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# How to Use The ComfortLink™ SmartLoader Software Download Program Version 2.1

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## Manual Contents

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## 1.0 About the SmartLoader Program

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SmartLoader is a Windows-based software tool that is used for downloading software to ComfortLink control boards.

SmartLoader provides for controlled software and command files stored on the hard disk or CD to be downloaded directly to the ComfortLink unit via LEN (Local Equipment Network) communications.

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## 2.0 Hardware and Operating System Requirements

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SmartLoader requires the following hardware and operating system:

- 486 processor or better
- Minimum 640 x 480 screen resolution
- Microsoft Windows™ 95, 98, 2000, XP
- RS-485 interface board, 2-wire half-duplex, 9600, 19.2K or 38.4K baud or, Serial port with RS-232/RS-485 converter, 2-wire half-duplex, 19.2K or 38.4K baud.

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## 2.1 Cable Requirements & Connection Locations

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A COMM port repeater & appropriate patch cable are needed to connect your computer to the ComfortLink unit or board. There are (2) two connection means to download unit software:

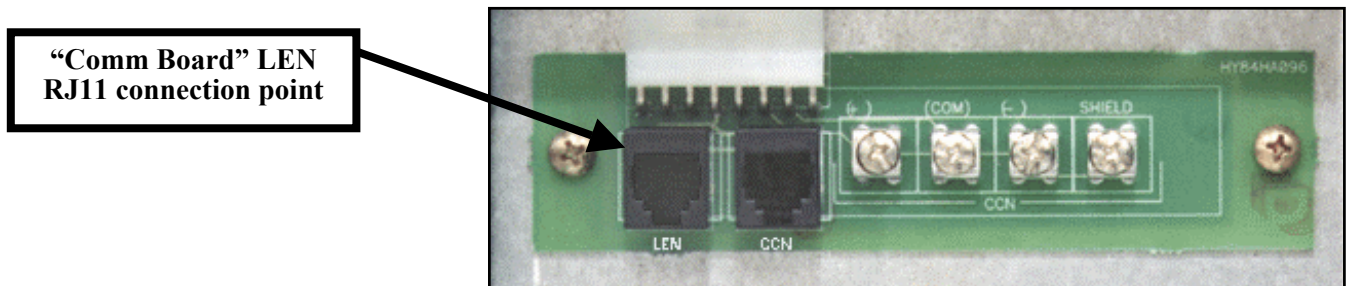
(1) Via the “LEN” RJ11 connector on the unit’s “Comm Board”

Or

(2) Via direct connection to the ComfortLink board

### 2.1.1 LEN Connectivity Requirements

LEN connectivity is accomplished through the “LEN” RJ11 on the unit’s “Comm Board” as shown in the figure below.

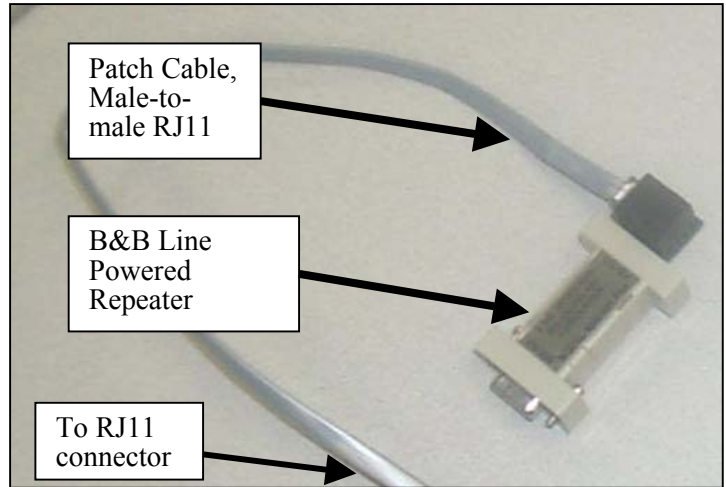


Components for LEN RJ11 “Comm Board” download:

The cable/connector requirements for LEN connectivity are shown in the figure below. The components are:

- B&B Line Powered Repeater, DB-9 to RJ11, B&B part number 485CARLP9A

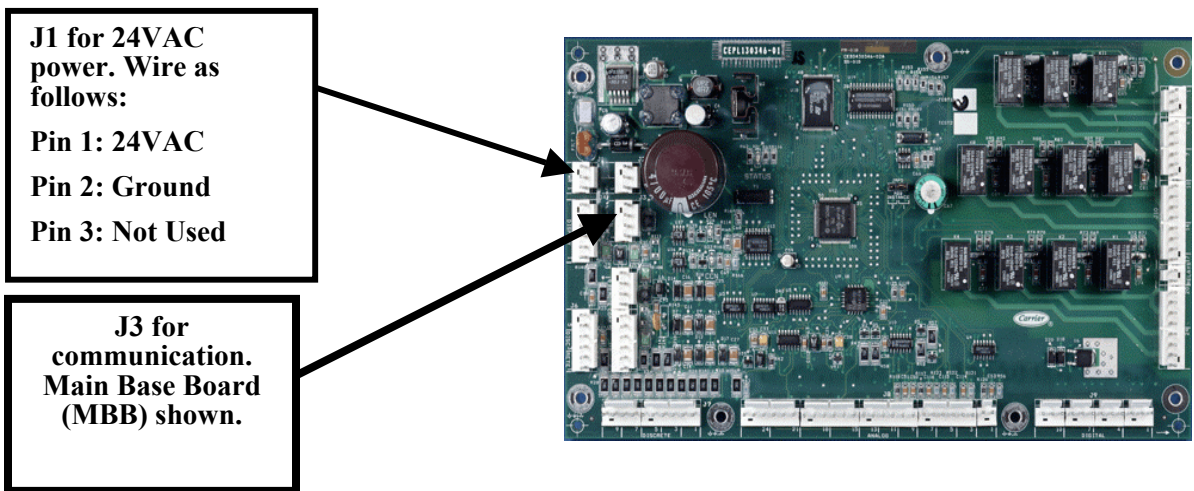
Contact: B&B Electronics  
707 Dayton Road  
PO Box 1040  
Ottawa, IL 61350  
ph 815.433.5100  
fx 815.433.5109  
e-mail: sales@bb-elec.com  
www.bb-elec.com



- Patch Cable, six-conductor, male-to-male RJ11, straight through pin out, OR four-conductor modular extension, male-to-male RJ11, straight through pin out.

**2.1.2 ComfortLink Board Connectivity Requirements**

ComfortLink board communication & power connectivity is accomplished through direct connection to the J1 power & J3 communication terminals as shown in the figure below.



Components for direct download to ComfortLink board:

Communication Components:

- B&B Line Powered Repeater, DB-9 to RJ11, B&B part number 485CARLP9A.

Contact: B&B Electronics

707 Dayton Road

PO Box 1040

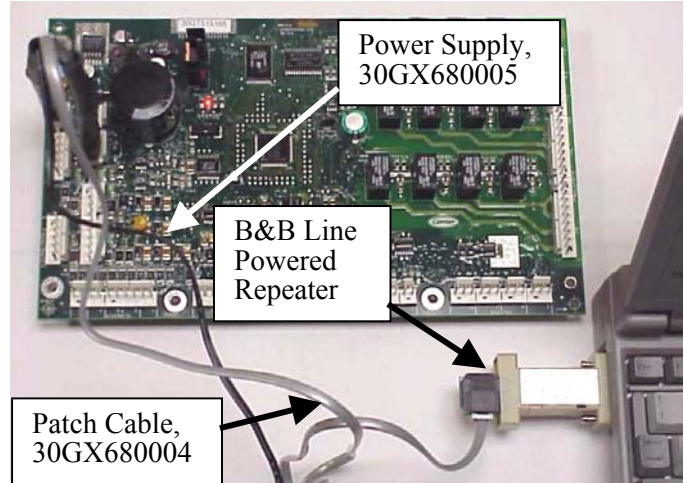
Ottawa, IL 61350

ph 815.433.5100

fx 815.433.5109

e-mail: sales@bb-elec.com

www.bb-elec.com



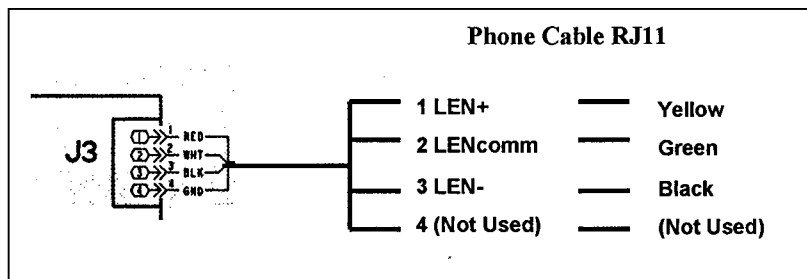
- Patch Cable: Part Number 30GX680004 is available from RCD.

