CIMPLICITY ThinView CE Hardware

GE Fanuc Automation

ThinView CE

February 2002
GFK-1919A

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doc@gefedmonton.ge.com

Contents

1 Welcome

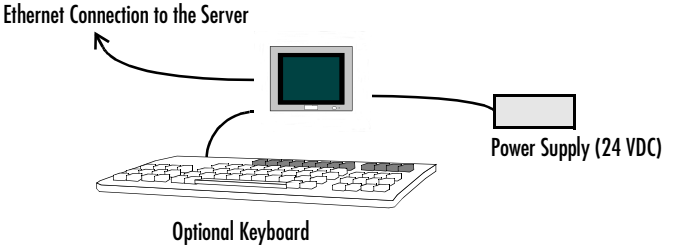
Congratulations on your purchase of the ThinView CE, the next generation thin client computer from GE Fanuc Automation. The ThinView CE is a bundled Windows CE industrial Thin Client computer with a 10.4″ diagonal screen and pre-installed CIMPLICITY automation software. Powered by Microsoft Windows CE, an industry standard embedded control operating system, the ThinView CE provides the familiarity of the Windows user interface increasing usability for operators. Using the latest Thin Client technology, CIMPLICITY ThinView CE allows operators and managers to view real-time graphical automation screens from the plant floor without additional screen configuration.

For convenient access, users can mount a ThinView CE on a machine or process. It provides quick access to critical systems and processes of your machine. Users can enter process information, as the bi-directional information flow facilitated by the on-board Ethernet permits easy system interaction with unprecedented flexibility. The many features of the ThinView CE make it an obvious choice for a world of applications. Your smart choice will provide reliable operation for years to come.

GETTING STARTED

Basic Setup

Your ThinView CE is shipped in a ready-to-use condition. All you must do is connect a DC power supply to start. Depending on your application, you may also want to connect and configure optional input devices (see page 24), and communications ports (see page 29).



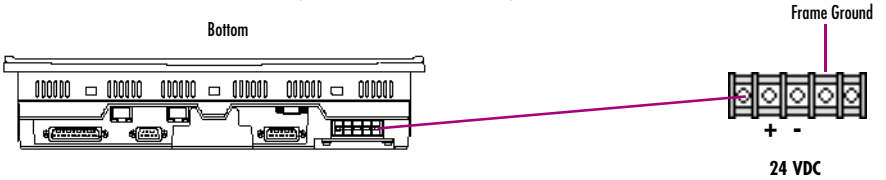
Caution: Disconnect the AC supply from your 24VDC power supply before connecting to your ThinView CE. Connecting a "live" power supply may result in damage to equipment and personnel. Ensure that the **Frame Ground** terminal is connected to a safety ground such as a conducting chassis or equipment rack.

To connect a DC power supply

For your safety, the ThinView CE comes equipped with a transparent safety guard that covers the DC power terminals. Also included with your unit is a 24VDC, 50 watt power supply and a DC power connection cable with three color-coded wires (red, black and green) extending from the end.

1. Remove transparent plastic safety guard from the terminal block.
2. Attach the red wire to the + terminal block
3. Attach the black wire to the - terminal block.

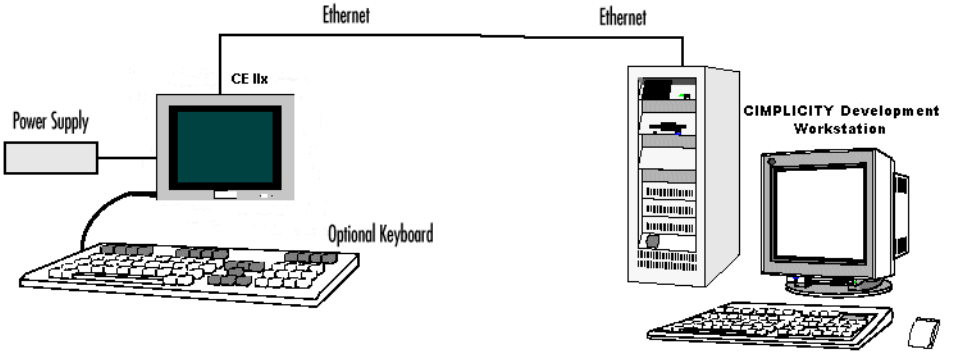
4. Attach the green wire to the FG (frame ground) terminal.



5. Reattach the transparent plastic safety guard

ThinView CE to CIMPLICITY Server Connection

While working in CIMPLICITY Plant Edition™ , it is necessary to provide a data link between your development workstation and the ThinView CE. An Ethernet network connection is supported between an NT workstation and a ThinView CE.



To set up for ThinView CE

1. Attach the ThinView CE to your Ethernet network (see page 39).
2. (Optional) Connect a keyboard to your ThinView CE.
3. Connect a 24VDC, 50 watt power supply (see page 2).
4. Obtain an IP address. (see page 40)

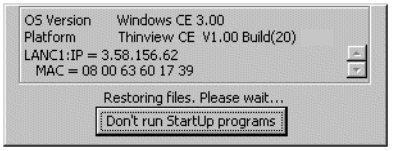
Note: Refer to GFK-1692, Section 4-1, Starting ThinView session on a Windows CE PC for more details on setting up your ThinView CE.

To start up the ThinView CE

- Apply AC power to the 24VDC supply.

The system will boot automatically. FixDisk runs automatically (see page 15).

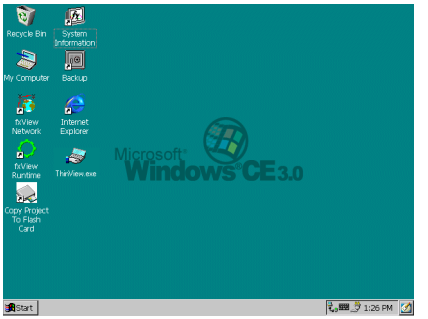
The ThinView CE issues a beep prior to beginning initialization. After initialization, the first thing to appear on the display is the splash screen.



You can configure the ThinView CE to force the startup applications to run **(see page 47)**.

1. To skip running any programs included in the StartUp folder, tap **Don't run StartUp programs**.

   The splash screen disappears automatically after about 5 seconds. The Windows CE desktop is then visible.



2. Tap **Start**, point to **Settings**, then tap **Control Panel**.
3. In the Control Panel, double-tap **Stylus** to configure the touch screen (see page 21).
4. In the Control Panel, double-tap **Date and Time** to configure the system clock (see page 45).
5. On the desktop, double-tap **Backup** to save any new settings through a power cycle (see page 13).

Shutdown

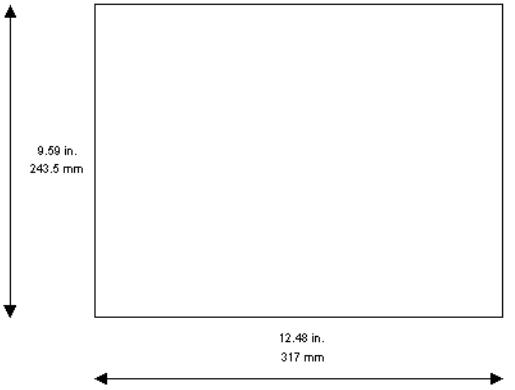
There are no specific dangers associated with a power failure or other unplanned shutdown of the ThinView CE. In general, programs are retained in FLASH memory. Some operating system settings are retained only with user-intervention. In order to carry out a graceful shutdown of the unit, it is recommended that you perform the following procedure.

To shut down the ThinView CE

1. Shut down all running programs.
2. On the desktop, double-tap  **Backup** to save any operating system settings through a power cycle (see page 13).
3. Remove AC power from the 24VDC supply.

Panel Cutout

If you install the ThinView CE into a panel, you must cut out a section of the panel according to certain specifications.



