GETTING STARTED

In this Chapter...

Introduction

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ViewMarq is an LED message display utilizing the latest LED and communications technologies for industry. It utilizes both serial and Ethernet communications. The display can be connected to a PLC or any device capable of sending serial ASCII, Modbus RTU, or Modbus TCP communications. It can accept commands over Modbus and Modbus TCP, or serial ASCII.

Some of the features of the ViewMarq LED message displays are:

- Powered by 100 to 240VAC or 24VDC
- Low power consumption, high-efficiency switch mode supply
- CE, UL508, NEMA12 indoor, NEMA 4 indoor
      (Models: MD4-0112T, MD4-0124T, MD4-0212T, MD4-0224T,
      MD4-0412T and MD4-0412T)
- CE, UL61010, UL61010-2-201, NEMA12 indoor, NEMA 4 indoor
      (Models: MD4-0112T-1, MD4-0124T-1, MD4-0212T-1, MD4-0224T-1,
      MD4-0412T-1 and MD4-0412T-1)
- Multiple mounting options
- Free, easy to use configuration software
- No configuration DIP switches. Everything is set through software for ease of use.
- RS-232/485 Serial ASCII and Modbus RTU and Ethernet Modbus TCP communications can be used at the same time.

Purpose of the Software

The ViewMarq Configuration Software serves four purposes:

1) Create and Preview Messages

2) Display messages on the ViewMarq

3) Configure the ViewMarq LED display

4) Create ASCII String Commands that may be used in a PLC to control the LED message display

5) Create and load a Message list to the ViewMarq LED display.

Purpose of this Manual

This user manual provides information that will help you mount, wire, configure, use, troubleshoot, and maintain your ViewMarq message display. The manual includes information that is critical to the safety of the personnel who will install and use the display, and to the machinery, processes, and equipment that interact with the display.

Conventions Used

When you see the exclamation point icon in the left-hand margin, the paragraph to its immediate right will be a warning. This information could prevent injury, loss of property, or even death in extreme cases. Any warning in this manual should be regarded as critical information that should be read in its entirety. The word **Warning** in boldface will mark the beginning of the text.

When you see the attention icon in the left-hand margin, the paragraph to its immediate right is intended to draw attention to important information that will affect the functionality of the device. The word **Attention!** in boldface will mark the beginning of the text.

When you see the notepad icon in the left-hand margin, the paragraph to its immediate right will be a special note. Notes represent information that may make your work quicker or more efficient. The word **NOTE:** in boldface will mark the beginning of the text.

Key Topics for Each Chapter

The beginning of each chapter will list the key topics that can be found in that chapter.

GETTING STARTED   CHAPTER **1**

In This Chapter...

What's in the Box?

1

Included in the shipping carton are the following:

1) The ViewMarq LED message display unit

2) Mounting Brackets
   - Two Wall-Mount Bracket assemblies with hardware (disassembled)
   - Two Chain Mount Brackets with hardware (disassembled)

3) Back Covers
   - Power Back Cover
     · 1/2" cable gland for power cable (with 10mm grommet installed)

   - Communication Back Cover
     · Two 1/2" cable gland (6mm and 10mm grommets installed)
     · 3/4" cable gland (with 6mm split grommet installed)
     · Two cable gland plugs (one 6mm, one 10 mm)

4) Accessories
   · 7-ft. Ethernet Patch Cable
   · Installation Guide

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Getting Started

About Getting Started

If you are familiar with LED message displays and PLCs in general, then following the simple steps in this chapter may be all you require to start being productive using a ViewMarq LED display. After you have completed the steps, your ViewMarq LED display will be displaying messages you create on your PC. If you are new to the world of LED displays and PLCs, be sure to familiarize yourself with all of the chapters in this user manual to help you get started.

Supplemental Manuals and Other Help

The ViewMarq Configuration Software (MD-PGMSW) can be downloaded free from the AutomationDirect web site **(http://www.automationdirect.com)**. This User Manual (MD-USER-M) is free as a download. The ViewMarq Configuration Software also includes searchable online help topics covering all aspects of the software and ASCII Command specifications.

Technical Support

We strive to make our manuals the best in the industry. We rely on your feedback to let us know if we are reaching our goal. If you cannot find the solution to your particular application, or, if for any reason you need technical assistance, please call us at:

770–844–4200

Our technical support group will work with you to answer your questions. They are available Monday through Friday from 9:00 A.M. to 6:00 P.M. Eastern Time. We also encourage you to visit our web site where you can find technical and non-technical information about our products and our company.

http://www.automationdirect.com

AutomationDirect.com
3505 Hutchinson Road
Cumming, GA, USA 30040

Before You Begin...

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It is recommended that the following items be available to make this short step-by-step introduction to the ViewMarq LED message display go smoothly.

