



EVERVU™ Touch Screen Display for EVERGREEN® 19XR, XRV, 23XRV Chillers with PIC II or PIC III Controls

Installation and Start-Up Instructions

Part No: 33CNTVIEW

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SAFETY CONSIDERATIONS

When installing this accessory, observe precautions in the literature and on any labels attached to the equipment, and all other safety precautions that may apply.

- Follow all safety codes.
- Use care in handling and installing this accessory.

WARNING

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

INTRODUCTION

Carrier's new EverVu™ touch screen display allows a facility manager to monitor a chiller from a 15-in. color touch screen display. The EverVu display screens allow easy navigation to determine data and chiller trends such as a chiller performance trend, chilled water trend, condenser water trend and power trend. The EverVu touch screen display is available for Evergreen 19XR, 19XRV and 23XRV chillers and 32 Series chiller retrofit packages. The display is provided with ComfortVIEW™ software preloaded.

Retrofit Compatibility — The EverVu™ display can be retrofitted to any existing Carrier Comfort Network® (CCN) compatible chiller, though default screen sets may not be

included for all chillers. The display may also be retrofitted to competitor's chillers when the 32 Series retrofit panels are applied.

ABBREVIATIONS AND EXPLANATIONS

Terms and abbreviations used in this manual include:

CCN (Carrier Comfort Network)	— Carrier's proprietary communications protocol
CCN bus	— 3-wire RS-485 network for CCN elements
CCN element	— Unique addressing scheme for devices on a CCN network
Network Manager	— ComfortVIEW software system for managing network devices
Workspace Manager	— ComfortVIEW software for managing workspaces and trends within workspaces for graphical representation of a system

PACKAGE CONTENTS

- Touch screen display screen with quick connect mount
- Swing arm for mounting (assembly required; see Swing Arm Assembly Instructions)
- RS-232 to RS-485 converter from B&B Electronics
- ComfortVIEW software key (USB) (already installed in back side of display screen)
- Several bags containing bolts and Allen style wrenches
- Touch computer power supply
- 6-ft or 25-ft Beldon power cable (25-ft cable will be available for order)
- 25-ft coiled communication cable with RJ-14 connectors
- Swing Arm Assembly Instructions

CHILLER SOFTWARE VERSION REQUIREMENTS

The chiller software in the International Chiller Visual Control (ICVC) controller must match a version of chiller software for which the EverVu workspace screens have been developed. The EverVu display is supplied with databases to support the chiller software versions listed in Table 1.

Table 1 — Chiller Software Version Requirements

UNIT	EVERVU DATABASE VERSION	CHILLER SOFTWARE VERSION
19XR	19XR Version 09 Chiller	CESR-131294-09
19XRV	19XRV Version 04 Chiller	CESR-131350-04
23XRV	23XRV Version 02 Chiller	CESR-131293-02
32DK	19DK Version 01 Chiller (Build 0.016)	CESR-131458-01
32XR	32XR Version 01 Chiller	CESR-131435-01

If the chiller software is an earlier version than is supported by the EverVu display, the chiller software will need to be upgraded to match the version of EverVu database that will be cloned during the installation of the display.

If the chiller software is a later version than is supported by the EverVu display, a new EverVu database will need to be downloaded and imported into the EverVu display. Contact a Carrier Service office for assistance in importing the databases.

INSTALLATION

Equipment Needed

- 3/16 in. hex screwdriver
- 1/4 -20-1 in. hex bolts
- Voltmeter

Step 1 — Identify Power Supply

POWER REQUIREMENTS — The EverVu™ panel is provided with a 25-ft Beldon power cable and plug for connection to a 120-v receptacle. If 120-v receptacle is available, proceed to Step 2. If 120-v receptacle is not available, power may be obtained directly from the chiller power panel by following the instruction below.

Connecting Power Cable to Chiller Power Panel — The following instructions are for connecting the power cable of the display panel directly to the 110-v supply at the chiller power panel. If the power cable of the display can be connected to a 120-v receptacle, this step is not necessary; proceed to Step 2.

⚠ WARNING

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

1. Identify the oil heater contactor (1C) in the chiller power panel.
2. Using a voltmeter, check the voltage across Terminals 22 and 23. The voltage should be 110 v ±10%. If the voltage is not within this range, STOP immediately and consult an appropriate electrical specialist.
3. Using a voltmeter, verify that Terminal 23 in oil heater contractor is neutral. If not, STOP immediately and consult an appropriate electrical specialist.
4. After verifying voltages in Steps 2 and 3, turn off chiller power and verify that the oil heater contractor is deenergized and no voltage is present at the input Terminals 22 and 23.
5. LOCK OUT and TAG OUT power supply to the chiller power panel.
6. Remove the plug of the display panel power cord with a wire cutter.
7. Strip approximately 6 in. of insulation off power cable end.
8. Using two fork connectors (red and blue), crimp according to the following color code:
 - a. WHITE wire to RED connector
 - b. BLACK wire to BLUE connector.
9. Strip the insulation off the green grounding wire.
10. Remove the electrical knockout from the panel and add a strain relief connection, if necessary.
11. Pulls the wires through strain relief and connect the green grounding wire to the grounding lug. Connect

the fork terminals to the input of the oil heater circuit breaker as follows:

- a. 1C-22 to RED fork terminal (WHITE wire)
 - b. 1C-23 to BLUE fork terminal (BLACK wire).
12. For safety reasons, do not remove LOCK OUT and TAG OUT until completing Step 5 — Connect Cable Between Display and ICVC (International Chiller Visual Control).

Step 2 — Assemble Swing Arm — Refer to separate Swing Arm Assembly Instructions provided in package.