Panel Cut-out

Height: 9.59 in./243.5 mm
(+/- 0.039 in./1 mm)

Width 12.48 in./317 mm
(+/- 0.039 in./1 mm)

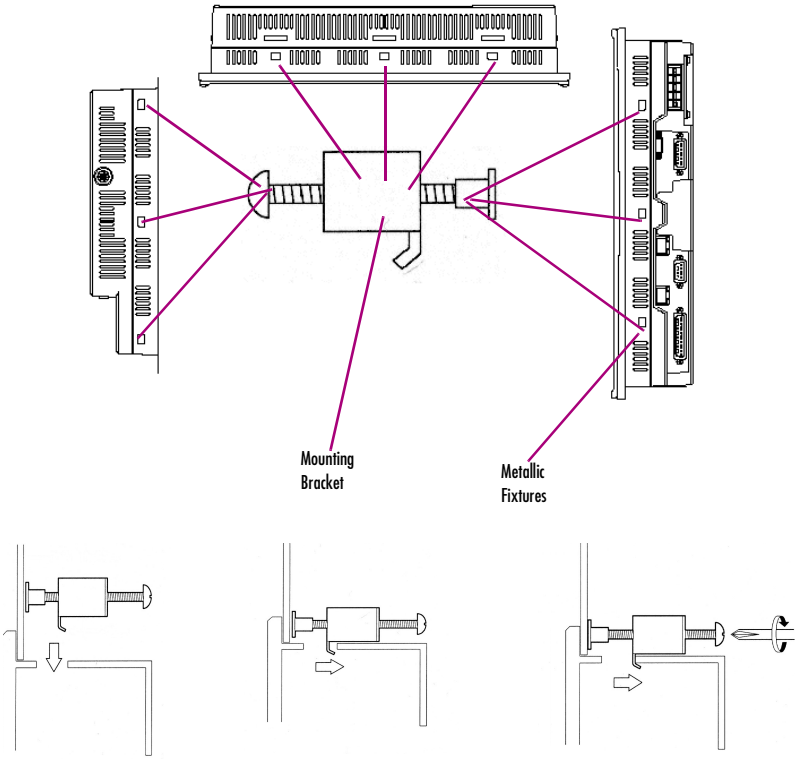
Depth 2.9 in. (7.4 cm)

Faceplate Dimensions

Height: 10.5 in. (26.7 cm)

Width: 13.2 in. (33.5 cm)

Eight mounting brackets are included with the ThinView CE for the purposes of installing the unit within an enclosure. Mounting brackets attach to mounting fixtures located on the sides of the unit. The unit can be installed using any three of the mounting fixtures on the sides of the unit. However, the manufacturer's recommended installation is two brackets on the top and bottom of the unit and one on each side.



To mount the ThinView CE in a panel

1. Insert the hook of the metal fittings into the mounting fixtures shown above.
2. Slide the metal fittings into the back side.
3. Firmly tighten screw until unit is mounted into place.

Note: Torque tolerance is 0.5 to 0.6 Nm.

Mounting brackets hold the ThinView CE in place by tension. No holes are required to be drilled in the panel.

Also included with the ThinView CE is a rubber gasket that surrounds the perimeter of the unit. After installation, the gasket acts as a seal preventing water and other liquid substances from spilling into the electronic area of the unit preventing dangerous shock hazards. Ensure that the gasket is attached to the unit prior to installation.

TECHNICAL SUPPORT

If you have technical problems that cannot be resolved with the information in this guide, you can contact us by:

Telephone: 1-800-GE-FANUC (1-800-433-2682)

Internet: www.gefanuc.com

E-mail: support@gefanuc.ge.com

Comments about our manuals or help: doc@gefedmonton.ge.com

2 Overview

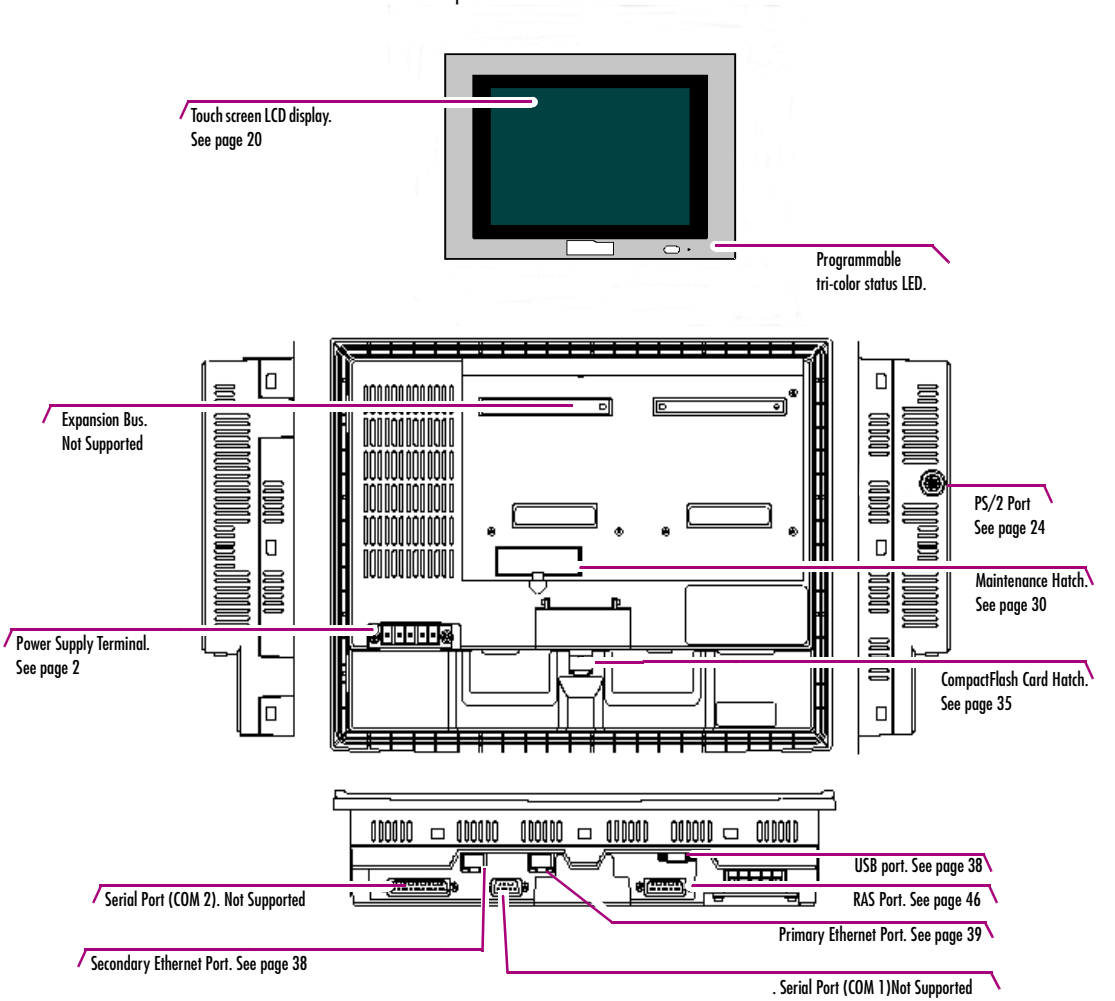
This chapter provides introductory information on the ThinView CE hardware and software with descriptive procedures for completing some of the most common tasks you will encounter.

In this chapter:

THINVIEW CE HARDWARE

Layout Diagram

In addition to the primary touch screen interface, the ThinView CE supports a variety of communication ports and expansion busses to allow greater flexibility in application. The following pictures show the physical layout of the ThinView CE and the locations of ports and connections.



THINVIEW CE SOFTWARE

Windows CE v3.0

The ThinView CE uses Microsoft Windows CE as the operating system. It is a full 32 bit O/S with a graphical user interface (GUI). This popular operating system is finding widespread application in hand-held PCs (H/PCs) and embedded controllers, such as the ThinView CE.

The user interface of Windows CE is similar to that of Windows 95/98/NT. The familiar look and feel of Windows CE shortens the learning curve for those having experience with Windows 95/98/NT. From the software developer's perspective, the CE environment is a subset of the WIN32 application programming interface, simplifying the porting of existing software from other versions of Windows.

In the ThinView CE, the operating system is stored in a 10 MB block of FLASH memory and copied to a 12 MB block of DRAM for execution. The operating system starts automatically following a power-up or reset of the unit.

Working with Windows CE

Although the main user input device when working with Windows CE is the touch screen, it is often convenient to use keyboard shortcuts, such as described in the following table.

Keyboard Shortcut	Action
CTRL+ESC or 	Opens the Windows CE **Start** menu. Use arrow keys to select a program and ENTER to run it.
ALT+TAB	Starts the Task Manager. Use it to quit unresponsive programs.
CTRL+ALT+=	Starts the touch screen calibration.
SPACEBAR	Equivalent to single-tap.
ENTER	Equivalent to double-tap. In a dialog box, equivalent to **OK**.
TAB	In a dialog box, select next control.
SHIFT+TAB	In a dialog box, select previous control.
CTRL+TAB	In a tabbed dialog box, open the next tab.
ESC	Close dialog box, discarding changes.
ARROW KEYS	In a dialog box, select controls or items from a list box.

To place a program in the Start menu

1. Start Windows CE Explorer.
2. Navigate to the program you want to place in the **Start** menu.
3. Tap the program's icon to select it.
4. From the **Edit** menu, choose **Copy**.
5. Navigate to the^\Windows\Programs\' folder.
6. From the **Edit** menu, choose **Paste Shortcut**.
7. Run the **Backup** program to retain the change through a power cycle (see page 13).

For more on Windows CE visit **www.microsoft.com/windowsce/**.