- This cable can also be made from a phone cable, four-conductor modular extension, male-to-male RJ11, straight through pin out.
- The patch cable wiring diagram is based on looking at the end of the RJ11 connector, with the locking tab facing up and reading left to right. Cut the RJ11 connector off of the opposite end.
- Strip the appropriate leads and crimp on the Trifurcon terminal, qty 3, Carrier HY57MP008, (same as Molex 08-50-0189). Terminals are to be crimped and soldered to the yellow, green, and black cable wires as shown below.

Note: Molex crimping tool required to assemble Trifurcon terminal & Molex housing. Available from Paladin Tool, part number 1631.

- Connect with 4-Pin Molex connector housing HY07MP504, (same as Molex part number 09-50-8041).

J3 pin identification is silk screened on each ComfortLink board.



Patch Cable Wiring

- A Navigator can be connected to the MBB by using a HY84HA096 Comm Board and a 30GT680001 wiring harness to verify configurations. This will also allow connection of Service Tool or ComfortView.

#### Power Components:

- 24VAC Power Supply: Part Number 30GX680005 available from RCD. Plug type cube, 115/24VAC transformer, 450mA rated output.
- A field supplied 24VAC transformer can also be used. Strip the leads and crimp on the Trifurcon terminal, qty 2, Carrier HY57MP008, (same as Molex 08-50-0189).
- Wire terminals as follows: Pin 1: 24 VAC, Pin 2: Ground, Pin 3: Not Used.
- Connect with 3-Pin Molex connector housing HY07MP503, (same as Molex part number 09-50-8031).

## **2.2 Interaction with Network Service Tool IV, Building Supervisor IV, and ComfortVIEW**

SmartLoader can be installed on a computer along with Carrier's Network Service Tool IV, Building Supervisor IV, and ComfortVIEW software. These software products cannot, however, run simultaneously with SmartLoader. You can shut down Network Service Tool IV and Building Supervisor IV and launch SmartLoader without re-booting the computer. Smartloader 2.0 will automatically shutdown ComfortVIEW Services and return them to their previous state after you exit SmartLoader.

**Note:** You must install SmartLoader after installation of the aforementioned software products. If, for any reason, you install any of these products after SmartLoader has been installed, you must re-install SmartLoader.

## **2.3 Comm Port Setup**

The LEN Bus serial port must be set to an unused serial comm port to avoid hardware conflicts. Although the baud rate is selectable in SmartLoader, all ComfortLink units are set to 38.4K baud at the factory. The baud rate selection feature can apply to future SmartLoader products with variable rates.

## **3.0 How to Install SmartLoader**

**Note:** You must install SmartLoader **after** installation of Carrier's Building Supervisor IV, Network Service Tool IV, and ComfortVIEW products. If, for any reason, you install any of these products after SmartLoader has been installed, you must re-install SmartLoader.

Before installing SmartLoader, all applications running under Windows must be closed. If you are using Windows 2000 or XP you must be logged on as an Administrator.

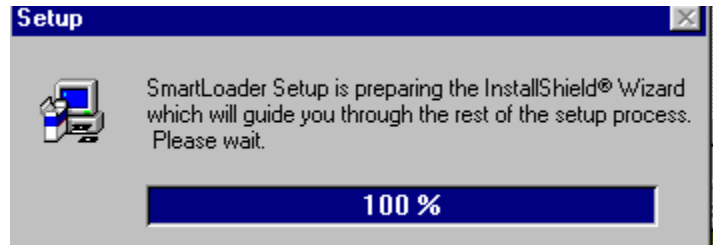
To install SmartLoader, place the SmartLoader CD into your computer's CD-ROM drive. If your computer is set up for CD autoplay, the SmartLoader install program will start automatically.

- If the CD autoplay feature is active, SmartLoader will attempt to install every time you place the SmartLoader CD into your CD drive.
- Press the SHIFT key when you insert the CD into the CD-ROM drive to deactivate the autoplay feature.



To install SmartLoader with the autoplay feature deactivated, open the Start menu, select Run..., and type *d:setup*, where *d* is the drive letter assigned to your CD drive.

The SmartLoader welcome screen will appear followed by the Setup acknowledgement of the InstallShield Wizard as shown to the right.

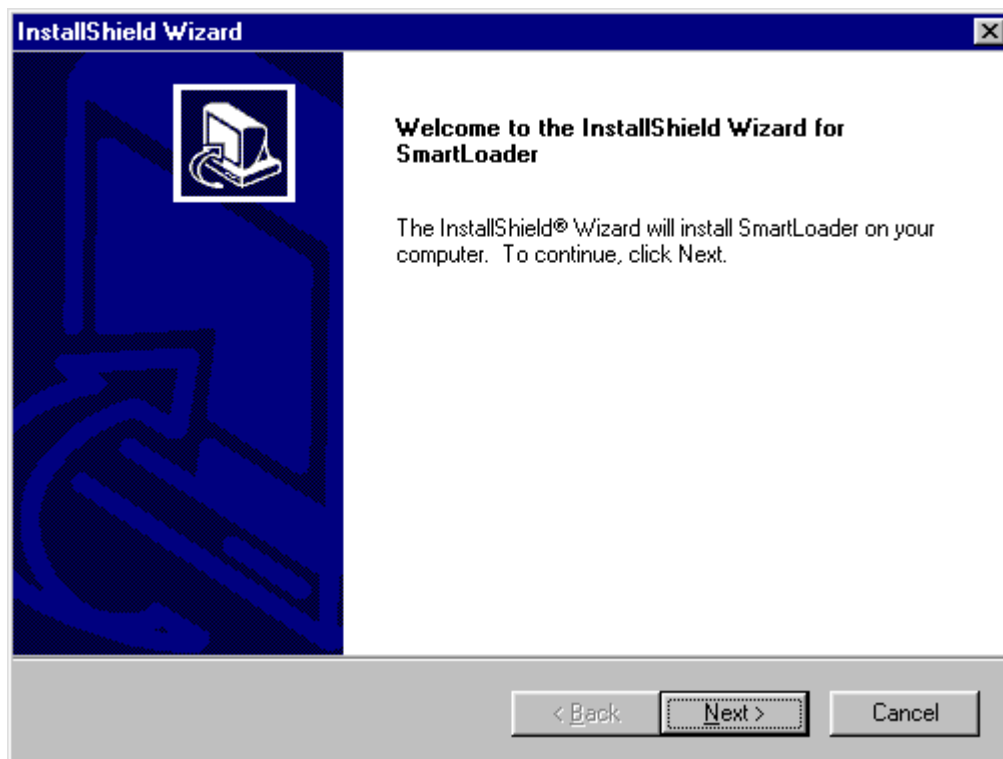


### 3.1 Installation Welcome Screen

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Once the password was been entered, the installation will proceed as shown below.

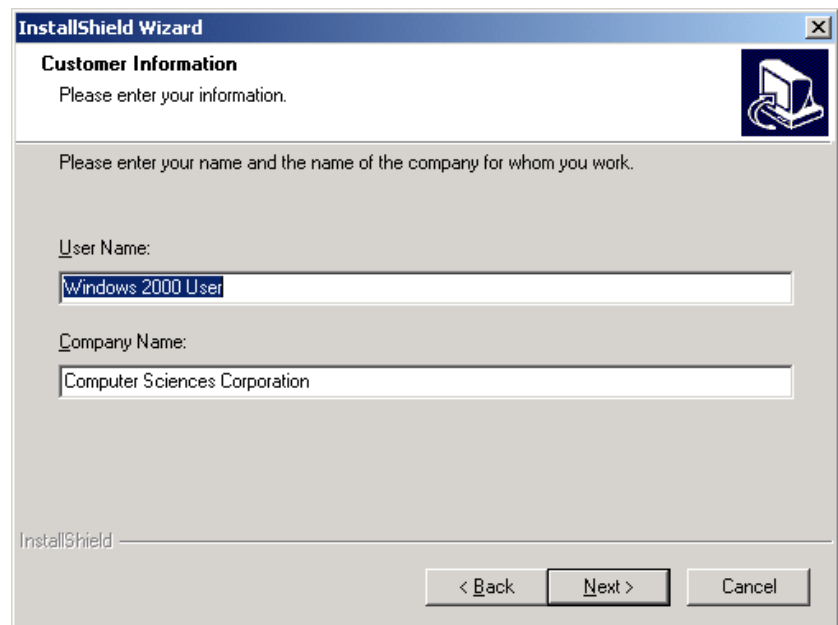
- Click “Next” to continue.



