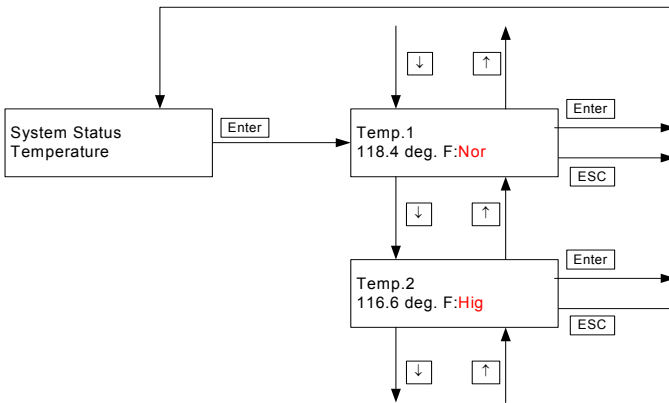
### 3.3.13 View System Status



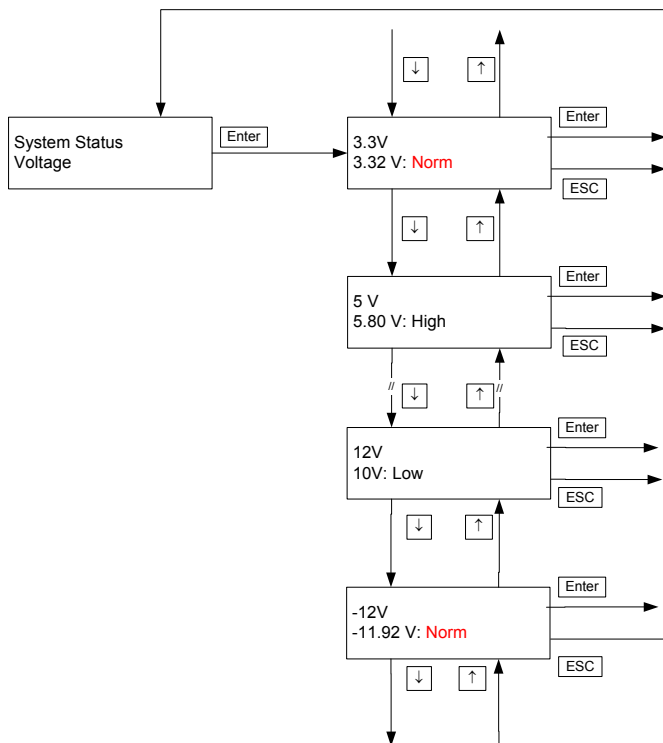
### 3.3.14 View Fan Speed



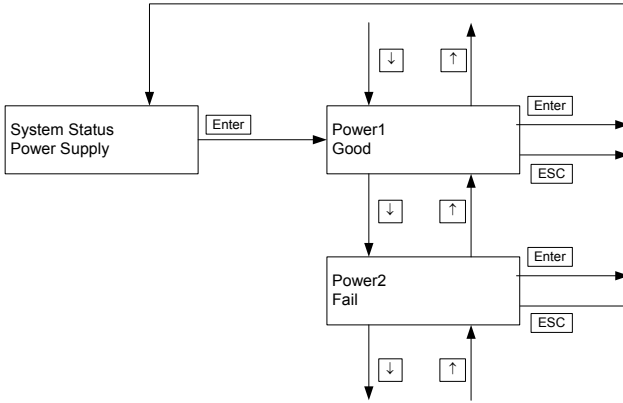
### 3.3.15 View Temperature Status



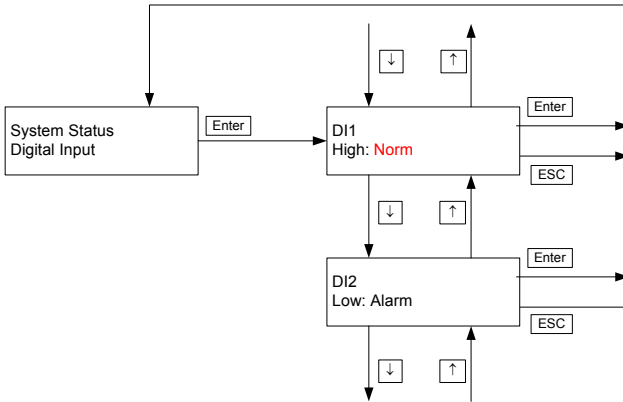
### 3.3.16 View Voltage Status



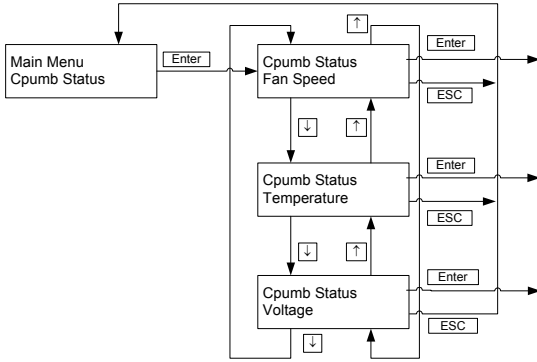
### 3.3.17 View Power Supply Status



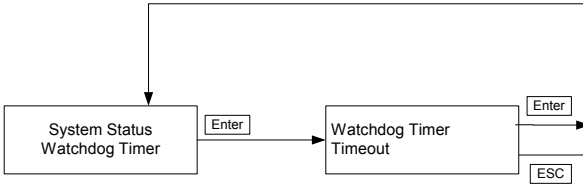
### 3.3.18 View Digital Input Status



### 3.3.19 View CPU Card/ Mother Board Healthy Status



### 3.3.20 View Watchdog Timer Status









CHAPTER  
**4**

**Programming the  
SNMP-1000**

# Chapter 4 Programming the SNMP-1000

## 4.1 Introduction

---

The SNMP-1000 can be accessed and controlled by direct command input. With this function, SNMP-1000 can be easily controlled and integrated into user's system by user's program.

## 4.2 Entering the pass through command mode

---

Before you can program the SNMP-1000 you need first to set up a connection from the host computer to the SNMP-1000 through serial port or Telnet. Follow below steps to enter the pass through command mode.

1. Turn on SNMP-1000 then SNMP-1000 will send identify string "`\nAdvantech v0.xx (SNxxxxxx) Ready \n`" to the host computer through COM port.
2. On host computer side, send a carriage return (enter, or `\r`).
3. SNMP-1000 will response by sending main menu title and a message to request for entering user name.

```
"\n\n
+=====+