Pocket Internet Explorer

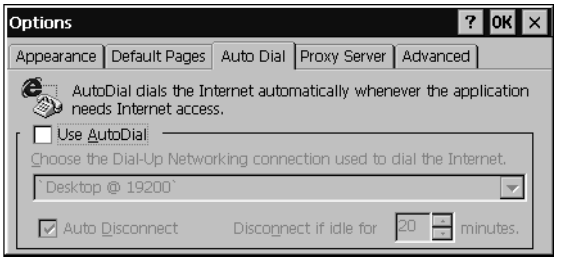
Microsoft's Pocket Internet Explorer is a full featured browser that is fully integrated with the Windows CE operating system. This browser allows you to connect to an internet service provider, view web pages and download from FTP sites.

A connection can be established over an Ethernet network (default) or using a dial-up connection. The Ethernet or dial-up connection must be properly configured.

To configure a dial-up connection in Pocket Internet Explorer

1. Start Pocket Internet Explorer.
2. From the **View** menu, choose **Options**.

The **Options** dialog box appears.

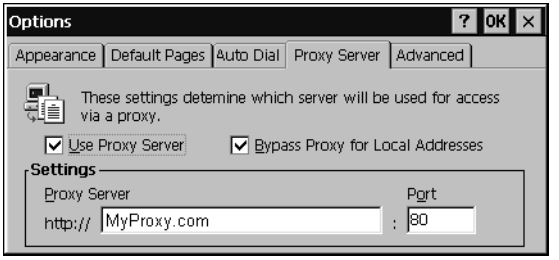


3. On the **Auto Dial** tab, select the **Use AutoDial** check box.
4. Choose either the default or a user-defined connection from the list.
5. Tap **OK**.
6. Run the **Backup** program to retain the new settings through a power cycle (see page 13).

To configure a Proxy Server

1. Start Pocket Internet Explorer.
2. From the **View** menu, choose **Options**.

   The **Options** dialog box appears.



3. On the **Proxy Server** tab, select the **Use Proxy Server** check box.
4. In the **Proxy Server** box, type the URL of your proxy server (see your ISP or network administrator).
5. In the **Port** box, type the server's port number for HTTP access.
6. Select the **Bypass Proxy for Local Addresses** check box to connect directly to sites like your intranet.
7. Tap **OK**.
8. Run the **Backup** program to retain the new settings through a power cycle (see page 13).

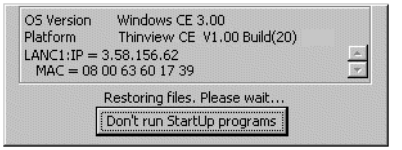
Backup

Backup is a custom utility that saves any changes made to the Windows Registry or Desktop. This utility is required because unlike typical Windows CE platforms, the ThinView CE is not battery powered. Specifically, the Backup command stores in Flash memory Windows CE registry information and other data including:

- Touch screen calibration settings.
- IP address.
- Any changes (additions) made to the 'Windows' subtree of the file system.

Backup is used in conjunction with the following utility:

- **Restore Windows:** Restores the 'Windows' subtree previously saved by issuing the Backup command. This program runs automatically when the ThinView CE powers up or Windows CE is restarted. When the Restore Windows program runs the System Information splash screen appears for at least five seconds. Tapping the **Don't run Startup programs** button on the splash screen will cause Windows CE to skip running any programs specified in the **Startup** folder.

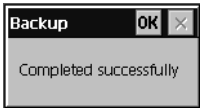


The **Backup** program should be run prior to shutting down the ThinView CE.

To run the Backup program

1. On the desktop, double-tap **Backup**.

   The **Backup** dialog box appears.



2. Tap **OK**.

Reboot the System

The reboot function is a custom utility, installed with the operating system, which allows users to reboot the system at any time during operation.

To reboot the system

1. Run the **Backup** program to retain any changes.
2. Tap **Start**, point to Programs, then the System folder, and then tap **Reboot**.

   A confirmation dialog box appears.
3. Choose **Yes**

   The operating system restarts.

FixDisk

The ThinView CE uses mounted volumes of FLASH memory (see page 43) for persistent storage. Equivalent to hard disk partitions on a standard PC, mounted volumes appear in the Windows CE file system as folders located in the root directory.

Mounted volumes on CE devices can occasionally lose data and become corrupt. To combat the problem of volume corruption in the ThinView CE's persistent storage system, the FixDisk utility is available to repair or format lost or corrupted data volumes.

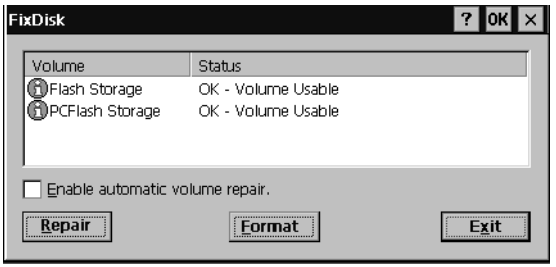
The FixDisk utility automatically repairs volumes at startup or can be run manually at any time to format or repair volumes. If errors are detected in one or more of the mounted volumes, FixDisk repairs them automatically and displays a message reporting the results of the repair. If no errors are detected, no message appears and normal operation continues.

The automatic repair feature allows you to non-interactively repair a volume. When the automatic repair is enabled, FixDisk automatically repairs any damage to the selected volumes without prompting you. When the "Enable Automatic Volume Repair" check box is cleared, you are prompted with interactive dialog boxes as errors are discovered. By following the instructions displayed, you can manually repair damaged volumes.

To manually repair a volume

1. Tap **Start** menu, tap **Programs**, tap **System** and then tap **FixDisk**.

   The **FixDisk** dialog box appears.



2. Select a volume from the list of mounted volumes.
3. Tap the **Repair** button.

   FixDisk repairs the selected volume.

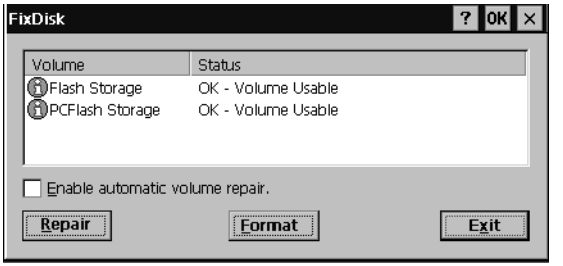
To manually format a volume

If a volume cannot be repaired, then it must be formatted.

Caution: After formatting a volume, all data in that volume is lost.

1. Tap **Start** menu, tap **Programs**, tap **System** and then tap **FixDisk**.

   The **FixDisk** dialog box appears.



2. Select a volume from the list of mounted volumes.
3. Tap the **Format** button.

   The selected volume is formatted and you are prompted to restart the operating system.

System Information

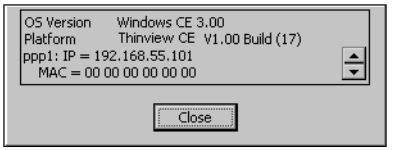
System Information is a custom utility that causes a splash screen to appear with the following information displayed:

- **Operating System version.** For example, 'Windows CE 3.0'.
- **Platform.** Identifies the host equipment, its version and build number.
- **Network Adapter: IP Address.** An entry for each network card appears in a scroll bar.
- **MAC Address.** The unique address, factory assigned to each device that will operate on a TCP/IP network.

To run the System Information program

1. On the desktop, double-tap **System Information**.

   The **System Information** splash screen appears.



2. Tap **Close** to continue.

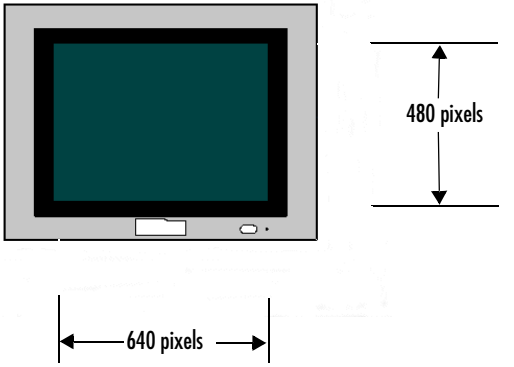
3 Detailed Operation

In this chapter:

TOUCH SCREEN DISPLAY

10 inch LCD Display

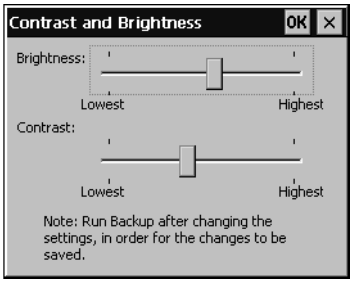
The ThinView CE has an integrated 256 color flat panel display. The ten inch back-lit panel employs TFT technology to provide a bright operator interface supporting a resolution of 640 by 480 pixels.



