



**CQ
COMPUTER
COMMUNICATIONS
INC.**

CQ-3770EE®

Connectivity Solution

USER GUIDE

CQ Computer Communications, Inc.
570 Peachtree Parkway
Cumming, Georgia 30041 USA
Phone: 1-800-523-6807 / 770-844-0233
Fax: 770-886-7021
email@cq-comm.com

www.cq-comm.com

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Contact

U.S. Department of State
Office of Defense Trade Controls (PM/DTC)

CQ Computer Communications, Inc.
570 Peachtree Parkway
Cumming, Georgia USA 30041-6820
Phone: (770) 844-0233
Fax: (770) 886-7021

email@cq-comm.com
<http://www.cq-comm.com>

April, 2007.

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Part No. 0704-37EEM-UG

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Introduction

Highlights

How this manual is organized

Conventions used in this manual

How to access and use CQ help screens

*A technical overview of Enterprise Extender
communications*

*A description of solution
benefits and features*

A list of system requirements

The **CQ-3770EE™** connectivity solution combines numerous features with an advanced Graphical User Interface (GUI) to provide clients with remote mainframe connectivity through IBM's® Enterprise Extender technology. This solution provides connectivity from any remote or local workstation or client running a Microsoft® Windows® 32-bit operating system, such as Windows XP or Windows Server™ 2003. This manual describes the basic operations of the **CQ-3770EE** emulation and customization for your applications and requirements.

Organization

Section One: Solution Setup

Chapter 1: Installation explains how to install the complete **CQ-3770EE** solution on your computer.

Chapter 2: Configurator explains how to configure your **CQ-3770EE** software according to your specifications through CQ's *Configurator* program.

Chapter 3: Configuration Options explains the configuration options associated with your software.

Section Two: Functions and Features

Chapter 4: Solution Operation explains how to communicate with the **CQ-3770EE** software.

Chapter 5: Print Functions explains how to print certain areas of the *Interface* screen with the print commands.

Chapter 6: Edit Functions explains how to edit certain areas of the *Interface* screen with the edit commands.

Chapter 7: Data Transfers explains how to send and receive data with the transfer commands.

Chapter 8: View Functions explains how to view the convenient toolbar and SmartKey Pad from the *Interface* screen.

Chapter 9: Scripts explains how to create, modify, and run scripts.

Chapter 10: Advanced Options explains the advanced options of the *Interface* screen, including the toolbar and SmartKey Pad and also diagnostic features such as the audit and trace functions.

Chapter 11: DES/Triple DES Security Options explains the optional single *DES* (Data Encryption Standard) and *Triple DES* features.

Section Three: CQ Information

Chapter 12: Customer Services explains the customer services available with **CQ-3770EE**.

Chapter 13: CQ Solutions and Products describes CQ's connectivity and productivity solutions.

The **Index** is included for further reference.

Manual Conventions

Single Characters and Command Keys

Single characters, command keys, and toolbar buttons appear in SMALL CAPITAL LETTERS within square brackets:

[S] [2] [ENTER] [F1]

Menu Bar Options and Commands

Menu bar options (i.e., File, Edit, Transfer, Options, or Help) and menu bar commands appear in **boldface**:

File Options Print Screen to File Script

Dialog Box Options

Dialog box options (i.e., any check box, drop-down list, scrolling list, text box, command button, etc.) also appear in **boldface**:

OK Prompt for Filename Print Setup

Toolbar Buttons

Toolbar buttons appear in **boldface**:

Exit Select All Help Contents

Entering a Command

Text that the you must enter appears in a different TYPEFACE and is framed:

A:SETUP

Brief Messages that Appear on the Screen

Brief messages that appear on the screen appear in a different TYPEFACE:

This is an example of a brief message.

Filenames and Directory Paths

Filenames and directory paths appear in **boldface**:

example.txt **c:\cq\transfer**

Other Specific Names

Other information such as dialog boxes and Notes and Warnings appear in *italic*:

CQ Script dialog box

Note:

This is an example of a Note. As you can see, it appears in italic and the heading is indented and overscored.

Common Terms and Phrases

The host is sometimes referred to as the “mainframe”, the “mainframe end”, or the “host end”.

A workstation is any PC or notebook computer running ***CQ-3770EE*** with the intent to communicate with the host.

Help Screens and Documentation

Help Screens

CQ help screens are available throughout the **CQ-3770EE** software program. To display the help screens, select the **Help** button from any dialog box or screen or select the **Help** command from a screen's menu bar if it is available. In many cases, you can also press the [F1] key to access help information. For information on using other context-sensitive help features, refer to the documentation that came with your operating system.

CQ-3770EE USER GUIDE in .PDF Format

The complete *CQ-3770EE USER GUIDE* is included in Adobe® Acrobat® .PDF format on your **CQ-3770EE CD**. The name of this file is **37eeuser.pdf**.

Quick Installation Guide

Your **CQ-3770EE** solution should have come with a *Quick Installation Guide*. This guide contains detailed instructions on how to install your CQ solution. In some cases, your *Quick Installation Guide* may also be customized for communications with a specific host site.

To install your CQ solution, CQ recommends that you follow the instructions in the *Quick Installation Guide*. Other information about your CQ solution can be found in the *CQ-3770EE USER GUIDE*.

Technical Overview

This technical overview discusses the Enterprise Extender (EE) technology and how it relates to the transmission of SNA data over IP networks. This overview looks at how SNA networks exist today, in what ways they can be tailored in order to be used in the future, and how the Enterprise Extender technology can be used in this endeavor.

SNA Networks

Systems Network Architecture (SNA) networks are still in place and in use today. These SNA networks were implemented decades ago and remain mission-critical components of the organizations that use them. However, more and more each year it is becoming increasingly difficult for these organizations to support and maintain their SNA networks and systems.

One reason that it is difficult to maintain SNA networks is that key SNA networking equipment has been discontinued or is now not supported. For example, the IBM 3745 and 3746 Controllers (also known as Front End Processors) form the backbone of many mission critical SNA networks by allowing remote SNA clients to connect to mainframe computers. These FEPs were withdrawn from marketing by IBM effective September 27, 2002. Since that date, only used FEP products and features have been available.

Another reason that it is difficult to maintain SNA networks is a lack of personnel to support the applications and equipment that are a part of the SNA system. The knowledge, skills, and technical expertise that are required to manage SNA networks as they exist today is becoming increasingly scarce.

The reasons explained above necessitate a move from “pure” SNA into a form of SNA that can be integrated with today’s technology and resources.

IP Networks

Many organizations would agree that Internet Protocol (IP) is now the networking technology of choice. Almost all new IT deployments, including those that include mainframe connectivity, are based on IP. For many years, IP networks have been run alongside SNA networks with great success. However, the solution of running two separate networks between the same two end points has led to considerable duplication with excessive administration, management, and maintenance costs between the two networks. So, this begs the question - "Why not just run SNA traffic over the existing IP networks?". After all, there are several advantages to integrating SNA networks into existing IP networks.

The first advantage has already been explained in the previous paragraph. This advantage is that IP is the network of choice for today's networking and communications projects so it is well supported and well maintained. There is an abundance of IP equipment that is available and that is constantly being updated to meet today's high-speed standards. For example, through the use of the OSA-Express adapter at the mainframe end, extremely high-speeds can be achieved that otherwise would not be available over a "pure" SNA connection.

A second advantage, also previously explained, is the simplification of the network by integrating the SNA network into IP. By eliminating many of the SNA network components, there is no redundancy costs associated with the upkeep of two networks.

SNA-over-IP through Enterprise Extender

So, now that we've decided that running SNA traffic over IP is a good idea, how do we accomplish this? Simple - by implementing Enterprise Extender! For many years, SNA over IP was not a possibility. However, with the implementation of Enterprise Extender on the mainframe, remote clients can now transmit SNA traffic over their existing IP networks!

Enterprise Extender (EE) allows for the use of SNA transport protocols (namely APPN and HPR) over an IP network. EE enables the leveraging of IP-based infrastructure network components for use in delivering SNA traffic.

The Enterprise Extender architecture carries SNA (HPR) traffic of any LU type over an IP infrastructure, without requiring changes to that infrastructure. EE essentially treats the IP network as a particular type of SNA logical connection. In this manner, these SNA protocols act as transport protocols on top of IP, as does any other transport protocol such as Transmission Control Protocol (TCP).

EE Strategic Advantages

Enterprise Extender combines the features of SNA and IP to offer the best of both worlds when running SNA traffic over an IP backbone. Some of the advantages that the EE solution offers to its users are listed in this section.

Cost-Effectiveness and Resource Convergence

The use of Enterprise Extender allows you to avoid costly application rewrites by providing a means of IP-enabling SNA applications (such as RJE) that cannot be migrated to “pure” IP. That is, EE allows the continued use of native SNA applications over a different network: the IP network. This allows you to eliminate the SNA infrastructure altogether. The ultimate result is the convergence to a single network infrastructure that carries both IP and SNA application data.

Enterprise Extender has been designed to run over existing IP networks without requiring any change to applications or to IP routers. SNA applications see the same SNA network interfaces as before, whereas IP routers continue to see the same IP (UDP) packets.

Flow and Congestion Control

TCP/IP and HPR both provide their own unique, network-specific mechanisms for flow and congestion control. TCP uses a windowed technique, whereas HPR uses a technique based on data rate. Enterprise Extender introduced a new variant of the HPR flow control method known as responsive mode adaptive rate-based (ARB) flow control. Responsive mode ARB, like basic mode ARB, is designed to prevent network congestion; however, unlike basic mode ARB, it can also ensure a fair division of network capacity between the four SNA priorities and native IP traffic.

Class of Service

One of the biggest issues facing those who wish to transport SNA over an IP network is the question of maintaining SNA's class of service. In SNA, the class of service specified for a particular session is used to determine both the route taken by the session and the transmission priority allotted to it.

With an IP backbone, the route is essentially unpredictable because of IP's connectionless property. However, IP provides for a transmission priority using the precedence bits in the IP header. Many routers now support the use of these bits, but in the past they have tended to use the TCP or UDP port number as a means of assigning priorities to packets.

Enterprise Extender supports the use of both the precedence bits and the port numbers to inform the IP network of the transmission priority. Use of the precedence bits is recommended because the UDP or TCP port numbers are carried inside the IP datagram, whereas the precedence bits are in the IP header. Thus, encrypted packets have unreadable port numbers and fragmented packets have no port numbers, after the first fragment. For such encrypted or fragmented packets, intermediate routers cannot determine the appropriate priority.

Session Availability

TCP/IP has always had the ability to reroute packets around failing components, without disrupting the connection, by means of the connectionless property of IP. More recently SNA has implemented the same function, albeit in a rather different fashion. The high-performance routing (HPR) extension to SNA is connection-oriented as SNA has always been, but when it detects a failure, it will move an existing connection around a failing component. The use of HPR transport over an IP network provides non-disruptive rerouting around failed network components using either IP or HPR methods, depending on the location of the failure.

HPR consists of the following layers:

- **Automatic Network Routing (ANR)** - a connectionless layer that enables rerouting around failures.
- **Rapid Transport Protocol (RTP)** - a reliable connection-oriented layer that provides the end-to-end functionality.

Conclusion

Enterprise Extender provides SNA users with a seamless transition to SNA over IP that is both optimal in reducing network complexity and cost while also providing strategic advantages as a sustainable long-term solution that is adaptable with the changes in the future.

Benefits and Features

- **Interactive GUI Interface.** The user friendly interface makes installation, configuration, and use of **CQ-3770EE** simple and easy to understand. Interface components such as drop down menus, customizable toolbars, clearly identified buttons, and context sensitive help can be found throughout the solution.
- **Customizable Features.** The customizable toolbar and floating SmartKey Pad allow users convenient and quick one button access to scripts, complex commands, and other programs, such as CQ's optional productivity solutions. For example, a button can be setup that condenses a series of JES commands into a single mouse click. This might be helpful as a means to have one button queue access. A button may also be easily setup for one button remote host login access.
- **Configurator.** CQ's *Configurator* program allows users to quickly and easily set communication options. Most of these options are set from the *Quick Configuration* screen. EE specific options include the **CP Name**, **DLUS Name**, and **Destination IP** address.
- **CQ In/Out Bound Screen.** An informative *CQ In/Out Bound* screen appears when the client is connected with the host. This screen clearly displays the current status of communications, any OutBound console data, and any InBound console data. Users can also conveniently scroll through the data queues from this screen. All of the information is displayed in a clear, concise manner.

- **Scripting and Scheduling.** CQ's scripting language allows automated and unattended **CQ-3770EE** host site communications through customized scripts and scheduling features. Unattended automation facilities make host site communications more cost effective than normal attended operation. Most any task can be scheduled for execution through CQ's scripting commands.

For advanced data management scheduling, the optional **CQ-Event Scheduler** productivity solution provides an automated way to schedule recurring computer tasks that you would otherwise have to initiate manually. The solution is especially ideal for the automation of daily, weekly, or monthly tasks such as file management processes, report downloads, and large after hours print jobs.

- **Printing Features.** **CQ-3770EE** supports any laser printer that is supported by the Windows operating system. Customizable print features such as the number of lines and columns and page orientation can easily be setup through the solution. **CQ-3770EE** also supports the Windows operating system print spooler so the user can print multiple jobs. Up to eight concurrent printers are also supported by the solution. The solution also supports older legacy printers for uses that require raw line prints.

For the ultimate in printer features and compatibility, the **CQ-Print Administrator** productivity solution provides an efficient way to manage and print text based files according to your specific print layout requirements and specifications. The solution is useful for large recurring print jobs that require pre-set file formatting options and also allows you to configure and save print Layouts for unattended print jobs that you schedule through other programs, including **CQ-3770EE**. Through these print Layouts, you can also include customizable headers, footers, and banner pages that allow you to separate and identify print jobs according to your specific requirements.

- **CQ Diagnostics.** ***CQ-3770EE*** provides accessible communications logging features through its audit and trace options. These features are used for tracking the user's data transfers and include time stamps, file send and receive information, and file size information.
- **Security Features.** ***CQ-3770EE*** is equipped with numerous security features. Certain areas of the program are password protected and the configuration data is decrypted dependent upon the proper entry of the correct password. Also, for the ultimate in secure communications, the Triple Data Encryption Standard (Triple DES) security option is available as an option.

System Requirements

Workstation/Server Requirements

CQ-3770EE supports a wide range of systems. There are hardware and software requirements, as well as memory and storage requirements, to consider when installing **CQ-3770EE**.

Microprocessor	An Intel Pentium® microprocessor is recommended, although other compatible microprocessors such as the Celeron and AMD K6/Athlon/Duron family of microprocessors are also supported.
Drive Space	A minimum of 200 MB of fixed drive space is required. Additional space may be required after CQ-3770EE installation due to configuration option changes and other post installation changes such as diagnostics or scripting changes
Operating System	All Microsoft Windows 32-bit operating systems are supported by CQ-3770EE .
Memory	A minimum of 128 MB of memory is required, although at least 256 MB of memory is recommended.
Peripherals	The system should have access to a CD-ROM drive. CQ-3770EE is compatible with systems that support all VGA resolution or above display monitors, all VGA resolution or above video adapters, all keyboards, and all printers (when a PDT file is not used) that are supported by Windows.
TCP/IP Protocol	The TCP/IP protocol (i.e., Internet Protocol) should be bound to the system's network card

Other Connectivity Programs	CQ recommends that you not have Microsoft's Host Integration Server (current versions as well as previously released versions such as Microsoft SNA Server, etc.) loaded and/or running on the system you will be running CQ-3770EE from. CQ recommends that you not have any IBM mainframe/host connectivity products (such as Host Access Client) loaded and/or running on the system you will be running CQ-3770EE from. If you have a question on CQ-3770EE compatibility with other connectivity programs on your system, please contact CQ at 770-844-0233.
Other Requirements	Your CQ representative may have indicated other hardware and software requirements to you at the time of purchase. Please note that your actual requirements may also vary based on your system configuration and the features required.

Application Data Access Requirements

Application data is generally defined to be files that contain user preferences or configuration information. The **CQ-3770EE** solution needs access to specific application data files in order to install and run properly.

CQ recommends that the current user logged onto the system have access to the following application data locations in order for **CQ-3770EE** to function properly. Please note that some of these locations are created during **CQ-3770EE** installation.

Windows 95/98 Operating Systems

- C:\Windows\All Users\Application Data\CqCompComm
- C:\Windows\All Users\Application Data\IBM\Personal Communications
- C:\Windows\ %USERNAME% \Application Data\IBM\Personal Communications

Windows NT-based Operating Systems (NT, 2000, XP, etc.)

- C:\Documents and Settings\All Users\Application Data\CqCompComm
- C:\Documents and Settings\All Users\Application Data\IBM\Personal Communications
- C:\Documents and Settings\ %USERNAME% \Application Data\IBM\Personal Communications

Registry Access Requirements

The current user logged onto the system must have read/write access to the subkeys of the following Registry area in order for **CQ-3770EE** to function properly:

- **HKEY_CLASSES_ROOT\CLSID\{}**

EE Settings

Prior to **CQ-3770EE** installation, you will need to obtain several EE settings from your host site contact for each **CQ-3770EE** product that you plan to install. These EE settings are as follows:

- **Destination IP Address** - This is the IP address to get access to the host DLUS function.
- **DLUS Name** - This is comprised of the **Network Name** and the **CP Name** of the host where the DLUS resides.
- **CP Name** - For each **CQ-3770EE** installation, you will need to request a **CP Name** from your host site contact.

The Control Point Name (**CP Name**) is a 17-byte character string that consists of two parts separated by a period (this period appears on the *Configurator* screen so you need not enter it). The first part is a 1- to 8-byte character string that is the network name. The second part is a 1- to 8-byte character string that is the control point name.

- **XID** - The **Exchange ID** is required for host connections and consists of two parts - the **IDBLK** (three hexadecimal digits) and the **IDNUM** (five hexadecimal digits). For example, a valid **XID** is 03D12345.
- **# of LUs** - This is the number of LUs configured for the remote PU.
- **Logon** - The logon command is used to attach the LUs to an application (usually JES2 or JES3). An example of a logon is as follows:

```
LOGON APPLID(XXX) LOGMODE(BATCH) DATA(RMT###,,password)
```

In the example above, *XXX* is the application identifier, *###* is your Remote Number, and *password* is the password assigned to you by your host site contact for your Remote Number. This entire Logon is provided to you by your host site contact.

All of these settings are necessary in that they will be entered into CQ's *Configurator* program after **CQ-3770EE** installation and will allow the **CQ-3770EE** software to connect to the mainframe. Keep in mind that if you plan to install multiple licenses of **CQ-3770EE**, you will need a unique **CP Name**, **Logon**, and **XID** for each installation.

Windows XP Firewall

Certain packets of data are blocked by the **Windows Firewall** feature included in Microsoft Windows XP when trying to connect with **CQ-3770EE**. To enable your operating system to allow these packets, CQ recommends, if at all possible, that you disable the **Windows Firewall**. If you are unable to fully disable your **Windows Firewall**, then the standard UDP ports (numbers 12000 to 12004) must be added to the **Windows Firewall** exception list.

Follow either of the instructions below in order to allow **CQ-3770EE** connectivity through the **Windows Firewall**.

Disabling the Windows Firewall

1. Open **Windows Firewall** from the *Windows Control Panel*.
2. Select the **Off** option button.
3. Select the **OK** button.
4. Close the *Windows Control Panel*.

Adding Ports to the Exception List

1. Open **Windows Firewall** from the *Windows Control Panel*.
2. Select the **Exceptions** folder tab.
3. Select the **Add Port** button to add UDP ports **12000**, **12001**, **12002**, **12003**, and **12004**.
4. After you have added all the ports, select the **OK** button.
5. Close the *Windows Control Panel*.

Section One

Solution Setup

Chapters

Chapter 1: Installation

Chapter 2: Configurator

Chapter 3: Configuration Options

Chapter 1

Installation

Highlights

How to install the CQ solution

This chapter describes the procedures associated with installing your **CQ-3770EE** solution.

Quick Installation Guide

Your *CQ-3770EE* solution should have come with a *Quick Installation Guide*. This guide contains detailed instructions on how to install and configure your CQ solution.

To install your CQ solution, CQ recommends that you follow the instructions in the *Quick Installation Guide*. The instructions that appear within the remainder of this chapter are summary in nature.

Software Installation

Please note that prior to *CQ-3770EE* installation, be sure that you have followed the instructions within the *Planning to Install CQ-3770EE* guide. The instructions within this guide must be followed prior to *CQ-3770EE* installation.

After you have followed the instructions in the *Planning to Install CQ-3770EE* guide, you can install the ***CQ-3770EE*** solution. If you require assistance, please contact CQ at **770-844-0233** to schedule a day and time for CQ to assist with ***CQ-3770EE*** installation instructions that appear within this section. Then, at the assigned day and time, a CQ representative will guide you through the instructions within this section so that the solution is installed and ready for a production environment.

CQ-3770EE System Check

Before you begin with **CQ-3770EE** software installation, check your system according to the requirements listed below:

- **System Requirements.** Confirm that your system conforms to the list of **System Requirements** listed at the end of the **Introduction** section of this guide.
- **3770EE Settings.** Your host site contact should provide you with a **Destination IP Address**, **DLUS Name**, **CP Name**, **XID**, and **Logon**. You will need this information in order to configure **CQ-3770EE** after installation.
- **Other Third Party Programs.** CQ recommends that you not have Microsoft's Host Integration Server (current versions as well as previously released versions such as Microsoft SNA Server, etc.) loaded and/or running on the system you will be running **CQ-3770EE** from.

Also, CQ recommends that you not have any IBM mainframe/host connectivity products (such as **Host Access Client**) loaded and/or running on the system you will be running **CQ-3770EE** from. If you have a question on **CQ-3770EE** compatibility with other connectivity programs on your system, please contact CQ at **770-844-0233**.

Note:

If during the course of software installation you encounter an error or similar event, contact the CQ Technical Support department at 770-844-0233 for specific instructions on how to uninstall and then re-install the software. Do not attempt to uninstall the software as the uninstall program may delete some files that you would otherwise want to save. A CQ Representative can assist you in this procedure.

Installation

When you are ready to install the software, CQ recommends that you follow the instructions in the *Quick Installation Guide* that came with your solution.

Software License Registration

Sometime during the first month after initial software installation, you will need to contact CQ for license authorization instructions if the **Software License Registration** icon appears within the *CQ_WIN* program group.

For more information on license registration, turn to the section called “Software License Registration” in the *Quick Installation Guide* that came with your solution. If you require additional license registration assistance, you can also contact CQ.

Configuration

After you have successfully installed your **CQ-3770EE** connectivity solution, please note that all **CQ-3770EE** related programs will appear in the *CQ_WIN* program group.

To access the *CQ_WIN* program group:

- Select **Start > (All) Programs > CQ-3770EE** from your computer's desktop.

CQ Configurator

Before you begin communications, you must first configure the **CQ-3770EE** communications parameters such as the logon, CP Name, and other parameters. To set these parameters, access the *Configurator* program.

To access the Configurator program:

- Select the **Configurator** icon in the *CQ_WIN* program group.

For detailed information on how to use the *Configurator* program, turn to **Chapter 2: Configurator**.

Chapter 2

Configurator

Highlights

An overview of the Configurator

How to access the Configurator

*Descriptions of the
Configurator's screens*

How to use the Configurator

*An introduction to
the configuration options*

This chapter explains how to configure **CQ-3770EE** through the *Configurator*. This chapter is divided into two sections. The first section gives a brief overview of the *Configurator*, including an explanation of each of its screens. The second section explains how to use the *Configurator's* many options.

Quick Installation Guide

Your *CQ-3770EE* solution should have come with a *Quick Installation Guide*. This guide contains detailed instructions on how to install and configure your CQ solution.

To install your CQ solution, CQ recommends that you follow the instructions in the *Quick Installation Guide*. The instructions that appear within the remainder of this chapter are summary in nature.

Configurator Overview

Before you can communicate with a host, you must first create and set up a configuration file. Each configuration file that you create contains the communications options that are necessary for host communications. These options include the logon, number of Logical Units (LUs), and other information. Most of the options in the *Configurator* program are accessible from one simple screen with more advanced options accessible through other screens.

CQ's *Configurator* program allows you to create multiple configuration files for **CQ-3770EE** communications. This might be helpful if, for example, you connect to multiple host sites or you need to connect to the same host sites using different options.

Accessing the Configurator

To access the *Configurator* program, select the **Configurator** icon in the *CQ_WIN* program group.



2 - 1 Configurator Program Icon

The *Configurator* program allows you to:

- Create one or more new configuration files.
- Change the option settings of one or more configuration files that you have already created.

Note:

*When you exit the Configurator after creating one or more new configuration files, a new icon appears in the CQ_WIN program group for each new configuration file that was created. To connect to the host site, select one of these icons. This will run the configuration file according to the communications options that were set up through the Configurator. For more information on host site communications, see **Chapter 4: Solution Operation**.*

Special Note for Password Protected Users

If the *Configurator* program has been password protected, a screen will appear that requests password entry. A **Configuration Password** may be required for access to the communications options within the *Configurator* program. A **Run Time Password** may also be required for access to the *Configurator* program.

These passwords protect the communications options on two different levels of security:

- **Configuration Password** - This password gives the user access to all of the *Configurator* communications options. Your central site administrator usually has access to this password.
- **Run Time Password** - This password gives the user access to the majority of the parameters. Through the use of this password, the **Logon** is encrypted. Some central site administrators may find it useful to give end users access to the majority of the communications options (such as the **XID**) and restrict access to sensitive information such as the **Logon**.

Once the required **Passwords** have been entered, the *CQ Configurator* screen explained on Page 2-7 will appear. If no **Run Time Password** was required, then all communications options become available for modification. If a **Run Time Password** was required, then all communications options except for the **Logon** become available for modification. For information on password protecting the *Configurator*, see the option called “Password” on Page 2-9.

Configurator Screens

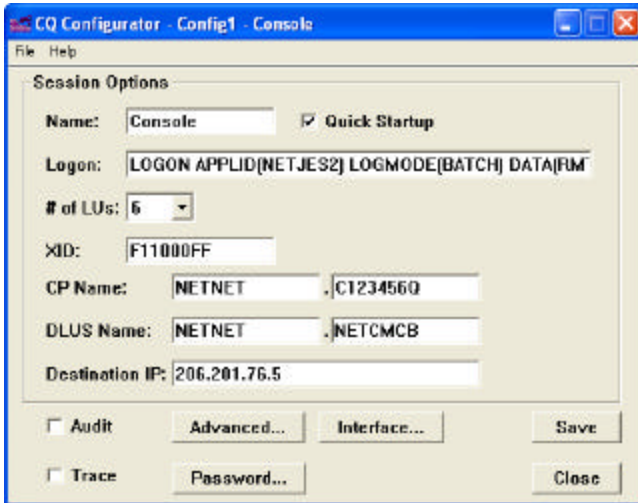
The *Configurator* consists of five screens:

1. *CQ Configurator* - This is the first screen that appears after loading the *Configurator*. Most of the settings that you will need appear on this screen.
2. *Change Passwords* - This screen is used to change the passwords associated with **CQ-3770EE**.
3. *Interface - Local* - This screen is where RJE communications occur when you are connected with the host site. When this screen is accessed through the *Configurator*, you can customize features such as the receive data options, the toolbar, the SmartKey Pad, and scripts.
4. *Advanced Options* - Intended for more advanced users, you can set some of the more advanced options from this screen.
5. *Configuration Tree* - This screen gives a graphical representation of the current configuration scheme.

These screens appear in order of complexity. For example, when you first access the *Configurator*, the *CQ Configurator* screen appears. From this screen, you can access the *Change Passwords* screen to change the settings associated with the passwords or the *Interface - Local* screen to customize features such as the receive data options, the toolbar, the SmartKey Pad, and scripts. You can also access the *Advanced Options* screen. This screen contains more advanced options than the previous screen. Many of these options are not absolutely necessary to facilitate communications. The last screen is accessible through the *Advanced Options* screen and is called the *Configuration Tree* screen. This screen is intended for advanced users only that are using multiple communications drivers.

CQ Configurator Screen

The first screen that appears after you select the **Configurator** program icon is the *CQ Configurator* screen. This screen displays the settings required by most users to complete configuration. Some users may need to access the *Advanced Options* screen for further customization.



2 - 2 CQ Configurator Screen

Note:

*Some of the options that appear in the screen pictured above may or may not appear on your version of **CQ-3770EE** software.*

Menu Bar Options

The *CQ Configurator* screen menu bar has two options, **File** and **Help**.

- **File** - From this option, you can start a new configuration, open an existing configuration, save the current configuration, save the current configuration as another name, rename the current configuration, delete the current configuration, exit the *Configurator*, or open one of the most recent configurations that you have accessed.
- **Help** - From this option, you can access the *CQ-3770EE Help* file where you can use the **Contents**, **Index**, or **Search** features to locate helpful information on the software. You can also access the *About* screen for information about the **CQ-3770EE** software, including the serial number.

Quick Configuration Options

The quick configuration options make up the majority of the *CQ Configurator* screen.

- **Session Options** - This area is reserved for options that are absolutely necessary for communications. Be sure to enter values for each of these options before attempting communications. For more information on **Session Options**, see **Chapter 3: Configuration Options**.
- **Audit** - Activate this check box to initiate CQ's audit feature. An audit file gives a summary of all communications events, including a date and time stamp of the number of records sent or received, the number of bytes sent or received, the filenames sent or received, and the status of each file. For information on the audit feature, see the section called "Audit" on Page 10-27.

