

ACCESS 9340 and 9360 Meter Ethernet Communications Card 9340-60-ETHER

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INTRODUCTION

The 9340-60-ETHER module is a communications add-on module for the ACCESS 9340 and 9360 that provides connectivity between Ethernet (Modbus TCP/IP) and serial line devices, allowing Modbus TCP/IP clients to access information from the host meter and the serial slave devices.

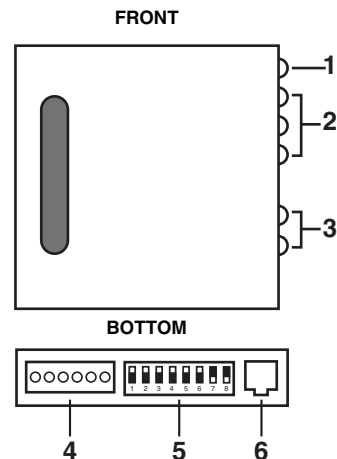
Supported Ethernet Protocols

The 9340-60-ETHER module supports the following Ethernet protocols:

- **Modbus TCP/IP:** Modbus TCP/IP is a combination of the Modbus protocol, which provides master-slave communication between devices, and TCP/IP, which provides communications over an Ethernet connection. Modbus TCP/IP is used to exchange data between the 9340-60-ETHER module and other compatible Modbus TCP/IP devices via TCP port 502.
- **Hypertext Transfer Protocol (HTTP):** HTTP is a network protocol that handles the delivery of files and data on the World Wide Web. It provides web server functionality via TCP port 80. Remote configuration of the 9340-60-ETHER module and the viewing of diagnostic and real-time data is possible using a web browser.
- **File Transfer Protocol (FTP):** FTP is a network protocol that provides the ability to transfer files over the Internet from one computer to another. FTP is used to transfer firmware updates and custom web pages to the 9340-60-ETHER module via TCP port 21.
- **Simple Network Management Protocol (SNMP):** Based on MIB2 format, SNMP provides the ability to store and send identifying and diagnostic information used for network management purposes via UDP port 161.
- **Address Resolution Protocol (ARP):** ARP is used to convert IP addresses to Ethernet addresses. ARP requests are sent by the 9340-60-ETHER module to determine if its address is a duplicate IP address (see "Duplicate IP Address Detection" on page 8).
- **Simple Mail Transfer Protocol (SMTP):** SMTP is a protocol used to send e-mail messages over a network. The 9340-60-ETHER module uses SMTP to send alarm messages to defined users using TCP port 25.
- **Simple Network Time Protocol (SNTP):** SNTP is a protocol used to synchronize the clocks of networked devices using a SNTP server via UDP port 123.

Hardware

1. Power/Status LED
2. Ethernet LEDs:
LK (active link)
TX (transmitting data)
RX (receiving data)
3. Serial LEDs:
TX (transmitting data)
RX (receiving data)
4. RS485 connection
5. Dip switches
6. 10/100BaseTx connection



Meter Firmware

Before installing the 9340-60-ETHER module, the host ACCESS 9340 or 9360 must be running firmware version 10.6 or higher. To verify you have the correct firmware version, do the following:

1. From the meter display, press MAINT > DIAG > METER.
2. Verify that the number before OS, RESET, and DL is 10.600 or higher.

To download the latest firmware version, go to www.sea.siemens.com/access, select "ACCESS 9340/9360 Power Meter" from "Compact Power and Energy Meter" and then click the firmware file you want to download.

NOTE: To install the firmware upgrade you will need the Download Firmware Upgrade Utility (DLF3000), which is provided on the 9340-60-ETHER module Technical Library CD-ROM. If you do not have the CD-ROM, you can download DLF3000 from the downloads page, then follow the installation instructions. If you need assistance using DLF3000, refer to the Help file included with DLF3000.

Additional Resources

9340-60-ETHER module Documentation: Go to www.sea.siemens.com/access, select "ACCESS 9340/9360 Power Meter" from "Compact Power and Energy Meter" and then click the manual you want to download.

For installation instructions and hardware specifications, see the 9340-60-ETHER module installation manual PMIM-ETHCC-0208.

9340-60-ETHER module Firmware: See "Firmware" on page 27 to learn where to download firmware updates and how to install new firmware.

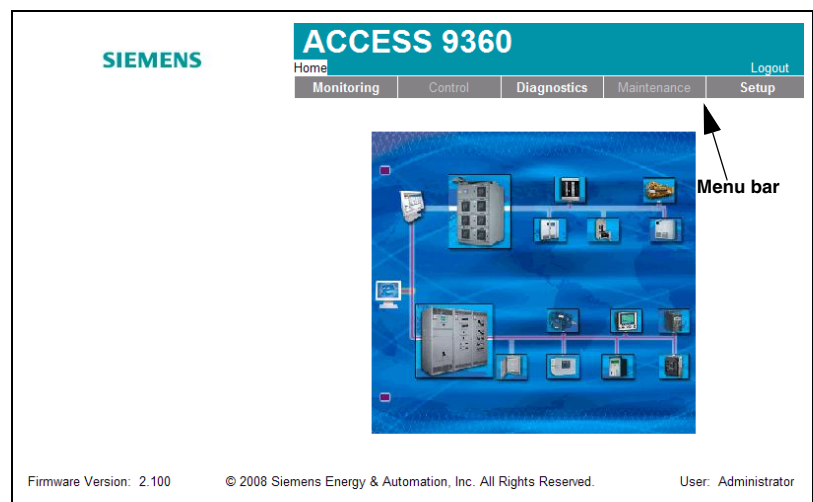
ACCESSING THE 9340-60-ETHER MODULE OVER A NETWORK

After you set up the Ethernet parameters (see the installation guide PMIM-ETHCC-0208), you can access the 9340-60-ETHER module over an Ethernet LAN using Internet Explorer 6.0 or higher.

Logging into the 9340-60-ETHER module

Action	Result
1. Launch Internet Explorer 6.0 or higher.	Opens Internet Explorer.
2. Type the 9340-60-ETHER module's IP address that was entered into the meter, then press Enter. To view the IP address using the meter display, press MAINT > SETUP > COMMS > ETHER.	Opens the Login dialog box.
3. Type your user name (<i>Administrator</i> is the default) and password (<i>Gateway</i> is the default) into the text boxes, then click OK .	Enters the user name and password, then opens the 9340-60-ETHER module home page.

Figure 1: The Home Page



Logging Out

We recommend logging out whenever you do not need access to the 9340-60-ETHER module.

