Reporting Application Software (For the ROC800-Series)

User Manual (QER 08Q005)

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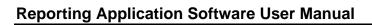
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1 Introduction

1.1 Scope and Organization

This document serves as the user manual for the Reporting Application Software (QER 08Q005), which is intended for use in the ROC800-Series Remote Operations Controllers (ROC800s). This manual describes how to download, install, and configure the Reporting Application Software (referred to as the "Reporting program" or "the program" throughout the rest of this manual). You access and configure this program using ROCLINK™ 800 Configuration Software loaded on an IBM®-compatible personal computer (PC) running Windows® 2000 (with Service Pack 2) or XP.

The sections in this manual are arranged to provide information in the order in which it is needed for first-time users. Once you become familiar with the procedures, and the software running in the ROC, the manual may be used as a reference tool.

The manual has the following major sections:

- Section 1, Introduction
- Section 2, Installation
- Section 3, Configuration
- Section 4, Reference Materials

This manual assumes that you are familiar with the ROC800 units and their configuration. For more information, refer to the following manuals:

- *ROC809 Remote Operations Controller Instruction Manual* (Form A6116).
- ROC827 Remote Operations Controller Instruction Manual (Form A6175).
- ROCLINK 800 Configuration Software User Manual (Form A6121).

1.2 Product Overview

The Reporting program gives the ROC800 product family the capability to print any display stored on the device. The Automated Reporting program runs at a user-defined hourly, weekly, or monthly interval.

1.3 Program Requirements

Two versions of the program are provided. The versions use different point types, but are identical in function. Only one program using a specific point type will run on the ROC at any given time. Load the program version which uses a point type set that does not conflict with programs currently running on the ROC.

The Reporting Application Software version 1.03 is compatible with ROC800 firmware version 2.11 and with version 1.75 (or greater) of ROCLINK 800 software. The software requires you to install a hardware based License Key.

Program specifics include:

File Name	Target Unit/ Version	User Defined Point (UDP)	Flash Used (in bytes)	SRAM Used (in bytes)	DRAM Used (in bytes)	ROCLINK 800 Version	Display Number
Reporting-69.tar	ROC800 2.11	69	24,711	156	180,224	1.75	69
Reporting-77.tar	ROC800 2.11	77	24,711	156	180,224	1.75	77

Note: You must connect a PC to the ROC800's LOI port before starting the download.

For information on viewing the memory allocation of user programs, refer to *Section 7.7* of the *ROCLINK 800 Configuration Software User Manual* (Form A6121).

1.3.1 License Keys

License keys, when matched with valid license codes, grant access to applications such as the Reporting Application program.

The term "license key" refers to the physical piece of hardware that can contain up to seven different licenses (refer to *Figure 1*). Each ROC800 can have none, one, or two license keys installed. If you remove a license key after enabling an application, the firmware disables the task from running. This prevents unauthorized execution of protected applications in a ROC800.

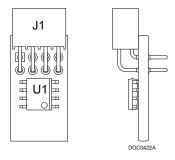


Figure 1. License Key

2 Installation

This section provides instructions for installing the user program into the ROC800. Read *Section 1.3* of the manual for program requirements.

Note: The computer running ROCLINK800 must be connected to the Local Operator Interface (LOI) port before you begin the download.

2.1 Installing the License Key

If you order the Reporting Application program for a new ROC800, your ROC800 is delivered with the license key installed. Go to *Section 2.2*.

If you order the program for an existing ROC800, you must install the license key yourself.



Failure to exercise proper electrostatic discharge precautions, such as wearing a grounded wrist strap may reset the processor or damage electronic components, resulting in interrupted operations.

When working on units located in a hazardous area (where explosive gases may be present), make sure the area is in a non-hazardous state before performing these procedures. Performing these procedures in a hazardous area could result in personal injury or property damage.

To install a license key:

- **1.** Remove power from the ROC800.
- **2.** Remove the wire channel cover.
- **3.** Unscrew the screws from the Central Processing Unit (CPU) faceplate.
- **4.** Remove the CPU faceplate.
- **5.** Place the license key in the appropriate terminal slot (**P4** or **P6**) in the CPU.

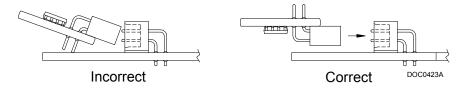


Figure 2. License Key Installation

Note: When using a single license key, install it in **slot P4**.

- **6.** Press the license key into the terminal until it is firmly seated (refer to Figure 2).
- **7.** Replace the CPU faceplate.
- **8.** Replace the screws on the CPU faceplate.
- **9.** Replace the wire channel cover.
- **10.** Restore power to the ROC800.