### 3.2 User Information

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- Enter your name & company name.
- Click “Next” to continue.



The screenshot shows a Windows-style dialog box titled "InstallShield Wizard". The main heading is "Customer Information" with a sub-heading "Please enter your information." and a small icon of a computer monitor. Below this, it says "Please enter your name and the name of the company for whom you work." There are two text input fields: "User Name:" containing "Windows 2000 User" and "Company Name:" containing "Computer Sciences Corporation". At the bottom, there are three buttons: "< Back", "Next >", and "Cancel". The "InstallShield" logo is visible in the bottom left corner.

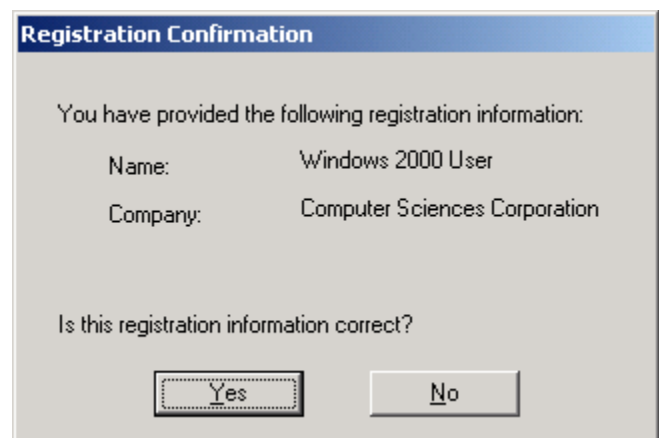
### 3.3 Registration Confirmation

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Your personal registration will be confirmed as shown below.

If acceptable:

- Click “Yes” to proceed.



The screenshot shows a dialog box titled "Registration Confirmation". It displays the registration information: "Name: Windows 2000 User" and "Company: Computer Sciences Corporation". Below this, it asks "Is this registration information correct?". At the bottom, there are two buttons: "Yes" and "No".

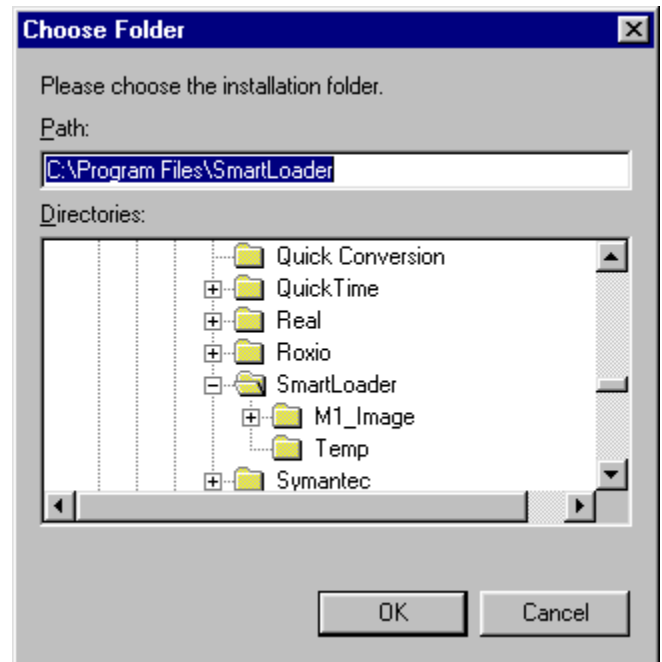
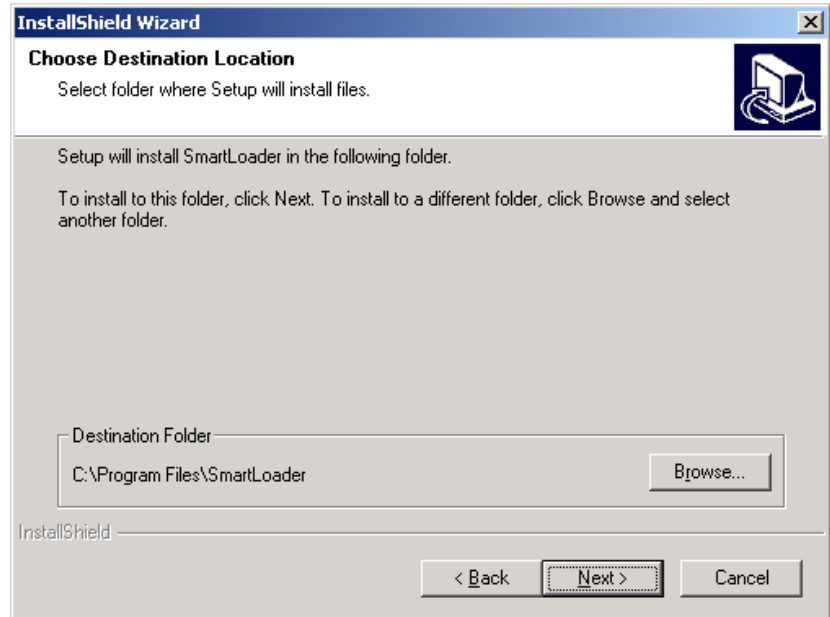
### 3.4 Destination Drive Selection

You will be allowed to copy SmartLoader to any drive. Installation to your primary hard drive C: is suggested.

If you would like to install SmartLoader to a drive other than C:

- Click the “Browse” button.
- Choose the drive & folder for the SmartLoader installation as shown below.

Note: Network installation is not recommended since the SmartLoader is intended for field download applications.



### 3.5 Operation from CD-ROM Drive

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It is recommended to copy all support & unit software to your hard drive.

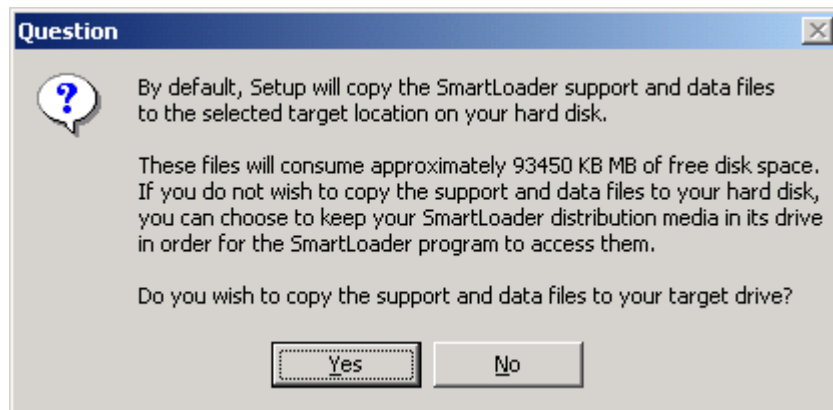
- Click “Yes” to copy support & unit software to your hard drive.

All SmartLoader drivers, executable & unit software files will be loaded to your hard drive.

Some users may prefer to minimize the amount of unit software on their hard drive. SmartLoader allows you to download unit software from either your hard drive or the SmartLoader CD.

If you would like to run SmartLoader from the CD-ROM drive:

- Click “No”.
- The installation will proceed to copy only the SmartLoader drivers & necessary executable files to your hard drive. Unit software will only reside on the SmartLoader CD.
- Note: the SmartLoader CD must be loaded in the CD-ROM drive for downloads to occur.



Appropriate files will now be copied to the destination drive as determined above. A status bar will appear as files are copied to the hard drive.