| [ SNMP Agent Configuration Utility Main Menu ] |
+=====+
\n
Enter User Name:"
```

4. On host computer side, send user name `\r` then SNMP-1000 will response user name `\n\n` and request for entering password:.

Host computer sends:  
"advantech\r"

SNMP-1000 responses:  
"advantech\n\n Enter Password:"

5. On host computer side send password `\r` then SNMP-1000 will response password `\n\n` and main menu.

EX.

Host computer side sends:

```
"admin\r"
```

SNMP-1000 responds:

```
" *****\n\n"
```

```
+=====+
|[ SNMP Agent Configuration Utility Main Menu ]|
+=====+

  1. Agent Configuration
  2. Remote Control
  3. Restart Agent
  4. Reset Configuration To Default
  5. Access Agent Command
  0. Exit
```

Please Enter Your Choice => "

6. On host computer side send `5\r` then SNMP-1000 responses `5\n` and SNMP-1000 will enter pass through command mode.

Host computer side sends

```
"5\r"
```

SNMP-1000 responses

```
"5\n"
```

```
Command :"
```

Now you've entered pass through command mode and SNMP-1000 is ready to receive command.

### 4.3 Syntax of command and response

---

The format of command and response is shown as follows:

- a. Write command: *w!!&xxx*
- b. Read command: *r!!&*
- c. Response: *[repeat received command]\n Response: xxx\n*

**Command:**

w : write command

r : read command

!!: device code

&: device sub-code

xxx: value in ASCII code, it could be "Done" or "Invalid" in the response from SNMP-1000.