The ThinView CE video subsystem employs the MediaQ MQ200 graphics accelerator supported with 1 MB of video RAM.

To adjust the display brightness

1. In the Control Panel, double-tap **Display** and choose the **Brightness** tab.
2. The **Brightness** dialog box appears.



3. Drag the **Brightness** slider between Lowest and Highest.
4. Tap **OK** to apply the new setting.
5. Run the **Backup** program to save settings through a power cycle (see page 13).

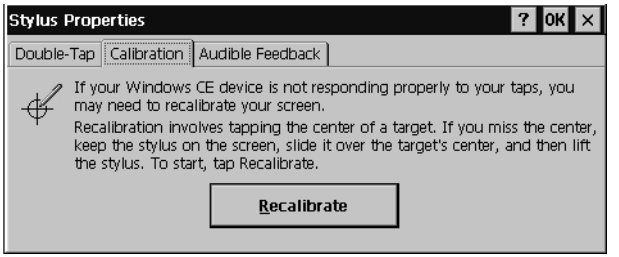
Touch Screen

The ThinView CE display is coupled to a resistive touch panel. Although you can use your finger to operate the touch screen, use of a blunt stylus is recommended.

To calibrate the touch screen

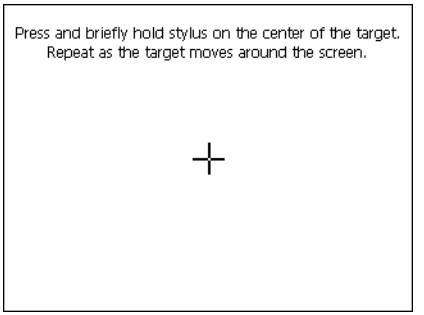
1. In the Control Panel, double-tap **Stylus** or press CTRL + ALT + =.

   The **Stylus Properties** dialog box appears.

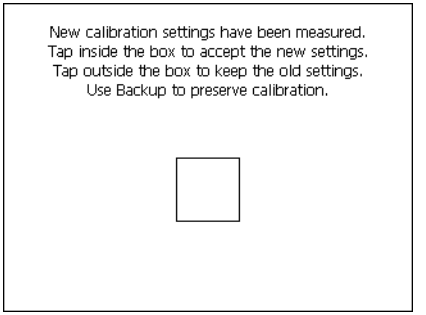


2. Choose the **Calibration** tab
3. Tap the **Recalibrate** button.

   A cross hair target is displayed on a blank background.



4. Tap the target center and hold until the cursor moves, then repeat four more times..

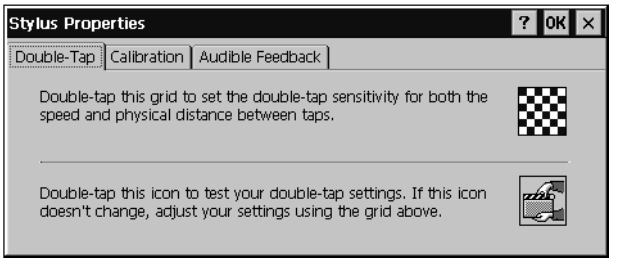


5. Tap inside the centre square to keep the new calibration settings or outside the square to discard the settings.
6. Run the **Backup** program to retain the new settings through a power cycle (see page 13).

To set the double-tap sensitivity

1. In the Control Panel, double-tap **Stylus**.

   The **Stylus Properties** dialog box appears.



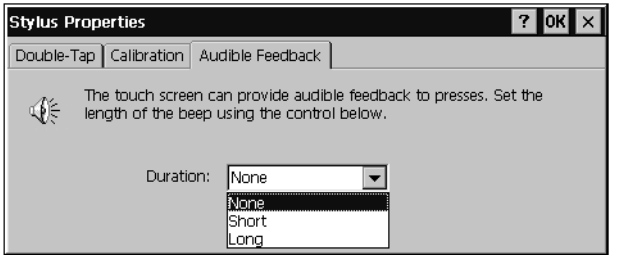
2. Choose the **Double-Tap** tab.
3. Double-tap the grid to enter a setting.
4. Double-tap the test icon to check the setting.

   If the test icon doesn't change when you double-tap it, double-tap the grid again.
5. Tap **OK** to finish.
6. Run the **Backup** program to retain the new settings through a power cycle (see page 13).

To set audible feedback

1. In the Control Panel, double-tap **Stylus**.

   The **Stylus Properties** dialog box appears.
2. Choose the **Audible Feedback** tab..



3. From the **Duration** pull-down menu choose None, Short or Long.
4. Tap **OK** to finish.
5. Run the **Backup** program to retain the new settings through a power cycle (see page 13).

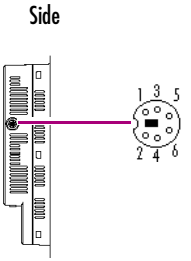
KEYBOARD

The ThinView CE can be configured to use either or both an external hardware keyboard and a software emulation keyboard (see page 25) as an operator data input device. Typically, use an external hardware keyboard when in development mode; the Soft Input Panel is more applicable in an operational environment.

External Keyboard (optional)

There are two methods in which an external keyboard can be attached to the ThinView CE.

Any standard PC keyboard that connects with a PS/2 interface can be used with the ThinView CE. The following diagram shows the location, orientation and pinout of the optional keyboard port.

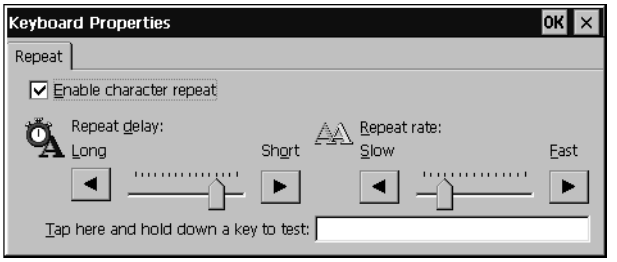


1	KBDAT (data)
2	n/c
3	GND
4	VCC (+5VDC)
5	KBCLK (clock)
6	n/c

To configure an external hardware keyboard

1. In the Control Panel, double-tap  **Keyboard**.

The **Keyboard Properties** dialog box appears.

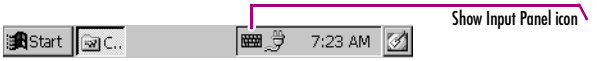


2. Select or clear the **Enable character repeat** check box.
3. If character repeat is enabled, drag the **Repeat delay** slider to set the minimum time a key must be pressed before the first repetition occurs.
4. If character repeat is enabled, drag the **Repeat rate** slider to set the time between repetitions while a key is pressed.
5. Tap the test box then press and hold a key to check keyboard performance.
6. Tap **OK** to finish.
7. Run the **Backup** program to retain the new settings through a power cycle (see page 13).

Soft Input Panel

The Soft Input Panel is a touch screen emulation of a standard keyboard. It can be used in place of a standard hardware keyboard.

If the soft input panel is the selected input method you will require a way to display or hide the panel. A utility program is included with the ThinView CE that places an icon in the system tray for this purpose.



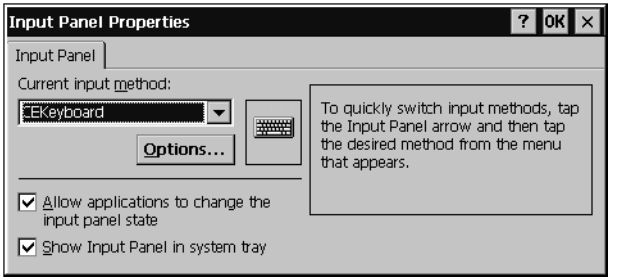
To display/hide the Soft Input Panel

- On the system tray of the task bar, double-tap the icon. The Soft Input Panel appears/disappears.

To show/hide the Soft Input Panel icon in the system tray

1. In the Control Panel, double-tap **Input Panel**.

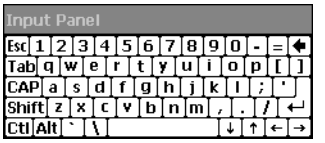
   The **Input Panel Properties** dialog box appears.



2. Select the **Allow applications to change the input panel state** check box.
3. Tap **OK**.
4. Select or clear the **Show Input Panel in system tray** check box.
5. Tap **OK**.
6. Run the **Backup** program to retain the new settings through a power cycle (see page 13).

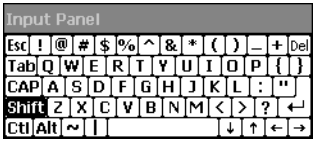
   The Soft Input Panel has two basic configurations: **Small key** and **Large key**.

   Small Key configuration: Provides a standard QWERTY key layout with numeric keys at the top row as illustrated in the following picture.