- **Trace** - Activate this check box to initiate CQ's trace feature. A trace file gives detailed descriptions of all low-level communications events. For information on the trace feature, see the section called "Trace" on Page 10-29.
- **Advanced** - Select this button to access the *Advanced Options* screen.
- **Interface** - Select this button to access the current configuration's *Interface* screen in "Local" mode. From the *Interface - Local* screen, you can configure options such as the receive options, the toolbar, the SmartKey Pad, and scripts. For more information on the *Interface - Local* screen, see the section called "Interface Screen" on Page 4-5.
- **Password** - Select this button to access the *Change Passwords* screen. This screen allows you to change the **Configuration** and **Run Time Passwords**. For more information on the *Change Passwords* screen, see the section called "Change Passwords Screen" on Page 2-10.
- **Save** - Select this button to save the current settings on the *CQ Configurator* screen.
- **Close** - Select this button to close the *Configurator* program.

Change Passwords Screen

The *Change Passwords* screen is accessible through the *CQ Configurator* screen. The *Change Passwords* screen is intended for advanced users and administrative personnel that want to password protect **CQ-3770EE**.

Warning:

When you password protect the Configurator or Interface, the software will always be password protected. You can change the password, but you cannot disable password protection. In order to run the software without password protection after you have installed a password, you will need to re-install the software. Contact CQ Technical Support for more information before proceeding.

Note:

For information on how to set or modify the passwords, see the section called “Passwords” on Page 2-29.

Change Passwords Screen Options

The *Change Passwords* screen has several options.

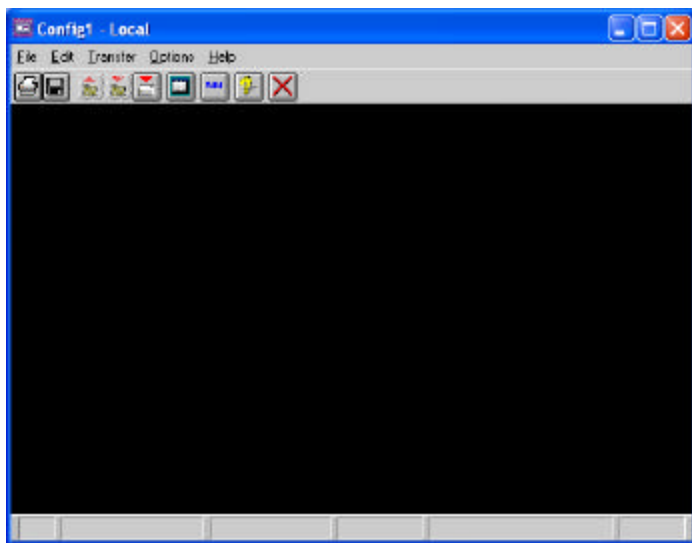
- **Configuration Password** - The password modification process requires the re-entry of the old password in the **Old Password** text box, the entry of the new password in **New Password** text box, and the re-entry of the new password in the **Confirm New Password** text box. The characters that are entered are displayed as asterisks (*) for security reasons.
- **Run Time Password**- The password modification process requires the re-entry of the old password in the **Old Password** text box, the entry of the new password in **New Password** text box, and the re-entry of the new password in the **Confirm New Password** text box. The characters that are entered are displayed as asterisks (*) for security reasons.

- **Minimum Length** - This text box contains the minimum length of the **Run Time Password**. It is recommended that a minimum length be specified for this password. Only passwords containing at least the minimum number of characters will be accepted.
- **Allow user to change at run time** - Activate this check box to allow the user to change the **Run Time Password** whenever the *Interface* screen is accessed.
- **Require user to change on the first time execution** - Activate this check box to require the user to change the **Run Time Password** upon initial execution of the *Interface* screen. The user will not be required to enter a new **Run Time Password** unless the **Allow user to change at run time** check box is activated.

Interface - Local Screen

The *Interface - Local* screen is where RJE communications occur. When this screen is accessed through the *Configurator*, the term *Local* appears in the title bar.

The purpose of accessing the *Interface* screen through the *Configurator* is so you can configure options such as the receive data options, the toolbar, the SmartKey Pad, and scripts without being connected to the host site.



2 - 3 Interface - Local Screen

Interface - Local Screen Options

The *Interface - Local* screen consists of five parts:

- **Title Bar** - The title bar is the horizontal bar at the top of the *Interface - Local* screen that contains the session name and the current connection mode. If the configuration is not connected to the host, the term *Local* will appear as the connection mode. If the configuration is connected to the host, the term *CQ In/Out Bound* will appear as the connection mode.
- **Menu Bar** - The menu bar is the horizontal bar located just below the title bar that contains the names of the menus, including **File**, **Edit**, **Transfer**, **Options**, and **Help**.
- **Toolbar** - The toolbar is the horizontal bar located just below the menu bar that contains the icon buttons. These buttons initiate the commands that are associated with them. Think of toolbar buttons as shortcut commands. Another part of the *Interface* screen similar to the toolbar is the SmartKey Pad. This pad is independent of the *Interface - Local* screen and may appear anywhere on your computer's desktop.
- **Console Area** - The console area is the large rectangular area located below the toolbar. **CQ-3770EE** connectivity occurs within the console area. This connectivity includes all information involving the host application. During configuration and times that you are not connected to the host, this area remains blank.
- **Status Line** - The status line is the horizontal bar located at the bottom of the *Interface - Local* screen. This bar displays information on the status of the current connection, including data transfer events and other communications information.

Advanced Options Screen

The *Advanced Options* screen is accessible through the *CQ Configurator* screen. The *Advanced Options* screen is intended for more advanced users. Most options that are necessary for host communications can be set through the *CQ Configurator* screen. In some cases, it may be necessary to set some of the options that do not appear on the *CQ Configurator* screen from within the *Advanced Options* screen.

Advanced Options Screen Options

The *Advanced Options* screen has several options.

- **Folder Tabs** - The *Advanced Options* screen uses a folder format to group communications options. For more information on the folder tabs that are displayed with your **CQ-3770EE** solution, see **Chapter 3: Configuration Options**.
- **Configuration Tree** - Select this button to access the *Configuration Tree* screen. This screen is intended for advanced users.
- **OK** - Select this button to save any changes made on this screen and return to the *CQ Configurator* screen.
- **Cancel** - Select this button to cancel any changes made on this screen and return to the *CQ Configurator* screen.

Configuration Tree Screen

The *Configuration Tree* screen gives a graphical representation of the current configuration scheme. The main function of the *Configuration Tree* screen is to allow users to add multiple communications drivers to a configuration. Most **CQ-3770EE** users communicate with only one type of communications driver and therefore need not be concerned with this screen.

Using the Configurator

This section gives instructions on how to use the *Configurator* program.

- **Configurations** - Explains how to use the commands in the **File** menu bar option of the *CQ Configurator* screen.
- **Communications Options** - Explains how to set the communications options located throughout the *Configurator* program as well as how to set the **Audit** and **Trace** functions.
- **Passwords** - Explains how to password protect the *Configurator* program.

Configurations

Use the chart below to find information on a specific topic.

Function	Page
Creating a New Configuration	2 - 17
Opening a Configuration	2 - 18
Saving a Configuration	2 - 19
Saving a Configuration as Another Name	2 - 20
Renaming a Configuration	2 - 21
Deleting a Configuration	2 - 22

Creating a New Configuration

These instructions explain how to create a new configuration.

The filename of the current configuration appears in the title bar at the top of the *CQ Configurator* screen. A configuration filename always ends with the extension **.CQC**. Note that the **.CQC** extension does not appear in the title bar. When accessing the program for the first time, a default configuration called **Config1.CQC** is created.

To create a new configuration:

1. From the *CQ_WIN* program group that was created during installation, select the **Configurator** icon. The *CQ Configurator* screen appears.
2. From the **File** menu, select **New Configuration**.
3. A dialog box appears and states that a new configuration has been created with the default settings. The name of the new configuration is *Configx*, where *x* is the number given to the next new configuration you have created. For example, the name of the configuration created when you first access the *Configurator* is called *Config1*. If you create a new configuration, it is called *Config2*. To rename the configuration, select **Rename** from the **File** menu.
4. Select the **OK** button. A new *CQ Configurator* screen appears with the default settings.

Opening a Configuration

These instructions explain how to open a configuration that was previously created and saved.

The filename of the current configuration appears in the title bar at the top of the *CQ Configurator* screen. A configuration filename always ends with the extension **.CQC**. Note that the **.CQC** extension does not appear in the title bar.

To open an existing configuration:

1. From the *CQ_WIN* program group that was created during installation, select the **Configurator** icon. The *CQ Configurator* screen appears.
2. From the **File** menu, select **Open Configuration**. The *Open Configuration* dialog box appears.
3. Highlight the configuration that you want to open from the scrolling **Configuration List**.
4. Select the **Open** button. The *CQ Configurator* screen for the configuration you selected appears.

Saving a Configuration

These instructions explain how to save any changes made to a configuration since it was last saved.

To save changes made to a configuration using the menu bar:

1. From the *CQ Configurator* screen, select **Save** from the **File** menu.
2. Any changes that you have made since you last saved the configuration will be saved.

To save changes made to a configuration using the **Save** button:

1. From the *CQ Configurator* screen, select the **Save** button.
2. Any changes that you have made since you last saved the configuration will be saved.

Note:

*Once the current settings are saved, the **Save** button will gray out until another change is made within the Configurator.*

Saving a Configuration as Another Name

These instructions explain how to save the current configuration as another name. This way, both the previously named configuration and the newly named configuration still exist.

To save the current configuration as another name:

1. From the *CQ Configurator* screen, select **Save As** from the **File** menu.
2. From the dialog box that appears, enter the new name that you want to save the current configuration as in the space provided.
3. Select the **OK** button. The name of the configuration at the top of the *CQ Configurator* screen changes to the new name.

Renaming a Configuration

These instructions explain how to rename the current configuration as another name. This way, the previously named configuration is deleted and replaced with the newly renamed configuration.

To rename the current configuration:

1. From the *CQ Configurator* screen, select **Rename** from the **File** menu.
2. From the dialog box that appears, enter a new name for the current configuration in the space provided.
3. Select the **OK** button. The name of the configuration at the top of the *CQ Configurator* screen changes to the new name.

Deleting a Configuration

These instructions explain how to delete the current configuration.

To delete the current configuration:

1. From the *CQ Configurator* screen, select **Delete Configuration** from the **File** menu.
2. From the dialog box that appears, select the **Yes** button to confirm that you want to delete the current configuration.

Communications Options

Use the chart below to find information on a specific topic.

Function	Page
Changing the Communications Options	2 - 24
Setting Quick Startup	2 - 25
Activating the Audit Feature	2 - 26
Activating the Trace Feature	2 - 27
Accessing the Advanced Options	2 - 28

Changing the Communications Options

All of the communications options are located within the *Configurator* program. The options that are most necessary for establishing communications are located in the opening *CQ Configurator* screen. All communications options are located in the *Advanced Options* screen.

To change the communications options:

1. From the *CQ_WIN* program group that was created during installation, select the **Configurator** icon. The *CQ Configurator* screen appears and the current configuration name appears in the title bar.

Note:

*To open a configuration other than the one that is currently open, select **Open Configuration** from the **File** menu.*

2. Make changes to the communications options that appear on the screen. These options are the settings that are most necessary for initiating and maintaining communications with the host site.
3. To change communications options that do not appear on the *CQ Configurator* screen, select the **Advanced** button. The *Advanced Options* screen appears.
4. To change the advanced options, select a folder tab to display its options. If an option on the *Advanced Options* screen also appears on the *CQ Configurator* screen, any changes that you make on one screen will be reflected on the other.

Note:

*For information on the options that came with your solution, select the **Help** button associated with each folder tab or see **Chapter 3: Configuration Options**.*

5. After you have made your changes, return to the *CQ Configurator* screen and select the **Save** button.

Setting Quick Startup

When you run a configuration set for **Quick Startup**, the software automatically connects with the host site. CQ recommends that you activate the **Quick Startup** check box for each configuration that you create.

To set a configuration for Quick Startup:

- From the *CQ Configurator* screen, activate the **Quick Startup** check box if it is not already activated.

Activating the Audit Feature

Audit files give a summary of all communications events, including a date and time stamp of the number of records sent or received, the number of bytes sent or received, the filenames sent or received, and the status of each file. Audit files are useful for troubleshooting communications. For information on the audit feature, see the section called “Audit” on Page 10-27.

To set up an audit:

- From the *CQ Configurator* screen, activate the **Audit** check box if it is not already activated.

Activating the Trace Feature

Trace files give detailed descriptions of all low-level communications events. Hexadecimal details of all communications events are date and time stamped and include details of options including SDLC framing. Trace files are useful for troubleshooting communications. For information on the trace feature, see the section called “Trace” on Page 10-29.

To set up a trace:

- From the *CQ Configurator* screen, activate the **Trace** check box if it is not already activated.

Accessing the Advanced Options

The advanced options available for each configuration may be different for your version of the **CQ-3770EE** solution.

To access the Advanced Options:

1. From the *CQ Configurator* screen, select the **Advanced** button. The *Advanced Options* screen appears.
2. To configure the advanced options, select a folder tab to display its options.

Note:

*For information on the options that came with your solution, select the **Help** button associated with each folder tab or see **Chapter 3: Configuration Options**.*

Passwords

Setting the Passwords from the Configurator

Both the **Configuration** and **Run Time Passwords** can be modified from within the *Configurator*.

Warning:

When you password protect the Configurator or Interface, the software will always be password protected. You can change the password, but you cannot disable password protection. In order to run the software without password protection after you have installed a password, you will need to re-install the software. Contact CQ Technical Support for more information before proceeding.

Passwords Overview

The *CQ Configurator* and *Interface* screens can be password protected by the **Configuration** and **Run Time Passwords**. The configuration data is decrypted dependent upon the proper entry of either password. You can set up these passwords through the *Configurator* program.

When you first access the *Configurator*, the *CQ Configurator* screen appears if the software is not currently password protected. If a screen appears instructing you to enter a password, the product has already been installed with a **Configuration Password**. You must enter the correct **Configuration Password** in order to have access to the *Configurator* parameters.

Some administrators may find it useful to give end users access to only most of the parameters (such as the **XID**) and not some of the more sensitive information (such as the **Logon**). In this case, the end user would enter the **Run Time Password** to have access to only most of the parameters (the **Logon** is encrypted).

To modify the Configuration and Run Time passwords:

1. From the *CQ Configurator* screen, select the **Password** button. The *Change Passwords* dialog box appears and presents the **Configuration Password** and **Run Time Password** fields for modification.
2. The password modification process requires the re-entry of the old password to provide additional security. The new password also requires re-entry as confirmation of the new password since the characters are not displayed.
3. Set the **Configuration Password**, **Run Time Password**, and any options associated with the **Run Time Password**.
4. Select the **OK** button. The *CQ Configurator* screen reappears.
5. Select the **Save** button.

Note:

*No changes are saved in any of the Configurator screens until the **Save** button is selected.*

Chapter 3

Configuration Options

Highlights

*The configuration options
for the **CQ-3770EE** solution*

This chapter explains the communications options associated with the *Configurator* program.

Note:

Communications options are located on the Advanced Options screen of the Configurator program. Some of these options can also be found on the CQ Configurator screen. If you change a setting on one screen, it will also be changed on the other.

Quick Installation Guide

Your *CQ-3770EE* solution should have come with a *Quick Installation Guide*. This guide contains detailed instructions on how to install and configure your CQ solution.

To install your CQ solution, CQ recommends that you follow the instructions in the *Quick Installation Guide*. The instructions that appear within the remainder of this chapter are summary in nature.

Folder Tab Options

Use the following chart for information on the folder tabs for the **CQ-3770EE** connectivity solution.

Folder Tab	Options	Page
IBM Terminal	Session Name, Script Name, Translation Table, Quick Startup	3 - 4
MLU	Logon, Signoff, # of LUs, LU Number	3 - 5
DLU(E)	Minimum Session-Level Encryption, Trace Decrypted Data	3 - 6
Internal PU	XID, Max RU, Master Key Storage Options <i>(optional)</i>	3 - 8
EE Link	Local CP Name, DLUS Name, Destination IP, Host SAP Number, Local SAP Number, Backup DLUS, Backup IP	3 - 11

IBM Terminal

The following options make up the **IBM Terminal** folder tab options.

- **Session Name** - This text box contains the current session's name.
- **Script Name** - This text box contains the name of the script that will automatically run when you initiate the configuration. For information on scripting, see **Chapter 9: Scripts**.
- **Translation Table** - This drop-down list displays the translation table selected for the current configuration. The default translation table used by **CQ-3770EE** is called **<Internal>**. You can edit the **STANDARD.XLT** translation table as necessary. Translation tables perform the ASCII/EBCDIC conversion necessary for host communications.
- **Quick Startup** - Activate this check box if you want the current configuration to automatically begin communications when you run the current configuration.

MLU

The following options make up the **Multiple Logical Unit (MLU)** folder tab options.

- **Logon** - This text box contains the logon command used to attach the LU to an application. Many host sites automatically attach your LU to an application so this option is not always necessary. An example of a logon is as follows:

```
LOGON APPLID(xxx) LOGMODE(BATCH) DATA(RMT###,password)
```

In the **Logon** example above, *xxx* is the application identifier, *###* is the remote number, and *password* is the password.

These parameters are usually provided to you by your host site contact.

- **Signoff** - This text box contains the signoff command. If this box contains a value, then **CQ-3770EE** will automatically send this card just prior to exiting. A typical signoff value is **/*SIGNOFF**.
- **# of LUs** - This drop-down list displays the current number of LUs selected. The default number of LUs is 6.
- **LU Number** - These text boxes contain the numbers assigned to each LU. You can usually get this number from your host site contact. This number identifies the LU to the host.

By default, each **LU Number** is left blank. If you leave the **LU Numbers** blank (the default), CQ will automatically assign them at runtime. The **LU Number** may also be known as the Local Address.

DLU(E)

The following options make up the **DLU(E)** folder tab options.

- **Minimum Session-Level Encryption** - You can choose the minimum setting of session-level encryption for the current session by selecting one of the option buttons. This option specifies the *minimum* cryptography that is required in the BIND for **CQ-3770EE** to accept the BIND. If an option button is grayed out, then this form of session-level encryption was not included with your version of **CQ-3770EE**.

Note:

*The single **DES** and **Triple DES** security options are available as options to **CQ-3770EE** at additional costs. Your version of **CQ-3770EE** may not be equipped with one of these options. For information on how to upgrade your software to **CQ-3770EE/DES** or **CQ-3770EE/Triple DES**, contact your CQ Sales representative.*

1. **No Encryption** - When this option button is selected, NO session-level cryptography is required. This option allows all sessions to be bound. Sessions *do not* have to be encrypted through single **DES** or **Triple DES** encryption in order to be bound.
2. **Selective DES Encryption** - When this option button is selected, session-level **selective** or **mandatory** cryptography is required through single **DES** or **Triple DES** encryption.
3. **Mandatory DES Encryption** - When this option button is selected, session-level **mandatory** cryptography is required through single **DES** or **Triple DES** encryption.

4. **Selective Triple-DES Encryption** - When this option button is selected, session-level **selective** or **mandatory** cryptography is required through ***Triple DES*** encryption.
 5. **Mandatory Triple-DES Encryption** - When this option button is selected, session-level **mandatory** cryptography is required through ***Triple DES*** encryption.
- **Trace Decrypted Data** - In the event of communications problems, you may require a communications log file to be written. If the **Trace Decrypted Data** check box is activated, the log file for the current session will be written with un-encrypted data.

Internal PU

The following options make up the **Internal PU** folder tab options.

- **XID** - This text box contains the Exchange ID (**XID**) required for host site connections. The **XID** consists of two parts, the IDBLK (three hexadecimal digits) and the IDNUM (five hexadecimal digits). You can usually get the **XID** from your host site contact.
- **Max RU** - This drop-down list contains the maximum data amount allocated for each block of data transmitted. You can select a maximum Request Unit (**Max RU**) from the list or enter one directly into the text box. The **Max RU** currently selected appears in the space provided.

Master Key Storage Options

The **Master Key Storage Options** group box displays the storage information for the **DES Master Keys**. These options are only available with a Data Encryption Standard (single **DES** or **Triple DES**) version of **CQ-3770EE**. If these options are available, use them to enter one or more **Master Keys**. This information is usually provided to you by your Central Site contact. Also, in some cases, partial **Master Key** information may have already been entered for you by your Central Site contact.

Note:

*For information on the single **DES** and **Triple DES** security options, see **Chapter 11: DES/Triple DES Security Options**.*

- **Master Key Number** - By selecting a **Master Key Number** option (1, 2, or 3), the remaining options within the **Master Key Storage Options** group box change to display the information for the selected **Master Key Number**.
- **Keyn Location** - This drop-down list displays the location of the currently selected **Master Key Number**.
 1. **NONE** - When this option is selected, there is no **Master Key** information for the currently selected **Master Key Number**. In other words, you are not implementing this **Master Key Number**.
 2. **Software** - When this option is selected, the currently selected **Master Key Number** is stored within the CQ software.
 3. **Glenco** - When this option is selected, the currently selected **Master Key Number** is stored within a Glenco Hardlock device attached to the computer.
 4. **Jones Card** - When this option is selected, the currently selected **Master Key Number** is stored within a Jones Futurex ENC-347 card installed in the computer.

NONE Master Key Storage Options

When the **NONE** option is selected, there are no additional options displayed within the **Master Key Storage Options** group box.

Software and Glenco Master Key Storage Options

When the **Software** or **Glenco** option is selected, the following additional options are displayed within the **Master Key Storage Options** group box.

- **Partial Master Keyn** - This text box contains the 16 hexadecimal digits that make up the **Master Key**. In most cases, this information will have been provided to you by your Central Site personnel. Also, in some cases, partial **Master Key** information may have already been entered for you in this text box by your Central Site contact.

- **Confirm Partial Key** - This text box is used to confirm the 16 hexadecimal digits that were entered in the **Partial Master Key** text box.

Note:

*Any digits entered in the **Partial Master Key** and **Confirm Partial Key** text boxes will always be blank when re-entering the **Controller** folder tab screen. There will be no indication that anything was ever entered into these fields. These fields are used only to change, not display, the **Master Key**.*

- **Accept Partial Key** - This button installs the **Partial Master Key** that is entered in the **Partial Master Key** and **Confirm Partial Key** text boxes.
- **Clear Master Key** - This button clears the **Partial Master Key** information.

Jones Card Master Key Storage Options

When the **Jones Card** option is selected, the following additional options are displayed within the **Master Key Storage Options** group box.

- **I/O Address** - This text box contains the Jones card's I/O address. In most cases, this should have been pre-configured for you by your Central Site personnel.
- **DES Key Slot #** - This text box contains the Jones card's DES key slot number. In most cases, this should have been pre-configured for you by your Central Site personnel.

EE Link

The following options make up the **EE Link** folder tab options.

- **Local CP Name** - This text box contains the remote fully qualified local Control Point (CP) name which specifies the control point of **CQ-3770EE**. This should match the name the node sends on its XIDs. The **Local CP Name** is usually provided to you by your host site contact.

The fully qualified **CP Name** is a 17-byte character string that consists of three parts. The first part is a 1- to 8-byte character string that is the network name. The second part is a period that separates the first and third parts. The third part is a 1- to 8- byte character string that is the CP Name.

- **DLUS Name** - This text box contains the fully qualified Dependent Logical Unit Server (DLUS) name. The **DLUS Name** is usually provided to you by your host site contact.

The fully qualified **DLUS Name** is a 17-byte character string that consists of three parts. The first part is a 1- to 8-byte character string that is the network name. The second part is a period that separates the first and third parts. The third part is a 1- to 8- byte character string that is the DLUS Name.

- **Destination IP** - This text box contains the destination IP address of a node in the APPN network that **CQ-3770EE** will be communicating with. The **Destination IP** is usually provided to you by your host site contact.
- **Host SAP Number** - This text box contains the host end Service Access Point (SAP). The SAP consists of two hexadecimal digits. The default **Host SAP Number** is 04. The **Host SAP Number** is usually provided to you by your host site contact.
- **Local SAP Number** - This text box contains the local Service Access Point (SAP). The SAP consists of two hexadecimal digits. The default **Local SAP Number** is 04.

- **Backup DLUS** - This text box contains the optional fully qualified backup DLUS name. In the event that session establishment fails with the primary **DLUS Name**, the **Backup DLUS** is used in its place. The **Backup DLUS** is usually provided to you by your host site contact. This backup setting is optional and is not required for connectivity.

The fully qualified **Backup DLUS** is a 17-byte character string that consists of three parts. The first part is a 1- to 8-byte character string that is the network name. The second part is a period that separates the first and third parts. The third part is a 1- to 8- byte character string that is the DLUS Name.

- **Backup IP** - This text box contains the optional destination IP address of Enterprise Extender. In the event that session establishment fails with the primary **Destination IP**, the **Backup IP** is used in its place. The **Backup IP** is usually provided to you by your host site contact. This backup setting is optional and is not required for connectivity.

Section Two

Functions and Features

Chapters

Chapter 4: Solution Operation

Chapter 5: Print Functions

Chapter 6: Edit Functions

Chapter 7: Data Transfers

Chapter 8: View Functions

Chapter 9: Scripts

Chapter 10: Advanced Options

Chapter 11: DES/Triple DES Security Options

Chapter 4

Solution Operation

Highlights

How to run a configuration

*A description of the
Interface screen*

*A description of the
Interface screen in
CQ In/Out Bound mode*

*An overview of
Status Line messages*

*A description of the
CQ Session Status screen*

*How to run a script using the
Interface command line*

This chapter explains how to use the **CQ-3770EE** software to communicate with a host site.

Running a Configuration

Before you can use **CQ-3770EE** to communicate with a host site, you must have first created a configuration through the *Configurator*. For more information on the *Configurator*, see **Chapter 2: Configurator**.

When you exit the *Configurator* program after creating a new configuration, a new program icon appears in the *CQ_WIN* program group. The icon name is the same name that you saved the configuration as in the *Configurator* program. For example, the configuration that is used in the icon below is called **Config1**.



4 - 1 Interface Program Icon Example

To run the **Config1** configuration, you would simply select this icon from the *CQ_WIN* program group.

To run a configuration:

1. From the *CQ_WIN* program group that was created during installation, select the icon for the configuration you want to run. For example, if you saved a configuration under the default name **Config1**, select the icon called **Config1**.
2. The next events that occur depend on if the configuration is set for **Quick Startup** mode:
 - **Quick Startup** - If the configuration is set for **Quick Startup** mode, an *Interface* screen appears and the software attempts to connect with the host according to the communications options that you set through the *Configurator* program.
 - **NOT Quick Startup** - If the configuration is not set for **Quick Startup** mode, the *CQ Session Status* screen appears. You can use this screen to open (i.e., run) the configuration when you are ready to connect with the host.
3. In most cases, users have their configurations setup in **Quick Startup** mode which in turn automatically runs a script the user has specified within the configuration. In these cases, the *Interface* screen is minimized in the Windows desktop's taskbar (unless otherwise instructed in the script to appear in a maximized format) and the *CQ Script* screen will appear as the script begins to run.

Note:

*For more information on **Quick Startup** mode, see the section called “Setting Quick Startup” on Page 2-25. For more information on the *CQ Script* screen, see **Chapter 9: Scripts**.*

Special Note for Password Protected Users

If the *Interface* screen has been password protected, a screen will appear that requests entry of the **Run Time Password**. Once the **Run Time Password** has been entered, the *Interface* screen explained in the next section appears.

For information on password protecting the *Interface* screen, see the option called “Password” on Page 2-9.

Entering a New Run Time Password

In some cases involving the **Run Time Password**, you may have the option of entering a new **Run Time Password**.

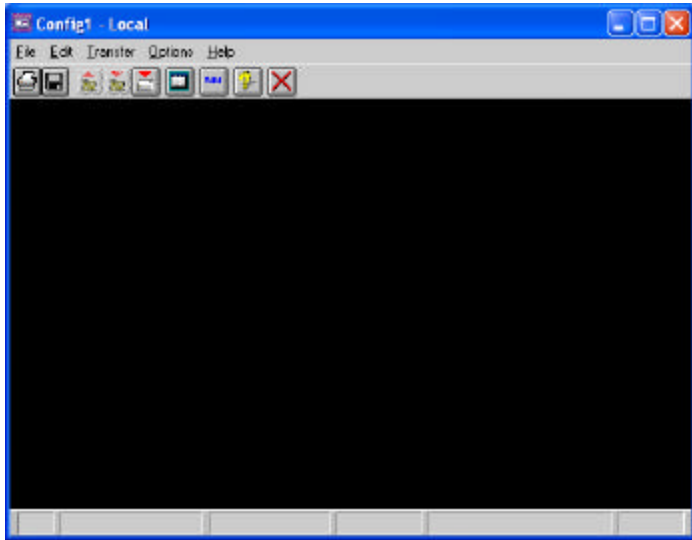
For example, if the **Allow user to change at run time** and/or **Require user to change on the first time execution** check boxes on the *Change Passwords* screen explained on Page 2-10 are activated, then a dialog box appears instructing you to enter the **Old Password** as well as a **New Password**.