### 3.6 Setup Complete

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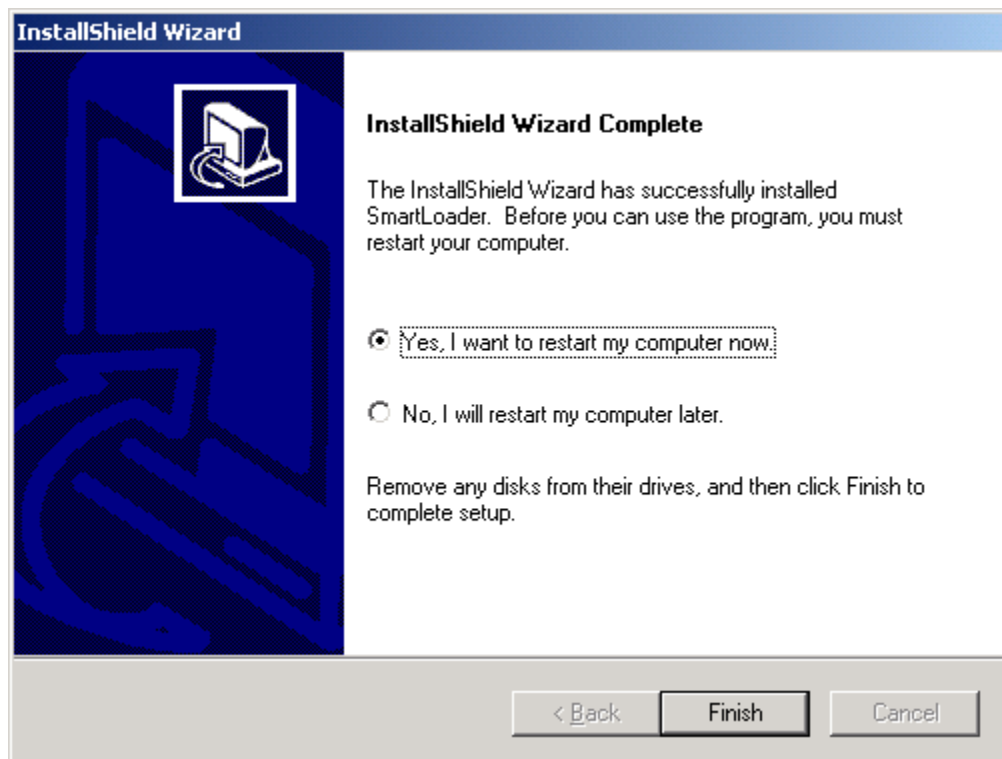
Once the appropriate files have been copied to the hard drive, a SmartLoader program group will appear. This confirms that SmartLoader has been installed.

Notice: the Readme.doc file contains any last minute software notes that may be important to the operation of the program. Please read the Readme.doc file for any last minute & important program information.

See “SmartLoader 2.1 User Manual.doc” or “SmartLoader 2.1 User Manual.pdf” located on the SmartLoader CD for a copy of this manual.

Once the installation has been completed, you should restart your computer to ensure the drives & program configuration settings are established.

- Ensure “Yes, I want to restart my computer now.” has been chosen.
- Click “Finish”.



### 3.7 Installation Validation

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Access to SmartLoader software is restricted to Carrier authorized service personnel only. This is to ensure that the proper unit software is downloaded to the equipment. Installation of the incorrect software may result in damage to the equipment and may be considered abuse. A registered password will be required before the software will proceed. The password will have to be entered only once for each PC or laptop installation.

In order to use SmartLoader, you must register your copy of the software with NAC Service Engineering support. To accomplish this:

1. Copy the Installation Serial Number that appears on the Installation Validation dialog box the first time you run Smartloader.
2. Telephone or e-mail the Installation Serial Number to NAC Service Engineering:

Contact	Phone	e-mail
Bev Green	315-432-7912	bev.green@carrier.utc.com
Steve Bayes	315-432-6067	stephen.bayes@carrier.utc.com
Lewis Clark	315-432-3788	lewis.clark@carrier.utc.com
Chris Jones	315-433-4751	chris.jones@carrier.utc.com

3. Provide the following information:
  - Installation Serial Number
  - Your full name
  - Company name (Only Carrier distributors, Carrier Commercial Service, and Carrier Export Companies will be authorized)
  - Distributor mailing address
  - Your e-mail address
4. NAC Service Engineering support will in turn give you a password.
5. Enter the password into the Installation Verification dialog box.
6. Then you will be able to use SmartLoader without the need to enter a password again.
7. You will be required to acknowledge copyright protection on the SmartLoader software.

## 4.0 Getting Ready to Start the SmartLoader Program

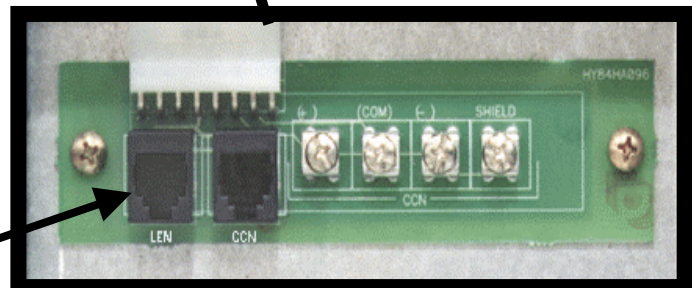
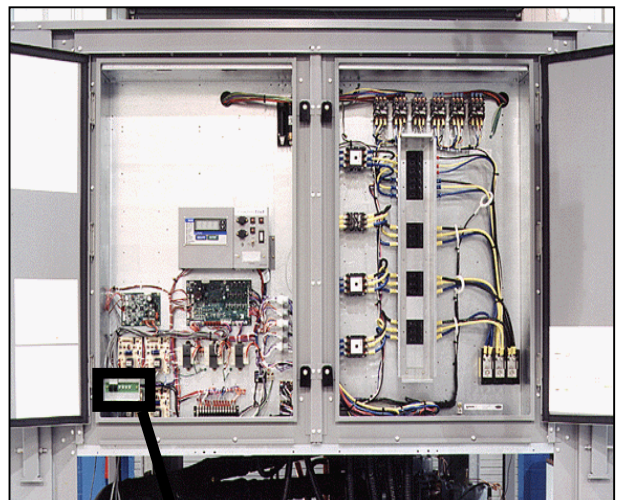
You are almost ready to use the SmartLoader. Just a few more steps:

- Ensure control power to the ComfortLink unit is ON. Unit power is not necessary unless the unit relies on a control voltage transformer to provide unit control power.

Note: All 30 Series Chillers must have the Remote/Off/Enable switch in the Off position.

- Ensure your RS-232 line powered repeater is connected to your computer's COM port.
- Ensure an appropriate four-conductor cable with RJ11 connector is connected to the repeater.
- Connect the other end of the cable to:
  - Either an appropriate ComfortLink board J3 terminal
  - Or LEN RJ11 connection on the ComfortLink unit "Communication Board"

**CAUTION:** Do not connect into the CCN RJ11 on the ComfortLink unit or any non-ComfortLink RJ11 connector. Only ComfortLink units or ComfortLink boards can be downloaded with SmartLoader. 30GTN chiller connection location example is shown below.



**Download through LEN  
connection ONLY!**

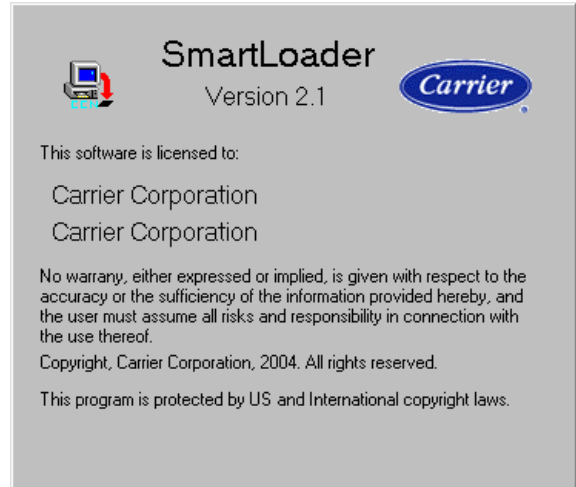
**ComfortLink Communication Board**

## 4.1 Starting SmartLoader

To start the SmartLoader program:

- Click on the SmartLoader icon from the SmartLoader program group
- Or
- Click the Windows™ Start button & choose SmartLoader from the program list

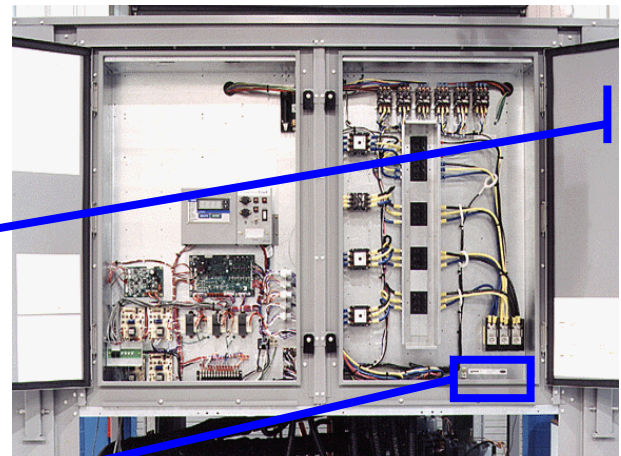
The following introduction screen will appear.



