NCR Dual Ethernet UPS Interface Card

Installation and Operation Manual

Class A EMC Statements

FCC Part 15

NOTE 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 Rules. 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 which case the user will be required to correct the interference at his own expense.

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CHAPTER 1

Getting Started

NOTE Read all instructions before installing the Dual Ethernet UPS Interface Card.

The NCR Dual Ethernet UPS Interface Card expands the communication capability of the uninterruptible power system (UPS) so that access to UPS conditions and meter values is available via SNMP v1 (Simple Network Management Protocol). The card provides two network connections to the UPS, each of which is accessed via separate IP addresses, providing for redundant network communication paths to the UPS.

The Dual Ethernet UPS Interface Card (kit or factory installed) is designed specifically for use with the NCR 4074 Rack-Mount UPS (3000 VA, 230V model). The Dual Ethernet UPS Interface Card can be factory installed or ordered as a kit (part number 007-9963936). The card includes these installation instructions and a local configuration cable (part number 152601503-001).

Dual Ethernet UPS Interface Card Installation

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during installation and operation of the NCR Dual Ethernet UPS Interface Card. Please read all instructions before installing the card and save this manual for future reference.

DANGER

This UPS contains **LETHAL VOLTAGES**. All repairs and service should be performed by **AUTHORIZED SERVICE PERSONNEL ONLY**. There are **NO USER SERVICEABLE PARTS** inside the UPS.

If the Dual Ethernet UPS Interface Card is not installed, refer to the *NCR Dual Ethernet UPS Interface Card Option Kit Abbreviated Installation Instructions* for NCR-specific installation instructions and configuration information in a DHCP/BOOTP environment.

Continue to "Configuration" on page 3 to review more specific settings within the card or to troubleshoot an installation.

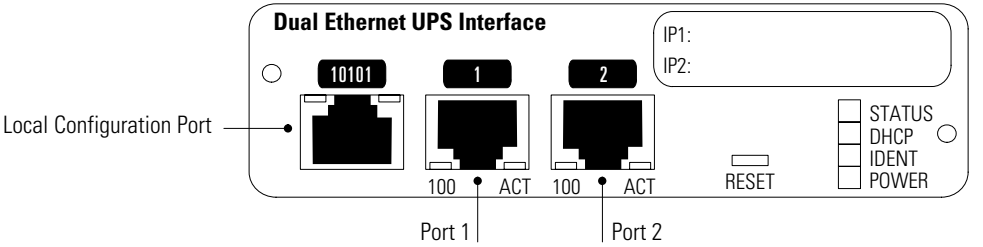

Figure 1. The Dual Ethernet UPS Interface Card

CHAPTER 2

CONFIGURATION

The Dual Ethernet UPS Interface Card can obtain IP address-related information via DHCP/BOOTP. This is the factory default for the card. If the card was installed into this environment successfully, it has obtained an IP address and, as necessary, a network gateway and network mask from a DHCP or BOOTP server that is on the connected network. Knowing the IP address assigned to either of the card's Ethernet ports is necessary to allow remote configuration of the card using Telnet to make additional changes to the card's settings.

If you know the IP address Information for the card, write it in the space provided below:

IP Address Ethernet Port 1 _____

IP Address Ethernet Port 2 _____

Local configuration may also be performed by using the supplied cable (part number 152601503-001) and a serial terminal program that supports 9600 baud, 8 data bits, No parity, 1 stop bit, and no hardware handshaking. A username and password are not required for access.

NOTE If you intend to remotely configure the card using Telnet, continue to Remote Configuration – Preparation on page 5.

Local Configuration – Preparation

Use the following procedure to access the card's configuration utility through a serial port.

Before You Start

To use the built-in configuration utility for the card, you need:

- The local configuration cable supplied with the card.
- A computer with a serial communication port and a terminal emulation program (such a HyperTerminal® for Windows®).

Connecting the Card

To connect the card to the computer and start the configuration utility:

1. Plug the local configuration cable into the local configuration port on the Dual Ethernet UPS Interface Card (see Figure 1).
2. Plug the other end of the cable into the COM port on your computer.
3. Open your terminal emulation program, such as HyperTerminal, and select the appropriate serial connection (such as COM1).

   The serial line should be set to 9600 baud, 8 data bits, No parity, 1 stop bit, and no hardware handshaking.
4. Press [Enter]. The card's Main Menu screen appears (see Figure 2).

   If the screen does not appear, press [Enter] again.

