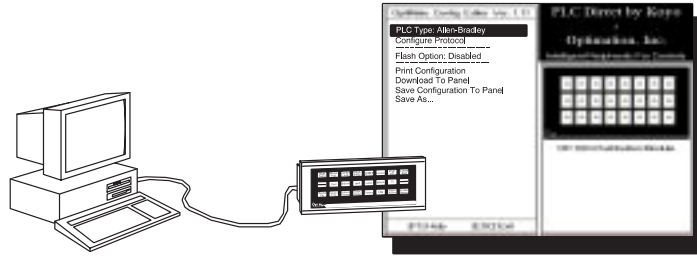# Configuring Multiple Panels with the OPEditor

You configure multiple panels by loading the OPEditor software on a personal computer and selecting the appropriate options. The setup options for your system configuration such as type of PLC being used, communications protocol, and the type of panel being used are handled through an on-screen dialogue.

System Requirements

In order to use the OPEditor software, you must have the following components:

- IBM 386 (or better) compatible computer
- VGA or SVGA video board and color monitor
- DOS 5.0 or higher and 3 1/2" disk drive
- At least 1 meg of hard drive space and 1 meg of RAM

At the time of publication of this manual, we are providing a DOS version of the OptiMate OPEditor configuration software. In early 1996, we will have a Windows version available.

There is only one installation disk for this software. You must have a 3-1/2 inch drive in order to install it. We suggest you make a backup copy of this disk before making the installation.

How to Install

Here are the easy steps for successful installation of the software:

1. Insert the disk in the 3 1/2" floppy drive of your computer.
2. From the DOS prompt, execute the INSTALL.EXE file. For example, if the disk is in drive A, and you are logged onto your hard drive, type the following:

   . . . . **A: install**   press **<Return>**
3. You will be prompted to accept the default directory (C:\OP) or change it. Make the choice and press Enter.
4. The software will automatically insert files in the directory you have named. These will use about 400 kilobytes of hard drive space. You should view the OPTITEXT.WRI file to take advantage of demo files and other useful information. The main file is OPEDITOR.EXE. The other files are for fonts and configuration information. Two subdirectories are created: (1) modules, and (2) systems. These are used to store your configuration data.
5. You will automatically be returned to the DOS prompt after the files and directories have been created, and you press the Return key. Installation is now complete!

Step-by-Step Procedure

NOTE: You do not need to connect the OP-9001 or any of the OP-panels to your computer until you are ready to download configuration information. Remember that the panels must have their DIP switch set to 31 and that the OP-9001 must have a jumper in place before the configuration can be successfully written. You will remove the jumper on the OP-9001, and reset the DIP switch settings on the panels, when you connect your configured system to the PLC for actual operation.

Step 1
Load the OPEditor
**and Complete the**
Editor Setup

You can operate the OPEditor as a DOS program out of DOS only. Do not attempt to operate the program out of Windows. If you are in Windows, close Windows completely, change to the directory in which you have stored the OPEditor executable file (default is C:\OP), and then type the file name (OPEDITOR) from the DOS prompt.

The first configuration screen has 4 choices. You should select the first choice, **Editor Setup**.
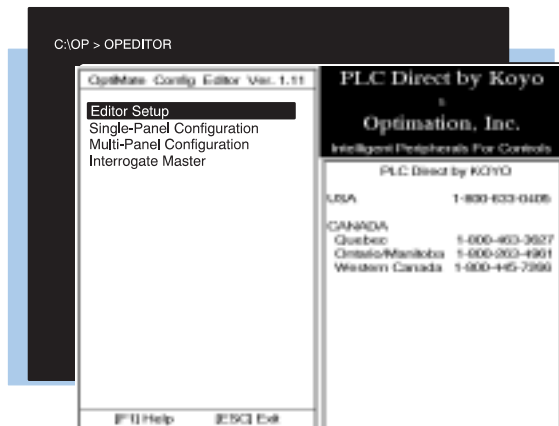
Step 2
Select the
LPT and COM ports