- Click “OK” to proceed.
- Locate the unit Model & Serial numbers.
- The 30GTN chiller nameplate is located on the unit corner post.
- A secondary identification label is located on the inside of the control box as show below.

Carrier		30GTN070-E-620KA		Carrier			
A United Technologies Company		NNNF 12346					
MODEL 30GTN070-E-620KA		SERIAL NNNF 12346		FACTORY CHARGED			
QTY	VOLTS AC	PH	HZ	RLA	LRA	REFRIG SYSTEM	R-22
COMP 1	460	3	60	65.4	345	70 LBS	31.8 kg
COMP 1	460	3	60	65.4	345	69 LBS	31.3 kg
COMP							
DESIGN / TEST PRESSURE GAGE		HIGH	PSI 450	MPa 3102	LOW	PSI 278	kPa 1917
FAN MOTORS	QTY	VOLTS AC	PH	HZ	FLA	HP	KW OUT
OUTDOOR	4	460	3	60	3.3	2.0	1.5
OUTDOOR	2	460	3	60	2.8	1.7	1.2
OTHER							
HEATERS		TOTAL ONLY SUITABLE FOR OUTDOOR USE					
POWER SUPPLY	460	VOLTS	3	PH	60	HZ	CT
PERMISSIBLE VOLTAGE AT UNIT	506	MAX	414	MIN	1	166.0	MAX OVERCURRENT PROTECTION DEVICE AMPS
CONTROL POWER SUPPLY	115	VOLTS	1	PH	60	HZ	30
							AMPS
MADE IN U.S.A.		TLF	CHARGE SYSTEM PER INSTALLATION INSTRUCTIONS			99NA504514 E	SP

**30GTN Nameplate Example**



Carrier		30GTN070-E-620KA		Carrier	
A United Technologies Company		NNNF 12346			
MODEL 30GTN070-E-620KA		SERIAL NNNF 12346			

**30GTN Secondary Identification Label**

- Enter the complete Model & Serial number in the fields provided.
- Use the **full** model & serial numbers from the unit nameplate or secondary identification label to ensure the appropriate software is downloaded.

Note: SmartLoader will not recognize units with **SPECIAL ORDER** model numbers. Only base unit model number will be accepted. **SPECIAL ORDER** model numbers can be identified by numeric values in the 12<sup>th</sup> through 16<sup>th</sup> digits as follows:

Unrecognized SPECIAL ORDER Model Number Example

3	0	G	T	N	0	7	0	-	E	-	7	2	2	9	1
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

The diagram illustrates the data flow from a physical unit nameplate to the SmartLoader software interface. On the left, a Carrier nameplate for model 30GTN070-E-620KA is shown. The model number and serial number (NNNF12346) are circled in red. On the right, the SmartLoader (Carrier Proprietary) window is displayed. The 'Carrier model number' field contains '30GTN070-E-620KA' and the 'Serial number' field contains '3199F12346'. Both fields are also circled in red. Arrows indicate that the model and serial numbers from the nameplate are being entered into the software. The software window also shows 'Automatic' selected for file selection, a source directory of 'd:\Program Files\SmartLoader\M1\_Image', and PC address and baud rate settings.

**OR**



## 4.2 Choose File Selection Method

There are two modes possible for file selection, Automatic and Manual.

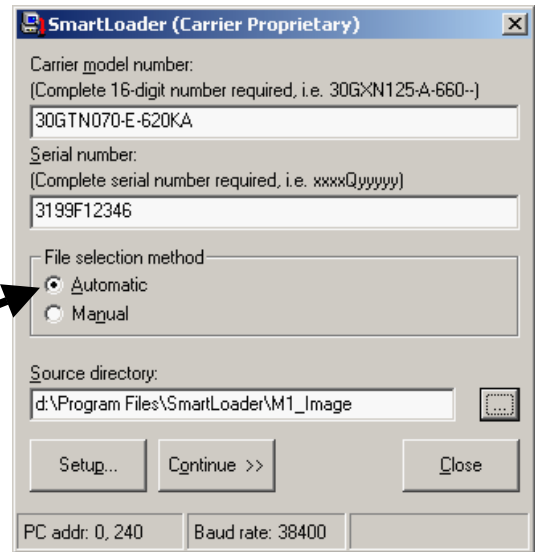
When running in the Automatic mode, SmartLoader searches the “M1\_Image” database for download files corresponding to the model number and serial number entered by the user. The latest compatible revision of download files for a board set is used.

Manual mode allows a user to select download files from a Product folder, as well as a Revision level. While not typically used, Manual file selection allows an experienced user to revert back to older versions of download files if necessary.

The **Automatic** file selection method is recommended to ensure the latest unit software is selected & downloaded.

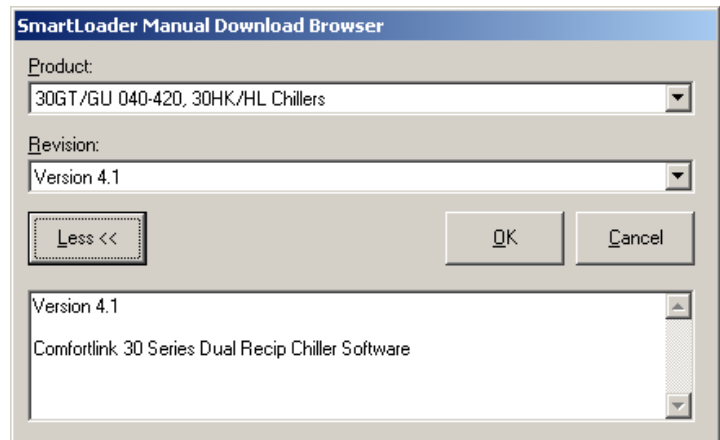
If you would like SmartLoader to automatically locate the appropriate unit software:

- Click on **Automatic** file selection method.



The **Manual** file selection method is convenient if you desire to download a previous version of the software from your hard drive or from the SmartLoader CD.

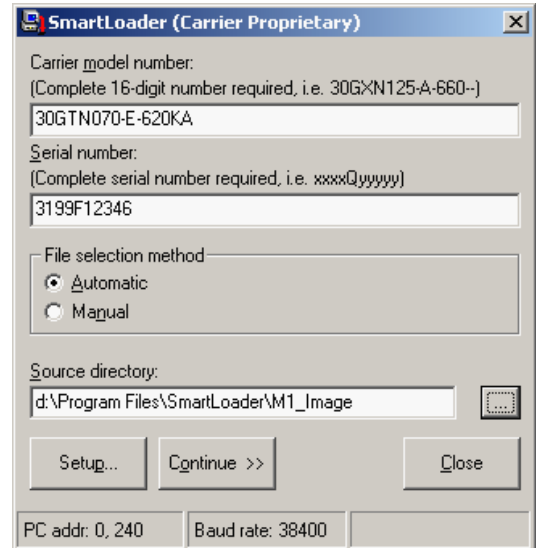
- Click on **Manual** and then “Continue>>” to direct SmartLoader to the desired software revision. The revision can be selected by clicking on the “Revision” drop down list.
- Click on the “More >>” button to see any related notes regarding the software release as shown to the right.
- Click on “Less <<” to hide these notes.
- Click on “OK” once the desired software package has been selected.



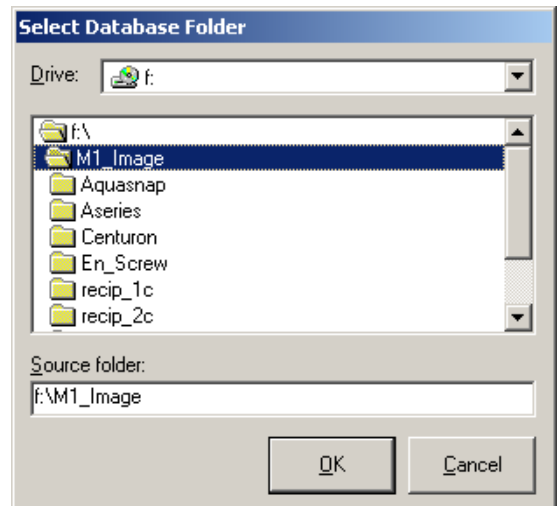
### 4.3 Select Database Folder

SmartLoader can be directed to find the unit software database on your hard drive or SmartLoader CD.

