CCU2/C-4100

Simplex 4100 Panel CCUNET Interface Installation Instructions

Part #: CCU2/C-4100

The CCU2/C-4100 is used to connect a Simplex 4100 fire panel to the CCUNET. It has 1 RS232 port to connect to a Simplex 4100 panel and 2 RS232 Network connections.

This equipment is designed for installation and servicing by fully qualified field engineers. There are no user serviceable or installation parts inside.

Supplied:

1	x	Boxed CCU2/C with firmware for Simplex 4100 fire panel CCUNET interface
1	x	Power connector for CCU2/C
1	x	Relay connector for CCU2/C
2	x	RS232 network connectors
1	x	RS232 fire panel connectors
1	x	Earth strap

You will need:

1	x	24VDC power supply to CCU2/C. A connector is supplied.

Power Requirements:

Voltage Input: 12-40 VDC
Typical current: 200mA at 24VDC
Inrush current: 1 Amp

1. Installation of the CCU2/C-4100

This port is not used	CCUNET Network Port RS232 / RS422	CCUNET Network Port RS232 / RS422
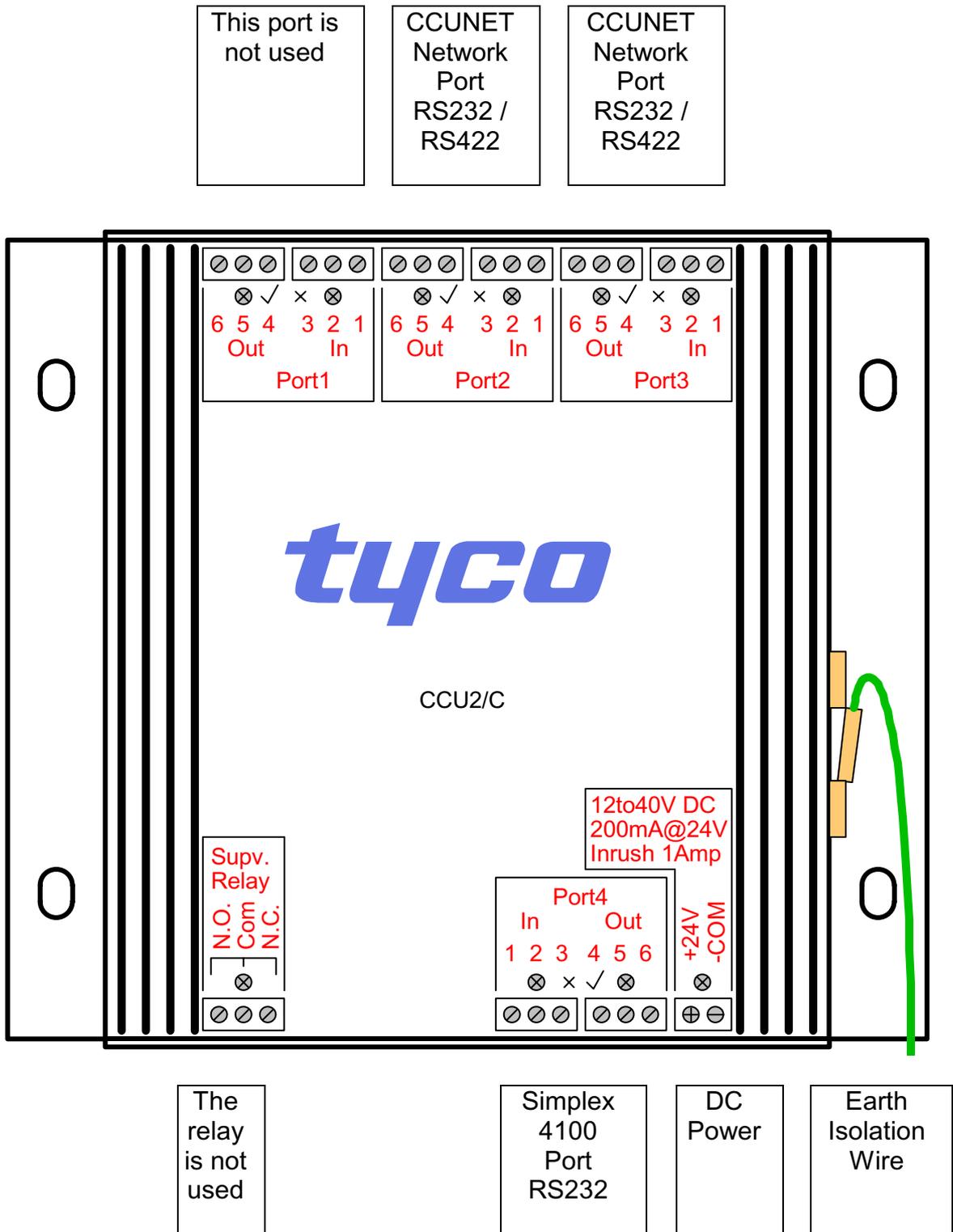
Figure 1. Board Layout
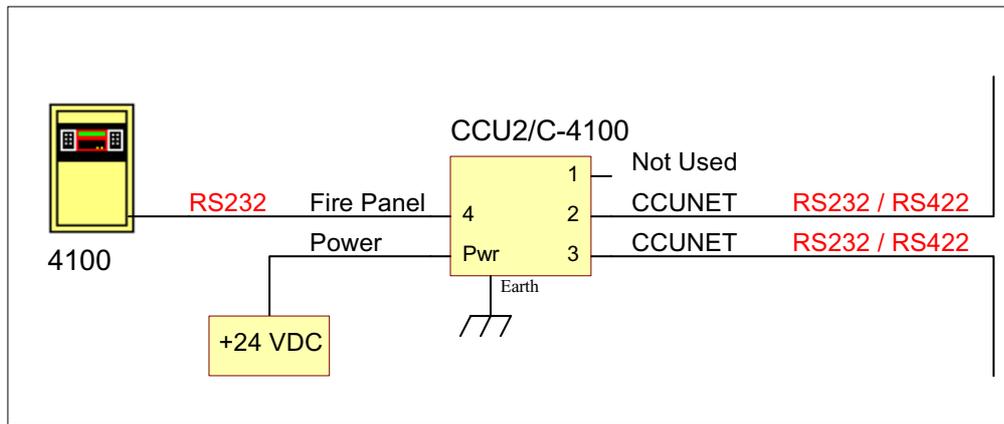
Figure 2. Board Connections

1.1. Power

Connect the 24V DC power source to the supplied connector. These connections are marked on the faceplate.

1.2. Earth Connection

For correct installation and protection of the CCU2/C device the Earth Isolation Wire must be connected to an earth point. Alternatively it can be connected to the mounting screws (of the CCU2/C) if the CCU2/C case is in direct contact with an earth point. This is important for correctly dissipating any static discharge on the communication lines (as caused by an electrical storm) and thereby preventing damage to this unit.

1.3. Simplex 4100 Panel Connection

Port 4 of the CCU connects to a Simplex fire panel via the 2120/RS-232 Interface Card. Consult the installation manual for your panel type for details on installing this card.

The CCU may be connected either to the DB-25 socket on top of the 2120/RS-232 Interface Card or to the equivalent terminal blocks on the motherboard. Different motherboards have the terminals numbered differently although the connections are made in the same order.