The setup screen provides two serial port options: You must specify which of the serial ports (**COM1** or **COM2**) that you will be using when communicating with your OP-panel. The setup screen will also allow you to designate which parallel port (**LPT1** or **LPT2**) to use for printing your configuration.
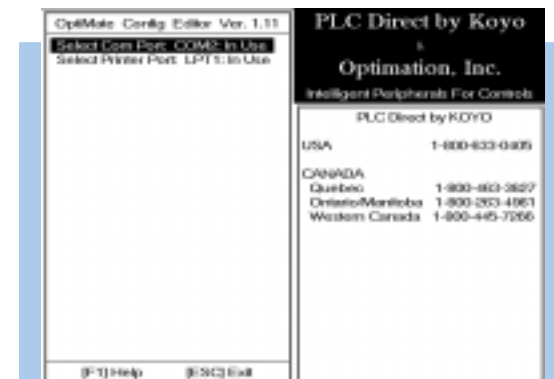
Step 3
Select Multi-Panel
Configuration

Next, you must press <**ESC**> to return to the first screen again. Here you will need to select **Multi-Panel Configuration**. Even though you will be configuring each individual panel, as well as the OP-9001, it is all done through this Multi-Panel Configuration path. You do not use the Single-Panel Configuration for any reason when you are configuring a multi-panel system.
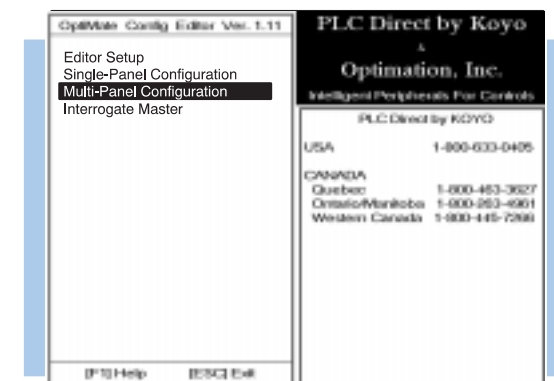
**Step 4
Select the
Source for your
Configuration**

When you select **Multi-Panel Configuration**, another menu appears that allows you to choose from the following actions:

> Browse the OP Directory for an existing system configuration.

> Enter a path and filename of an existing system configuration.

> Upload a system configuration already in the OP-9001 panel.

> Configure a new system.

You will want to select **Configure a New System**, since you are creating a configuration file for the first time.
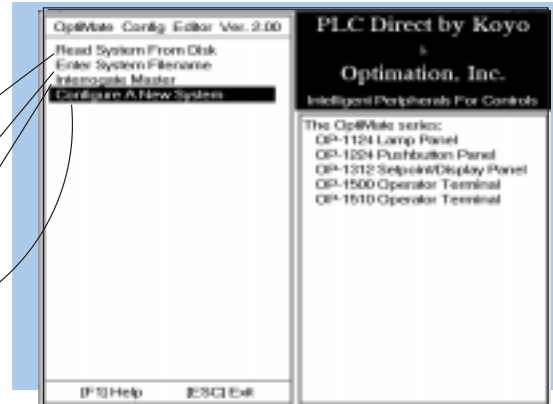
**Step 5
Enter the Correct
PLC Brand and Type**

As soon as you make the above selection and press the <**Enter**> key, you will go to a screen that allows you to choose from either **PLCDirect** or **Allen-Bradley**.