To log out of the configuration session, click **Log Out** to end your session.

9340-60-ETHER MODULE USER INTERFACE OVERVIEW

The 9340-60-ETHER module ships with 12 pre-installed web pages used for the 9340-60-ETHER module setup and configuration. See Table 1 for a description of each web page.

Table 1: 9340-60-ETHER module static web pages

Web Page	Description	See Page
Setup		
Ethernet & TCP/IP	Configure Ethernet and TCP/IP communication settings.	6
Serial Port	Set up or change serial communication parameters.	9
Device List	Identify serial devices on the daisy chain.	11
User Accounts ^①	Create and edit groups and users.	12
Web Page Access ^①	Select web page access rights for each user group, and add or remove custom web pages.	13
Modbus TCP/IP Filtering ^①	Set up which IP addresses can access the 9340-60-ETHER module and serial RS485 daisy chained devices through Modbus TCP/IP.	15
SNMP Parameters ^①	Enable and configure the Simple Network Management Protocol (SNMP), which allows the 9340-60-ETHER module to identify itself to network devices requesting SNMP data.	16
Date and Time ^①	Configure the date and time of the 9340-60-ETHER module manually or to enable and configure SNTP.	16
E-mail on Alarm ^①	Configure the To and From e-mail addresses, enable e-mail on alarm, enter the SMTP server IP address, and enter the SMTP server username and password.	18
Diagnostics		
Statistics	Displays diagnostic data used to troubleshoot network problems. This page also contains information about your specific 9340-60-ETHER module and the host meter the 9340-60-ETHER module is connected.	21
Read Device Registers	Allows users to read register data from a serial device connected to the 9340-60-ETHER module and from the host meter the 9340-60-ETHER module is connected.	25
Monitoring		
Instantaneous Readings	Allows users to view some of the real-time data of the host meter.	26

^① Accessible by administrator only

SETUP

To access the Setup menu, click **Setup** on the **9340-60-ETHER** module menu bar.

Ethernet and TCP/IP Settings

Action	Result
1. From the Setup menu, click Ethernet & TCP/IP .	Opens the Ethernet & TCP/IP page.
2. Select your frame format and media type. Contact your network administrator if you do not know.	Selects the frame format and media type.
3. Enter your IP address, subnet mask, and default gateway address assigned to your 9340-60-ETHER module by your network administrator.	Enters the Ethernet parameters for the 9340-60-ETHER module.
4. Click Apply .	Updates the Ethernet and TCP/IP settings for the 9340-60-ETHER module. <i>NOTE: If you enter an IP address that is used by another device, you will be prompted to select a new IP address. See "Duplicate IP Address Detection" on page 8.</i>
5. Click OK to approve the changes.	A message box opens saying the 9340-60-ETHER module must reboot to apply the changes.
6. Click OK .	The 9340-60-ETHER module reboots.

Figure 2: Ethernet & TCP/IP Page

Table 2: 9340-60-ETHER module Ethernet and TCP/IP settings

Option	Description	Setting
Frame Format	Used to select the format for data sent over an Ethernet connection.	Ethernet II, 802.3 SNAP Default: Ethernet II
Media Type	Used to define the physical Ethernet connection or media type.	<ul style="list-style-type: none"> 10T/100Tx Auto 10BaseT-HD 10BaseT-FD 100BaseTX-HD 100BaseTX-FD Default: 10T/100Tx Auto
IP Address	Used to enter the static IP address of the 9340-60-ETHER module.	Default: 169.254.0.10
Subnet Mask	Used to enter the Ethernet IP subnet mask address of your network.	Default: 255.255.0.0
Default Gateway	Used to enter the gateway (router) IP address used for wide area network (WAN) communications.	Default: 0.0.0.0

Advanced Ethernet Settings

CAUTION

IMPAIRED NETWORK PERFORMANCE

Failure to follow these instructions can impair network performance. Only qualified workers should modify the advanced Ethernet settings of the 9340-60-ETHER module. Such modifications should be performed only after reading about and understanding the advanced Ethernet settings.

Action	Result
1. Click Advanced on the Ethernet & TCP/IP page.	Opens the Advanced Ethernet Settings page.
2. Configure the advanced Ethernet settings (see Table 3).	Sets up the advanced Ethernet settings.
3. Click Apply . <i>NOTE: Applying changes to the Advanced Ethernet Settings page does not save changes to the Ethernet & TCP/IP page.</i>	Updates the 9340-60-ETHER module Ethernet and TCP/IP settings.
4. Click OK to approve the changes and to reset the 9340-60-ETHER module.	The 9340-60-ETHER module reboots.

Figure 3: Advanced Ethernet Settings Page

Advanced Ethernet Settings

TCP Time To Live:	60	▼	(Hops)
UDP Time To Live:	30	▼	(Hops)
TCP Keep Alive:	30		(Seconds)
HTTP Connection Idle Time:	4		(Seconds)
HTTP Port Number:	80		
ARP Cache Timeout:	15		(Minutes)
FTP Server:	Enabled	▼	
FTP Connection Idle Time:	30	▼	(Seconds)
Modbus TCP/IP Server Connections:	32	▼	
Modbus Broadcast:	Disabled	▼	
ModbusTCP/IP Server Connection Idle Time:	0		(Seconds)

Table 3: Advanced Ethernet Settings

Option	Description	Setting
TCP Time To Live	Identifies the number of routers a TCP packet can pass.	1 to 255 hops Default: 60 hops
UDP Time To Live	Identifies the number of routers a UDP packet can pass.	1 to 255 hops Default: 30 hops
TCP Keep Alive	A timer that detects when a connected device on an idle connection becomes unavailable due to events such as a reboot or shutdown. A setting of 0 disables this setting.	0 to 65,535 seconds Default: 30 seconds
HTTP Connection Idle Time	A timer that closes the HTTP connection after a specified amount of idle time.	0 to 65,535 seconds Default: 4 seconds
HTTP Port Number	The TCP port used for HTTP messages. The following port numbers are reserved for other network protocols and cannot be used: 20 and 21 (FTP) and 502 (Modbus TCP/IP).	0 to 65,535 Default: 80

Table 3: Advanced Ethernet Settings

Option	Description	Setting
ARP Cache Timeout	Used to specify how long IP address and Ethernet address information is stored before it is removed.	0 to 65,535 seconds Default: 15
FTP Server	Controls whether the FTP server initializes during startup.	Disabled or Enabled Default: Enabled
FTP Server Connection Idle Time	A timer that closes the FTP connection after a specified amount of idle time.	30 to 900 seconds Default: 30
Modbus TCP/IP Server Connections	Used to specify the number of Modbus TCP/IP server connections are available.	32 to 48 Default: 32
Modbus Broadcast	Determines how Modbus TCP/IP messages with Unit ID = 0 are handled on the serial subnetwork. Disabled = all messages are ignored. Enabled = all messages are treated as broadcasts to serial ports with no response expected.	Disabled or Enabled Default: Disabled
Modbus TCP/IP Server Connection Idle Time	A timer that closes the Modbus TCP/IP connection after a specified amount of idle time. A setting of 0 disables this setting.	0 to 32,767 seconds Default: 0

Duplicate IP Address Detection

When connecting to your network, the 9340-60-ETHER module publishes its IP address. To avoid any duplicate IP address conflicts, the 9340-60-ETHER module uses the Address Resolution Protocol (ARP) to see if any other device on your network is using the same IP address. Table 4 below explains how the 9340-60-ETHER module handles a duplicate IP address when it is detected.