4020/4100 Host					Cable	CCU2/C	
4020		4100			Signal		Signal	Pin
Port A TB1	Port B TB1	Port A TB1	Port B TB2	DB25 Pin			Signal	Pin
1	6	8	1	2	TXD	→	RXD	2
3	8	6	3	3	RXD	←	TXD	3
2	7	7	2	4	RTS	→	CTS	8
4	9	5	4	5	CTS	←*	RTS	7
5	10	4	5	7	GND	——	GND	5

Table1.   Pinout for Cable from the CCU2/C to a 4020/4100 Fire Panel.
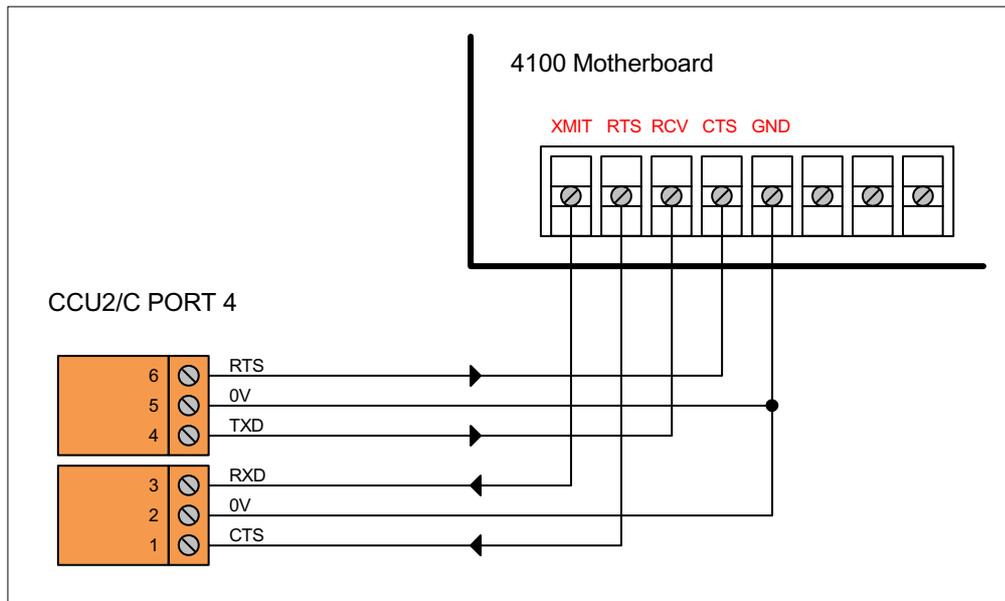
Figure 3. Connection of CCU2/C to Terminals on 4100 Motherboard

1.4. CCUNET Network Connections

There are 2 ports that communicate using the CCUNET protocol (Port 2 and Port 3). These ports may be jumpered for either RS232 or RS422 operation depending on your network type.

1.4.1. RS232 Network Connections

There are 2 styles of RS232 port, DCE and DTE. Determine which type of port you are connecting to using the following table:

CCU BOARD	PORT A	PORT B	PORTC
CCU/232	DTE	DTE	DCE
CCU/M	DCE	DTE	DTE
CCU/485	n/a	n/a	DCE
CCU/F	n/a	n/a	DCE

Table2.   RS232 Port Styles.

If you are connecting to a COM port on a PC, then this is a DTE port.
Use the following table to make the cable.

CCU2/E 6PIN	DCE port of a CCU Board	DTE Port of a CCU Board	PC COM 9PIN (DTE)
3	2	3	3
4	3	2	2
2 & 5	5	5	5

Table3.   RS232 Cable Pinouts.
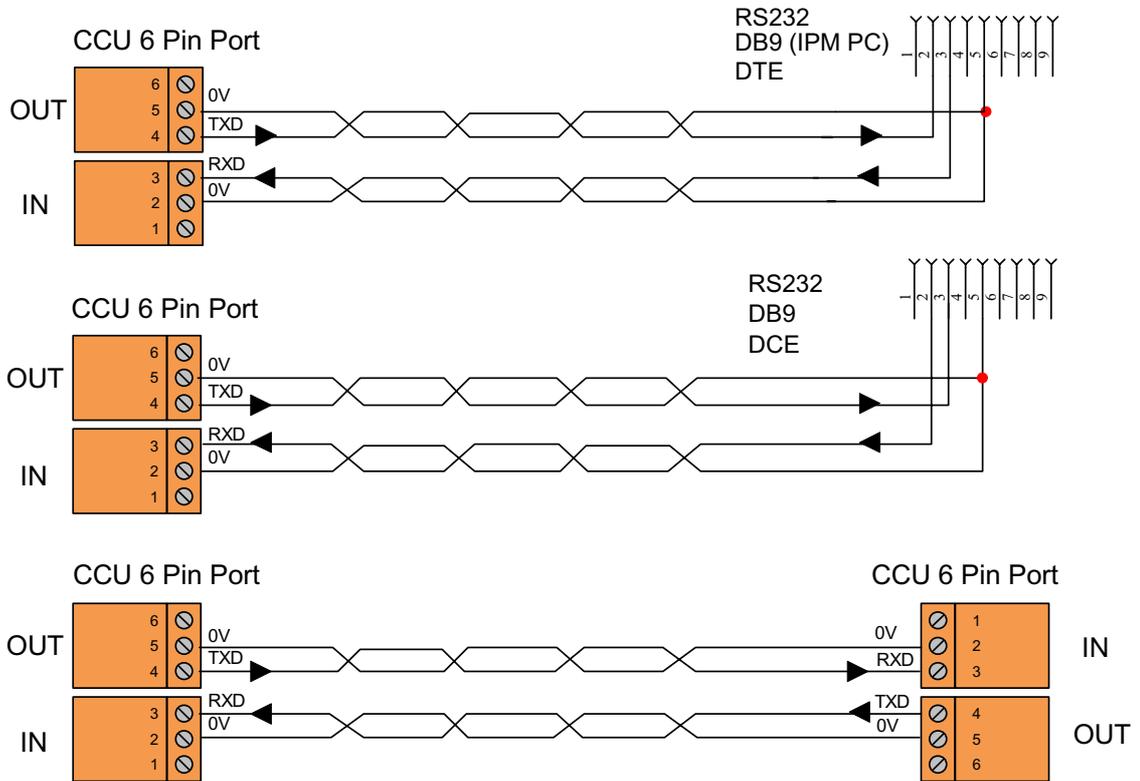
Figure 4.   RS232 Cables

1.4.2. RS422 Network Connections

CCU2/E 6PIN	CCU2/E 6PIN
4	2
6	3
2	4
3	6

Table4.   RS422 Cable Pinouts.
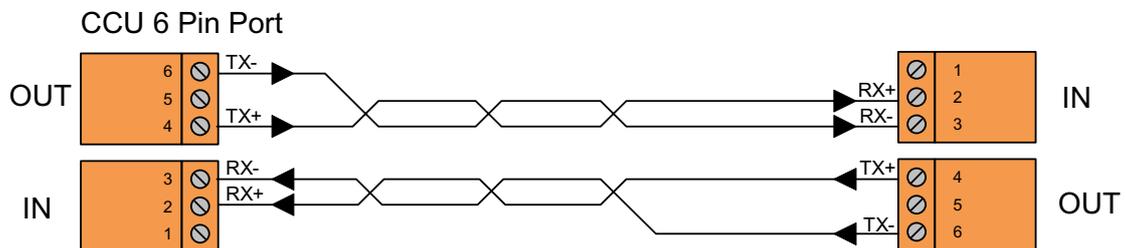
Figure 5.   RS422 Cables

2. Operation of LEDs

Each port has a green LED on the output port and a yellow LED on the input port. The green led for each port flashes when data is transmitted. Yellow means that the input port is not receiving data correctly, or there has been supervision failure on this port.