2.1.1 Verifying the License Key Installation

After you install the license key, you can verify whether the ROC800 recognizes the key. From the ROCLINK 800 screen, select **Utilities** > **License Key Administrator**. The License Key Administrator screen displays:

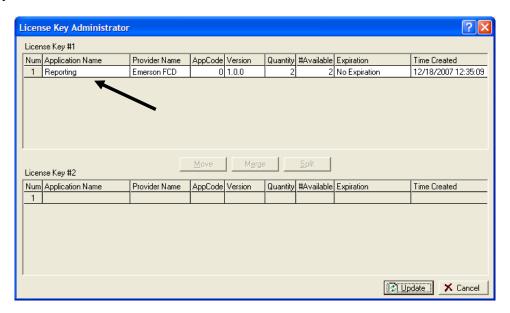


Figure 3. License Key Administrator

Reporting appears in the Application Name column. (For further information on the License Key Administrator screen, refer to *Section 2.4* of the *ROCLINK 800 Configuration Software User Manual*, Form A6121.)

After you verify that the license key is correctly installed and recognized, proceed to *Section 2.2* to download the user programs.

2.2 Downloading the Reporting.tar Program

This section provides instructions for installing the Reporting.tar program file into the Flash memory on the ROC800.

Note: This manual shows the installation of **Reporting-69.tar**. Choose the program version that uses a point type which **does not** conflict with programs currently installed on the ROC.

To download the program using ROCLINK 800 software:

1. Select any empty program number (in this case, number 1) into which to download the program:

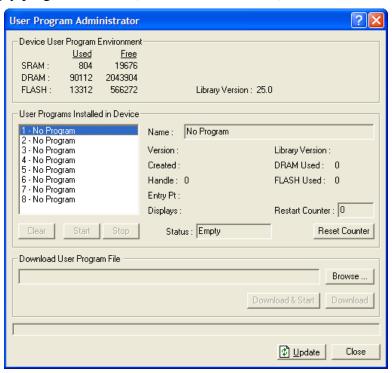


Figure 4. User Program Administrator

- **2.** Click **Browse** in the Download User Program File frame. The Select User Program File screen displays (see *Figure 5*).
- **3.** Select the path and user program file to download from the CD-ROM. (Program files are typically located in the Program Files folder on the CD-ROM.) As *Figure 5* shows, the screen lists all valid user program files with the .TAR extension:

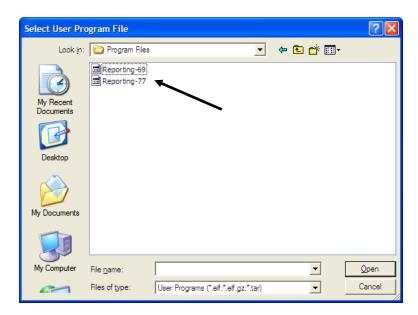


Figure 5. Select User Program File

4. Click **Open** to select the program file. The User Program Administrator screen displays. As shown in *Figure 6*, note that the Download User Program File frame identifies the selected program and that the **Download & Start** button is active:

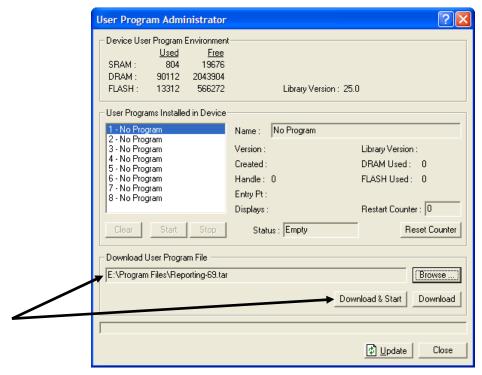


Figure 6. User Program Administrator

5. Click **Download & Start** to begin loading the selected program. The following message displays:



Figure 7. Confirm Download

6. Click **Yes** to begin the download. The following message displays when the download completes:

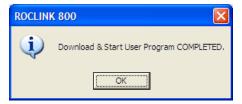


Figure 8. ROCLINK 800 Download Confirmation

- **7.** Click **OK**. The User Program Administrator screen displays (see *Figure 9*). Note that:
 - The Device User Program Environment frame reflects the use of system memory.
 - The User Programs Installed in Device frame identifies the installed program(s).
 - The Status field indicates the program is loaded and running.