After making your selection, press the <**Enter**> key to return to previous screen.
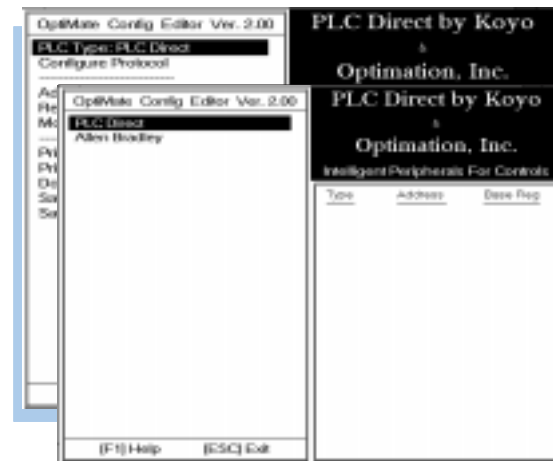
**Step 6A
Select Configure
Protocol and the PLC
Subtype**

Select **Configure Protocol**. Here we are selecting the communications protocol that will be used between the PLC and the OP-9001.

This will take you to another screen that gives you a selection of **PLC Subtype**. The default subtype (for PLC*Direct*) is indicated. In this example shown, the default is **Direct-Net 205**. To change this, press the <**Enter**> key.

Select the desired protocol for the CPU subtype that you are using. Refer to the appropriate CPU User Manual for the correct protocol corresponding to the communications port you are using.

Make sure your choice here matches the CPU port into which you will actually be connected. On some PLC*Direct* models, one port is K-sequence and another may be *Direct*Net. On others, you may only have one protocol available.
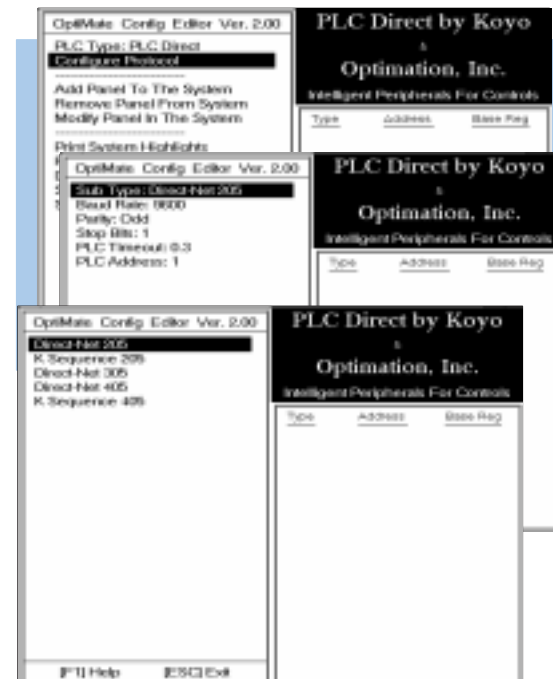
**Step 6B
Set the Baud Rate,
Parity and Stop Bits**

If you are using a PLC*Direct* or compatible programmable controller with your OP-9001, you can use the chart shown on the right to help you select the proper baud rate, parity and stop bits.

If you are using an Allen-Bradley SLC 5/03 or 5/04, you must select either 4800 or 9600 baud. Your Allen-Bradley configuration software shows a default baud rate of 1200; so you must change this. You must also be connecting through Channel 0 (the bottom serial port) and be set to DF1 full duplex.

| PLC Model	Port/Baud Rates	Parity	Stop Bit
DL230/240	Top 9600	Odd	
	Bottom (DL240 only) 1200/9600/19.2k	Odd/None	1
DL330	DCU 1200/9600/19.2k	Odd/None	1
DL340	Top 1200/4800/9600/19.2k	None	
	Bottom 1200/4800/9600/19.2k	None	1
DL430/440	Top 9600	Odd	
	Bottom 1200/9600/19.2k	Odd/None	1
DL450	DB15 9600	Odd	
	DB25 1200/4800/9600/19.2k	Odd/None	1
	RJ12 1200/4800/9600/19.2k	Odd/None	

**Step 6C
Set the Timeout**

When the OP-9001 sends a message to the PLC, and either does not receive a response or does not understand the response, it will wait the timeout period before resending the message. The default timeout period is 0.3 seconds. You can change this, if you like. The range is from 0.2 seconds to 25.5 seconds.