If this occurs, enter the **Old Password** and select the **OK** button. Then, enter a **New Password** and confirm the **New Password**. When you have successfully confirmed the **New Password**, the *Interface* screen explained in the next section appears.

Interface Screen

The *Interface* screen is where all communications occurs. Every configuration is accessed through a separate *Interface* screen.

The *Interface* screen appears each time a program icon for a configuration that is set in **Quick Startup** mode is accessed. Program icons for each configuration are created through CQ's *Configurator* program.



4 - 2 Interface Screen

Interface Screen Description

The *Interface* screen consists of five parts.

1. Title Bar

The title bar is the horizontal bar at the top of the *Interface* screen that contains the session name and the current connection mode. If the configuration is not connected to the host, the term *Local* will appear as the connection mode. If the configuration is connected to the host, the term *CQ In/Out Bound* will appear as the connection mode.

2. Menu Bar

The menu bar is the horizontal bar located just below the title bar that contains the names of the menus, including **File**, **Edit**, **Transfer**, **Options**, and **Help**.

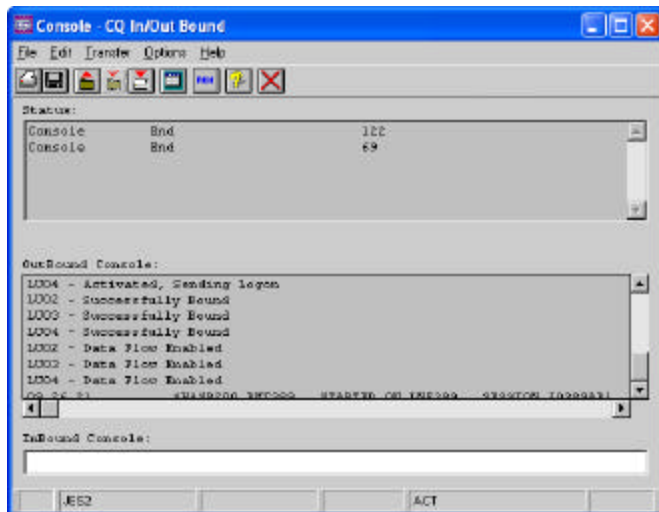
3. Toolbar

The toolbar is the horizontal bar located just below the menu bar that contains the icon buttons. These buttons initiate the commands that are associated with them. Think of toolbar buttons as shortcut commands. Another part of the *Interface* screen similar to the toolbar is the SmartKey Pad. This pad is independent of the *Interface* screen and may appear anywhere on your computer's desktop.

4. Console Area

The console area is the large rectangular area located below the toolbar. Connectivity with the host site occurs within the console area.

The *Interface* screen appears in *CQ In/Out Bound* mode when you are connected with the host.



4 - 3 Interface Screen in CQ In/Out Bound Mode

Once you have connected with the host, the console area in *CQ In/Out Bound* mode is divided into three parts: **Status**, **OutBound Console**, and **InBound Console**.

- **Status** - Contains status messages about the operation of the current session. This information is divided into five columns:
 1. **Device** - The type of device the session is emulating.
 2. **Current Status** - The current status of the corresponding device, such as **End**, **Closed**, etc.
 3. **File Destination** - The name of the file that the data is being transmitted to.
 4. **Number of Bytes** - The total number of bytes transmitted.
 5. **Percentage of Bytes Sent** - The percentage of the bytes transmitted.

Note:

Some of the columns explained above may appear without a value during transmissions. Blank values are caused by insufficient information and DO NOT effect the speed or accuracy of file transfers.

- **OutBound Console** - Contains the outbound console data transferred with the host. Any command that you enter in the **InBound Console** area also appears in the **OutBound Console** area.
- **InBound Console** - Use this area to send commands to the host. Once you have entered a command into the **InBound Console** area, it is then displayed in the **OutBound Console** area.

Note:

*The **InBound Console** area of the console area will not appear until after you have established a connection with the host.*

5. Status Line

The status line is the horizontal bar located at the bottom of the *Interface* screen. This bar displays information on the status of the current session, data transfer events, and other communications information.

The status line consists of six fields that display information messages about the particular area that they monitor.



4 - 4 Sample Status Line with Numbered Fields

Field 1. **Insert/Overwrite Status** - This field indicates if the **InBound Console** area of the *Interface* screen is in Insert (INS) or Overwrite (OVR) mode. Insert mode inserts the text you type into the console area at the cursor location, while the Overwrite mode causes the text you type at the cursor location to be placed over any existing text. You can toggle between these modes by pressing the [INSERT] key.

Field 2. **Terminal Identification** - This field displays the **LU Name** your host staff uses to identify the session.

Field 3. **EMPTY** - This field is empty. It is not used by **CQ-3770EE**.

Field 4. **Field Attribute** - The field attribute status displays if the *Interface* screen is password protected or not. If the screen is not password protected, this field will be blank. Otherwise, the message **Password** will appear in this field and the contents of the *Interface* screen will not be visible.

Field 5. **Communications Status** - This field shows the current status of communications with the host. Use the lists on the next few pages for detailed explanations of the abbreviated status codes and other messages that appear in this field.

Status Line Messages

Abbreviated Messages

- **INA (Communications Inactive)** - There is currently no connection with the host. This message appears when the program is first loaded and run. It indicates that communications has not yet been established.
- **CNT (Connecting)** - The session is connecting with the host.
- **PRB (Communications Problem)** - Communications was established but has stopped for some reason. Many different hardware and software problems such as modem failure, a bad phone line, or too high a data rate can cause this message.
- **IDL (Communications Idle)** - The systems are in contact, but no transmissions have been received for more than six seconds. The link may be gone or the host response time may be slow.
- **XID (Exchange ID Sent)** - Each session responds to the host and sends Exchange ID (XID). If XID continues to appear on the status line, your XID was refused. Try again, or contact the host site personnel for assistance.
- **ACT (Communications Active)** - This message indicates that **CQ-3770EE** and the host are connected and ready to transmit data.

Long Messages

- **BUSY** - The number that you are calling is busy.
- **DIAL TONE DETECTED** - This message indicates that a dial tone is detected, and that dialing is in process.
- **INTERNAL ERROR** - No internal error messages should occur. Write down the message error code, and contact CQ Technical Support.

- **MODEM FIRMWARE VERSION INCOMPATIBLE** - If the modem firmware has changed so that it is incompatible, this message will be displayed.
- **NO TONE DETECTED** - The modem did not 'hear' a dial tone on the phone line. Check to be sure that the phone line is connected and operational.
- **NO TONE DETECTED** - After issuing a dial command, the modem sends status updates to the dial program. Absence of an update for thirty seconds results in this message.
- **RING** - The number that you are calling is ringing.
- **MODEM REJECTED THE DIAL COMMAND** - This error occurs if you have invalid digits in the phone number. Valid digits include numbers zero through nine (0-9), asterisk (*), number sign (#), comma (,), space, the letters T and P, and a hyphen (-). Check your modem documentation for a valid character.
- **TRANSMIT TIMEOUT** - A Transmit timeout error occurs if there is no sign of a proper response from the modem. Probable causes include the address of the modem is set incorrectly, the address of the modem was entered incorrectly during installation of **CQ-3770EE**, there is an address conflict with another board, you have used the wrong COM port (with the async version only), or there is a modem problem. This message does not occur with a properly installed modem.
- **UNEXPECTED RESPONSE FROM MODEM** - This message occurs if the modem does not respond properly, or rejects a command.
- **WAITING FOR DIAL TONE** - The modem has taken control of the phone line, and is awaiting a dial tone.

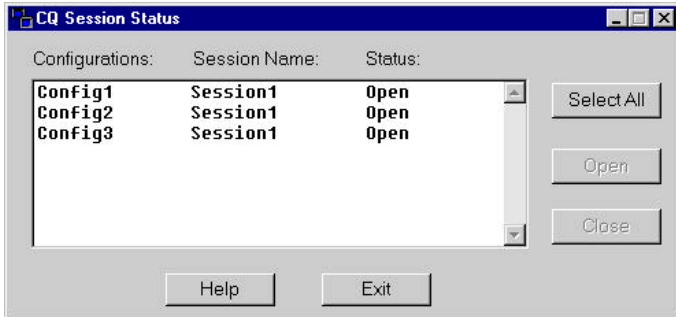
Field 6. **Cursor Position** - This field is the last portion of the status line. It shows the current position of the cursor in **InBound Console** area of the *Interface* screen. The format is as follows:

- **Row,Column**

For example, if the cursor is in the upper left hand corner, the **Cursor Position** field will display **1,1**.

CQ Session Status Screen

The *CQ Session Status* screen appears when you access a configuration that is not set in **Quick Startup** mode. This screen reports the status (open or closed) of the configuration.



4 - 5 CQ Session Status Screen

Note:

*When you run a configuration set for **Quick Startup**, the software automatically dials into and connects with the host site. CQ recommends that you activate the **Quick Startup** check box for each configuration that you create. For more information, see the section called “Setting Quick Startup” on Page 2-25.*

To open a configuration from the CQ Session Status screen:

1. Select the configuration that you want to open from the *CQ Session Status* screen.
2. Select the **Open** button. The **Status** column changes from **Closed** to **Open** and the *Interface* screen for the configuration appears. The *CQ Session Status* screen will be minimized in the taskbar when one or more configurations is running.

Running a Script Using the Interface Command Line

To run a script using the *Interface* command line, you will need to enter the command from the directory that you installed **CQ-3770EE** under, from another program, or from a DOS batch file. For more information on scripting, see **Chapter 9: Scripts**.

For example, if the directory that you installed the software into is called **c:\cq3770**, type the command **cd c:\cq3770** at any DOS prompt to return to that directory.

The format of the command line is as follows:

CQMULATE <configuration name> [options]

Command Line Description

- <configuration name> - The configuration name is required. It is the name of the configuration file you specified. If you did not specify a name while running the *Configurator*, the default name supplied is **config1.cqc**. The extension is always **.cqc** and is not required as it is automatically added onto the filename.
- [options] - There are three options available. If more than one option is used, separate each one of them with a space.
 1. /T= - Create and run a trace file. This file is created each time the *Interface* is executed in *CQ In/Out Bound* mode. Any previously existing file of the same name will be overwritten. The file name immediately follows the equals sign (=) (i.e., /T=**mytrace.cqt**). If the extension is not supplied, **.cqt** will be appended to the filename (i.e., **mytrace.cqt**).

2. /A= - Create an audit file. This file contains the summary of date and time stamped communications events. A new audit file is created for each communications session. Any previously existing file of the same name will be overwritten. The file name immediately follows the equals sign (=) (i.e., /A=**myaudit.cqa**). The extension is always **.cqa**.
3. /S= - Execute a script file. This file must exist and have been created by using the scripting language. For example, in the command /S=**myscript**, **myscript** is the name of the script file created. The extension is always **.cqs** and need not be supplied. For more information on scripting, see **Chapter 9: Scripts**.
4. /K - Closes an open *Interface* screen so that a new *Interface* screen can open. This command can be used as long as both *Interface* screens (the one being closed and the one being opened) are opened through the same configuration file. This command helps to avoid conflicts between two open *Interface* screens accessed through the same configuration file. This is especially useful for users that launch **CQ-3770EE** from another program in order to run **CQ-3770EE** in unattended mode from a script.

Command Line Example

In the following example, the *Interface* will run with the configuration file **config1.cqc** and will run with the script named **myscript.cqs**. An audit file will also be created and will be called **myaudit**.

```
CQMULATE config1 /S=myscript /A=myaudit
```

A command line such as the example above would be used in the calling program, entered as a line in a DOS batch file, or typed at a command line prompt in a DOS window.

Chapter 5

Print Functions

Highlights

How to set the print options

How to print to a file

How to print to a printer

This chapter explains how to use the printing features associated with **CQ-3770EE**.

Print Commands

The print commands are located in the **File** menu bar option of the *Interface* screen. **CQ-3770EE** allows you to print the contents of the **OutBound Console** area of the *Interface* screen through these commands. The **OutBound Console** area contains the outbound console data transferred with the host.

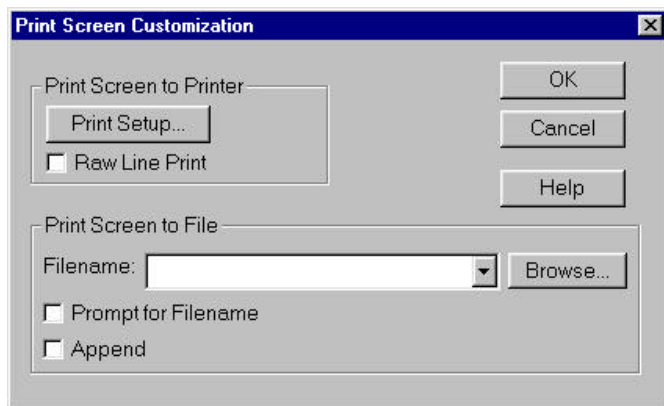
Print commands include:

- **Print Screen to Printer** - Use this command to send the contents of the *Interface* screen's **OutBound Console** area to the connected printer. This command is also available as a toolbar button.
- **Print Screen to File** - Use this command to save the contents of the *Interface* screen's **OutBound Console** area to a file. This command is also available as a toolbar button.
- **Print Screen Set Up** - Use this command to access the *Print Screen Customization* dialog box. From this dialog box, you can change the settings associated with printing to a file (i.e., saving the screen) or printing to a printer. This command is also available as a toolbar button.

The directions in this chapter explain how to setup **CQ-3770EE** to print the contents of the **OutBound Console** area to a printer or save the contents to a file.

Print Screen Customization

The **File > Print Screen Set Up** menu bar command accesses the *Print Screen Customization* dialog box. From this dialog box, you can change the settings associated with printing the contents of the **OutBound Console** area to a file (i.e., saving the screen) or a printer.



5 - 1 *Print Screen Customization Dialog Box*

Print Screen Customization Options

- **Print Setup** - This button accesses the *Print Setup* dialog box. From this dialog box, you can set printer options such as printer properties, paper size and source, and page orientation.
- **Raw Line Print** - When this check box is selected, all data is sent to the printer as raw print data. This is useful when printing to generic text, line, dot matrix, and similar printers.
- **Filename** - This field displays the name of the file you are printing to on your computer. The **Filename** includes the entire pathname, including all directories and subdirectories.
- **Browse** - This button accesses the *Browse* dialog box where you can select a file already saved on your computer. The filename that you choose in this dialog box is displayed in the **Filename** area, including all directories and subdirectories.
- **Prompt for Filename** - When this check box is selected, you will be prompted for a filename each time you print the **OutBound Console** text to a file.
- **Append** - When this check box is selected, the **OutBound Console** text being printed to a file is appended to a file by the same name already on the computer.

Setting the Print Screen Options

Before you print, it is recommended that you first check your print options on the *Print Screen Customization* dialog box.

To customize for prints to a file:

1. Access the *Print Screen Customization* dialog box:
 - Select the **File > Print Screen Set Up** menu bar command.
 - Select the **Customize Screen Prints** toolbar button

2. Select the **Browse** button to change the **Filename** displayed. The **Filename** includes the entire pathname, including all directories and subdirectories.
3. To be prompted for a filename each time you print to a file, activate the **Prompt for Filename** check box. To print to the default filename each time you print (this includes overwriting), do not activate the **Prompt for Filename** check box.
4. To append the contents being printed to a file by the same name already on the computer, activate the **Append** check box. To overwrite a file with the current contents being saved, do not activate the **Append** check box.
5. Select **OK**.

To customize for prints to a printer:

1. Access the **Print Screen Customization** dialog box:

- Select the **File > Print Screen Set Up** menu bar command.
- Select the **Customize Screen Prints** toolbar button



2. To check the printer options, select the **Print Setup** button. These options include the printer properties, paper size and source, and page orientation.
3. To send data to the printer as raw data, activate the **Raw Line Print** check box. This is useful when printing to generic text, line, dot matrix, and similar legacy-type printers.
4. Select **OK**.

Printing to a File

CQ-3770EE allows you to print (i.e., save) the contents of the **OutBound Console** area of the *Interface* screen to a file. The **OutBound Console** area contains the outbound console data transferred with the host.

Before you print to a file, make sure your print options are set correctly. To check your print options, access the *Print Screen Customization* dialog box. Print options include the filename to print to, prompting for a filename, and appending to an existing file.

Once you have checked your print options, there are two ways to print the **OutBound Console** text to a file:

To print to a file using the menu bar:

- Select the **File > Print Screen to File** menu bar command.

To print to a file using the toolbar:

- Select the **Save Screen to File** toolbar button



Printing to a Printer

CQ-3770EE allows you to print the contents of the **OutBound Console** area of the *Interface* screen to a printer. The **OutBound Console** area contains the outbound console data transferred with the host.

Before you print to a printer, make sure your print options are set correctly. To check your print options, access the *Print Screen Customization* dialog box. Print options include the print setup options (i.e., destination, orientation, etc.), printing NUL lines, and form feeding after each screen print.

Once you have checked your print options, there are two ways to print the **OutBound Console** text to a printer:

To print to a printer using the menu bar:

- Select the **File > Print Screen to Printer** menu bar command.

To print to a printer using the toolbar:

- Select the **Print Screen to Printer** toolbar button



Chapter 6

Edit Functions

Highlights

How to use the edit commands

This chapter explains how to use the edit features associated with **CQ-3770EE**.

Edit Commands

The edit commands are located in the **Edit** menu bar option of the *Interface* screen. **CQ-3770EE** allows you to manipulate the contents of the **OutBound Console** area of the *Interface* screen through these commands. Use the table below to find information on each command.

C o m m a n d	P a g e
Copy	6 - 3
Append	6 - 4
Select All	6 - 5
View Clipboard	6 - 6

Copy Command

The **Copy** command duplicates the selected area of **OutBound Console** text to the *Clipboard*. The **Copy** command does not delete the selected area from the **OutBound Console** area.

To copy text using the menu bar:

1. Select the text you want to copy by holding the left mouse button and dragging the mouse across the **OutBound Console** text. A box appears around the text you selected.
2. Select the **Edit > Copy** menu bar command.
3. The text has been copied to the *Clipboard*.

To copy text using the toolbar:

1. Select the text you want to copy by holding the left mouse button and dragging the mouse across the **OutBound Console** text. A box appears around the text you selected.
2. Select the **Copy** toolbar button .
3. The text has been copied to the *Clipboard*.

Append Command

The Append command duplicates the selected area of the **OutBound Console** area to the *Clipboard*. If there is already text in the clipboard, the **Append** command appends the new text to it. The **Append** command does not delete any text from the **OutBound Console** area. Appended text is copied to the clipboard in a position immediately after the text that is already present in the clipboard.

To append text to other text already in the Windows Clipboard using the menu bar:

1. Select the text you want to append by holding the left mouse button and dragging the mouse across the **OutBound Console** text. A box appears around the text you selected.
2. Select the **Edit > Append** menu bar command.
3. The text has been appended to any text already in the *Clipboard*.

To append text to other text already in the Windows Clipboard using the toolbar:

1. Select the text you want to append by holding the left mouse button and dragging the mouse across the **OutBound Console** text. A box appears around the text you selected.
2. Select the **Append** toolbar button .
3. The text has been appended to any text already in the *Clipboard*.

Select All Command

The **Select All** command selects all of the text within the **OutBound Console** area.

To select all of the text using the menu bar:

1. Select the **Edit > Select All** menu bar command.
2. All of the text is selected. A box appears around the entire **OutBound Console** area. You can now use one of the other **Edit** commands to copy, append, etc. the selected text.

To select all of the text using the toolbar:

1. Select the **Select All** toolbar button .
2. All of the text is selected. A box appears around the entire **OutBound Console** area. You can now use one of the other **Edit** commands to copy, append, etc. the selected text.

View Clipboard Command

The **View Clipboard** command accesses the *Clipboard Viewer*. The *Clipboard Viewer* enables you to view the contents of the *Clipboard*.

Note:

*If the **View Clipboard** command is grayed out, then the Clipboard Viewer is not installed on your computer. To install the **ClipBrd.exe** program, consult the Help files for your Windows operating system.*

To view the clipboard using the menu bar:

- Select the **Edit > View Clipboard** menu bar command.

To view the clipboard using the toolbar:

- Select the **View Clipboard** toolbar button .

Chapter 7

Data Transfers

Highlights

How to set the send data options

How to send data

How to set the receive print data options

How to receive print data

This chapter explains how to use the data transfer features associated with **CQ-3770EE**.

Transfer Commands

The **Transfer** menu bar option from the *Interface* screen accesses the features associated with sending data from the PC to the host and receiving data from the host to the PC. From this menu bar option, you can select one of the following commands:

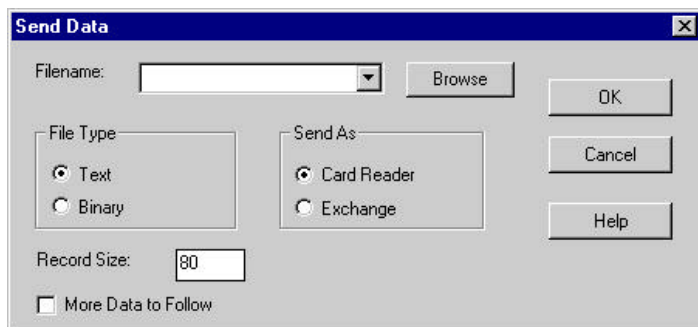
- **Send File** - Use this command to access the *Send Data* dialog box. From this dialog box, you can change the settings associated with sending data from your PC to the host. This command is also available as a toolbar button.
- **Receive Print Data** - Use this command to access the *Receive Data* dialog box. From this dialog box, you can change the settings associated with receiving data from the host to your PC. This command is also available as a toolbar button.

Note:

The **Receive File** command is grayed out for the **CQ-3770EE** program. It is used to initiate *IND\$FILE* file transfer sessions in CQ's interactive **CQ-3270** software program.

Send Data

The **Transfer > Send File** menu bar command accesses the *Send Data* dialog box. From this dialog box, you can change the settings associated with sending data from your PC to the host.



7 - 1 *Send Data Dialog Box*

Send Data Options

- **Filename** - This field displays the name of the file you are sending to the host. The **Filename** includes the entire pathname, including all directories and subdirectories.
- **Browse** - This button accesses the *Open File* dialog box where you can select a file already saved on your computer.
- **File Type** - Use these option buttons to choose if the file will be **Text** or **Binary**.
- **Record Size** - This text box displays the size of the record. For text data, the **Record Size** represents the maximum record size. For binary data, the **Record Size** is absolute. The maximum record size is 256.
- **Send As** - Use these option buttons to choose the format you want to send the file. If you need to send records larger than 128 bytes and the host specifies Exchange data, then choose **Exchange**. Otherwise, it should be left as **Card Reader**.
- **More Data to Follow** - When this check box is activated, multiple files are appended into a single file from the host's perspective.
- **OK** - Select this button to send data to the host.

Setting the Send Data Options

Before you send data to the host, it is a good idea to check your send options in the *Send Data* dialog box.

To set your send options:

1. Access the *Send Data* dialog box:
 - Select the **Transfer > Send File** menu bar command.
 - Select the **Send File to Host** toolbar button .
2. Enter or select a filename. If the filename you want to send is not in the drop-down list, select the **Browse** button to access a file already saved on the computer.
3. Select the file type, either text or binary.
4. Select the form to send the file as, either card reader or exchange.
5. Indicate the record size.
6. If more data is to follow this file at a later time, select the **More Data to Follow** check box.

Sending Data

Before you send data to the host, make sure your send options are set correctly. To check your send options, access the *Send Data* dialog box.

Once you have checked your send options, there are two ways to send data.

To send data using the menu bar:

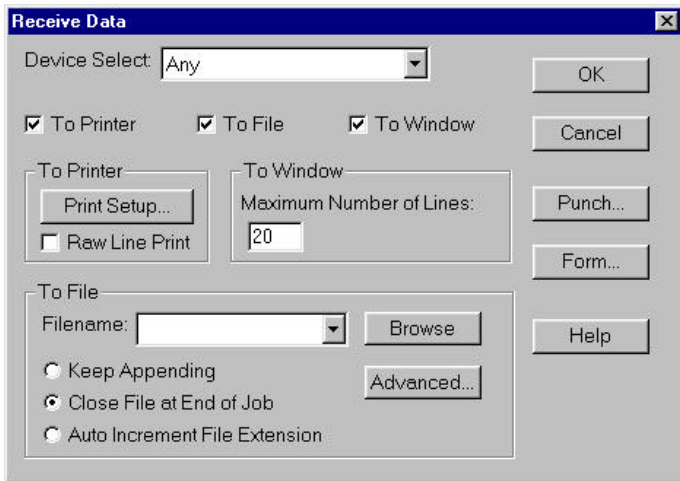
1. Select the **Transfer > Send File** menu bar command.
2. Select the **OK** button to start the transfer.

To send data using the toolbar:

1. Select the **Send File to Host** toolbar button .
2. Select the **OK** button to start the transfer.

Receive Print Data

The **Transfer > Receive Print Data** menu bar command accesses the *Receive Data* dialog box. From this dialog box, you can change the settings associated with receiving data from the host.



7 - 2 *Receive Data Dialog Box*

Receive Data Options

- **Device Select** - This drop-down list contains the name of the device(s) currently selected.
- **To Printer** - When this check box is activated, any printer data that you receive from the host will be redirected to the currently selected printer.
- **To File** - When this check box is activated, any printer data that you receive from the host will be redirected to a file that you specify in the **Filename** text box.
- **To Window** - When this check box is activated, any printer data that you receive from the host will be redirected to the display window.
- **Punch** - Select this button to access the *Receive Data - Punch Options* dialog box.
- **Form** - Select this button to access the *Receive Data - Form Options* dialog box.
- **Print Setup** - This button accesses the *Print Setup* dialog box. From this dialog box, you can set printer options such as the destination, page orientation, paper size, and paper source.
- **Raw Line Print** - When this check box is selected, all data is sent to the printer as raw print data. This is useful when printing to generic text, line, dot matrix, and similar printers.
- **Maximum Number of Lines** - This text box displays the maximum number of lines that the *Interface* reserves for the display window.
- **Filename** - This drop-down list contains the names of the most recently received files from the host. These are the names as they appear on your computer. The name of the file currently selected to be received appears in the space provided. You can change this name by selecting from the drop-down list, typing in a new name, or using the **Browse** button to browse your computer for the filename.

- **Browse** - This button accesses the *Open File* dialog box where you can select a file already saved on your computer.
- **Keep Appending** - When this option button is activated, if more than one file is being sent from the host, then all of the data is appended into the designated filename that appears in the **Filename** text box.
- **Close File at End of Job** - When this option button is activated, the filename specified in the **Filename** text box is automatically closed after a file is received from the host and written to it. Also, the **To File** check box becomes deselected to prevent appending to or overwriting that file.
- **Auto Increment File Extension** - When this option button is activated, CQ's Automatic File Naming (AFN) feature is activated. There are several ways to use the AFN feature. These are explained in the section called "Automatic File Naming" on Page 7-10.
- **Advanced** - Select this button to access the *Receive Data to File - Advanced Options* dialog box.

Automatic File Naming

To activate the Automatic File Naming (AFN) feature for incoming printer data from the mainframe, activate the **Auto Increment File Extension** option button on the *Receive Data* dialog box.

The AFN feature is useful when you do not know exactly how many files you will be receiving or if you have a large number of files and do not want to name them one at a time. There are several ways to use the AFN.

AFN with No Specified Numeric Extension

If the filename that you entered in the **Filename** text box does not have an extension, AFN creates a new filename for each incoming file using the filename you specify and a three-digit extension plus one. The first three-digit extension is **.000** or the next available numeric extension in that subdirectory.

For example, if the filename you specify is called **data** and you are receiving three files from the mainframe, they will be called **data.000**, **data.001**, and **data.002**.

Note:

If a non-numeric extension exists, it will be replaced with a numeric extension.

AFN with a Specified Numeric Extension

If the filename that you entered in the **Filename** text box has an extension, AFN creates a filename and numeric extension you specify to receive the first downloaded file. Then, AFN creates the next filename for each incoming file using the filename you specify and the three-digit extension plus one.

For example, if the filename you specify is called **data.555** and you are receiving three files from the mainframe, they will be called **data.555**, **data.556**, and **data.557**.

Note:

If a file has a .999 extension, AFN names the next file with a .000 extension.

Setting the Receive Print Data Options

Before you receive print data from the host, it is a good idea to check your receive print data options in the *Receive Data* dialog box.

To set the receive print data options:

1. Access the *Receive Data* dialog box:
 - Select the **Transfer > Receive Print Data** menu bar command.
 - Select the **Receive Print Data from Host** toolbar button
. The icon shows a printer with a red arrow pointing down to it, indicating data being sent to the printer.
2. Select the name of the device that the data being received is going to.
3. Select which devices you want the data to be redirect to, including the Printer, File, and/or Window.
4. Set the options associated with the device(s) you selected in Step 3.
5. If you need to set the more advanced punch data receive options, select the **Punch** button to access the *Receive Data - Punch Options* dialog box.
6. If you need to set the more advanced form data receive options, select the **Form** button to access the *Receive Data - Form Options* dialog box.

7. If you need to set the more advanced receive data to file options, select the **Advanced** button to access the *Receive Data to File - Advanced Options* dialog box.

Note:

The next several sections explain the options associated with the dialog boxes referenced in Steps 5 through 7. If you do not need to set these options, turn to the section called “Receiving Print Data” on Page 7-20 for instructions on how to receive print data.