ViewMarq LED message display

AC Power Cord

DC Power Supply
Example: PSP24-60S

or

ViewMarq User Manual
and Installation Guide

ViewMarq Software
installed on a PC
(Windows XP SP3 minimum)

Ethernet Patch Cable
(One 7-ft. cable supplied)

#1 Phillips Head Screwdriver and a
Small Flat Head Screwdriver
Examples: TW-SD-VPH-1 & TW-SD-VSL-1

Wire Strippers
Example: DN-WS

Hookup Wire

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Step 1 - Install Configuration Software

The ViewMarq Configuration Software runs on the Windows® operating system. Please see the AutomationDirect website for current compatibility information. A serial or Ethernet connection between the PC and ViewMarq display is required for programming the ViewMarq display. Follow the steps below to install the ViewMarq Configuration Software.

1) Download the ViewMarq Configuration Software from the following AutomationDirect.com web site: **http://support.automationdirect.com/downloads.html** and UnZip the downloaded .zip file.

2) Double-click ViewMarq Install.exe

3) The ViewMarq Configuration Software splash screen will appear after a short delay.

4) Click on the Install button and follow the instructions to install the ViewMarq Configuration Software.

# Step 2 - Launch Configuration Software

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After installing the ViewMarq Configuration Software, MD-PGMSW, from the PC's Start menu, select All Programs, AutomationDirect, ViewMarq and click the ViewMarq Configuration Software.

The ViewMarq Configuration Software will start up and display the Main Window as shown.

NOTE: The minimum screen size for the ViewMarq Configuration Software is 1024 X 768 pixels.
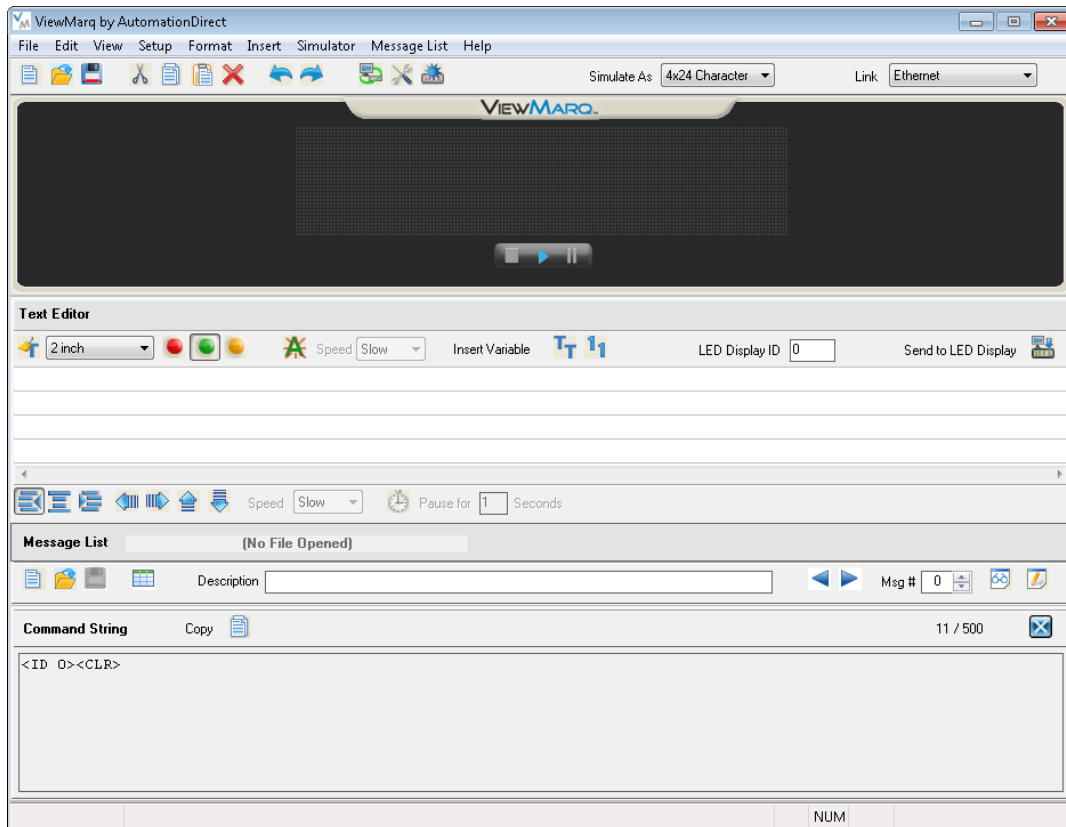
Step 3 - Connect Power Wiring

The ViewMarq LED message display can accept DC power (24VDC) or AC power (120 or 240 VAC). There is a power terminal for each.