Step 3 — Attach Arm to Tube Sheet

1. Identify the tube sheet on the evaporator (19XR, XRV) or condenser (23XRV) where the display is to be mounted. Insert the bolt into the center hole of the tube sheet mounting bracket.

NOTE: Do not remove the white plastic piece inside the mounting bracket. This serves to insulate the metal between the tube sheet and mounting bracket.

2. Attach the 1/4 -20-1 in. hex bolts halfway through in the base of the mounting bracket. Do not tighten completely.
3. Align the arm mounting bracket to the tube sheet and tighten hex bolts using a 3/16 hex screwdriver. See Fig. 1.

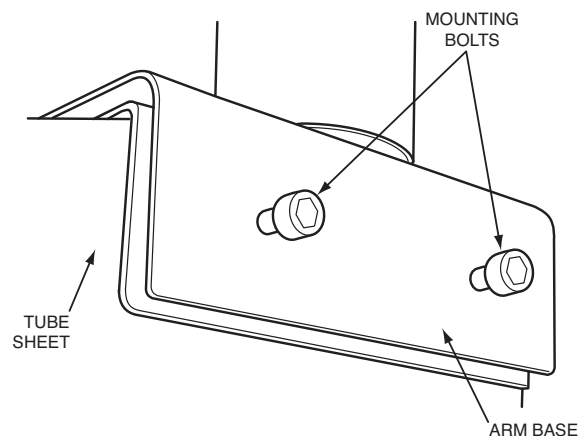


Fig. 1 — Attach Arm to Tube Sheet

Step 4 — Mount Display Screen on Arm Mounting Bracket

Locate the EverVu display panel. Do not remove the plastic covering until you are ready to start up the touch screen. The display screen is shipped with the quick connect mount attached to the back of the screen. See Fig. 2.

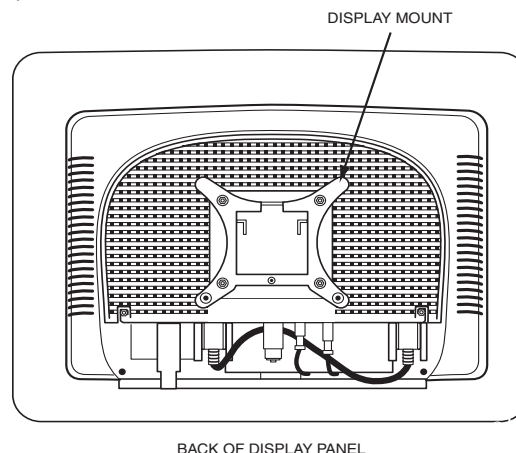


Fig. 2 — Display Panel with Mount Attached

- Slide the screen display onto the mounting bracket.
(location shown in Fig. 3).

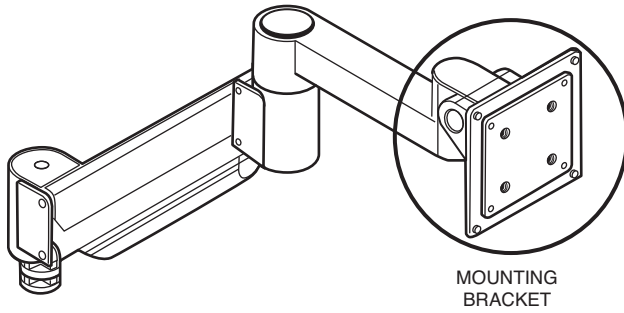


Fig. 3 — Display Screen Mounting Location

- Two hooks secure the display screen to the mounting bracket. Hold the display screen until verifying that the display screen is supported by the hooks on the mounting bracket before releasing. See Fig. 4.

IMPORTANT: To prevent damage to display screen, do not mount the display on the arm until arm is completely attached to the tube sheet.

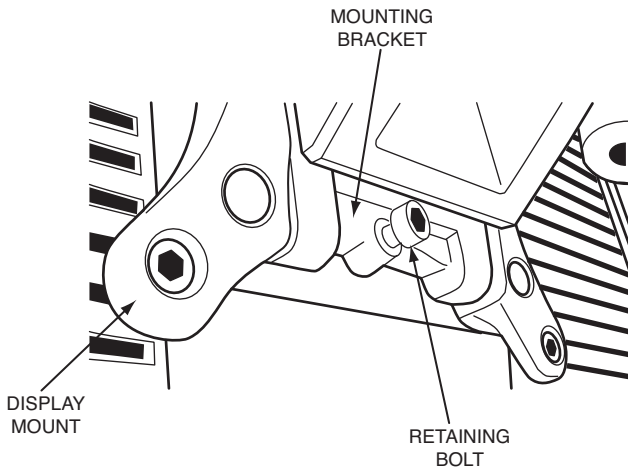


Fig. 4 — Bolt Display Screen to Arm

- The display height is adjustable within a 15.9 in. range. Arm dimensions are shown in Fig. 5.
- Using a hex screwdriver, secure the arm from pulling out of the mount by tightening the hex screw on the side of the mount. The display screen can now be positioned to desired height. To adjust tension on the up and down movement of the arm, tighten the hex screw on the top of the arm mount (Fig. 6).