Examples:

1. Write low limit of Fan 0 to "1000" rpm  
EX.

Host computer side sends

```
"w1011000\r"
```

**SNMP-1000: responds**

```
"w1011000\n Response: Done\n Command:"
```

2. Read low limit of Fan 0  
EX.

Host computer side sends

```
"r101\r"
```

**SNMP-1000: responds**

```
"r101\n Response: 1000\n Command:"
```

3. If input command is incorrect then SNMP-1000 will response invalid message.

EX.

Host computer side sends

```
"r905\r"
```

Here the sub-device code is over range.

***SNMP-1000: responds:***

"r905\n Response: Invalid\n Command:"

## 4.4 List of Device Code and Device Sub-Code

Device Code									
Code	10	11	12	13	14	15	16	17	18
Device	Fan 0	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Fan 7	Fan 8
Code	20	21	22	23	24	25	26	27	28
Device	Temp 0	Temp 1	Temp 2	Temp 3	Temp 4	Temp 5	Temp 6	Temp 7	Temp 8
Code	30	31	32	33	34	35	36	37	38
Device	3.3 V	5 V	-5 V	5 Vsb	12 V	-12 V			
Code	40	41							
Device	CPU Fan1	CPU Fan2							
Code	50	51							
Device	CPU Temp 1	CPU Temp 2							
Code	60	61	62	63	64	65	66	67	68
Device	CPU 1 Vcore	CPU 2 Vcore	VI/O	5 V	-5 V	12 V	-12 V		
Code	70	71	72	73					
Device	Power 0	Power 1	Power 2	Power 3					
Code	80	81	82	83	84	85	86	87	



Device	DI 0	DI 1	DI 2	DI 3	DI 4	DI 5	DI 6	DI 7	
Code	90								
Device	WDT								

<b>Device Sub-Code</b>							
Device Code	1	2	3	4	5	6	7
Fan	Low Limit	Alarm Level	Event Out	Current Speed			
Temp.	High Limit	High Alarm Level	High Event Output	Low Limit	Low Alarm Level	Low Event Output	Current Temp.
Voltage	High Limit	Low Limit	Alarm Level	Event Out	Current Voltage		
Power	Normal Level	Alarm Level	Event Output	Current Status			
DI	Normal Level	Alarm Level	Event Output	Current Status			
WDT	Alarm Level	Event Output	Current Status				

## 4.5 Summary of Command Set

---

### 4.5.1 Fan Read

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r101	Fan 0	10	Low Limit	1
r111	Fan 1	11		
~	~	~		
r181	Fan 8	18		
r102	Fan 0	10	Alarm Level	2
r112	Fan 1	11		
~	~	~		
r182	Fan 8	18		
r103	Fan 0	10	Event Output	3
r113	Fan 1	11		
~	~	~		
r183	Fan 8	18		
r104	Fan 0	10	Current Speed	4
r114	Fan 1	11		
~	~	~		
r184	Fan 8	18		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w101xxxx	Fan 0	10	Low Limit	1	1000~9999	RPM in ASCII code
w111xxxx	Fan 1	11				
~	~	~				
w181xxxx	Fan 8	18				
w102x	Fan 0	10	Alarm Level	2	1	Not used
w112x	Fan 1	11			2	No Alarm
~	~	~			3	Critical
w172x	Fan 7	17			4	Major
w182x	Fan 8	18			5	Minor
w103x	Fan 0	10	Event Output	3	1	None
w113x	Fan 1	11			2	Power Off
~	~	~			3	DO 0
w163x	Fan 6	16			4	DO 1
w173x	Fan 7	17			5	DO 2
w183x	Fan 8	18			6	DO 3