Warning: Only one power source should be connected to the ViewMarq display. Observe all of the wiring precautions stated in this User Manual and the Installation Guide. For more details on wiring and installation refer to Chapter 3, Hardware Installation.
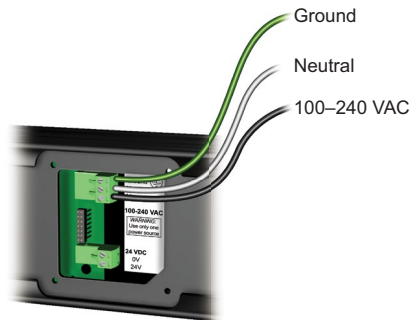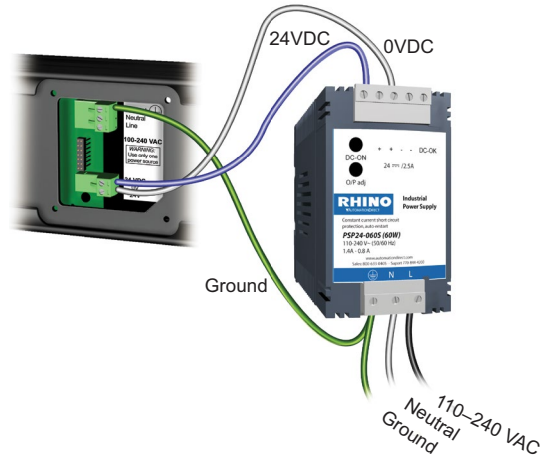
AC Power Input   DC Power Input

Connect either DC or AC power per the following diagram. Be sure to connect Earth Ground to the Ground terminal regardless of the supply voltage. Wiring terminals should be torqued to 4.5 in·lbs (0.5 N·m).

Model	Max Input Power
MD4-0112T(-1)	22W
MD4-0124T(-1)	38W
MD4-0212T(-1)	38W
MD4-0224T(-1)	74W
MD4-0412T(-1)	74W
MD4-0424T(-1)	123W

| Model	Max DC Current
MD4-0112T(-1)	1A
MD4-0124T(-1)	1.5 A
MD4-0212T(-1)	2A
MD4-0224T(-1)	3.5 A
MD4-0412T(-1)	3.5 A
MD4-0424T(-1)	4A

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Step 4 - Connect the ViewMarq Message Display to a PC

The default settings of the ViewMarq LED display make connecting to a PC for the first time very simple. You can connect in one of two ways: Ethernet or Serial. We will cover Ethernet for this example. Refer to Chapter 4 – PC to ViewMarq Communication for other communications options.

Ethernet

The simplest way to connect the ViewMarq to a PC is through the Ethernet Port.

1) Using a straight-through or crossover Ethernet patch cable, connect the ViewMarq to the PC's Ethernet port. The system will automatically detect the cable type. (One 7-ft straight-through cable is supplied with the ViewMarq.)

2) The ViewMarq LED display can also be connected to a local Ethernet network via a straight-through or crossover cable.
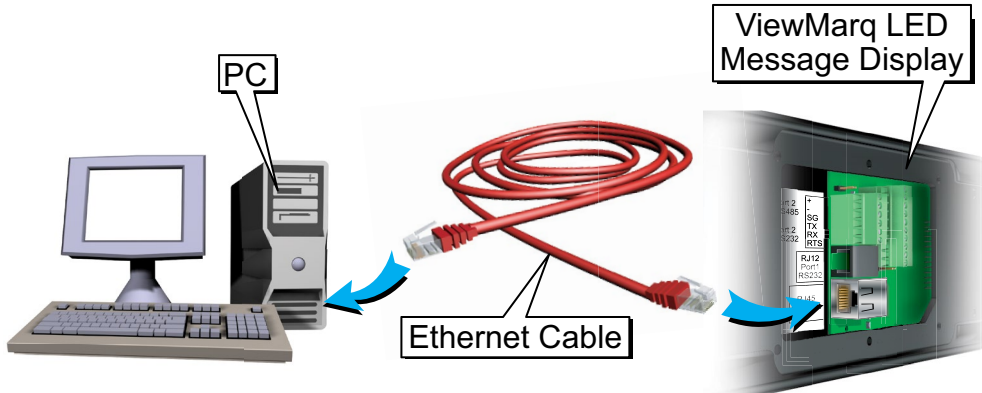
Step 5 - Apply Power to the Display

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Turn on the power source and check for the Start-Up Message scrolling on the display.