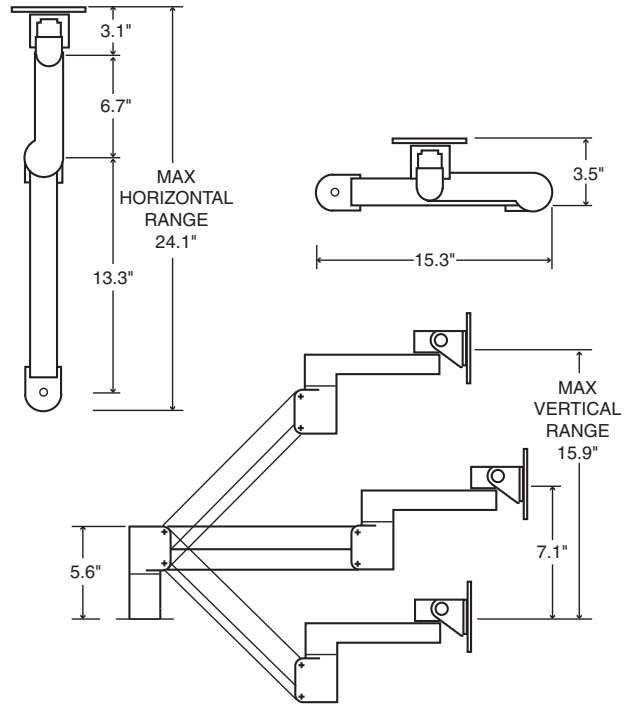


Fig. 5 — Display Arm Dimensions

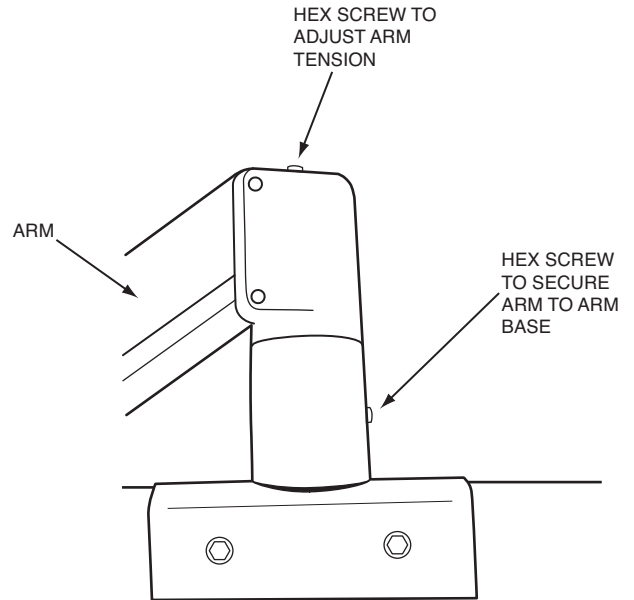


Fig. 6 — Adjust Arm Tension

Step 5 — Connect Cable Between Display and ICVC (International Chiller Visual Control)

1. Remove the knockout from the control panel box.
2. Pass the 25-ft coiled RS-485 cable, through the knockout. Approximately 16 to 20 in. of cable should be inserted into the control box.
3. Connect one end of the RS-485 cable to the J8/SERVICE port of the ICVC.
4. Connect the other end of the cable to the RJ14 connector in the B&B Electronics converter provided with the display. The converter should then be attached to the 9-pin serial port on the display. If chiller is connected to a CCN network, see note below.
5. The ComfortVIEW™ software key is already installed in the back side of the display. The software key will allow preloaded software to run automatically when the display screen is booted up.
6. After connecting both cable ends, connect the power cord to the power brick and connect to the EverVu™ panel. Pull the cord through the side of the back cover and attach to the display.
7. If touch screen power cord was connected directly to the chiller power panel rather than an AC outlet, remove LOCK OUT and TAG OUT.
8. Turn on power to the display screen (lower right side) and to the ICVC.

Before going to the job site to perform the installation, you will need to know the chiller ICVC version. Some older versions need to be updated to work with the touch panel. Contact a Carrier Service office for assistance in downloading a new version, if required.

NOTE: Besides being connected to the display, the chiller may be on a CCN network in the building. If this is the case, make sure the correct wiring is utilized and coordinate with the Carrier controls technician on the site. The refresh rate of the touch screen display may need to be extended, depending on the other devices on the network.

COMMUNICATION BUS WIRE SPECIFICATIONS — The communication bus wiring is field-supplied and field-installed. Bus wiring consists of shielded three-conductor cable

with drain (ground) wire. The cable selected must be identical to the communication bus wire used for the entire network. See Table 2 for recommended cable.

Table 2 — Recommended Cables

MANUFACTURER	CABLE PART NO
Alpha	2413 or 5463
American	A22503
Beiden	8772
Columbia	02525

NOTE: Conductors and drain wire must be at least 20 AWG (American Wire Gage), stranded, and tinned copper. Individual conductors must be insulated with PVC, PVC/nylon, vinyl, Teflon*, or polyethylene. An aluminum/polyester 100% foil shield and an outer jacket of PVC, PVC/nylon, chrome vinyl or Teflon with aluminum operating temperature range of -20 C to 60 C is required.

START-UP

Start Touch Screen System — Once the ICVC and display screen are powered up, the Touch Screen display will boot up to a default graphical chiller for a Version 04XR.V. The CCN database for this display is defaulted to database only, so there will be no communications.

An expandable keyboard (Fig. 7) is viewable after boot up. The keyboard is used for inputting data into any menu screen or prompt that is the active.

The keyboard can be minimized to an icon again by pressing the large rectangular icon on the left side of the expandable keyboard.



The keyboard can be viewed at any time by pressing the keyboard icon at the top right side of any active screen or prompt.



The expandable keyboard can be moved to different positions on the screen by touching any of the blue areas between the keys and moving it to desired position on screen.



Fig. 7 — Expandable Keyboard

*Registered trademark of DuPont.