3. CCUNET Example
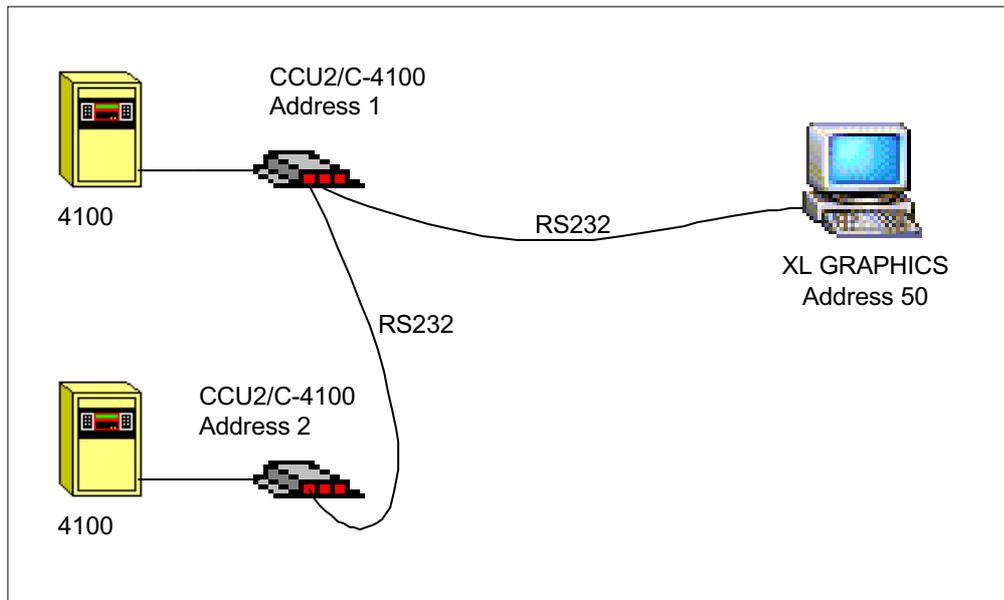
Figure 6. Example Network

This configuration is used for the example setup in this section and the next one.

4. Configuring the CCU2/C-4100

The program CCUNET V4.14 or later is required. After it is run select File-Scan to determine which CCUs are on the network.
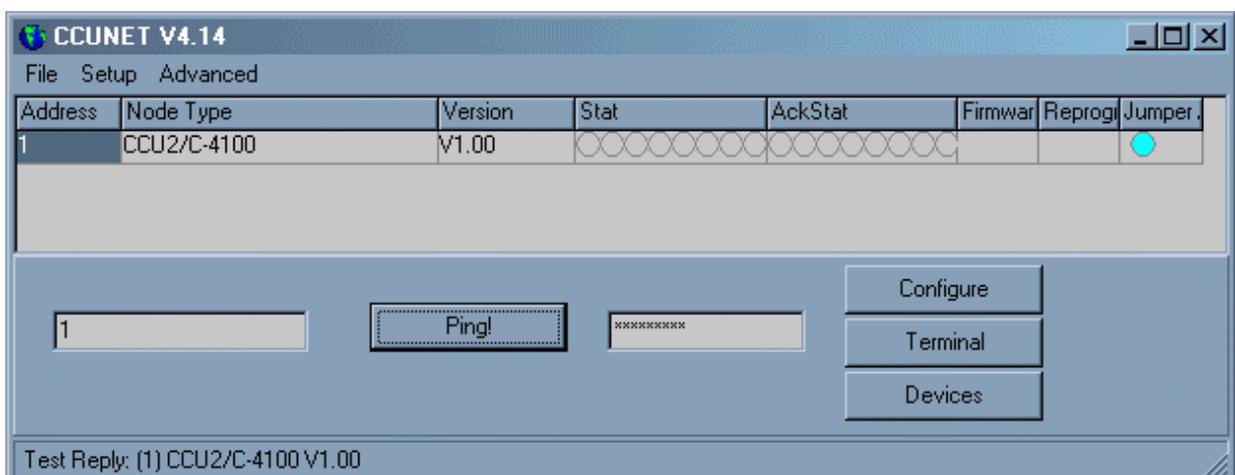
Figure 7. CCUNET Main Window.

Clicking on the CCU2/C-4100 in the CCU table and pressing 'CONFIGURE' will open the configuration window.

Each CCU node must have a unique address between 1 and 65534. Addresses 0, 255 and 65535 are reserved and **CANNOT BE USED**. The CCU node address on the CCU2/C-4100 board must be set by software. There are no address jumpers as on most other CCU boards.

The configuration window for a CCU2/C-4100 board is shown below. To change the CCUNET address of a CCU2/C-4100 enter in the value you wish and click the 'Send Config to CCU' button.

The CCUNET retry timeout is set to 2 seconds. It should not be changed.
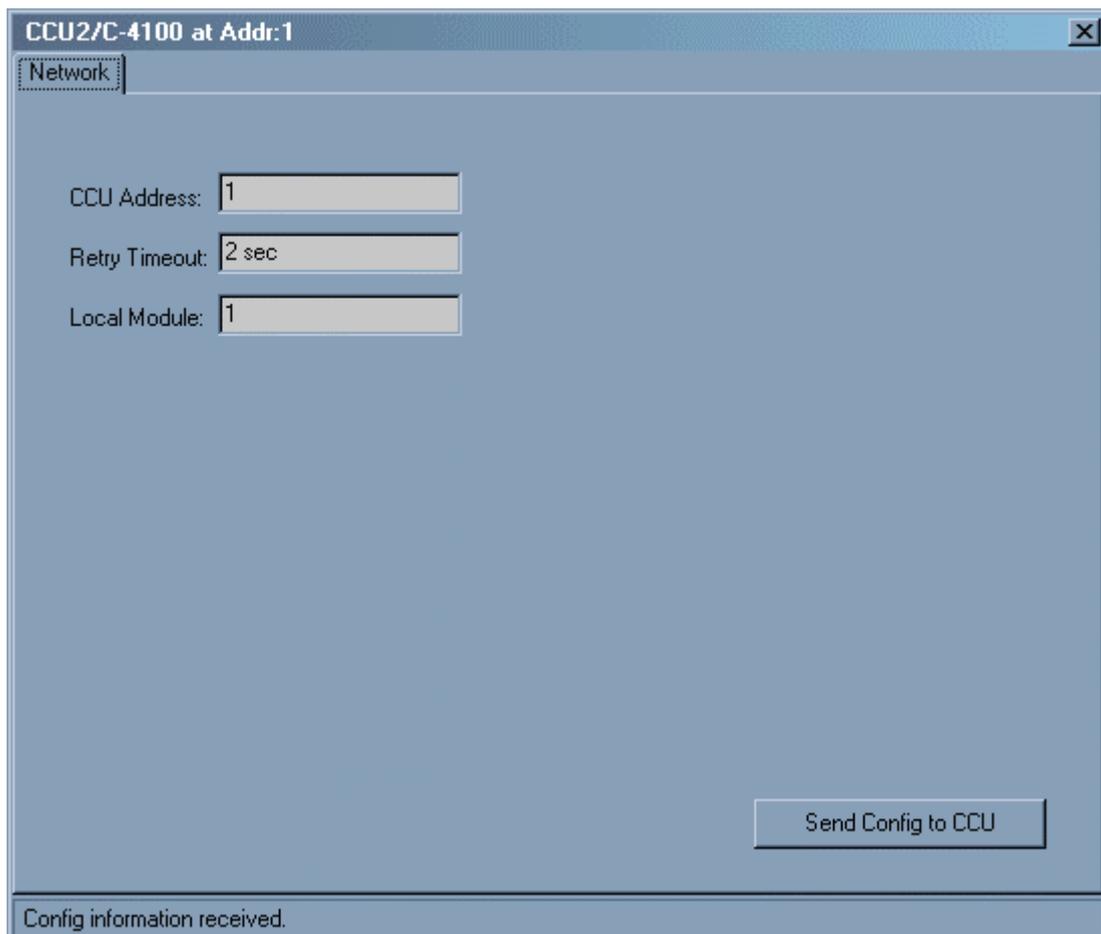
Figure 8. CCU2/C-4100 Configuration Window.