Receive Data - Punch Options Dialog Box

The **Punch** button from the *Receive Data* dialog box accesses the *Receive Data - Punch Options* dialog box. From this dialog box, you can change the settings associated with receiving punch data.



7 - 3 *Receive Data - Punch Options Dialog Box*

Receive Data - Punch Options

- **Record Size** - This text box displays the default record size. This record size is used if the host specifies a default size. Otherwise, the host specified record size is used.
- **Translate To ASCII** - When this check box is activated, EBCDIC files will be translated to ASCII format. This box must be activated if the first punch data file is a text file in EBCDIC.
- **Terminate Records w/ CRLF** - When this check box is activated, each record will end with a Carriage Return Line Feed (CRLF).
- **Blank Fill Records** - When this check box is activated, short records are blank filled to the indicated **Record Size**.

Receive Data - Form Options Dialog Box

The **Form** button from the *Receive Data* dialog box accesses the *Receive Data - Form Options* dialog box. From this dialog box, you can change the settings associated with receiving form data.

Receive Data - Form Options

☐ Use FCB name specified by Host

Default Form Specifications

FCB Name:

Lines Per Page:

Margins: Top Bottom

Vertical Tab Stops:

02	9	06	29	10	49
03	14	07	34	11	54
04	19	08	39	12	59
05	24	09	44		

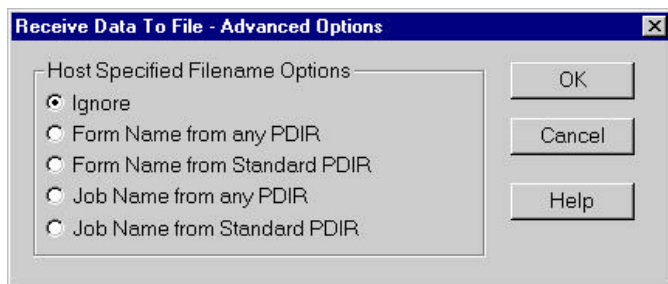
7 - 4 *Receive Data - Form Options Dialog Box*

Receive Data - Form Options

- **Use FCB name specified by Host** - When this check box is activated, the Form Control Buffers (FCBs) will be set to the host's specifications. If it is not activated, then the FCBs will be set according to the default settings. FCBs are used to specify vertical margins and tab stops for different types of forms you may use on your printer.
- **FCB Name** - This drop-down list contains the names of FCBs you have used.
- **New** - Select this button to add a new FCB name to the **FCB Name** drop-down list. The name of this new FCB name is *Formx*, where *x* is the number given to the next new FCB name that you create for the current session. For example, each new session is preset with one FCB name that cannot be deleted called *Default*. If you select the **New** button, another FCB name called *Form1* is created. New FCB names are preset with the default settings for your version of **CQ-3770EE**.
- **Delete** - Select this button to delete the FCB name displayed in the **FCB Name** drop-down list.
- **Lines Per Page** - This text box contains the total number of lines of printer data on one page.
- **Margins** - The **Top** and **Bottom** text boxes contain the margins for the top and bottom of one page.
- **Vertical Tab Stops** - These text boxes contain the vertical tab stops 2 through 12 (vertical tab 1 always goes to the top margin of the page).
- **Maximum Characters Per Line** - This text box contains the maximum number of characters per line.
- **Characters Beyond Maximum** - Use these option buttons to **Wrap** or **Truncate** any characters that exceed the maximum number of allowed characters per line.

Receive Data to File - Advanced Options Dialog Box

The **Advanced** button from the *Receive Data* dialog box accesses the *Receive Data to File - Advanced Options* dialog box. From this dialog box, you can change the settings associated with receiving advanced file data.



7 - 5 *Receive Data to File - Advanced Options Dialog Box*

Receive Data to File - Advanced Options

- **Ignore** - When this option button is activated, there will not be any form or job names used when receiving data.
- **Form Name from any PDIR** - When this option button is activated, the filename that you specified in the *Receive Data* dialog box will be treated as a backup if there is no form name specified in the Peripheral Data Information Record (PDIR).
- **Form Name from Job Separator PDIR** - When this option button is activated, the data following the Job Separator header (i.e., a banner page) can be written to a separate file with the form name found in the PDIR.
- **Job Name from any PDIR** - When this option button is activated, the filename that you specified in the *Receive Data* dialog box will be treated as a backup if there is no job name specified in the PDIR.
- **Job Name from Job Separator PDIR** - When this option button is activated, the data following the Job Separator header (i.e., a banner page) can be written to a separate file with the job name found in the PDIR.

Receiving Print Data

Before you receive print data from the host, make sure your receive print data options are set correctly. To review your receive options, access the *Receive Data* dialog box.

Once you have reviewed your receive print data options, you are ready to receive print data.

To receive print data:

- Contact your host site. Instruct the site that you are ready to receive their print data.

Chapter 8

View Functions

Highlights

*How to view and hide
the toolbar*

*How to view and hide
the SmartKey Pad*

This chapter explains how to use the view functions associated with the toolbar and SmartKey Pad of **CQ-3770EE**.

View Commands

The **Options > View** menu bar option from the *Interface* screen accesses the features associated with showing or hiding the toolbar and SmartKey Pad. From this menu bar option, you can select the **View** command:

- **View** - Use this command to either show or hide the toolbar or SmartKey Pad.
 - **Toolbar** - This option functions as a toggle. If there is a check mark next to it, the toolbar will appear on the *Interface* screen. This command is also available as a toolbar button.
 - **SmartKey Pad** - This option functions as a toggle. If there is a check mark next to it, the floating SmartKey Pad will appear on the computer's desktop. This command is also available as a toolbar button.

For more information on the toolbar and the SmartKey Pad features of the *Interface* screen, see **Chapter 10: Advanced Options**.

Viewing the Toolbar

The **View > Toolbar** option functions as a toggle. The toolbar appears just below the *Interface* screen's menu bar.

To view the toolbar:

- Select the **Options > View** menu bar command and make sure that there is a check mark next to the **Toolbar** option.

To hide the toolbar:

- Select the **Options > View** menu bar command and make sure that there is not a check mark next to the **Toolbar** option.

Note:

*To quickly hide the toolbar, select the **Hide Toolbar***

toolbar button 

Viewing the SmartKey Pad

The **View > SmartKey Pad** option functions as a toggle. The SmartKey Pad appears on your desktop as a separate floating window.

To view the SmartKey Pad:

- Select the **Options > View** menu bar command and make sure that there is a check mark next to the **SmartKey Pad** option.

To hide the SmartKey Pad:

- Select the **Options > View** menu bar command and make sure that there is not a check mark next to the **SmartKey Pad** option.

Note:

To quickly view or hide the SmartKey Pad, select the

Toggle SmartKey Pad toolbar button .

Chapter 9

Scripts

Highlights

An overview of scripts

*An explanation of the
CQ Scripting Language*

The script commands

This chapter explains how to create, modify, and run scripts within **CQ-3770EE**.

Scripts Overview

A script is a series of instructions that accomplish a particular task and can be launched easily within **CQ-3770EE**. Once a script is launched, it is executed without any further input from the user. Scripts can be written from within **CQ-3770EE** through the **Options > Script** menu bar option of the *Interface* screen.

The CQ Scripting Language consists of several useful and powerful commands. These script commands are entered within the **Script Text Area** of the *Script Editor* dialog box explained later in this chapter.

Script Design

The structure of a CQ script is one command per line. The general format of the script commands appear as follows:

COMMAND *parameters*

- COMMAND is the name of the CQ scripting command.
- *Parameters* can be any combination of device names, file names, event names, or strings. Multiple *parameters* are separated by at least one space. *Parameters* may be optional depending on the scripting command.

Spaces in front of commands are ignored allowing for indentation. You can use spaces to help clearly document a script.

Script Programming Styles

The CQ Scripting Language provides the script programmer with two styles of programming that are based on the way they are executed. CQ scripts can be either executed Line-by-Line or Event Driven.

Line-by-Line

With the Line-by-Line execution programming style, each task is accomplished before moving to the next. This style is best used for short scripts that consist of commands for sending and/or receiving files.

The following script sends a signon, waits to receive a file, and ends the script without ending communications.

```
SEND signon
WAIT_FOR SEND_COMPLETE
RECEIVE mydata.txt
WAIT_FOR RECEIVE_COMPLETE
EXIT
```

Event Driven Execution Style

With the Event Driven execution programming style, the code is focused on the tasks to be accomplished for each event independently of the others. This is accomplished by the WHEN and OR_WHEN commands. As the command name suggests, the code following the WHEN and OR_WHEN is the code executed when the event happens. For any given phase of the script, including scheduling calls, establishing the communications link, sending and receiving files, and terminating the communications link, there can be a collection of WHEN commands for each anticipated event.

A collection of **WHEN** commands have the following format:

```
WHEN <event1>
    (an unspecified number of script lines for event1 tasks)
OR_WHEN <event2>
    (an unspecified number of script lines for event2 tasks)
OR_WHEN <event3>
    (an unspecified number of script lines for event3 tasks)
OR_WHEN <event4>
    (an unspecified number of script lines for event4 tasks)
END_WHEN
```

Execution of the script is suspended at the **END_WHEN** until one of the events (event1, event2, etc.) occurs. After a **WHEN** event occurs, all of the **WHEN** commands preceding the **END_WHEN** command are disabled and the point of execution begins with the first line following the **END_WHEN** command. If there is no first line, the script terminates while communications remains active. Structurally, the lines of code following a given **WHEN** command are executable for that **WHEN** command until an **END_WHEN** or **OR_WHEN** command is encountered. Therefore, only the code for that **WHEN** command event is executed. A **GOTO** command can be used to reinstate a wait for the next event for same set of **WHEN** commands.

Note:

*For more information on the **WHEN** commands, see the section called “**WHEN** Commands” on Page 9-36.*

Script Writing Advice

- **Pad the script.** Add a comment line at the end of your script. The last line will not be executed so a non-essential line is needed to pad the script.
- **Review and test the script.** Make sure your script follows the communications events properly. CQ suggests that you review the audit file after you go through the communications process manually.

For example, use the menus to send and receive files after you make your connection. Also, use the ANY device option for the manual trial. The incoming devices will be specified in the audit file. After a successful completion of this process, review the audit file. It will show all messages received from the mainframe as CONSOLE data, your receive files coming in on the devices of CONSOLE1, PRINTERx, or PUNCHx, and your files sent by name and device. Your script should model these events.

- **Be careful when using the WAIT_FOR commands.** Trap all errors and use the INACTIVITY command to avoid waiting indefinitely for an event that will not happen. For example, when sending a file with the SEND command, the loss of communications may not generate an error. If you use a WAIT_FOR command, the script might end up waiting and unacceptably long period of time. Use WHEN commands instead of WAIT_FOR commands in this situation. WAIT_FOR commands are best used with TIMER commands.
- **Limit each line of a script to only 200 characters.** Do not exceed 200 characters on any line of a script.

- **DO NOT nest calls within a script.** This can occur when using the CALL, WHEN, or IF commands. Inadvertent nesting can also happen when you use a GOTO command from a CALLED subroutine. For example, if you use the CALL command to call another portion of the script, you must first return to the original script location using the RETURN command before you can place another call.
- **DO NOT send and receive at the same time.** The only time it is recommended that you try and send and receive at the same time within a script is if you have more than one Logical Unit (LU).

Note:

*The number of LUs that you have are listed in the audit file. An audit file is created if the **Audit** check box from the Configurator program is activated. For information on how to use and read Audit files, see the section called “Audit Files and Scripts” on Page 10-28.*

Common Scripting Questions

- **What is a device?** A device can be thought of as a channel, path, or connection type. A device name identifies a particular channel on which the data flows.
- **How is received and sent data assigned?** All received data arrives “on” a device assigned by the host end. All sent data arrives “on” a device assigned by you.

Script Samples, Tips, and Hints

The information below gives brief descriptions of the sample scripts, script fragments, tips, tricks, and hints that were copied to the **CQ-3770EE** main directory you specified during installation. You may be able to use these files to customize your **CQ-3770EE** software to your specific project requirements. These files are located in the **examples** subdirectory.

Some of these files include:

- **complex.cqs** - This file is a full script that, on a schedule, connects, waits for a possible start up message, sends a file, and then waits for any number of files. It then sends a signoff and waits for confirmation. The script then disconnects and returns to the scheduling. The script has been written with error trapping and demonstrates the use of audit entries.
- **dial.cqs** - This script displays detailed error messages about the connection and opens a prompt for manual commands.
- **schedule.txt** - This file explains a few ways in which scheduling and “connecting and sending when a file is ready” can be achieved from a script. The instructions are written as script code fragments and are intended to demonstrate features that may be useful to your operation.
- **simprecv.cqs** - This script assumes an auto-answer configuration. When the connection is made, the script receives one or more files and then returns to auto-answer mode.
- **task.txt** - This file contains some example uses of the SYSTEM command. This CQ script command enables execution of Windows programs, MS-DOS programs and MS-DOS batch files.
- **tips.txt** - This file contains some tips on script-writing, audit file use, and how to use some of the CQ supplied utility programs located in the **utilities** directory.

CQ Scripting Language

This section explains each of the **CQ-3770EE** scripting commands that make up the CQ Scripting Language. Use the table below to find information on each command.

Command	Page		Command	Page
<i>comment</i>	9 - 10		DEBUG	9 - 32
UNATTEND	9 - 11		WAIT_FOR	9 - 34
ATTEND	9 - 11		WHEN	9 - 36
DISPLAY	9 - 12		OR_WHEN	9 - 36
BEEP	9 - 13		END_WHEN	9 - 36
CONNECT	9 - 14		IF	9 - 38
DISCONNECT	9 - 15		IF_EXIST	9 - 38
SEND	9 - 16		ELSE_IF	9 - 38
RECEIVE	9 - 19		ELSE	9 - 38
START	9 - 24		END_IF	9 - 38
STOP	9 - 26		DELETE	9 - 45
RESUME	9 - 27		SYSTEM	9 - 46
GOTO	9 - 28		MAIN_WINDOW	9 - 48
CALL	9 - 29		SCRIPT_WINDOW	9 - 49
RETURN	9 - 29		EXIT	9 - 50
CLEAR	9 - 31			

Comment Command

The *comment* command is used to provide documentation within your scripts. Any characters on a line to the right of a semicolon will be ignored. The *comment* command is useful for documenting your script.

Command Format

;comment

Examples

- Comments on single lines:

```
; This is an example of a comment on a line by itself.  
; Comments can also appear one line after another.  
; Like this...  
; And this...  
; Etc.
```

- Comments on lines with other commands:

```
GOTO exit      ; goto the exit label
```

UNATTEND/ATTEND Commands

The UNATTEND command is used within scripts that are intended to run without operator intervention. Scripts that run in unattended mode continue to run despite any errors during communications. It is expected that the scriptwriter will use the error trapping commands provided through CQ's software.

The ATTEND command is used within scripts that are intended to run with an operator present. Many error messages and exception events appear on the screen and are ready to be handled in real time by the operator.

Note:

To set the script for attended mode, you do not have to enter the command ATTEND at the beginning of a script. All scripts automatically default to ATTEND mode. Use the UNATTEND command to run a script in unattended mode and the ATTEND command to return to attended command if necessary.

Command Format

UNATTEND

ATTEND

Example

- The following example runs a script in unattended mode and then returns the script to attended mode later in the script:

UNATTEND

(an unspecified number of script lines
that run in unattended mode)

DISPLAY Command

The DISPLAY command is used to display a message in the **Message** scrolling text box portion of the *CQ Script* screen. This command can also be used to optionally write the message to an audit/log file.

Command Format

DISPLAY <string> [AUDIT]

Description of Parameters

- <string> - A string is any number of characters contained within quotation marks (“ ”). This is the message that will appear on the display screen.
- [AUDIT] - When AUDIT is included in the DISPLAY command, the string is not only displayed on the screen, but it is also appended to the Audit file. For information on the audit feature, see the section called “Audit” on Page 10-27.

Examples

- The following example displays the string “File Received” in the **Message** scrolling text box portion of the *CQ Script* screen:

DISPLAY “File Received”

- The following example displays the string “File Received” in the **Message** scrolling text box portion of the *CQ Script* screen and also inserts it into the Audit file:

DISPLAY “File Received” AUDIT

BEEP Command

The BEEP command is used to audibly signal the user by producing a beep or succession of beeps from the computer.

Command Format

BEEP [number]

Description of Parameters

- [number] - This is the number of beeps that will be produced. The maximum number is ten. If no number is specified, one beep will be produced.

Example

- The following example produces five beeps:

BEEP 5

CONNECT Command

The CONNECT command establishes a communications link between the remote computer and the host site.

If you are dialing into the host site, the CONNECT command will begin dialing the host site phone number stored in the current or specified configuration file.

The CONNECT command will generally establish the communications link in accordance with the current or specified configuration file. If you need to review or modify the connect parameters, they can be found in that configuration file.

Command Format

CONNECT

Example

- The CONNECT command appears on a line in a script with no other options or values:

CONNECT

DISCONNECT Command

The DISCONNECT command disconnects the remote computer from the host site. This is useful when there is a long period of inactivity between the two sites. Also, before you can use the DISCONNECT command you must first be connected to the host site, usually through the CONNECT command.

Note:

The DISCONNECT command does not terminate the script or necessarily close the Interface screen. The DISCONNECT command simply terminates the communications link.

Command Format

DISCONNECT

Example

- The DISCONNECT command appears on a line in a script with no other options or values:

DISCONNECT

SEND Command

The SEND command is used to send files or strings within your scripts.

Command Format

SEND [device] <{string} / {filename}> [send options]

Description of Parameters

- [device] - This part of the command is optional (signified by the brackets []). Device names include:
 - CONSOLE - This is the default device when sending strings.
 - CARD - This is the default device when sending files.
 - EXCHANGE
- <{string} / {filename}> - You may either send a string or a filename.
 - string - This is any number of characters contained within quotation marks (“ ”). The default device for a string is CONSOLE.
 - filename - This is any standard filename and may also include a directory path. Do NOT enclose filenames within quotation marks. The default device for a file is CARD.

- [send options] - There are several send options to choose from:
 - TEXT / BINARY - Specifies whether you want to send files as text (default) or binary data. When files are sent as text data, the data is translated to EBCDIC character set before it is sent. Carriage Return Line Feeds (CRLFs) are replaced with a record separator and tabs are expanded with spaces.
 - RECORD_SIZE=*nn* or RS=*nn* - If the files that are being sent are text data, this option specifies the maximum record size to send. Any lines larger than this will be split. If the files that are being sent are binary data, this option specifies the absolute record size of the files. The default record size is 80 bytes.
 - MORE_DATA or MORE - This option specifies that more data (i.e., another file) is to follow this file and is to be included in the same job.

Examples

- Send a text file called **file.sgn** as card reader data.

SEND file.sgn

Note:

The device automatically defaults to CARD data because the file being sent is a text file.

- Send JCL with a record size of 80 and then append more binary data in the file that is to follow with a record size of 128.

SEND header.jcl RS=80 MORE
SEND data.dat BINARY RS=128

Note:

Separate multiple options with a space between each option.

- Send a string that signals the mainframe to start sending the punch data:

SEND "\$SPU1"

Note:

The device automatically defaults to CONSOLE data because the text being sent is a string.

RECEIVE Command

The RECEIVE command is used to receive files within your scripts.

Command Format

```
RECEIVE [device] <{filename} / PRINTER> [receive options]
```

Description of Parameters

- [device] - This is the type of device you will be receiving from. Device names include:
 - ANY (default)
 - CONSOLE_PRINTER
 - PRINTER1 through PRINTER16
 - PUNCH1 through PUNCH16
 - EXCHANGE1 through EXCHANGE16
- <{filename} / PRINTER> - You may either send the data that you receive to a filename that you specify or to the PRINTER. A filename is any standard filename, with or without the three-character extension. Do not enclose filenames within quotation marks. There are numerous options associated with sending received data to a filename. These options are explained in the next section called “Receive Options”.

Each [receive option] list is divided according to the type of device. A printer is the name of the printer attached to the computer that you defined in the *Receive Data* dialog box. For more information, see **Chapter 7: Data Transfers**.

- [receive options] - You can choose from several different receive options. These options depend on the type of device that is receiving the data. The lists on the next few pages explain the options that are specific to the devices.

Receive Options

These options apply only to *PUNCH* or *EXCHANGE* devices:

- **TEXT / BINARY** - If the TEXT option is defaulted or specified, the incoming data will be translated into ASCII. If the BINARY option is specified, the incoming data will not be translated.
- **RECORD_SIZE=nn or RS=nn** - This option sets the maximum record size for TEXT data or the absolute record size for BINARY data.
- **INSERT_CRLFS** - The incoming record separators are replaced with Carriage Return Line Feeds (CRLFs). Records larger than RECORD_SIZE are truncated and CRLFs are inserted while the remaining part of that record is processed as a separate record.
- **BLANK_FILL** - Short records are filled with blanks until RECORD_SIZE.

Note:

Incoming BINARY data is processed BLANK_FILL regardless of the setting of INSERT_CRLF and BLANK_FILL.

These options apply only to *PRINTER* devices:

- **HOSTFCBNAME** - Specifying this option allows the host to specify the Form Control Block (FCB) name to use. HOSTFCBNAME is the form name expected from the host. If you have not configured the forms for the given form name, see the section called “Receive Data - Form Options Dialog Box” on Page 7-16.
- **FCBNAME = name** - The FCBNAME is used in the event the HOSTFCBNAME is not given by the host or, if given by the host, is not in the list of configured FCBs.

These options apply to *PRINTER*, *PUNCH*, or *EXCHANGE* devices:

- **HOSTFORM** or **HOSTFORM_ST** - **HOSTFORM** is used to receive data to a file named from the host form name. If **HOSTFORM_ST** is used, only the form name from the Standard PDIR will be used. This typically is used to capture only the data of a download exclusive of any banner pages.
- **HOSTJOB** or **HOSTJOB_ST** - **HOSTJOB** is used to receive data to a file named from the host job name. If **HOSTJOB_ST** is used, only the job name from the Standard PDIR will be used. This typically is used to capture only the data of a download exclusive of any banner pages.

These options apply to all devices and when writing to a file:

- **KEEP_OPEN** - Append all data coming into the device into one file.
- **CLOSE** - Close the file after end of file is received from the host. This is the default.
- **AUTO** or **AUTO_INC** - The received file is named with a numeric extension. If an extension is given, it is ignored unless it is all numeric. If it is all numeric, that extension will be used and should the name be a duplicate, the file will be overwritten. Otherwise, if a non-numeric or no extension is given, the first available (unduplicated) numeric extension will be used. The numeric extension is automatically incremented by one for each file received.

Note:

Only one of the options in the list above may be specified.

Examples

- Receive data to an unknown number of files from any device:

RECEIVE report.fil AUTO

This command will direct all incoming data to files named **report.000**, **report.001**, etc. according to the AUTO option. Note that the extension **.fil** is overwritten. Since BINARY is not specified, TEXT is the default. Since the device type is not specified, ANY device is the default. The host for all incoming data assigns the device type. The ANY device parameter is useful if you are not sure as to what device types the host has assigned or it may be used just to simplify your script. For more information on devices, see the section called “Corresponding Device/Event Names” beginning on Page 9-51.

- Receive untranslated data to a punch device for an unknown number of files:

RECEIVE PUNCH1 edi_data BINARY AUTO

PUNCH1 is the specified device. If the host had assigned PRINTER3, the data would not go to PUNCH1 so the file (**edi_data**) would not be written. The data received will not be translated. This is useful when the arriving data is already in ASCII, there is post processing such as decompression to be done, or the data contains unprintable characters.

- Receive text data to the print device for an unknown number of files. The files here are named according to the host's form name but do not include banner pages in the file:

```
RECEIVE PRINTER1 banners.dat HOSTFORM_ST KEEP_OPEN
```

When data needs special print formatting, the host's Form Name can name the file as well as identify the type of form to be used with the data. Another method of letting the host name the incoming files is the HOSTJOB option. This option can be used to track incoming jobs (reports) via a file name. Banner pages, and all jobs not named by the host, will go to the file called **banner.dat**.

START Command

The START command resets a specified timer to zero and then starts the timer within a script. The timer functions count up from zero, similar to a stopwatch. There is no practical upper limit to the timer. There can be a maximum of nine timers running in a script.

The inactivity timer is a special timer that is always running. Inactivity is any period where there is no active data transfer on the communications line. There is only one inactivity timer. It is used to detect extended periods of inactivity.

The WAIT_FOR, WHEN, and IF commands are used to check a timer. For more information on timer events, see the “WAIT_FOR Command” (Page 9-34), “WHEN Commands” (Page 9-36), and “IF Commands” (Page 9-38) sections in this chapter.

Note:

The inactivity command resets to zero not only each time that you call the command through the START INACTIVITY command, but also when communications becomes active, a file is actively being sent, or a file is actively being received.

Command Format

START <timer_device>

Description of Parameters

- <timer_device> - This option is one of ten possible choices. The choices are TIMER1 through TIMER9 and INACTIVITY.

Examples

- The START command is most often used in conjunction with the WHEN command. In this example, the script waits for 30 seconds before continuing.

```
START TIMER1  
WHEN TIMER1 >= 30  
END_WHEN
```

This script example can be used, for example, to wait between busy signals. Once it is started, it continues until it is stopped.

- The START command can also be used with the INACTIVITY option. In this example, the script waits for 30 seconds of inactivity before continuing.

```
START INACTIVITY  
WHEN INACTIVITY >= 30  
GOTO no_more_files  
END_WHEN
```

STOP Command

The STOP command stops a specified timer within a script. This command stops the timer number that you specify by suspending its operation. It holds its count without changing until either it is resumed or restarted at zero with the START command.

Command Format

STOP <timer_device>

Description of Parameters

- <timer_device> - This option is one of nine possible choices. The choices are TIMER1 through TIMER9.

Example

- The STOP command:

STOP TIMER1

RESUME Command

The RESUME command resumes a timer after you have stopped it. The specified timer continues counting from where it was stopped through the STOP command.

Command Format

```
RESUME <timer_device>
```

Description of Parameters

- <timer_device> - This option is one of nine possible choices. The choices are TIMER1 through TIMER9.

Examples

- The RESUME command:

```
RESUME TIMER1
```

- Resuming another timer within a script:

```
RESUME TIMER2
```

GOTO Command

The GOTO command is used to jump unconditionally from one part of a script to another part. This command can also initiate a jump from one script to another script.

Command Format

GOTO <[filename::] [label]>

Description of Parameters

- [filename::] - This parameter is used to jump to another script from within the current script. The script filename should be followed by two colons (::). If you do not enter a filename, the script action stays within the current script and does not access another script.
- [label] - This is the place in the script the script action is jumping to. A label is any arbitrary name of alphabetic characters with no spaces allowed that ends with a colon (:). If you do not enter a label, then the script action goes to the first line in the script.

Examples

- The following example forms a loop with a GOTO command and a label:

```
mylabel:  
(an unspecified number of script lines)  
GOTO mylabel
```

- The following example accesses another script called **get_data.cqs**.

```
GOTO get_data.cqs::
```

The **get_data** script will then run from its first line.

CALL/RETURN Commands

The CALL command is used to jump to a subroutine either within the same script or to another script. The RETURN command appears at the end of the subroutine to return the script execution point to the command line immediately following the CALL command.

Command Format

```
CALL <[filename::] [label]>
```

```
RETURN
```

Description of Parameters

- [filename::] - This parameter is used to jump to another script from within the current script. The script filename should be followed by two colons (::). If you do not enter a filename, the script action stays within the current script and does not access another script.
- <label> - This is the name of the subroutine the script action is jumping to. A label is any arbitrary name of alphabetic characters with no spaces allowed that ends with a colon (:). If you do not enter a label, then the script action goes to the first line in the script.

Examples

- The following example calls a subroutine and then returns to where the subroutine was originally called.

```
CALL mysubroutine  
(an unspecified number of script lines)  
mysubroutine:  
(an unspecified number of script lines)  
RETURN
```

- The following example calls a subroutine from another script and then returns to the original script.

Original Script:

```
CALL get_data.cqs::mysubroutine  
(an unspecified number of script lines)
```

get_data.cqs Script:

```
(an unspecified number of script lines)  
mysubroutine:  
(an unspecified number of script lines)  
RETURN
```

As the original script runs, it calls the **get_data.cqs** script and goes to the `mysubroutine` label. The script lines in the **get_data.cqs** are then executed from the `mysubroutine` label to the `RETURN` command, which returns back to the original script on the next line after the `CALL` command.

CLEAR Command

The CLEAR command is used to clear the particular option that you specify. This command is likely to be used only in the most complex scripts.

Command Format

CLEAR <option>

Description of Parameters

- <options> - There are three options to choose from:
 - EVENTS - Clears all of the currently programmed events that may occur. Note that after a WHEN command occurs, all other timer and inactivity events are automatically cleared.
 - TIMERS - Sets the timer specified to zero (0), but does not start the timer. This option can be any timer between TIMER0 and TIMER9.
 - OUTBOUND DEVICES - Removes all previous destinations for incoming files going to the specified outbound device. This option can be any of the outbound device names listed in the “Outbound (Receive Command) Names” table on Page 9-51.

Examples

- Examples of the CLEAR command:

CLEAR EVENTS

CLEAR PRINTER1

CLEAR TIMER3

DEBUG Command

Script writers use the DEBUG command to help debug their scripts.