Start Carrier Network Manager

1. Minimize the expandable keyboard.
2. Select (tap) the Windows Start icon in the lower left corner of the screen.
3. Select “All Programs.”
4. Select “ComfortVIEW.”
5. Select “Carrier Network Manager” (Fig. 8).

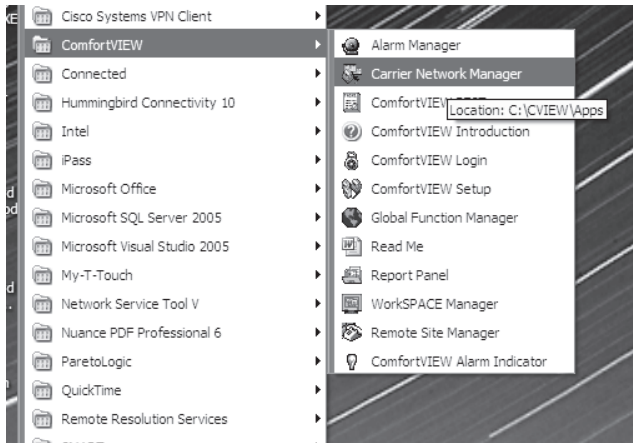


Fig. 8 — Start Carrier Network Manager

Configure ComfortVIEW™ Software on Touch Screen — For ease of use, a default CCN database called “Local Chillers” was created and set up for communications through COM 1 port of the display. An example of the display showing the default CCN databases and the Local Chiller database is shown in Fig. 9.

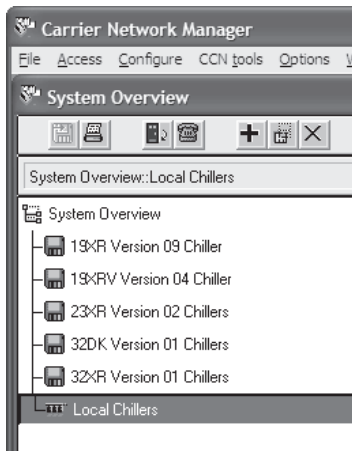


Fig. 9 — Default and Local Chillers Database

The other CCN databases listed in Fig. 9 are provided as templates of chiller versions. Each CCN database contains one chiller database in Network Manager and associated workspaces in Workspace Manager. These files are provided to allow the cloning of these workspaces for your specific chiller.

More CCN databases are planned for release to support older software versions and future software releases.

If at any time, Carrier Network Manager issues the operator message, “Your Access Level will not allow you to perform this function” or if there is a problem during the configuration procedure, it may be necessary to log out of ComfortVIEW and log in again.

To login, use the local administrative account and password. The username is “sa” and the password is “carrier”, both in lowercase (Fig. 10). The username and password are entered using the expandable keyboard. The keyboard can be displayed by tapping the small keypad icon.



Fig. 10 — Login Prompt

It will be necessary to upload your specific chiller into the Local Chiller CCN database to be able to communicate with your chiller.

1. Double tap on “Local Chillers.”
2. Double tap on “Local Chillers - My chiller.”
3. Carrier Network Manager is started with “Local Chillers - My chiller” is displayed, as shown in Fig. 11.

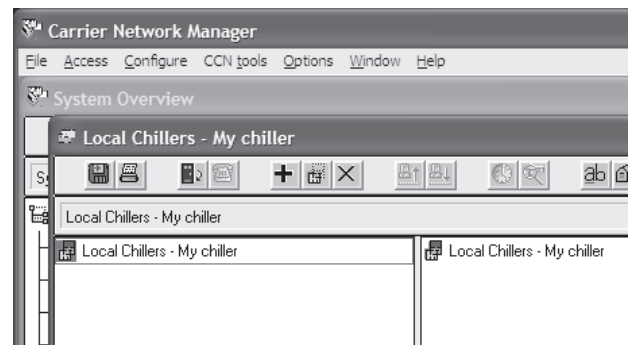


Fig. 11 — “Local Chillers - My chiller” Screen

4. Select the “+” icon at the top of the “Local Chillers - My chiller” screen.
5. “CCN Element Definition” screen is displayed. Enter “Element name” (for this example we are using “My 19XR”) and “Element description” using onscreen keyboard, then press “OK” (Fig. 12). Enter “Bus” and “Element” numbers.

NOTE: Default numbers are 0 for Bus and 1 for Element.

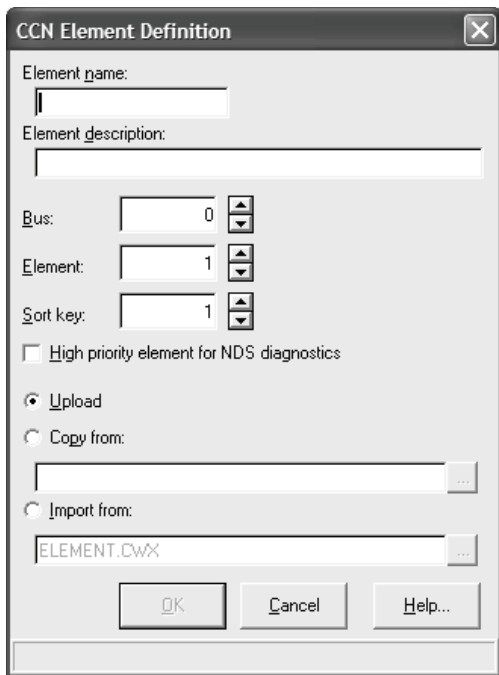


Fig. 12 — CCN Element Definition

6. “Upload element?” prompt screen is displayed. Press “Yes” to upload.
7. “Uploading element” screen is displayed. Wait for upload to complete.
8. After uploading your chiller into the Local Chiller CCN database (Fig. 13), press “OK” to the prompt. The tree can be expanded for your chiller to select point and configuration screens to verify communication. If preferred, the configuration of an existing chiller database can be used by performing the copy function rather than the upload function while adding your chiller to the Local Chiller CCN.

