



Universal Device Control Systems

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Hi-Z Antennas
Hi-Z 3 Triangular Array
Local and Remote Control System
HZ3AC User Manual Version 2.1

May, 2014

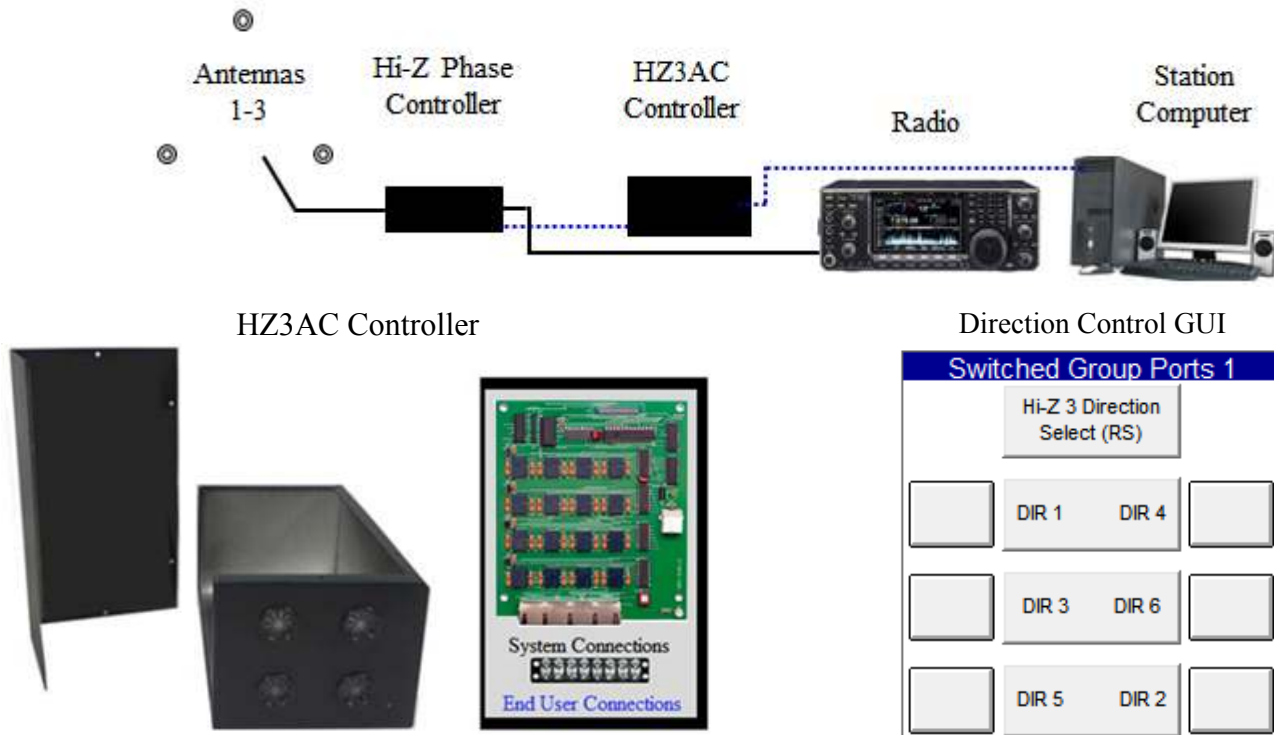
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Section I General Description

The HZ3AC Control System provides users the ability to implement local direction control of a Hi-Z Antennas 3 Element Triangular Array receive antenna system with the click of a mouse. The control system can also be used for direction control while operating from a remote location using a remote desktop application or the UDCS/N4PY Integrated Server System over a reliable Internet connection. Control system ports not used for the preconfigured application can be used for other station control functions. Refer to the Application Notes Page at www.udcsys.com for details.

HZ3AC Control System Block Diagram



Section II Installation

Please read and understand instructions in this manual and the Control System Software Quick Start Guide before starting the installation process. Control Software is available for download at udcs.weebly.com