Command Format

DEBUG [options]

Description of Parameters

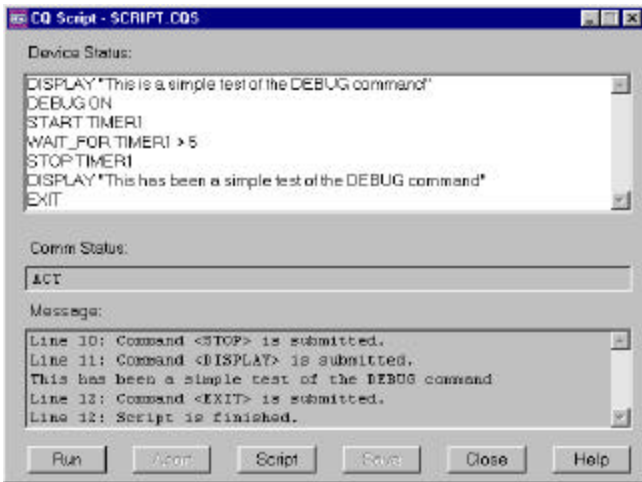
- [options] - This part of the command is optional (signified by the brackets []). The options available are ON and OFF.
 - If the DEBUG command is not used in a script or it has been turned OFF, then the **Device Status** section of the *CQ Script* dialog box will display communications event information and the **Message** section will display messages defined through the DISPLAY command, any syntax errors, and other messages.
 - If the DEBUG command is turned ON, then the **Device Status** section of the *CQ Script* dialog box will display the script text as it runs and the **Message** section will display detailed information about the status of each line of the script as it is executed.

Examples

- The following example turns the debug feature on:

DEBUG

During the DEBUG operation, the following *CQ Script* dialog box tracks the script's point by displaying lines as they are executed.



9 - 1 CQ Script Dialog Box (DEBUG Command ON)

Note:

To set the debug command in a script, you do not have to enter the term ON after the DEBUG command. ON is the default.

- The following example turns the debug feature off:

DEBUG OFF

WAIT_FOR Command

The WAIT_FOR command is used when you need to have the script wait for a certain device to complete a certain event before continuing.

Command Format

WAIT_FOR [device] <event>

Description of Parameters

- [device] <event> - The type of device name must match the corresponding type of event. For example, if the device type is a send device, the event must be a send event. See the section called “Corresponding Device/Event Names” on Page 9-51 for information on the corresponding device and event names.

Examples

- Receive commands:

WAIT_FOR CONSOLE_PRINTER RECEIVE_ERROR

WAIT_FOR PRINTER1 ACTIVE

- Send commands:

WAIT_FOR CONSOLE COMPLETE

WAIT_FOR CARD ACTIVE

- Other communications commands:

WAIT_FOR COMMUNICATIONS DISCONNECTED

WAIT_FOR COMMUNICATIONS ACTIVE

- Timer and inactivity commands:

WAIT_FOR TIMER1 > 60

WAIT_FOR INACTIVITY >= 1:00

WHEN Commands

The WHEN commands are used to perform tasks within a script when devices complete defined events. The WHEN command is used first. Each subsequent OR_WHEN command defines another event. When there are no more WHEN or OR_WHEN commands, the END_WHEN command must appear in the script. Be aware that when you use the WHEN commands, the script will always wait for one of the events to occur before continuing past the END_WHEN command.

Command Format

```
WHEN [device] <event>
    (unspecified number of commands)
OR_WHEN [device] <event>
    (unspecified number of commands)
END_WHEN
```

Description of Parameters

- [device] <event> - The type of device name must match the corresponding type of event. For example, if the device type is a send device, the event must be a send event. See the section called “Corresponding Device/Event Names” on Page 9-51 for information on the corresponding device and event names.
- (unspecified number of commands) - These are the commands that are performed when the first WHEN or OR_WHEN event occurs.

Example

- The following example script language does a number of things. When communications indicates a busy signal after dialing (COMMUNICATIONS BUSY), a timer is started to wait 60 seconds and execution goes back to the beginning of the script until the next event. When the inactivity is more than three minutes, the session disconnects and exits. Once the communications is active, the inactivity timer is activated and the script continues after the END_WHEN statement where other commands, such as SEND and RECEIVE, are executed.

```
START INACTIVITY
beginning:
CONNECT
WHEN COMMUNICATIONS ACTIVE
  START INACTIVITY
OR_WHEN COMMUNICATIONS BUSY
  START TIMER1
  WAIT_FOR TIMER1 > 60
  STOP TIMER1
  GOTO beginning
OR_WHEN INACTIVITY > 3:00
  DISCONNECT
  EXIT
END_WHEN
continue:
(an unspecified number of script lines)
```

IF Commands

The IF commands are used to perform tasks within a script if devices complete specified events, if system variables created by calling other programs equal certain values, and if filenames exist in an accessible location.

The IF command is used for the first event. Each subsequent ELSE_IF command defines another event. You can also use the ELSE command to automatically perform a task if none of the IF or ELSE_IF commands are achieved. When there are no more IF, ELSE_IF, or ELSE commands, the ENDIF command must appear at the end of the list of IF commands. Be aware that when you use the IF commands, the script will continue past the ENDIF command even if none of the events occur.

There are three formats for the IF commands. These three formats are explained separately on the next few pages.

1. IF [device] <event>
2. IF <system variable> <boolean> <value>
3. IF EXIST <filename>

1. IF [device] <event>

Command Format

```
IF [device] <event>
    (unspecified number of commands)
ELSE_IF [device] <event>
    (unspecified number of commands)
ELSE
    (unspecified number of commands)
ENDIF
```

Description of Parameters

- [device] <event> - The type of device name must match the corresponding type of event. For example, if the device type is a send device, the event must be a send event. See the section called “Corresponding Device/Event Names” on Page 9-51 for information on the corresponding device and event names.
- (unspecified number of commands) - These are the commands that are performed when the IF, ELSE_IF, OR ELSE events are achieved.

Example

- The following example script language does a number of things. If communications is active, a message is displayed on the screen. If communications is disconnected, a different message is displayed on the screen. If there is an error in communications, the DEBUG command is called, a message is displayed on the screen, and then the DEBUG command is turned off. Keep in mind that if none of these communications events occur (i.e., communications is busy), then the script continues with the next command after ENDIF.

```
IF COMMUNICATIONS ACTIVE
  DISPLAY "The communications is active"
ELSE_IF COMMUNICATIONS DISCONNECTED
  DISPLAY "The line has been disconnected"
ELSE_IF COMMUNICATIONS ERROR
  DEBUG
  DISPLAY "There is a communications error"
  DISPLAY "Debugging in process"
  DEBUG OFF
ENDIF
```

2. IF <system variable> <boolean> <value>

Note:

See the section called “SYSTEM Command” on Page 9-46 for information on this format.

Command Format

```
IF <system variable> <boolean> <value>
    (unspecified number of commands)
ELSE_IF [device] <event>
    (unspecified number of commands)
ELSE
    (unspecified number of commands)
ENDIF
```

Description of Parameters

- <system variable> - This option can be either SYSTEM_STATUS or SYSTEM_RETURNS. See the section called “SYSTEM Command” on Page 9-46 for information on these two options. Please note that the SYSTEM_STATUS must be successful (return a value of zero) to ensure that any SYSTEM_RETURNS values are valid.
- <boolean> - This option may be one of the following values:
 - > (greater than)
 - >= (greater than or equal to)
 - < (less than)
 - <= (less than or equal to)
 - = (equal to)
 - NOT (not equal to)

- `<value>` - This option can be any positive or negative number. Three possible values can be returned by the `SYSTEM` command and accessed through the `SYSTEM_STATUS` variable:
 - 0 - The program that was accessed through the `SYSTEM` command was successfully launched. If the `WAIT` option was activated, a return code was also successfully fetched. `SYSTEM_RETURNS` codes can only be checked for valid returns if the `SYSTEM_STATUS` returns a code of zero (0).
 - -1 - The program that was accessed through the `SYSTEM` command failed to launch. This could be due to a bad command, incorrect path, etc.
 - -2 - The program that was accessed through the `SYSTEM` command failed to fetch a return code.

Other return code values can be accessed through the `SYSTEM_RETURNS` variable. These return codes can be any positive or negative number that is returned by the program accessed through the `SYSTEM` command. `SYSTEM_RETURNS` codes can only be checked for valid returns if the `SYSTEM_STATUS` returns a code of zero (0).

- (unspecified number of commands) - These are the commands that are performed when the `IF`, `ELSE_IF`, `OR` `ELSE` events are achieved.

Example

- The following example script language checks the completion status of the program that was called by a SYSTEM command. If the program that was called returned a SYSTEM_STATUS code less than zero (error codes -1 or -2), the DEBUG command is called, a message is displayed on the screen, and then the DEBUG command is turned off. If the program that was called returned a SYSTEM_STATUS code of zero, a different message is displayed on the screen and the SYSTEM_RETURNS are checked.

Note:

SYSTEM_RETURNS codes can only be checked for valid returns if the SYSTEM_STATUS returns a code of zero (0).

```
SYSTEM "chekfile.exe myfile.txt"
IF SYSTEM_STATUS<0
  DEBUG
  DISPLAY "chekfile was not successfully executed"
  DISPLAY "Debugging in process"
  DEBUG OFF
ELSE_IF SYSTEM_STATUS=0
  DISPLAY "chekfile ran, will now check system returns"
  GOTO ok
ENDIF
(an unspecified number of script lines)
ok:
IF SYSTEM_RETURNS 12
  DISPLAY "chekfile verifies ok, (returned error level 12)"
ELSE
  DISPLAY "no file, myfile.txt" AUDIT
ENDIF
```

3. IF EXIST <filename>

Command Format

```
IF EXIST <filename>
    <unspecified number of commands>
ELSE_IF [device] <event>
    (unspecified number of commands)
ELSE
    (unspecified number of commands)
ENDIF
```

Description of Parameters

- <filename> - Through the IF EXIST command, the <filename> option can be any complete pathname and/or filename that is accessible from the workstation.
- (unspecified number of commands) - These are the commands that are performed when the IF, ELSE_IF, OR ELSE events are achieved.

Example

- The following example script language checks to see if the file **process.txt** exists. If the file exists, it is sent to the host through the SEND command and a message is displayed. If it does not exist, a different message is displayed on the screen.

```
IF EXIST process.txt
    SEND process.txt
    DISPLAY "Sending the file process.txt"
ELSE
    DISPLAY "The file process.txt does not exist"
ENDIF
```

DELETE Command

The DELETE command is used to delete a file from the user's local drive or network. The filename may include all necessary drive letter and pathname information.

Note:

The DELETE command does not support ambiguous filenames. These include filenames with an asterisk () to indicate any number and type of character or a question mark (?) to indicate any character. The filename must be a specific filename.*

Command Format

DELETE <filename>

Description of Parameters

- <filename> - This is the filename to be deleted from the user's local drive or network. The filename may include all necessary drive letter and pathname information.

Examples

- The following example deletes a file from the user's local drive:

DELETE datafile.txt

Note:

The current drive letter and path are assumed in the example above.

- The following example deletes a file from the user's network:

DELETE h:\user\transfer\datafile.txt

SYSTEM Command

The SYSTEM command is used access another program through the current operating system.

Note:

When the SYSTEM command is used, the program that is accessed generates a status code and an optional return code. The generated status codes can be used to determine if the accessed program was completed successfully or resulted in an error. The user generated return codes can be used at the discretion of the user. The IF command is used to check the status and return codes. See the section called “IF <system variable> <boolean> <value>” on Page 9-41 for information on how to use the IF command to check the status and return codes.

Command Format

SYSTEM “command string” [wait option]

Description of Parameters

- “command string” - This option is the command used to access the program through the current operating system.
 - For DOS commands, the command string should appear as follows:
path.com /c <DOS command>.
 - For Windows commands, simply enter the program name and any related commands.
- [wait option] - This option can be one of two values:
 - WAIT (default) - The script will wait for the program that has been accessed to completely execute and exit before continuing with the script.
 - NO_WAIT - Both the script and the program that has been accessed through the script will run simultaneously.

Example

- The following example script language checks the completion status of the program that was called by a SYSTEM command. If the program that was called failed to execute for whatever reason, then the SYSTEM_STATUS will be less than zero (error codes -1 or -2) and a message will be displayed on the screen as the “fail” label is accessed through the GOTO command. If the program that was called returned a SYSTEM_RETURNS code of twelve (12) demonstrated in the example below, a different message is displayed on the screen and the “ok” label is accessed through the GOTO command.

Note:

*Certain programs such as DOS batch files will not return error levels. In these cases, SYSTEM_RETURNS values will not have valid values. Operation results of DOS batch files can be determined indirectly through the use of the IF EXIST command. For more information, see the **tips.txt** file located in the **examples** subdirectory under the main **CQ-3770EE** directory that you specified during installation.*

```
SYSTEM "chekfile.exe myfile.txt"
; test SYSTEM_STATUS to see if chekfile.exe
; executed successfully
IF SYSTEM_STATUS<0
    DISPLAY "chekfile.exe failed to execute" AUDIT
    GOTO fail
; else check what error level chekfile.exe returned
; (if any) since execution was on
ELSE_IF SYSTEM_RETURNS=12
    DISPLAY "chekfile.exe returned error level 12" AUDIT
    GOTO ok
ENDIF
```

MAIN_WINDOW Command

The MAIN_WINDOW command is used to restore or minimize the *Interface* screen. The *Interface* screen automatically appears in the taskbar in a minimized format when a script is initiated through a configuration as it is accessed. The MAIN_WINDOW command is useful for restoring the *Interface* screen.

Command Format

MAIN_WINDOW <options>

Description of Parameters

- <options> - The two options are RESTORE and MIN. Use the RESTORE option to restore the *Interface* screen from a minimized state in the taskbar. Use the MIN option to minimize the *Interface* screen to the taskbar.

Examples

- The following example restores the *Interface* screen:

```
MAIN_WINDOW RESTORE
```

- The following example minimizes the *Interface* screen:

```
MAIN_WINDOW MIN
```

SCRIPT_WINDOW Command

The `SCRIPT_WINDOW` command is used to restore or minimize the *CQ Script* dialog box. When a configuration that accesses an attached script is accessed, the *CQ Script* dialog box automatically appears in a maximized format. The `SCRIPT_WINDOW` command is useful for minimizing the *CQ Script* dialog box into the taskbar.

Command Format

```
SCRIPT_WINDOW <options>
```

Description of Parameters

- `<options>` - The two options are `RESTORE` and `MIN`. Use the `RESTORE` option to restore the *CQ Script* dialog box from a minimized state in the taskbar. Use the `MIN` option to minimize the *CQ Script* dialog box to the taskbar.

Examples

- The following example restores the *CQ Script* dialog box:

```
SCRIPT_WINDOW RESTORE
```

- The following example minimizes the *CQ Script* dialog box:

```
SCRIPT_WINDOW MIN
```

EXIT Command

The EXIT command is used to exit from either a script or an *Interface* screen.

Command Format

EXIT [options]

Description of Parameters

- [options] - This part of the command is optional. The default is SCRIPT. You can also choose to exit the current *Interface* screen by entering PROGRAM.

Examples

- The following example exits a script:

```
EXIT
```

Note:

To exit the script, you do not have to enter the term SCRIPT after the EXIT command. SCRIPT is the default.

- The following example exits an *Interface* screen:

```
EXIT PROGRAM
```

Corresponding Device/Event Names

The lists in this section summarize the devices and their corresponding events. These combinations can be used in the SEND, RECEIVE, WAIT, WHEN, and IF commands.

Outbound (Receive Command) Names

[device]	<event>
CONSOLE_PRINTER PRINTER1 through PRINTER16 PUNCH1 through PUNCH16 EXCHANGE1 through EXCHANGE16 ANY	RECEIVE_ERROR RECEIVE_COMPLETE RECEIVE_ACTIVE ACTIVE COMPLETE ERROR

Inbound (Send Command) Names

[device]	<event>
CONSOLE CARD EXCHANGE1	SEND_ERROR SEND_COMPLETE SEND_ACTIVE ACTIVE COMPLETE ERROR

Other Names

[device]	<event>
COMMUNICATIONS	ACTIVE DISCONNECTED BUSY ERROR

Timer and Inactivity Names

[device]	<event>
TIMER1 through TIMER9 INACTIVITY	<boolean> <time> The <boolean> may be either of two symbols: • > (greater than) • >= (greater than or equal to) The <time> is in the format <code>[[hh:]mm:]ss</code>, where <i>hh</i> is the hour (between 0 and 23), <i>mm</i> is the minutes (between 0 and 59), and <i>ss</i> is the seconds (between 0 and 59). Please note that you are not required to enter every field of the time. If you enter 50, this signifies 50 seconds. If you enter 90, this will automatically be converted to 1:30, or one minute and 30 seconds.

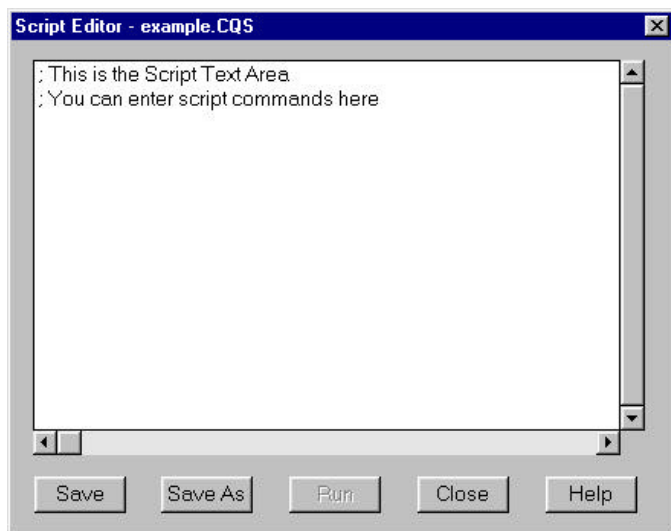
Script Commands

The **Options > Script** menu bar option from the *Interface* screen accesses the features associated with creating, modifying, or running scripts. From this menu bar option, you can select one of the following commands:

- **New Script** - Use this command to create a new script. This command is also available as a toolbar button.
- **Open Script** - Use this command to open an existing script. This command is also available as a toolbar button.
- **Run Script** - Use this command to run an existing script. This command is also available as a toolbar button.

New Script Command

The **Options > Script > New Script** menu bar command accesses the *Script Editor* dialog box. From this dialog box, you can write a new script.



9 - 2 *Script Editor Dialog Box*

Script Editor Options

- **Script Text Area** - This scrolling text box contains all of the text and commands associated with the script. You can edit the script text in this box.
- **Save** - Select this button to save the current script.
- **Save As** - Select this button to save the current script as another name.
- **Run** - Select this button to run the current script.
- **Close** - Select this button to close the current script.

Creating a New Script

To create a new script from the Interface screen:

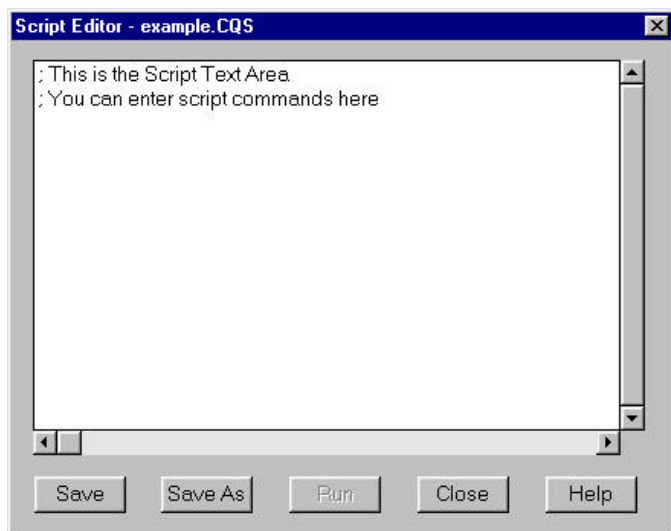
1. Access the *Script Editor* dialog box:
 - Select the **Options > Script > New Script** menu bar command.
 - Select the **Create a New Script** toolbar button .
2. In order to write a script, you will need to use the CQ Scripting Language explained in this chapter. For information on the CQ Scripting Language, turn to the section called “CQ Scripting Language” on Page 9-9.

To create a new script from a text editor:

1. You can create a script using a text editor such as *DOS Edit* or *Notepad*. Do not use a program that automatically formats text, such as *Microsoft Word* or *WordPerfect*. If you use a text editor to create a script, the file must have the extension **.cqs**.
2. In order to write a script, you will need to use the CQ Scripting Language explained in this chapter. For information on the CQ Scripting Language, turn to the section called “CQ Scripting Language” on Page 9-9.

Open Script Command

The **Options > Script > Open Script** menu bar command accesses the *Script Editor* dialog box. From this dialog box, you can edit an existing script.



9 - 3 *Script Editor Dialog Box*

Script Editor Options

- **Script Text Area** - This scrolling text box contains all of the text and commands associated with the script. You can edit the script text in this box.
- **Save** - Select this button to save the current script.
- **Save As** - Select this button to save the current script as another name.
- **Run** - Select this button to run the current script.
- **Close** - Select this button to close the current script.

Opening an Existing Script

To open a script for editing from the Interface screen:

1. Access the *Open* dialog box:
 - Select the **Options > Script > Open Script** menu bar command.
 - Select the **Open a Script to Edit** toolbar button . The icon is a square button with a light gray background and a black border. Inside the square, the word "OPEN" is written in red, bold, uppercase letters.
2. From the *Open* dialog box that appears, select the script you want to open.
3. Edit the script within the *Script Editor* dialog box. In order to edit a script, you will need to use the CQ Scripting Language explained in this chapter. For information on the CQ Scripting Language, turn to the section called “CQ Scripting Language” on Page 9-9.
4. Select the **Save** button.

To open a script for editing from a text editor:

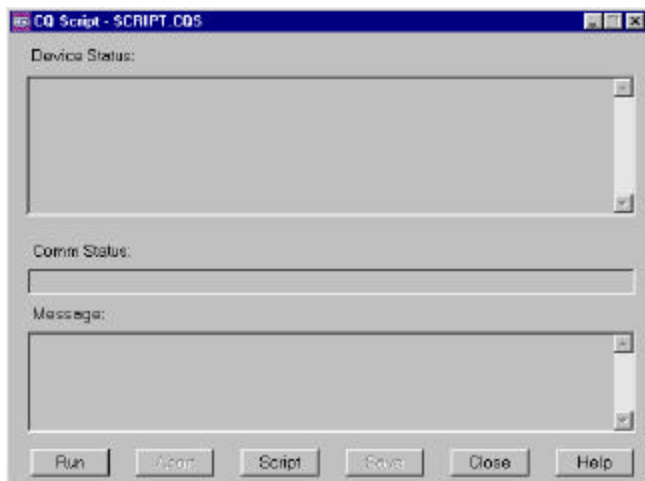
1. You can edit a script using a text editor such as *DOS Edit* or *Notepad*. Do not use a program that automatically formats text, such as *Microsoft Word* or *WordPerfect*. If you use a text editor to edit a script, be sure to save the file with the extension **.cqs**.
2. In order to edit a script, you will need to use the CQ Scripting Language explained in this chapter. For information on the CQ Scripting Language, turn to the section called “CQ Scripting Language” on Page 9-9.

Run Script Command

The *CQ Script* dialog box is accessed through one of two ways:

1. The **Run Script** command from the **Options > Script** menu bar command accesses the *Run* dialog box. After selecting a script, the *CQ Script* dialog box appears containing the script selected.
2. The **Run** button from the *Script Editor* dialog box accesses the *CQ Script* dialog box.

Once the *CQ Script* dialog box is accessed, the script selected automatically runs. From the *CQ Script* dialog box, you can view a script as it runs.



9 - 4 CQ Script Dialog Box

CQ Script Options

- **Device Status** - The contents of the **Device Status** scrolling text box depend on whether or not the **DEBUG** command is turned ON or OFF.

If the **DEBUG** command is not used in a script or it has been turned OFF, then the **Device Status** section will display communications events such as the host connection, send and receive data progress reports, and host disconnection.

If the **DEBUG** command is turned ON, then the **Device Status** section will display the script text as it runs.

- **Comm Status** - This field displays the current status of communications with the host. Turn to the section called “Status Line Messages” on Page 4-10 for a complete list of messages that may appear.
- **Message** - The contents of the **Message** scrolling text box depends on whether or not the **DEBUG** command is turned ON or OFF.

If the **DEBUG** command is not used in a script or it has been turned OFF, then the **Message** section will display messages defined through the **DISPLAY** command, any syntax errors, and other messages.

If the **DEBUG** command is turned ON, then the **Message** section will display detailed information about the status of each line of the script.

- **Run** - Select this button to run the current script.
- **Abort** - Select this button to abort the current script as it is running.
- **Script** - Select this button to view the script text in the **Device Status** scrolling text box.
- **Save** - Select this button to save the current script.
- **Close** - Select this button to close the current script.

Running a Script

To run a script from the Interface screen:

1. Access the *Run* dialog box:
 - Select the **Options > Script > Run Script** menu bar command.
 - Select the **Run a Script** toolbar button .
2. From the *Run* dialog box that appears, select the script you want to run.
3. Select the **Run** button.

Chapter 10

Advanced Options

Highlights

*How to customize the toolbar,
including editing and adding
toolbar buttons*

*How to customize the SmartKey Pad,
including editing and adding
SmartKeys*

*How to change the
Run Time Password*

How to activate the audit feature

How to activate the trace feature

This chapter explains how to use the more advanced options of **CQ-3770EE**. These options include the *Interface* screen's toolbar, the floating SmartKey Pad, password protection of the *Interface* screen, and the audit and trace diagnostics features.

Advanced Commands

The **Options > Advanced** menu bar option from the *Interface* screen accesses the advanced features associated with **CQ-3770EE**. From this menu bar option, you can select one of the following commands:

- **Toolbar** - Use this command to add, edit, or delete toolbar buttons from the toolbar. This command is also available as a toolbar button.
- **SmartKey Pad** - Use this command to add, edit, or delete SmartKeys from the SmartKey Pad. This command is also available as a toolbar button.
- **Change Password** - Use this command to change the **Run Time Password** for the *Interface* screen.
- **Audit** - This option functions as a toggle. If there is a check mark next to it, an audit file is created when you run the configuration.
- **Trace** - This option functions as a toggle. If there is a check mark next to it, a trace file is created when you run the configuration.

Toolbar

The **Options > Advanced > Toolbar** menu bar command accesses the *Customize Toolbar* dialog box. From this dialog box, you can customize the toolbar that appears within the *Interface* screen by adding, editing, or deleting toolbar buttons.



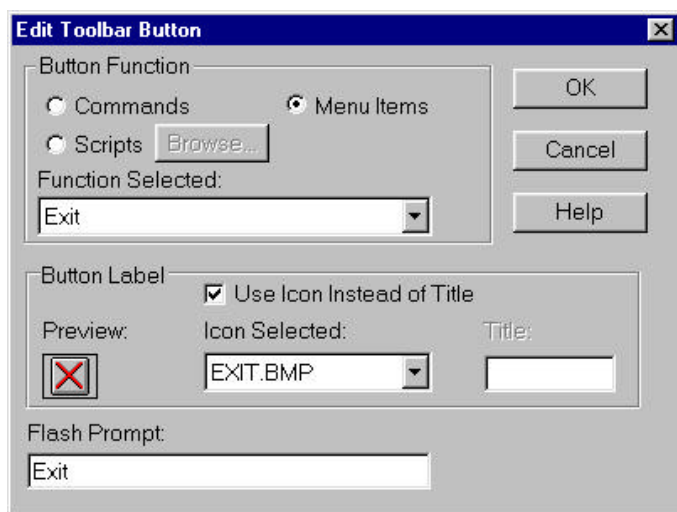
10 - 1 Customize Toolbar Dialog Box

Customize Toolbar Options

- **Toolbar Area** - This area displays the toolbar as it appears for your current configuration. From this area you can drag and drop toolbar buttons to different positions on the toolbar. A small arrow appears below the toolbar button that is currently selected.
- **Edit** - This button accesses the *Edit Toolbar Button* dialog box where you can edit the selected toolbar button.
- **Add Button** - This button accesses the *Add Toolbar Button* dialog box where you can add a toolbar button to the **Toolbar Area**.
- **Delete** - Select this button to delete the selected toolbar button from the **Toolbar Area**.
- **Add Space** - Select this button to add a space to the right of the selected toolbar button in the **Toolbar Area**.
- **Defaults** - Select this button to return the toolbar settings to their default values.

Edit Toolbar Button

The **Edit** button from the *Customize Toolbar* dialog box accesses the *Edit Toolbar Button* dialog box. From this dialog box, you can edit a toolbar button.



10 - 2 Edit Toolbar Button Dialog Box

Edit Toolbar Button Options

- **Commands, Menu Items, or Scripts** - These option buttons allow you to classify the toolbar button function.
- **Browse** - This button is available when the **Scripts** option button is selected. Select the **Browse** button to access the *Open* dialog box where you can select a script file already saved on your computer. Scripts should end with the extension **.CQS**.

