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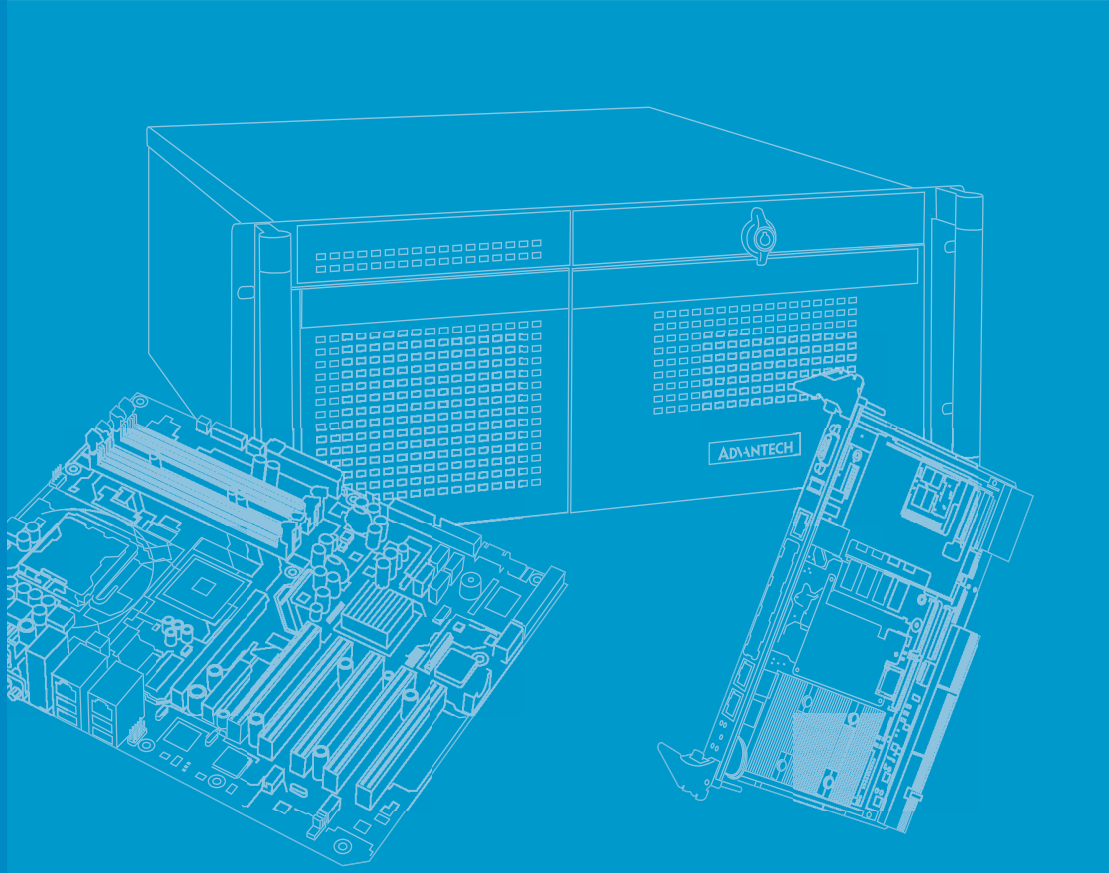
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User Manual

SNMP-1000-B2

Intelligent SNMP/HTTP Remote System Manager

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FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC regulations. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in such cases users are required to correct the interference at their own expense.

This device complies with the requirements outline in part 15 of the FCC regulations.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received including interference that may cause undesired operation

Caution! *The battery is at risk of exploding if incorrectly replaced. The battery does not require charging. Replace only with Advantech-specified batteries.*



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Advantech customer services

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Initial Inspection

Before beginning card installation, please ensure that the materials specified in the packing list have been shipped.

SNMP-1000-E1B2

- 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 ISA slot bracket
- Two thermal sensor board with cable sets
- One 9-pin to 9-pin modem cable
- One SNMP-1000-B2 startup manual
- One CD containing a utility program, SNMP MIB file, and user manual (in pdf format)

SNMP-1000-E2B2

- One SNMP/HTTP system manager kernel board mounted on a chassis carrier board
- 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 the CPU card
- One RJ-45 cable with bracket for an external LAN connection
- Two thermal sensor boards with cable sets
- One 9-pin to 9-pin modem cable
- One SNMP-1000-B2 startup manual
- One CD containing a utility program, SNMP MIB file, and user manual (in pdf format)

SNMP-1000-LCD

- One message display module
- One 8-pin cable for SNMP-1000-B2 connection

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

The mechanical and electrical components of the product have been carefully inspected prior to shipping. The product should be free from marks and scratches and in perfect working order upon receipt.

While unpacking, check the product for signs of shipping damage (for example, damaged packaging, scratches, dents, etc.). If your product is damaged or fails to meet specifications, notify our service department or your local sales representative immediately. Please 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

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1.1 Introduction

The SNMP-1000-B2 is a platform-independent server and PC system management controller that can detect the system operating conditions and notify users to take necessary action to avert system failure. The SNMP-1000-B2 is web enabled and supports multiple communication protocols. This server provides a simple tool for managing several remote servers and delivers reliability for critical applications such as computer telephony.

Powerful and Easy to Use

SNMP-1000-B2 can identify and measure numerous internal conditions, including system temperature, voltage, fan rotation, power supply, and CPU operations such as watchdog timer output. With the I2C interface, SNMP-1000-B2 can be used to monitor CPU temperature and voltages of Advantech's full-sized CPU cards. Depending on the event severity and user setup, the server generates different alarm outputs for SNMP traps, e-mails, pager messages, acoustic signals, system reset functions, and digital signal outputs. With the easy-to-use web-based interface, users can set the alarm criteria and outputs for all event triggers. The backup battery ensures that the SNMP-1000-B2 alarm function continues to operate even during total system power failures.

Web Enabled, No Driver Needed

Equipped with an onboard 10/100 Mbps Ethernet adapter, the SNMP-1000-B2 can be connected to existing networks. SNMP-1000-B2 also supports multiple network protocols, such as TCPIIP, SNMP, HTTP and Telnet, facilitating system management via a web browser. Because the device operates independently, no software drivers are required, which eliminates compatibility issues regarding different operating systems.

Online Upgrades and Batch Setup

The device firmware can be upgraded online using the setup utility. This eliminates the need to disassemble the chassis and collect each SNMP-1000-B2 module to conduct a firmware upgrade. The setup utility also supports the "batch setup" function, which allows users to save and duplicate a configuration to other modules. This freduces the time required to setup several SNMP-1000-B2 modules.

Flexible Modular Hardware Design

With its modular design, the SNMP-1000-B2 can be easily customized to suit any application. The ultra compact kernel module is only 40.5 mm wide and 93 mm long, and can be mounted on standard or customized carrier boards to meet different I/O extension requirements. The compact size ensures that the SNMP-1000-B2 module can be integrated into a wide range of customers' systems.

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1.2 Specifications

1.2.1 Hardware Specifications

- 20 MHz 80188-compatible CPU
- 512KB of Flash ROM and 512KB of SRAM
- One 10/100 Mbps onboard Ethernet adapter
- One RS-232 serial port with a 9600 baud rate
- One SM bus interface for PC system healthy status monitoring
- One SM bus interface for up to eight external temperature sensors
- Nine fan tachometer inputs (seven for SNMP-1000-E2B2)
- One onboard temperature sensor
- One LCM message display interface
- System watchdog time-out signal detector
- Four good power signals (one for SNMP-1000-E2B2)
- Eight digital inputs (SNMP-1000-E1B2 only)
- Four digital outputs (one for SNMP-1000-E2B2)
- Buzzer support

1.2.2 Dimensions

- **Kernel module:** 40.5 x 93 mm
- **PCI/ISA carrier module:** 175 x 107 mm
- **Chassis carrier board:** 55 x 115 mm

1.2.3 Sensor Input Specifications

- **Voltage inputs:** +5 V DC, -5 V DC, 5 V SB, +3.3 V DC, +12 V DC, -12 V DC
- **Temperature sensors:** LM75 digital temperature sensor, I2C interface, -30 ~ 125 °C (-22 ~ 257 °F)
- **Fan speed monitor:**
  Up to nine fans, 700 ~ 10000 RPM
  Power good/Digital input:
  High: > 2.4 V_{DC}
  Low: < 0.8 V_{DC}

1.2.4 Firmware Specifications

System Status Monitoring and Management

- Real-time health status monitoring; provides a real-time status display in HTTP Java graphical format
- Supports history log graphical display and data downloads
- Alarm event log

Alarm Notification

- Supports up to four e-mail addresses
- Alarm messages can be transmitted to optional LCD display modules
- SNMP trap: can notify up to eight SNMP administrators
- Pager notification: can send messages to up to eight pagers via an external modem
- Audible alarm sound

Supported Protocols

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

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Management Function

- Supports web-based remote configuration, control, and monitoring
- Remote reset, power OFF/ON
- Remote digital output signal control
- Remote message display control
- Firmware upgrade via serial port and Ethernet port
- Modem dial in (console mode only)

1.2.5 LCD Message Display Module with Keys

- LCD module with backlight supports displays of up to 2 rows and 16 characters
- Module is 147 (W) x 42 (H) x 158 mm (L), fits into a 5.25" drive bay, and can accomodate a 3.5" HDD
- Features five keys: up, down, enter, escape, and alarm sound off

Optional Backup Battery:

- Charge time: 3 hours
- Battery type: Li-ion
- Battery capacity: 1800 mA*h (fully charged, for 45 ~ 50 minutes operation, dependent on the output used)
- Battery life: 1 year @ 20 °C, 80% capacity after 500 cycles of charge and discharge

Power Consumption

- 5 V @ 550 mA

1.2.6 Environmental Specifications

- **Storage temperature:** -20 ~ 70 °C (4 ~ 158 °F)
- **Operating temperature:** 0 ~ 60 °C (32 ~ 140 °F)
- **Relative humidity:** 5 ~ 95% RH non-condensing

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Chapter 2

Hardware Installation

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2.1 Kernel Module Installation

The SNMP-1000-B2 modular design facilitates I/O connection. The kernel module can be mounted on an I/O extension/carrier module. Several extension modules designed for specific application needs are available on the market. If your extension module differs from that depicted in this section, please refer to the user manual of your extension module for information.

The kernel module features two 32-pin connectors labeled MCN1 and MCN2. The extension module features two 32-pin connectors labeled CN11 and CN12. MCN1 of the kernel module should be mounted onto CN11 of the extension module, and MCN2 of the kernel module should be mounted onto CN12 of the extension module. Once mounted, secure the kernel module to the extension module using the provided studs and screws.