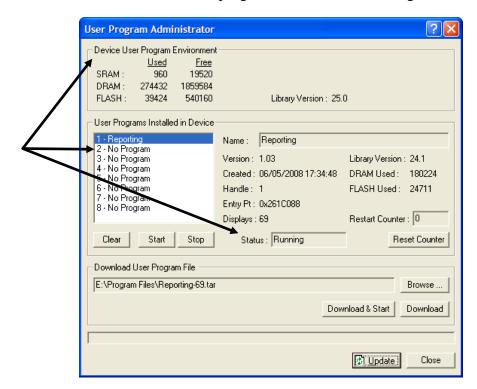


Figure 9. User Program Administrator

8. Proceed to Section 3 to configure the programs.



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3 Configuration

After you have downloaded and started the Reporting Application program, use the Reporting screen to define printer settings for printing user-created reports. To configure the program (after successfully installing the license key, logging onto ROCLINK 800, and installing the program), proceed through the program screens in the sequence described in this section.

You can access all the program-specific screens from the main ROCLINK 800 screen:

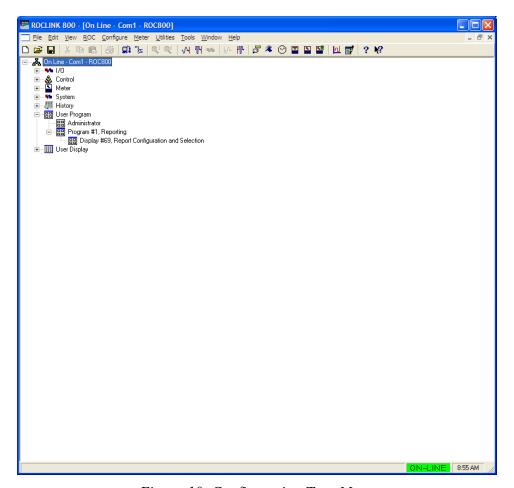


Figure 10. Configuration Tree Menu

3.1 Report Configuration and Selection

Use this screen to define printer settings, report settings, automation, view error messages, and to print user-created reports.

To access this screen:

- 1. From the Directory Tree, select **User Program > Program #1, Reporting**.
- **2.** Double-click **Display #69, Report Configuration and Selection**. The Report Configuration and Selection screen displays:

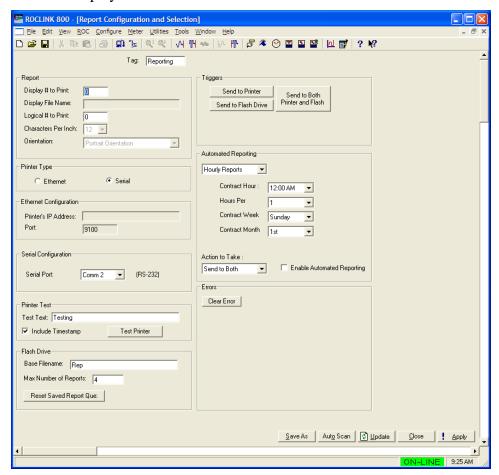


Figure 11. Report Configuration and Selection screen

3. Review the values in the following fields:

Field	Description						
Tag	Sets a unique name for the reporting application. The default value is Reporting .						
Display # to Print	Defines which display to print.						
Display File Name	This read-only field shows the filename of the display that will be printed.						
Logical # to Print	Defines the logical number to print.						
Characters Per Inch	Sets the number of characters per inch to be printed on a page when printing. This number is inverse to font size.						

Field	Description						
Orientation	Sets the orientation of the report to be printed as landscape or portrait.						
Printer's Type	Sets the communication type of the connected printer. Valid selections are Ethernet and Serial.						
Printer's IP	Indicates the IP address of the printer.						
Address	Note: This field is active only if Ethernet is selected as the Printer Type.						
Port	Indicates the port used by your printer. Typically, the default port for Ethernet printers is 9100. Consult your printer manual or network administrator.						
	Note: This field is active only if Ethernet is selected as the Printer Type.						
Serial Port	Indicates the serial port used by the printer.						
	Note: This field is active only if Serial is selected as the Printer Type.						
Test Text	Sets a string of text characters to be included in the test printout.						
Include Timestamp	Adds the ROC's timestamp on the test printout. The default is checked (add timestamp).						
Test Printer	Sends a command to the selected printer to print the test string.						
Base Filename	The file name when a report is saved to the ROC's internal flash memory.						
Max Number of Reports	Sets the maximum number of reports to keep before deleting the oldest. The ROC's internal flash memory holds approxiamately 120 reports with an average report size of 4.5KB.						
Reset Saved Report Que	Click to prevent all current reports in the ROC's internal flash memory from being deleted. Care must be taken not to fill up the ROC's internal flash memory.						
Send to Printer	Click to send the selected report to the printer.						
Send to Flash Drive	Click to save the selected report to ROC's internal flash memory.						
Send to Both Printer and Flash	Click to send the selected report to the printer and save the report to the ROC's internal flash memory.						
Automated Reporting	Sets the frequency that reports are generated. Valid selections are Hourly Reports, Daily Reports, Weekly Reports, and Monthly Reports.						
Contract Hour	Sets the contract hour for automated reports.						
Hours Per	For hourly automated reports, this number defines the number of hours between automated reports. Valid values are 1, 2, 3, 4, 6, 8, and 12.						
Contract Week	For weekly automated reports, the number defines the day of the week to run the automated reports. Valid values are $0-6$.						
Contract Month	For monthly automated reports, this number defines the day of the month to run the report. Valid Values are $0-28$.						
Action to Take	Select an action for automated reports. Valid selections are Send to Printer, Send to Flash, and Send to Both.						
Enable Automated	When checked, enables automated reporting.						
Reporting	Note: You must configure the fields in the Automated Reporting section of the screen before selecting Enable Automated Reporting.						