Controller Software Installation

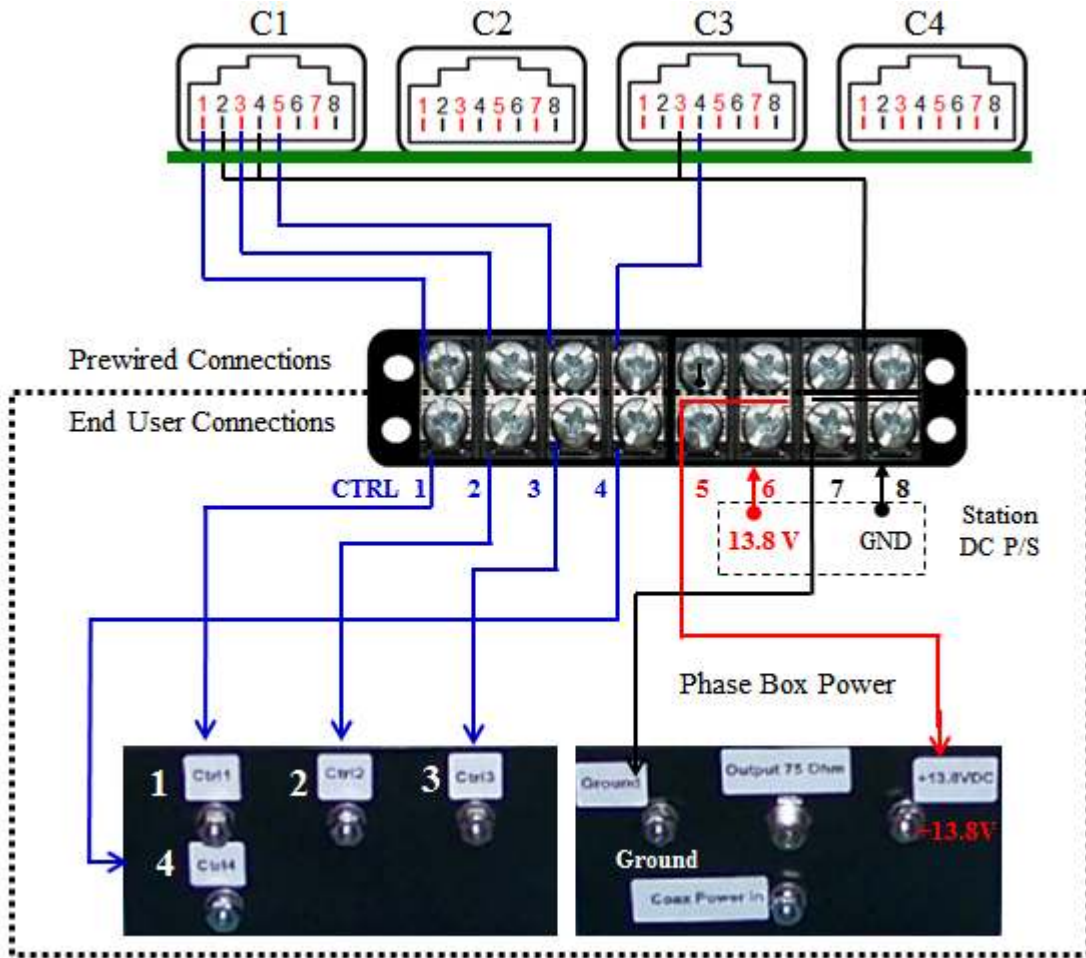
Refer to the Control Software Quick Start Guide for details

- Insert the Control Software CD in the CDROM/DVD drive on the station computer
- Start the installation process by clicking Install
- Click OK and follow the installation prompts and click Finish to run the default application
- Ignore the *hamShack* Switch Not Found message by clicking OK
- After the default control window appears exit the program

System Hardware Installation (Refer to Figure 1 on Page 2)

- Plug the HZ3AC USB cable into an unused USB port on the station computer
- Connect the red and black power cable to the station 13.8 Volt DC supply
- Start the HZ3AC Control Program by clicking on the hamShack Switch desktop icon
- Verify control lead 1 and 2 functionality against the Hi-Z Truth Table on page 3, Section IV
- Connect Hi-Z 3 power and control leads 1 – 4 to barrier strip positions as shown in Figure 1

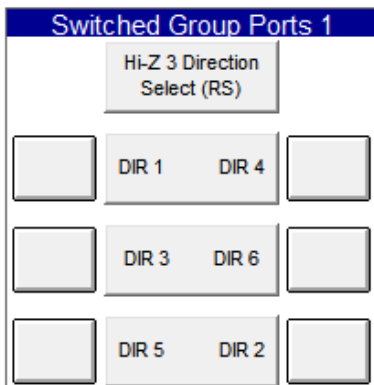
Figure 1
 HZ3AC to Hi-Z 3 Phase Box Control and Power Lead Connections



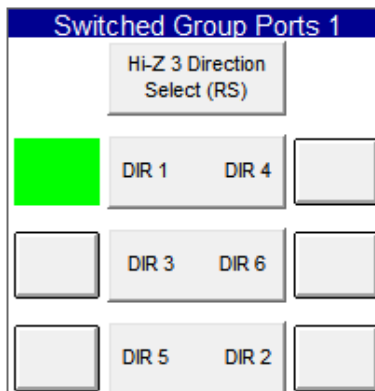
Section III Control System Operation

To change Hi-Z 3 receive antenna system direction click the desired control button