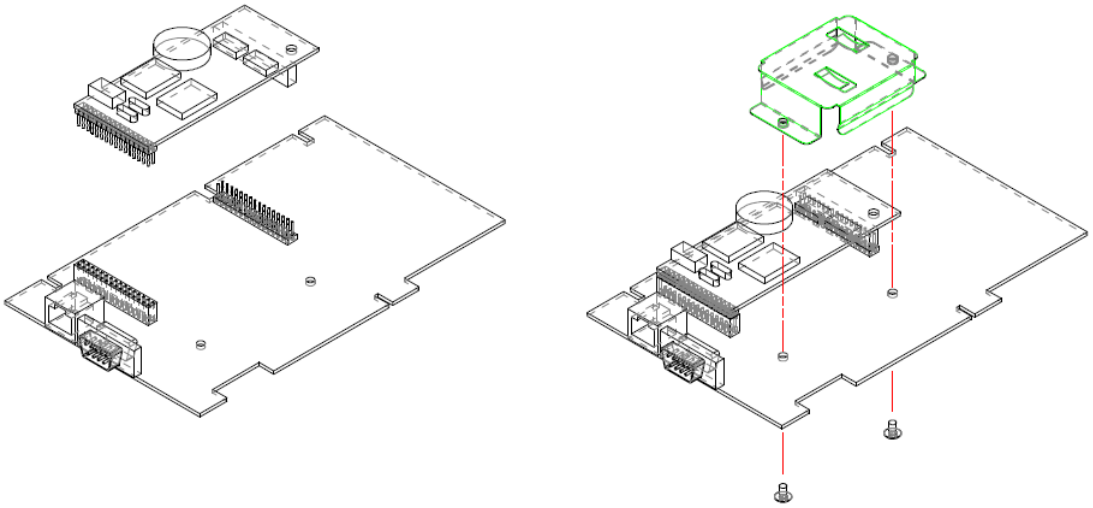


Figure 2.1 Kernel module and battery installation

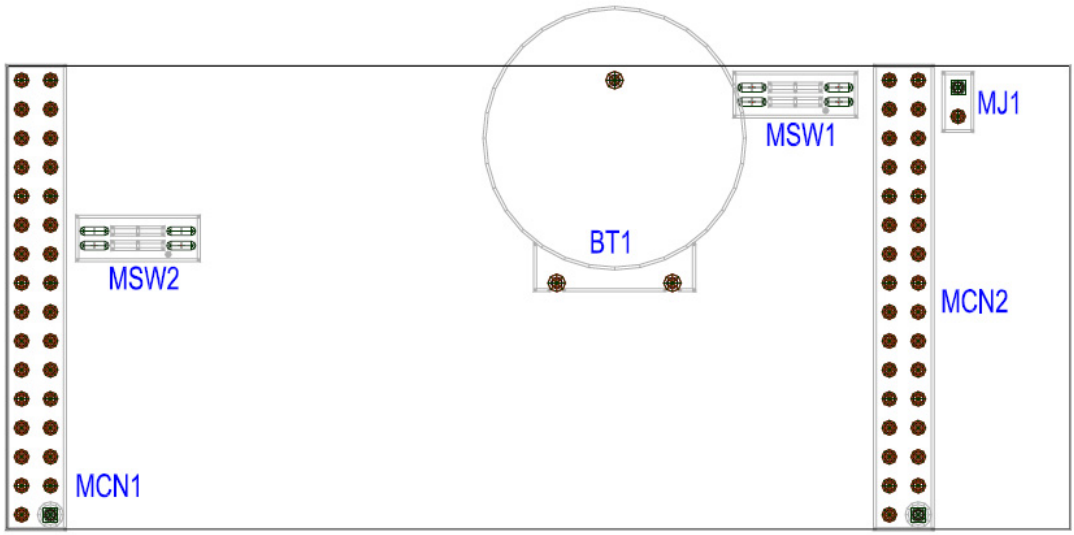


Figure 2.2 Kernel module connectors

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MJ1: Restores the default username and password and should be used to reset the system settings when users forget their username and password. Otherwise, MJ1 should be left open under normal operation.

Operation procedure:

1. Power off the SNMP-1000-B2 and remove the backup battery.
2. Short MJ1 using a jumper
3. Power on the SNMP-1000-B2 and wait until the system is operable
4. Turn the system power off
5. Remove MJ1. The username and password are reset to "advantech" and "admin"

MCN1 and MCH2: Sensor and I/O interface (Please refer to Appendix A for pin assignments)

2.2 Connecting Sensors and I/O Ports

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

The PCI/ISA extension module is designed with an ISA edge and a PCI edge. This module can be inserted into an ISA bus slot or a PCI bus slot to detect the bus voltages. However, because SNMP-1000-B2 does not communicate with the system through the ISA or PCI bus, no driver is required.

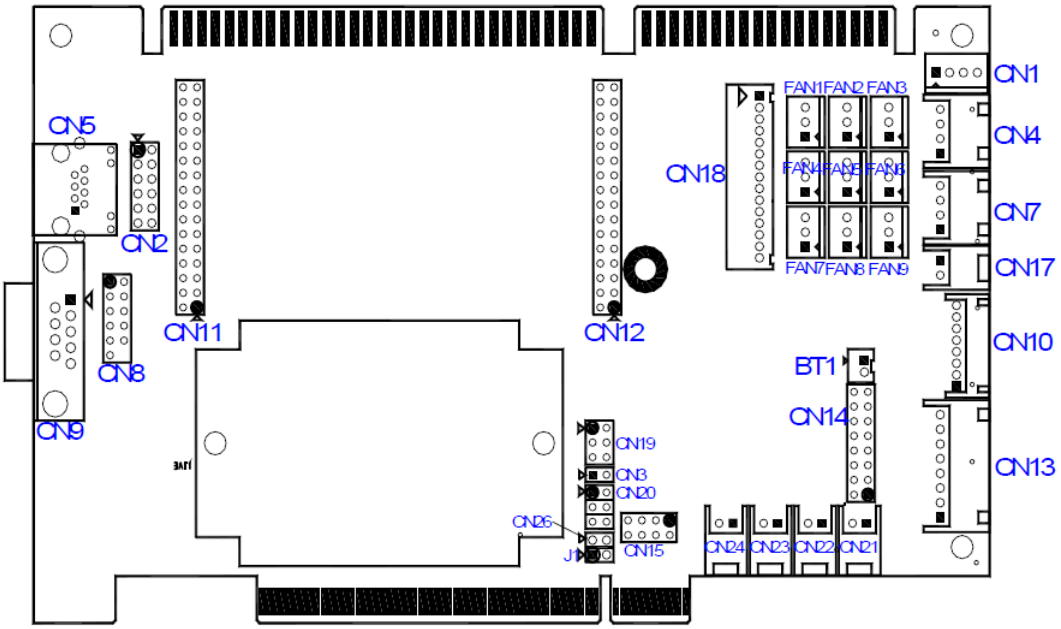


Figure 2.3 Extension board connectors

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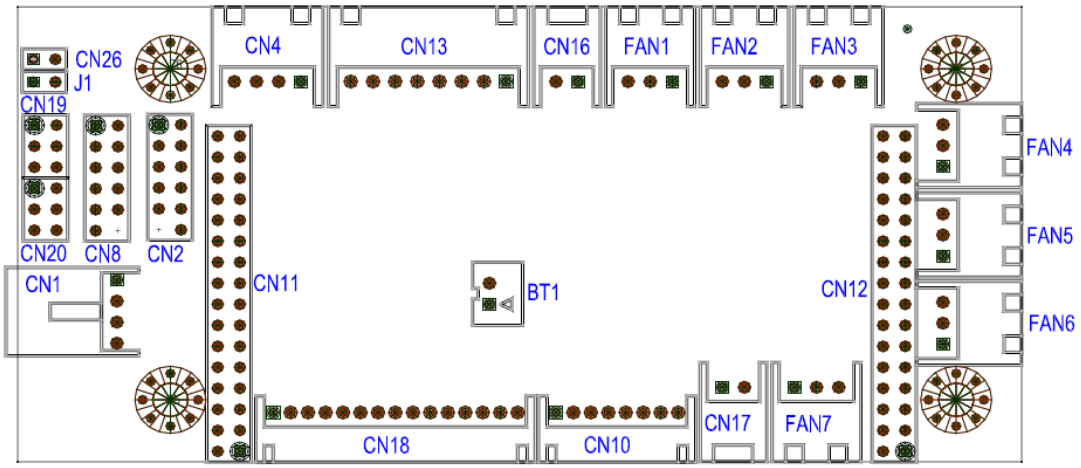


Figure 2.4 Carrier board connectors

2.2.1 External Buzzer Connector (J1)

Supports connection to an external buzzer.

2.2.2 Bypass Password Protection (MJ1)

Restores the default alarm board ID and password.

2.2.3 External Power Connector (CN1)

This connector is used to provide auxiliary power to SNMP-1000-B2. This connector is only required when an extension board is not plugged into the PCI or ISA slots.

2.2.4 System SMBus Connector (CN3)

Enables users to read system SMBus signals.

2.2.5 10/100Base-T LAN Connectors (CN2 and CN5)

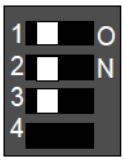
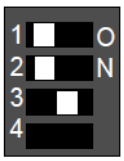
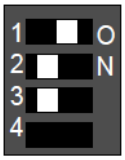
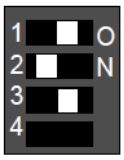
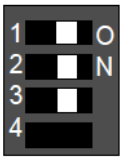
CN5 is a standard RJ-45 connector for Ethernet connectivity. A box header (CN2) is also available for internal connectivity.

The chassis carrier board is equipped with a special cable (P/N 1703120900) that features a box header at one end and an RJ-45 at the other end. An adaptor bracket allows users to fix the RJ-45 end to the chassis via an existing DB-9 COM port.

2.2.6 Temperature Sensor Connectors (CN4 and CN7)

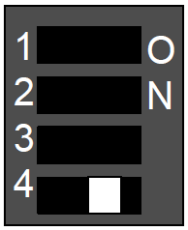
These connectors interface with LM75 digital temperature sensors via SM bus. SNMP-1000-B2 supports monitoring of up to nine temperatures. One sensor located on the kernel module is designated as Temp. 0, and up to eight external sensors can be connected. External temperature sensors and cables are available from Advantech. Sensors can be connected in series in any order to either connectors, but each sensor must be allocated a unique ID ranging from 1 ~ 8 using the DIP switch on the sensor board.