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Field	Description
Clear Error	Clears any errors the program receives from the printer or program. Possible errors are Bad IP Address Input; Can't Acquire Socket; Cannot Connect, Connection Timeout; Cannot Allocate Memory; Cannot Find/Open Display File; Inet Error; Send Error; Flash Drive Full; Cannot Edit Report Que; and Bad Base Filename.

4. Proceed to *Section 3.2* to save your configuration.

3.2 Saving the Configuration

Whenever you modify or change the configuration, it is a good practice to save the final configuration to memory.

To save the configuration:

1. Select **ROC** > **Flags**. The Flags screen displays:

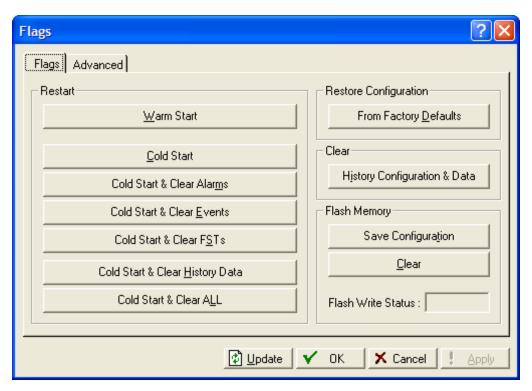


Figure 12. Flags screen

2. Click **Save Configuration**. A verification message displays:

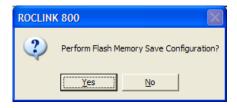


Figure 13. Perform screen

3. Click **Yes** to begin the save process. The Flash Write Status field on the Flags screen displays *In Progress*. When the process ends, the Flash Write Status field on the Flags screen displays *Completed*.

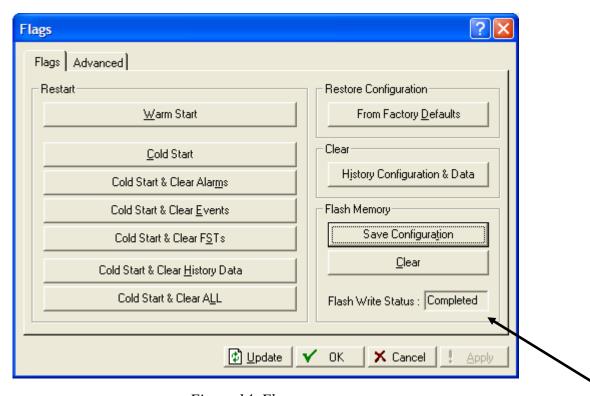


Figure 14. Flags screen

4. Click **Update** on the Flags screen. This completes the process of saving your new configuration.

Note: For archive purposes, you should also save this configuration to your PC's hard drive or a removable media (such as a diskette or a flash drive) using the **File** > **Save Configuration** option on the ROCLINK 800 menu bar.

4 Reference Materials

This section provides instructions for using the Reporting program, and tables of information about the user-defined point type used by the Reporting program.

- Using the Program
- Point Type 69 and 77 (Reporting).

4.1 Using the Program

The Reporting program allows you to create displays and send them to a networked, PCL enabled printer, a serial printer, or save the display to the ROC's internal flash memory

4.1.1 Printing Displays

- 1. Select how the printer is connected to the ROC in the Printer Type field.
- **2.** If you select Serial as the Printer Type, select which communication port on the ROC the printer is connected to and proceed to step 6. If you select Ethernet, proceed to step 3.
- **3.** Connect the ROC to the network and check its internet settings.

Note: Select **ROC** > **Information** and the Device Information screen displays. Select the **Internet** tab. Make sure your Subnet Mask is set to correctly redirect the ROC if the printer is outside of its network, and if so, make sure the Gateway Address points to the appropriate router.

4. Find a **NETWORK** printer and locate its IP address.

Note: For Windows XP users, select **Control Panel** > **Printers&Faxes**. Right click on the desired printer snd select **Properties.** Select the **Ports** tab. The printer's IP address is displayed next to the checked box.