   If you still do not see the Main Menu screen, check the following conditions:

   - Verify the serial line is set to 9600 baud, 8 data bits, No parity, 1 stop bit, and no hardware handshaking.
   - If the serial line settings are correct, check the cabling to verify all connections are secure.
   - Verify that your terminal program is on the correct communication port for the serial connection.
   - Verify that the Dual Ethernet UPS Interface Card has power (the green power indicator should be illuminated). The UPS should be turned on.
5. Skip to "Configuring the Card" on page 6.

```
+============================================================================+
|                              [ Main Menu ]                                 |
+============================================================================+
   1. Card Settings
   2. Reset Card's Configuration to Default
   3. Restart Card
   4. Locate Card
   0. Exit
Please Enter Your Choice =>
```

Figure 2. Dual Ethernet UPS Interface Card Main Menu Screen

Remote Configuration – Preparation

Use the following procedure to access the card's configuration menus via a remote Telnet client.

Before You Start

Once the card is accessible on the network, further configuration may be completed using a Telnet client. To use the configuration utility for the card, you need:

- One of the two IP addresses assigned to the card via DHCP or BOOTP (see page 3).
- A Telnet client on a network-connected computer.
- The username and password assigned to allow access to the card's configuration menus (**admin** is the default username and password).

Connecting the Card

To access the configuration menus via the network:

1. Access the card using Telnet by typing:

   telnet *xxx.xxx.xxx.xxx* [Enter]

   where *xxx.xxx.xxx.xxx* is one of the card's IP addresses.

2. When you are prompted for a login, enter your ***username*** and ***password*** (**admin** is the default username and password), then press **[Enter]**.

   If Telnet cannot connect to the card at the specified IP address, verify the following:

   - The IP address used in Step 1 is valid for the card. If the IP address is valid, try the IP address of the second Ethernet connection.
   - The computer can detect the card by using the ping utility to check whether the card is visible on the network. If it is not, ping another known network device to verify that the computer is on the network.

3. Upon proper authentication of the username and password, the card's Main Menu screen is displayed (see Figure 2).
4. Continue to the following section, "Configuring the Card."

Configuring the Card

To configure the card:

From the Main Menu screen, type **1** to enter the Card Settings Menu screen (see Figure 3).

```
+==============================================================================+
|                          [ Card Settings Menu ]                              |
+==============================================================================+
   1. Network Settings
   2. Security Settings
   3. SNMP and Host Table Settings
   4. Quick Status
   0. Return to Previous Menu
Please Enter Your Choice =>
```

Figure 3. Card Settings Menu Screen

Card Settings Menu - Network Settings

From the Card Settings Menu screen, type **1** to enter the Network Settings screen (see Figure 4).

```
+==============================================================================+
|                            [ Network Settings ]                              |
+==============================================================================+
      Card Firmware Version        : 1.00.0.0
      DHCP/BOOTP                   : Enabled
      MAC Address (Port 1)         : 00:60:26:10:00:00
   1. IP Address                   : 10.80.7.100
   2. Gateway Address              : 0.0.0.0
   3. Network Mask                 : 255.240.0.0

      MAC Address (Port 2)         : 00:60:26:10:00:01
   4. IP Address                   : 10.96.7.100
   5. Gateway Address              : 0.0.0.0
   6. Network Mask                 : 255.240.0.0
   0. Return to Previous Menu
Please Enter Your Choice =>
```

Figure 4. Network Settings Screen

The Network Settings screen contains the following parameters:

- **Card Firmware Version** - At the top of the Network Settings screen, the card's firmware version number is displayed.
- **DHCP/BOOTP** - Tells whether or not the card is configured to acquire its network information via DHCP or BOOT.

  This setting is directly controlled by DIP switch S1, position 1. The default position for this switch is the OFF position, which enables the DHCP/BOOTP process. If this switch is set to the ON position, DHCP/BOOTP is disabled during the card's boot sequence.