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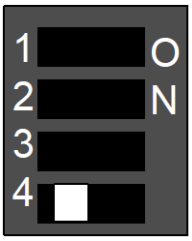
Sensor ID	1-3 of DIP switch	
Temp. 1		Off Off Off
Temp. 2		Off Off On
Temp. 3		Off On Off
Temp. 4		Off On On
Temp. 5		On Off Off
Temp. 6		On Off On
Temp. 7		On On Off
Temp. 8		On On On

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



Enable



Disable

2.2.7 RS-232 Interface (CN8 and CN9)

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

Note *A unique "null modem" cable is required to connect the module serial port to a PC serial port. Please ensure that the cable features reversed Tx and Rx signals at one end and only Pins 2, 3, and 5 are connected. This type of cable is available from Advantech (part number 1700091801). If other pins are connected, SNMP-1000-B2 will identify the RS-232 connection as a modem connection and terminate it immediately.*

2.2.8 LCM Message Display Connector (CN10)

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

2.2.9 Kernel Board Connectors (CN11 and CN12)

CN11 and CN12 are used to piggyback the kernel module.

2.2.10 Backplane Voltage Input Connector (CN13)

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

2.2.11 Digital Input Connectors (DI1 ~ DI8)

SNMP-1000-B2 can monitor up to eight TTL-level digital signals. These digital inputs can be used to detect external devices or identify a health status, such as chassis intrusion. These connectors are not available for the chassis carrier board.

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2.2.12 Digital Output Connectors (DO1 ~ DO4)

Alarm events can independently trigger one of four digital output signals. These signals can be used to control external devices and restore the system health or to notify users of the alarm-triggering event. This connector is not available on the chassis carrier board.

2.2.13 Alarm Reset Connector (CN17)

This connector is used to reset the alarm after an alarm-triggering event occurs. The alarm can be connected to an auto-recovery push button (that is activated when the button is pushed).

2.2.14 LED Indicator Connector (CN18)

The system status can be displayed using LED indicators. CN18 is connected to an LED indicator board. Please refer to Appendix A regarding pin assignments.

2.2.15 CPU Card Interface Connector (CN19)

This connector can be used to monitor the status of the CPU card. The 8 pin to 6 pin cable included with the product can be used to connect SNMP-1000-B2 to a CPU card.

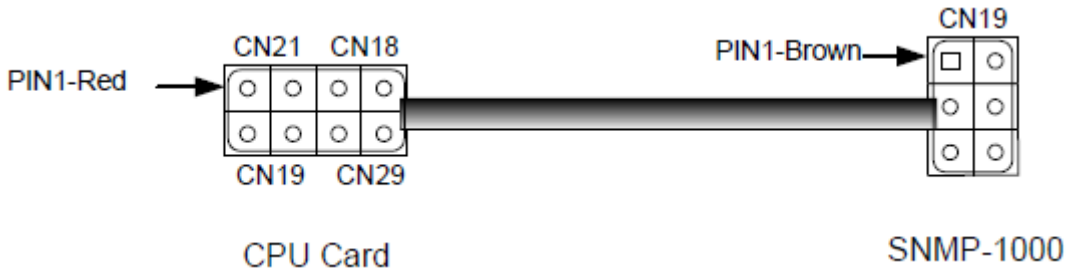


Figure 2.5 Connecting SNMP-1000-B2 to a CPU card

Note *Only Advantech's new full-sized CPU cards, 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, can be monitored. 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.*

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2.2.16 Chassis and Watchdog Timer Connector (CN20)

Pins 1 and 2 of CN20 are connected to the ATX power ON/OFF button on the chassis.

Pins 3 and 4 of CN20 are connected to the SNMP-1000-B2 chassis reset button.

Pins 5 and 6 of CN20 are connected to the watchdog timer output pins of the CPU card (J2). SNMP-1000-B2 can detect a watchdog timer time-out output signal. Included with the product is a cable (part number 1703020558) for connecting SNMP-1000-B2 to the watchdog timer.



Figure 2.6 Configuring the watchdog timer to interrupt



Figure 2.7 Configuring the watchdog timer to reset

2.2.17 Power Good Input Connectors (CN16, CN21 ~ CN24)

Up to four power fail signals can be detected. SNMP-1000-B2 can detect “power good” and “power fail” signals if the power supply unit emits these output signals.

2.2.18 External HDD LED Connector (CN26)

Output HDD LED signal to chassis bezel.

2.2.19 Fan Connectors (FAN1 ~ FAN9)

These connectors provide +12 V power to fans and receive tachometer signals from the fans. SNMP-1000-B2 can only detect fans that emit tachometer signals. This type of fan generates two pulses per revolution.

2.2.20 External Backup Battery Connector (BT1)

SNMP-1000-B2 supports an external backup battery to maintain alarm notifications during total system power failures.

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Chapter 3

Getting Started

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3.1 Configuring SNMP-1000-B2

The SNMP-1000-B2 HTTP intelligent system manager must be configured prior to use. Configuration can be conducted through a PC serial port using terminal emulator software, such as HyperTerminal in Windows 98/NT, or via the Ethernet port using Telnet or a browser such as Chrome or Internet Explorer. For security reasons, certain parameters can only be configured via the serial port.

The setup utility software can be found on the utility CD shipped with SNMP-1000-B2. This can assist system managers with setting up multiple SNMP-1000-B2 systems with the same configuration. A specific configuration can be saved to a file and then copied to other modules.

Before configuration, users must install and power up their SNMP-1000-B2 module. Please refer to Chapter 2 for installation instructions. SNMP-1000-B2 can be connected to a network via the LAN port, or via the serial port connected to the serial port of a PC. For security reasons, the administrator name and password can only be changed via the serial port directly connected to a PC.

Note *A unique "null modem" cable is required to connect the module serial port to a PC serial port. Please ensure that the cable features reversed Tx and Rx signals at one end and only Pins 2, 3, and 5 are connected. This type of cable is available from Advantech (part number 1700091801). If other pins are connected, SNMP-1000-B2 will identify the RS-232 connection as a modem connection and terminate it immediately.*

When all cables are connected, SNMP-1000-B2 can be powered up. A green LED on the kernel module indicates that 5 V of power is being supplied to SNMP-1000-B2. The system initiates a self-testing procedure that takes approximately 5 seconds to complete before the system can be used.

3.2 Configuration Via the Serial Port

In this manual, HyperTerminal for Windows (95, 98, Me, NT, 2000, or XP) is used as an example to demonstrate the configuration process.

1. Start HyperTerminal by accessing the "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 represents the number of the COM port connected to SNMP-1000-B2.
4. Configure your PC serial port to 9600 bps, 8 data bits, no parity, 1 stop bit with no flow control.
5. After users press "Enter", the SNMP-1000-B2 prompts for the administrator name and password. The default administrator name is "advantech" and the default password is "admin".

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

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

Enter User Name: advantech

Enter Password: *****
```

After entering a password, users can select one of items listed in the image below.

```
+=============================================================================+
|              [ 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 access 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 SNMP controller model name.
- The default value is SNMP-1000-B2. We recommend not changing the default model name.
- IP Address: The IP address of SNMP-1000-B2.
- Gateway Address: The network default gateway address.
- Network Mask: The sub-net mask setting.
- SNMP Agent Date: The internal date of SNMP-1000-B2. Format: mm/dd/yyyy
- SNMP Agent Time: The internal time of SNMP-1000-B2. Format: hh:mm:ss

Enter the number of the field you desire to alter and follow the instructions to input a new value.

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```
+=============================================================================+
|                          [ 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 SNMP-1000-B2 administrator user name. Only the administrator is permitted to input the console mode. The default admin user name is “advantech”.
- Admin User Password: The administrator password. This password enables users to read and write to SNMP-1000-B2. The default admin user password is “admin”.
- Community Read-Only: A general password for read-only access.
- The 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 upgrades through local networks.
- HTTP Security Control: Enables/disables HTTP login password requests.

```
+=============================================================================+
|                         [ 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 =>
```


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3.2.1.3 Parameter Group

The following items can be set under this command:

- sysDescription: A description of this system. This is an alphanumeric string of up to 31 bytes. The default value is empty.
- sysContact: The contact information of the entity managing the system. This is an alphanumeric string of up to 15 bytes. The default value is empty.
- sysName: The name of this system. This is an alphanumeric string of up to 15 bytes. The default name is “Advantech”.
- sysLocation: The location of this system. This is an alphanumeric string of up to 15 bytes. The default value is empty.

```
+==============================================================================+
|                          [ 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 : []
```

3.2.1.4 Access Control Table

This table allows users to restrict SNMP-1000-B2 access from specific IP addresses. Users can add IP addresses and set the access control. The configuration options are NoAccess, Read Only, and Read/Write. Workstations cannot display information if their IP address is set to “NoAccess”.

Press “1” to modify a line in the table. Press “2” to delete a line of data. This table is used for access via SNMP and HTTP. Access through Telnet or a serial port is only permitted using the “Admin User Name” and “Admin User Password” in the 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
```


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3.2.1.5 Trap Receiver Table

SNMP-1000-B2 can be managed with SNMP-compatible software from a remote server connected to a network. The IP addresses of SNMP trap receivers can be added to the list if SNMP-compatible management software is available at the addresses.

Press “1” to modify a line in the table. Press “2” to delete a line of data. The Severity Level allows users to specify the alarm level. Traps are not sent if the alarm severity is lower than the 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

SNMP-1000-B2 can send e-mails to specified e-mail addresses every day at a fixed time or after an alarm-triggering event.