Table 4: Duplicate IP Detection Scenarios

Scenario	Duplicate IP Detected	Power/Status LED
Boot Process / Power Restore	Reverts to the default 9340-60-ETHER module IP address, subnet mask, and gateway address.	Four blinks, pause pattern
Ethernet Link Detected	ARP requests are sent every 15 seconds until the IP address is available. When the IP address becomes available, the 9340-60-ETHER module will use it.	
Manual Address Change	9340-60-ETHER module keeps it's previous IP address and displays a message indicating that the IP address is already in use by another device.	
Receives an ARP request	Reverts to the default 9340-60-ETHER module IP address, subnet mask, and gateway address if a connected device sends four ARP requests for the 9340-60-ETHER module's IP address. The 9340-60-ETHER module will send ARP requests every 15 seconds until the IP address is available again. When the IP address becomes available, the 9340-60-ETHER module will use it.	Four blinks, pause pattern

Serial Port

Action	Result
1. From the Setup menu, click Serial Port .	Opens the Serial Port page.
2. Select your physical interface, transmission mode, baud rate, parity, and response timeout (see Table 5 on page 9).	Selects the serial port options.
3. Click Apply .	Updates the 9340-60-ETHER module Serial Port settings.

Figure 4: Serial Port Page

Serial Port

Physical Interface:	RS485 2-wire	▼
Transmission Mode:	Automatic	▼
Baud Rate:	19200	▼
Parity:	Even	▼
Response Timeout:	3	▼ (Seconds)

Table 5: Serial Port Settings

Option	Description	Setting
Physical Interface	Used to select how the 9340-60-ETHER module serial port is physically wired.	RS485 4-wire or RS485 2-wire Default: RS485 2-wire
Transmission Mode	Used to select how data is transmitted over a serial connection.	Automatic or Modbus ASCII Default: Automatic <i>NOTE: Automatic mode allows you to communicate to Modbus RTU and ACCESS slave devices on the same daisy chain. These devices are entered on the Device List page.</i>
Baud Rate	Used to select the data transmission speed over a serial connection.	2400, 4800, 9600, 19200, 38400 Default: 19200
Parity	Used to select if data is checked for accuracy using a parity bit.	Even, Odd, None Default: Even
Response Timeout	Used to select how long the 9340-60-ETHER module will wait to receive a response from a serial device.	0.1 to 10 seconds Default: 3 seconds

Advanced Serial Port Settings

<h2>CAUTION</h2>
<p>IMPAIRED NETWORK PERFORMANCE</p> <p>Failure to follow these instructions can impair serial communication performance.</p> <p>Only qualified workers should modify the advanced serial port settings of the 9340-60-ETHER module. Such modifications should be performed only after reading about and understanding the advanced serial port settings.</p>

Action	Result
1. Click Advanced on the Serial Port page.	Opens the Advanced Serial Port Settings page.
2. Configure the advanced serial port settings (see Table 6).	Sets up the advanced serial port settings.
3. Click Apply . <i>NOTE: Applying changes to the Advanced Serial Port Settings page does not save changes to the Serial Port page.</i>	Updates the 9340-60-ETHER module advanced serial port settings.

Figure 5: Advanced Serial Port Page

Advanced Serial Port Settings

Delay Between Frames:	50	▼	(Milliseconds)
Silent Interval Extension:	6	▼	(Characters)
Modbus Timeout Exception Code:	0x0B	▼	

Table 6: Advanced Serial Port Settings

Option	Description	Setting
Delay Between Frames	Defines the silent time between the end of a received response and the beginning of a new request on the serial line.	0 to 100 milliseconds Default: 50
Silent Interval Extension	Allows the silent interval used to signify the end of a ModbusRTU packet to be extended beyond the 3.5 characters defined by the standard.	0 to 15 characters Default: 6
Modbus Timeout Exception Code	Indicates the exception response code returned when a serial device connected to the 9340-60-ETHER module does not respond before the serial port timeout. Modbus TCP/IP uses 0x0B. However, WinPM.Net before version 4.0 uses 0x0A.	0x0A or 0x0B Default: 0x0B

Device List

Before you begin, keep in mind the following:

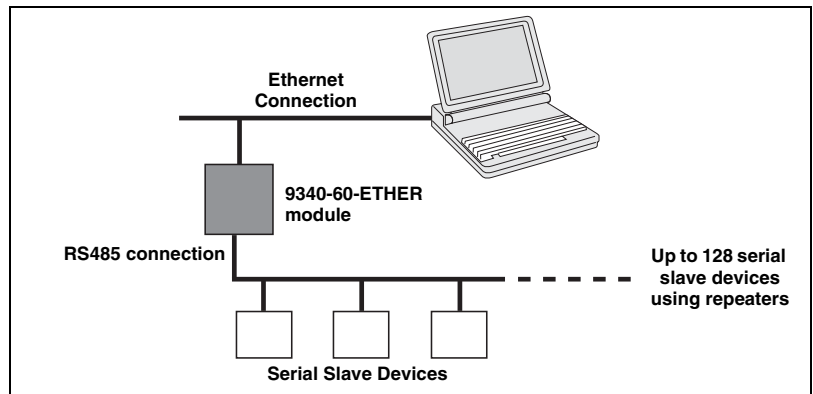
- Modbus RTU devices do not have to be defined in the Device List, but it helps you manage your system.
- ACCESS Power Monitoring devices must be defined in the Device List.

NOTE: Do not use serial slave addresses 1 or 16 in Automatic transmission mode on a daisy chain with mixed protocols .