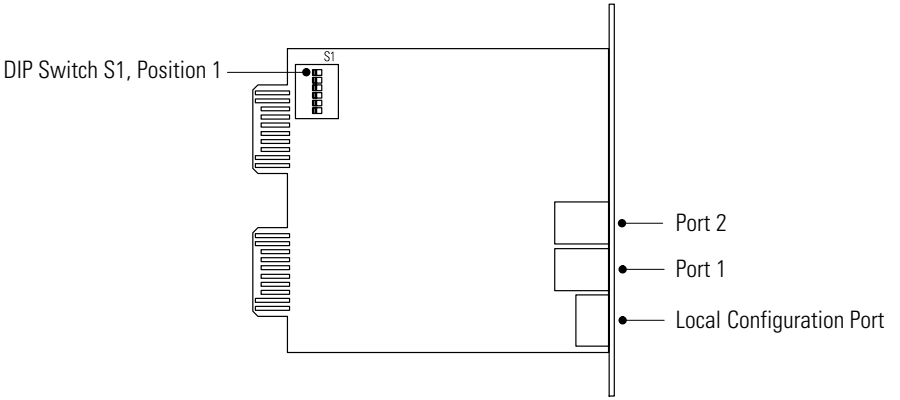

Figure 5. S1 DIP Switch Location

- **MAC Address** (Port 1 and Port 2) - These parameters indicate the factory-programmed MAC addresses for the two Ethernet devices. They are not user accessible, but help in identifying the card on the network. The MAC address for Port 1 is located on a label on top of the card. To determine the MAC address of Port 2, increase the Port 1 address by one; for example:

  Port 1 MAC Address + 1 = *Port 2 MAC Address*
  006026100018 + 1 = 006026100019

- **IP Address**, **Gateway Address**, and **Network Masks** (Port 1 and Port 2) - IP addresses, gateway addresses, and network masks can be configured by the user by selecting the menu number of the setting. The user is prompted to enter new information. If you choose not to change the existing information, type **[Enter]** without entering a replacement value.

NOTE If you choose to manually change any of these settings, be advised that the DHCP/BOOTP action during startup may override your settings based on the configuration of the DHCP or BOOTP server. The only way to prevent the card from attempting DHCP or BOOTP when the card is restarted is to switch DIP switch S1, position 1 to the ON position, preventing the card from trying DHCP or BOOTP during the boot process.

Changes are not saved permanently until you completely exit the card's menu system or select the Restart option from the card's Main Menu screen.

Type **0** to return to the Card Settings Menu screen.

Security Settings

From the Card Settings Menu screen, type **2** to enter the Security Settings screen (see Figure 6).

```
+==============================================================================+
|                            [ Security Settings ]                             |
+==============================================================================+
   1. Username                 : admin
   2. Password                 : ****
   3. Root Password            : ****
   0. Return to Previous Menu

Please Enter Your Choice =>0
```

Figure 6. Security Settings Screen

Local configuration of the card through the serial configuration cable does not require the user to enter a username and password. The card only prompts you for a username and password when accessing the configuration menus via Telnet.

By default, the username is *admin* and may be changed by the user.

By default, the password is *admin*. It is always recommended that the card's administrator change this password after the card has been installed.

The root password allows special privileges via Telnet access and is only associated with the username *root*. The default root password is *powerware*.

To change the username or password, type the menu number followed by [Enter]. You are prompted for the new value and asked to confirm your change by typing it again. As a security measure, the old password must be entered before you are allowed to change it.

Security settings are saved immediately and do not require you to completely exit the card's menu system.

Type **0** to return to the Card Settings Menu screen.

SNMP and Host Table Settings

From the Card Settings Menu screen, type **3** to enter the SNMP and Host Table Settings screen (see Figure 7).

```
+==============================================================================+
|                      [ SNMP and Host Table Settings ]                        |
+==============================================================================+
   1. SNMP MIB/Trap Settings
   2. SNMP Trap Receivers Table
   0. Return to Previous Menu
Please Enter Your Choice =>
```

Figure 7. SNMP and Host Table Settings Screen

The SNMP and Host Table Settings screen has two submenus. The first allows access to overall SNMP-related configuration items, the second allows you to configure the card to send SNMP traps to specific hosts.

1. Type **1** to access the SNMP MIB/Trap Settings screen (see Figure 8).

```
+==============================================================================+
|                        [ SNMP MIB/Trap Settings ]                            |
+==============================================================================+
   1. Get Community Name                                : public
   2. Set Community Name                                : *
   3. Trap Community Name                               : public
   4. Watch/Alarm for Secondary AC Input                : Enabled
   5. UPS Installation Date                             :
   6. Battery Last Replaced Date                        :
   7. Heartbeat Trap Interval (minutes)                 : 0
   8. sysName      :
   9. sysContact   :
  10. sysLocation  :
  11. AttdDevices  :
   0. Return to Previous Menu
Please Enter Your Choice =>
```