Typical Start-Up Message

ViewMarq Display_438F FW AI V1.55 ** ETH 169.254.15.12** P1 AS 1 38400 8O1**P2 MB 1 38400 8O1**

** **ViewMarq Display_438F** - View Marq Identifier and Display Name

** **FW AI V1.55** - Firmware Version

** **ETH 169.254.15.12** - Ethernet IP Address

> (If no cable is connected IP Address will be 0.0.0.0)

** **P1 AS 1 38400 8O1** - Port 1 Settings
> AS - ASCII, MB - Modbus
> Node ID - 1 to 247
> Baudrate - 38400, 19200, 9600, 4800, 2400
> Data bits - 8 or 7
> Parity - O - Odd, E - Even, N - None
> Stop Bits - 1 or 2

****P2 MB 1 38400 8O1** - Port 2 Settings
> AS - ASCII, MB - Modbus
> Node ID - 1 to 247
> Baudrate - 38400, 19200, 9600, 4800, 2400
> Data bits - 8 or 7
> Parity - O - Odd, E - Even, N - None
> Stop Bits - 1 or 2

Refer to Chapter 5 for more information on the port settings for the display.
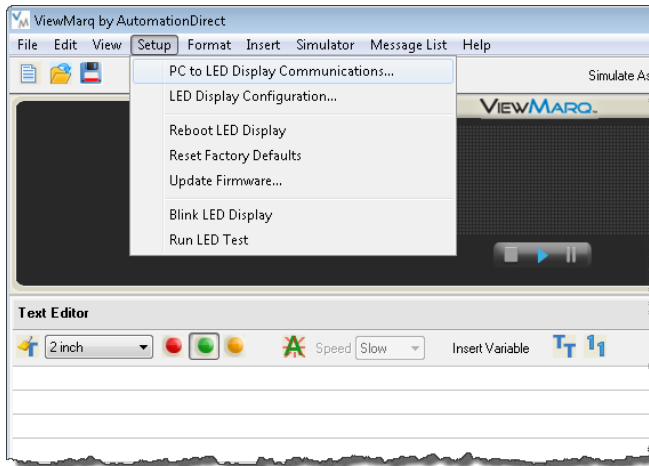
Step 6 - Create Link between the ViewMarq and your PC

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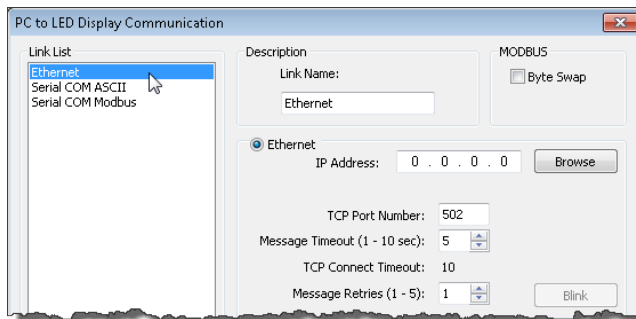### Establishing Ethernet Communications with the ViewMarq Message Display

NOTE: See Chapter 4 for establishing serial communication with the ViewMarq message display.

First, select the Ethernet link:

1) From the Setup menu select **PC to LED Display Communications**.


2) In the PC to LED Display Communications dialog box, select Ethernet in the Link List.

3) In the PC to LED Display Communication dialog box, select the **Browse** button to browse the network for any connected ViewMarq LED display.

4) The **Ethernet Browse** dialog box will open and the connected ViewMarq LED display will be listed as shown below.

If the ViewMarq does not show up on the list:
> A. Check the physical connection.
> B. Check that the Ethernet port on the PC is enabled.

If the PC has multiple Network Interface cards, disable those not in use.
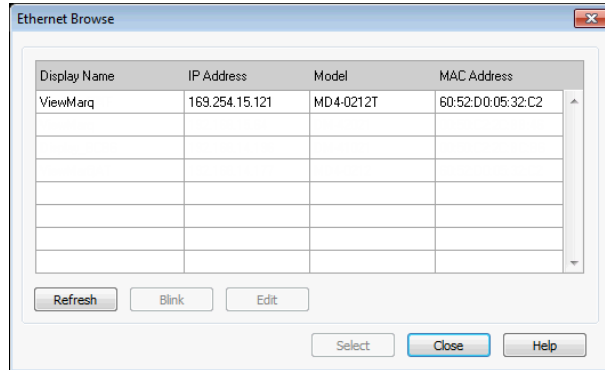
5) Select the ViewMarq LED message display in the table.

6) If the IP Address is correct on your local Subnet, click **Select** and **proceed to step 14**.

NOTE: *If the IP Address of the ViewMarq is 169.254.XXX.nnn then no DHCP server was found to issue an IP Address. Check the IP Address of the ViewMarq and set the IP Address of the ViewMarq to be on the same subnet as the PC.*

If the IP Address of the ViewMarq is 0.0.0.0, then the ViewMarq is not connected to an Ethernet network.

7) If the IP Address is not on your Subnet it must be changed. Select it and click **Edit** to open the **Ethernet Browse Editor**.
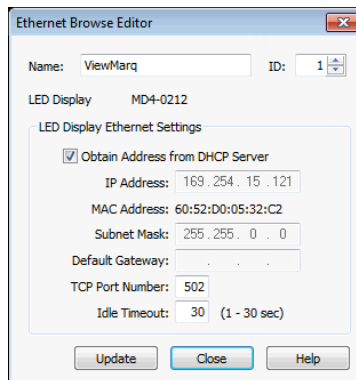
8) Deselect **Obtain IP Address from DHCP Server**.