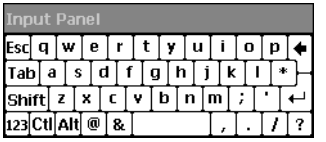
Small key: lower case

   Uppercase characters are accessed by pressing the SHIFT key once. This is equivalent to holding down the SHIFT key on a conventional keyboard. The SHIFT key is active while the next key is pressed then reverts back to its unselected state. The CAP key does the same thing as SHIFT but does not revert to lower case after another key is pressed. Rather, the Soft Input Panel remains in the Uppercase mode until the CAP key is pressed again. The CTRL and ALT keys behave the same as the SHIFT key



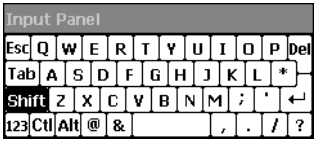
Small key: upper case

Large Key configuration: Provides alphabetic or numeric keys alone. No numeric keys are displayed at the top of the alpha panel; alpha keys are not displayed on the numeric panel.



Large key: lower case

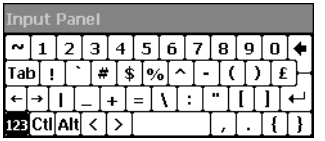
As with the small key configuration, upper or lower case alpha keys can be displayed by using the SHIFT key.



Large key: upper case

Pressing the **123** key once changes the keys to numeric. The numeric keys are displayed until another key is pressed then the Soft Input Panel reverts to the alpha mode.

Double-tapping the **123** key locks the panel in numeric mode until the **123** key is pressed again.

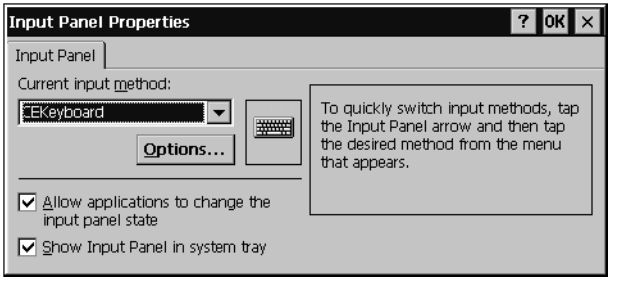


Large key: numeric

To change key configurations

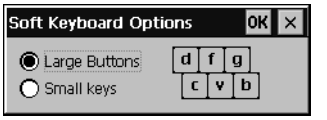
1. In the Control Panel, double-tap **Input Panel**.

   The **Input Panel Properties** dialog box appears.



2. From the **Current input method** list, choose **CE Keyboard**.
3. Tap **Options**.

   The **Soft Keyboard Options** dialog box appears.



4. Select **Large Buttons** or **Small Keys**.

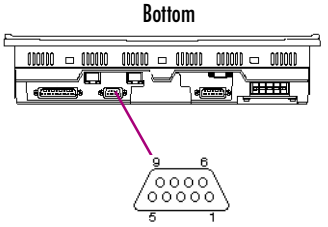
   A preview of the key size is displayed on the dialog box.
5. Tap **OK** to finish.
6. Run the **Backup** program to save the settings through a power cycle (see page 13).

COMMUNICATION PORTS

ThinView CE comes equipped with two COM serial ports (configured COM1 and COM2). The Windows CE operating system supports these ports, but ThinView CE applications do not. For personal ThinView CE driver requirements for serial ports, contact your local distributor.

COM1 - Serial

The COM1 port is a general purpose RS 232C.



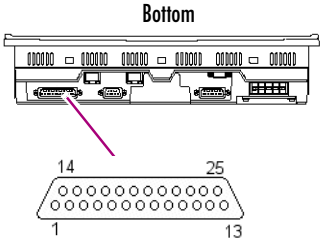
1	n/c
2	RXD - Receiving Data
3	TXD - Transmitting Data
4	n/c
5	SG - GND
6	n/c
7	RTS - request to send
8	CTS - clear to send
9	5V - DC5V 200 mA

COM2- Serial

The COM2 port is a general purpose bidirectional serial data channel that supports the RS232C and RS485 electrical standards. The COM1 port can be accessed and configured:

- as a direct or dial-up remote networking connection.
- as the port used by a terminal session (modem link only).
- from a user-created application program.

A connection can be configured to reside on a network supporting a TCP/IP protocol.



1	Frame Ground - GND	14	RXD (RS485)
2	TXD (RS232)	15	RXD (RS485)
3	RXD (RS232)	16	RXB (RS485)
4	RTS (RS232)	17	RXD (RS485)
5	CTS (RS232)	18	n/c
6	DSR (RS232)	19	n/c
7	SG (RS232)	20	DTR (RS232)
8	CD (RS232)	21	n/c
9	n/c	22	RI (RS232)
10	TXD (RS485)	23	n/c
11	TXD (RS485)	24	n/c
12	TXD (RS485)	25	n/c
13	TXD (RS485)		

Working with COM ports

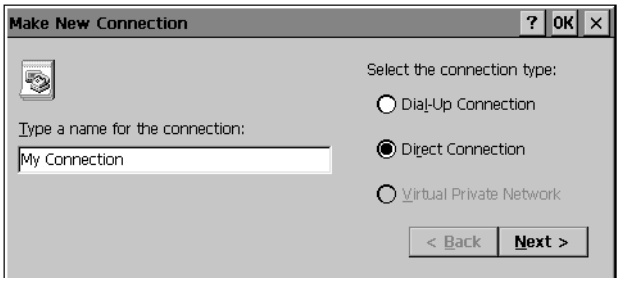
To add a new connection

1. From the **Start** menu, tap **Programs**, then **Communication**, and choose **Remote Networking**.

   The **Connection** window appears.

2. Double-tap **Make New Connection**.

   The **Make New Connection** wizard appears.

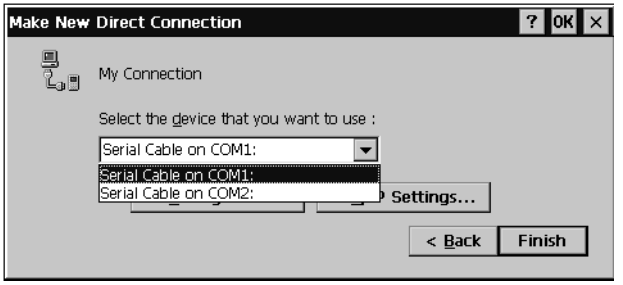


3. Type a name for the new connection then press ENTER

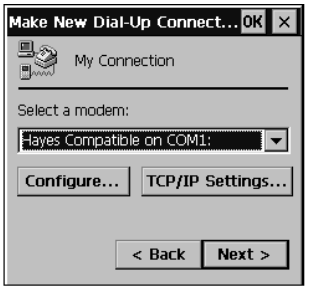
   You will need to use either an external keyboard or the soft keyboard.

4. Choose a connection type.
5. Tap **Next**.

The **Make New Direct Connection** or **Make New Dial-up Connection** dialog box appears.



or

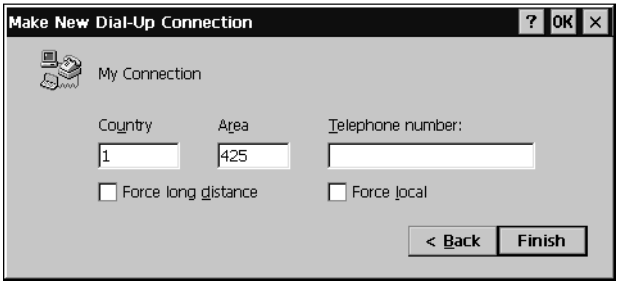


6. From the list, choose the device you want to use (COM1, COM2).

   You can **Configure** your device or **TCP/IP Settings** at this time if you wish.

7. Tap **Finish** for direct connect or **Next** for dial-up.

   If you are adding a dial-up connection the following dialog box appears.



8. Type the destination **Country code**, **Area code**, and **Phone number** in the appropriate boxes.
9. Select or clear the **Force Long Distance** or **Force Local** check boxes.
10. Tap **Finish**.

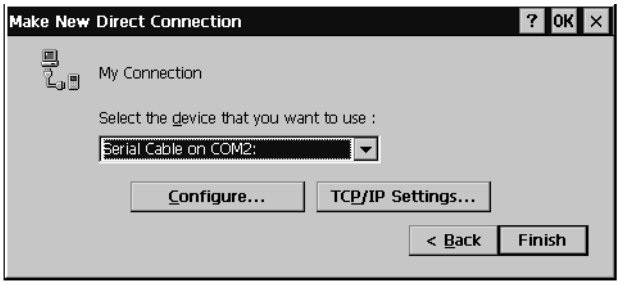
To configure a communications connection

1. From the **Start** menu, choose **Programs**, then **Communication**, and tap **Remote Networking**.

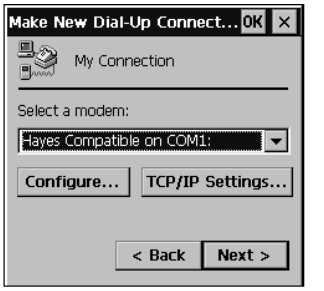
The **Connection** window appears.