Figure 8. SNMP MIB/Trap Settings Screen

The SNMP MIB/Trap Settings screen contains the following parameters:

- **Get Community Name** - To perform SNMP “gets” (read actions) on the card from a network management system (NMS), the card and NMS must share a specified community name. By default, this community name is *public*. If enhancing the security of the card is important, it is suggested that the name be changed.
- **Set Community Name** - To perform SNMP “sets” (to change configuration items or control the UPS) on the card from an NMS, the card and NMS must share a specified community name. By default, this community name is *private*. Because the ability to perform “sets” on the card is more often a security concern for administrators, the Set Community Name is hidden from the user.
- **Trap Community Name** - As a form of validation or filtering, the card and the NMS share a Trap Community Name that helps ensure that received traps are only from the card(s) you intend to monitor. The default name is *public*.
- **Watch/Alarm for Secondary AC Input** - By default, this setting is Enabled for the NCR 4074 Rack-Mount UPS (3000 VA, 230V model) since it has two individual AC input connections that are presumed to be connected. To avoid nuisance alarms and traps, this parameter can be set to Disabled when the UPS is not connected to a secondary source of input power.
- **UPS Installation Date** - This parameter allows the user to enter the date when the UPS was installed. The user may select the format of the date entry as appropriate for their location. By default, the field is blank. This parameter corresponds to the PowerMIB object xupsConfigInstallDate.
- **Battery Last Replaced Date** - This parameter allows the user to enter the date when the UPS batteries were replaced. The user may select the format of the date entry as appropriate for their location. By default, the field is blank. This parameter corresponds to the PowerMIB object xupsBatteryLastReplacedDate.

- **Heartbeat Trap Interval (minutes)** - The card can be configured to send a heartbeat trap at a specified interval (in minutes). By default, this parameter is set to 0, which leaves the heartbeat trap sending disabled. The user may configure this parameter with a value between 0 and 2147483647 minutes. This parameter corresponds to the PowerMIB object xupsHeartbeatMinsInterval.
- **sysName**, **sysContact**, **sysLocation**, and **AttdDevices** - These four user-configurable parameters allow the user to specify environment-specific information regarding the installation of the card and UPS. All four correspond to their respective MIB objects and allow the information, once entered, to be obtained via a SNMP "get" function on the appropriate MIB.

Changes are not saved permanently until you completely exit the card's menu system or select the Restart option from the card's Main Menu screen.

2. Type **0** to return to the SNMP and Host Table Settings screen.
3. Type **2** to enter the SNMP Trap Receivers Table screen.

```
+=============================================================================+
|                     [ SNMP Trap Receivers Table ]                           |
+=============================================================================+
|      IP Address                Trap Level                  MIB Group      |
+--Permanent-------------------------------------------------------------------+
      1) 10.80.7.110               All Traps                  RFC 1628
+--Dynamic---------------------------------------------------------------------+
      2) 10.80.7.114               All Traps                  PowerMIB
+=============================================================================+
-----COMMANDS-----------------------------------------------------------------
   1. Create  - Create a Permanent Trap Receiver Table Entry
   2. Modify  - Edit a Trap Receiver Table Entry
   3. Delete  - Delete a Trap Receiver Table Entry
   4. Promote - Promote a Dynamic Host to Permanent Entry
   0. Return to previous menu
Please Enter Your Choice =>
```

Figure 9. SNMP Trap Receivers Table Screen

In order for the card to send traps to an NMS or other trap receiver, the card must be configured to know whom to send them to.

The Trap Receiver Table can contain the IP addresses of up to 32 receivers. To add a permanent entry to the table, select **Create** and provide the IP address of the target receiver, the level of traps you want them to receive and whether the traps should come from the Standard UPS MIB (RFC 1628) or the PowerMIB.

Separately, the card has the ability to dynamically add trap receivers based on general SNMP activity. If you perform SNMP "gets" or "sets" on the card, your IP address is automatically added to the Dynamic section of the SNMP Trap Receivers Table. After you are added to the table, you are automatically sent traps from PowerMIB. By using the appropriate NMS software, these traps can be displayed or acted upon.

After 30 minutes has elapsed without SNMP activity from the dynamically added host, the card stops sending traps to your IP address. The table, as seen in the configuration screen, is updated to reflect the removal of the host's IP address **only** after there is UPS or card activity that causes the generation of traps from the card.