9) Enter an IP Address, Subnet Mask and Default Gateway compatible with your PC's Ethernet settings or check with your IT department for proper settings.

10) You may also choose to change the name of the ViewMarq display and ID number at this time.

11) Select **Update**. The ViewMarq LED display will automatically reset. The new settings will scroll on the screen.

12) In the **Browse** window select the **Refresh** button.

13) When the ViewMarq is listed in the table again select it and click **Select**.
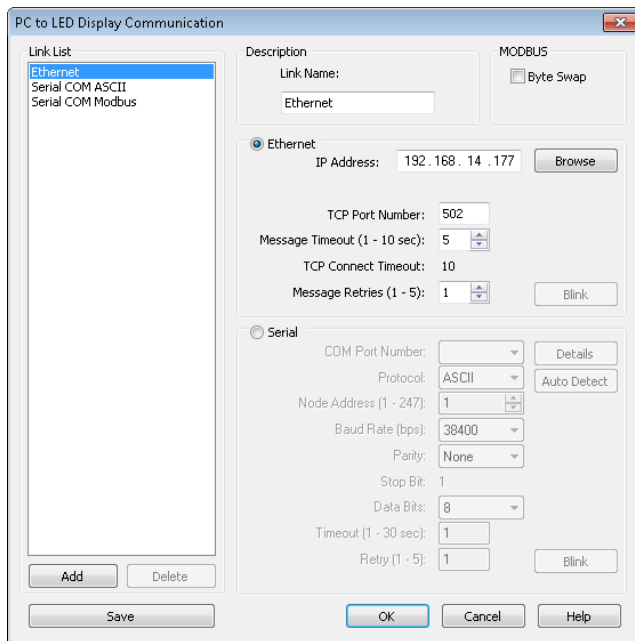

14) Select **Save** and **OK.**

You have now established an Ethernet link from your PC to your ViewMarq LED display. You are ready to send messages to your ViewMarq.

For more information on connecting to the ViewMarq display and creating links, see Chapter 4 - PC to ViewMarq Communication.

Step 7 - Creating Messages

Creating a new message in the ViewMarq software is simple; just start typing.

1) To create a message, start typing in the Text Editor window.
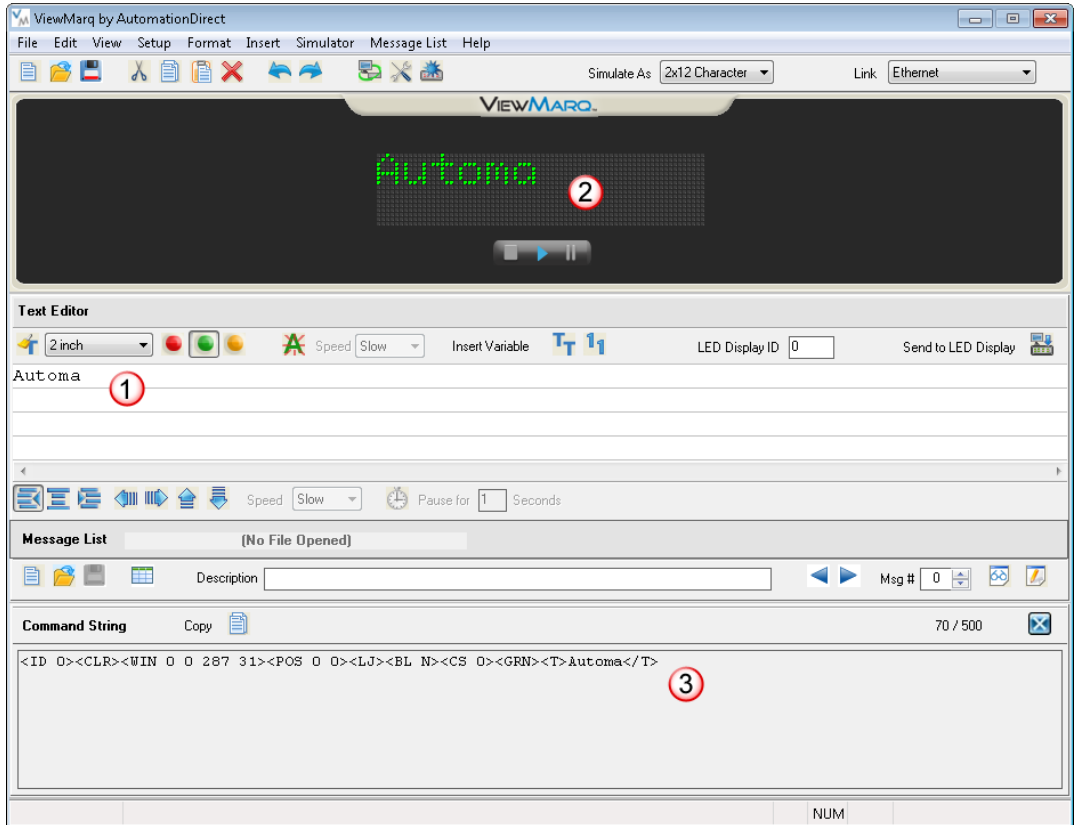
2) As text is entered, it is automatically displayed in the simulator.