## 4.5.2 Temperature

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r201	Temp. 0	20	High Limit	1
r211	Temp. 1	21		
~	~	~		
r281	Temp. 8	28		
r202	Temp. 0	20	High Alarm Level	2
r212	Temp. 1	21		
~	~	~		
r282	Temp. 8	28		
r203	Temp. 0	20	High Event Output	3
r213	Temp. 1	21		
~	~	~		
r283	Temp. 8	28		
r204	Temp. 0	20	Low Limit	4
r214	Temp. 1	21		
~	~	~		
r284	Temp. 8	28		
r205	Temp. 0	20	Low Alarm Level	5
r215	Temp. 1	21		
~	~	~		
r285	Temp. 8	28		
r206	Temp. 0	20	Low Event Output	6
r216	Temp. 1	21		
~	~	~		
r286	Temp. 8	28		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r207	Temp. 0	20	Current Temp.	7
r217	Temp. 1	21		
~	~	~		
r287	Temp. 8	28		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w201xxxxx	Temp. 0	20	High Limit	1	-55~125 (°C) or -67 ~ 257 (°F)	Temperature value in ASCII, degree C or F depends on system setting, max. 5 characters, incl. "-", "."
w211xxxxx	Temp. 1	21				
~	~	~				
w281xxxxx	Temp. 8	28				
w202x	Temp. 0	20	High Alarm Level	2	1	Not used
w212x	Temp. 1	21			2	No Alarm
~	~	~			3	Critical
w272x	Temp. 7	27			4	Major
w282x	Temp. 8	28			5	Minor
w203x	Temp. 0	20	High Event Output	3	1	None
w213x	Temp. 1	21			2	Power Off
~	~	~			3	DO 0
w263x	Temp. 6	26			4	DO 1
w273x	Temp. 7	27			5	DO 2
w283x	Temp. 8	28			6	DO 3
w204xxxxx	Temp. 0	20	Low Limit	4	-55~125 (°C) or -67 ~ 257 (°F)	Temperature value in ASCII, degree C or F depends on system setting, max. 5 characters, incl. "-", "."
w214xxxxx	Temp. 1	21				
~	~	~				
w284xxxxx	Temp. 8	28				

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w205x	Temp. 0	20	Low Alarm Level	5	1	Not used
w215x	Temp. 1	21			2	No Alarm
~	~	~			3	Critical
w275x	Temp. 7	27			4	Major
w285x	Temp. 8	28			5	Minor
w206x	Temp. 0	20	Low Event Output	6	1	None
w216x	Temp. 1	21			2	Power Off
~	~	~			3	DO 0
w266x	Temp. 6	26			4	DO 1
w276x	Temp. 7	27			5	DO 2
w286x	Temp. 8	28			6	DO 3

### 4.5.3 Voltage

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r301	3.3V	30	High Limit	1
r311	5V	31		
r321	-5V	32		
r331	5VSB	33		
r341	12V	34		
r351	-12V	35		
r302	3.3V	30	Low Limit	2
r312	5V	31		
r322	-5V	32		
r332	5VSB	33		
r342	12V	34		
r352	-12V	35		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r303	3.3V	30	Alarm Level	3
r313	5V	31		
r323	-5V	32		
r333	5VSB	33		
r343	12V	34		
r353	-12V	35		
r304	3.3V	30	Event Output	4
r314	5V	31		
r324	-5V	32		
r334	5VSB	33		
r344	12V	34		
r354	-12V	35		
r305	3.3V	30	Current Voltage	5
r315	5V	31		
r325	-5V	32		
r335	5VSB	33		
r345	12V	34		
r355	-12V	35		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w301xxxxxx	3.3V	30	High Limit	1	-15.0 ~15.0	Voltage value in ASCII code, max. 6 characters, incl. "-", ".", "ex.": 03.53-12.55-13
w311xxxxxx	5V	31				
w321xxxxxx	-5V	32				
w331xxxxxx	5VSB	33				
w341xxxxxx	12V	34				
w351xxxxxx	-12V	35				