To have a host that always receives traps from the card, create a permanent entry for the host or promote the dynamic host to the permanent list. By creating a permanent entry for a host, you have the option to select RFC 1628 traps as an alternative to those from the PowerMIB.

Changes are not saved permanently until you completely exit the card's menu system or select the Restart option from the card's Main Menu screen.

4. Type **0** to return to the SNMP and Host Table Settings screen.
5. Type **0** again to return to the Card Settings Menu screen.

Quick Status

From the Card Settings Menu screen, type **4** to request a Quick Status report from the UPS.

Selecting Quick Status provides a confirmation that the card is communicating with the UPS by providing overall status of the UPS, along with a fixed selection of the most common meter values.

After you finish reviewing the status and meter information, type **Enter** to return to the Card Settings Menu screen.

You may type **0** to return to the card's Main Menu.

Resetting the Card's Configuration to Default

To return the card to its factory settings, you can choose to reset all of the card's parameters back to the default settings, including IP addresses and security settings.

CAUTION

It is advisable that you perform this operation from the local configuration port using the local configuration cable. Resetting the card's parameters to default while connected via Telnet may result in a dropped connection as the IP address information changes.

From the Main Menu screen, type **2** to reset the card's parameters to the default settings. You are prompted to confirm your selection (see Figure 10).

```
+==============================================================================+
|                                [ Main Menu ]                                 |
+==============================================================================+
   1. Card Settings
   2. Reset Card's Configuration to Default
   3. Restart Card
   4. Locate Card
   0. Exit
Please Enter Your Choice => 2
Reset Configuration to Default<y/n>? [No] :
```

Figure 10. Main Menu - Reset Card's Configuration to Default Screen

Restarting the Card

Use one of the following options to restart the card's boot process:

- Press and release the Reset switch located on the face of the card.

NOTE Any configuration changes will be lost unless the user has completely exited the card's menu system prior to pressing the switch.

- From the Main Menu screen, type **3**. You are prompted to confirm your selection (see Figure 11).

CAUTION

It is advisable that you perform this operation from the local configuration port using the local configuration cable. Restarting the card while connected via Telnet results in a dropped connection when the card begins the restart process..

```
+==============================================================================+
|                                [ Main Menu ]                                 |
+==============================================================================+
   1. Card Settings
   2. Reset Card's Configuration to Default
   3. Restart Card
   4. Locate Card
   0. Exit
Please Enter Your Choice => 3
Restart Card (y/n)? [No] :
```

Figure 11. Main Menu - Restart Card Screen

Locating the Card

To find a card after it has been installed in a UPS, use the locate function. This function turns the card's audible alarm on and illuminates the red IDENT indicator.

From the Main Menu screen, type **4** to locate the card. A Locate Card Menu screen appears showing the current state of the locator (see Figure 12).

Audio and Visual Locator: Disabled - The audible alarm and IDENT indicator are currently turned off. To activate the indicator and alarm, type **1**. When prompted to select 1 to disable the function or 2 to enable it, type **2**. The card's alarm and indicator turn on and remain on until you disable the function by typing **1** again.

Type **0** to return to the Main Menu screen.

```
+==============================================================================+
|                             [ Locate Card Menu ]                             |
+==============================================================================+
   1. Audio and Visual Locator : Disabled
   0. Return to Previous Menu
Please Enter Your Choice => 1
```

Figure 12. Locate Card Menu Screen

Exiting the Card Configuration Menus

To save your changes and to exit the card's configuration menu system, type **0** from the Main Menu screen. If you are communicating with the card via Telnet when you perform this operation, you are logged off and your Telnet session is closed. If you are communicating serially via the local configuration port, you are not logged off, but the Main Menu screen simply refreshes after a short pause.

NOTE Due to a timeout mechanism common to configuration menu systems, one minute of inactivity on a Telnet connection logs you off and closes your connection. Likewise, on the local configuration port, the menu system refreshes after one minute of inactivity. If a timeout occurs after you have made configuration changes **and** before you completely exit the card's configuration menu system, your changes will be lost.

CHAPTER 3

SNMP MANAGEMENT OF THE CARD

As mentioned earlier, the Dual Ethernet UPS Interface Card allows the NCR 4074 Rack-Mount UPS to be managed via SNMP. NCR-specific application software does this inherently. NMS software may be used to manage the UPS via two separate MIBs.

The first is the PowerMIB, which is written specifically to take advantage of NCR UPS features. Alternately, the more generic Standard UPS MIB (RFC 1628) may also be used to manage the UPS.