5. In the Report Configuration and Selection screen, fill in the Printer's IP Address and Port number.

Note: The port setting is 9100 for most printers.

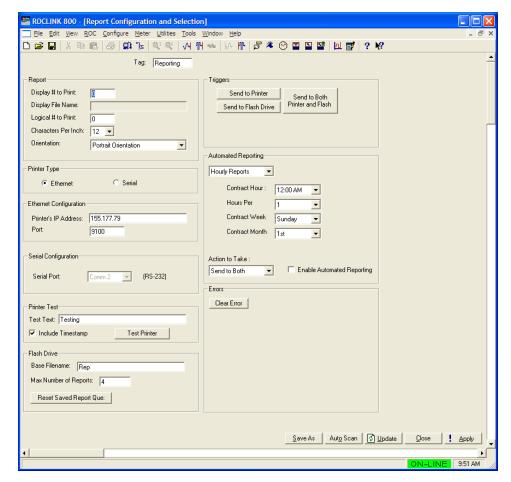


Figure 15. Report Configuration and Selection screen

6. Select **Test Printer** to print out a test page. This allows you to check your network settings.

7. Select View > Display > New from ROCLINK's menu bar to create your own display.

Notes:

- When creating a display, only labels and text boxes display on the printed report.
- Text boxes show their associated TLP data. The data will show [0, 0, 0] if no TLP is selected.
- Use the alignment buttons when creating your display. Objects that are not flush will be shifted to the next line or column.
- **8.** Select the **Save Display To File** icon (**l**) to save the newly created display to your computer.
- **9.** Select **File > Close** to return to the main ROCLINK screen.
- **10.** To load the display you just created, select **User Display** > **Administer** from the configuration tree on the main ROCLINK screen. The Display Administrator screen displays.

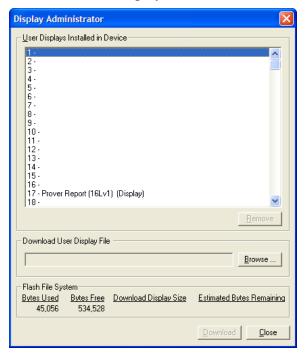


Figure 16. Display Administrator screen

11. Select the display location in ROCLINK you wish to download your display (in this case, number 1) to and click **Browse**.

Note: Remember the location in which you load the display. You use this number to identify the report the program prints.

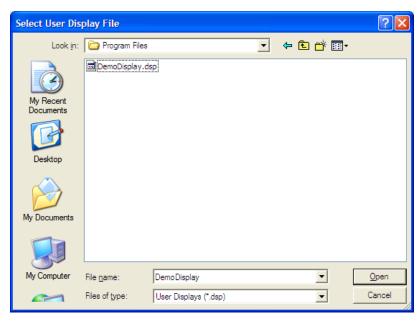


Figure 17. Select User Display File screen

12. Select the file name of the display you just created and click **Open**.

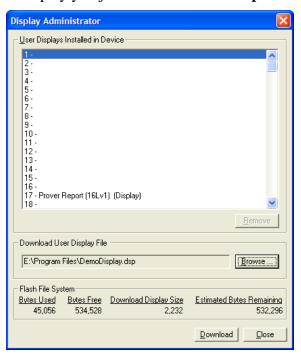


Figure 18. Display Administrator screen

13. Click **Download** to begin loading the selected display. The following message displays:



Figure 19. Download User Display Confirmation

14. Click **Yes** to begin the download. The following message displays when the download completes:



Figure 20. Download User Display Confirmation

15. Click **OK**. The Display Administrator screen displays.

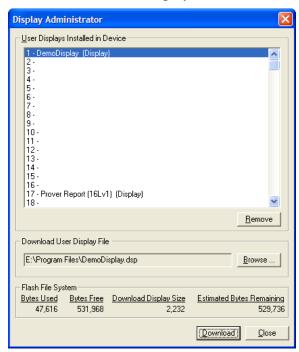


Figure 21. Display Administer screen

16. In the Reporting screen, enter that location number in which you loaded the display as the **Display # to Print** (in this case, number 1).