```
+================================================================================+
|                       [ 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
```

From this menu, users can configure 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.

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```
+=============================================================================+
|                        [ 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 used for logging SNMP-1000-B2 into the mail server.



- Mail Status Daily: Option 5 allows users to specify the time when the SNMP-1000-B2 sends daily logs via e-mail to pre-specified accounts.
- Mail Receivers Table: Option 6 allows users to specify the receiving e-mail addresses.

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```
+=============================================================================+
|   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. Dialy 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 Conditions: This function allows users to specify the conditions for sending an e-mail. The choices include

- Alarm: Send an e-mail when an alarm-triggering event occurs.
- Daily Logs: Send daily logs at a specified time.
- Alarm and Log: Send both alarm-triggered notifications and daily logs.
- Alarm Level: This allows users to set the alarm severity for triggering an alarm notification. This item is useful when the Mail Condition is set to “Alarm” or “Alarm and Log”.
- Status: This allows users to set the status of an e-mail address. The status can be set to Disabled when the address is temporarily not in use.

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3.3 Communication Over Ethernet

To communicate with SNMP-1000-B2 over Ethernet, a computer equipped with an Ethernet and TCP/IP network is required.

Users must obtain the IP address of the SNMP-1000-B2 module to communicate with it over Ethernet.

There are four methods for determining an IP address.

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

B. The IP address can be determined in the console mode, as described in Section 3.2.1.1 under "Agent Configuration".

C. The IP address can be obtained using the LCM display if your SNMP-1000-B2 device is connected to the LCM display module.

D. All SNMP-1000-B2 modules connected to the same network can be identified using the setup utility.

3.3.1 Configuration Using Telnet