Device List Setup

Figure 6 illustrates how devices are connected to the 9340-60-ETHER module on a daisy chain. To add those devices to the Device List, follow the steps below.

Figure 6: Topology



Action	Result
1. From the Setup menu, click Device List .	Opens the Device List page.
2. Select the number of viewable devices (1 to 128).	Selects the number of viewable locations that can be used to define serial slave devices connected to the 9340-60-ETHER module.
3. In the Local ID text box, type the local ID (address) of the serial slave device.	Enters the local address of the device.
4. Select the Protocol .	Selects the protocol of the connected device.
5. Repeat steps 3 and 4 until all of the devices are entered.	Enters all of the connected devices.
6. Click Apply .	Updates the Device List settings.

Figure 7: Device List Page

Device List

Number of Viewable Devices: 8

Local ID	Protocol
1	Modbus
2	PowerLogic <input type="button" value="v"/>
3	Modbus <input type="button" value="v"/>
4	Jbus <input type="button" value="v"/>
5	Modbus <input type="button" value="v"/>
6	Modbus <input type="button" value="v"/>
7	Modbus <input type="button" value="v"/>
8	Modbus <input type="button" value="v"/>

Indicates the ID of the host device. If the Local ID is zero, the 9340-60-ETHER module is not communicating with the meter.

User Accounts

9340-60-ETHER module users are assigned user names and passwords. Each user belongs to a group, and each group has access rights to the 9340-60-ETHER module Web pages assigned by the 9340-60-ETHER module administrator.

NOTE: There are two default user accounts: Administrator (password is Gateway) and Guest (password is Guest).

Action	Result
1. From the Setup menu, click User Accounts .	Opens the User Accounts page.
2. If you want to change a group name, type a new name in one of the Groups text boxes (the Administrator group name cannot be changed).	Enters a new group name.
3. In the Users section, enter a Name (1 to 24 characters) and Password (0 to 12 characters) for a new user. <i>NOTE: User names and passwords are case-sensitive and can contain only alphanumeric characters.</i>	Enters the name and password for a user.
4. Select a group and the default language for the new user.	Selects the group and language for a user.
5. Repeat steps 3 and 4 for each additional user you want to add.	Continues adding users.
6. Click Apply .	Saves all of the user account settings.

Table 7: Accounts and passwords

Account	Default Password
Administrator	Gateway <i>NOTE: You must contact your local representative if the Administrator password is lost; the password cannot be retrieved from the 9340-60-ETHER module.</i>
Guest	Guest
User-defined accounts (up to 11 accounts possible)	No default –Password is user-defined

Figure 8: User Accounts Page

User Accounts

Groups

Administrators	Engineering	Operations	Maintenance
----------------	-------------	------------	-------------

Users

Name	Password	Group	Language
Administrator	••••••	Administrators	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
		Maintenance	English
Guest	•••••	Guest	English

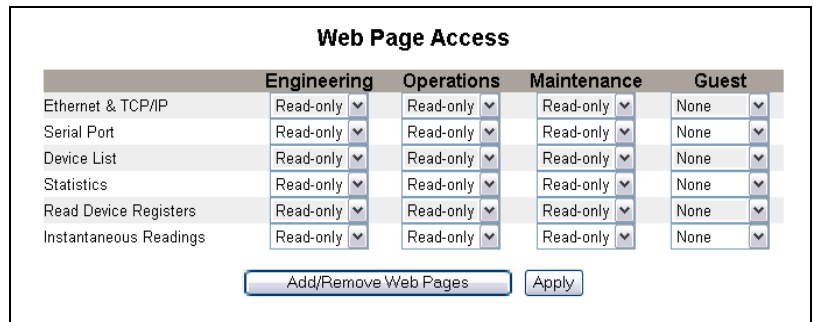
Web Page Access

Action	Result
1. From the Setup menu, click Web Page Access .	Opens the Web Page Access page.
2. In the Ethernet & TCP/IP row, select the access level (None, Read-only, or Full) that each user group will have for the Ethernet & TCP/IP web page.	See Table 8 below for an explanation of access levels for each group.
3. To allow Guest access to the web page, select Read-only under the Guest column. <i>NOTE: If the Guest group is Read-only, other groups may only be set to Read-only or Full.</i>	Allows the default Guest group to access the web page.
4. Repeat steps 2 and 3 for the Serial Port, Device List, Statistics, and Read Device Registers rows.	Selects the access level for each web page.
5. Click Apply .	Saves the password settings.

Table 8: Group Access

Group	Access
Administrator	Full access to all web pages <i>NOTE: We recommend that you change the default administrator password for system security the first time you log in.</i>
Guest	Read-only access to selected web pages.
Three user-defined groups	Choosing from the following options, the administrator assigns web page access for each group. Access levels are as follows: <ul style="list-style-type: none"> • None: a group has no access to selected web page • Read-only: a group has read-only access to the selected web page • Full: a group has the same access as the Administrator group to the selected web page

Figure 9: Web Page Access Page



Add/Remove Custom Web Pages

Custom web pages and other file types can be transferred from your computer to the 9340-60-ETHER module via FTP. These custom web pages should be transferred to one of three folders on the 9340-60-ETHER module: Monitoring, Control, or Maintenance. Each folder has a corresponding link on the menu bar. When the link is clicked on the menu bar, the web pages you added will appear in the menu on the left side of the window.

NOTE: You cannot create new folders inside of the Monitoring, Control, or Maintenance folders.

After custom web pages have been transferred to the 9340-60-ETHER module, they can be added and removed from the web interface without removing them from the 9340-60-ETHER module by using the Add/Remove Web Pages page. This page is opened from the Web Page Access page.

Adding Web Pages Using FTP

Action	Result
1. Launch Windows Explorer, type <i>ftp://</i> and the IP address of the 9340-60-ETHER module (for example, <i>ftp://169.254.0.10</i>) in the Address text box, then press Enter.	Opens the Log On As dialog box.
2. Type the user name <i>Administrator</i> and the administrator password in the text boxes, then click Log On .	Opens an FTP session with the 9340-60-ETHER module.
3. Open a new Windows Explorer window, locate the custom web page on your computer, right-click it, then click Copy .	Copies the file to the clipboard.
4. Switch back to the 9340-60-ETHER module Windows Explorer window you opened in step 1, then open the folder where the web page will be copied.	Opens the folder where the web page will be stored on the 9340-60-ETHER module.
5. Right-click in the right pane of the Windows Explorer window, then click Paste . <i>NOTE: Instead of copying and pasting the file, you can drag-and-drop the file into Windows Explorer.</i>	Copies the custom web page to the 9340-60-ETHER module, and the 9340-60-ETHER module reboots.
6. Click the Close button on the Windows Explorer window.	Closes Windows Explorer.