5.   Configuring XL Graphics

5.1. Address Formats

XL Graphics supports a wide number of Fire Indicator Panels on the SAME SYSTEM. This means that a wide number of device address formats are supported. You need to enter the Address format for a SIMPLEX Panel. In most cases, if you have freshly installed XL Graphics, the address formats will be AUTOMATICALLY configured. If you are updating an existing installation then the existing data will not be overwritten, so it is best to check the address formats.
To change the address formats:
1. Run XL Maintenance (or this can be done from XL Graphics)
2. Click on **Options**
3. Click on Address Format

For connection to a SIMPLEX 4100 the address formats required are:

For Logical address format use:
- nnn
- nnn-nnn
- nnn-nnn-nnn

For Symbolic address format use:
- nnn
- nnn-nnn
- nnn-nnn-nnn
- nnn-ZNnnn
- nnn-SIGnnn
- nnn-AUXnnn
- nnn-FBnnn
- nnn-IOnnn
- nnn-Mnnn-nnn
- nnn-Pnnn
- nnn-Annn
- nnn-Lnnn

NOTE 1: If you are using symbolic addresses ensure that the panel is configured to communicate in symbolic address format.

NOTE 2: If you are using an address prefix add the required fields to the formats. Eg: If we use the prefix of AP- the formats will be cc-nnn, cc-nnn-nnn etc.

5.2.   Communications Options

5.2.1. Setting up the CCUNET

You need to tell XL Graphics that there is a CCUNET Interface connected. This can be done by:

1. Running XL Graphics
2. Display the Menu (using ALT-M)
3. Click on **Utilities**
4. Click on Communications

Figure 9. XLGraphics Utilities Menu.

You will then be able to view the Communications Network Structure. If there is a + sign to the left of an item, click the + sign to expand the branch.

To configure XLGraphics for use with a CCUNET use the add button in the 'Network Communications & Setup' window. Select the 'CCUNET Interface' Option and Click OK. If you already have a CCUNET interface in the communication tree then you do not need to add it a second time.
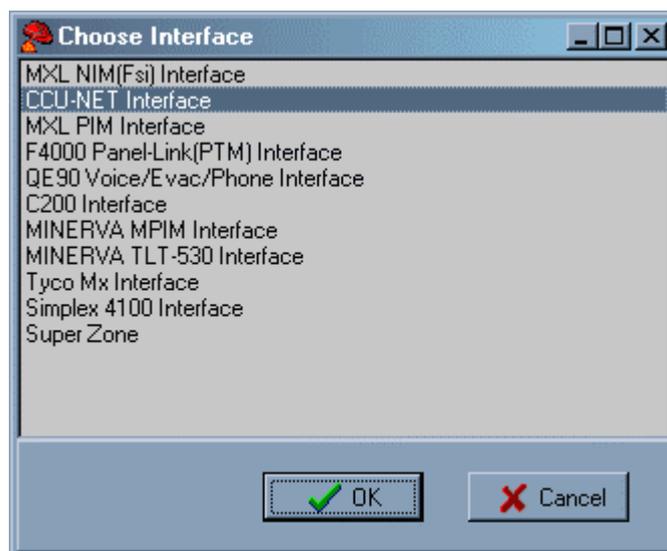
Figure 10. Communication Interface list.

Set the communication parameters that you have used to connect the CCUNET to the PC. For example in figure 11 you can see the CCUNET has been connected to COM1 of the PC and is using RS232 protocol. The CCUNET address of XLGraphics has been set to 50 and finally 'Ccu-Net Enabled' has been ticked. Click the 'Apply' button to save the configuration options.
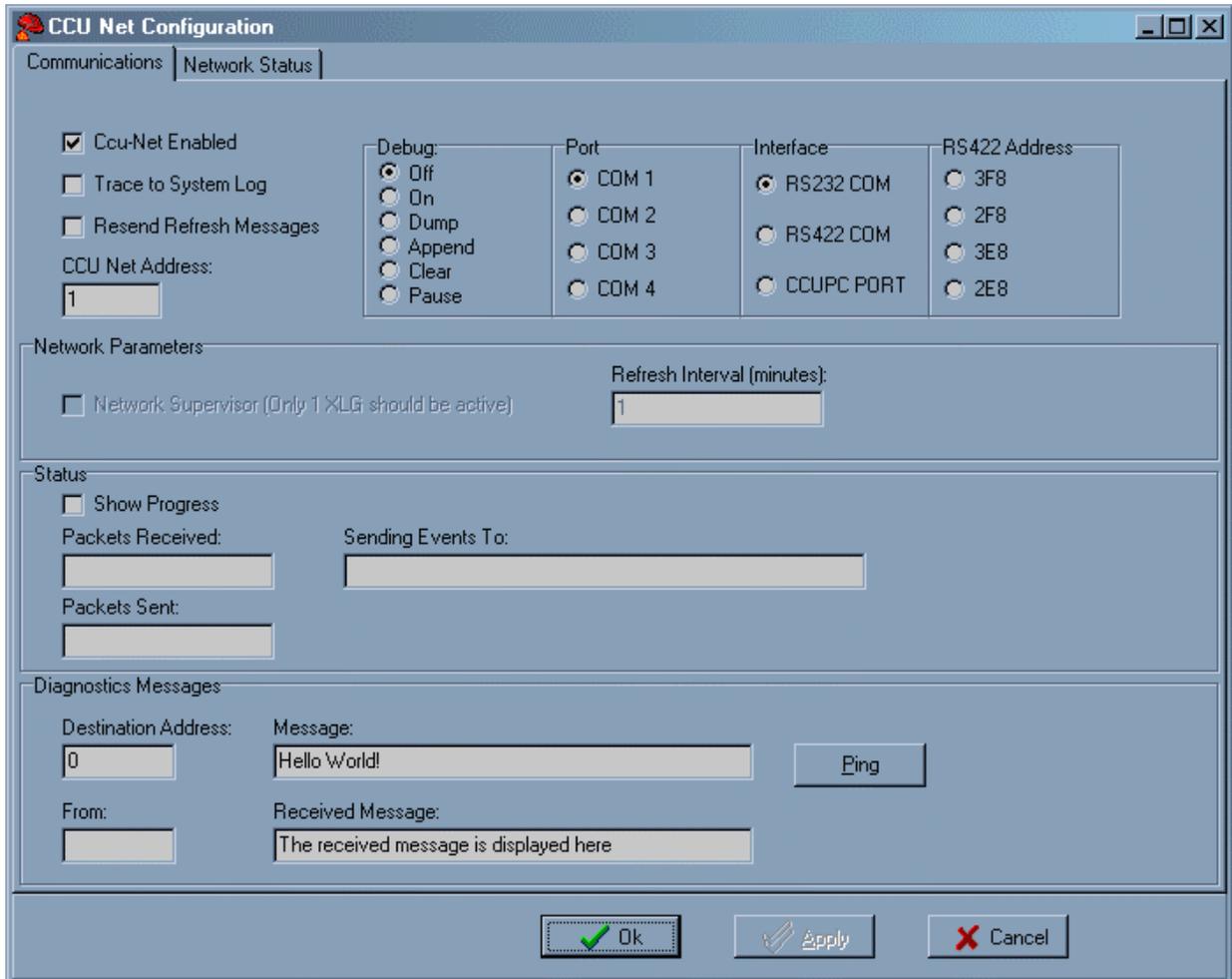
Figure 11. CCUNET Communication Configuration Options.