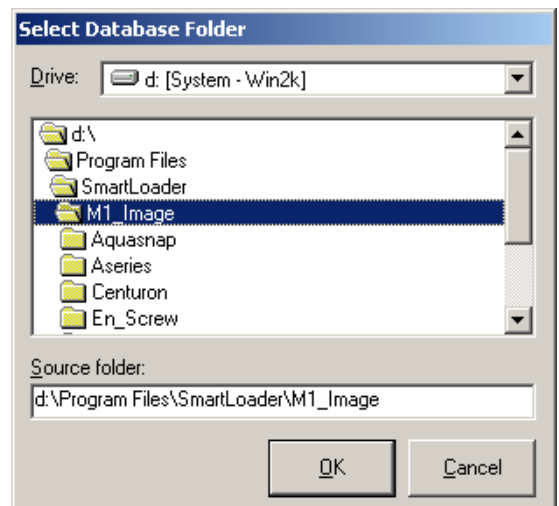
- Click on “...” to select the source directory.



If you elected to run SmartLoader from the CD-ROM, you will have to choose the CD-ROM drive from the “Select Database Folder” menu.



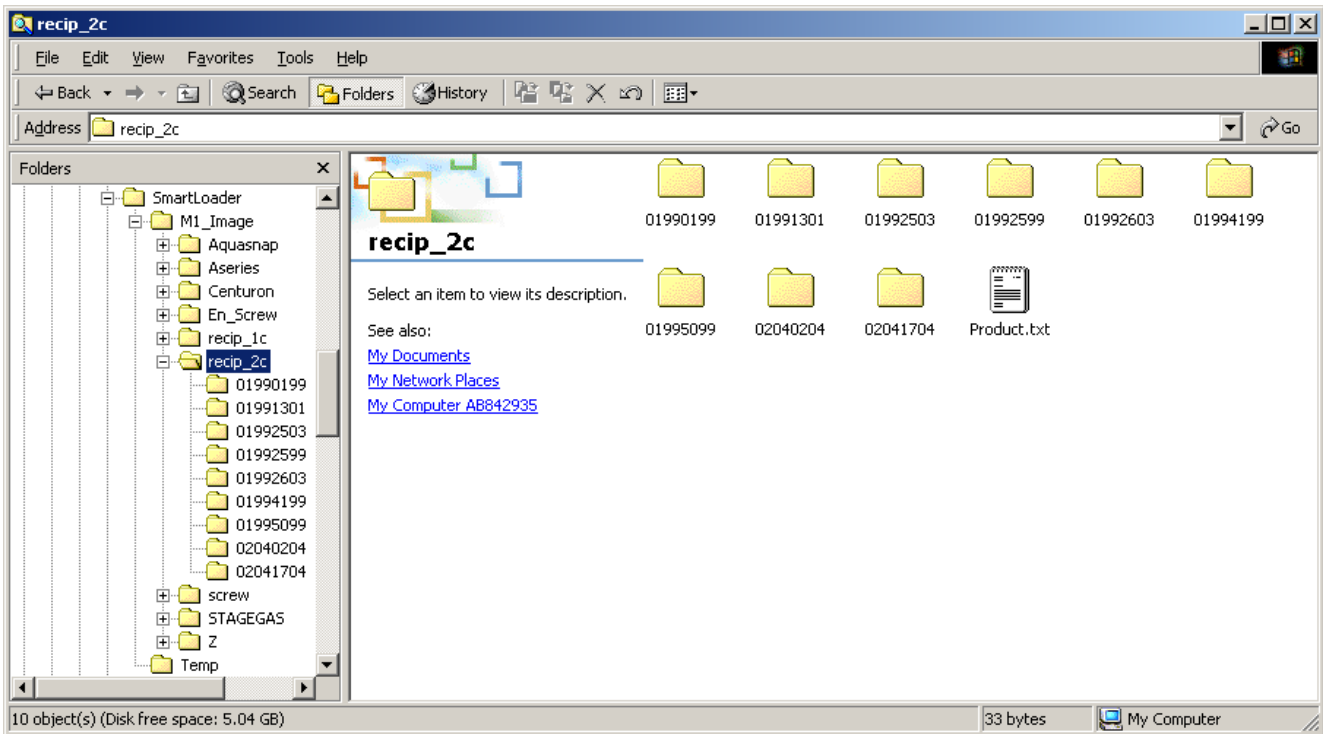
However, if you installed the unit software database files to your hard drive, you will have to select the database folder from that drive. An example for a C: installation is shown to the right.



## 4.4 File Directory Structure

The SmartLoader assumes that a CD or hard disk is used to store controlled versions of downloadable code files and command files. The file structure consists of a database folder that in turn consists of product folders that contain dated subdirectories, or dated folders. These dated folders are of the format AABBXXYY where AABB determines the compatible date (AA=week of year, BB=year) and XXYY determines the effective date (XX=week of year, YY=year). Each dated folder contains the downloadable code files and command files for the unit. The serial number of the unit determines which version will be downloaded to the unit (which dated subdirectory will be used).

An example of the M1\_Image folder directory structure is shown below.

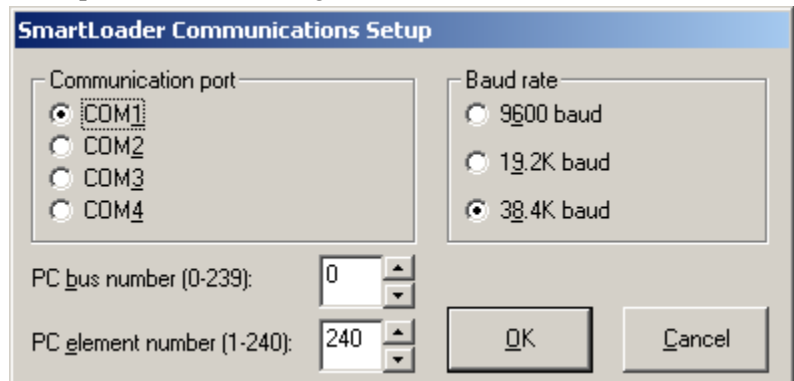


## 4.5 Communications Setup

SmartLoader can be directed to configure the computer's communication hardware. Click on the "Setup..." button from the SmartLoader screen to launch the Communications Setup screen. The host LEN network address is also configured here. You only have to run the setup once. These settings are stored for future use when SmartLoader is closed.

By using radio buttons, the PC serial port can be selected. Choose from Com1, Com2, Com3, and Com4.

**Note:** *If the wrong serial port is selected, or if there is a hardware conflict with another PC device, an error message will result.*



## 4.6 Baud Rate

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The baud rate may be selected by clicking the appropriate radio button. The baud rate selections are 9600, 19200, and 38400 baud.

**Note:** For M1 boards, the configuration program that SmartLoader executes prior to a download automatically resets the baud rate to 38400 baud, regardless of the user's selection. The baud rate selection feature is provided for the future expandability of SmartLoader.

## 4.7 Set PC Address

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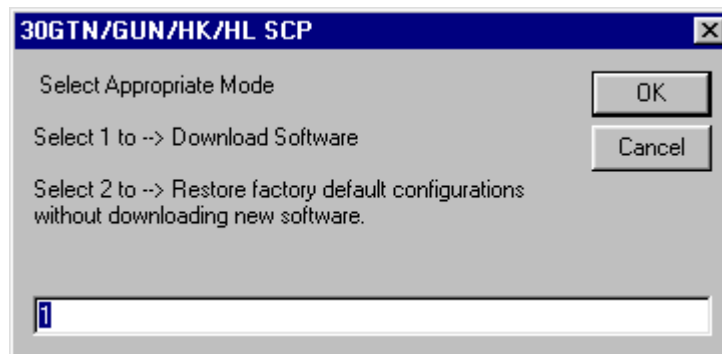
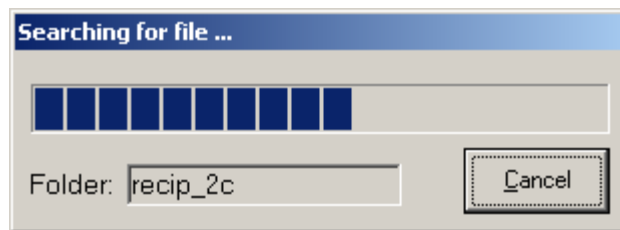
PC element number and bus number may be set with the spin buttons or typed into the text box. The allowable entries for the PC element number are 0-240 and the allowable entries for bus number are 0-239. PC element number 240 is recommended.