**Step 6D
Set the PLC Address
for the Port Used**

Each PLC*Direct* or compatible has addresses associated with its communications ports. Some port addresses are fixed and some are configurable. Check your respective PLC User Manual for the address available for the port connected to your OP-9001. Make sure your OPEditor setting matches the number assigned to the port.

For Allen-Bradley SLC 5/03 or 5/04, you must connect to Channel 0 (the bottom serial port) set for DF1 full duplex. You can set the PLC address to any number in the range of 0 through 255 using the A-B software. Make sure the OPEditor setting matches the A-B configuration. The default is PLC Address 1.
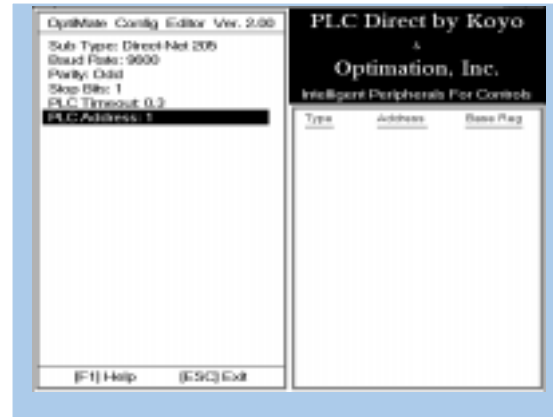
**Step 7
Add the Panel
to the System**

Since this is the first time that you are configuring a multi-panel system, select **Add Panel to the System**. Then press the **<Enter>** key.
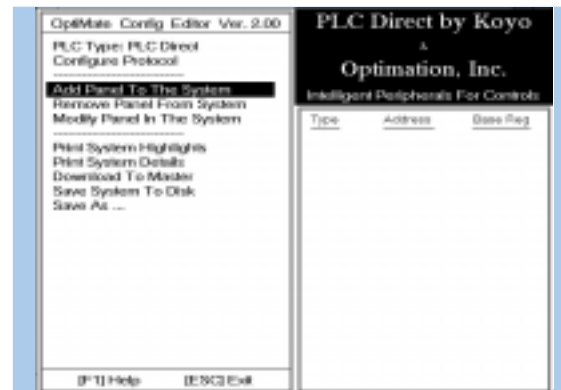
Step 8
Select the Panel to be Configured or Upload an Existing Panel Configuration

If you have previously configured an OP-panel (as a single panel), and now you are including it in a multi-panel system, select **Get Configuration from Panel**.

If you have no existing configuration, and you are now adding a panel that must be configured, move the selector bar to the appropriate model name. Then, press the **<Enter>** key.
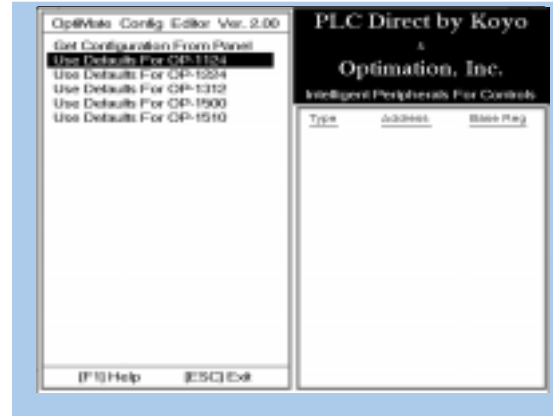
Step 9
**Download the Configuration to the Respective Panel**

Each panel has to store its own configuration. Consequently, each time you finish a configuration, connect the respective panel, then set its DIP switch to address 31 for downloading. All the slide switches (representing weighted decimal digits) are turned to the ON position in order to indicate address 31.