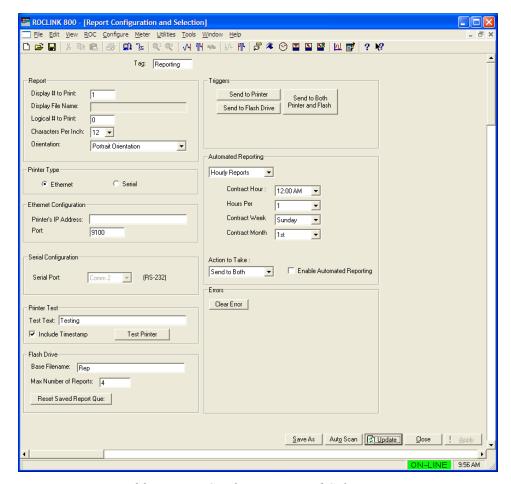


Figure 22. Report Configuration and Selection screen

17. Select which logical to print. This number starts at 0.

Note: For displays with an associated point type, the selected logical is used instead of the textbox or label's logical. Fields using a point type other than the point type associated with the display will behave normally.

- **18.** Depending on the display, adjust the Characters Per Inch (CPI) and the orientation of the printed report. The CPI acts like an inverse font size.
- **19.** Select **Send to Printer** to print the display.

Figure 23. Sample Printed Report

4.1.2 Saving Reports to Flash Memory

Saving a report to the ROC's internal flash memory is similar to sending a report to a printer.

1. Select View > Display > New from ROCLINK's menu bar to create your own display.

Notes:

- When creating a display, only labels and text boxes display on the printed report.
- Text boxes show their associated TLP data. The data will show [0, 0, 0] if no TLP is selected.
- Use the alignment buttons when creating your display. Objects that are not flush will be shifted to the next line or column.
- 2. Select the Save Display To File icon () to save the newly created display to your computer.
- **3.** Select **File > Close** to return to the main ROCLINK screen.
- **4.** To load the display you just created, select **User Display** > **Administer** from the configuration tree on the main ROCLINK screen. The Display Administrator screen displays:

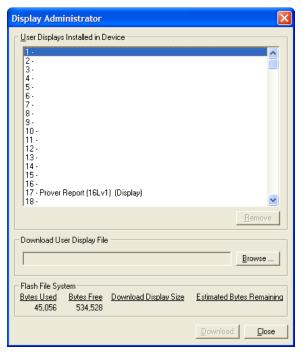


Figure 24. Display Administrator screen

5. Select the display location in ROCLINK you wish to download your display (in this case, number 1) to and click **Browse**.

Note: Remember the location in which you load the display. You use this number to identify the report the program saves.

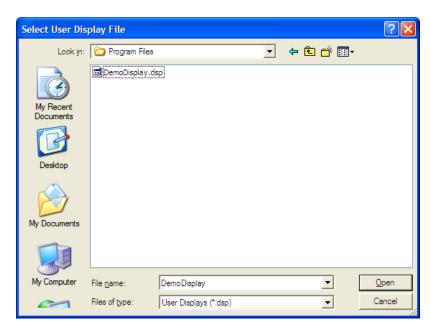


Figure 25. Select User Display File screen

6. Select the file name of the display you just created and click Open.

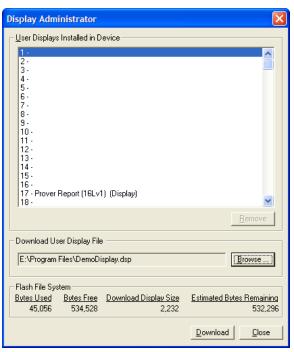


Figure 26. Display Administrator screen

7. Click **Download** to begin loading the selected display. The following message displays:



Figure 27. Download User Display Confirmation

8. Click **Yes** to begin the download. When the download completes the following message displays:



Figure 28. Download User Display Confirmation

9. Click **OK**. The Display Administrator screen displays.

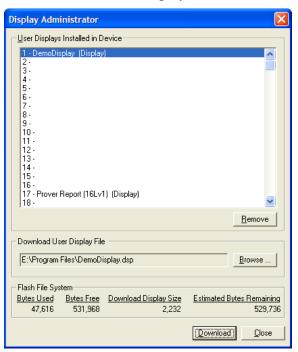


Figure 29. Display Administer screen

10. In the Reporting screen, enter that number where the display was loaded as the **Display # to Print** (in this case, number 1).

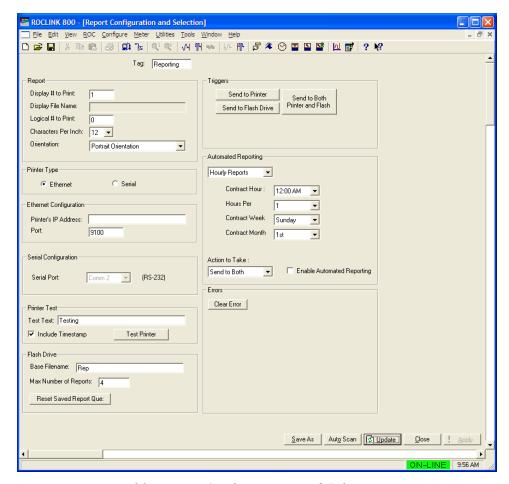


Figure 30. Report Configuration and Selection screen

11. Select which logical to print. This number starts at 0.

Note: For displays with an associated point type, the selected logical is used instead of the textbox or label's logical. Fields using a point type other than the point type associated with the display will behave normally.