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w302xxxxxx	3.3V	30	Low Limit	2	-15.0 ~15.0	
w312xxxxxx	5V	31				
w322xxxxxx	-5V	32				
w332xxxxxx	5VSB	33				
w342xxxxxx	12V	34				
w352xxxxxx	-12V	35				
w303x	3.3V	30	Alarm Level	3	1	Not used
w313x	5V	31			2	No Alarm
w323x	-5V	32			3	Critical
w333x	5VSB	33				
w343x	12V	34				
w353x	-12V	35			4	Major
w304x	3.3V	30			5	Minor
w314x	5V	31	Event Output	4	1	None
w324x	-5V	32			2	Power Off
w334x	5Vsb	33			3	DO 0
w344x	12V	34			4	DO 1
w354x	-12V	35			5	DO 2
					6	DO 3



## 4.5.4 CPU Card

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r401	CPU 1	40	Low Limit	1
r411	CPU 2	41		
r402	CPU 1	40	Alarm Level	2
r412	CPU 2	41		
r403	CPU 1	40	Event Output	3
r413	CPU 2	41		
r404	CPU 1	40	Current Speed	4
r414	CPU 2	41		
r501	CPU 1	50	High Limit	1
r511	CPU 2	51		
r502	CPU 1	50	High Alarm Level	2
r512	CPU 2	51		
r503	CPU 1	50	High Event Output	3
r513	CPU 2	51		
r504	CPU 1	50	Low Limit	4
r514	CPU 2	51		
r505	CPU 1	50	Low Alarm Level	5
r515	CPU 2	51		
r506	CPU 1	50	Low Event Output	6
r516	CPU 2	51		
r507	CPU 1	50	Current Temp.	7
r517	CPU 2	51		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r601	CPU 1 Vcore	60	High Limit	1
r611	CPU 2 Vcore	61		
r621	CPU VI/O	62		
r631	CPU card +5V	63		
r641	CPU card -5V	64		
r651	CPU card +12V	65		
r661	CPU card -12V	66		
r602	CPU 1 Vcore	60	Low Limit	2
r612	CPU 2 Vcore	61		
r622	CPU VI/O	62		
r632	CPU card +5V	63		
r642	CPU card -5V	64		
r652	CPU card +12V	65		
r662	CPU card -12V	66		
r603	CPU 1 Vcore	60	Alarm Level	3
r613	CPU 2 Vcore	61		
r623	CPU VI/O	62		
r633	CPU card +5V	63		
r643	CPU card -5V	64		
r653	CPU card +12V	65		
r663	CPU card -12V	66		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r604	CPU 1 Vcore	60	Event Output	4
r614	CPU 2 Vcore	61		
r624	CPU V/I/O	62		
r634	CPU card +5V	63		
r644	CPU card -5V	64		
r654	CPU card +12V	65		
r664	CPU card -12V	66		
r605	CPU 1 Vcore	60	Current Voltage	5
r615	CPU 2 Vcore	61		
r625	CPU V/I/O	62		
r635	CPU card +5V	63		
r645	CPU card -5V	64		
r655	CPU card +12V	65		
r665	CPU card -12V	66		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w401xxxx	CPU 1	40	Low Limit	1	1000~9999	RPM in ASCII
w411xxxx	CPU 2	41				
w402x	CPU 1	40	Alarm Level	2	1	Not used
					2	No Alarm
w412x	CPU 2	41			3	Critical
					4	Major
					5	Minor

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w403x	CPU 1	40	Event Output	3	1	None
					2	Power Off
					3	DO 0
w413x	CPU 2	41			4	DO 1
					5	DO 2
					6	DO 3

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w501xxxxx	CPU 1	50	High Limit	1	-55~125 (°C) or -67~257 (°F)	Temperature value in ASCII, degree C or F depends on system setting, max. 5 characters, incl. ".", "."
w511xxxxx	CPU 2	51				
w502x	CPU 1	50	High Alarm Level	2	1	Not used
					2	No Alarm
					3	Critical
w512x	CPU 2	51			4	Major
					5	Minor
w503x	CPU 1	50			High Event Output	3
			2	Power Off		
			3	DO 0		
w513x	CPU 2	51	4	DO 1		
			5	DO 2		
			6	DO 3		
w504xxxxx	CPU 1	50	Low Limit	4	-55~125 (°C) or -67~257 (°F)	Temperature value in ASCII, degree C or F depends on system setting max. 5 characters, incl. ".", "."
w514xxxxx	CPU 2	51				