The MIB files are available via FTP download from the card once it is accessible on the user's network.

1. Use your FTP client to open a connection with one of the card's assigned IP addresses. The card requires you to log in with the same username and password assigned to allow Telnet access to the card's configuration. Assuming a command line FTP client, type:

   ftp *xxx.xxx.xxx.xxx* [Enter]

   where *xxx.xxx.xxx.xxx* is one of the card's IP addresses.

2. When you are prompted for a login, enter your ***username*** and ***password*** (**admin** is the default username and password), then press **[Enter]**.

3. After logging in, change to the directory location containing the MIB files by typing:

   cd documents [Enter]

4. Once you are in the documents directory, request a "get" of the PowerMIB by typing:

   get XUPS.MIB [Enter]

5. To request a "get" of the Standard UPS MIB, type:

   get stdupsv1.mib [Enter]

6. After the MIB files are downloaded to your computer, close the connection to the card and exit the FTP client by typing:

   quit [Enter]

7. The MIB files can be reviewed by the user or compiled by an appropriate NMS for use.

APPENDIX

The appendix contains the card specifications, indicator descriptions, DIP switch settings, firmware upgrade instructions, service and support, and the warranty.

Table 1. Technical Specifications

CPU	Atmel AT91RM9200 ARM-9
Memory	32 MB Static DRAM 8 MB Flash ROM
LAN Controller	DM9161E – Port 1 SMSC LAN91C113I – Port 2
Network Connection	(2) 10/100BaseT RJ-45 network connectors
UPS Protocol	Powerware® UPS communication protocol
Network Protocols (not limited to)	SNMP v1 over UDP/IP FTP Telnet BOOTP, DHCP TCP/IP
Supported SNMP MIBs	Powerware PowerMIB (XUPS.MIB) RFC-1628 Standard UPS (STDUPSV1.MIB) RFC-1213 (MIB-II)
Operating Temperature	0–40°C (32–104°F)
Operating Humidity	10–80%, noncondensing
Power Input	8-25 Vdc unregulated (12 Vdc nominal)
Power Consumption	2.0 watts maximum
Size (L x W x H)	12 cm x 11.4 cm x 3.9 cm (4.7" x 4.5" x 1.5")
Weight	200 gm (7 oz)
EMC Statements	Class A: FCC Part 15

Front-Panel Indicator Descriptions

Table 2. Ethernet Port Indicators

	Indicator Label	Illuminated	Not Illuminated
Ethernet Port 1	100	Indicates a valid 100 Mb Connection (Link).	Indicates a valid 10 Mb Connection (Link) as long as the corresponding ACT indicator is illuminated.
	ACT	Indicates network activity when the indicator is on or blinking.	Indicates network activity when the indicator is on or blinking.
Ethernet Port 2	100	Indicates a valid 100 Mb Connection (Link).	Indicates a valid 10 Mb Connection (Link) as long as the corresponding ACT indicator is illuminated.
	ACT	Indicates network activity when the indicator is on or blinking.	Indicates network activity when the indicator is on or blinking.

Table 3. Stacked Indicator Descriptions

Label	Color	Illuminated	Not Illuminated
STATUS	Green	Communication with the UPS has been established.	Communication with the UPS has not been established. As the card boots, the indicator remains off. However, if it remains off after one minute, there is a communication problem between the card and the UPS.
DHCP	Amber	• ON Steady – Both Ethernet Ports were successful at obtaining IP address information via DHCP/BOOTP. • Blinking – One or both Ethernet Ports were unsuccessful at obtaining IP address information via DHCP/BOOTP.	The use of DHCP/BOOTP has been disabled by the user (DIP Switch S1 – Position 1 is set to the ON position).
IDENT	Red	The user has activated the card's Locate function. The card's horn will also be heard while the indicator is on.	The card's Locate function has not been activated.
POWER	Green	DC power is available to the card from the UPS.	If all indicators are not illuminated, DC power is not available from the UPS. This may indicate that the UPS is off and unplugged.

Note During the power on sequence, all four indicators are illuminated for approximately 20 seconds. The user should wait at least one minute for the card's boot process to complete before comparing the indicators to the table above since indicators may turn on and off at different times in the boot process.

DIP Switch Description

DIP switch definitions for the Dual Ethernet UPS Interface Card are listed in Table 4.