- **12.** Depending on the display, adjust the Characters Per Inch (CPI) and the orientation of the printed report. The CPI acts like an inverse font size.
- **13.** Enter a name for the saved report in the **Base Filename** field.

Notes:

- The Base Filename is restricted to 0-9, a-z, A-Z, '.', '-', and '_' characters. This makes the filename Unix compatible.
- When a file is saved to the /flash/data folder, the filename is appended to /flash/reportQue.txt.
- Use the alignment buttons when creating your display. Objects that are not flush will be shifted to the next line or column.

- Empty vertical space between objects is removed. Insert empty boxes to place an object lower on the printed report.
- **14.** Enter a number for the maximum number of reports stored in the ROC's internal flash memory. If this number is exceeded, saving additional reports will delete the oldest report in memory.
- **15.** Click **Send to Flash Drive** to store the report on the ROC's internal flash memory.
- **16.** Click **Close** to return to the main ROCLINK screen.

4.1.3 Viewing Saved Reports

View the report you saved to the ROC's internal flash memory in Section 4.1.2.

1. Select **Utilities** > **Read File From Device** from ROCLINK's menu bar. The Read File From Device screen displays:

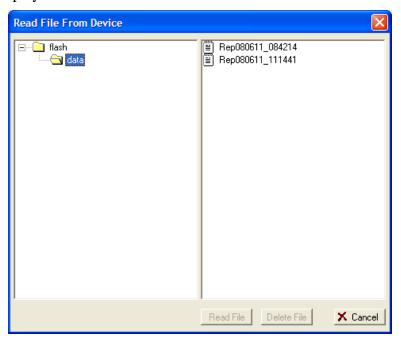


Figure 31. Read File From Device screen

2. Choose the report you wish to view from the list on the right side of the screen and select **Read File**. The Save As window displays:

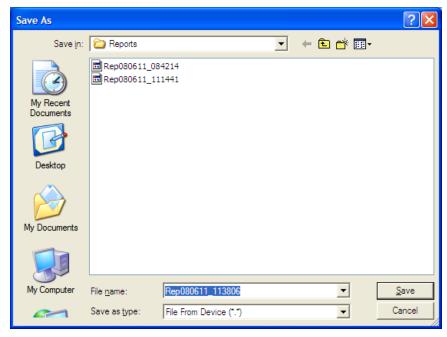


Figure 32. Read File From Device screen

- **3.** Enter the name and location to store the resulting file and click **Save**.
- **4.** Open the stored document with Microsoft® Wordpad to view the file contents.

4.2 Point Type 69/77: Reporting

Point type 69 and point type 77 contain the exact same parameters for the reporting application.

Point Type 69/77: Reporting

Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
0	Point Tag Id.	R/W	User	STRING	20	0x20 → 0x7E for each ASCII character	"Reporting"	1.00	Identification name for specific printer. Values must be printable ASCII characters.
1	Printer IP Address	R/W	User	STRING	20	0x30 → 0x39 or 0x2E for each ASCII character, must make 4 grouping of numbers with a dot('.') in between	0	1.00	Standard IPv4 address example: 155.177.78.160. If an invalid IPv4 address is input, the error TLP is set and printing will disabled. Additional characters after the address will be ignored.
2	Printer Port	R/W	User	U16	2	0 → 65,535	9100	1.00	The port that the printer is listening on for incoming print jobs. Most printers use port 9100, although 515, and 631 are also common.
3	Test TimeStamp	R/W	User	U8	1	0 → 1	0	1.00	0= No timestamp on test page. 1= Add a timestamp on the test page.
4	Test String	R/W	User	STRING	30	0 → 1	"Testing"	1.00	A line of text to print when testing.
5	Command Trigger	R/W	User	U8	1	0 → 4	0	1.00	Master Trigger:
									 0 = Do nothing. 1 = Send test page to printer. 2 = Send report to printer. 3 = Send report to flash drive. 4 = Send report to both printer and flash drive.