2. Select a connection and tap **Properties**.

   The **Make New Direct Connection** or **Make New Dial-up Connection** dialog box appears.

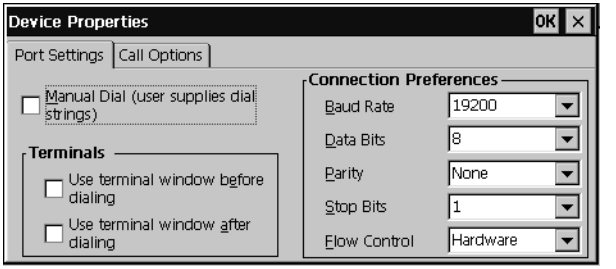


or



3. Tap **Configure**.

   The **Device Properties** dialog box appears.



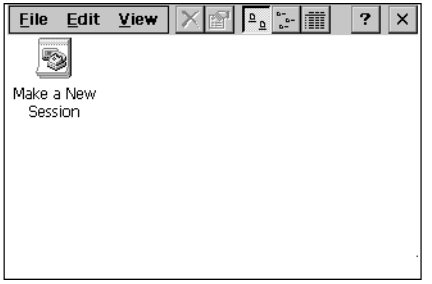
4. In the **Port Settings** tab, choose settings for all **Connection Preferences**.
5. If the connection is for terminal emulation, select or clear the **Terminal** check boxes.

   You can use the ThinView CE to emulate a terminal attached via a modem link (Hayes compatible) to COM1 or COM2. A terminal emulation definition is added as a unique session.

To add a new session

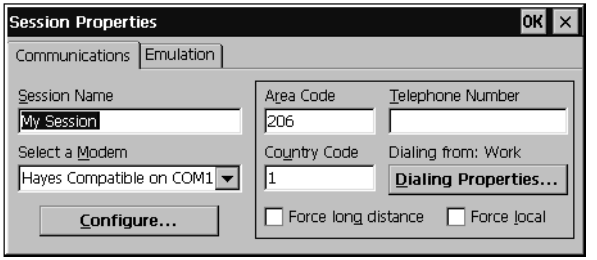
1. From the **Start** menu, tap **Programs**, then **Communication**, and choose **Terminal**.

   The **Terminal** window appears.

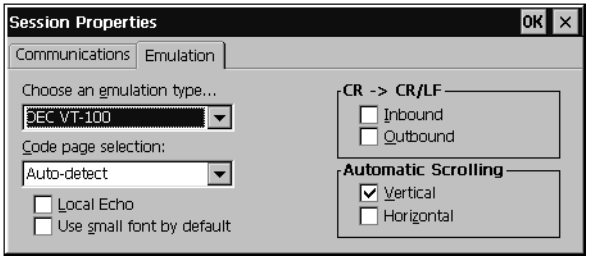


2. Double-tap **Make a New Session**.

   The **Session Properties** dialog box (**Communications** tab) appears.



3. In the **Session Name** box, type a name for your session.
4. Enter the **Country Code**, **Area Code** and **Telephone** number of the remote modem you will connect to.
5. Tap the **Emulation** tab and choose an emulation type (DEC-VT-100 or TTY (Generic)).



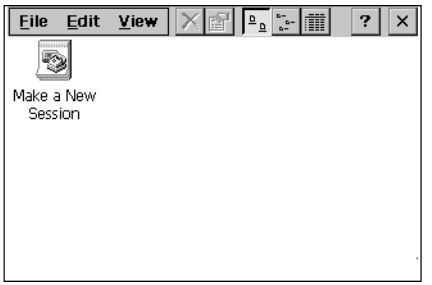
6. From the **Code page selection** box, select the coding type to employ.
7. Select the **Inbound** and /or **Outbound** check boxes to add LF characters to each CR.

8. Select the **Vertical** and/or **Horizontal** check boxes to specify automatic scrolling.
9. Tap **OK**.
10. The new session is added to the **Session** window.
11. Run the **Backup** program to retain the new session definition through a power cycle (see page 13).

To start a terminal session

1. From the **Start** menu, tap **Programs**, then **Communication**, and choose **Terminal**.

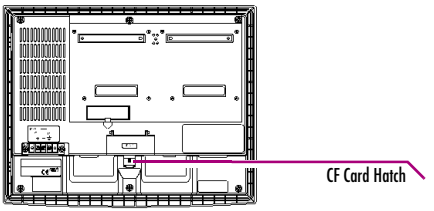
   The **Terminal** window appears.



   Double-tap the session you want to start.

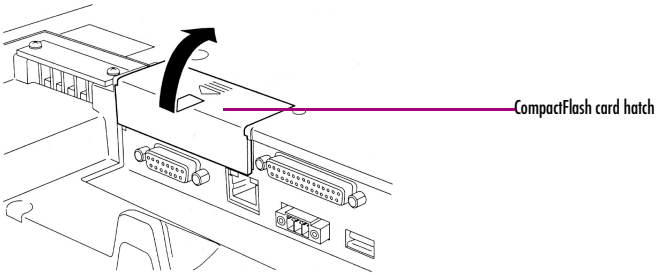
COMPACTFLASH PORT

The ThinView CE is equipped with a CompactFlash Card port located on the back of the enclosure behind a hinged hatch.

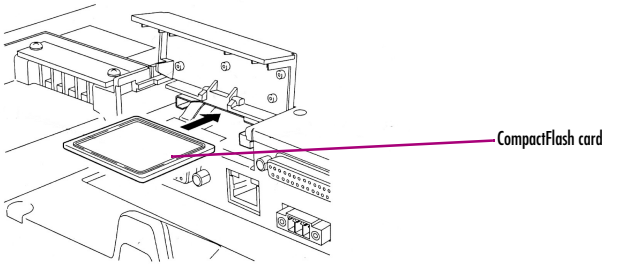


CompactFlash cards can be installed in the port to add to the ThinView CE's Flash memory (see page 43). Compact flash cards are a source of secondary storage for the unit.

The CompactFlash Card Hatch/Port



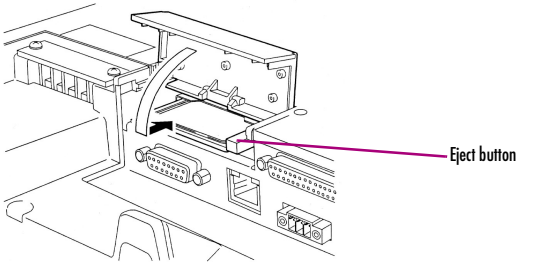
To insert a CompactFlash card into the CF port



1. Open the CF Hatch on the ThinView CE.

   Opening the hatch reveals the CF port.
2. Grasp a CF card between thumb and forefinger.
3. Slide the CF card gently into the CF card port until the eject button clicks.

   The CF card should slide easily into the port. DO NOT FORCE.
4. To eject the CF card, gently press the eject button.



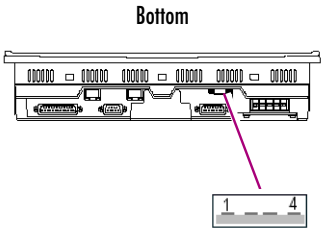
Compatible CF Cards

The following is a list of CompactFlash cards that are recommended by the manufacturer for your ThinView CE.

Manufacturer	Capacity (MB)	Body
Hitachi	16	HB289016C4
Hitachi	32	HB289032C4
Proface	16	GP077-CF20
Proface	32	GP077-CF30
SanDisk	8	SDCFB-8-299
SanDisk	16	SDCFB-16-505
SanDisk	32	SDCFB-32-505
SanDisk	48	SDCFB-48-485
SanDisk	96	SDCFB-96

UNIVERSAL SERIAL BUS (USB)

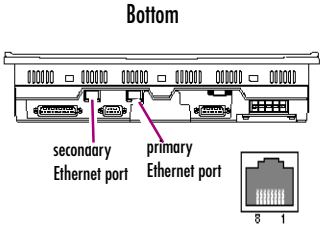
The ThinView CE provides one standard USB port. USB is a high speed serial bus with multidrop capability. A variety of third party USB peripheral devices are available. Each device connected via USB requires a specific device driver. For your personal USB driver requirements, contact your distributor.