Configuration using Telnet is basically the same as that via the serial port. First, ensure that your computer has a TCP/IP network and web browser installed. In the address line type “xxx.xxx.xxx.xxx”, with “xxx.xxx.xxx.xxx” being the IP address of SNMP-1000-B2. The SNMP-1000-B2 then prompts users to enter a user name and password, which is the same as described in Section 3.2.

3.3.2 Configuration Using a Web Browser

The easiest way to configure SNMP-1000-B2 is by using a web browser. Input the URL “http://xxx.xxx.xxx.xxx”, with “xxx.xxx.xxx.xxx” being the IP address of SNMP-1000-B2. The SNMP-1000-B2 then prompts users to enter a user name and password.

3.3.3 Remote Access Via a Telephone Line

SNMP-1000-B2’s command mode can be accessed remotely via a telephone line. The SNMP-1000-B2 module and your PC must be connected to a telephone line through a modem. HyperTerminal for Windows or other dialing software tools can be used for this purpose. Please refer to the user manual of your dialing program for setup instructions.

3.3.4 Setup Using the LCD Message Display Module

The LCD message display module is equipped with five buttons. The module can be used for on-site service without a network-connected PC. The up (↑) and down (↓) arrow keys on the LCD display panel allow users to scroll through the configuration setup menu. The ↵ icon provides the functions “enter” or “OK”, and the ESC icon provides the functions “escape” or “cancel”.

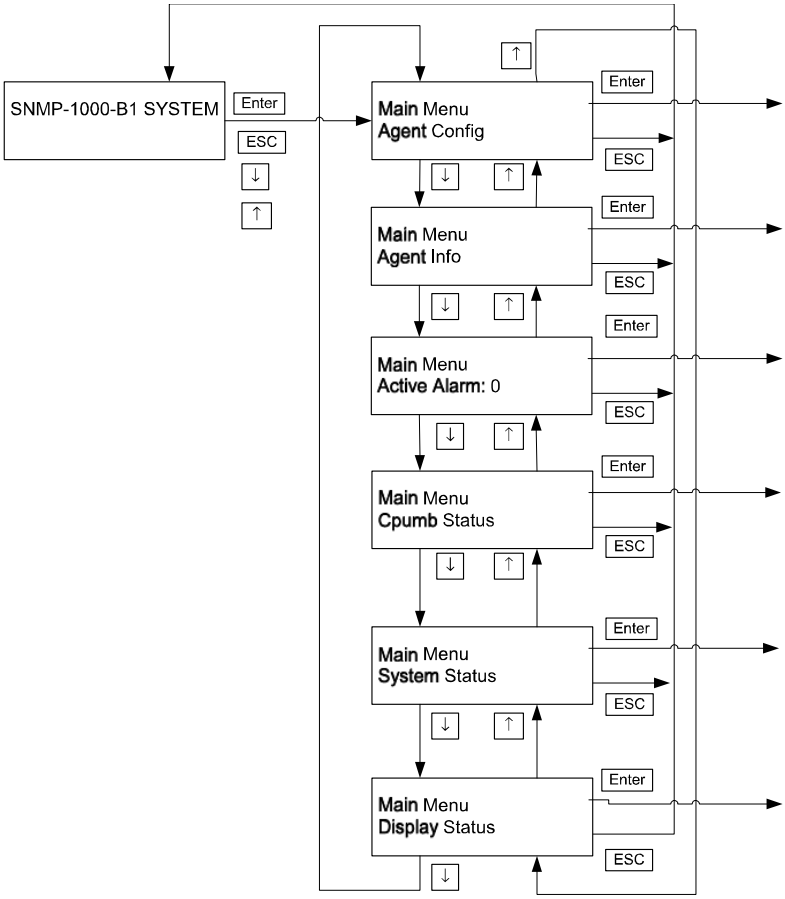
When users alter settings and/or wish to access a lower menu level, they must press “ENTER” to confirm the changes. If users press “ESC”, the system return to a higher menu level without saving any changes. When an alarm notification is triggered and warning sounds are emitted, users can press the alarm reset button  to stop the audible alarm sounds.

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Table 3.1: LCD Display Module Function Keys	
Keys	**Function**
▲	Scroll Up
▼	Scroll Down
↵	Enter
ESC	ESC Escape
🔇	Alarm Reset

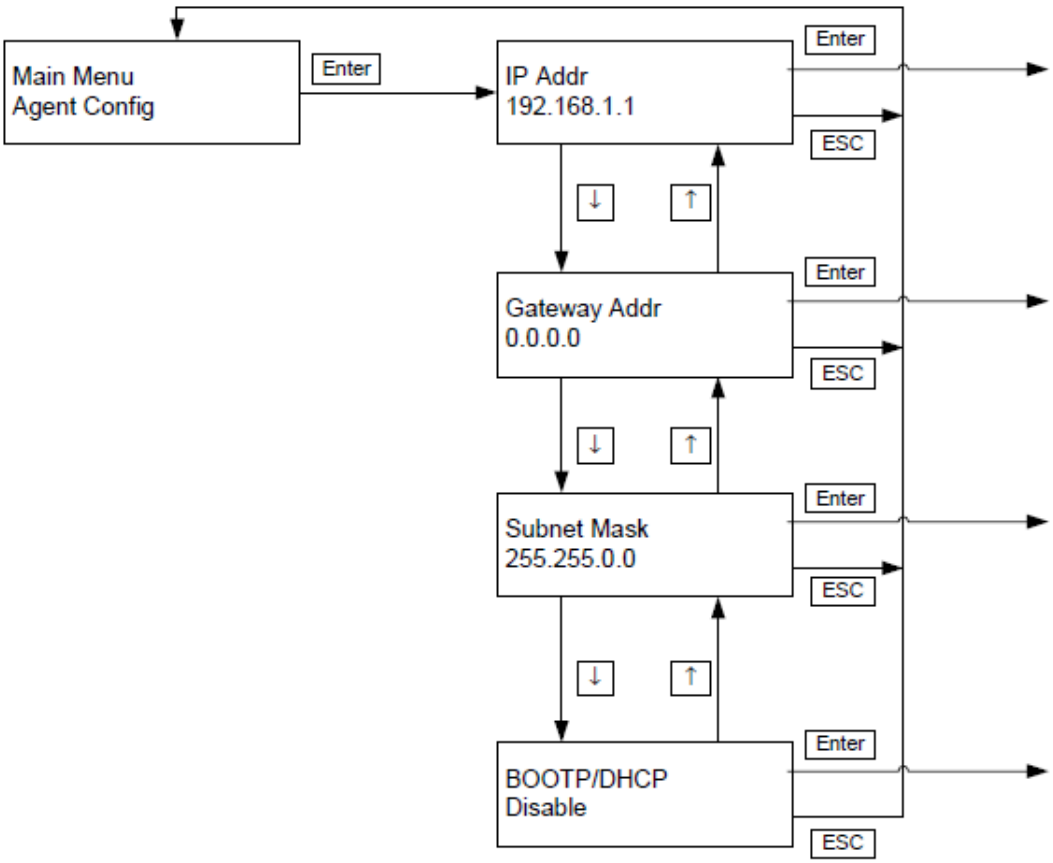
Flowcharts for each function are presented in the following sections. Please note that not all settings can be accessed via the LCD module. Certain parameters can only be set under the command mode or via the web page.

3.3.5 Main Menu

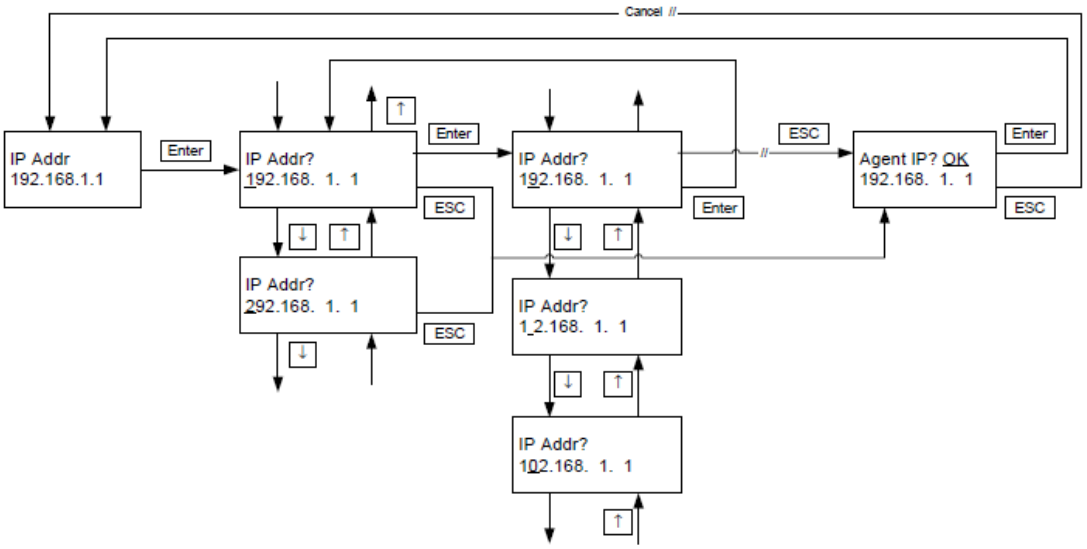


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3.3.6 Agent Configuration

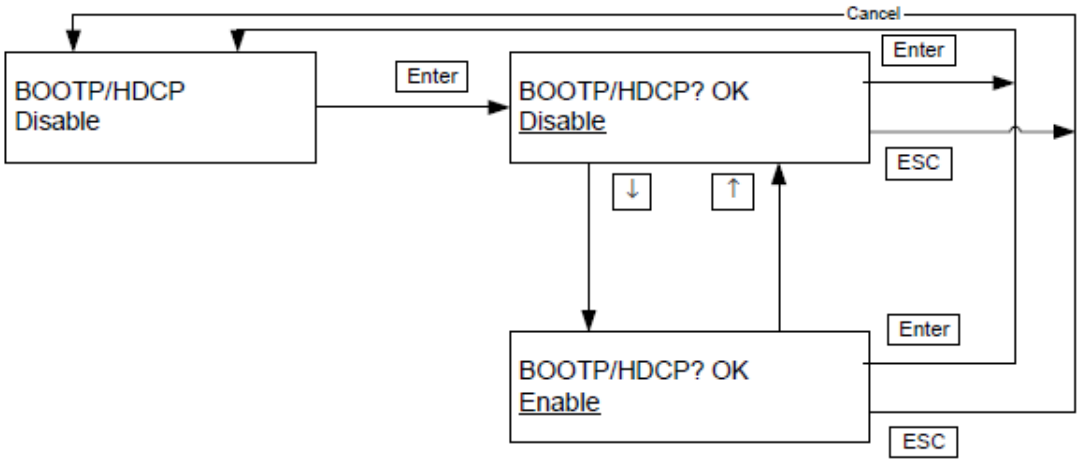