Table 4. DIP Switch Definitions

S1 Position Number	OFF Position (Default)	On Position
1	DHCP/BOOTP Enabled	DHCP/BOOTP Disabled
2	Reserved	Reserved
3	Reserved	Reserved
4	Reserved	Reserved
5	Reserved	Reserved
6	Reserved	Reserved

Upgrading the Card's Firmware

If necessary the card's firmware may be updated. The procedure requires the user to use FTP to upload the necessary files to the card. Once the files are present in the appropriate directory, the card begins the automatic process of updating the firmware. The card begins by checking the checksum accuracy of the images and then, once validated, initiates the upgrade process. When the upgrade is completed, the card automatically restarts, signaled by the card's audible alarm.

A typical upgrade contains a minimum of three files.

- **romfs.img.gz** - contains the entire application space image for the card.
- **checksums.md5** - contains the computed checksum information for the romfs.img.gz and images.lst files so that the card can validate the file content before performing the upgrade.
- **images.lst** - contains the name of the image file(s) to be updated, along with the MTD (Memory Technology Device) partition where the update needs to be placed.

If necessary, the kernel file may also be upgraded using the same process.

The following steps are typically used to manually initiate the firmware upgrade process on the card:

1. Use your FTP client to open a connection with one of the card's assigned IP addresses. The card requires you to log in with the same username and password assigned to allow Telnet access to the card's configuration. Assuming a command line FTP client, type:

   ftp *xxx.xxx.xxx.xxx* [Enter]

   where *xxx.xxx.xxx.xxx* is one of the card's IP addresses.

2. When you are prompted for a login, enter your ***username*** and ***password*** (**admin** is the default username and password), then press **[Enter]**.

3. After logging in, change to the directory location where the upgrade files need to be placed by typing:

   cd upload [Enter]

4. Once you are in the upload directory, you may need to instruct your FTP client that you intend to transfer a binary image. To do so, type:

   bin [Enter]

5. Upload the userland file romfs.img.gz to the card by typing:

   put romfs.img.gz [Enter]

6. Upload the images.lst file to the card by typing:

   put images.lst [Enter]

NOTE Although the order in which the files are uploaded is not important, the checksums.md5 file must be present before the card can account for the existence of the other files and verify that their checksums are valid.

7. Upload the checksums.md5 file to the card by typing:

   put checksums.md5 [Enter]

8. After the files are uploaded, close the connection to the card and exit the FTP client by typing:

   quit [Enter]

9. Within a few seconds, the card validates the file content based on the provided checksum information and begins the update process.

NOTE DO NOT reset the card or interrupt power to the card until the audible alarm is heard indicating the upgrade is complete and the card is automatically restarting. As the upgrade files are replaced in the card, the IDENT indicator periodically illuminates.

Service and Support

If you have any questions or problems with the UPS or Dual Ethernet UPS Interface Card, call NCR at 1-800-262-7782 and ask for a UPS technical representative.

Please have the following information ready when you call Customer Service:

- Model number
- Serial number
- Version number (if available)
- Date of failure or problem
- Symptoms of failure or problem
- Customer return address and contact information

If repair is required, you will be given a Returned Material Authorization (RMA) Number. This number must appear on the outside of the package and on the Bill Of Lading (if applicable). Use the original packaging or request packaging from Customer Service or the distributor. Units damaged in shipment as a result of improper packaging are not covered under warranty. A replacement or repair unit will be shipped, freight prepaid by NCR for all warrantied units.

NOTE For critical applications, immediate replacement may be available. Call **Customer Service** for the dealer or distributor nearest you.

NCR Limited Warranty

This warranty applies to uninterruptible power system (UPS) conditioning products hardware you purchase from NCR Corporation ("NCR") and use in the United States, unless you have another applicable written agreement with NCR. You indicate your acceptance of this NCR Limited Warranty by your initial use of your NCR products. Any software warranties are contained in the "break seal" license agreement shipped with the software or any other applicable written agreement you may have with NCR.

What is Covered

The failure to any NCR product, that is of any NCR uninterruptible power system power conditioner, to operate in accordance with its specifications during the period of this warranty in good condition.

What We Will Do

If your NCR product is defective and you return it to NCR within the warranty period of 3 years from the date of purchase, we will repair it or, at our option, replace it at no charge to you. If you have purchased a warranty upgrade for on-site service, during your warranty you may call the number listed below for dispatch of an NCR service representative. All warranty service will be subject to NCR's standard policies.