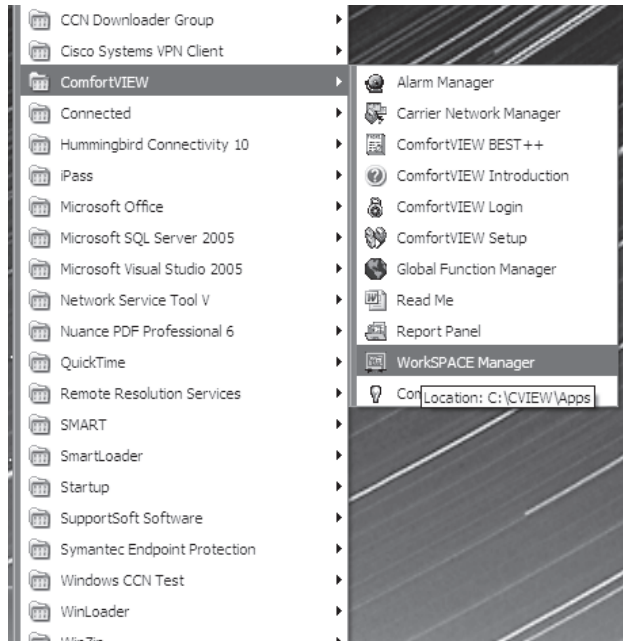


Fig. 14 — Start Workspace Manager

14. From chiller display page, select “File” tab at the top of the screen, then select “Open WorkSPACE” (Fig. 15).

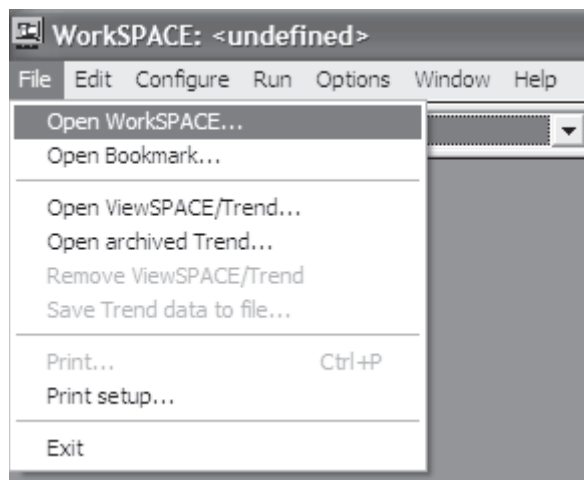


Fig. 15 — Select Open Workspace

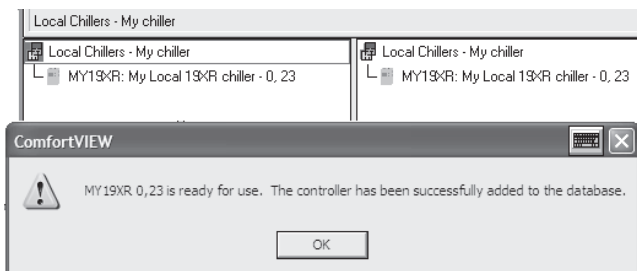


Fig. 13 — Local Chiller Successfully Added

9. Once your chiller has been added, it is possible to clone all of your workspaces and viewspaces for your local chiller from one of the existing chiller databases. In order to do this, start Workspace Manager (Fig. 14) as follows.
10. Select (tap) the Windows Start icon in the lower left corner of the screen.
11. Select “All Programs.”
12. Select “ComfortVIEW.”
13. Select “WorkSPACE Manager.”

15. From the “Open WorkSPACE” screen, open the default workspace for the chiller that is the same version as your local chiller (Fig. 16). It is important to use the same type and version number of your chiller or the cloning tool will not clone all the workspaces and viewspaces. Otherwise, an error response will be generated indicating the chiller versions do not match.

Chiller software version can be found on ICVC, under “ICVC CONFIGURATION” or from the touch screen using Carrier Network Manager under “Device Configuration,” then “Controller ID.”

16. Select the appropriate chiller type and version and press “OK.”

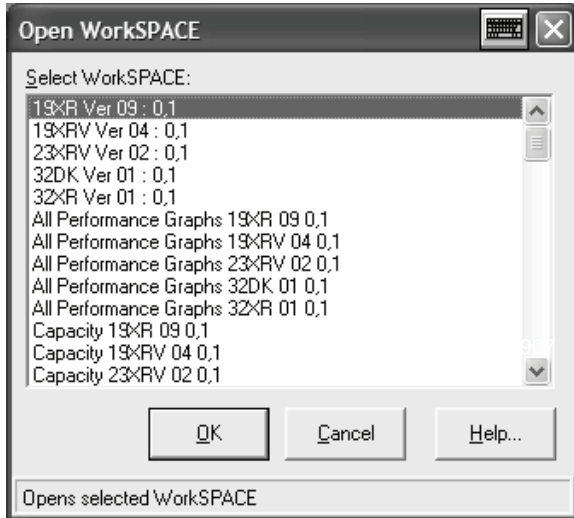


Fig. 16 — Open Workspace

17. After the default workspace of the chiller version to be cloned is opened, select the “Run” tab at the top of the screen, then “Enter design mode” (Fig. 17).