To check if the configuration options have been set correctly use the 'Network Status' page. A list of the CCU boards present on the network can be seen. Press 'Update' to scan the network and refresh the list. Our example shows only 1 device on the CCUNET, this being the CCU2/C-4100 at address 1.
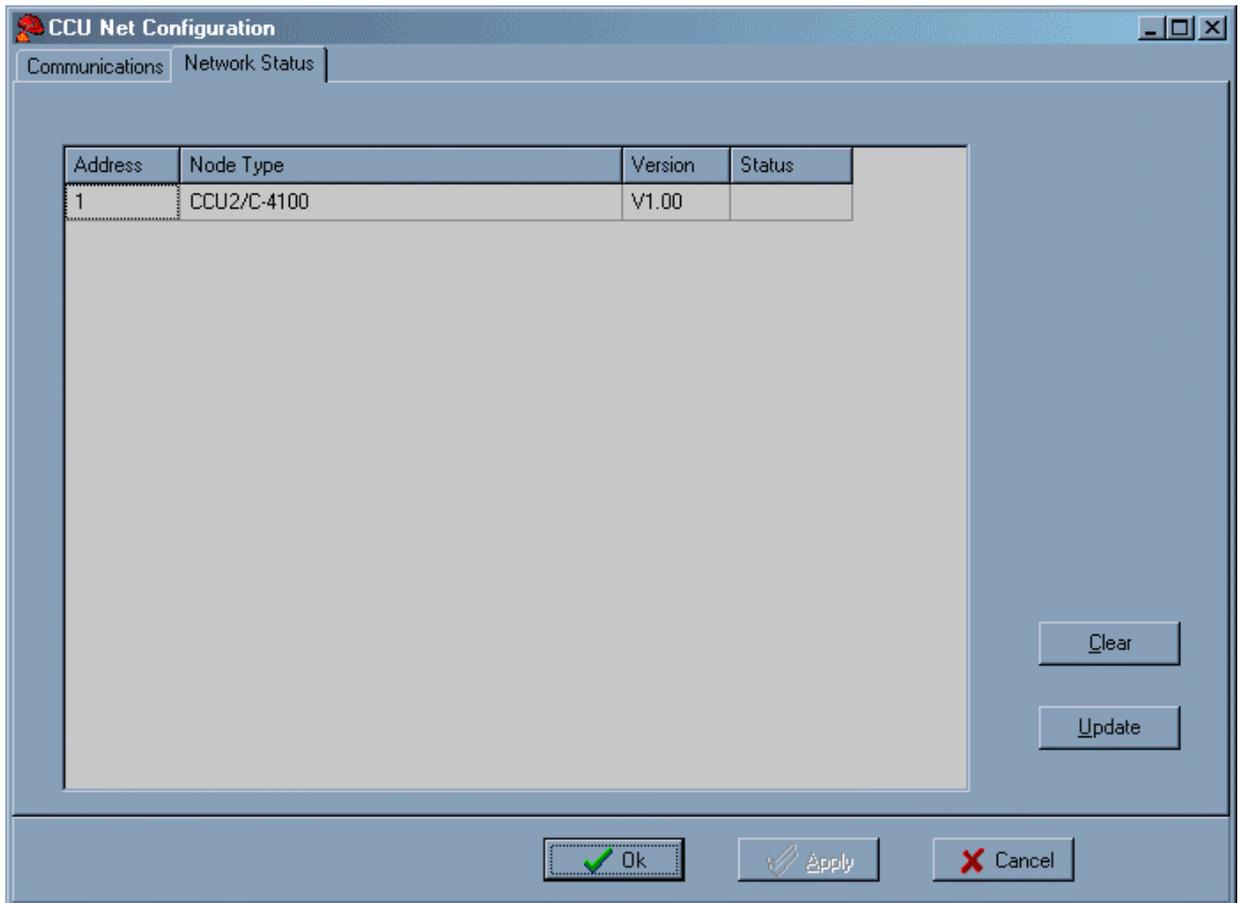
Figure 12. CCUNET Device List.

5.2.2. Adding the CCU2/C-4100

Once you've added the CCUNET interface you must add the CCU2/C-4100 board. This will enable XLGraphics to communicate directly with the Simplex panel. To do this select the CCUNET node in the Communications Tree and press the 'Add' button. You will then see the CCU board selection window below. Choose the CCU2/C-4100 and click the OK button.
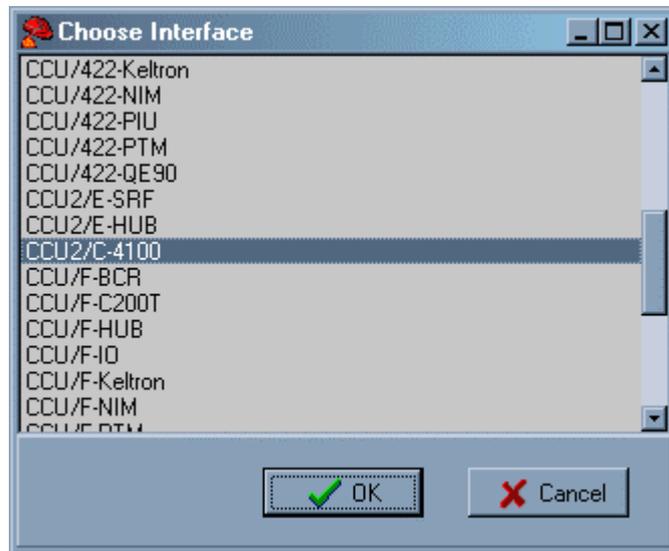
Figure 13. CCUNET Device Selection List.