What We Ask You To Do

To get warranty service for your NCR product, you must provide proof of the date of purchase. Call NCR toll free at the number below to report problems or for the address of an authorized service location. If you ship your NCR product to the authorized service location, you must prepay all shipping costs. We suggest you retain your original packing material in the event you need to ship your NCR product. When sending your NCR product to a service location, include your name, address, phone number, proof of date of purchase, and a description of the operating problem. After repairing or replacing your NCR product, we will ship it to your business or home (if you are a consumer) in the United States at no cost to you.

What This Warranty Does Not Cover

This warranty does not cover defects resulting from accidents, damage while in transit to our service location, alterations, unauthorized repair, failure to follow instructions, misuse, use outside the United States, fire, floods, acts of God. If your NCR product is not covered by our warranty, call us toll free at the number below for advice as to whether we will repair your NCR product and other repair information, including charges. We, at our option, may replace rather than repair your NCR product with a new or reconditioned one of the same or similar design. The repair or replacement will be warranted for 90 days or the remainder of the original warranty period, whichever is longer.

This limited warranty is the only one we give on your NCR product, and it sets forth all our responsibilities regarding your NCR product. There are no other express warranties. Repair or replacement of your NCR product during the warranty period is your exclusive remedy.

Limitations

IF YOU ARE A CONSUMER UNDER APPLICABLE LAW, ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THOSE OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY (AN UNWRITTEN WARRANTY THAT THE PRODUCT IS FIT FOR ORIGINAL USE) ARE LIMITED TO ONE YEAR FROM THE DATE YOU PURCHASED YOUR NCR PRODUCT. IF YOU ARE NOT A CONSUMER, THERE ARE NO IMPLIED WARRANTIES, INCLUDING THOSE OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. WE WILL NOT PAY FOR LOSS OF TIME, INCONVENIENCE, LOSS OF DATA, LOSS OF USE OF YOUR NCR PRODUCT, OR PROPERTY DAMAGE CAUSED BY YOUR NCR PRODUCT OR ITS FAILURE TO WORK OTHER THAN AS PROVIDED IN THE

LOAD PROTECTION WARRANTY DESCRIBED BELOW, OR ANY OTHER DIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so those aspects of the above limitations or exclusions may not apply to you.

Connected Equipment Warranty

This warranty applies to equipment connected to NCR UPS power conditioning products as specified herein. For the warranted lifetime of the NCR UPS power conditioning products specified below, and to the Original Purchaser who has registered the NCR UPS product within 30 days of purchase, NCR warrants that it will repair or replace, at its discretion, equipment owned by Original Purchaser, not to exceed $25,000, that is damaged by a surge, spike, or other power line transient when properly connected to the Dual Ethernet UPS Interface Card Uninterruptible Power Supply (UPS).

This warranty is limited solely to the repair or replacement of equipment directly connected to the NCR UPS. Reimbursement or restoration for data loss, or any other incidental or consequential damage, is not included. To claim damages resulting from AC power line transients, at the time of the damage (a) the NCR UPS product must have been plugged into properly grounded and wired outlets using no extension cords, adapters, other ground wires, or other electrical connections; and (b) the installation must have been in compliance with all applicable electrical and safety codes described by the National Electric Code (NEC) then in effect. This warranty does not cover any damage to equipment that results from causes other than AC power line disturbances.

This warranty is null and void if the NCR UPS product has been improperly installed, altered, or tampered with in any way; or if the equipment was not used under normal operating conditions or in accordance with any labels or instructions. This warranty does not cover damage resulting from accident or abuse.

NCR will not accept any product or equipment for return, credit, or exchange unless expressly authorized by NCR in writing and freight prepaid to an NCR designated facility. NCR will not accept any charges for testing, checking, repair, removal, or installation of a warranted UPS or component part of a UPS.

All defective UPS and system component parts, if returned, become the property of NCR Corporation.

This limited warranty applies only to the Original Purchaser of the equipment and is non-transferable.

Dispute Resolution

Any controversy or claim between you and NCR regarding NCR products or services will be resolved by binding arbitration under the current rules and supervision of the American Arbitration Association. The Arbitrator's decision and award will be final and binding and may be entered in any court with jurisdiction.

State Law Rights

This warranty gives you specific legal rights, and you may also have other legal rights which vary from state to state.

The number to call is: 1-800-262-7782

Warranty Claim Number _____

F-6802 Number_____

Work Order Number _____

Date: _____

Site Assessment/Preparation Hotline: 1-800-257-0458 Fax: 919-460-9558