3) Also, an ASCII formatted string is automatically created for use in your PLC instruction.

To get more attention with your message, you may change the Text size, Color and / or make it Blink. You can also choose to justify the text to the Center or Right or make the text Scroll. Experiment with the different effects that can be used to modify and display your text in creative ways.

For more information on Formatting Messages, see Chapter 5 - Creating and Previewing Messages.

NOTE: *The <ID 1> is set by entering "1" in the LED Display ID box in the Text Editor window.*

Step 8 - Simulating Messages

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The ViewMarq Simulator shows all text colors, blinking text, scrolling messages and inserted variables just as they appear on the ViewMarq display.

NOTE: Shades of color, blink rates and scroll speeds may vary depending on your PC environment and display.

To see what your message will look like on the ViewMarq display, you can simulate it as if it were on your particular model. In the example below, the model selected is a MD4-0424T-1, the 4-line by 24-character tri-color model.
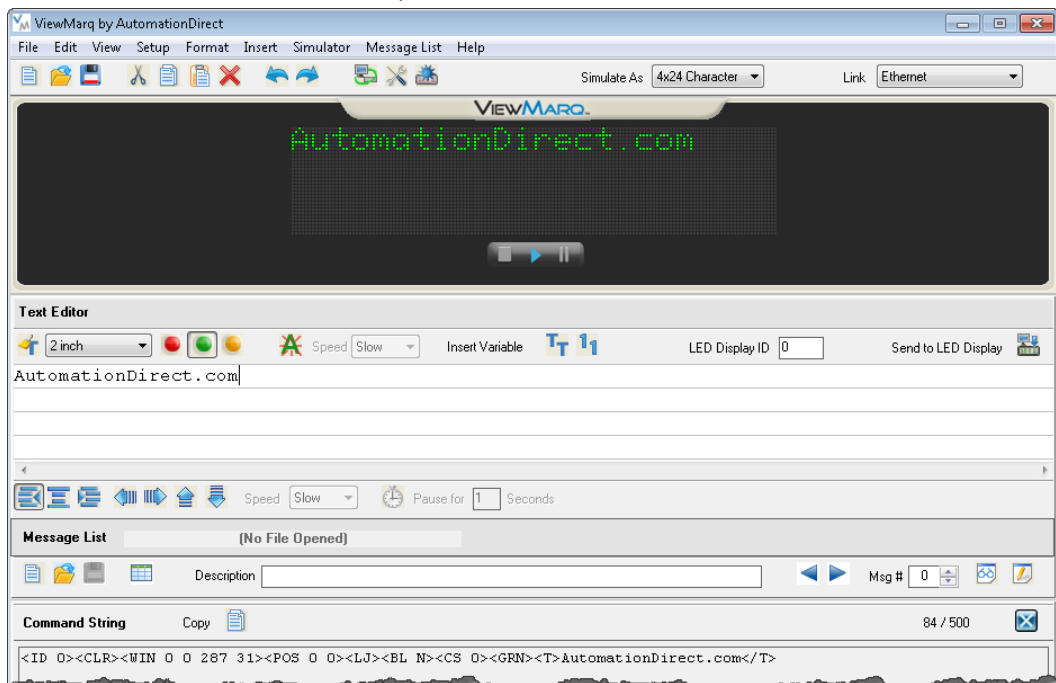
Stop / Play

By default the Simulator is in **Play** mode. This means that any motion such as scroll or blink will be seen in the Simulator as it will look on a message display. Selecting **Stop** will stop the Simulator from running until **Play** is selected. When **Play** is selected, the simulation will start over from the beginning. Even when it is stopped, the Simulator will still show text as it is typed.

Pause

When the Simulator is in **Play** mode and **Pause** is selected, the simulation will stop where it is. When **Pause** is selected again, the simulation will continue where it left off. If the message is modified while paused, the simulator will clear until un-paused.