- **Function Selected** - This drop-down list changes according to which option button is currently selected. The function currently selected appears in the space provided. For example, if the **Commands** option button is selected, the **Function Selected** drop-down list will contain commands such as Send, Print, Receive, Reset, etc.
- **Use Icon Instead of Title** - When this check box is activated, a graphic icon in bitmap (**.bmp**) format is used in place of a text button. A list of available **.bmp** files appears in the **Icon Selected** drop-down list.
- **Preview** - This area displays how the toolbar button will appear on the toolbar.
- **Icon Selected** - This drop-down list contains all of the available **.bmp** files that you can use as graphic icons on the toolbar. The **.bmp** file currently selected appears in the space provided.

Note:

*You can use bitmap files that you have created and customized. To use your own bitmap files most effectively as toolbar button icons, make sure that each **.bmp** filename is no more than eight characters long and that it is the correct size (32 x 32 pixels), the correct resolution (1 dpi), the correct number of colors (16 or less), and is then placed in the same directory that you installed **CQ-3770EE**. It will then be accessible through the **Icon Selected** drop-down list as a toolbar button icon.*

- **Title** - This text box contains the text that appears on a toolbar button when the **Use Icon Instead of Title** check box is not activated. You should limit the text to only two or three letters by abbreviating functions. For example, the **Help** toolbar button is labeled as **Hp**.
- **Flash Prompt** - This text box contains a brief description of the toolbar button. This description extends out from the toolbar button when you leave the mouse cursor idle over the button for more than one second.

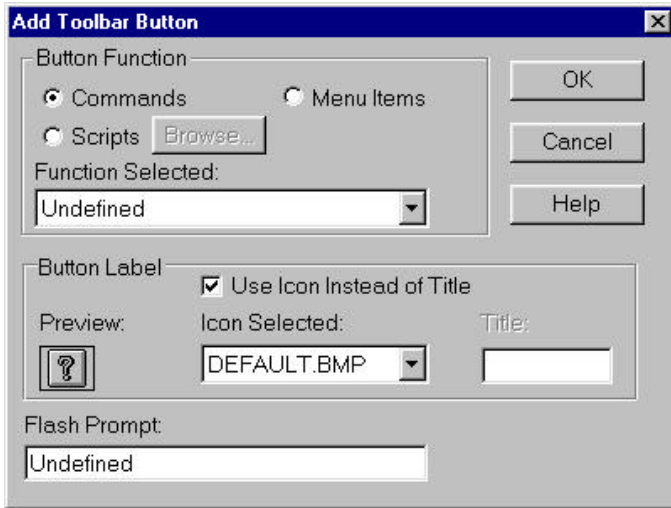
Editing a Toolbar Button

To edit a toolbar button:

1. Access the *Customize Toolbar* dialog box:
 - Select the **Options > Advanced > Toolbar** menu bar command.
 - Select the **Customize Toolbar** toolbar button .
2. Select the toolbar button you want to edit from the **Toolbar Area**.
3. Select the **Edit** button to edit the selected toolbar button.
4. Make all necessary changes to the toolbar button in the *Edit Toolbar Button* dialog box. Changes include button function, button label (appearance), and the flash prompt.
5. Select **OK**.
6. Select **OK** to return to the *Interface* screen.

Add Toolbar Button

The **Add Button** button from the *Customize Toolbar* dialog box accesses the *Add Toolbar Button* dialog box. From this dialog box, you can add a toolbar button.



10 - 3 Add Toolbar Button Dialog Box

Add Toolbar Button Options

- **Commands, Menu Items, or Scripts** - These option buttons allow you to classify the new toolbar button function.
- **Browse** - This button is available when the **Scripts** option button is selected. Select the **Browse** button to access the *Open* dialog box where you can select a script file already saved on your computer. Scripts should end with the extension **.CQS**.

- **Function Selected** - This drop-down list changes according to which option button is currently selected. The function currently selected appears in the space provided. For example, if the **Commands** option button is selected, the **Function Selected** drop-down list will contain commands such as Send, Print, Receive, Reset, etc.
- **Use Icon Instead of Title** - When this check box is activated, a graphic icon in bitmap (**.bmp**) format is used in place of a text button. A list of available **.bmp** files appears in the **Icon Selected** drop-down list.
- **Preview** - This area displays how the toolbar button will appear on the toolbar.
- **Icon Selected** - This drop-down list contains all of the available **.bmp** files that you can use as graphic icons on the toolbar. The **.bmp** file currently selected appears in the space provided.

Note:

*You can use bitmap files that you have created and customized. To use your own bitmap files most effectively as toolbar button icons, make sure that each **.bmp** filename is no more than eight characters long and that it is the correct size (32 x 32 pixels), the correct resolution (1 dpi), the correct number of colors (16 or less), and is then placed in the same directory that you installed **CQ-3770EE**. It will then be accessible through the **Icon Selected** drop-down list as a toolbar button icon.*

- **Title** - This text box contains the text that appears on a toolbar button when the **Use Icon Instead of Title** check box is not activated. You should limit the text to only two or three letters by abbreviating functions. For example, the **Help** toolbar button is labeled as **Hp**.
- **Flash Prompt** - This text box contains a brief description of the toolbar button. This description extends out from the toolbar button when you leave the mouse cursor idle over the button for more than one second.

Adding a Toolbar Button

To add a toolbar button:

1. Access the *Customize Toolbar* dialog box:
 - Select the **Options > Advanced > Toolbar** menu bar command.
 - Select the **Customize Toolbar** toolbar button .
2. Select the **Add Button** button.
3. Design the toolbar button using the *Add Toolbar Button* dialog box. Be sure to select a button function, button label (either a graphic **.bmp** file or text), and flash prompt description.
4. Select **OK**.
5. Select **OK** to return to the *Interface* screen.

Toolbar Button Descriptions

Toolbar buttons quickly perform the command(s) assigned to them. These buttons appear on the toolbar, a horizontal bar located just below the menu bar in the *Interface* screen. Think of a toolbar button as a shortcut to a command, script, or menu item.

Commands

A toolbar button can initiate a command. To add or edit a toolbar button to perform a command, access the *Customize Toolbar* dialog box. The table below lists the commands that you can make available through a toolbar button.

Note:

*Some commands listed here are intended to be used with CQ's other software products, such as **CQ-3270**.*

Command	Description
Alternate Cursor (Alt Cursor)	Alternates the cursor.
APL Toggle	Toggles between APL on and APL off.
Attention (Attn)	Signals the mainframe.
Backspace	Moves the cursor one space to the left.
BackTab	Moves the cursor to the first input location of the previous unprotected field.
Blink	Selects the blink attribute.
Blue	Selects the blue color attribute.
Clear	Clears the 3270 session window.
Clear Partition	Clears the partition.

Command	Description
Cursor Down	Moves the cursor down one line.
Cursor Left	Moves the cursor left one character position.
Cursor Right	Moves the cursor right one character position.
Cursor Select Light Pen (Cursor Sel)	Performs the light pen selection function at the current cursor position.
Cursor Up	Moves the cursor up one line.
Delete	Erases the character at the cursor and moves all the characters to the right of the cursor right one position.
Device Cancel	Cancels a current print request in the printer queue.
Double Left	Moves the cursor two characters to the left.
Duplicate (Dup)	Duplicates.
Enter	Sends the data to the mainframe.
Erase to End-of-Field (Erase EOF)	Erases the current field from the cursor position to the end of the field.
Erase Input	Erases all input fields in the session window.
Escape	Escapes.
Field Mark	Informs the program that the end of the field has been reached.
Forward Tab	Moves the cursor to the first input location of the next unprotected field.
Green	Selects the green color attribute.

Command	Description
Home	Move the cursor to the first input character of the field.
Insert	Inserts a character.
Monochrome/Color Toggle (Mono-Color Toggle)	Toggles between a Monochrome and a Color display screen.
New Line	Moves the cursor to the first input character of the next line.
Next Page	Moves the cursor to the first input character of the next page.
Program Access Keys 1-3 (PA1 - PA3)	Sends user-defined signals to the mainframe.
Partition Jump	Jumps to the next partition.
Program Function Keys 1-24 (PF1 - PF24)	Sends user-defined signals to the mainframe.
Pink	Selects the pink color attribute.
Previous Page	Moves the cursor to the first input character of the previous page.
Print 3270 Screen (Print 3270 Scrn)	Prints the 3270 screen, excluding the status line.
Red	Selects the red color attribute.
Remove Color	Removes a color attribute.
Remove Highlight	Removes a highlight attribute.
Reset	Resets.
Scrol Back	Scrolls back one line.
Scroll Forward	Scrolls forward one line.
Scroll Left	Scrolls left one character position.
Scroll Right	scrolls right one character position.
System Request	System request.

Command	Description
Turquoise	Selects the turquoise color attribute.
Underscore	Selects the underscore attribute.
White	Selects the white color attribute.
Yellow	Selects the yellow color attribute.

Scripts

A toolbar button can initiate a script. CQ scripts end with the extension **.CQS**. **CQ-3770EE** is configured with a few simple scripts that you can modify and use in your applications. These files are located in the main directory that you specified during installation. To add or edit a toolbar button to run a script, access the *Customize Toolbar* dialog box.

For information on the sample scripts files that came with your software, turn to the section called “Script Samples, Tips, and Hints” on Page 9-8.

Menu Items

A toolbar button can initiate a menu bar command. To add or edit a toolbar button to perform a menu bar command, access the *Customize Toolbar* dialog box. The next few pages list the menu items that you can make available through a toolbar button. The corresponding bitmap (**.bmp**) files are located in the main directory where you installed **CQ-3770EE**.

File menu bar items:

-  **Print Screen to Printer prntscrn.bmp**
-  **Save Screen to File save.bmp**
-  **Print Screen Set Up pr_setup.bmp**
-  **Reconnect to Host reconnect.bmp**
-  **Exit exit.bmp**

Edit menu bar items:

-  **Copy copy.bmp**
-  **Append append.bmp**
-  **Select All selc_all.bmp**
-  **View Clipboard viewclip.bmp**

Transfer menu bar items:

-  Send File to Host send.bmp
-  Receive Print Data from Host . . . recv_prn.bmp

Options menu bar items:

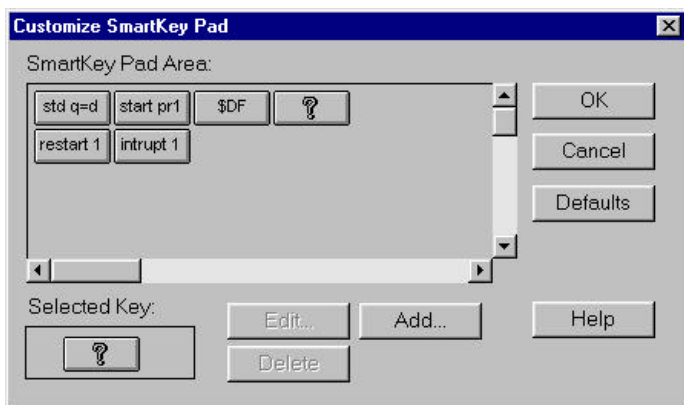
-  Hide Toolbar tbr_hide.bmp
-  Toggle SmartKey Pad smk_togl.bmp
-  Create a New Script scr_new.bmp
-  Open a Script scr_open.bmp
-  Run a Script scr_run.bmp
-  Customize Toolbar tbr_cust.bmp
-  Customize SmartKey Pad smk_cust.bmp

Help menu bar items:

-  Contents & Index help_con.bmp
-  About about.bmp

SmartKey Pad

The **Options > Advanced > SmartKey Pad** menu bar command accesses the *Customize SmartKey Pad* dialog box. From this dialog box, you can customize the SmartKey Pad by adding, editing, or deleting SmartKeys.



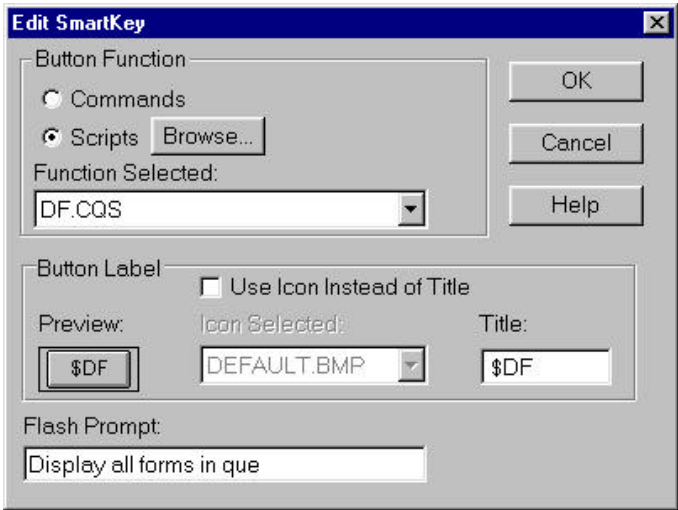
10 - 4 *Customize SmartKey Pad Dialog Box*

Customize SmartKey Pad Options

- **SmartKey Pad Area** - This area displays the SmartKey Pad as it appears for your current configuration. From this area you can drag and drop SmartKeys to different positions on the **SmartKey Pad Area**. The currently selected SmartKey appears in the **Selected Key** area and also is outlined with a rectangular box in the **SmartKey Pad Area**.
- **Selected Key** - This area displays the currently selected SmartKey within the **SmartKey Pad Area**.
- **Edit** - This button accesses the *Edit SmartKey* dialog box where you can edit the selected SmartKey.
- **Add** - This button accesses the *Add SmartKey* dialog box where you can add a SmartKey to the **SmartKey Pad Area**.
- **Delete** - Select this button to delete the selected SmartKey from the **SmartKey Pad Area**.
- **Defaults** - Select this button to return the SmartKey settings to their default values.

Edit SmartKey

The **Edit** button from the *Customize SmartKey Pad* dialog box accesses the *Edit SmartKey* dialog box. From this dialog box, you can edit a SmartKey.



10 - 5 Edit SmartKey Dialog Box

Edit SmartKey Options

- **Commands** or **Scripts** - These option buttons allow you to classify the SmartKey button function.
- **Browse** - This button is available when the **Scripts** option button is selected. Select the **Browse** button to access the *Open* dialog box where you can select a script file already saved on your computer. Scripts should end with the extension **.CQS**.

- **Function Selected** - This drop-down list changes according to which option button is currently selected. The function currently selected appears in the space provided. For example, if the **Commands** option button is selected, the **Function Selected** drop-down list will contain commands such as Send, Print, Receive, Reset, etc.
- **Use Icon Instead of Title** - When this check box is activated, a graphic icon in bitmap (**.bmp**) format is used in place of a text SmartKey. A list of available **.bmp** files appears in the **Icon Selected** drop-down list.
- **Preview** - This area displays how the SmartKey button will appear on the SmartKey Pad.
- **Icon Selected** - This drop-down list contains all of the available **.bmp** files used as graphic icons on the SmartKey Pad. The **.bmp** file currently selected appears in the space provided.
- **Title** - This text box contains the text that appears on a SmartKey when the **Use Icon Instead of Title** check box is not activated. You should limit the text to eight to ten letters by abbreviating functions. For example, the **System Request** SmartKey is labeled as **SysRq**.
- **Flash Prompt** - This text box contains a brief description of the SmartKey. This description extends out from the SmartKey when you leave the mouse cursor idle over the SmartKey for more than one second.

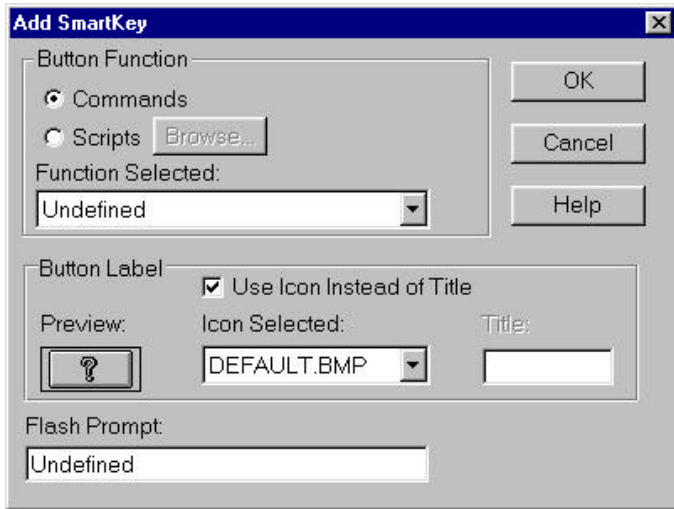
Editing a SmartKey

To edit a SmartKey:

1. Access the *Customize SmartKey Pad* dialog box:
 - Select the **Options > Advanced > SmartKey Pad** menu bar command.
 - Select the **Customize SmartKey Pad** toolbar button
. The icon is a small square with a blue border, containing a green and blue graphic of a keypad.
2. Select the SmartKey you want to edit from the **SmartKey Pad Area**.
3. Select the **Edit** button to edit the selected SmartKey.
4. Make all necessary changes to the SmartKey in the *Edit SmartKey* dialog box. Changes include function, button label (appearance), and the flash prompt.
5. Select **OK**.
6. Select **OK** to return to the *Interface* screen.

Add SmartKey

The **Add** button from the *Customize SmartKey Pad* dialog box accesses the *Add SmartKey* dialog box. From this dialog box, you can add a SmartKey.



10 - 6 Add SmartKey Dialog Box

Add SmartKey Options

- **Commands** or **Scripts** - These option buttons allow you to classify the new SmartKey button function.
- **Browse** - This button is available when the **Scripts** option button is selected. Select the **Browse** button to access the *Open* dialog box where you can select a script file already saved on your computer. Scripts should end with the extension **.CQS**.

- **Function Selected** - This drop-down list changes according to which option button is currently selected. The function currently selected appears in the space provided. For example, if the **Commands** option button is selected, the **Function Selected** drop-down list will contain commands such as Send, Print, Receive, Reset, etc.
- **Use Icon Instead of Title** - When this check box is activated, a graphic icon in bitmap (.bmp) format is used in place of a text SmartKey. A list of available .bmp files appears in the **Icon Selected** drop-down list.
- **Preview** - This area displays how the SmartKey will appear on the SmartKey Pad.
- **Icon Selected** - This drop-down list contains all of the available .bmp files used as graphic icons on the SmartKey Pad. The .bmp file currently selected appears in the space provided.
- **Title** - This text box contains the text that appears on a SmartKey when the **Use Icon Instead of Title** check box is not activated. You should limit the text to eight to ten letters by abbreviating functions. For example, the **System Request** SmartKey is labeled as **SysRq**.
- **Flash Prompt** - This text box contains a brief description of the SmartKey. This description extends out from the SmartKey when you leave the mouse cursor idle over the SmartKey for more than one second.

Adding a SmartKey

To add a SmartKey:

1. Access the *Customize SmartKey Pad* dialog box:
 - Select the **Options > Advanced > SmartKey Pad** menu bar command.
 - Select the **Customize SmartKey Pad** toolbar button

2. Select the SmartKey from within the **SmartKey Pad Area** with a question mark on it: 
3. Select the **Add** button.
4. Design the SmartKey using the *Add SmartKey* dialog box. Be sure to select a button function, button label (either a graphic **.bmp** file or text), and flash prompt description.
5. Select **OK**.
6. Select **OK** to return to the *Interface* screen.

SmartKey Descriptions

SmartKeys quickly perform the command(s) assigned to them. SmartKeys appear on the SmartKey Pad, a floating keypad window that you can move anywhere on your computer's desktop. SmartKeys are similar to toolbar buttons in that they both quickly access commands or scripts.

Commands

A SmartKey can initiate a command. To add or edit a SmartKey to perform a command, access the *Customize SmartKey Pad* dialog box.

For a complete list of commands, turn to the section called “Commands” on Page 10-10.

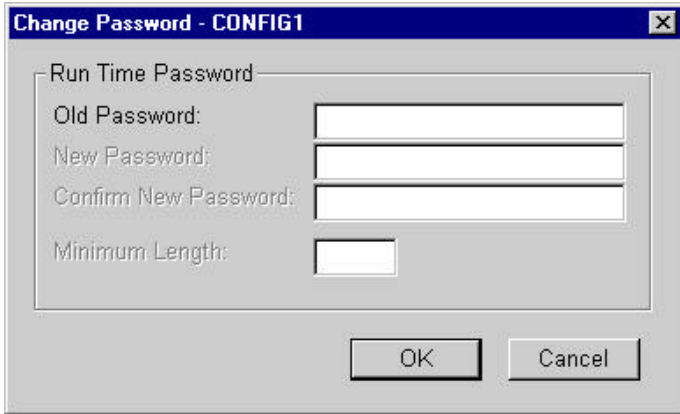
Scripts

A SmartKey can initiate a script. CQ scripts end with the extension **.CQS**. **CQ-3770EE** is configured with a few simple scripts that you can modify and use in your applications. These files are located in the main directory that you specified during installation. To add or edit a SmartKey to run a script, access the *Customize SmartKey Pad* dialog box.

For information on the sample scripts files that came with your software, turn to the section called “Script Samples, Tips, and Hints” on Page 9-8.

Change Password

The **Options > Advanced > Change Password** menu bar command accesses the *Change Password* dialog box. From this dialog box, you can password protect the *Interface* screen.



10 - 7 Change Password Dialog Box

Change Password Options

- **Run Time Password** - The password modification process requires the re-entry of the old password in the **Old Password** text box, the entry of the new password in the **New Password** text box, and the re-entry of the new password in the **Confirm New Password** text box. The characters that are entered are displayed as asterisks (*) for security reasons.
- **Minimum Length** - This text box contains the minimum length of the **Run Time Password**. It is recommended that a minimum length be specified for this password. Only passwords containing at least the minimum number of characters will be accepted.

Setting the Run Time Password

The **Run Time Password** can be modified within the *Interface* screen.

Passwords Overview

The *Interface* screen can be password protected by a **Run Time Password**. When a password is activated, the user must enter it before communicating with the software. You can set up this password through the *Interface* screen.

To modify the Run Time password from the Interface screen:

1. Select the **Options > Advanced > Change Password** menu bar command.
2. The *Change Password* dialog box appears and presents the **Run Time Password** fields for modification. The password modification process requires the re-entry of the old password to provide additional security. The new password also requires re-entry as confirmation of the new password since the characters are not displayed.
3. Set the **Run Time Password** and any options associated with the **Run Time Password**.
4. Select the **OK** button to return to the *Interface* screen.

Audit

The **Options > Advanced > Audit** menu bar command functions as a toggle. If there is a check mark next to it, an audit file is created when you run the configuration.

Note:

*You can also set a configuration to save an audit through the Configurator program. Simply activate the **Audit** check box on the CQ Configurator screen. For more information, see the section called “Activating the Audit Feature” on Page 2-26.*

Description of Audit Files

Audit files give a summary of all communications events, including a date and time stamp of the number of records sent or received, the number of bytes sent or received, the filenames sent or received, and the status of each file.

Naming Audit Files

CQ-3770EE automatically names each audit file as the same name as the configuration with the extension **.cqa**. All CQ audit files are located in the directory that you installed **CQ-3770EE** under during installation. Previous audit files with the same name are overwritten each time you run a configuration with the audit feature activated.

Audit Files and Scripts

Each time you run **CQ-3770EE**, a new audit file is created with the extension **.cqa**. If a script terminates communications and then restarts communications at a later time without exiting **CQ-3770EE**, the audit file for the second communications will be appended to the first audit file.

For more information on the audit file feature, access the **tips.txt** file in the **examples** directory in the location that you installed **CQ-3770EE**.

Auditing Communications

To audit communications:

1. Select the **Options > Advanced** menu bar command.
2. Select the **Audit** option if a check mark is not currently beside it. The check mark indicates that the audit feature is activated.

Trace

The **Options > Advanced > Trace** menu bar command functions as a toggle. If there is a check mark next to it, a trace file is created when you run the configuration.

Note:

*You can also set a configuration to save a trace through the Configurator program. Simply activate the **Trace** check box on the CQ Configurator screen. For more information, see the section called “Activating the Trace Feature” Page 2-27.*

Description of Trace Files

Trace files give detailed descriptions of all low-level communications events. Hexadecimal details of all communications events are date and time stamped and include details of options including SDLC framing.

Naming Trace Files

CQ-3770EE automatically names each trace file as the same name as the configuration with the extension **.cqt**. All CQ trace files are located in the directory that you installed **CQ-3770EE** under during installation. Previous trace files with the same name are overwritten each time you run a configuration with the audit feature activated.

Tracing Communications

To trace communications:

1. Select the **Options > Advanced** menu bar command.
2. Select the **Trace** option if a check mark is not currently beside it. The check mark indicates that the trace feature is activated.

Chapter 11

DES/Triple DES Security Options

Highlights

*Overview of the software's
security features*

*DES/Triple DES
Encryption overview*

*How to set the minimum
session-level encryption*

How to install a Master Key

This chapter explains the Data Encryption Standard (*DES*) security options (single *DES* and *Triple DES*) that may have come with your version of **CQ-3770EE**.

Note:

*The **DES** and **Triple DES** security options are available as options to **CQ-3770EE** at additional costs. Your version of **CQ-3770EE** may not be equipped with one of these options. For information on how to upgrade your software to **CQ-3770EE/DES** or **CQ-3770EE/Triple DES**, contact your CQ Sales representative.*

Security Overview

CQ-3770EE supports several password protection options as well as the Data Encryption Standard (*DES*) and *Triple DES* forms of encryption. These features provide exceptional security for EE communications.

Encrypted Files

All CQ configuration files are encrypted on the **CQ-3770EE** distribution CD or diskettes and remain encrypted when they are loaded onto your computer. These files can only be viewed through the *Configurator* program or through the **CQ-3770EE** software during run time.

Password Protection

Access to the *Configurator* and *Interface* programs can be restricted by implementation of passwords. The passwords can be set through the *Configurator* program or through the *Interface* screen during run time.

- For more information on setting passwords through the *Configurator* program, see the section called “Passwords” on Page 2-29.
- For more information on setting passwords through the *Interface* screen during run time, see the section called “Change Password” on Page 10-25.

If your **CQ-3770EE** software was initially configured with password protection off-site (usually by a Central Site administrator), the **Configuration Password, Run Time Password**, and all password related parameters may have already been set for you. The actual values of the passwords are never displayed on the screen. You will need to get this password information in order to access **CQ-3770EE**.

DES/Triple DES Encryption

The **DES** options, including **Master Key** information, are also set through the *Configurator* program. The remainder of this chapter explains the features of the single **DES** and **Triple DES** security options.

DES/Triple DES Encryption

CQ-3770EE supports the Data Encryption Standard (**DES**) through the single **DES** and **Triple DES** security options. Your **DES** version of **CQ-3770EE** depends on the **DES** option that came with your software:

- **CQ-3770EE/DES** - This version supports single **DES** data encryption. A single **Master Key** is stored through this version.
- **CQ-3770EE/Triple DES** - This version supports **Triple DES** data encryption. Up to three **Master Keys** are stored through this version.

All **DES** security option information appears on two folder tabs within the *Configurator* program. These folder tabs are called **DLU(E)** and **Internal PU**.

DLU(E) Folder Tab

The **DLU(E)** folder tab contains the settings associated with the minimum setting of session-level encryption that is required in the BIND for **CQ-3770EE** to accept the BIND.

The encryption levels that you may choose from depends on the **DES** version of **CQ-3770EE** that you are using. **CQ-3770EE** supports five different levels of minimum session-level encryption.

Encryption Level	Versions Supported
No Encryption - No session-level cryptography is required.	CQ-3770EE CQ-3770EE/DES CQ-3770EE/Triple DES
Selective DES Encryption - Session-level selective or mandatory cryptography is required through single DES or Triple DES encryption.	CQ-3770EE/DES CQ-3770EE/Triple DES
Mandatory DES Encryption - Session-level mandatory cryptography is required through single DES or Triple DES encryption.	CQ-3770EE/DES CQ-3770EE/Triple DES
Selective Triple-DES Encryption - Session-level selective or mandatory cryptography is required through Triple DES encryption.	CQ-3770EE/Triple DES
Mandatory Triple-DES Encryption - Session-level mandatory cryptography is required through Triple DES encryption.	CQ-3770EE/Triple DES

To set the minimum session-level encryption:

1. From the *CQ_WIN* program group that was created during installation, select the **Configurator** icon.
2. Enter the **Configuration Password** if you are prompted to do so. The *CQ Configurator* screen appears.
3. Select the **Advanced** button. The *Advanced Options* screen appears.
4. Select the **DLU(E)** folder tab.
5. From this screen, select the option button that corresponds with the **Minimum Session-Level Encryption** that you want required in order for **CQ-3770EE** to accept the BIND. If an option button is grayed out, then this form of session-level encryption was not included with your version of **CQ-3770EE** (see the previous table).
6. In the event of communications problems, you may require a communications log file to be written. This log file can be written to include data in decrypted or encrypted form. This log file may be interpreted by users familiar with the SNA protocols and by personnel who are authorized to view decrypted data. If you want to log the decrypted data, select the **Trace Decrypted Data** check box. The communications log file will be written with un-encrypted data.
7. Select the **OK** button to return to the *CQ Configurator* screen.
8. Select the **Save** button.
9. Select the **Close** button.

Internal PU Folder Tab

The **Internal PU** folder tab contains the settings associated with storage of a **Master Key**.

The following **Master Key** storage locations are available for use with the **DES** versions of **CQ-3770EE**.

- **Software - Master Key** is stored through the CQ software (Page 11-8).
- **Glenco - Master Key** is stored through a Glenco Hardlock device attached to the computer (Page 11-9).
- **Jones Card - Master Key** is stored through a Jones Futurex ENC-347 card installed in the computer (Page 11-17).