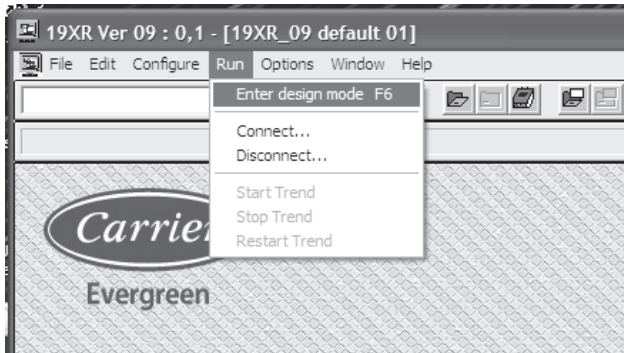


Fig. 17 — Select Design Mode

18. The prompt “Reload current WorkSPACE for design?” will be received. Press the “Yes” button. (Fig. 18).

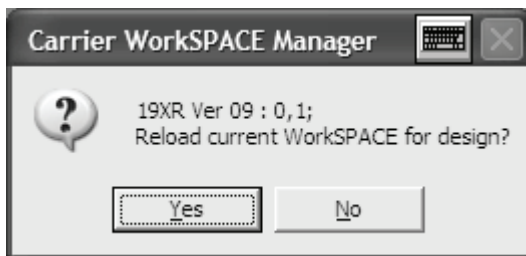


Fig. 18 — Reload Prompt

19. From chiller display page, select “File” tab at the top of the screen, then select “Save Current WorkSPACE as” (Fig. 19).

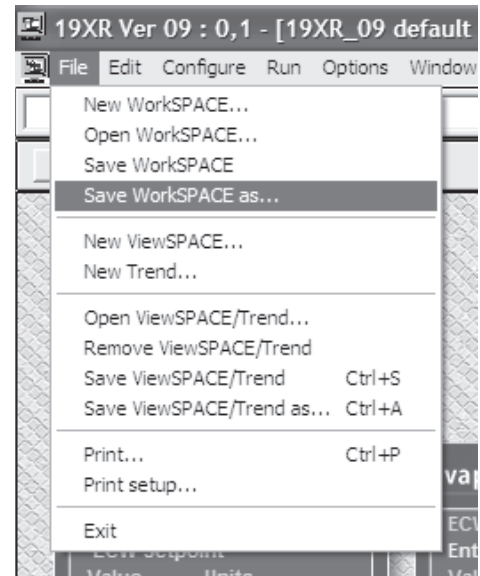


Fig. 19 — Select “Save Current WorkSPACE as”

20. The “Save Current WorkSPACE As” prompt box is displayed. Input the filename of your local chiller default screen. Then press the “Clone” button (Fig. 20).

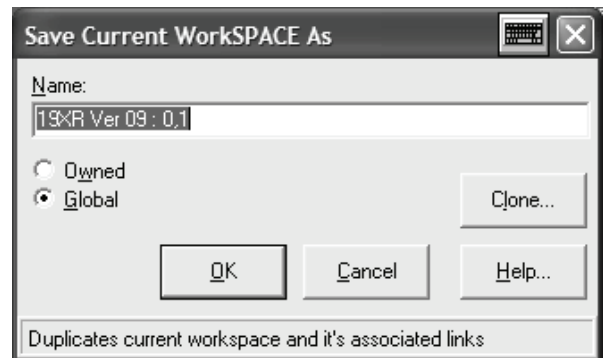


Fig. 20 — Save Workspace Name

21. The “Clone WorkSPACE” prompt is received. Enter the new workspace name of the default workspace for your local chiller. Enter using the onscreen expandable keyboard. Then press “OK” (Fig. 21).

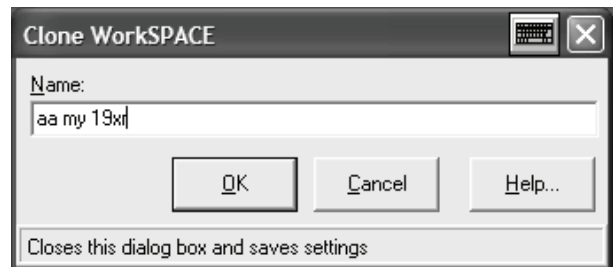


Fig. 21 — Enter New Workspace Name

- The system will prompt to select the area and CCN element screens to clone. Select the area “Local Chiller” and element that was just added in Network Manager. Then press “OK” (Fig. 22).

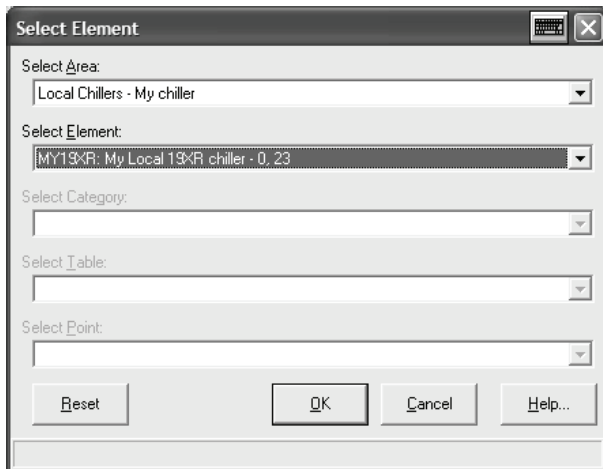


Fig. 22 — Select Element Definition

- A confirmation screen will be displayed of the clone to be made. Press the “Close” button” (Fig. 23).