The CCU2/C-4100 configuration options window will then be shown.
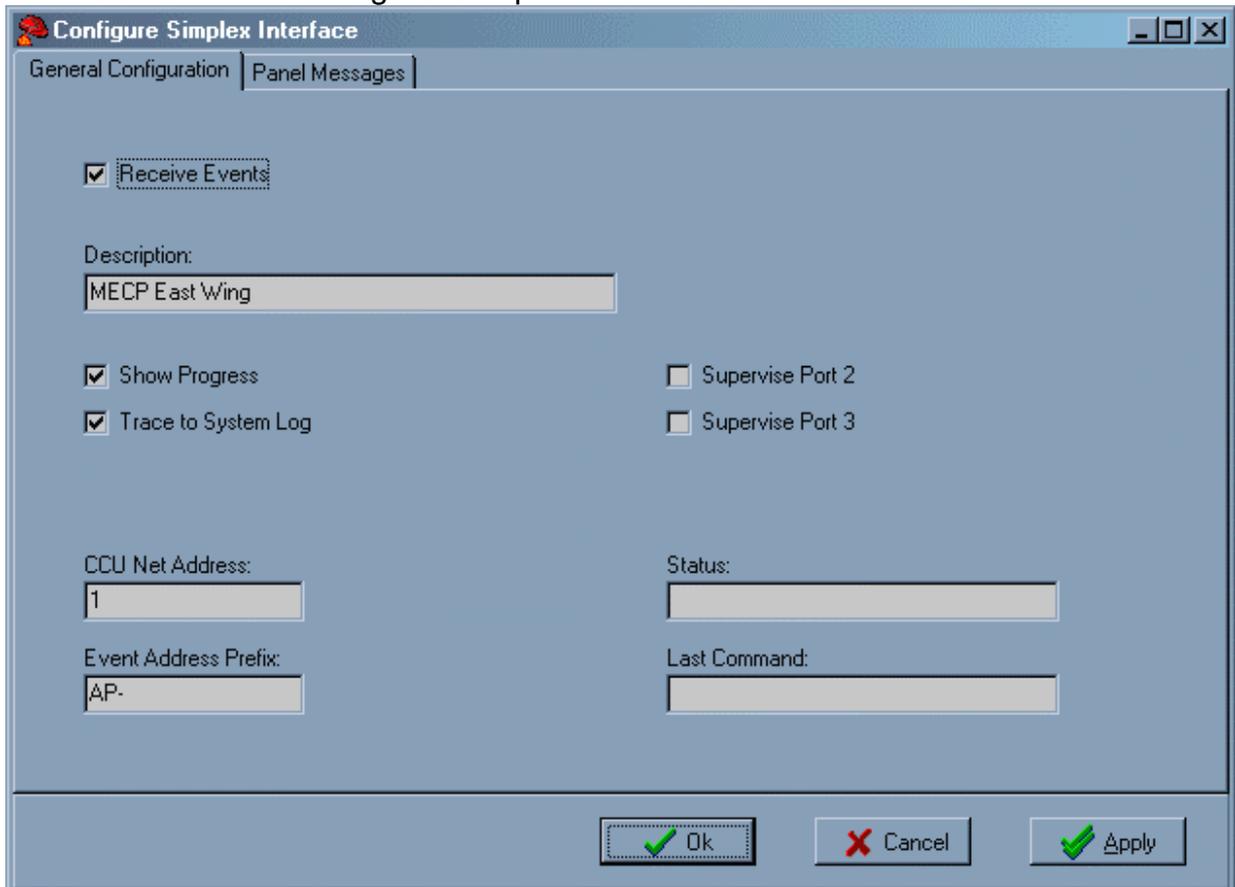
Figure 14. CCU2/C-4100 Configuration Window.

Ensure that you have ticked the 'Receive Events' box to enable the CCU to communication directly with the panel. Also ensure that the 'CCU Net Address' is set to the correct address. This is the address of the CCU device. Click OK when you are done.
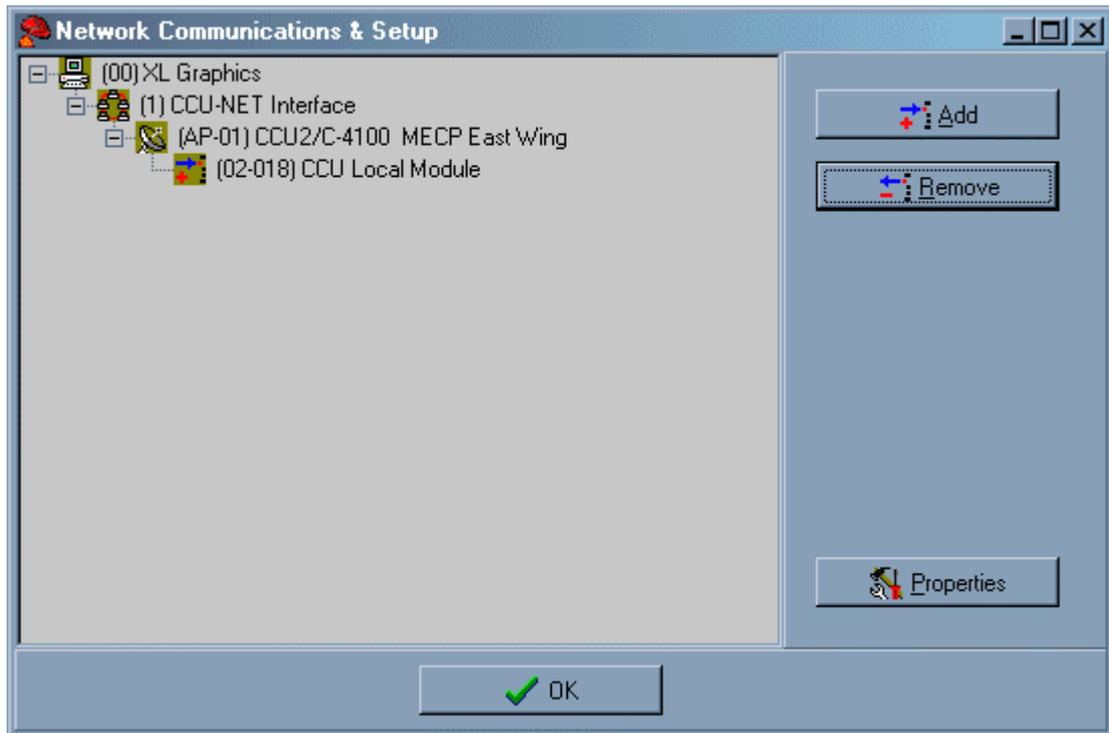
Figure 15. Communications Window Showing a CCUNET Interface to a Simplex Panel.