## 4.8 Continue to Download

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Once the above configuration choices have been entered,

- Click the “Continue >>” button to allow SmartLoader to search for the specific unit software database.
- Once the specific unit database has been located, SmartLoader will allow you the option to download the software or restore the configuration parameters to the factory defaults.
- After you make your selection SmartLoader will proceed to the SmartLoader board selection screen as described in Section 5.0.



## 5.0 Performing a Download

You are now ready to choose the specific board to download.

SmartLoader will show you the ComfortLink boards associated with the model number & serial number unit entered in the previous menu.

An example of a 30GTN070 using a version 4.1 controller (MBB) & all related ComfortLink boards are shown to the right.

The dialog box displays a table of boards with columns for Board Description and Part Number. Each row has a 'select' button to its right. At the bottom, there is a 'Model Number' field containing '30GTN070-E-620KA' and two buttons: 'OK' and 'CANCEL'.

Board Description	Part Number	
30GTN Controller 4.1 (MBB)	30GT515165	select
30GTN EXV Controller 1.2	30GT515217	select
Extra Unloader Board 1.2 (CXB)	30GT515219	select
Energy Management Module 1.1	30GT515218	select
Scrolling Marquee Display 1.4	HK50AA031	select

Model Number: 30GTN070-E-620KA

Buttons: OK, CANCEL

## 5.1 Select Board to Download

You will now choose the ComfortLink boards to download.

- Click on the “select” button to choose the board(s) to download.
- If you want to download all boards, click all “select” buttons. Note: All boards listed may not be present in the unit. Verify that boards selected are actually in the unit.

Notice a ✓ mark will appear next to the board selected as shown to the right.

- You may deselect any board by clicking on the “select” button again.
- Click on the “OK” button to allow SmartLoader to download to the selected boards.

The dialog box is identical to the previous one, but the first row, '30GTN Controller 4.1 (MBB)', now has a checkmark in the left margin and its 'select' button is disabled. The other rows remain unchanged.

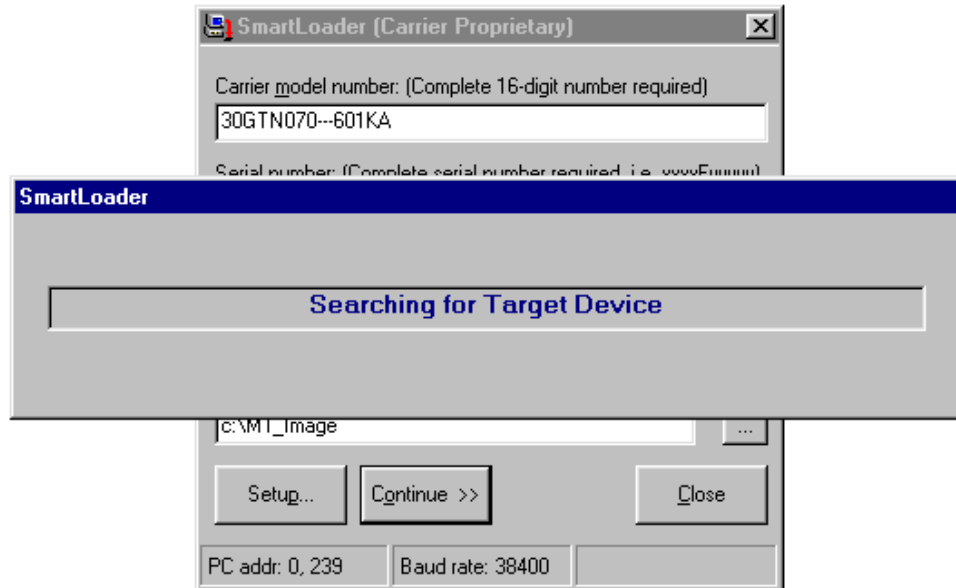
Board Description	Part Number	
✓ 30GTN Controller 4.1 (MBB)	30GT515165	select
30GTN EXV Controller 1.2	30GT515217	select
Extra Unloader Board 1.2 (CXB)	30GT515219	select
Energy Management Module 1.1	30GT515218	select
Scrolling Marquee Display 1.4	HK50AA031	select

Model Number: 30GTN070-E-620KA

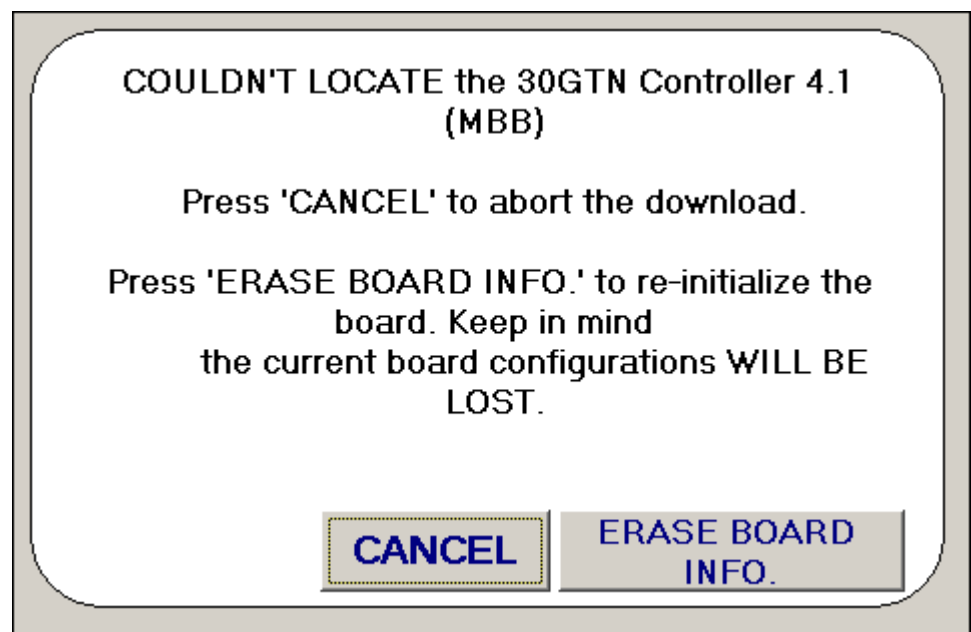
Buttons: OK, CANCEL

## 5.2 Download in Process

SmartLoader will now search for the board(s). These are referred to as “Target Devices” as shown below.



SmartLoader will tell you its progress as it searches for the appropriate unit software. If this warning is displayed Smartloader cannot communicate with the Comfortlink board. Check all connections. Verify operation of RS485 converter. Selecting ERASE BOARD INFO. will completely erase the application software and make the unit inoperable.



### 5.3 Existing Software Configuration Confirmation

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SmartLoader will attempt to preserve the unit's existing software configuration to minimize reconfiguration during unit startup. Once the existing configuration is determined, SmartLoader will establish the best way to preserve the configurations. There are three (3) potential configuration confirmations:

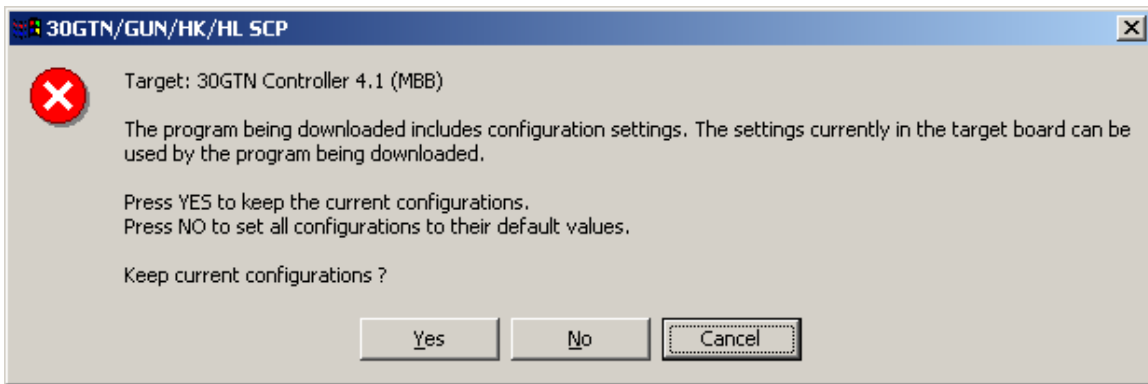
1. All existing configurations can be saved.
2. SmartLoader can not verify configuration status.
3. SmartLoader can not save existing configurations.