Deleting Web Pages Using FTP

Action	Result
1. Launch Windows Explorer, type <i>ftp://</i> and the IP address of the 9340-60-ETHER module (for example, <i>ftp://169.254.0.10</i>) in the Address text box, then press Enter.	Opens the Log On As dialog box.
2. Type the user name <i>Administrator</i> and the administrator password in the text boxes, then click Log On .	Opens an FTP session with the 9340-60-ETHER module.
3. Open the folder where the custom web page is located, right-click the file you want to delete, then click Delete .	Opens the folder where the custom web page is located, then deletes file.
4. Click the Close button on the Windows Explorer window.	Closes Windows Explorer.

Add/Remove Web Pages to/from the Web Interface

Action	Result
1. Log on to the 9340-60-ETHER module.	Logs on to the 9340-60-ETHER module web interface.
2. From the Setup menu, click Web Page Access .	Opens the Web Page Access page.
3. Click Add/Remove Web Pages .	Opens the Add/Remove Web Pages page.
4. If you added custom web pages to any of the 9340-60-ETHER module folders, you will see a list of file names underneath the name of each folder. Select the web pages you want your users to see. Deselect web pages you do not want your users to see. <i>NOTE: Deselecting a web page does not delete it from the 9340-60-ETHER module.</i>	Selects or deselects a custom web page.
5. Click Apply .	Adds or removes a custom web page from the 9340-60-ETHER module web interface.

Modbus TCP/IP Filtering

This function allows the administrator to specify Modbus TCP/IP client devices that have or do not have access to serial slave devices connected to the 9340-60-ETHER module and the host ACCESS 9340 or 9360.

*NOTE: There is an anonymous Modbus TCP/IP address (***.***.***.***) that can be set to Read-only or None. Setting it to **Read-only** allows any Modbus TCP/IP client not in the filtered list to access serial slave devices with read-only access. Setting it to **None** blocks all Modbus TCP/IP clients not in the filtered list.*

Action	Result
1. From the Setup menu, click Modbus TCP/IP Filtering .	Opens the Modbus TCP/IP Filtering page.
2. Check Enable Filtering .	Activates filtering.
3. In the IP address column, enter the Modbus TCP/IP client address	Enters an IP address for a Modbus TCP/IP client that will have access to the serial devices connected to the 9340-60-ETHER module.
4. In the Access Level column, select Read-only or Full.	Selects the access level for the corresponding IP address. When set to Read-only, only the following Modbus TCP/IP function codes are allowed: Decimal: 1, 2, 3, 4, 7, 8, 11, 12, 17, 20, 24, 43, 100 Hexadecimal: 01, 02, 03, 04, 07, 08, 0B, 0C, 11, 14, 18, 2B, 64
5. Repeat steps 3 and 4 to add more IP addresses.	Continues adding IP addresses for filtering.
6. Click Apply .	Saves the Modbus TCP/IP address filtering list.

Figure 10: Modbus TCP/IP Filtering Page

Modbus TCP/IP Filtering

Enable Filtering:

IP Address				Access Level
***	***	***	***	
169	254	0	33	Full <input type="button" value="v"/>
				Read-only <input type="button" value="v"/>
				Read-only <input type="button" value="v"/>
				Read-only <input type="button" value="v"/>
				Read-only <input type="button" value="v"/>
				Read-only <input type="button" value="v"/>
				Read-only <input type="button" value="v"/>
				Read-only <input type="button" value="v"/>
				Read-only <input type="button" value="v"/>
				Read-only <input type="button" value="v"/>

SNMP Parameters

The 9340-60-ETHER module supports SNMP, allowing a network administrator to remotely access a 9340-60-ETHER module with an SNMP manager and view the networking status and diagnostics in the MIB2 format.

Action	Result
1. From the Setup menu, click SNMP Parameters .	Opens the SNMP Parameters page.
2. Check Enable SNMP to turn ON the simple network management protocol. <i>NOTE: If you deselect Enable SNMP and click Apply, the 9340-60-ETHER module will reboot and SNMP functionality will be turned OFF.</i>	Activates SNMP.
3. Enter the system contact, system name, system location, read-only community name, and the read-write community name.	Enters the SNMP system information and community access names.
4. Click Apply .	Saves the SNMP settings.

Figure 11: SNMP Parameters Page

Date and Time

The Date and Time page allows you to set the date and time for the 9340-60-ETHER module and the host ACCESS 9340 or 9360.

Action	Result
1. From the Setup menu, click Date and Time .	Opens the Date and Time page.
2. Configure the year, month, day, hour, minutes, and seconds.	Sets up the date and time.
3. Click Apply .	Saves the Date and Time settings.

Figure 12: Date and Time Page

Network Time Synchronization

Enabling network time synchronization allows the time and date of the 9340-60-ETHER module and the ACCESS 9340 or 9360 to be set by a Network Time Protocol (NTP) server.

NOTE: Configuring the date and time with the meter display will override the 9340-60-ETHER module SNTP settings. After the SNTP poll interval time expires, a new SNTP time will then override the meter time.

Action	Result
1. Select the Enable Network Time Synchronization check box in the Date and Time page.	Reveals the SNTP Parameters section.
2. Configure the time zone offset, poll interval, and the primary and secondary NTP server IP addresses (see Table 9 on page 17).	Sets up the SNTP parameters.
3. Click Apply .	Saves the SNTP settings.

Figure 13: Enable Network Time Synchronization

Table 9: SNTP Parameters Settings

Option	Description	Setting
Time Zone Offset	The time is set based on the Coordinated Universal Time (UTC) value selected.	UTC-12:00 to UTC+13:00 Default: UTC
Poll Interval	Controls how often the 9340-60-ETHER module contacts the NTP server for the correct time.	1 hour to 1 week Default: 1 week
Primary NTP Server IP Address	The IP address of the primary NTP server the 9340-60-ETHER module contacts for the correct time.	0.0.0.0 to 255.255.255.255 Default: 0.0.0.0
Secondary NTP Server IP Address	The IP address of the secondary NTP server the 9340-60-ETHER module contacts for the correct time.	0.0.0.0 to 255.255.255.255 Default: 0.0.0.0

E-mail on Alarm

E-mail on alarm is a method of distributing messages about anomalies detected by the host ACCESS 9340 or 9360. When conditions are outside normal parameters, a meter equipped with a 9340-60-ETHER module can send alarm information to a list of e-mail addresses.