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w505x	CPU 1	50	Low Alarm Level	5	1	Not used
					2	No Alarm
w515x	CPU 2	51			3	Critical
					4	Major
					5	Minor
w506x	CPU 1	50	High Event Output	6	1	None
					2	Power Off
					3	DO 0
w516x	CPU 2	51			4	DO 1
					5	DO 2
					6	DO 3

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w601xxxxxx	CPU 1 Vcore	60	High Limit	1	-15 ~ 15	Voltage value in ASCII code, max. 6 characters, incl. "-", "."
w611xxxxxx	CPU 2 Vcore	61				
w621xxxxxx	CPU VI/O	62				
w631xxxxxx	CPU card +5V	63				
w641xxxxxx	CPU card -5V	64				
w651xxxxxx	CPU card +12V	65				
w661xxxxxx	CPU card -12V	66				
w602xxxxxx	CPU 1 Vcore	60	Low Limit	2		
w612xxxxxx	CPU 2 Vcore	61				
w622xxxxxx	CPU VI/O	62				
w632xxxxxx	CPU card +5V	63				
w642xxxxxx	CPU card -5V	64				
w652xxxxxx	CPU card +12V	65				
w662xxxxxx	-12V	66				

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(xxxx)	Remark
w603x	CPU 1 Vcore	60	Alarm Level	3	1	Not used
w613x	CPU 2 Vcore	61			2	No Alarm
w623x	CPU VI/O				3	Critical
w633x	CPU card +5V					
w643x	CPU card -5V					
w653x	CPU card +12V	65			4	Major
w663x	CPU card -12V	66			5	Minor
w604x	CPU 1 Vcore	60	Event Output	4	1	None
w614x	CPU 2 Vcore	61			2	Power Off
w624x	CPU VI/O	62			3	DO 0
w634x	CPU card +5V	63				
w644x	CPU card -5V	64				
w654x	CPU card +12V	65			5	DO 2
w664x	CPU card -12V	66			6	DO 3

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r701	Power 1	70	Normal Level	1
r711	Power 2	71		
r721	Power 3	72		
r731	Power 4	73		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r702	Power 1	70	Alarm Level	2
r712	Power 2	71		
r722	Power 3	72		
r732	Power 4	73		
r703	Power 1	70	Event Output	3
r713	Power 2	71		
r723	Power 3	72		
r733	Power 4	73		
r704	Power 1	70	Current Status	4
r714	Power 2	71		
r724	Power 3	72		
r734	Power 4	73		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value (x)	Remark
w701x	Power 1	70	Normal Level	1	1	High
w711x	Power 2	71				
w721x	Power 3	72				
w731x	Power 4	73				
w702x	Power 1	70	Alarm Level	2	1	Not used
w712x	Power 2	71				
w722x	Power 3	72				
w732x	Power 4	73				
					5	Minor



Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value (x)	Remark
w703x	Power 1	70	Event Output	3	1	None
w713x	Power 2	71			2	DO 0
w723x	Power 3	72			3	DO 1
w733x	Power 4	73			4	DO 2
					5	DO 3

### 4.5.5 Digital Input

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r801	DI 1	80	Normal Level	1
r811	DI 2	81		
~	~	~		
r871	DI 7	87		
r802	DI 1	80	Alarm Level	2
r812	DI 2	81		
~	~	~		
r872	DI 7	87		
r803	DI 1	80	Event Output	3
r813	DI 2	81		
~	~	~		
r873	DI 7	87		
r804	DI 1	80	Current Status	4
r814	DI 2	81		
~	~	~		
r874	DI 7	87		