The next few sections explain each of these storage locations in greater detail as well as specific hardware installation instructions where applicable. Turn to the page number indicated above for more information on each of these storage locations.

Software DES

CQ-3770EE supports **Master Key** storage through the CQ software. Software storage eliminates the expense and maintenance of additional hardware.

Master Key Distribution

CQ-3770EE supports the split key method defined in the American National Standards Institute (ANSI) X9.17 standard. The split key method splits the **Master Key** into two parts. The **Master Key** is split at the Central Site before distribution to Remote Sites. After the key is split, the Central Site personnel enters the first part of the **Master Key** and then distributes the CQ software to each Remote Site where the second part of the **Master Key** is entered.

Note:

*If you are a Central Site administrator, you can contact CQ for more information on splitting the **Master Key** during Central Site installation.*

CQ-3770EE also supports entering the **Master Key** in its entirety at either the Central Site or Remote Site.

Master Key Installation

For information on installing a **Master Key**, turn to the section called “Master Key Installation” on Page 11-19.

Glenco Hardlock Device

CQ-3770EE supports **Master Key** storage through the Glenco Engineering, Inc.'s (a.k.a. Aladdin Knowledge Systems, Inc.) Hardlock devices. This form of **DES Master Key** storage requires an external 306060 Hardlock DES dongle device attached to a computer's parallel printer port.

Dongle Description

The dongle is a portable external module that connects directly to the printer port on a PC, notebook computer, or compatible machine. The printer cable can be attached to the dongle, allowing the end user to perform normal printer tasks while the dongle is attached to the computer. The dongle's data rate is limited by the printer port to just under 6K bytes per second.

Note:

*Due to certain limitations of Windows 95, CQ recommends that you quit or temporarily suspend any printer sessions that are using the printer port that the dongle is attached to during initialization. Once the **Master Key** has been obtained from the dongle by **CQ-3770EE** and you are logged onto a **DES** session, you can resume all print jobs without interruption.*

The GL306060 Hardlock dongle contains an application-specific integrated circuit that supports the **Master Key** for the **DES** algorithm stored in the EEPROM cells. The **Master Key** may be written and used but there are no functions that permit the **Master Key** to be read.

A feature of the Hardlock DES device is its ability to merge an external key part with the internal key storage, either storing the result or using it as a **DES** key without transferring it to EEPROM storage.

Master Key Distribution

There are two different ways that your Central Site personnel can choose to distribute the **Master Key**. Your Central Site personnel should instruct you which of the following ways you will use to install the **Master Key**.

- **Option 1: Glenco Hardlock Device Only - CQ-3770EE** supports entering the **Master Key** in its entirety. This method involves simply plugging the pre-programmed Glenco Hardlock device into your computer's printer port. There is no configuration that needs to occur within the *Configurator* program. If your Central Site personnel supplies you with the dongle device and does not provide any type of a hexadecimal code, this is most likely the option you will use.
- **Option 2: Glenco Hardlock Device and Hexadecimal Code (Split Key Method) - CQ-3770EE** supports the split key method defined in the American National Standards Institute (ANSI) X9.17 standard. The split key method splits the **Master Key** into two parts. The **Master Key** is split at the Central Site before distribution to Remote Sites. After the key is split, the Central Site personnel distribute the pre-programmed Glenco Hardlock device and **CQ-3770EE** software to each Remote Site. Each Remote Site then plugs the Glenco device into the computer's printer port and enters the second part of the **Master Key** through the *Configurator* program. If your Central Site personnel supply you with the dongle device as well as a hexadecimal code, this is most likely the option you will use.

Hardware Installation

For the Windows 2000 and Windows XP operating systems, you must install a special Glenco device driver that came with your CQ software CD to properly use the Glenco Hardlock DES dongle. Windows 95, Windows 98, and Windows NT users are not required to install this device driver.

- **Windows 95, Windows 98, and Windows NT Users** - For information on installing the Glenco Hardlock DES dongle, turn to the section called “Windows 95, Windows 98, and Windows NT Installation” on Page 11-12.
- **Windows 2000 Users** - For information on installing the Glenco Hardlock DES dongle as well as the required Windows 2000 dongle device driver, turn to the section called “Windows 2000 Installation” on Page 11-13.
- **Windows XP Users** - For information on installing the Glenco Hardlock DES dongle as well as the required Windows XP dongle device driver, turn to the section called “Windows XP Installation” on Page 11-15.

Windows 95, 98, and NT Installation

Note:

*These instructions are intended for users running **CQ-3770EE** under the Windows 95, Windows 98, or Windows NT operating systems.*

1. Connect the Glenco Hardlock DES dongle to any parallel port on your computer. If there is a printer cable attached to that port, detach the printer cable and plug the dongle into the port. Reconnect the printer cable to the dongle. The Glenco Hardlock DES dongle should not affect normal printer operation.

Glenco Hardlock DES dongle installation is now complete. For information on installing a **Master Key**, turn to the section called “Master Key Installation” on Page 11-19.

Windows 2000 Installation

Note:

*These instructions are intended for users running **CQ-3770EE** under the Windows 2000 operating system. The Windows 2000 operating system requires special dongle device driver installation that is explained in these instructions.*

1. Connect the Glenco Hardlock DES dongle to any parallel port on your computer. If there is a printer cable attached to that port, detach the printer cable and plug the dongle into the port. Reconnect the printer cable to the dongle. The Glenco Hardlock DES dongle should not affect normal printer operation.
2. Select **Start > Settings > Control Panel**.
3. Select the **Add/Remove Hardware** icon.
4. Select the **Next** button.
5. Select the **Add/Troubleshoot a device** button and then select the **Next** button.
6. From the list of **Devices**, select the **Add a new device** option and then select the **Next** button.
7. Select the **No, I want to select the hardware from a list** option and then select the **Next** button.
8. From the list of **Hardware types**, select the **Other devices** option and then select the **Next** button. After a few moments, the next screen appears.
9. Select the **Have Disk** button.

10. Select the **Browse** button and locate the directory where you installed **CQ-3770EE**.

Note:

The default directory that you most likely used during software installation is C:\CQ3770.

11. Select the **glendngl.inf** file and then select the **Open** button.
12. Select the **OK** button.
13. Select the **Hardlock DES Dongle** option and then select the **Next** button.
14. Select the **Next** button.
15. Select the **Finish** button.

Glenco Hardlock DES dongle installation is now complete. For information on installing a **Master Key**, turn to the section called “Master Key Installation” on Page 11-19.

Windows XP Installation

Note:

*These instructions are intended for users running **CQ-3770EE** under the Windows XP operating system. The Windows XP operating system requires special dongle device driver installation that is explained in these instructions.*

1. Connect the Glenco Hardlock DES dongle to any parallel port on your computer. If there is a printer cable attached to that port, detach the printer cable and plug the dongle into the port. Reconnect the printer cable to the dongle. The Glenco Hardlock DES dongle should not affect normal printer operation.
2. Select **Start > Control Panel**.
3. Find the **Add Hardware** icon that should appear somewhere within the *Control Panel*. You may have to switch to “classic view” or change other settings in order for the **Add Hardware** icon to appear.
4. Once you have found the **Add Hardware** icon, select the **Add Hardware** icon.
5. Select the **Next** button. The *Add Hardware Wizard* will search for new hardware.
6. A question will appear asking you if you have already connected the new hardware to your computer. Select the **Yes, I have already connected the hardware** option and then select the **Next** button.

7. From the list of **Installed hardware**, select the **Add a new hardware device** option and then select the **Next** button.
8. Select the **Install the hardware that I manually select from a list (Advanced)** option.
9. From the list of **Common hardware types**, select the **Show All Devices** option and then select the **Next** button. After a few moments, the next screen appears.
10. Select the **Have Disk** button.
11. Select the **Browse** button and locate the directory where you installed **CQ-3770EE**.

Note:

The default directory that you most likely used during software installation is C:\CQ3770.

12. Select the **glendngl.inf** file and then select the **Open** button.
13. Select the **OK** button.
14. Select the **Hardlock DES Dongle** option and then select the **Next** button.
15. Select the **Next** button.
16. A message appears stating that the Hardlock DES dongle has not passed Windows Logo testing. Select the **Continue Anyway** button to continue with installation.
17. Select the **Finish** button.

Glenco Hardlock DES dongle installation is now complete. For information on installing a **Master Key**, turn to the section called “Master Key Installation” on Page 11-19.

Jones Futurex ENC-347 Card

CQ-3770EE supports **Master Key** storage through the Jones Futurex Encryptor 347 SDLC adapter card. This form of **DES** requires an internal Jones Futurex ENC-347 card installed in a PC.

ENC-347 Adapter Card Description

The Jones Futurex ENC-347 card provides security for remote computers, mainframes, and networks by encrypting sensitive data over synchronous communication lines to remote sites. The ENC-347 is equipped with a single synchronous port that is functionally compatible with IBM's SDLC adapter card. This allows **CQ-3770EE** to operate with the ENC-347 without any modifications.

Security features of the ENC-347 include:

- A user supplied key to encrypt and decrypt sensitive data.
- Keyword protection through the use of fixed and variable keys. The fixed and variable keywords used in conjunction with **CQ-3770EE** provide a variety of logical and physical security options. Among these options are multi-layered security, user authentication, and PC identification.
- Physical security is accomplished by encasing sensitive components directly on the card in a steel enclosure filled with x-ray opaque epoxy. This security prevents intruders from probing and reading the keywords while the board is resident in the PC.

The Jones Futurex ENC-347 card contains an application-specific integrated circuit that supports the **Master Key** for the **DES** algorithm stored in the EEPROM cells. The **Master Key** may be written and used but there are no functions that permit the **Master Key** to be read.

A feature of the Jones Futurex ENC-347 card is its ability to merge an external key part with the internal key storage, either storing the result or using it as a **DES** key without transferring it to EEPROM storage.

Master Key Distribution

With the Jones Futurex ENC-347 Card, the **Master Key** is distributed in its entirety from within the card. This method involves simply installing the pre-programmed Jones Futurex card into a slot on your PC. There is no configuration that needs to occur within the *Configurator* program. The Central Site personnel distribute the pre-programmed Jones Futurex card and CQ software to each Remote Site. Each Remote Site then plugs the Jones Futurex card into an open PC slot.

Hardware Installation

Follow the Jones Futurex card installation instructions you should have received from your Central Site personnel. When the card is installed, continue with the **Master Key** installation instructions later in this chapter.

For information on installing a **Master Key**, turn to the section called “Master Key Installation” on Page 11-19.

Master Key Installation

In most cases, you should receive specific instructions on how to install one or more Master Keys for use with your **DES** version of **CQ-3770EE**. The instructions in this section serve as a guideline.

Master Key Notes

When going through these instructions, be aware that **CQ-3770EE/Triple DES** users will need to enter a double or triple key. In most cases, simply a double key will do. This means that **Master Key Numbers 1 and 2** will have **Key Locations** such as **Software, Glenco, or Jones Card** as well as the appropriate **Master Key** information. **Master Key Number 3** will have a **Key Location** of **NONE**.

Also, be aware that **CQ-3770EE/DES** users will need to enter a single key. This means that **Master Key Number 1** will have a **Key Location** such as **Software, Glenco, or Jones Card** as well as the appropriate **Master Key** information. **Master Key Numbers 2 and 3** are grayed out so no information needs to be entered for these options.

Hardware Installation

If you are using a Glenco Hardlock DES dongle device, you should have already installed the device according to the previous instructions in this chapter. For Glenco Hardlock DES dongle installation instructions, turn to the section called “Hardware Installation” on Page 11-11. When the Glenco Hardlock DES dongle device is plugged in, continue with the **Master Key** installation instructions on the next page.

If you are using a Jones Futurex card, follow the Jones Futurex card installation instructions you should have received from your Central Site personnel. When the Jones card is installed, continue with the **Master Key** installation instructions on the next page.

To install a Master Key at the Remote Site:

1. From the *CQ_WIN* program group that was created during installation, select the **Configurator** icon.
2. Enter the **Configuration Password** if you are prompted to do so. The *CQ Configurator* screen appears.
3. Select the **Advanced** button. The *Advanced Options* screen appears.
4. Select the **Internal PU** folder tab. There should be a group box on the **Internal PU** folder tab page called **Master Key Storage Options**.
5. From the **Master Key Number** options, select an option number for the **Master Key** you intend to configure. For example, single **DES** users should always select **1**. **Triple DES** users should select option **1**, **2**, or **3** depending on the **Master Key** to be configured. If installing a **Master Key** for the first time, always select option **1**.

Note:

*If you are upgrading from a previous **DES** version of **CQ-3770EE**, select the **Clear Master Key** button now before continuing. DO NOT select the **Clear Master Key** button if you are NOT upgrading your version of **CQ-3770EE** software or if you received your software from a Central Site contact. Your Central Site contact may have already configured part of the **Master Key** in your software. By selecting this button, you will clear the first part of the **Master Key** entered by the Central Site if they implemented the split key method.*

6. From the **Keyn Location** drop-down list, select the location of the **Master Key**. Available options include **Software**, **Glenco**, and **Jones Card**. If you select the **NONE** option, no **DES Master Key** information will occur for the currently selected **Master Key Number**.

7. If you selected **Software** or **Glenco** as the **Key Location**:
 - a. Enter the 16 hexadecimal digits of the **Master Key** that was provided to you by your Central Site personnel into the **Partial Master Keyn** text box.
 - b. Confirm your entry in the text box labeled **Confirm Partial Key**.
 - c. Select the **Accept Partial Keyn** button. This is the button located directly below the **Confirm Partial Key** heading.
8. If you selected **Jones Card** as the **Key Location**, the options in the **Master Key Storage Options** group box (**I/O Address** and **DES Keyn Slot #**) should have been pre-configured for you by your Central Site personnel. If you were instead instructed to enter these values now, enter them in the spaces provided.
9. If you need to enter another **Master Key**, repeat steps 5 through 8 for each **Master Key**. For example, **Triple DES** users should have been instructed by their Central Site personnel to enter at least two keys.
10. After you have entered your encryption options, select the **OK** button to return to the *CQ Configurator* screen.
11. Select the **Save** button.
12. Select the **Close** button.

Note:

*If you entered hexadecimal digits in the **Partial Master Keyn** and **Confirm Partial Key** text boxes, these text boxes will always be blank when re-entering the **Internal PU** folder tab screen. There will be no indication that anything was ever entered into these fields. These fields are used only to change, not display, the **Master Key**.*

Section Three

C Q Information

Chapters

Chapter 12: Customer Services

Chapter 13: CQ Solutions and Products

Chapter 12

Customer Services

Highlights

CQ corporate information

CQ Sales Department information

CQ web site information

CQ Technical Support policy information

Policies and procedures

This chapter explains the customer services available through CQ Computer Communications, Inc.

About CQ

CQ Computer Communications, Inc. has been a leading communications connectivity and post-processing solution provider since it was founded in 1982. CQ designs, engineers, and distributes these solutions to clients worldwide.

Address:	CQ Computer Communications, Inc. 570 Peachtree Parkway Cumming, GA USA 30041-6820
Telephone:	770-844-0233 <i>Office Hours: Mon-Fri, 9:00 A.M. to 5:00 P.M., EST</i>
Fax:	770-886-7021
E-Mail:	email@cq-comm.com sales@cq-comm.com tech@cq-comm.com
Internet:	http://www.cq-comm.com

Sales

CQ's sales department staff is ready to answer your sales questions Monday through Friday during regular office hours (9-5, EST).

Contact your CQ sales representative for information on CQ's complete line of products, software upgrade information, CQ's beneficial software maintenance plan, and more. If you need technical assistance, please contact the CQ Technical Support Department.

Sales Phone:	1-800-523-6807 770-844-0233 <i>Office Hours: Mon-Fri, 9:00 A.M. to 5:00 P.M., EST</i>
International:	1-770-844-0233
Sales Fax:	770-886-7021
Sales E-Mail:	sales@cq-comm.com
Internet:	http://www.cq-comm.com

CQ Web Site

CQ's web site address is:

- <http://www.cq-comm.com>

Check us out for information concerning your CQ product.

User Registration Form

Please take the time to fill out the **User Registration Form** enclosed with your CQ product. Upon receipt of this form, you become eligible for special incentives offered through CQ including discounts on software upgrades and any other special programs offered by CQ.

User Registration Online

For your convenience, you can register your new CQ software conveniently through CQ's web site. Just locate your software serial number and follow these simple steps:

Note:

*Your software serial number can be found most easily through the **Help** > **About** menu bar command from the CQ Configurator or Interface screens.*

1. Point your web browser to CQ's **User Registration** page:
 - http://www.cq-comm.com/user_reg.htm
2. Fill in the *User Registration ONLINE* form and submit it to CQ.
3. Upon submission of this form, you become eligible for special incentives offered through CQ including discounts on software upgrades and any other special programs offered by CQ.

Technical Support Policy

CQ recognizes the importance of providing our customers with access to comprehensive technical services and support. CQ also feels that access to product upgrades and updates is an integral part of an organization's overall software deployment strategy. With this in mind, CQ provides the **CQ Access Point** agreement to its customers - CQ's annual license activation and software maintenance agreement. With each license acquisition, you receive annual license activation as well as access to the product upgrade and technical support features of Software Maintenance.

License Activation

During initial installation, your new CQ software will require its license to be activated by contacting CQ and requesting "License Key Codes". Upon activation, the software will be fully licensed and fully functional on the workstation or server that you have loaded it onto. Then, on an annual basis, your license will need to be reactivated. You will receive notification in the form of a pop-up message 30 days from the expiration date that the software license is due to expire soon. Then, you will receive a similar notification each day under the 30-day period. If you have been unable to extend your license within the allotted time, CQ allows a short grace period before the license is terminated. By maintaining this "grant of license" with CQ, this ensures a stable environment for your CQ solution to function. It also allows for the free product upgrades and updates that you will be receiving to be more easily installed.

Technical Support

During each year of your software's usage, CQ's technical support staff will be available to troubleshoot any CQ related technical issues. CQ will provide up to two hours of telephone technical support for each licensed CQ software product. Along with the two hours of telephone support, we will provide unlimited e-mail technical support. This is CQ's way of making sure that you are covered with the technical support that you need. This is your way of getting an increased return on your investment in a total software solution.

Product Updates and Upgrades

As new product upgrades (new features, etc.) and product updates (patches, bug fixes, etc.) become available, they will be made available to **CQ Access Point** customers. Then, you can upgrade to new releases and new versions as your needs dictate.

By providing constantly updated software to **CQ Access Point** customers such as yourself, we are helping you maintain your software budgeting. For example, if you weren't enrolled in the **CQ Access Point** agreement, then you would have to budget an uncertain amount for new software releases. Then, if you forgot to budget for new software releases – or didn't even know that you needed to budget for this – then you are stuck with an unplanned expenditure, or forced to wait until the next budget cycle to be current with the CQ software. With the **CQ Access Point** agreement, you never have to worry about new software releases because they are included in the agreement. This makes it simple for you to purchase and administer all CQ related solutions in one planning and budgeting cycle as part of its overall software acquisition plan.

CQ Access Point Agreement Features

- **License Activation and Annual License Renewals.**
Upon initial installation of the CQ software, you will be entitled to activate your license for a period of one year. Then, on an annual basis, your license will need to be reactivated by continually paying your annual **CQ Access Point** agreement fee. By maintaining this “grant of license” with CQ, this ensures a stable environment for your CQ solution to function and also allows for the free product upgrades and updates that you will be receiving to be more easily installed.
- **Initial Telephone Installation and Configuration Support.**
Within 30 days of receipt of the CQ solution, the customer will be entitled to contact CQ via telephone and speak with a CQ Technical Support Representative for up to 30 minutes for initial installation and configuration assistance. In most cases, a maximum of 30 minutes will be all that is required for the CQ solution to be installed and working properly. At CQ’s sole discretion, additional phone calls and support time may be initiated.
- **Telephone Technical Support.**
Technical support of up to two hours per license is provided to **CQ Access Point** customers on an annual basis. Subscribers will receive a telephone response from CQ within four hours that the original call is received. Please note that CQ does not guarantee that the technical issue that is phoned in to CQ will be resolved within two hours, but that CQ will begin to troubleshoot the situation and attempt to solve the issue expediently.

- **Unlimited E-Mail Technical Support.**

After initial telephone technical support has expired, all subsequent technical support issues for the CQ solution must be made through e-mail. CQ guarantees that the customer will receive a response within one business day from the day the request is received by CQ. Please note that CQ does not guarantee that the technical issue described in the e-mail will be resolved within one business day, but that CQ will begin to troubleshoot the situation and attempt to solve the issue expediently.

Technical support issues that the **CQ Access Point** agreement covers include installation help, simple configuration of communications parameters, basic CQ solution operating procedures, and limited troubleshooting of hardware and software issues. This agreement does not include programming or script writing. Some CQ solutions come with basic scripts or customized user interfaces. These scripts and customizations were developed as a service for CQ customers and are provided on an “as is” basis.

- **Free Same Version Software Updates (Patches, Bug Fixes, etc.).**

The customer is entitled to free patches and bug fixes from CQ for the version of CQ software licensed.

- **Free New Version Software Upgrades (New Features, etc.).**

The customer is entitled to free CQ software upgrades to major releases as well as new CQ software releases with new features. Keep in mind that you may use either the upgraded software or the original CQ software, but never both at the same time.

Technical Support and Troubleshooting

The **CQ Access Point** agreement includes troubleshooting of CQ's solution problems as well as limited conflicts with other hardware and software products already present on the system. Over the course of troubleshooting of these errors, CQ may require the customer to run diagnostic tests as instructed by CQ's technical support staff. In these cases, the customer must have some degree of computer knowledge in order for CQ to be able to offer assistance.

Over the course of troubleshooting, if it is determined that there is an error in CQ's software or hardware products, CQ will do all that it can to fix the error. CQ will, at its sole discretion, accomplish this through one or more ways: CQ will fix the error and provide a working solution to the customer; CQ will let the customer know that the error has been fixed in a later version of the software; CQ will suggest alternatives that will avoid the error; and/or CQ will notify the customer that the error will not be repaired in the foreseeable future.

All technical support issues will be limited to applications that involve CQ products. If there is an identified error through the use of CQ's products due to other environmental issues such as operating system conflicts or with conflicts with other installed software or hardware, CQ's responsibility will be limited to the discovery of the problem or simply ruling out CQ's products as the cause of the problem.

CQ Access Point agreement subscriptions must be purchased concurrently for all licenses of the CQ solutions owned by a customer. CQ may, at its sole discretion, prorate the term of the customer's **CQ Access Point** agreement subscription so that all **CQ Access Point** agreement subscriptions for the CQ customer renew concurrently.

Software Copy Protection through “License Key Codes”

CQ protects its software assets and intellectual property from illegal, unauthorized duplication and piracy through software copy protection. This method in no way hinders or otherwise obstructs the CQ software’s capabilities. Through CQ’s license and software copy protection, the CQ software is “linked” to the workstation (this can be a single user workstation or a server) that it is loaded onto through “License Key Codes”.

The “License Key Codes” are based on some of the workstation’s internal characteristics. This prevents the software from being installed and used without authorization on more than one workstation. In order to enable the software on more than one workstation, additional “License Key Codes” must be generated for each workstation. CQ permits a customer to transfer the software from one workstation to another by invalidating the prior “License Key Codes” and issuing new “License Key Codes”. In order for CQ to issue these new “License Key Codes”, the customer must provide CQ with a valid removal code that is generated by the software. Customers with environments where frequent reinstallation, regular system changes, or other modifications are a natural occurrence are strongly advised to contact CQ before any workstation changes are made.

Contacting Technical Support

If you have a technical question that you cannot answer with CQ's Help screens or documentation **and you are currently enrolled in the CQ Access Point agreement**, please contact our Technical Support department. CQ Technical Support representatives look forward to answering your questions regarding your CQ products.

Tech Support Phone:	770-844-0233 <i>Technical support representatives are available Monday through Friday (excluding certain holidays) from 9:00 A.M. to 5:00 P.M., EST</i>
Tech Support E-Mail:	tech@cq-comm.com

Before contacting CQ, please have the following information ready:

- **NAME** - Your name as well as the name of the person within your company or organization that purchased the CQ product.
- **COMPANY** - Your company as well as the name of the company or organization that purchased the CQ product (in some cases, this may be an outside consultant, etc.).
- **PHONE** - A phone number where you can be reached.
- **SERIAL NUMBER** - Your CQ software serial number can be found most easily through the **Help > About** menu bar command from the *CQ Configurator* or *Interface* screens. Also, please provide the serial numbers of any CQ hardware you may be using.
- **TECHNICAL DESCRIPTION** - A detailed description of your current technical issue. This may include error messages you are receiving, your operating system, the name of the mainframe/host site, the types of hardware you are using such as modems, etc.

Policies and Procedures

Technical and Consulting Services

CQ technical and consulting services that are provided by CQ to customers without enrollment in the **CQ Access Point** agreement are available on an hourly basis at the then current hourly rate with a minimum charge of four hours and may be subject to the current CQ prices, terms, and conditions at the time the technical and consulting services are used. For on-site technical and consulting services, the customer must agree to accept reasonable costs determined by CQ that are associated with travel expenses for CQ support personnel.

Hardware Warranties

All hardware products developed by CQ (i.e., **CQ-Sync200 PCI**, etc.) are covered by a **Limited Lifetime Hardware Warranty**. CQ warrants its hardware products to be in working order for the life of the product.

You can find details on CQ's Hardware Warranties on the **Hardware Warranties** page on CQ's web site.

Product Reproduction Policy

The customer agrees to make no more than one copy of the CQ software, for backup purposes, at any one time. The customer also agrees to label the backup copy with the software name, serial number, and copyright and trademark notices provided by CQ on the original software media. The only copies of the software that are permitted the customer are the original copy, the backup copy, and one copy of the CQ software loaded and in use on one computer at any time.

Backup Systems

CQ always recommends the purchase of a backup system for contingency purposes. To help encourage the implementation of backup systems, CQ offers discounts on software used for backup purposes. These discount offers are contingent on the customer's agreement to use backup products for reserve backup purposes only and not for additional processing capacity (i.e., another "active" system). Backup products should not be placed in service while the machine with the original software installed is running except for periodic updating of the backup system to mirror the main original system.

CQ cannot be held responsible for a lack of appropriate contingency and disaster-recovery planning on the customer's part. Therefore, CQ strongly encourages its customers to maintain a backup system according to their connectivity needs and to also subscribe all systems into the **CQ Access Point** agreement.

Backup License Activation

During initial installation, the backup CQ software will require its license to be activated by contacting CQ and requesting "License Key Codes". Upon activation, the software will be fully licensed and fully functional on the backup workstation or server that you have loaded it onto for a period of one year. It will be the user's responsibility to contact CQ annually in order to extend the backup software license each year. Also, CQ will only extend the backup license if the **CQ Access Point** agreement for the original license of the software has been paid in full when it is due on an annual basis.

Technical Support

Unless you have chosen to pay the annual fee for the **CQ Access Point** agreement on the backup software, technical support for the backup software will be limited to 30 minutes for initial installation and configuration assistance. In most cases, a maximum of 30 minutes will be all that is required for the backup CQ solution to be installed and working properly. At CQ's sole discretion, additional phone calls and support time may be initiated.

Product Updates and Upgrades

Unless you have chosen to pay the annual fee for the **CQ Access Point** agreement on the backup software, you will not have access to new product upgrades (new features, etc.) and product updates (patches, bug fixes, etc.) for the backup software.

By annually paying for the **CQ Access Point** agreement, your backup system will mirror your “active” system. In order to have an effective backup system, CQ recommends that you subscribe to the **CQ Access Point** agreement for all live “active” systems as well as their corresponding backup systems.

Software Protection Policy through “License Key Codes”

CQ protects its software assets and intellectual property from illegal, unauthorized duplication and piracy through software copy protection. This method in no way hinders or otherwise obstructs the CQ software’s capabilities. Through CQ’s license and software copy protection, the CQ software is “linked” to the workstation (this can be a single user workstation or a server) that it is loaded onto through “License Key Codes”.

The “License Key Codes” are based on some of the workstation’s internal characteristics. This prevents the software from being installed and used without authorization on more than one workstation. In order to enable the software on more than one workstation, additional “License Key Codes” must be generated for each workstation. CQ permits a customer to transfer the software from one workstation to another by invalidating the prior “License Key Codes” and issuing new “License Key Codes”. In order for CQ to issue these new “License Key Codes”, the customer must provide CQ with a valid removal code that is generated by the software. Customers with environments where frequent reinstallation, regular system changes, or other modifications are a natural occurrence are strongly advised to contact CQ before any workstation changes are made.

Product Evaluation Policy

Customers may request CQ products for evaluation from CQ for a set period of time. CQ will evaluate each evaluation request on a case-by-case basis to determine if the product that is requested for evaluation will solve the customer’s needs. CQ may at any time demand return of any products under evaluation. Evaluation products not returned within the agreed upon period of time or not returned to CQ following a request by CQ for its return will be considered to have been purchased and the customer will be invoiced accordingly.