By default, the e-mail on alarm function evaluates the need to send an alarm notification every 30 seconds (range = 1 to 60). It bundles up to 30 events in a single e-mail. If an error occurs when sending an e-mail, the 9340-60-ETHER module attempts to send an e-mail every five minutes for three days or until it goes through, whichever comes first. E-mails are sent in the language selected for the Administrator account. Pickup, dropout, and diagnostic events can trigger an e-mail (see “Advanced E-mail on Alarm Settings” on page 20).

Setting up E-mail on Alarm

Action	Result
1. From the Setup menu, click E-mail on Alarm .	Opens the E-mail on Alarm setup page.
2. Check Enable E-mail on Alarm Feature .	Enables the e-mail on alarm feature. <i>NOTE: If the check box is unchecked, e-mail is not sent to any of the To addresses.</i>
3. In the To: section, check the first check box in the Enable column, then in the first E-mail Address text box, type the e-mail address of a person receiving e-mail alarms (49 characters maximum).	Enables and enters an alarm e-mail recipient. <i>NOTE: If the check box is unchecked, e-mail is not sent to the To address.</i>
4. In the text box in the From section, type the e-mail address of the person administering the device (49 characters maximum).	Enters who sent the e-mail. <i>NOTE: A from e-mail address is required because most SMTP servers require it.</i>
5. Select the Alarm Priority to Report level when e-mail is sent (Priority 2 is the default).	Selects Priority 1, Priority 2, or Priority 3.
6. Type the SMTP IP address obtained from your network administrator.	Enters the mail server IP address (Default = 10.10.10.10).
7. If your SMTP server requires a password, select SMTP server requires login , then enter your username and password. <i>NOTE: The 9340-60-ETHER module supports Digest-MD5, CRAM-MD5, Login, and Plain authentication types.</i>	Selects the option to require a login to send e-mails and enters the username and password.
8. To test the new settings, click Test . <i>NOTE: The settings are saved when Test is clicked.</i>	If the settings are correct, a test e-mail is sent to the addresses in the To E-mail Addresses text boxes.
9. Click Apply .	Saves the settings.

NOTE: See Figure 14 on page 19 for an illustration of the E-mail on Alarm Setup page.

Figure 14: E-mail on Alarm Setup Page

E-Mail on Alarm

Enable E-Mail on Alarm:

To:	
Enable	E-Mail Address
<input checked="" type="checkbox"/>	john@siemens.com
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

From:
tim@siemens.com

Alarm Priority to Report: Priority 1
 Priority 2
 Priority 3

SMTP Parameters

SMTP Server IP Address: 192 . 168 . 5 . 45

SMTP server requires login:

Username: user

Password: *****

Alarm Message Content

Alarm e-mail message content is essentially the same as an ACCESS 9340 or 9360 onboard alarm log entry:

To:	john@siemens.com
From:	linesupervisor@siemens.com
Subject:	ONBOARD ALARM: 9340-60-ETHERNET

Date/Time	msec	Event Name	Value	Comment	Data Log	Priority
06/19/2007	17:29:53	N/A	502	Pickup	Yes	1
06/19/2007	17:29:58	N/A	524	Dropout	Yes	1
06/19/2007	17:30:07	N/A	507	Pickup	Yes	1
06/19/2007	17:30:13	N/A	527	Dropout	Yes	1


```

=====
9360SC: v10.6000S, v10.600DL, v10.600RS
9340-60-ETHERNET: v1.500
HTTP://169.254.0.45
    
```

- **Meter nameplate:** in the subject line of the e-mail (for example “ONBOARD ALARM: 9340-60-ETHER module”)
- **Date/Time:** meter date and time when the event occurred
- **msec:** meter milliseconds when the event occurred
- **Event Name:** meter alarm label
- **Value:** maximum metered value during pickup
- **Comment:** Pickup, Dropout, Diagnostics
- **Priority:** alarm priority

Advanced E-mail on Alarm Settings

Action	Result
1. On the E-mail on Alarm page, click Advanced .	Opens the Advanced E-mail on Alarm Settings page.
2. Enter the event buffer size, the event hold time, the alarm type to report, and the SMTP port number.	Enters the advanced e-mail on alarm settings.
3. Click Apply . <i>NOTE: Applying changes to the Advanced E-mail on Alarm Settings page does not save changes to the E-mail on Alarm page.</i>	Applies the advanced SMTP settings. <i>NOTE: Click Default to enter the default advanced SMTP settings.</i>

Figure 15: Advanced SMTP Settings Page

Advanced E-Mail on Alarm Settings

Event Buffer Size:	<input type="text" value="15"/>	Alarms
Event Hold Time:	<input type="text" value="30"/>	Seconds
Alarm Type to Report:	<input checked="" type="checkbox"/> Pickup <input type="checkbox"/> Dropout <input checked="" type="checkbox"/> Diagnostic	
SMTP Port Number:	<input type="text" value="25"/>	

Table 10: Advanced E-mail on Alarm Settings

Option	Description	Setting
Event Buffer Size	The number of alarm events before an e-mail is sent.	1 to 30 Default: 15 alarms
Event Hold Time	How long to collect alarms before sending an e-mail.	1 to 60 Default: 30 seconds
Alarm Type to Report	Select which alarm conditions cause an e-mail to be sent.	Pickup, Dropout, Diagnostic Default: Pickup and Diagnostic
SMTP Port Number	Enter the port number used by the SMTP server.	Any unused port assigned by your network administrator. Default: 25

DIAGNOSTICS

To access the Diagnostics menu, click **Diagnostics** on the **9340-60-ETHER** module menu bar.

Statistics

Action	Result
1. From the Diagnostics menu, click Statistics .	Opens the Statistics page (see Figure 16).
2. View the data.	See "Interpreting Statistics" on page 21.
3. Click Reset .	Resets the 9340-60-ETHER module cumulative diagnostic data to 0.

NOTE: This page will show accumulated readings since the 9340-60-ETHER module was last activated. If power to the 9340-60-ETHER module is lost, all cumulative values reset to zero.