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(x)	Remark	
w801x	DI 1	80	Normal Level	1	1	High	
w811x	DI 2	81					
~	~	~				2	Low
w871x	DI 7	87					
w802x	DI 1	80	Alarm Level	2	1	Not used	
w812x	DI 2	81				2	No Alarm
~	~	~				3	Critical
w862x	DI 6	86				4	Major
w872x	DI 7	87				5	Minor
w803x	DI 1	80	Event Output	3	1	None	
w813x	DI 2	81				2	Reset
~	~	~				3	Power Off
w843x	DI 4	84				4	DO 0
w853x	DI 5	85				5	DO 1
w863x	DI 6	86				6	DO 2
w873x	DI 7	87				7	DO 3

#### 4.5.6 WDT

Command	Device	Device Code	Device Sub-Item	Device Sub-Code
r901	WDT	90	Alarm Level	1
r902			Event Output	2
r903			Current Status	3

Command	Device	Device Code	Device Sub-Item	Device Sub-Code	Value(x)	Remark
w901x	WDT	90	Alarm Level	1	1	Not used
					2	No Alarm
					3	Critical
					4	Major
					5	Minor
w902x	WDT	90	Event Output	2	1	None
					2	Power Off
					3	DO 0
					4	DO 1
					5	DO 2
					6	DO 3



Appendix

**A**

## **Connector Pin Assignments**

# Appendix A Connector Pin Assignments

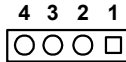
## A.1 External Buzzer (J1)

---

Pin	Signal
1	Buzzer
2	VCC

## A.2 Auxiliary external power input (CN1)

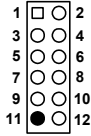
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Pin	Signal
1	+12 V (2 A max.)
2	GND
3	GND
4	+5 V (2 A max.)

### A.3 LAN Connector (CN2)

---



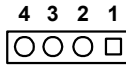
Pin	Signal	Pin	Signal
1	SPLED (LAN speed LED)	2	TERMPANE
3	RX+	4	RX-
5	GND	6	GND
7	TX+	8	TX-
9	LILED (LAN link LED)	10	TERMPANE
11	N.A.	12	NC

### A.4 System SM Bus Connector (CN3)

---

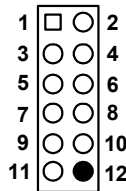
Pin	Signal
1	B_SCLK (I2C bus clock)
2	B_SDAT (I2C bus data)

## A.5 Temperature Sensor (LM75) Connector (CN4, CN7)



Pin	Signal
1	+5 V
2	T_SCLK
3	T_SDAT
4	GND

## A.6 RS-232 Connector (CN8, CN9)

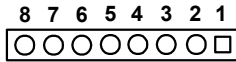


Pin	Signal	Pin	Signal
1	DCD	2	RX
3	TX	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC
11	NC	12	NA



## A.7 LCM Display Board Connector (CN10)

---



Pin	Signal	Pin	Signal
1	LCM I2C bus data	2	LCM I2C bus clock
3	+12 V	4	GND
5	+5 V	6	+5 V
7	Alarm LED	8	GND

## A.8 Kernel Board Connector (CN11)

---

Pin	Signal	Pin	Signal
1	SIN	2	SOUT
3	CTS#	4	DCD#
5	RTS#	6	DTR#
7	DSR#	8	Alarm reset
9	ATX ON	10	DO 4
11	GND	12	DO 3
13	Watchdog IN	14	DO 2
15	Watchdog OUT	16	DO 1
17	SPLED (LAN speed LED)	18	DI 1
19	LILED (LAN link LED)	20	DI 2
21	GND	22	DI 3

Pin	Signal	Pin	Signal
23	TX+ (LAN)	24	DI 4
25	TX- (LAN)	26	DI 5
27	RX+ (LAN)	28	DI 6
29	RX- (LAN)	30	DI 7
31	TERMPANE	32	DI 8

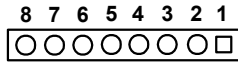
## A.9 Kernel Board Connector (CN12)