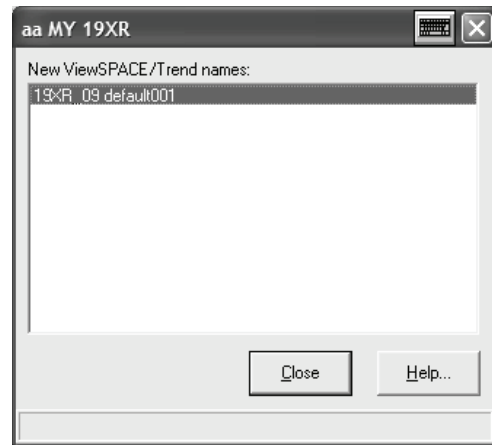


Fig. 23 — Confirmation Prompt

- The cloning tool will now search for all linked workspaces and viewspaces. A pop up screen with the names of the first 8 linked workspaces found will be displayed. The workspace names can be customized here and the area and element to be cloned can be selected.
- Select the same local chiller (“Local Chillers - My chiller”) and your chiller (for this example, “My 19XR”) for all 8 workspaces.
- Select element names for all 8 workspaces.
- After entering the information press “Proceed” (Fig. 24).
- A confirmation will be received for each workspace that is cloned; press “Close” for each one.

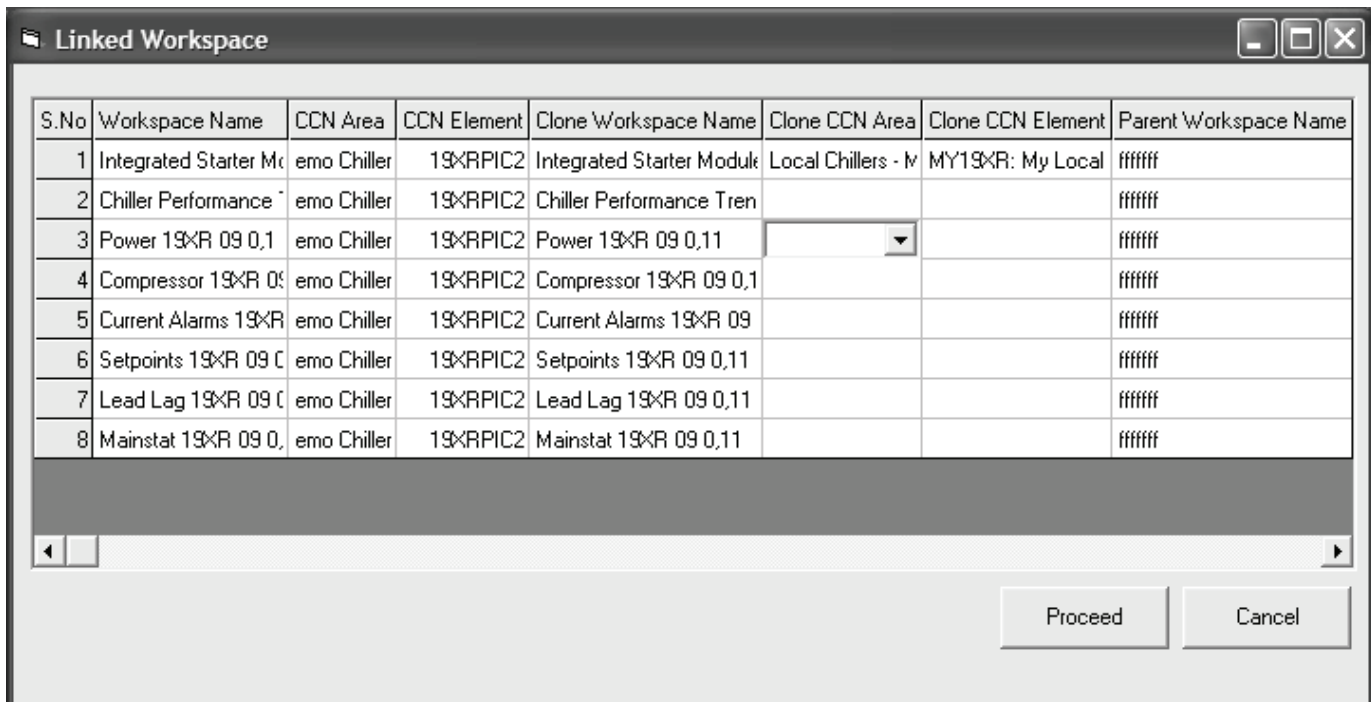


Fig. 24 — Multiple Clone Screen

29. A second enhanced clone screen will open with the next 8 screens to be cloned. Again, the names can be customized and the area and element of the chiller these workspaces to be cloned must be selected.
30. Select the same local chiller and your chiller for all 8 workspaces.
31. Select element names for all 8 workspaces.
32. After entering the information press “Proceed” (Fig. 24).
33. A confirmation will be received for each workspace that is cloned; press “Close” for each one.
34. The Run mode can now be selected for the workspace just created (Fig. 25). Select the “Run” tab, then “Enter run mode.”