Figure 16: Statistics Page

Statistics

Boot Time: 2006 Dec 14 10:02:43 Current Time: 2007 Jan 2 12:49:21

Ethernet

Frames Transmitted OK:	3982	Frames Received OK:	1385415
Collisions:	0	Excessive Collisions:	0
CRC Errors:	0	Alignment Errors:	0
Frames Too Long:	0	Frames Too Short:	0
Link Status:	100BaseTx-FD		

Modbus TCP/IP

Frames Sent:	0	Frames Received:	0
Protocol Errors:	0	Active Connections:	0
Accumulative Connections:	0	Maximum Connections:	0
Inbound Read Messages:	0	Inbound Write Messages:	0
Outbound Reply Messages:	0		

SMTP

E-Mail Send OK:	1	E-Mail Connect Error:	0
E-Mail Send Error:	0	E-Mail General Error:	0

Serial Port

Frames Sent:	0	CRC Errors:	0
Frames Received:	0	Protocol Errors:	0
Outbound Read Messages:	0	Timeouts:	0
Outbound Write Messages:	0		

Meter Interface

Frames Sent:	335150	CRC Errors:	0
Frames Received:	335150	Protocol Errors:	0
Outbound Read Messages:	0	Timeouts:	0
Outbound Write Messages:	0		

Card Information

Firmware Version:	0.920	System Idle Time:	38%
MAC Address:	00:80:67:80:5A:B5	Serial Number:	46
Model Number:	PM8ECC	Hardware Version:	
Manufacture Date:	2006-Jan-01		

File System Information

Total Space:	1906 KB	Free Space:	1825 KB
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Meter Information

Firmware Version:	10.600	Serial Number:	26009979
Model Number:	9360DC	Manufacture Date:	2008-Sep-24

Interpreting Statistics

Statistic	Description
Ethernet	
Frames Transmitted OK	A counter that increments each time a frame is successfully transmitted.
Frames Received OK	A counter that increments each time a frame is successfully received.
Collisions	A counter that increments each time a frame is retransmitted due to collision detection.

Statistic	Description
Excessive Collisions	A counter that increments each time a frame is not able to be sent due to reaching the maximum collision status based on the Truncated Binary Exponential Backoff algorithm.
CRC Errors	A counter that increments each time a frame is received that has a checksum/CRC that does not match what is calculated.
Alignment Errors	A counter that increments each time a frame is received that has a checksum/CRC error and does not end on an 8-bit frame boundary.
Frames Too Long	A counter that increments each time a frame is received that is larger than the allowed maximum size defined in the standards (frames larger than 1518 bytes).
Frames Too Short	A counter that increments each time a frame is received that is smaller than the allowed minimum size defined in the standards (frames smaller than 64 bytes).
Link Status	A status string that represents the speed and duplex setting being used to communicate with the linking partner.
Modbus TCP/IP	
Frames Sent	A counter that increments each time a frame is sent.
Frames Received	A counter that increments each time a frame is received.
Protocol Errors	A counter that increments each time an ill-formed message is received.
Active Connections	A status value that represents the number of connections that are active at the moment the diagnostics page is refreshed. A maximum of 48 connections are supported with a default of 32 connections. Clicking Active Connections opens a new window with a list of all of the active client connections.
Accumulative Connections	A counter that increments each time a connection is made to the 9340-60-ETHER module.
Maximum Connections	A status value that represents the maximum number of connections that were active at any given moment.
Inbound Read Messages	A counter that increments each time a read request message is received.
Inbound Write Messages	A counter that increments each time a write request message is received.
Outbound Reply Messages	A counter that increments each time a reply message is sent.
SMTP	
E-mail Send OK	A counter that increments each time an e-mail is sent successfully to the SMTP server.
E-mail Connect Error	A counter that increments each time the 9340-60-ETHER module is unable to connect to the SMTP server.
E-mail Send Error	A counter that increments each time an e-mail is unable to be sent to the SMTP server.
E-mail General Error	A counter that increments each time an e-mail is unable to be sent due to the inability of the 9340-60-ETHER module to create the e-mail.
Serial Port	
Frames Sent	A counter that increments each time a frame is sent.
CRC Errors	A counter that increments each time a message is received that has a CRC that does not match what is calculated. Typically the result of wiring issues.
Frames Received	A counter that increments each time a frame is received.
Protocol Errors	A counter that increments each time an ill-formed message is received.
Outbound Read Messages	A counter that increments each time a read request message is sent.
Outbound Write Messages	A counter that increments each time a write request message is sent.
Timeouts	A counter that increments each time a request message is sent without receiving a corresponding response message within the allowed time. Timeouts are typically the result of configuration errors or a non-responsive device.

Statistic	Description
Excessive Collisions	A counter that increments each time a frame is not able to be sent due to reaching the maximum collision status based on the Truncated Binary Exponential Backoff algorithm.
CRC Errors	A counter that increments each time a frame is received that has a checksum/CRC that does not match what is calculated.
Alignment Errors	A counter that increments each time a frame is received that has a checksum/CRC error and does not end on an 8-bit frame boundary.
Frames Too Long	A counter that increments each time a frame is received that is larger than the allowed maximum size defined in the standards (frames larger than 1518 bytes).
Frames Too Short	A counter that increments each time a frame is received that is smaller than the allowed minimum size defined in the standards (frames smaller than 64 bytes).
Link Status	A status string that represents the speed and duplex setting being used to communicate with the linking partner.
Modbus TCP/IP	
Frames Sent	A counter that increments each time a frame is sent.
Frames Received	A counter that increments each time a frame is received.
Protocol Errors	A counter that increments each time an ill-formed message is received.
Active Connections	A status value that represents the number of connections that are active at the moment the diagnostics page is refreshed. A maximum of 48 connections are supported with a default of 32 connections. Clicking Active Connections opens a new window with a list of all of the active client connections.
Accumulative Connections	A counter that increments each time a connection is made to the 9340-60-ETHER module.
Maximum Connections	A status value that represents the maximum number of connections that were active at any given moment.
Inbound Read Messages	A counter that increments each time a read request message is received.
Inbound Write Messages	A counter that increments each time a write request message is received.
Outbound Reply Messages	A counter that increments each time a reply message is sent.
SMTP	
E-mail Send OK	A counter that increments each time an e-mail is sent successfully to the SMTP server.
E-mail Connect Error	A counter that increments each time the 9340-60-ETHER module is unable to connect to the SMTP server.
E-mail Send Error	A counter that increments each time an e-mail is unable to be sent to the SMTP server.
E-mail General Error	A counter that increments each time an e-mail is unable to be sent due to the inability of the 9340-60-ETHER module to create the e-mail.
Serial Port	
Frames Sent	A counter that increments each time a frame is sent.
CRC Errors	A counter that increments each time a message is received that has a CRC that does not match what is calculated. Typically the result of wiring issues.
Frames Received	A counter that increments each time a frame is received.
Protocol Errors	A counter that increments each time an ill-formed message is received.
Outbound Read Messages	A counter that increments each time a read request message is sent.
Outbound Write Messages	A counter that increments each time a write request message is sent.
Timeouts	A counter that increments each time a request message is sent without receiving a corresponding response message within the allowed time. Timeouts are typically the result of configuration errors or a non-responsive device.