5.2.3. Setting up the Simplex Panels

Once the appropriate XLGraphics Communication Interface has been added into the Communication tree you may now set up the Simplex Panels. To do this select the outer most node of the Simplex communications interface. This may be 'CCU2/C-4100' node if you are using a CCUNET interface or a 'Simplex 4100 Interface' node. Once you have selected the node click the 'Add' button. A list of Simplex Panels supported by XLGraphics will then be displayed (as seen below).
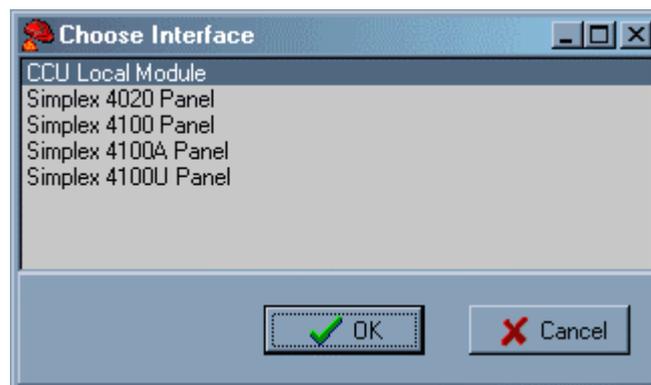
Figure 16. Simplex Panel List.

The configuration options window will then be displayed. Click OK when you have entered the appropriate settings.
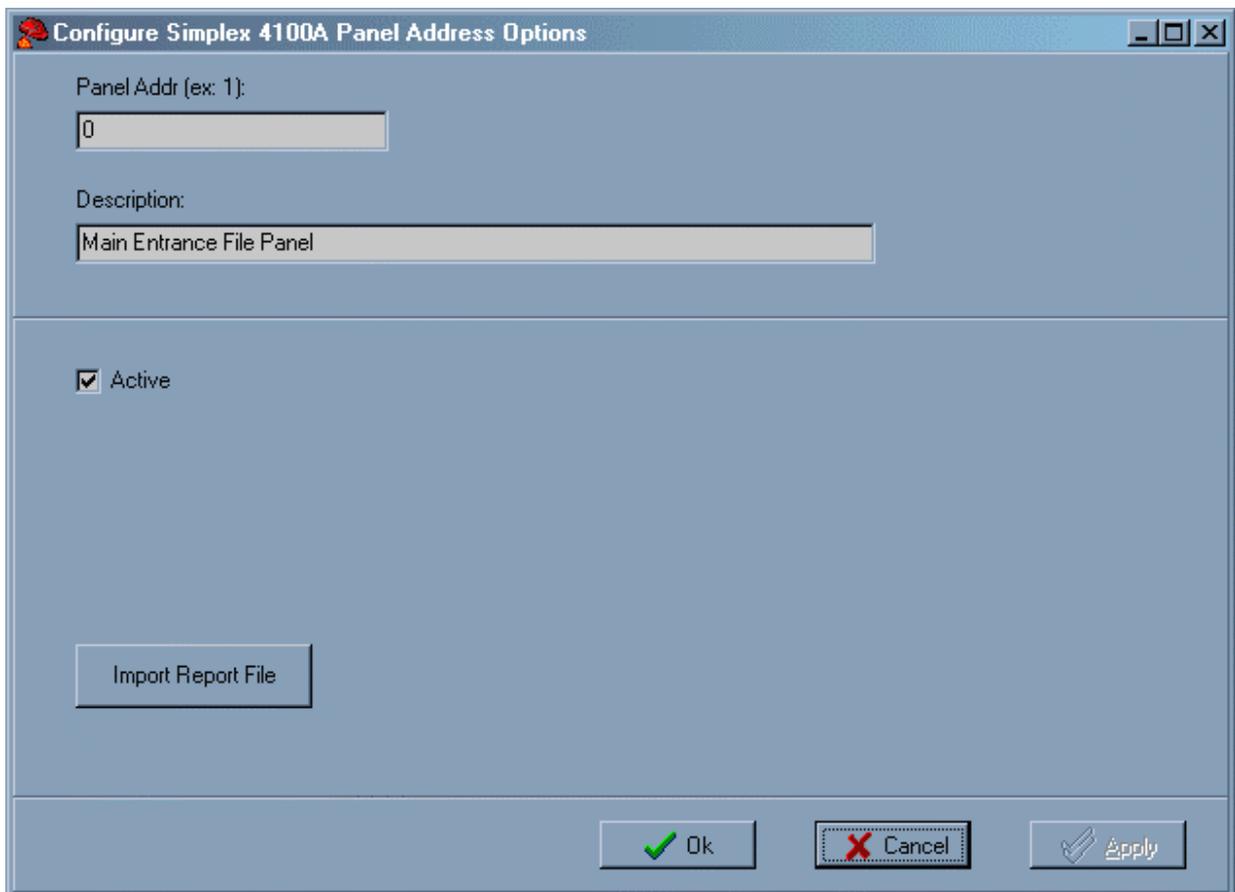
Figure 17. Simplex Panel Configuration.

The panel's address must be specified. Use 0 as the address of the local panel. The description is optional. The **Import Report File** button is used to import a **Card Detail Report** file produced by the 4100 programmer. This adds the cards for this panel to the Communications Window. This enables XL Graphics to display the correct message for point events from these cards. The **Card Detail Report** should be for **Hardware Cards** only. These cards may also be added manually, select the panel you wish to add cards to then click the **Add** button.

Importing a **Card Detail Report** file also adds the custom message for each symbolic point to the database.
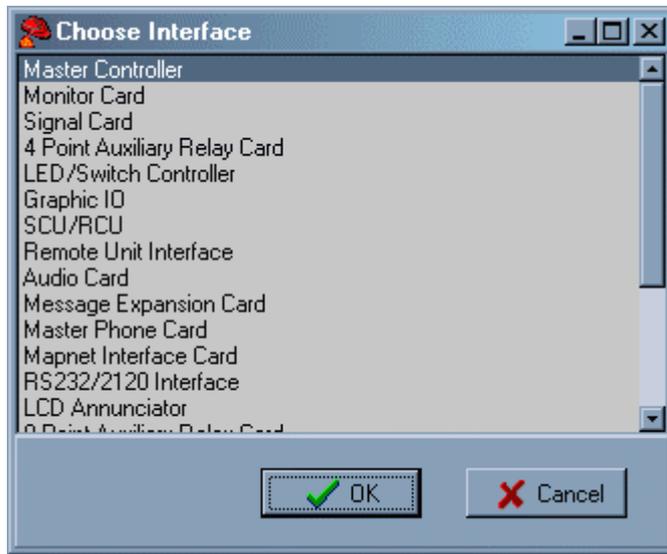
Figure 18. Simplex Panel Card List.

Here the cards installed on the panel can be added. A complete choice of cards for a Simplex panel is listed. Select a card from the list and press **OK** to add it to the panel.