3.3.7 Setting the IP Address

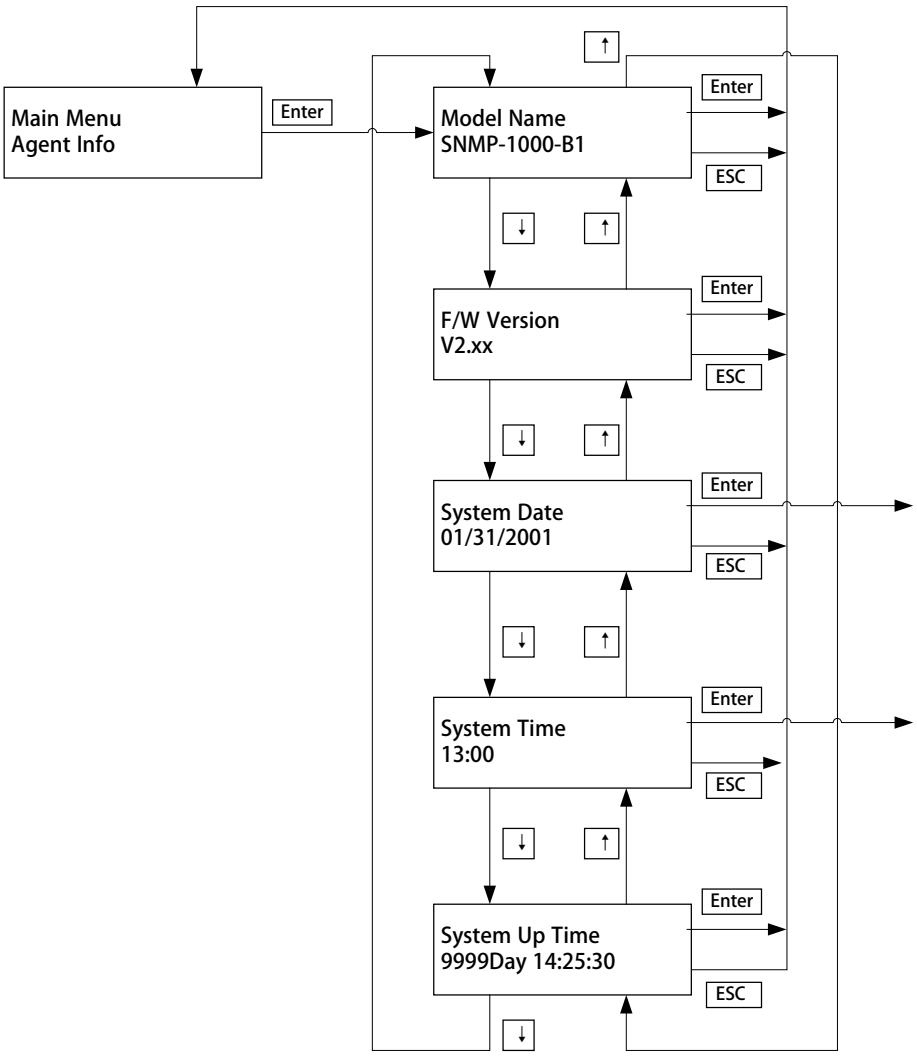


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3.3.8 Enable/Disable the BOOTP/HDCP Function

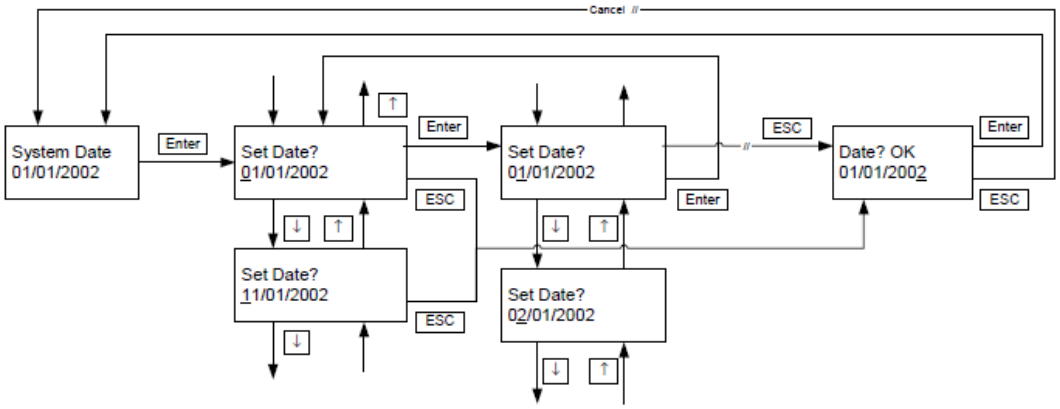


3.3.9 Agent Information

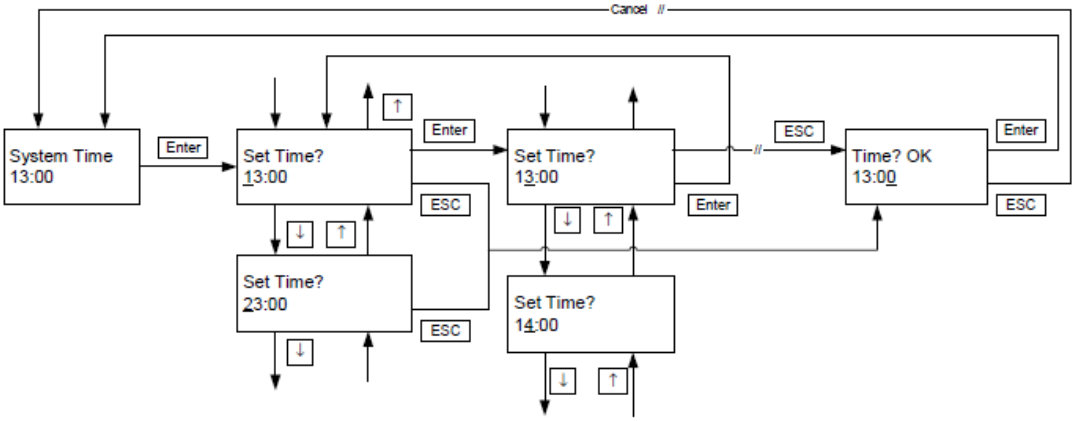


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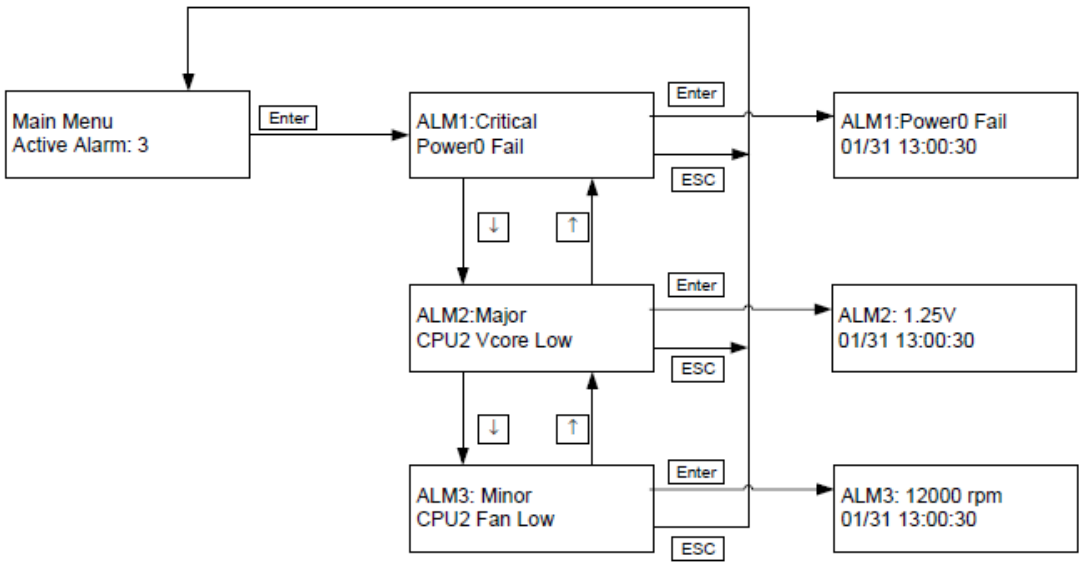
3.3.10 Set System Date



3.3.11 Set System Time

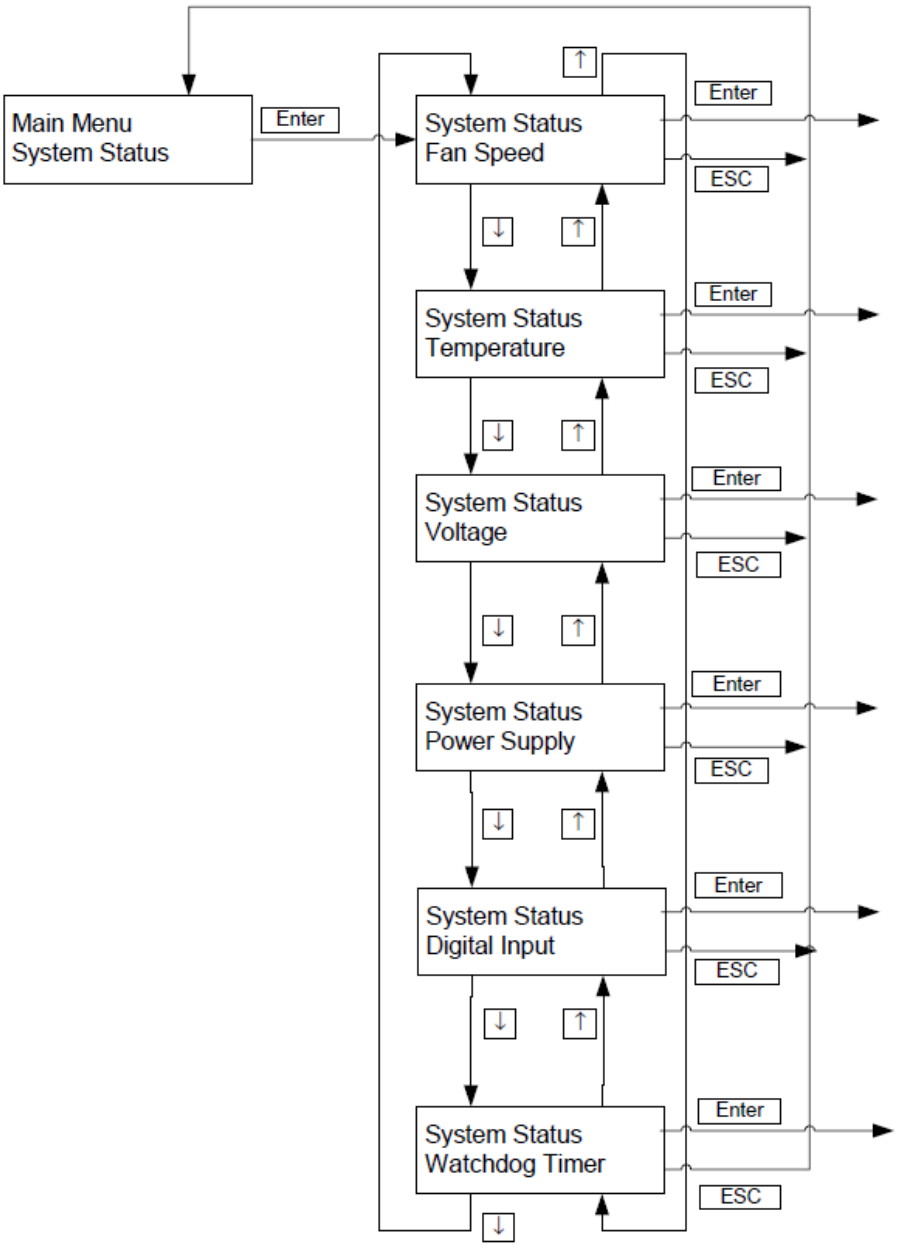


3.3.12 View Active Alarms



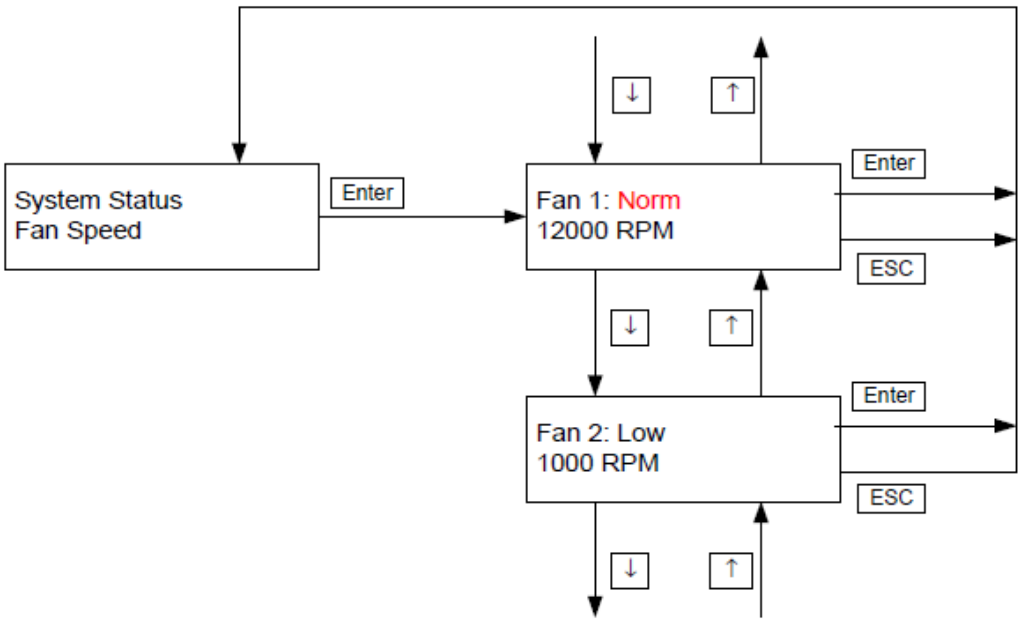
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3.3.13 View System Status

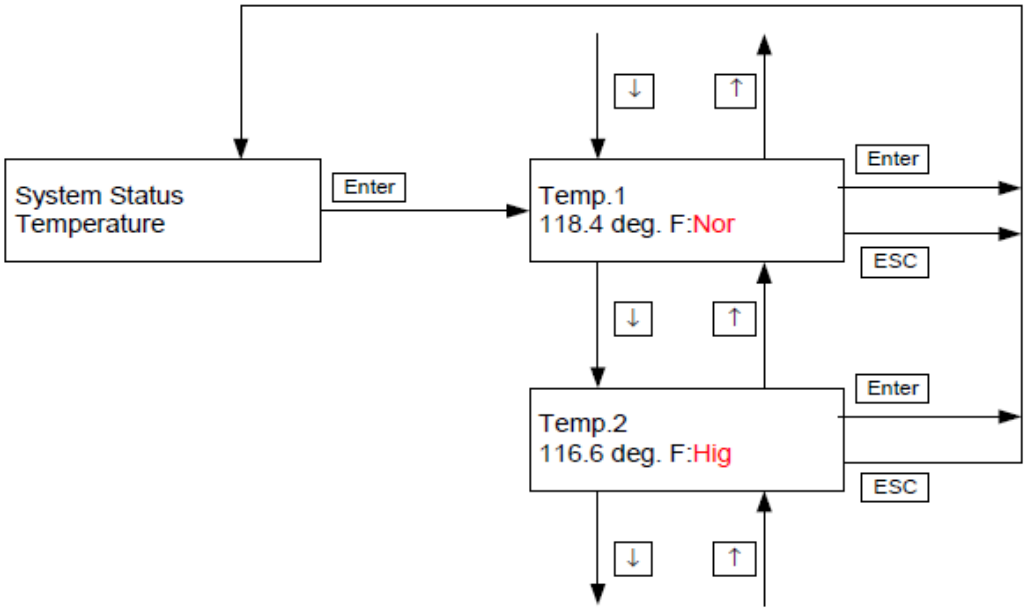


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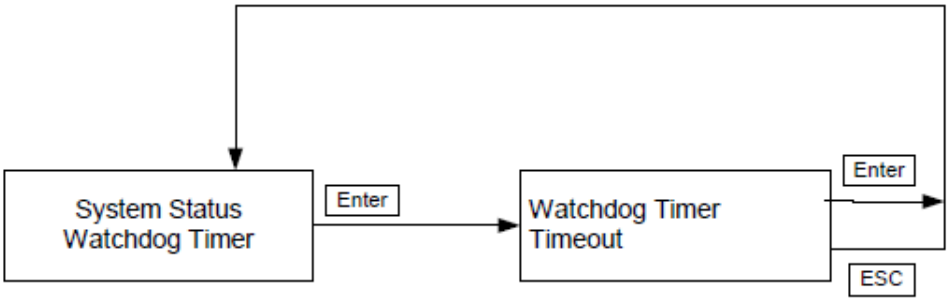
3.3.14 View Fan Speed



3.3.15 View Temperature Status

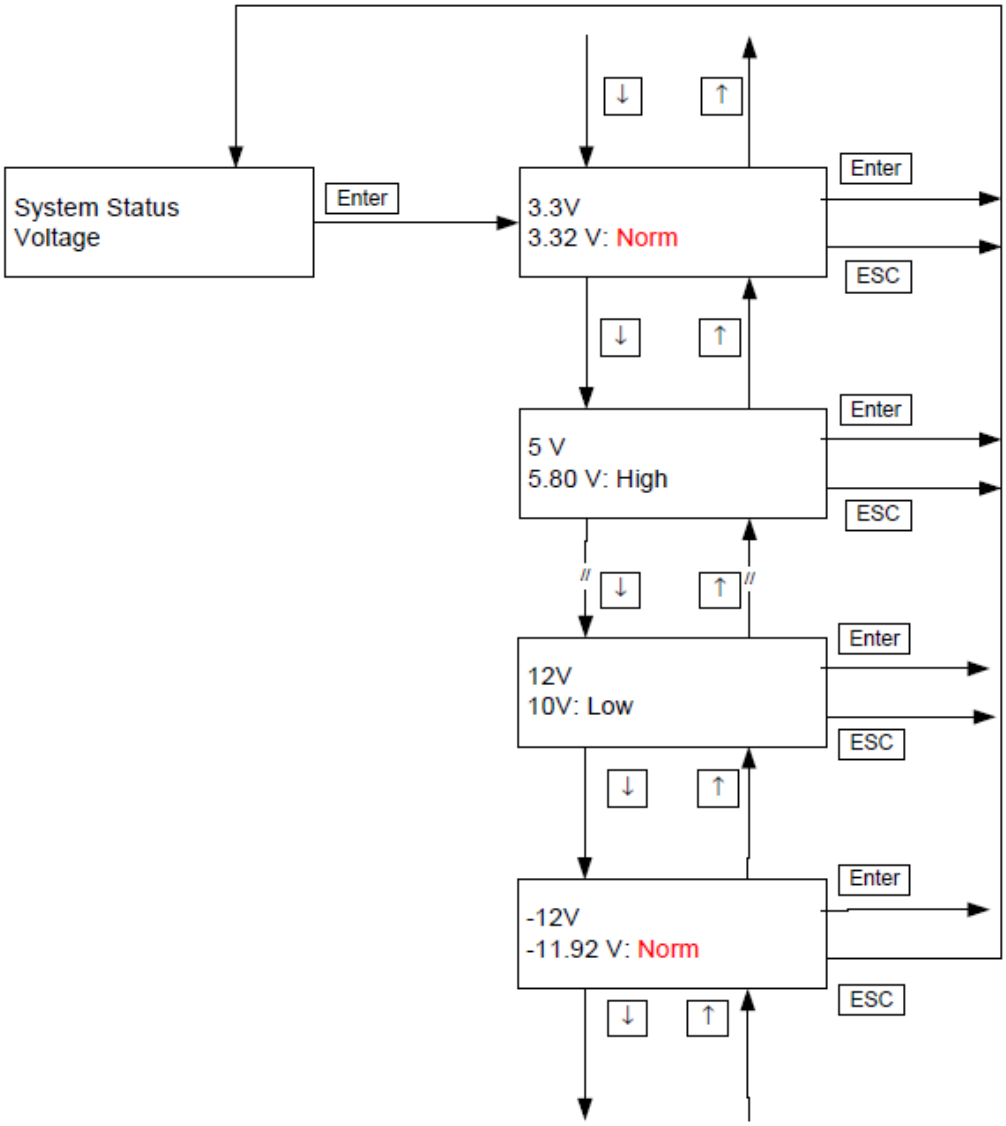


3.3.16 View Watchdog Timer Status



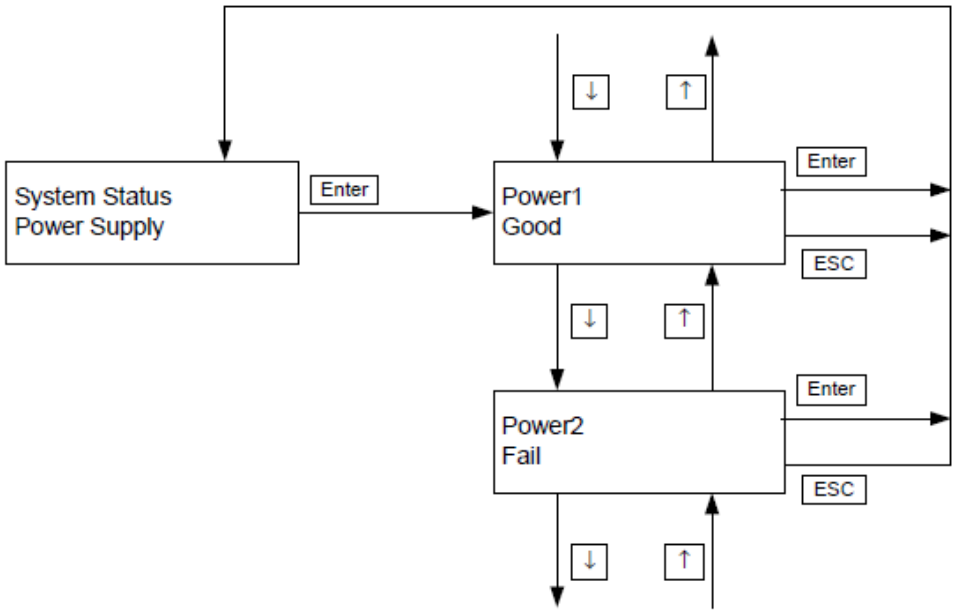
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3.3.17 View Voltage Status

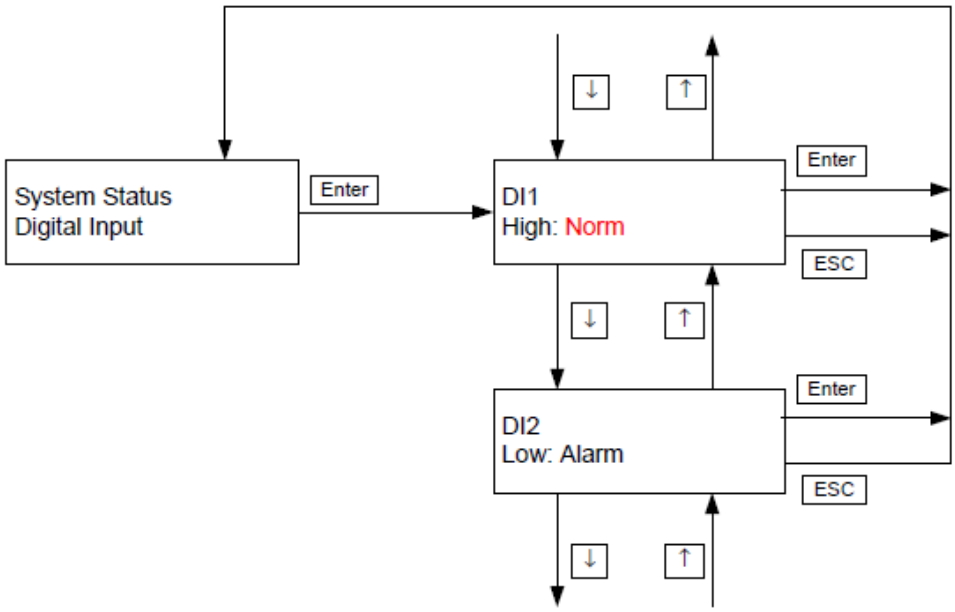


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3.3.18 View Power Supply Status

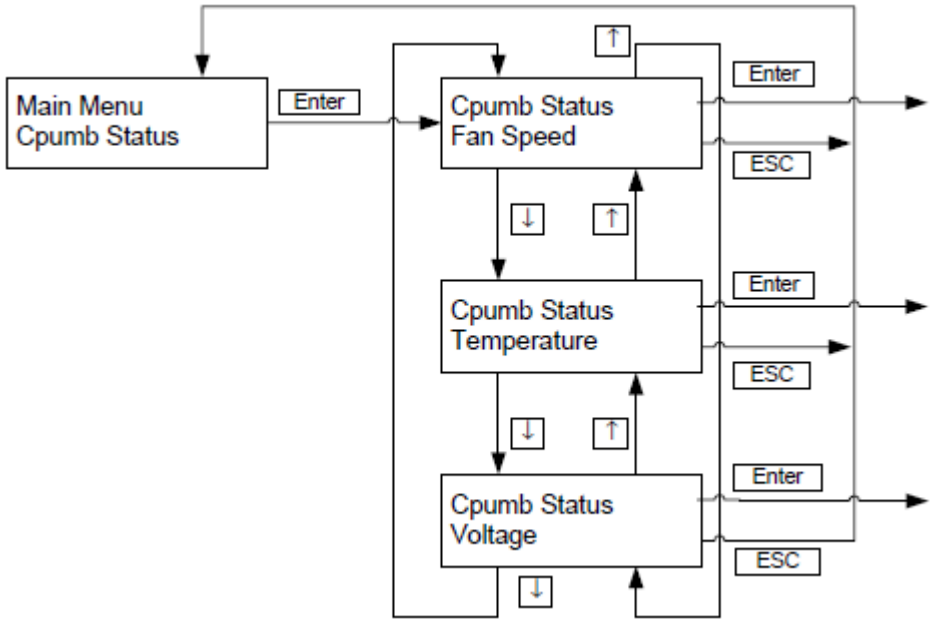


3.3.19 View Digital Input Status



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3.4 View CPU Card/Motherboard Status



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Chapter 4

Programming SNMP-1000-B2

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4.1 Introduction

SNMP-1000-B2 can be accessed and controlled by direct command inputs. With this function, SNMP-1000-B2 can be easily controlled and integrated into a user's system via the appropriate user program.

4.2 Entering the Pass Through Command Mode

Before programming SNMP-1000-B2, users must connect the host computer to SNMP-1000-B2 via the serial port or Telnet. Follow the steps outlined below to enter the Pass Through Command mode.

1. Power on SNMP-1000-B2 to allow the device to send the identifying string "\nAdvantech v2.xx (SNxxxxxx) Ready \n" to the host computer via a COM port.
2. On the host computer side, send a carriage return (enter, or \r).
3. SNMP-1000-B2 then responds by sending the main menu title and a message requesting that the user name be entered.

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

4. On the host computer side, send the user name \r. SNMP-1000-B2 will respond with the user name \n\n and request that the password be entered.

Host computer sends:

```
"advantech\r"
```

SNMP-1000-B2 responds:

```
"advantech\n\n Enter Password:"
```

5. On the host computer side send the password \r. SNMP-1000-B2 will respond with the password \n\n\n and access to the main menu.

EX.

Host computer side sends:

```
"admin\r"
```

SNMP-1000-B2 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
```


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```
Please Enter Your Choice => "
```

6. On the host computer side send 5\r. SNMP-1000-B2 will respond 5\n\n and enter the pass through command mode.

Host computer side sends:

```
"5\r"
```

SNMP-1000-B2 responds:

```
"5\n
Command :"
```

Once the pass through command mode is entered, SNMP-1000-B2 is ready to receive commands.

4.3 Command and Response Syntax

The format of commands and responses is displayed 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 subcode

xxx: value in ASCII code; this can be "Done" or "Invalid" in the SNMP-1000-B2 response.

Examples:

1. Write lower limit of Fan 0 to "1000" rpm

EX.

Host computer side sends:

```
"w1011000\r"
```

SNMP-1000-B2 responds:

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

2. Read lower limit of Fan 0

EX.

Host computer side sends:

```
"r101\r"
```

SNMP-1000-B2 responds:

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

3. If the input command is incorrect then SNMP-1000-B2 will respond with an invalid message notification.

EX.

Host computer side sends:

```
"r905\r"
```

Here the device subcode is over range.

SNMP-1000-B2 responds:

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


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4.4 List of Device Codes and Subcodes

Device Codes									
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	CPU Temp							
Code	60	61	62	63	64	65	66	67	68
Device	CPU 1	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								

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Device Subcodes							
Device Code	1	2	3	4	5	6	7
Fan	Lower Limit	Alarm Level	Event Out	Current Speed			
Temp	Upper Limit	High Alarm	High Event	Lower Limit	Low Alarm Level	Low Event Output	Current Temp
Voltage	Upper Limit	Lower 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 Subcode
r101	Fan 0	10	Lower 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		

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Command	Device	Device Code	Device Sub-Item	Device Subcode	Value (xxxx)	Remark
w101xxxx	Fan 0	10	Lower 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 Subcode
r201	Temp 0	20	Upper 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	Lower 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		

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r206	Temp 0	20	Low Event Output	6
r216	Temp 1	21		
r286	Temp 8	28		
r207	Temp 0	20	Current Temp	7
r217	Temp 1	21		
r287	Temp 8	28		

Command	Device	Device Code	Device Sub-Item	Device Subcode	Value (xxxx)	Remark
w201xxxxx	Temp 0	20	Upper Limit	1	55 ~ 125 (°C) or -67 ~ 257 (°F)	Temperature value in ASCII, °C, or °F according to the 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	Lower Limit	4	55 ~ 125 (°C) or -67 ~ 257 (°F)	Temperature value in ASCII, °C, or °F according to the system setting, max. 5 characters, incl. "-", "."
w214xxxxx	Temp 1	21				
w284xxxxx	Temp 8	28				
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

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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 Subcode
r301	3 3V	30	Upper Limit	1
r311	5V	31		
r321	-5V	32		
r331	5VSB	33		
r341	12V	34		
r351	-12V	35		
r302	3 3V	30	Lower Limit	2
r312	5V	31		
r322	-5V	32		
r332	5VSB	33		
r342	12V	34		
r352	-12V	35		
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		

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Command	Device	Device Code	Device Sub-Item	Device Subcode	Value(xxxx)	Remark
w301xxxxxx	3 3V	30	Upper 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				
w302xxxxxx	3 3V	30	Lower 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

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4.5.4 CPU Card

Command	Device	Device Code	Device Sub-Item	Device Subcode
r401	CPU 1	40	Lower 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	Upper 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	Lower 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		
r601	CPU 1	60	Upper Limit	1
r611	CPU 2	61		
r621	CPU VI/O	62		
r631	CPU card	63		
r641	CPU card -	64		
r651	CPU card	65		
r661	CPU card -	66		
r602	CPU 1	60	Lower Limit	2
r612	CPU 2	61		
r622	CPU VI/O	62		
r632	CPU card	63		
r642	CPU card -	64		
r652	CPU card	65		
r662	CPU card -	66		

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r603	CPU 1	60	Alarm Level	3
r613	CPU 2	61		
r623	CPU VI/O	62		
r633	CPU card	63		
r643	CPU card -	64		
r653	CPU card	65		
r663	CPU card -	66		
r604	CPU 1	60	Event Output	4
r614	CPU 2	61		
r624	CPU VI/O	62		
r634	CPU card	63		
r644	CPU card -	64		
r654	CPU card	65		
r664	CPU card -	66		
r605	CPU 1	60	Current Voltage	5
r615	CPU 2	61		
r625	CPU VI/O	62		
r635	CPU card	63		
r645	CPU card -	64		
r655	CPU card	65		
r665	CPU card -	66		

Command	Device	Device Code	Device Sub-Item	Device Subcode	Value (xxxx)	Remark
w401xxxx	CPU 1	40	Lower 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 Subcode	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

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Command	Device	Device Code	Device Sub-Item	Device Subcode	Value (xxxx)	Remark
w501xxxxx	CPU 1	50	Upper Limit	1	-55 ~ 125 (° C) or -67 ~ 257 (° F)	Temperature value in ASCII, ° C, or ° F according to the 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	1	None
					2	Power Off
					3	DO 0
w513x	CPU 2	51			4	DO 1
					5	DO 2
					6	DO 3
w504xxxxx	CPU 1	50	Lower Limit	4	-55 ~ 125 (° C) or -67 ~ 257 (° F)	Temperature value in ASCII, ° C, or ° F according to the system setting, max. 5 characters, incl. "-", "."
w514xxxxx	CPU 2	51				

Command	Device	Device Code	Device Sub-Item	Device Subcode	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

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Command	Device	Device Code	Device Sub-Item	Device Subcode	Value (xxxx)	Remark
w601xxxxxx	CPU 1 Vcore	60	Upper 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	Lower 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 Subcode	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

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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			4	DO 1
w654x	CPU card +12V	65			5	DO 2
w664x	CPU card -12V	66			6	DO 3

Command	Device	Device Code	Device Sub-Item	Device Subcode
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 Subcode
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		

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Command	Device	Device Code	Device Sub-Item	Device Subcode	Value (xxxx)	Remark
w701x	Power 1	70	Normal Level	1	1	High
w711x	Power 2	71				
w721x	Power 3	72			2	Low
w731x	Power 4	73				
w702x	Power 1	70	Alarm Level	2	1	Not Used
w712x	Power 2	71			2	No Alarm
w722x	Power 3	72			3	Critical
w732x	Power 4	73			4	Major
					5	Minor

Command	Device	Device Code	Device Sub-Item	Device Subcode	Value (xxxx)	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 Subcode
r801	0I 1	80	Normal Level	1
r811	0I 2	81		
r871	0I 7	87		
r802	0I 1	80	Alarm Level	2
r812	0I 2	81		
r872	0I 7	87		
r803	0I 1	80	Event Output	3
r813	0I 2	81		
r873	0I 7	87		
r804	0I 1	80	Current Status	4
r814	0I 2	81		
r874	0I 7	87		

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

4.5.6 WDT

Command	Device	Device Code	Device Sub-Item	Device Subcode
r901	W0T	90	Alarm Level	1
r902			Event Output	2
r903			Current Status	3

Command	Device	Device Code	Device Sub-Item	Device Subcode	Value (xxxx)	Remark
w901x	W0T	90	Alarm Level	1	1	Not Used
					2	No Alarm
					3	Critical
					4	Major
					5	Minor
w902x	W0T	90	Event Output	2	1	None
					2	Power Off
					3	DO 0
					4	DO 1
					5	DO 2
					6	DO 3

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Appendix A

Connector Pin Assignments

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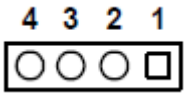
A.1 External Buzzer Connector (J1)

Pin	Signal
1	Buzzer
2	+5 V

A.2 Bypass Password Protection (MJ1)

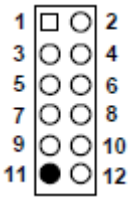
Pin	Signal
1	PASS_SET
2	GND

A.3 External Power Connector (CN1)



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

A.4 10/100Base-T LAN Connector (CN2)



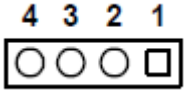
Pin	Signal	Pin	Signal
1	SPLE0 (LAN speed LED)	2	TERMPLANE
3	RX+	4	RX-
5	GND	6	LVCC
7	TX+	8	TX-
9	LILE0 (LAN link LE0)	10	TERMPLANE
11	N/A	12	GND

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A.5 System SMBus Connector (CN3)

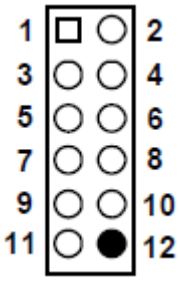
Pin	Signal
1	B_SCLK (I2C bus clock)
2	B_SDAT (I2C bus data)

A.6 Temperature Sensor Connectors (CN4 and CN7)



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

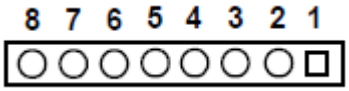
A.7 RS-232 Connector (CN8)



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

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A.8 LCM Message Display 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.9 Kernel Board Connector (CN11)

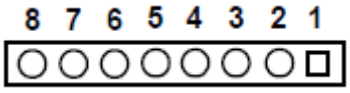
Pin	Signal	Pin	Signal
1	SIN	2	SOUT
3	CTS#	4	DCD#
5	RTS#	6	DTR#
7	DSR#	8	Alarm reset
9	ATX ON	10	DO 4
11	GND	12	DO 3
13	Watchdog IN	14	DO 2
15	Watchdog OUT	16	DO 1
17	SPLE0 (LAN speed LED)	18	DI 1
19	LILED (LAN link LED)	20	DI 2
21	GND	22	DI 3
23	TX+ (LAN)	24	DI 4
25	TX- (LAN)	26	DI 5
27	RX+ (LAN)	28	DI 6
29	RX- (LAN)	30	DI 7
31	TERMPLANE	32	DI 8

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A.10 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 LEO	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 (0ata of I2C bus to system)
29	-12V	30	T_SCLK (Clock of I2C bus to sensor)
31	+12V	32	T_SDAT (0ata of I2C bus to sensor)

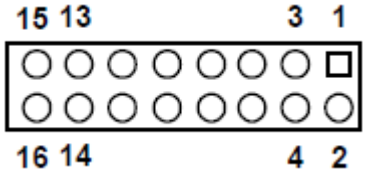
A.11 Backplane Voltage Input Connector (CN13)



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

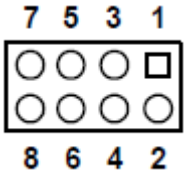
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A.12 Digital Input Connectors (DI1 ~ DI8) (CN14)



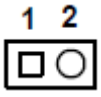
Pin	Signal	Pin	Signal
1	DI 1	2	GND
3	DI 2	4	GND
5	DI 3	6	GND
7	DI 4	8	GND
9	DI 5	10	GND
11	DI 6	12	GND
13	DI 7	14	GND
15	DI 8	16	GND

A.13 Digital Output Connectors (DO1 ~ DO4) (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

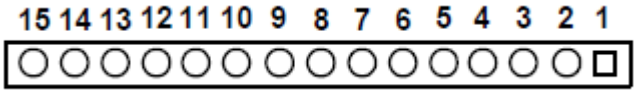
A.14 Alarm Reset Connector (CN17)



Pin	Signal
1	GND
2	ARM_RESET

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A.15 LED Indicator Connector (CN18)

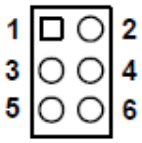


Pin	Signal	Pin	Signal
1	GND	2	PG +5 V
3	PG +12 V	4	PG -5 V
5	PG-12 V	6	HDD 1
7	PG LED	8	PF LED# (DO 1)
9	TG LED	10	TF LED# (DO 2)
11	FG LED	12	FF LED# (DO 3)
13	TF LED	14	PG +3 3 V
15	PG 5VSB		

Note

The SNMP-1000-B2NMP-1000-B2 uses digital signals DO1, DO2, and DO3 for the power failure LED (PF_LED#), overheating LED (TF_LED#) and fan failure LED (FF_LED#), respectively. Users must enable alarms for the power, temperature, and fan, and select the event output as DO1, DO2, and DO3 in the "Alarm Configuration" section of the SNMP-1000-B2 web management interface.

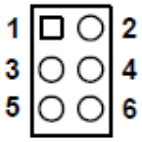
A.16 CPU Card Interface Connector (CN19)



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

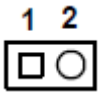
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A.17 Chassis and Watchdog Timer Connector (CN20)



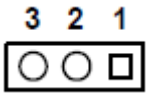
Pin	Signal	Pin	Signal
1	ATX IN	2	ATX OUT
3	GND	4	System Reset
5	Watch Dog Input	6	Watch Dog Output

A.18 Power Good Input Connectors (CN16, CN21 ~ CN24)



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

A.19 FAN Connectors (FAN1 ~ FAN9)



Pin	Signal
1	GND
2	+12 V
3	FAN Speed

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