Point Type 69/77: Reporting

Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
6	Target Display File Name	R/O	System	STRING	20	0x20 → 0x7E for each ASCII character	sc 33	1.00	The filename associated with the display to be printed. Will be filled in when selecting parameter #7.
7	Target Display to Print	R/W	User	U8	1	0 → 255	0	1.00	Selects the display to be printed. These can be found in the Display Administrator, under "User Display"
8	Target Logical	R/W	User	U8	1	0 → 255	0	1.00	Selects which logical to print. If a display is tied to a point type, then all textboxes associated with that point type will ignore the logical, and use this value instead.
9	Characters Per Inch	R/W	User	U8	1	0x20 → 0x7E for each ASCII character	12	1.00	The number of charters that is printed per inch on the printer. This effectively is an inverse font size setting. Use it to fit large displays onto the printable area.
10.0	Reporting Error	R/W	Both	U16	1	0x20 → 0x7E for each ASCII character	0	1.00	A collection of errors that could impede the application. If set, printing will be disabled and a text message will appear on the display. These are cleared by a button on the display.
10.1	Bad IP Address			Bit 0			0	1.00	Set whenever the user enters an invalid IP address. For example, text or attempting to use hex.
10.2	Bad Port Number			Bit 1			0	1.00	Not implemented.
10.3	Can Not Aquire Socket			Bit 2			0	1.00	Cannot acquire a socket.
10.4	Can Not Connect			Bit 3			0	1.00	Cannot connect to printer. This also applies when timing out.

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Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
10.5	Can Not Allocate Memory			Bit 4			0	1.00	Cannot allocate dynamic (heap) memory. Each display takes 10KB of memory in the process of forming a display.
10.6	Can Not find Display			Bit 5			0	1.00	The associated file does not exist. For example: If display #7 as seen on the display administrator and 7 is selected in parameter #7, then the file "/flash/user_c/dsp/6" will be sought. If it is not found, this bit is set.
									Note: The file is one less then it's "display number."
10.7	Inet Error			Bit 6			0	1.00	An Inet error occurred.
10.8	Sending Error			Bit 7			0	1.00	An error occurred while sending.
10.9	Flash Drive Full			Bit 8			0	1.00	The flash drive is full. The report failed to save to the flash drive.
10.10- 15	Unused								
11	External Print Request TLP	R/W	User	TLP	3	Any valid TLP	0,0,0	1.00	When target TLP is non-zero, it triggers a print request, parameter #5.
12	LandScape Option	R.W	User	U8	1	0 → 1	0	1.00	0 = Portrait. 1 = Landscape.
13	Flash Filename	R.W	User	String20	20	0x20 → 0x7E for each ASCII character	"Rep"	1.00	The basename to be used for the file saved to flash.
14	Max Number of Reports	R.W	User	U8	1	0 → 255	4	1.00	User defined maximum number of flash files to keep before deleting the oldest. For a 4.5KB report it hits the flashdrive limit around 120 reports.

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Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
15	Reset Saved Report Que	R.W	User	U8	1	0 → 1	0	1.00	This will save all the current reports on the flash drive from being deleted. Care must be taken not to fill up the flashdrive.
16	Automated Enabled	R/W	User	U8	1	0 → 1	0	1.02A	Enables or disables automated reports. Configure the type and time before enabling.
17	Type of Automation	R/W	User	U8	1	0 → 4	1	1.02A	Determines how reports are triggered.
									1 = Hourly. 2 = Daily. 3 = Weekly. 4 = Monthly.
18	Automated Trigger	R/W	User	U8	1	2 → 4	4	1.02A	Similar to the Reporting Trigger, but for automated reports. Determines what type of report to trigger.
									2 = Send to Printer.3 = Send to Flash.4 = Send to Both.
19	Contract Hour	R/W	User	U8	1	0 → 23	0	1.02A	Contract hour for automated reports.
									12:00am = 0.
									12:00pm =12.
									11:00pm =23.
20	Hours Per Report	R/W	User	U8	1	1, 2, 3, 4, 6, 8, 12	1	1.02A	For hourly automated reports. The number needs to evenly divide 24.

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Parm #	Name	Access	Program or User Update	Data Type	Length	Range	Default	Version	Description of functionality and meaning of values
21	Contract Week Day	R/W	User	U8	1	$0 \rightarrow 6$	0	1.02A	For weekly reports.
									 0 = Sunday. 1 = Monday. 2 = Tuesday. 3 = Wednesday. 4 = Thursday. 5 = Friday. 6 = Saturday.
22	Contract Month Day	R/W	User	U8	1	$0 \rightarrow 28$	0	1.02A	For monthly reports.
									0 = The first. 1 = The second. And so on.
23	Printer Type	R/W	User	U8	1	0 → 1	0	1.03	Selects the type of printer used.
									0 = Ethernet 1 = Serial
24	Serial Port	R/W	User	U8	1	0, 2, 3, 4, 5	2	1.03	Selects which ROC serial port the printer is connected to.
									0 = LOI 2 = Comm 2 3 = Comm 3 4 = Comm 4 5 = Comm 5

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