Switch found on OP-panels

On

1 2 4 8 16
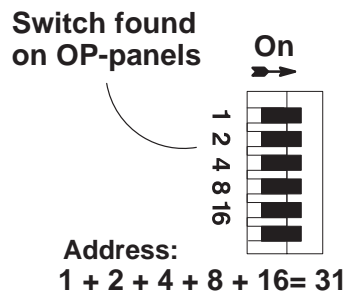
Address:
1 + 2 + 4 + 8 + 16= 31

NOTE: Remember that you must have the DIP switch on the rear of the OP-panel set to address 31 in order for the downloading of your configuration to take place.

Step 10
Assign a Unique Panel Address

So that the OP-9001 can distinquish one panel from the next, you must assign a unique address (in the range of 0 through 30) to each panel via its address dip switch. Make sure that the **Panel Numbe**r setting matches the dip switch setting.

Switch
On

1 2 4 8 16

Address:
1 + 2 = 3
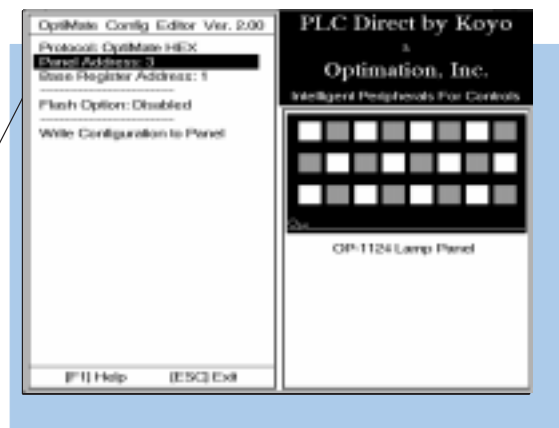
**Step 11
Repeat Steps 8-10 for
each OP-panel**

Each panel has to be individually configured for all of its features. You will have to repeat Steps 8 thru 10 for each panel you add to your system. Notice that as you add panels to your configuration they are shown on the righthand side of your screen along with the panel address and the base register address.

Each panel requires certain blocks of consecutive memory for its mapping process and you must be careful in assigning the base register addresses. In our Memory Planning section of this manual, we presented you with a table that shows the consecutive memory requirements for each panel and PLC combination. Assign a base register address that will not conflict with the other panels by overwriting their configuration.

Keep in mind (as you refer back to the individual User Manuals for each OptiMate panel) the configuration examples were based on single-panel systems that had to communicate directly with the PLC. For this reason they are setup in a single-panel scheme using the communications protocol of the PLC. For example, you use K-sequence or *Direct*NET for the PLC*Direct* and compatibles. The communications protocol for multi-panel systems will always be set for **OptiMate HEX** except for the OP-9001 communications master. The panels do not talk to the PLC directly–they talk instead to the OP-9001 communications master.

**Step 12
Download the
System
Configuration to the
OP-9001**

When you have completely finished configuring every individual panel belonging to your system, you are then ready to download the overall system to your OP-9001 panel. Don't forget to place the downloading jumper on the OP-9001. You access this through the edge of the panel. When you are finished downloading, you need to remove the jumper before the OP-9001 can communicate with the PLC. Make sure also that you have reset the DIP switch on the OP-panels to match the unique address you gave them during configuration.

Do not leave the panels set to address 31 or otherwise the OP-9001 will not be able to communicate with them.

If you want to download your system to a disk or save it as a file, you will notice the last two options on the above dialogue allow you to do just that. It is a good idea to always store your configuration on your hard drive or a floppy, as well as download it to the OP-9001.

NOTE: Remember that you must have the "download" jumper in place in order to download the system from the computer to the OP-9001. The jumper is located between the DB15 connector and the power supply connector on the open edge of the panel

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If you later want to **add, remove or modify a panel configuration**, you can do so by merely selecting any of these options from the above menu. You can also **print** the system highlights or the detailed version of your configuration, by clicking on these menu options.

By using **Save System To Disk**, or **Save As..** options of the menu, you can also make sure you have a backup copy of your configurations (panel or system) stored somewhere besides in a panel or the OP-9001.