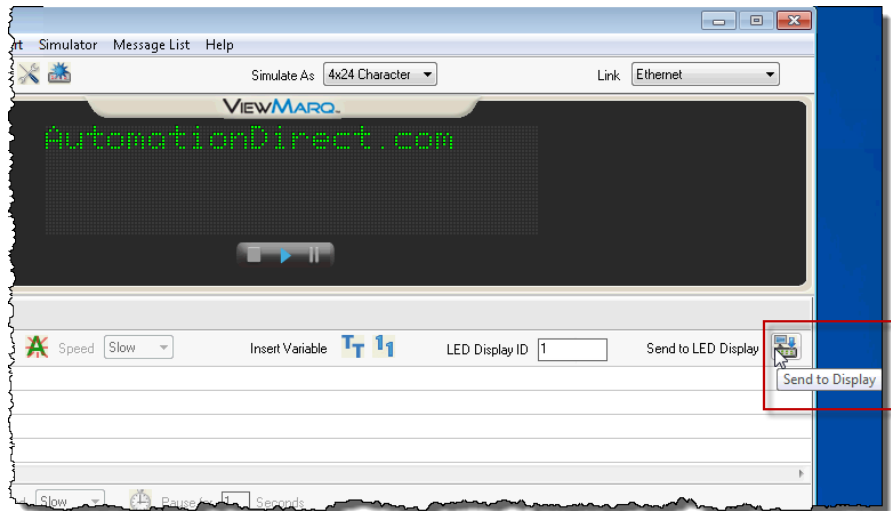# Step 9 - Sending Messages to the ViewMarq Message Display

Now that you have:

1) established a Link with your ViewMarq,

2) created a message,

3) previewed it on the Simulator,

it is time to display the message on the ViewMarq message display.

With your Link selected simply press the **Send to LED Display** Button below the Simulator.

Your text should be displayed on the LED message display.

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Step 10 - Sending Messages from your PLC to the ViewMarq

Sending messages one at a time from the PC software is not always convenient. It is much more common to use your control system to display a series of messages or to control messages/data to be displayed based on your control system conditions.

As you create a message in the ViewMarq software, the software creates an ASCII string of commands that the ViewMarq recognizes to display the message you created.

Command String	📄 Copy		86 / 500	✖

`<ID 1><CLR><WIN 0 0 287 31><POS 0 0><LJ><BL N><CS 0><GRN><T>Hello World</T>`

CLR NUM
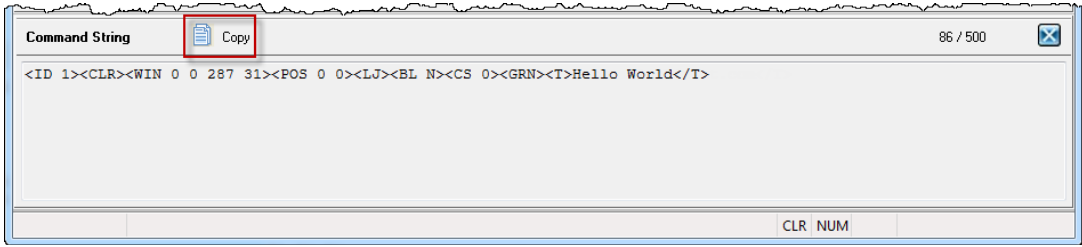
This string may be copied to the PC clipboard and pasted into your PLC's instruction or memory, and sent either serially or over Ethernet to the ViewMarq.

The ViewMarq can receive an ASCII Command String by:

Protocol	Connection
ASCII	RS-232 (Port 1), RS-485 (Port 2)
Modbus RTU	RS-232 (Port 1), RS-485 (Port 2)
Modbus TCP	Ethernet
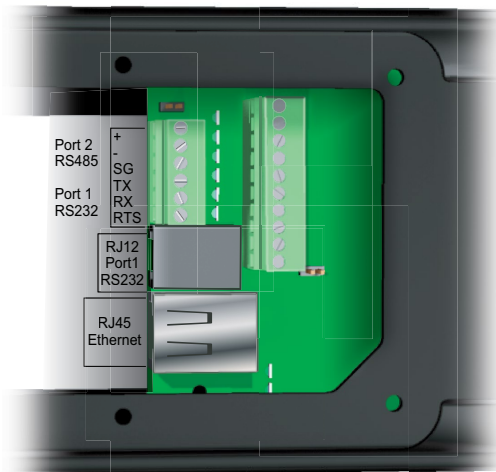
The following example shows you how to send messages to the ViewMarq from an AutomationDirect CLICK PLC using RS-232 and the ASCII protocol.

See Chapter 7 - Sending Messages from a PLC to ViewMarq for more information.