1 USB-5V (DC5V300mA)
2 USBD(-) (USB data -)
3 USBD(+) (USB data +)
4 SG (Signal Ground)

ETHERNET PORTS

Two 10BaseT Ethernet networks (shielded twisted pair) can be connected via the RJ45F connectors on the bottom of the unit ThinView CE. The primary port (port 1) is the primary interface to your CIMPLICITY Plant Edition development workstation. The secondary port (port 2) is intended for connection to an I/O network or other process specific equipment. Ethernet ports can be accessed by Windows CE network communications or your custom application. The following diagram shows the location, orientation and pin out of the Ethernet ports.



There are two methods
for setting an IP address on the ThinView CE:

- **DHCP (Dynamic Host Configuration Protocol).** This is the default method that is carried out automatically for primary only.
- **Manual method.** The user uniquely specifies the numeric addresses for the ThinView CE, the Subnet Mask and the Default Gateway.

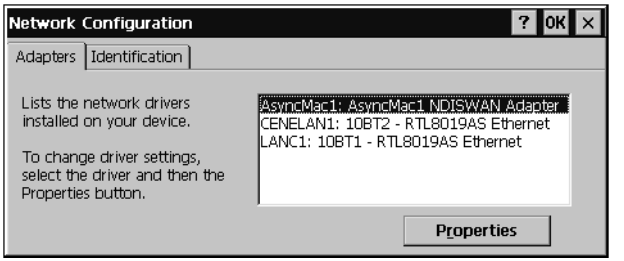
Defaults:

Port	IP
1	DHCP
2	Fixed 192.0.0.1 255.255.255.0 no gateway

To set an IP address

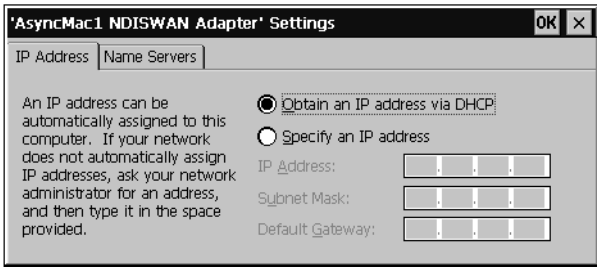
1. In the Control Panel, double-tap **Network**.

   The **Network Configuration** dialog box appears.



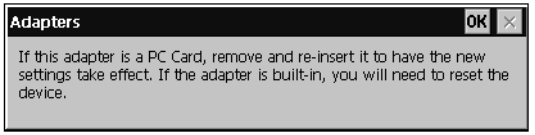
2. On the **Adapters** tab, select either 'CENELAN1: RTL8019AS Ethernet' or 'NE2001: NE2000 Compatible Ethernet', then tap the **Properties** button.

   The **On Board Ethernet Driver** dialog box appears.



3. Select a method:
   - **Obtain an IP address via DHCP** (automatic).
   - **Specify an IP address** (manual).
4. Enter the **IP Address**, **Subnet Mask** and **Default Gateway** numbers obtained from your network administrator (manual method only).
5. Tap **OK**.

The **Adapters** message box appears with a caution.



6. Tap **OK** twice to return to the Control Panel.
7. Run the **Backup** program to retain the new settings through a power cycle (see page 13).
8. Reboot the ThinView CE (see page 14).

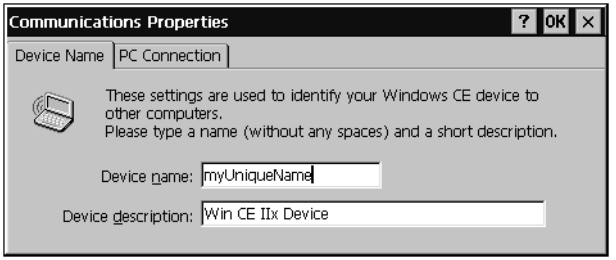
   If the DHCP method was selected, the network server will assign an IP address while the ThinView CE is initializing. (You must be connected to the network).

   After setting an IP address for the ThinView CE, you can access any network drives or shared resources for which you have permission.

To set up access to a Windows network

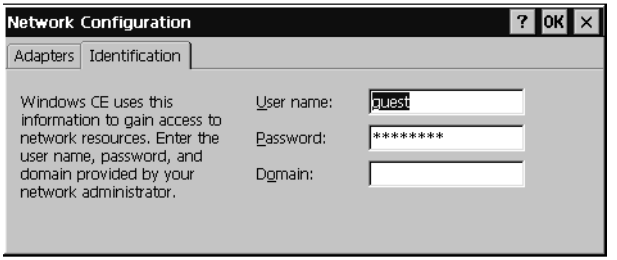
1. In the Control Panel, double-tap **Communications**.

   The **Communications Properties** dialog box appears.



2. On the **Device Name** tab, in the **Device name** box, type a unique name for your ThinView CE.
3. Tap **OK**.
4. In the Control Panel, double-tap **Network**.

The **Network Configuration** dialog box appears.



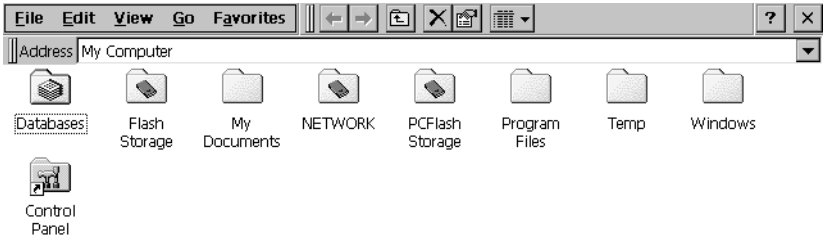
5. On the **Identification** tab, type your assigned **User Name** and **Password**.
6. Tap **OK**.
7. Run the **Backup** program to retain the settings through a power cycle (see page 13).

Using Windows CE Explorer, you can now access anything on your local network for which you have permission.

To access a remote resource on a Windows network

1. Start **Windows Explorer**.

The **Explorer** window appears.



2. In the **Address** box, type or choose from a list, the path to a remote resource.

For example, '\\MyRemoteComputer\MyFolder' specifies the folder named 'MyFolder' on a computer with the name 'MyRemoteComputer'.

3. Press ENTER.

The resource specified is displayed as a collection of files and folders. It can take a few moments to retrieve the data from your local network.

MEMORY

The ThinView CE supports a variety of memory subsystems to ensure the requirements of your application are met. All system memory is tied directly to the microprocessor's address and data busses for fastes access.

Flash Memory

Flash memory functions like a virtual hard drive from the point of view of Windows CE. A 16 MB block of non-volatile memory is the main long term program storage for the ThinView CE. It is partitioned into two sections of which only one is accessible from Windows CE Explorer. The **Flash Storage** folder represents a 6 MB (5 MB formatted) block available for long term storage of user application programs. Another 10 MB block is used to store the Windows CE operating system and is not directly accessible from Windows CE Explorer.

The operating system and all user application programs are transferred from Flash to DRAM for execution. Any user additions to the **Windows folder** are retained in **Flash Storage** when the Backup program is run.

FLASH memory has a limited write-cycle lifetime. That is, the physical memeory devices wear out after about 10,000 writes. Also, the write cycle is much slower for FLASH than for other portions of RAM. Thus, FLASH is not recommended for storage of program variables or any data items whose values are dynamic.

To expand Flash memory with a CompactFlash card

- Insert a blank CF card into the CF Flash Port (see page 35).

The unit immediately reads the new secondary storage.

New memory appears in Windows Ce Explorer as 

.

DRAM Memory

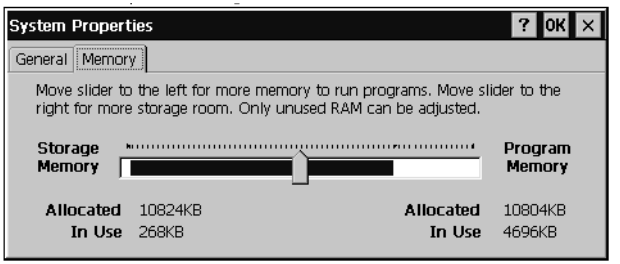
The ThinView CE is equipped with 32 MB of dynamic RAM. 12 MB of the DRAM is reserved for the Windows CE operating system and is not accessible by user applications. The other 20 MB is partitioned into two parts: an object store for temporary file storage and the main program memory for running programs in. The object store is represented in the Windows Explorer as all folders other than **Flash Storage, PCFlash and Network**. Space in program memory is allocated by the operating system on an as-needed basis. Typically, compressed programs stored in FLASH are expanded and moved to program memory for execution. Temporary storage of program variables or data files is also provided by program memory.

Any data stored in DRAM will not be retained through a power cycle.

To partition the DRAM memory

1. In the Control Panel, double-tap **System**.

   The **System Properties** dialog box appears.



2. On the **Memory** tab, drag the slider to divide the DRAM into Storage and Program memory.

   The amount of memory allocated to and used by each partition is shown on the dialog box.