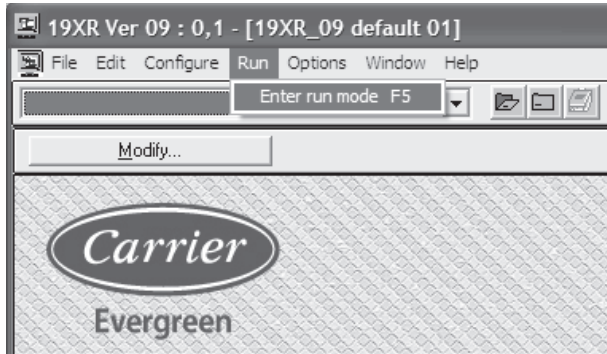


Fig. 25 — Enter Run Mode

35. From chiller display page, select the “File” tab, then select “Open WorkSPACE” (Fig. 26).

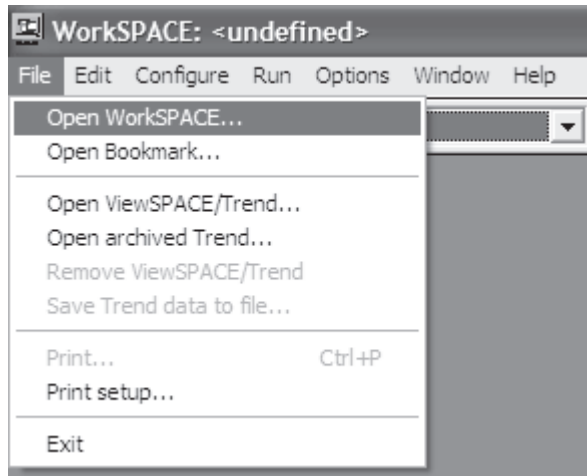


Fig. 26 — Open Workspace

36. Select the filename of the workspace to display and press “OK” (Fig. 27).

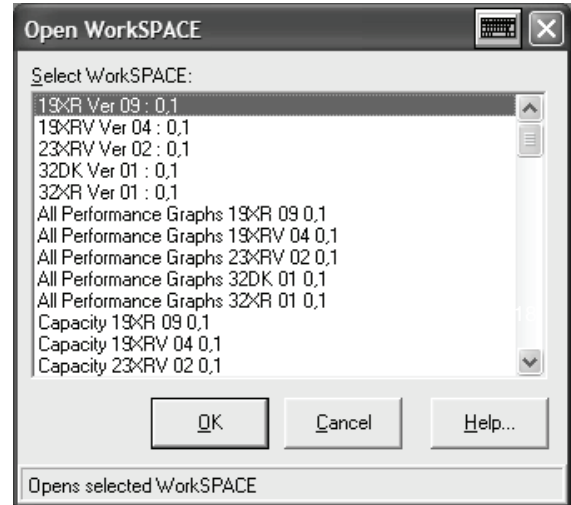


Fig. 27 — Select Workspace

37. These new screens created for your local chiller should now all be able to communicate with your chiller and show the data selected.
38. As a last step, log out as administrator and log in as the local default operator. The user name for the local default operator is “Carrier” and the password field is left blank.
39. The old default screen will open first in Workspace Manager. Select and open the new default workspace created while cloning.
40. Under the “Run” tab at the top of the screen, select the “Enter design mode.” Answer “Yes” to open the displayed screen for design (Fig. 28).

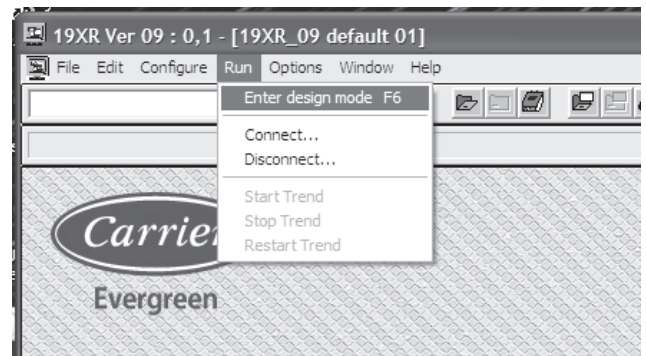


Fig. 28 — Enter Design Mode

41. Then, under the “Configure” tab, select “Set default workSPACE” (Fig. 29).
42. The default screen for the local operator is now set. Note that if you are still logged in as administrator, this will set the default screen for the administrator and not the local operator account. The local operator account is the only one that is set to start on boot of the computer.

43. As a final verification, power down, then power up and the default screen for the local operator should be displayed after boot up.

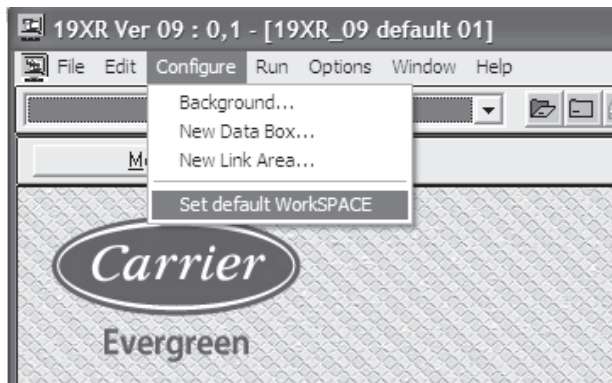


Fig. 29 — Configure as Default Workspace

The EverVu™ touch screen display provides 17 independent user screens for most of the default graphical representations. Navigation from screen to screen is accomplished by double tapping the buttons that are not highlighted in blue on the display. The blue highlight is used on a button to identify the screen currently being displayed. The following screens are provided:

- Default 19XR, viewspace with links
- Compressor, viewspace with links
- Heat exchanger, viewspace with links
- Main Status, viewspace with links
- Integrated Starter (19XR) or VFD (19XRV), viewspace with links
- Power, viewspace with links
- Startup, viewspace with links
- Lead lag, viewspace with links
- Capacity, viewspace with links
- Surge Prevention, viewspace with links
- Chilled Water, trend and viewspace with links
- Condenser water, trend and viewspace with links
- Power, trend and viewspace with links
- Chiller performance, trend and viewspace with links
- Setpoints, viewspace with links
- Alarms, viewspace with links
- All 4 trends and viewspace with links