1) Using the CLICK Programming Software set Port 2 on the CLICK PLC Com Port to match the default settings for the ViewMarq LED message display as shown below:
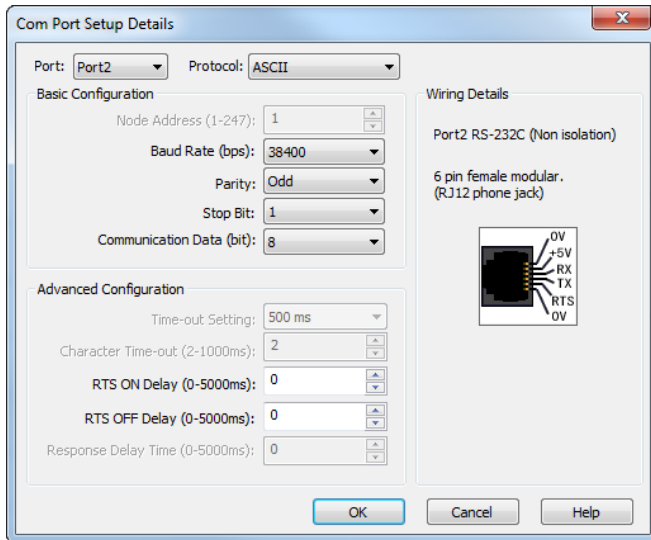
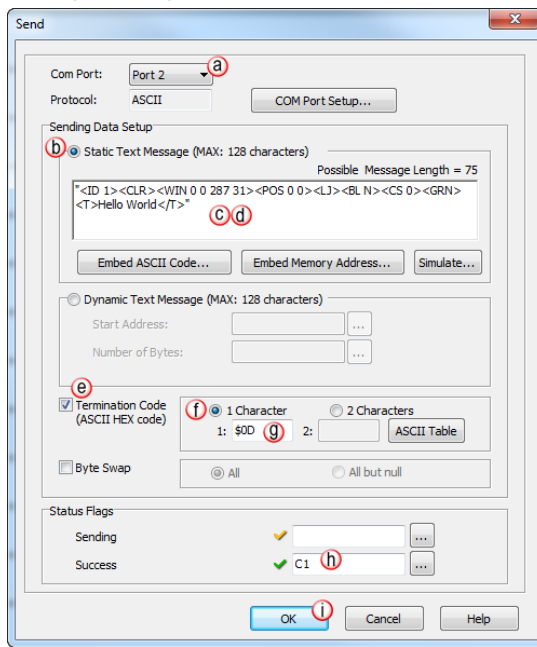|	
Protocol:	ASCII
Baud Rate:	38400
Parity:	Odd
Stop Bit:	1
Data Bits:	8

2) In the ViewMarq Software, type and configure a message. Copy the string in the Message String window by selecting Copy on the Message String Toolbar.
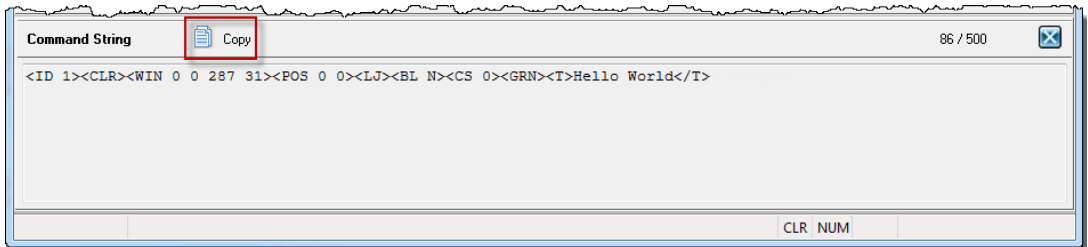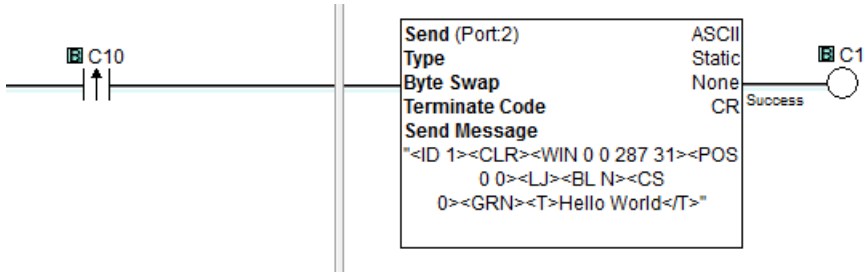
3) In the CLICK Programming software use a SEND instruction as shown below.

a) Select Port 2 for RS-232 (or 3 for RS-485) for the Com Port.

b) Select the Static Text Message radio button

c) Click in the Text Box and press Ctrl-V on your keyboard to paste the command string into the instruction.

d) Add quotes to the beginning and end of the string.

e) Select the Termination Code checkbox

f) Select 1 Character radio button

g) Enter $0D (Dollar Zero Dee) to embed a Carriage Return at the end of the string.

h) Select an address for the success bit. For example C1.

i) Select OK

1

```
                                    Send (Port:2)            ASCII
      C10                           Type                     Static        C1
  ─────┤↑├──────────────┃┃────────  Byte Swap                 None   ─────( )─────
                                    Terminate Code               CR  Success
                                    Send Message
                                    "<ID 1><CLR><WIN 0 0 287 31><POS
                                            0 0><LJ><BL N><CS
                                        0><GRN><T>Hello World</T>"
```

NOTE: *To prevent the string from being sent with every scan of the PLC use an EDGE triggered (or One Shot) instruction.*