Statistic	Description
Meter Interface	
Frames Sent	A counter that increments each time a frame is sent.
CRC Errors	A counter that increments each time a message is received that has a CRC that does not match what is calculated.
Frames Received	A counter that increments each time a frame is received.
Protocol Errors	A counter that increments each time an ill-formed message is received.
Outbound Read Messages	A counter that increments each time a read request message is sent.
Outbound Write Messages	A counter that increments each time a write request message is sent.
Timeouts	A counter that increments each time a request message is sent without receiving a corresponding response message within the allowed time. Timeouts are typically caused by resetting the host meter by changing the configuration.
Card Information	
Firmware Version	The firmware version that is installed on the 9340-60-ETHER module.
System Idle Time	A percentage from 0% to 100% indicating the average processor time that is not being used.
MAC Address	The unique Ethernet hardware address of the 9340-60-ETHER module.
Serial Number	The serial number of the 9340-60-ETHER module.
Model Number	The 9340-60-ETHER module model number.
Hardware Version	9340-60-ETHER module hardware version.
Manufacture Date	Date the 9340-60-ETHER module was manufactured.
File System Information	
Total Space	The maximum amount of storage space on the 9340-60-ETHER module.
Free Space	The amount of space available on the 9340-60-ETHER module.
Meter Information	
Firmware Version	The firmware version installed on the host meter.
Serial Number	The serial number of the host meter.
Model Number	The model of the host meter.
Manufacture Date	The date the meter was manufactured.

Read Device Registers

Action	Result
1. From the Diagnostics menu, click Read Device Registers .	Opens the Read Device Registers page.
2. Enter the device ID, starting register number, and the number of registers to read.	Enters the values to begin reading registers for the specified device.
3. Click Read Holding Registers or Read Input Registers .	Displays the values for the listed registers.
4. To change how the data is displayed in the Value column, select Decimal , Hexadecimal , Binary , or ASCII .	Selects how the data values are displayed.

Table 11: Read Device Register Settings

Option	Description	Default
Device ID	The address of the device that registers are read.	1
Starting Register	The first register to read.	1000
Number of Registers	The number of registers to read (1 to 10).	10
Register column	Lists the register numbers	—
Value column	Lists the data stored in a register.	—
Decimal, Hexadecimal, Binary, or ASCII options	Select an option to specify how the Value column data is displayed.	Decimal

Figure 17: Read Device Registers Page

Read Device Registers

Device ID:

Starting Register:

Number Of Registers:

Register	Value	
<input type="text" value="1000"/>	<input type="text" value="0"/>	<input type="button" value="Read Holding Registers"/>
<input type="text" value="1001"/>	<input type="text" value="0"/>	<input type="button" value="Read Input Registers"/>
<input type="text" value="1002"/>	<input type="text" value="0"/>	<input checked="" type="radio"/> Decimal
<input type="text" value="1003"/>	<input type="text" value="0"/>	<input type="radio"/> Hexadecimal
<input type="text" value="1004"/>	<input type="text" value="0"/>	<input type="radio"/> Binary
<input type="text" value="1005"/>	<input type="text" value="0"/>	<input type="radio"/> ASCII
<input type="text" value="1006"/>	<input type="text" value="0"/>	
<input type="text" value="1007"/>	<input type="text" value="0"/>	
<input type="text" value="1008"/>	<input type="text" value="0"/>	
<input type="text" value="1009"/>	<input type="text" value="0"/>	

MONITORING

To access the Monitoring menu, click **Monitoring** on the **9340-60-ETHER module menu bar**.

Instantaneous Readings

The 9340-60-ETHER module has the capability to show real-time device data from the host meter using the Instantaneous Readings web page. The metered values automatically update every 10 seconds.

Figure 18: Instantaneous Readings page

Instantaneous Readings			
Access 9360 Meter			
Tuesday, January 30, 2007 11:06:08 AM			
Parameter	Minimum	Present	Maximum
Load Current (A)			
la	0	0	0
lb	--	0	--
lc	--	0	--
Power			
Real (kW)	0	0	0
Reactive (kVAR)	0	0	0
Apparent (kVA)	0	0	0
Power Factor Total	N/A	N/A	N/A
Voltage, L-L Avg.	0	0	0
Voltage, L-N Avg.	0	0	0
Frequency (Hz)	N/A	N/A	N/A

FIRMWARE

Firmware on the 9340-60-ETHER module can be updated using File Transfer Protocol (FTP). Check www.sea.siemens.com/access or with your local sales representative for the latest firmware update.

Finding the Firmware Version

Action	Result
1. Log into the 9340-60-ETHER module.	Opens the 9340-60-ETHER module home page.
2. Locate the firmware version on the bottom-left corner of the page. <i>NOTE: If you recently updated your firmware, press F5 to refresh the web page and update the displayed firmware number.</i>	Determines the firmware version of the 9340-60-ETHER module.
3. Alternatively, you can select Diagnostics > Statistics to find the firmware version in the Card Information section.	Also determines the firmware version of the 9340-60-ETHER module.

Updating the Firmware File

Action	Result
1. Launch Windows Explorer, type <i>ftp://</i> and the IP address of the 9340-60-ETHER module (for example, <i>ftp://169.254.0.10</i>) in the Address text box, then press Enter.	Opens the Log On As dialog box.
2. Type the user name <i>Administrator</i> and the administrator password in the text boxes, then click Log On .	Opens an FTP session with the 9340-60-ETHER module.
3. Open a new Windows Explorer window, locate the firmware file on your computer, right-click it, then click Copy .	Copies the file to the clipboard.
4. Switch to the Windows Explorer window you opened in step 1.	Switches to the Windows Explorer window where the FTP address was entered.
5. Right-click in the Windows Explorer window, then click Paste . <i>NOTE: Instead of copying and pasting the firmware file, you can drag-and-drop the firmware file into Windows Explorer.</i>	Copies the firmware to the 9340-60-ETHER module, and the 9340-60-ETHER module reboots.
6. Click the Close button on the Windows Explorer window.	Closes Windows Explorer and ends the FTP connection to the 9340-60-ETHER module.
7. To verify that the firmware version was updated successfully, follow the steps in "Finding the Firmware Version" on page 27.	Verifies the updated firmware version.

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