#### 5.3.1 All Existing Configurations Can Be Saved

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If SmartLoader can save all existing configurations, the following message will be displayed:

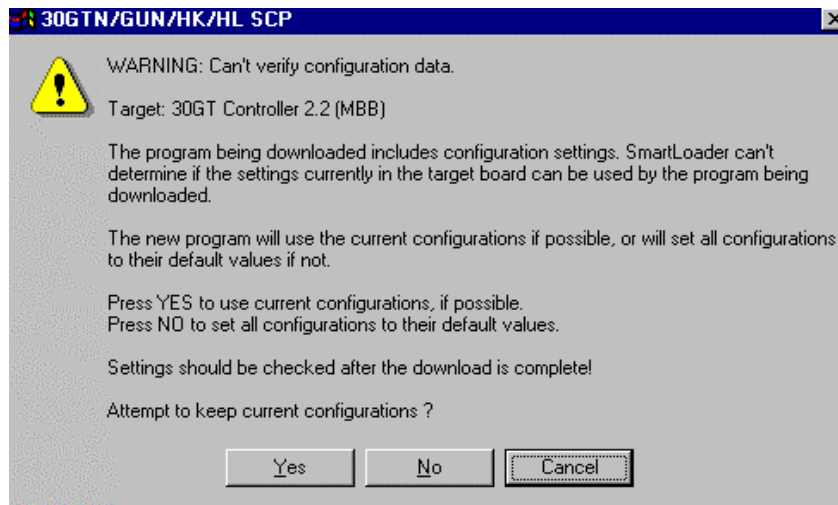
- Pressing the "Cancel" button will abort the download and return to the SmartLoader data entry screen for any of the following messages.



#### 5.3.2 Configurations Can Not Be Verified

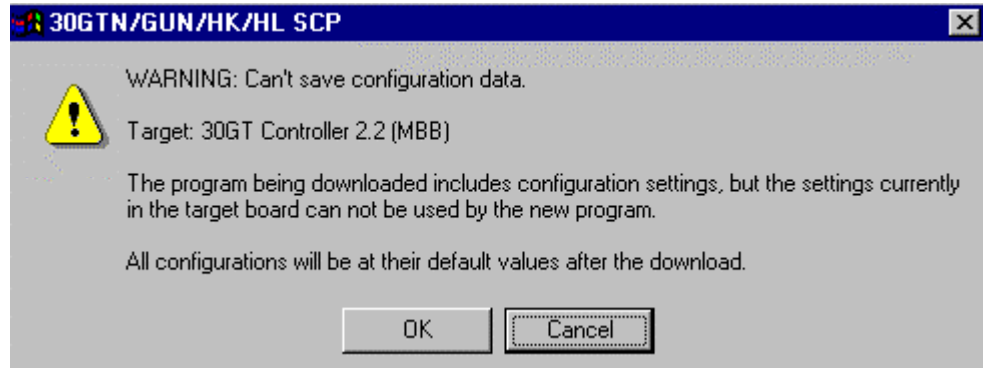
---

If the new unit software contains new configuration settings, SmartLoader will not be able to determine if the existing configurations can be saved. The following will be displayed if this scenario exists.



### 5.3.3 Configurations Can Not Be Saved

The new unit software may contain entirely new configuration setting requirements. As a result, SmartLoader will not be able to preserve any of the existing configuration settings. This scenario will reset all configurations to the default values.



### 5.4 Potential Download Errors

SmartLoader will recognize errors that could be encountered during the download. All are intended to prevent accidental download of inappropriate software into a unit or download when the machine has not been adequately shut down.

An example of the most likely error message is shown below. This error message indicates the target board is running an application different than what you attempted to download. Make sure you have entered the correct Model and Serial number.



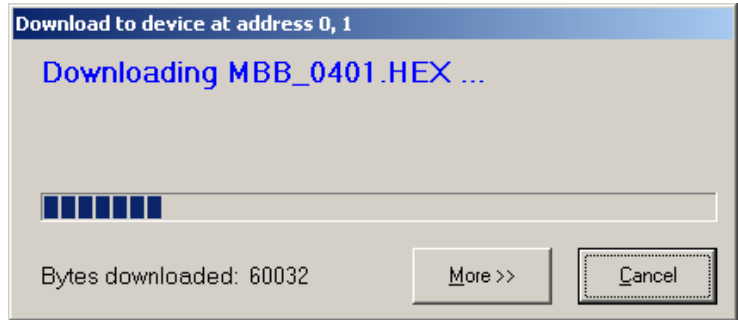
This error message indicates that you are about to download an older version of software than currently resides in the board. Verify that you have selected the correct software version.



## 5.5 Download Continuation

SmartLoader will advise you of its progress as the unit software is downloaded.

- Click on the “More >>” button to view details of the download event.

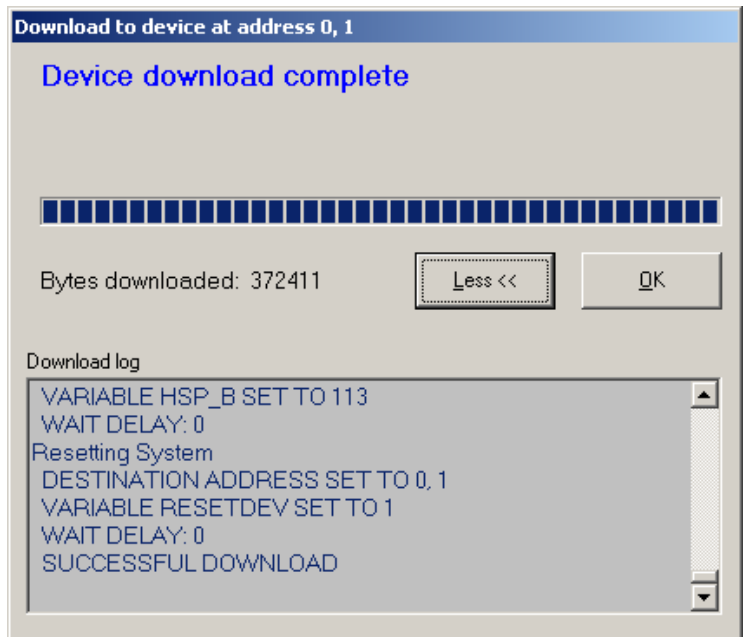


An example of this information is shown to the right.

Notice: A download log is presented to show the status of the download event.

***At this point the download is complete!***

- Click “OK” to return to the SmartLoader input screen to download another unit or ComfortLink board.



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## 6.0 Uninstalling SmartLoader

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SmartLoader can be removed from your PC if necessary.

**Note:** If, in error, you installed ComfortVIEW, Building Supervisor IV, or Network Service Tool IV after installing SmartLoader, the removal of SmartLoader will adversely affect the operation of these other Carrier products. In this case, after you uninstall SmartLoader, you must re-install the Carrier product(s) you wish to retain.

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### 6.1 To Uninstall SmartLoader

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1. Open the Start menu.
2. Choose *Settings*.
3. Choose *Control Panel*.
4. Double click on *Add/Remove Programs*.
5. Click the top tab that says *Install/Uninstall*.
6. Select *SmartLoader*.
7. Click the *Add/Remove* button.
8. Click *Yes* to confirm that you want to delete SmartLoader.
9. If a dialog box entitled *Remove Shared File?* is displayed, click *No to All*.
10. You may receive a message indicating that some elements could not be removed. Clicks on *Details* to identify which folders remain. You can delete your SmartLoader folder manually via Windows Explorer. DO NOT remove anything in a Carrier Shared directory.
11. Click *OK* to exit from the Remove Programs From Your Computer dialog box and you are done.

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## 7.0 Technical Support

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SmartLoader Installation & Operation Support:

Installation and Startup questions and the ability to communicate to the equipment from the SmartLoader, please contact, CCN Support, at:

**TEL: 860-674-3067 or 800-277-9852**

ComfortLink Unit or Control Support:

For problems relating to ComfortLink software, problems downloading to ComfortLink products or other product service inquiries, please contact NAC Service Engineering at:

**TEL: 315-432-6067 or 315-432-3788**

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## **8.0 Troubleshooting**

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Further assistance is available by contacting NAC at the Technical Support numbers shown above.