When pressing OK the following window is displayed asking for the address and description of the card. Be sure to add the correct address of the card. A description for the card is optional.
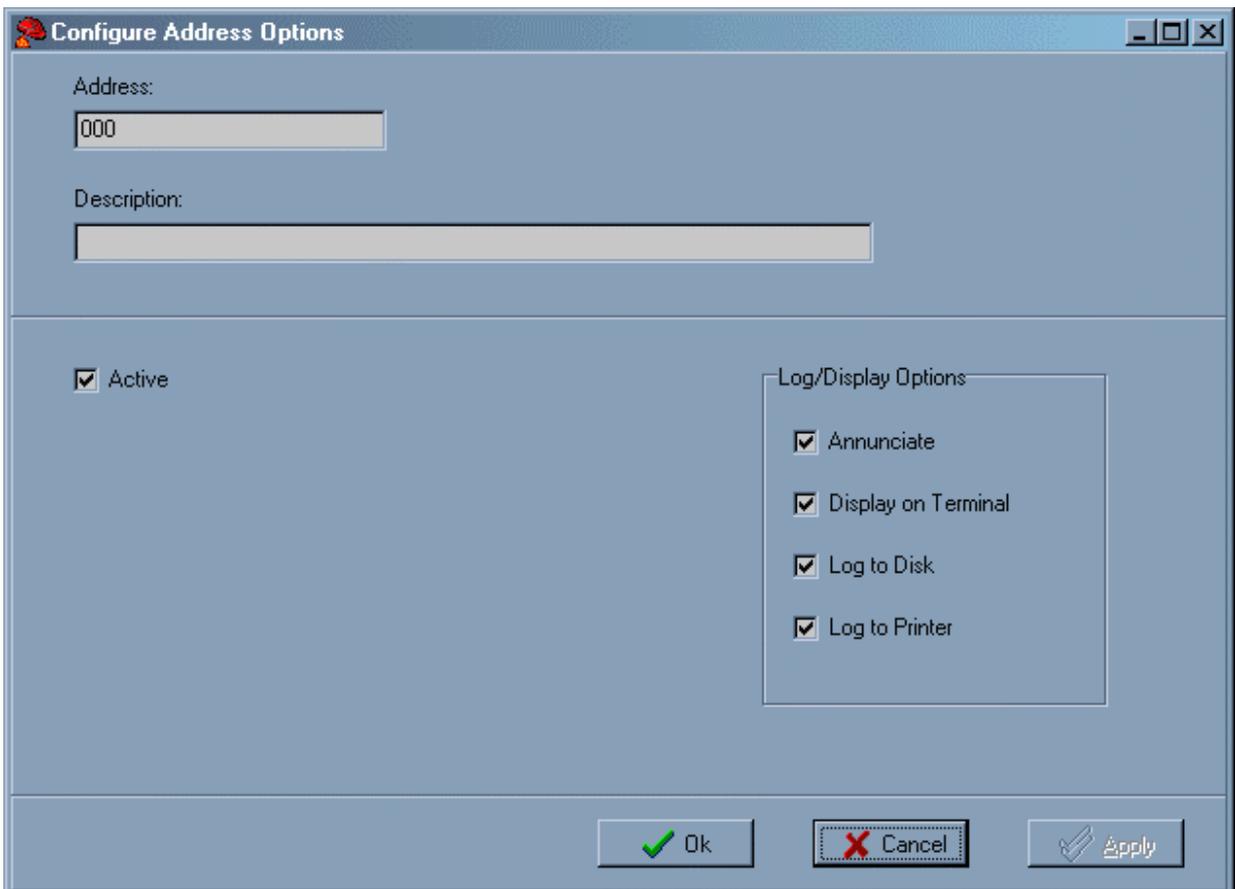
Figure 19. Simplex Panel Card Configuration.

Figure 20 shows our example with all the cards added. A symbolic address range has been added to the Mapnet card to control the annunciation and logging of these addresses.
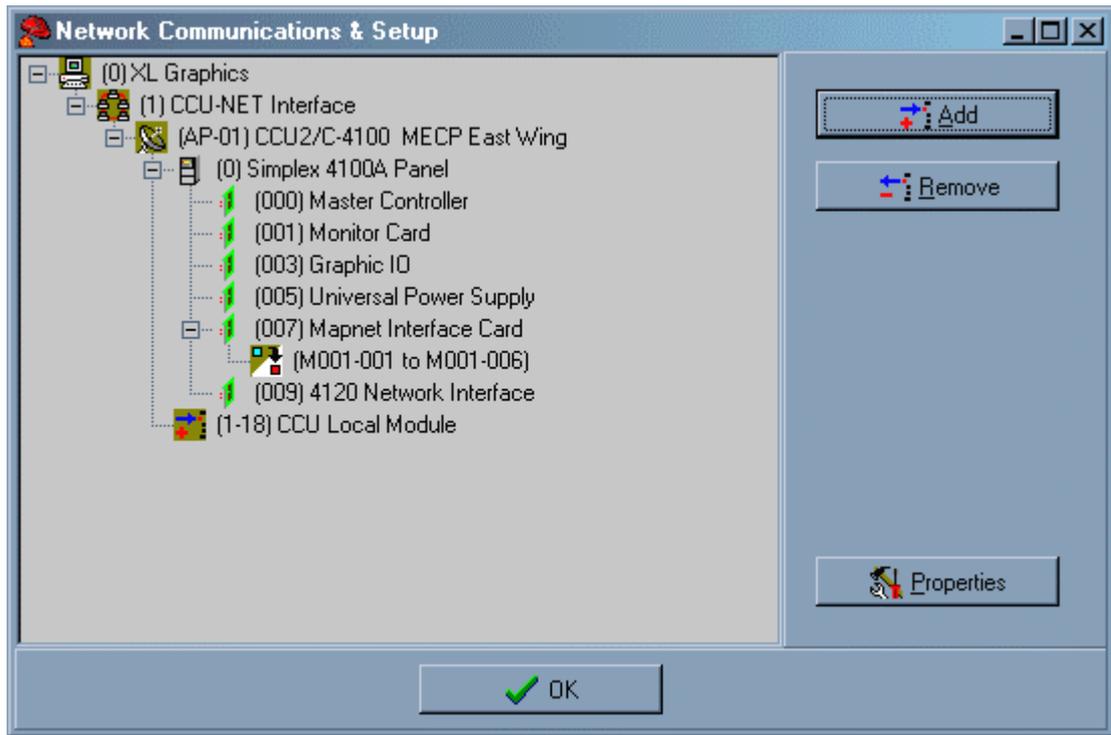
Figure 20. XLGraphics Communications Tree.

From the Network Configuration and Setup window click OK to return to XL Graphics and you have now completed the XLGraphics communication setup for using a Simplex 4100 Interface.

Appendix A: Installation of the CCUNET Program

The CCUNET program can be run on any computer that has XL Graphics installed. The program is supplied as a self-extracting executable. Simply run the program, it will prompt for a folder name and install the required files there.

Appendix B: Reprogramming Procedure

In the event the CCU has to be reprogrammed you will be supplied with updated data files from the factory. These will be in zipped format.

Unzip the supplied files into the same directory as CCUNET.EXE. Overwrite any files already there.

Run CCUNET.EXE. This is a windows program and must be run on an XL Graphics computer connected to the CCUNET. XL Graphics **MUST** be shutdown before running this program.

Select Setup – Comms from the menu to change the COM port to which the CCUNET is connected.

Select File - Scan from the menu. A list of all the CCUs connected to the network will display. The new CCU should appear in this list.

Click on the address of the CCU then press the 'PING' button. Check that the reply message from the CCU is received correctly.

Left click in the program column of the CCU you want to reprogram. A green dot will show.

Select File – Program from the menu. When the prompt appears verify the address is that of the board you want to reprogram. If so press Yes.

Wait until Success message or timeout message.

Press ☒ to close the reprogramming window.

Click on the address of the CCU then press the 'PING' button. Check that the reply message from the CCU is received correctly.