3. Tap **OK** to apply the new setting.
4. Run the **Backup** program to retain the new setting through a power cycle (see page 13).

OTHER SUBSYSTEMS

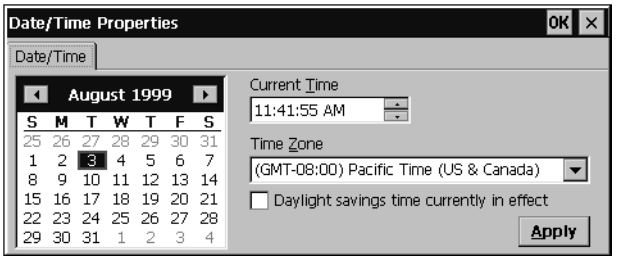
Real-Time Clock

The ThinView CE has a programmable real-time clock capable of reporting the current time in Year/Month/Day/Hour /Minute/ Second. The time is set from the Windows CE interface and retained through a power cycle.

To set the real-time clock

1. In the Control Panel, double tap **Date/Time**.

   The **Date/Time Properties** dialog box appears.



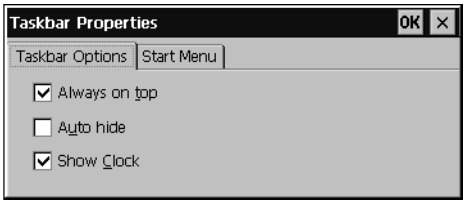
2. Tap the year to choose a new year; tap the month to choose a new month.
3. Tap a date to specify the day of month.
4. From the **Time Zone** box, choose your zone.
5. Select **Daylight savings time currently in effect** if it is true.
6. In the **Current Time** box, adjust the hours, minutes and seconds.
7. Tap **Apply** to apply the settings at any time, or tap **OK** to finish.

   The time can be displayed in the system tray on the task bar.

To display time on the taskbar

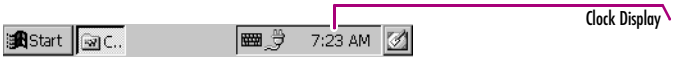
1. From the **Start** menu, choose **Settings** and then **Taskbar**.

   The **Taskbar Properties** dialog box appears.



2. On the **Taskbar Options** tab, select **Show Clock**.
3. Tap **OK**.
4. Run the **Backup** program to save the settings through a power cycle (see page 13).

   The current time is displayed in the taskbar.



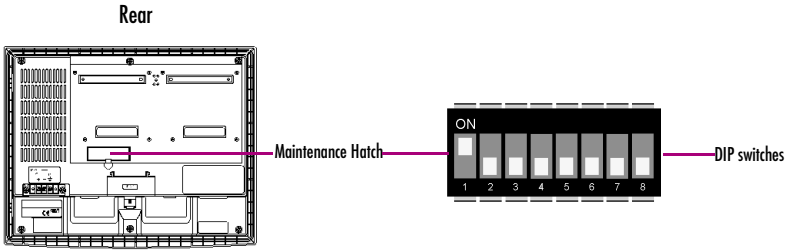
RAS Port

As this port is not supported by ThinView CE, please contact your distributor for your personal driver support needs.

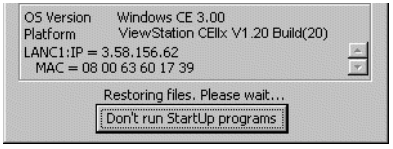
MAINTENANCE HATCH

The maintenance hatch accesses an eight position DIP switch, a serial port and four LEDs used for configuration of the ThinView CE. DIP switch 1 is set to "ON" at the factory. The remaining switches are set to "OFF"

Each switch controls a separate function of the ThinView CE. DIP switch 6 is the force startup switch. Setting this switch to "ON" forces the startup applications to run when the operating system is started.



When the switch is set to "OFF", the ThinView CE operates normally, displaying the startup splash screen. You can skip running the startup applications by tapping the "Don't run StartUp Programs" button on the startup splash screen.



To configure startup behavior of the ThinView CE

Warning: To avoid electric shock, ensure the AC power is disconnected from the unit prior to opening the maintenance hatch.

1. Open the Maintenance hatch on the back of the unit and locate DIP switch 6.
2. Turn DIP switch 6 to the "ON" position.

   The startup applications are now forced and will run the next time the system is restarted.

A1 Design Specifications

Protective Physical

Item	Specification
Enclosure dimensions (use for panel cutout)	Height: 9.59 in./243.5 mm (+/- 0.039 in./1 mm) Width: 12.48 in./317 mm (+/- 0.039 in./1 mm) Depth: 2.9 in (7.4 cm) w/o I/O module
Face plate dimensions	Height: 10.5 in (26.7 cm) Width: 13.2 in (33.5 cm) Depth: 0.47 in (1.2 cm)
Grounding	Functional grounding: D type
Cooling Method	Natural Air Circulation
Protective Structure	NEMA4X/12 or equivalent (Limited to front surface after installation in a panel
Weight	7.7 lbs (3.5 kg)

Environmental

Item	Specification
Ambient Operating Temperature	0 ~ 45 °C
Amibient Operating Humidity	30 ~ 85% (non-condensing)
Ambient Storage Temperature	-10 ~ 60 °C
Ambient Storage Humidity	5% ~ 85% (non-condensing)
Vibration Resistance	10 ~25 Hz 19.6m/s^2 X, Y, Z directions, 30 min. each)
Shock Resistance	98 m/s^2 or equivalent
Noise Immunity (via noise simulator)	Noise Voltage : 1000 V p-p Pulse Width : 1 Rise Time: 1ns

Item	Specification
Anti-Static Electricity Discharge	+/- 6kV

DC Power

Item	Specification
Input Voltage	DC+24V +/- 10%
Power Consumption	Less than 50W
Inrush current	Less than 30A
Voltage Endurance	AC1000V 1 min. 10mA or less (Between DC power source input and FG)
Insulation Resistance	10 MOhm at 500 VDC (Between DC power source input and FG)
Power Up Inrush Current (max)	Less than 30A

Display

Item	Specification
Display Device	TFT Color LCD (10.4 inch)
Effective area on display	211.2(W) x 158.4 (H) mm
Dot Pitch	0.33 x 0.33 mm
Brightness	170 cd. (average value at display center area)
Back Light	Cold Cathode FluorescentTube (Estimated life time is about 15,000 hours until its brightness is half)
Size	10 inch diagonal
Colors	65536
Resolution	640 by 480 pixels
Graphics Accelerator	MediaQ MQ200
Graphics Memory	1 MB

Touch Screen

Item	Specification
Type	Analog Resistive Film
Resolution	1024 (Vertical) x 1024 (Horizontal)

CPU

Item	Specification
Processor	Hitachi 7750 SH4
Clock speed	200 Mhz
OS Start Up Time	Approx. 10 seconds to splash screen.
EPROM	128 KB
Flash ROM	16 MB
Flash ROM Write Times	Max. 10,000 erase cycles (all blocks are used before cycling)
Main Memory	32 MB SDRAM

Interface

Item	Specification
Serial I/F (not supported by Plant Edition projects)	COM1: RS-232C (Dsub 9 pin plug) 5V supply available Max. current supply 200 mA, Automatic Recovery Fuse incorporated COM2: RS-232C/RS-485(Dsub 25 pin socket)
LAN I/F	2 Channel Ethernet (IEEE802.3 10BaseT) 10BaseT Modular Connector
CF Card I/F	CF Card Connector
RAS I/F(not supported)	Not currently supported
PS/2 I/F	Keyboard or Mouse connector 6 pin small type DIN connector Enable both connected with branch cable

Item	Specification
Universal Serial Bus (USB) (not supported by Plant Edition projects)	5v supply available Max current supply 300 mA, automatic recovery Fuse incorporated. Series A connector
MTBF	12,000 hrs

Calendar/Clock

Item	Specification
Resolution	1 second
Retention	Battery Backup
RTC Backup	Maintains 30 days watch. (under normal temperature 25 +/-5 C, normal humidity 65 +/-20%)
Accuracy of Watch	65 sec./month under normal temperature with electricity off. Changes to -90sec ~ +380 sec./month depending on operating condition, i.e., difference of temperature and period of use.

Miscellaneous

Item	Specification
LEDs	Front panel programmable tri-state LED
Annunciator	Programmed beep

A2 Troubleshooting

The tables contained in this appendix can be used to identify and remedy problems that can occur with the ThinView CE.

Power up

Problem	Suggested remedy
Power indicator does not illuminate.	Check all power connections to the unit.

Pocket Internet Explorer

Problem	Suggested remedy
Cannot access any URLs when using a dial-up connection to an ISP.	Check network status and configuration (DHCP requires DHCP server on network).

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