Payment Policy

CQ provides several ways to purchase our products and solutions:

- **Credit Card.** For added convenience, CQ accepts numerous credit cards, including **Visa**, **MasterCard**, and **American Express**. Credit card orders provide the most expedient means to order products from CQ. In most cases, orders that are paid for through the use of a credit card can be shipped the same day the order is received. To place an order through a credit card, simply call CQ at 1-800-523-6807.
- **Pre-Payment.** Products can also be ordered from CQ through pre-payment by company check. Before pre-paying for CQ products, please contact CQ for mailing instructions and to also confirm the final cost of the products.
- **Company Purchase Order.** For orders placed with CQ through the use of a company purchase order, you may fax or e-mail the company purchase order to CQ. In some cases, the use of a company purchase order to order products from CQ may be subject to credit approval. In these cases, CQ may ask for credit statements and banking references.
- **Wire Transfer.** CQ accepts payment for orders via wire transfer. Customers should contact CQ for further instructions regarding the specifics of wire transfer payments.

Customers that have been granted payment terms of “NetDue” agree that CQ is to receive payment immediately upon receipt of CQ’s invoice. Customers that have been granted payment terms of “Net15” (or similarly, “Net30”, “Net45”, etc.) agree that CQ is to receive payment within 15 days or less of the date that the customer’s products are shipped or 15 days or less from the date that technical services are rendered by CQ.

Failure to pay invoices within the agreed amount of time subjects the customer to loss of credit approval and other privileges for future orders. CQ may further withhold technical support services, disregard **Hardware Warranties** to customers, and/or further withhold CQ services to customers that are past due on payments to CQ, until the customer's accounts are brought current. Furthermore, CQ reserves the right to collect the full list price of CQ products with the forfeiture of any discounts that might have been granted to the customer, and also in collection of past due balances, CQ may add interest or finance charges of 1.5% of the unpaid balance per month, retroactive to the original billing date. If use of a third-party agency, such as a collection agency, or if any formal legal action is required by CQ in order to recover payment of past due invoices, the customer is further liable for reimbursement to CQ of all third-party fees, including collection agency fees, attorneys' fees, court fees, plus any additional expenses incurred in preparation of testimony and/or travel to testify before a court, to the fullest extent allowed by the applicable laws at the customer's location.

Return Policy

CQ strives to make all of our customers completely satisfied with the purchase of CQ solutions. To this end, all CQ software and hardware products are warranted to function properly and to meet the needs of the customer through the products' represented purposes. If a customer chooses to return a CQ product in good condition within 30 days of the original purchase date, CQ will credit, at its sole discretion, any payments that have been made to CQ, less shipping costs, and any unpaid bill will be adjusted to only include any unpaid shipping costs.

CQ will accept any returned products to CQ after 30 days of the original purchase date at CQ's sole discretion. These returns may be subject to a twenty-five percent (25%) restocking fee. In order for a product to be returned to CQ after 30 days, the customer must first contact CQ and receive an authorized Return Authorization Number (RA#). Once an RA# has been assigned, the product must be returned in the original packing and the product received by CQ before CQ will authorize a refund. Returned products and refunds are subject to CQ's approval.

Shipping and Delivery Procedures

All CQ orders are shipped to our customers by way of a national shipping carrier (UPS, FedEx, Airborne Express, etc.). If you request a specific shipment option or carrier, we will do our best to accommodate your request. All shipping and handling charges will be added to your order and these charges are different depending on the carrier, the destination, and also if there are any additional duties or taxes that are incurred for the shipment.

Terms of shipment are F.O.B. Destination. In case of damage, shipments received should be accepted and the appropriate carrier should be contacted for freight claims processing. Damaged shipments received via common and air carriers must be accepted with all damages clearly noted on the bill of lading. The Consignee must place damage claims with the carrier. All damage claims are the responsibility of the Consignee.

Changes to Policies and Procedures

CQ reserves the right to change policies and procedures at any time. All other rights are reserved by CQ Computer Communications, Inc., 570 Peachtree Parkway, Cumming, Georgia 30041-6820 USA (www.cq-comm.com).

Chapter 13

CQ Solutions and Products

CQ Computer Communications, Inc. has been a leading communications connectivity and post-processing solution provider since it was founded in 1982. CQ designs, engineers, and distributes these solutions to clients worldwide. For more information on these solutions, contact CQ at **770-844-0233** or [**email@cq-comm.com**](mailto:email@cq-comm.com).

Productivity Solutions

Have you been researching data management tools that can offer your organization the benefits of increased efficiency and lower costs? Or, are you simply tired of not getting the benefits that you had hoped for from the data management technology initiatives that you have already implemented? Either way, look no further than CQ's complete line of powerful data management application programs. These products offer superior data management tools that improve efficiencies while driving down the costs associated with the management of large quantities of recurring data.

It is often a daunting task to manage the massive amounts of data that organizations receive everyday. Many times, this data includes reports and files sent on a daily basis from mainframe computers to remote workstations. So, the simple question becomes, "How can I efficiently manage all this data?"

CQ offers productivity solutions that incorporate automated and time-saving features that allow you to efficiently manage your data. Many of these programs can be used independently, combined with other CQ productivity solutions, or combined with CQ connectivity solutions such as **CQ-EE™**, **CQ-3770EE®**, **CQ-3770MC®**, **CQ-3770®**, **CQ-3270EE®**, **CQ-3270®**, and **CQ-3780®**. Each solution focuses on a particular aspect of data management that allows users to efficiently manage data and thus increase your organization's productivity.

CQ-Forms Manager™

CQ's form selection management solution allows efficient management of the micro/mainframe file transfer process.

The ***CQ-Forms Manager*** productivity solution, used in conjunction with a CQ connectivity solution such as ***CQ-EE***, ***CQ-3770EE***, ***CQ-3770MC***, and ***CQ-3770***, allows you to both receive forms from a mainframe queue and to also send forms to a mainframe site.

The solution is customizable according to your organization's forms download and upload needs. For example, the solution allows you to pick and choose the files you download from mainframe queues, and then rename or redirect these files according to your needs.

The ***CQ-Forms Manager*** solution can be divided into two components: the ***Receive Component*** and the ***Send Component***.

Receive Component

Historically, the JES application running on the mainframe provides a queue for print jobs. Some example print jobs might include collections reports or year-end reports. Often times, these print jobs are stored in a queue on the mainframe computer with a "form report" name that describes the print job. Some example "form report" names include **COLL** and **YEND**.

Typically, an operator in charge of retrieving these forms (or reports) will retrieve the queue list from the mainframe and then request one of the reports. This review of the mainframe queue and the retrieval of "forms" are done using the mainframe application's JES commands.

While the **CQ-EE**, **CQ-3770EE**, **CQ-3770MC**, or **CQ-3770** connectivity solution enables the operator to accomplish these tasks through the JES commands, it is a time-consuming, multi-step process to specify the destination (either a file or printer), view the mainframe queue, specify the wanted form with or without a banner page, request the form download, and finally to close out the mainframe queue.

The **CQ-Forms Manager** productivity solution provides simple, point-and-click access to user-customized forms lists and even allows for unattended forms downloads of the mainframe queue. With **CQ-Forms Manager**, all forms download jobs can be setup and saved in advance and then run with ease when it is time for a download to occur.

Send Component

The second component of the **CQ-Forms Manager** program is the **Send Component**.

The **Send Component** allows you to send forms (i.e., reports) to the mainframe site. Through this component of the solution, you can setup separate configurations for unique sets of forms that you can send to the mainframe site manually (attended) or through a command line in a script (unattended).

Technical Features

- Easy maintenance of send and receive lists.
- Form retrieval specifications.
- Customizable destination specifications.
- Alternative file naming.
- For sending of files, customization of JCL specifications.
- Attended downloads and uploads.
- Unattended downloads and uploads.
- Integration with the SmartKey Pad.

CQ-Print Administrator™

CQ's print management solution allows efficient management of multiple text-based files to multiple printers according to page ranges and specifications set within the program. This solution allows you to minimize the effects of crippling printer malfunctions and errors by printing your large text-based files through this program.

The ***CQ-Print Administrator*** productivity solution provides an efficient way to manage and print text based files according to your specific print layout requirements and specifications. The solution is especially useful for large recurring print jobs that require pre set file formatting options such as the number of columns per line and the number of rows per page. The solution also allows you to configure and save print Layouts that are useful for unattended print jobs that you schedule through other programs. Through these print Layouts, you can also include customizable headers, footers, and banner pages that allow you to separate print jobs.

Print Files the Easy Way

CQ-Print Administrator is the ideal solution for print operators that receive large, multi megabyte text based files that need to be printed efficiently with little user intervention. The solution is especially useful for print operators that receive print jobs on a daily, weekly, or monthly recurring basis. The ***CQ-Print Administrator*** solution provides all the tools and features for complete print job satisfaction.

The solution simplifies the print process by allowing you to open large text based files and preview these files on the screen. This might sound like a simple task, but most programs in use today, such as word processing programs, will automatically format text and make it next to impossible to view it in an unformatted way.

The large **Preview Area** on the main **CQ-Print Administrator's** screen allows you to view each file in a fixed text format. You simply enter in the maximum number of columns per page and the **CQ-Print Administrator** shows you a true representation of what your text will look like when it is printed.

Technical Features

- **Unattended operation through pre-set print Layouts.**
- **Header, Footer, and Banner page features.**
- **Print recovery.** Useful for paper jams, out of paper errors, or other printing errors.
- **Compatible with any attached printer.** CQ's software is fully compatible with any laser printer that the Windows operating system supports. Print jobs can also be sent to printers as raw print data.
- **Easily handles any size text-based file.** Text files include files in ASCII format.
- **Manage multiple files simultaneously.** You can have several files open simultaneously as the software can easily format and print multiple files.
- **Print to multiple printers.**
- **Set file formatting options.** Options such as the maximum number of columns per line, the maximum number of lines per page, and whether to wrap or truncate long lines can be set through the software.
- **Preview Area.** The scrolling **Preview Area** allows you to preview each page of the file.
- **Print according to your page ranges.**
- **Navigation features.** You can easily move throughout text files through the program's navigation features.

CQ-Event Scheduler™

CQ's event scheduling solution allows the scheduling of recurring computer tasks, including daily or monthly data downloads. This solution allows you to schedule recurring computer tasks, including daily or monthly data downloads, that you would otherwise have to initiate manually.

The ***CQ-Event Scheduler*** productivity solution provides an automated way to schedule recurring computer tasks that you would otherwise have to initiate manually. The solution is especially ideal for the automation of daily, weekly, or monthly tasks such as file management processes, report downloads, and large after-hours print jobs.

For the ultimate in productive data management, ***CQ-Event Scheduler*** can be integrated with other CQ productivity solutions such as ***CQ-Forms Manager***, ***CQ-Print Administrator***, and ***CQ-File Manager*** or other CQ connectivity solutions such as ***CQ-EE***, ***CQ-3770EE***, ***CQ-3770MC***, ***CQ-3770***, and ***CQ-3780***. ***CQ-Event Scheduler*** allows for the complete automation of CQ's productivity and connectivity solutions according to your unique requirements and specifications.

This scheduled automation of events allows you to shift your organization's financial and labor resources to other tasks that cannot be automated. By automating tasks, you also decrease the likelihood of manual "human" errors from occurring. Finally, automated tasks can be completed during off-peak business hours when computers and their attached devices can be dedicated to a particular task that many times takes a lengthy period of time to complete.

Automated Task Scheduling

The **CQ-Event Scheduler** is a simple yet powerful solution. The solution is useful in situations that require certain computer tasks to be completed on a recurring basis. For example, the solution can be configured for a task, such as a weekly file download, to occur every Friday night at 11:59 P.M. The solutions also allows you to move ahead at any time in the calendar year and change certain download dates based on holidays or other possible interruptions. Automated tasks can occur without any human intervention. There is no limit to the number of tasks that can be scheduled up to 12 months in advance.

To schedule one or more tasks, you can select a date or continuous range of dates by using the solution's intuitive calendar screen. Once a date has been selected, the default task and time is copied to the selected date or to the selected range through the click of a button. Then, the user moves to a new screen to refine the scheduling defaults. From this screen, one or more tasks can be scheduled at multiple times.

For example, the user can have the **CQ-Event Scheduler** program run a **CQ-EE**, **CQ-3770EE**, **CQ-3770MC**, **CQ-3770**, or **CQ-3780** configuration file that in turn downloads one or more files.

The **CQ-Event Scheduler** program can also be used with other CQ productivity solutions such as **CQ-Forms Manager**, **CQ-Print Administrator**, and **CQ-File Manager**. For example, the **CQ-Event Scheduler** program can be setup to automatically download and print one or more text files through the **CQ-Print Administrator**.

CQ-File Manager™

CQ's file management solution provides a standardized interface that manages the file processing tasks that are customized to specific file processing requirements and specifications. The solution allows you to avoid the time-consuming and often times error-prone task of parsing data manually by automating the process according to your specific needs.

The ***CQ-File Manager*** productivity solution provides an automated way to manage data that your organization receives, usually through a recurring download, everyday. By automating the management procedures, the solution can improve your organization's efficiencies and drive down the costs associated with the management of large amounts of recurring data. The solution is easily customizable according to the file processing tasks that are unique to your requirements and specifications.

CQ-File Manager allows you to automate many of the daily data management tasks so that you can shift your financial and employee resources towards other issues. The processes that are defined within your customized version of ***CQ-File Manager*** also make manual "human" errors less likely as most of the processes will now be automated. Some potential applications for the solution include the daily "parsing" of data according to defined file characteristics; redefinition of report fields; file reformatting and conversion; data conversion such as EBCDIC/ASCII translation and field packing and unpacking; and data mining.

Customized File Processing Solution

File processing tasks vary widely from one organization to another and even from task to task within the same organization. More often than not, programs and procedures are uniquely designed and written for each task. For example, you may have the need to select specific fields of data from a file and then write the contents of these specific fields to a separate output file. With the assistance of CQ's engineering staff, the **CQ-File Manager** program can be customized to accomplish this task.

The **CQ-File Manager** program has taken the “tailor on demand” approach in the way that it can be customized for your applications and needs. CQ selected this approach in designing the program because any “generic” program that attempts to provide a user-customizable interface that allows for the configuration of all conceivable file processing tasks would be problematic and complex.

Instead, you simply provide CQ with your file processing requirements and CQ will provide an engineering cost estimate to accomplish your specified requirements. This “scope of work” that you would provide to CQ would include a sequence of events and procedures for management of your data that are currently in place at your organization. CQ will then customize **CQ-File Manager** to automate these procedures in a more efficient way. When the customized program has been written by CQ, you simply press the **[Start]** button from the **CQ-File Manager's** main screen and the output files are generated. For example, the **CQ-File Manager** solution can help you avoid the time-consuming and often times error-prone task of searching through your data files manually by automating the process according to your specific needs.

For the ultimate in productive data management, **CQ-File Manager** can be integrated with other CQ productivity solutions such as **CQ-Forms Manager**, **CQ-Print Administrator**, and **CQ-Event Scheduler** or other CQ connectivity solutions such as **CQ-EE**, **CQ-3770EE**, **CQ-3770MC**, **CQ-3770**, and **CQ-3780**.

Connectivity Solutions

CQ delivers IBM terminal emulation connectivity solutions that combine the depth and full range of IBM emulation with the simplicity and ease-of-use of the Windows Graphical User Interface (GUI). These solutions provide connectivity from any remote or local workstation or client running a Microsoft Windows operating system, including Windows 95, Windows 98, Windows NT, Windows 2000, and Windows XP.

SNA-over-IP Enterprise Extender Connectivity Solutions

The Enterprise Extender (EE) technology allows for the use of SNA transport protocols (namely APPN and HPR) over an IP network. It enables the leveraging of IP-based infrastructure network components for use in delivering SNA traffic. The **CQ-EE**, **CQ-3770EE**, and **CQ-3270EE** solutions utilize IBM's Enterprise Extender technology to allow for SNA access over IP connections. Best of all, these solutions are not dependent on specific hardware configurations like other SNA connectivity solutions - CQ's EE solutions can run on any Windows workstation or server with no hardware changes required!

The Move to Enterprise Extender

IBM Front End Processors (FEPs), such as the 3745 and 3746 Controllers, form the backbone of many mission-critical SNA networks by allowing remote SNA clients to connect to mainframe computers. These FEPs were withdrawn from marketing by IBM effective September 27, 2002. Since that date, only used FEP products and features have been available. Since IBM's announcement, networks that are based on these controllers have begun the realization that these FEPs are no longer supported and another SNA-type connectivity solution is necessary.

IBM states that the reason that the controllers were withdrawn from marketing is the success of IP in corporate networks. In the IBM Announcement Letter dated February 26, 2002, IBM stated that the “explosive growth of the Internet and TCP/IP traffic have resulted in a severe decline in the demand for new 3745 and 3746 Communication Controllers.” In fact, it is widely accepted that IP is the strategic networking protocol of the future. IP has been around since 1969 so it is well established and also offers features such as scalability, redundancy, resiliency, openness, adaptability, and manageability.

As a transition for SNA users, IBM developed an IP transport technology called Enterprise Extender (EE). Enterprise Extender allows remote SNA clients to continue to communicate with mainframes over existing IP networks in much the same way as they do today.

SNA Connectivity over IP Networks

The IBM Announcement of FEPs being withdrawn from marketing is important because many SNA networks rely upon IBM’s FEPs to connect SNA traffic between remote clients and corporate mainframes. CQ’s EE solutions utilize the EE technology and allows remote SNA clients access to corporate mainframe data centers over existing IP connections.

Through **CQ-EE**, **CQ-3770EE**, and **CQ-3270EE**, the applications and data that remote clients have used throughout the years can now be accessed over IP networks. CQ software users will find this new technology as reliable, scalable, and easy to use as SNA and because CQ’s EE solutions use standard IP technology, the solutions do not require new client hardware or software to be installed. In fact, certain client-side hardware such as dial-up modems, DLSw routers, Token Ring cards, and serial adapter cards are eliminated altogether.

Hardware Specific Connectivity Solutions

For mainframe or host communications that does not involve Enterprise Extender, CQ connectivity solutions require that workstation or server computers running the CQ software product be equipped with the proper hardware. In most cases, the host site almost always determines the connection option for communications between remote or local workstations or servers and the mainframe computer. For example, the host site might help to determine the speed (baud rate) of the connection as the host site ultimately controls this option. Other factors, such as port availability, type of port, and other factors, are controlled by the workstation or server that is connecting with the mainframe.

CQ's products support multiple methods of connection including remote analog dial-up lines, dedicated leased lines, high-speed T1/Fractional T1 leased lines, ISDN, Routed Networks (Frame Relay, etc.), direct connections, and more. These connections are supported through numerous hardware connection options. Hardware options include Hayes™ OPTIMA™ modems with the AutoSync™ 2 feature; versatile 32-bit **CQ-Sync™ PCI** internal adapter cards with external synchronous communications devices; Ethernet Network Interface Cards (NICs) and Token Ring adapter cards; and SNA over IP connections through IBM's Enterprise Extender technology. Other connection options are also available from CQ.

CQ-EE

(Customized Solution for Select Clients)

The **CQ-EE** connectivity solution combines numerous features with an advanced interface to provide clients with 377x SNA/RJE mainframe connectivity over existing IP networks. The transmission of SNA data over IP networks is accomplished through IBM's Enterprise Extender technology.

CQ-EE Features

- SNA-over-IP connectivity through the Enterprise Extender technology.
- Seamless transition for **CQ-3770MC** clients.
- Interactive Graphical User Interface (GUI).
- Customized for select clients.
- Customizable features such as the toolbar and SmartKey Pad.
- Easy configuration of communication parameters.
- Informative *CQ In/Out Bound* screen displays current status of communications.
- Scripting and scheduling features for unattended operation.
- Expanded printer support.
- Audit and trace diagnostic features.
- Security features such as Triple DES.
- 377x SNA/RJE features such as ASCII/EBCDIC translation, Full Multiple Logical Unit (MLU) support, fast batch file transfers through data compaction and repeated character compression, and automatic file naming.

CQ-3770EE

The **CQ-3770EE** connectivity solution combines numerous features with an advanced interface to provide users with 377x SNA/RJE mainframe connectivity over existing IP networks. The transmission of SNA data over IP networks is accomplished through IBM's Enterprise Extender technology.

CQ-3770EE Features

- SNA-over-IP connectivity through the Enterprise Extender technology.
- Seamless transition for **CQ-3770** clients.
- Interactive Graphical User Interface (GUI).
- Customizable features such as the toolbar and SmartKey Pad.
- Easy configuration of communication parameters.
- Informative *CQ In/Out Bound* screen displays current status of communications.
- Scripting and scheduling features for unattended operation.
- Expanded printer support.
- Audit and trace diagnostic features.
- Security features such as Triple DES.
- 377x SNA/RJE features such as ASCII/EBCDIC translation, Full Multiple Logical Unit (MLU) support, fast batch file transfers through data compaction and repeated character compression, and automatic file naming.

CQ-3270EE

The **CQ-3270EE** connectivity solution combines numerous features with an advanced interface to provide users with 3270 interactive mainframe connectivity over existing IP networks. The transmission of SNA data over IP networks is accomplished through IBM's Enterprise Extender technology.

CQ-3270EE Features

- SNA-over-IP connectivity through the Enterprise Extender technology.
- Seamless transition for **CQ-3270** clients.
- Interactive Graphical User Interface (GUI).
- Customizable features such as the toolbar, SmartKey Pad, and the display's color, font, and cursor attributes.
- Easy configuration of communication parameters.
- *Interface* screen displays all communications information.
- Security features such as Triple DES.
- Expanded printer support.
- Audit and trace diagnostic features.
- CQ graphical keyboard remapper.
- Scripting and scheduling features for unattended operation.
- 3270 SNA features such as terminal emulation of IBM's SNA 3270 interactive terminals and controllers, multiple simultaneous LU devices (LU2 display or LU1/LU3 printer type sessions) and IND\$FILE file transfers.

CQ-3770MC

(Customized Solution for Select Clients)

The **CQ-3770MC** connectivity solution delivers the ultimate in IBM 377x SNA/RJE terminal emulation connectivity by combining the depth and full range of IBM emulation with the simplicity and ease-of-use of the Windows Graphical User Interface (GUI).

CQ-3770MC Features

- Numerous connection options, including remote analog dial-up, dedicated leased line, high-speed T1/Fractional T1 leased line, ISDN, Routed Network (Frame Relay, etc.), direct connection, and more.
- Customized for select clients.
- Interactive Graphical User Interface (GUI).
- Customizable features such as the toolbar and SmartKey Pad.
- Scripting and scheduling features for unattended operation.
- Interface screen displays all communications information.
- Easy configuration of communication parameters.
- Expanded printer support.
- Audit and trace diagnostic features.
- Security features such as Triple DES.
- 377x SNA/RJE features such as ASCII/EBCDIC translation, Full Multiple Logical Unit (MLU) support, fast batch file transfers through data compaction and repeated character compression, and automatic file naming.

CQ-3770

The **CQ-3770** connectivity solution delivers the ultimate in IBM 377x SNA/RJE terminal emulation connectivity by combining the depth and full range of IBM emulation with the simplicity and ease-of-use of the Windows Graphical User Interface (GUI).

CQ-3770 Features

- Numerous connection options, including remote analog dial-up, dedicated leased line, high-speed T1/Fractional T1 leased line, ISDN, Routed Network (Frame Relay, etc.), direct connection, and more.
- Interactive Graphical User Interface (GUI).
- Customizable features such as the toolbar and SmartKey Pad.
- Scripting and scheduling features for unattended operation.
- Interface screen displays all communications information.
- Easy configuration of communication parameters.
- Expanded printer support.
- Audit and trace diagnostic features.
- Security features such as Triple DES.
- Auto-dialing and auto-answer support.
- 377x SNA/RJE features such as ASCII/EBCDIC translation, Full Multiple Logical Unit (MLU) support, fast batch file transfers through data compaction and repeated character compression, and automatic file naming.

CQ-3780

The **CQ-3770** connectivity solution delivers the ultimate in IBM 3780/2780 BSC/RJE terminal emulation connectivity by combining the depth and full range of IBM emulation with the simplicity and ease-of-use of the Windows Graphical User Interface (GUI).

CQ-3780 Features

- **CQ-File Transfer Options** utility program for easy customization of file transfer settings and actions.
- Numerous connection options, including remote analog dial-up, dedicated leased line, high-speed T1/Fractional T1 leased line, ISDN, Routed Network (Frame Relay, etc.), direct connection, and more.
- Interactive Graphical User Interface (GUI).
- Customizable features such as the toolbar and SmartKey Pad.
- Scripting and scheduling features for unattended operation.
- Interface screen displays all communications information.
- Easy configuration of communication parameters.
- Expanded printer support.
- Audit and trace diagnostic features.
- Security features.
- Auto-dialing and auto-answer support.
- 3780 Bisync/RJE features such as ASCII/EBCDIC translation, fast batch file transfers through repeated character compression, automated file distribution, and automatic file naming.

CQ-3270

The **CQ-3270** connectivity solution delivers the ultimate in IBM 3270 interactive terminal emulation connectivity by combining the depth and full range of IBM emulation with the simplicity and ease of use of the Windows Graphical User Interface (GUI).

CQ-3270 Features

- Numerous connection options, including remote analog dial-up, dedicated leased line, high-speed T1/Fractional T1 leased line, ISDN, Routed Network (Frame Relay, etc.), direct connection, and more.
- Customizable features such as the toolbar, SmartKey Pad, and the display's color, font, and cursor attributes.
- Interactive Graphical User Interface (GUI).
- Easy configuration of communication parameters.
- *Interface* screen displays all communications information.
- Security features such as Triple DES.
- Expanded printer support.
- Audit and trace diagnostic features.
- CQ graphical keyboard remapper.
- Scripting and scheduling features for unattended operation.
- Auto-dialing and auto-answer support.
- 3270 SNA features such as terminal emulation of IBM's SNA 3270 interactive terminals and controllers, multiple simultaneous LU devices (LU2 display or LU1/LU3 printer type sessions) and IND\$FILE file transfers.

Hardware Connection Options

For mainframe or host communications that does not involve Enterprise Extender, CQ connectivity solutions require that workstation or server computers running the CQ software product be equipped with the proper hardware. In most cases, the host site almost always determines the connection option for communications between remote or local workstations and the mainframe computer. For example, the host site might help to determine the speed (baud rate) of the connection as the host site ultimately controls this option. Other factors, such as port availability, type of port, and other factors, are controlled by the workstation that is connecting with the mainframe.

CQ supports several different connection options for use with the **CQ-3770MC**, **CQ-3770**, **CQ-3780**, and **CQ-3270** software products. Some of these connection options are only available with certain CQ products due to limitations in the technology. For example, the **DLC Interface** feature that is used for Ethernet and Token Ring applications does not support the Bisync protocol, so the **CQ-3780** product cannot connect through this option.

Hayes OPTIMA Modem (with AutoSync 2)

Before the AutoSync technology, remote PC-to-host communications users were required to install and configure numerous hardware components on the workstation including an internal synchronous adapter card, cable, external synchronous modem, and, in some cases, additional hardware such as a switch box.

In the 1980's, CQ co-developed and engineered the original AutoSync technology with Hayes Microcomputer Products, Inc. The AutoSync technology allows synchronous PC-to-host users to eliminate additional hardware that was previously required for host connectivity. In AutoSync mode, the modem automatically performs an internal asynchronous-to-synchronous conversion, thus permitting easy PC-to-host communications without any additional hardware required!

The AutoSync 2 feature automatically performs the sync/async conversion that is necessary for synchronous host communications over analog dial-up lines at speeds up to 33.6 Kbps. This feature is available in the OPTIMA line of external and internal modems that are currently manufactured by Zoom® Telephonics, Inc. PCMCIA versions of the OPTIMA modem are available directly through CQ.

CQ-Sync100™ PCI Adapter Card

This internal 32-bit synchronous adapter card allows PC users to connect remotely to host computers over analog dial-up or dedicated leased lines at speeds up to 33.6 Kbps. The card uses an RS-232 cable to connect to an external synchronous modem.

CQ-Sync200™ PCI and CQ-Sync300™ PCI High-Speed Adapter Cards

These internal 32-bit high-speed synchronous adapter cards allow PC users to connect remotely to host computers through two different hardware configurations. The **CQ-Sync200 PCI** adapter card uses an RS-232 cable to connect to an external synchronous modem or high-speed device (CSU/DSU, Router, etc.). The **CQ-Sync300 PCI** adapter card uses a V.35 cable.

- a. The first configuration uses the adapter cards to communicate over analog dial-up lines, dedicated leased lines, ISDN lines, T1/Fractional T1 leased lines, or other connection lines at speeds between 2400 bps and 128 Kbps. The **CQ-Sync PCI** card is installed at the remote workstation and is then connected to an external synchronous modem or high-speed device.
- b. The second configuration uses the adapter cards and high-speed devices to communicate through a local router over routed networks.

Ethernet NIC or Token Ring Adapter Card (DLC Interface)

These connections function through internal Network Interface Cards (NICs) installed in a PC that is part of an Ethernet or Token Ring network. The solution communicates to the host through a local router over a routed network (Frame Relay, etc.). This solution is only available for SNA products (**CQ-3770MC**, **CQ-3770**, and **CQ-3270**).

Local Direct Connection

This connection allows direct host connectivity through a local workstation. If the workstation is connected to a local Ethernet or Token Ring network, the software communicates through an internal Ethernet NIC or Token Ring adapter card installed on the local workstation. Another option is to use a **CQ-Sync PCI** adapter card to perform the direct connection to the host. For the ultimate in high-speed connectivity, CQ's solutions support channel attach to the host via Bus&Tag. This solution is only available for SNA products (**CQ-3770MC**, **CQ-3770**, and **CQ-3270**).

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