---

Pin	Signal	Pin	Signal
1	Select 1	2	Select 2
3	Power Good A	4	Power Good B
5	Power Good C	6	Power Good D
7	Alarm LED	8	FAN 1
9	GND	10	FAN 2
11	GND	12	FAN 3
13	VCC	14	FAN 4
15	VCC	16	FAN 5
17	VCC	18	FAN 6
19	BEEP	20	FAN 7
21	5VSB	22	FAN 8
23	-5V	24	FAN 9
25	+5V	26	B_SCLK (Clock of I2C bus to system)
27	+3.3V	28	B_SDAT (Data of I2C bus to system)
29	-12V	30	T_SCLK (Clock of I2C bus to sensor)
31	+12V	32	T_SDAT (Data of I2C bus to sensor)

## A.10 Backplane Voltage Input Connector (CN13)

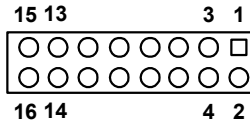
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Pin	Signal	Pin	Signal
1	+5 VSB	2	GND
3	GND	4	-5 V
5	+5 V	6	+3.3 V
7	-12 V	8	+12 V

## A.11 Digital Input (CN14)

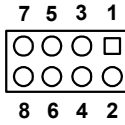
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Pin	Signal	Pin	Signal
1	DI 1	2	GND
3	DI 2	4	GND
5	DI 3	6	GND
7	DI 4	8	GND
9	DI 5	10	GND
11	DI 6	12	GND
13	DI 7	14	GND
15	DI 8	16	GND

## A.12 Digital Output (CN15)

---



Pin	Signal	Pin	Signal
1	DO 1	2	GND
3	DO 2	4	GND
5	DO 3	6	GND
7	DO 4	8	GND

## A.13 Alarm RESET (CN17)

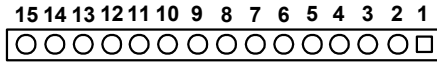
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Pin	Signal
1	GND
2	ARM_RESET

## A.14 LED Indicator Interface (CN18)

---



Pin	Signal	Pin	Signal
1	GND	2	PG +5V
3	PG +12V	4	PG -5V
5	PG-12V	6	HDD_1
7	PG_LED	8	PF_LED# (DO 1)
9	TG_LED	10	TF_LED# (DO 2)
11	FG_LED	12	FF_LED# (DO 3)
13	TF_LED	14	PG +3.3V
15	PG 5VSB		

**Notice:** *The SNMP-1000 uses the digital output DO1, DO2 and DO3 as the power fail LED (PF\_LED#), over temperature LED (TF\_LED#) and fan fail LED (FF\_LED#), respectively. Users need to enable the alarm of power, temperature and fan and select the event output as DO1, DO2 and DO 3 in the "Alarm Configuration" of the SNMP-1000 web page.*

## A.15 CPU Card Interface (CN19)

---



Pin	Signal	Pin	Signal
1	HDD Active	2	ATX IN
3	B_SCLK	4	ATX OUT
5	B_SDAT	6	SYSTEM RESET

## A.16 Chassis and Watchdog Timer Connector (CN20; CN26, CN27, CN28)

---



Pin	Signal	Pin	Signal
1	ATX IN	2	ATX OUT
3	GND	4	System Reset
5	Watch Dog Input	6	System Reset





	Pin	Signal	Pin	Signal
CN26	1	ATX IN	2	ATX OUT
CN27	1	GND	2	System Reset
CN28	1	Watch Dog Input	2	System Reset

### **A.17 Power Good Input (CN16; CN21, CN22, CN23, CN24)**

---



	Pin	Signal	Pin	Signal
CN16 CN21	1	Power Good A	2	GND
CN22	1	Power Good B	2	GND
CN23	1	Power Good C	2	GND
CN24	1	Power Good D	2	GND

## A.18 Auxiliary VCC In (CN25)

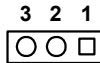
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Pin	Signal
1	Vin
2	VCC

## A.19 FAN Connectors (FAN1 ~ FAN9)

---



Pin	Signal
1	GND
2	+12 V
3	FAN Speed