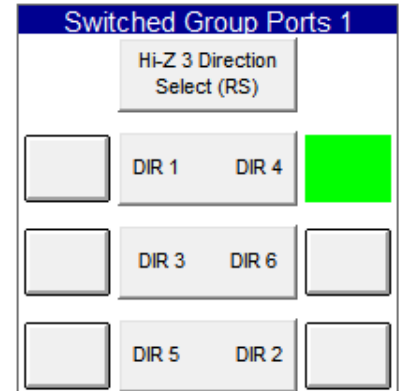
No Direction Selected



Direction 1 (North)



Direction 2 (Northeast)



Section IV Control Button Label Customization

Control Window Label Change

Control Window Default Label

HZ3AC

Settings

Control Window

1. Click Settings
2. Default Label Displayed in the Call Sign area in Settings

Call Sign HZ3AC

3. Place cursor at the end of the last letter in the default label
4. Backspace to remove default label and type the desired label text:

Call Sign RX ANT DIR SEL

5. Hit the Enter Key to complete label change

Control Switch Label Customization

Customizing Default Labels

Label customization Steps 1 – 7

Follow steps 1-7 to change the default control switch top center label



Do not change or delete the (RS) function symbol

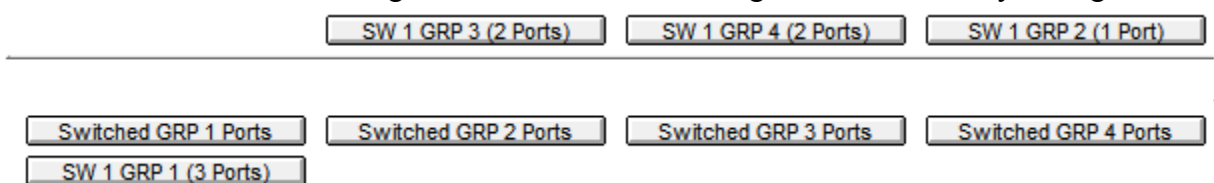
1. Right Click on the center direction indicator label
2. Dir 1 Dir 4 Default Labels appear
3. Place cursor at the end of Dir 2 and backspace to clear the label
4. N NE Type the desired direction label change
5. Hit the Enter Key to change the label
6. Spaces can be added between NE and SE to center labels
7. << N NE >> Add indicator arrows if desired

Section IV Troubleshooting

1. Verify the USB cable is connected to the station control computer
2. Verify the DC Power cable is connected to the station supply as shown in Figure 1 and power is on
3. Verify control leads 1 and 2 actions are functioning properly using a multi meter while switching controller directions

Direction 1 (N)	Direction 2	Direction 3
Control 1 GND	Control 3 & 4 GND	Control 2 GND
Direction 4	Direction 5	Direction 6
Control 1 & 4 GND	Control 3 GND	Control 2 & 4 GND

4. Verify power lead connections to the Hi-Z Phase Boxes, 13.8 volts is required
5. Click on the SGP Window Assignments button in the Settings Window to verify settings are unchanged



Should trouble persist after verifying all system settings and connections are correct and power is provided, follow troubleshooting instructions in the Hi-Z 3 user manual

Section V Remote Control Operation

There are two methods of operating the HZ3AC system from a remote location by using a remote desktop application or the UDCS/N4PY Integrated Client Server and rig control system.

Remote Desktop Application Control Method

Remote desktop applications enable users to see and control a connected PC as though they are sitting directly in front of it. Remote desktop applications to include Citrix Systems GoToMyPC, LogMeIn, Symantec pcAnywhere, RealVNC and later versions of Windows have remote desktop capability that can be used for remote control operation. Depending on the quality of an Internet connection there may be some degree of latency due screen refreshing as the system control software is running on the station computer.

UDCS / N4PY Integrated Client Server Method

The integrated Client – Server software feature provides a seamless Remote Radio Control System. Software running on the Radio Server PC sends and receives commands and also receives status information from the radio. Software on the client PC presents a graphical representation of radio controls and HZ3AC control functions. The client server system reduces latency as the control applications reside on the remote computer.

The radio's frequency, mode, gain and other functions can be adjusted; antennas and other station equipment can be selected or switched remotely using controller GUI Buttons. The Client Server Feature can also provide automatic antenna switching and the ability to use paddles at the Remote Client end for sending CW.

To implement the Integrated Client Server function, purchase and install the version of N4PY Rig Control Software for the type of radio to be used in the system. Follow instructions in the Client-Server and N4PY Rig Control manuals for system configuration and operation details.

