CTI JANUS CONTROLLER APPLICATION COPROCESSOR QUICK START GUIDE

VERSION 2.0 17AUG2026

Purpose of this Document

This document is designed to assist you in unpacking and initial installation of the CTI Janus Application Coprocessor (JACP) module. It also describes options for setting the network parameters required for basic operation.

For assistance with configuration and operation, we recommend that you download the *JACP Installation and Operation Guide* from the CTI web site: www.controltechnology.com/support/manuals/.

Introduction

The CTI Janus Application Coprocessor (JACP) module augments the communications capability of CTI Janus Controllers and CTI 2500 Series® controllers. It also enables Siemens®/TI 545/555 controllers to communicate using modern Ethernet protocols, such as Ethernet/IP and OPCUA. In some applications, it can function as a standalone controller, using Ethernet IO protocols, such as Ethernet/IP scanner and Modbus Client drivers.

IMPORTANT NOTE: Version 2.00 firmware brings significant changes to networking using the 2500P-JACP. These changes were necessary to prepare the product for future inclusion of PROFINET as it requires a dedicated, isolated port for the network communications.

Unpacking the Module

Open the shipping carton and remove the special anti-static bag that contains the module. After discharging any static build-up, remove the module from the static bag. Do not discard the static bag. Always use this bag for protection against static damage when the module is not inserted into the I/O base.

CAUTION:
The components on the JACP Module can be damaged by static electricity discharge. To prevent this damage, the module is shipped in a special anti-static bag. Static control precautions should be followed when removing the module from the bag and when handling the printed circuit board during configuration

Installation

The Janus Controller is shipped with the internal System SD card installed. The firmware is pre-loaded on the System SD card and ready for operation.

The JACP Module can be installed into any available slot in the base that accepts single wide I/O modules.

To install, remove power from the chassis, align the circuit board with the connector, and slide the controller into the rack until the connector seats. Use the thumbscrews to secure the controller to the rack. Plug an Ethernet cable leading to the factory network in Port 1.

Apply power to the base power supply. The POWER GOOD LED on the power supply should illuminate, indicating that power is being supplied to the base connectors.

Startup

The JACP module takes about 20 seconds to complete the startup sequence. During startup, you should see a scrolling decimal point in the front panel alphanumeric display. As shipped from the factory, DHCP is enabled for Port 1, and the module will get an address from a Dynamic Host Configuration Protocol (DHCP) server if one is present on the network.

If no DHCP server is present, the JACP module automatically assigns a unique Link Local compatible IP Address and Subnet mask during the startup process. This will be an address of the form such as 169.254.x.x/16.

When startup is complete, the firmware version is briefly displayed and the active network parameters (IP Address and Subnet mask in CIDR format) are scrolled across the front panel display. This will be either the address obtained from DHCP or the Link Local address.

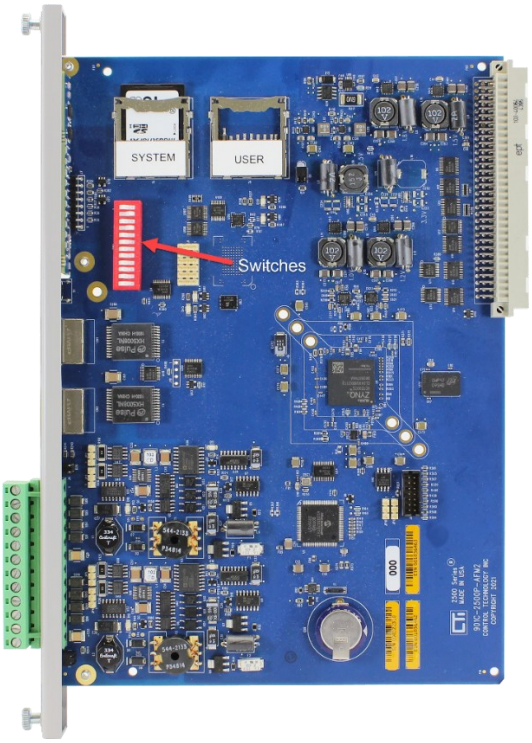
See 'Setup' section below for a description for setting a static IP Address and Subnet mask.

Module Status Indicators

When this is complete, the status indicators should be in the state as shown in the table below:

Indicator	State	Comments
CPU GOOD	ON	If the CPU GOOD LED is OFF, contact CTI Technical Support.
RUN	OFF	This LED is set ON when the application program is running in the CPU. It will always be OFF on initial startup.
ERROR	OFF	This LED should normally be OFF. should have a network address (either by DCHP server or internally generated Link-Local compatible parameters). If this LED is blinking and the display shows an error, contact CTI Technical Support.

Module Configuration Switch Locations



Switch Position	Use	Open Position	Closed Position
1	Remote Firmware Update	Disabled	Enables firmware update via web server. See IOG Section 6.3 for details.
2	SD Card Firmware Update	Normal operation	JACP enters *User SD Card Firmware Update* mode at startup. See Section IOG 6.2 for details.
3	Clear Exception Pushbutton	Disabled	Enables the recessed pushbutton to be used to clear exceptions, configuration reset, or to restore factory settings. See Section IOG 5.3.
4	SD Card Ethernet Port Setup	Disabled	Allows user to configure JACP Ethernet Port 1 via User SD Card. NOTE: This setting works ONLY if Switch 2 is OPEN. See IOG Section 3.2.8. NOTE: SD Card Ethernet Port setup is removed beginning with Firmware V2.00.
5	Remote Controller Reset	Disabled	Enables the ability to clear exceptions, Configuration Reset, and Restore Factory Settings using the embedded web server.
6 - 12	Reserved		

Shipping Configuration of Switches

Switch Position	Use	Shipping Configuration	Open Position
1	Remote Firmware Update	Open	Disabled
2	SD Card Firmware Update	Open	Normal operation
3	Clear Exception Pushbutton	Open	Disabled
4	SD Card Ethernet Port Setup. NOTE: SD Card Ethernet Port setup is removed beginning with Firmware V2.00.	Open	Disabled
5	Remote Controller Reset	Open	Disabled
6 - 12	Reserved	Open	

Setting Static Network Parameters

IMPORTANT NOTE: Beginning with version 2.00 firmware, there are significant changes to networking setup using the 2500P-JACP. The procedure below can be used to set an initial IP address in the JACP module on first startup 'out of the box'. However, additional networking settings are often required before the module is ready to run your application. We strongly recommend you review Chapter 8: Ethernet Port Operation in the JACP Installation and Operation Guide, which can be downloaded from the CTI Web Site here:

https://controltechnology.com/Files/Products/2500-Classic/2500P-JACP/manuals-(restricted)/2500P-JACP-Installation-and-Operation-Guide

The JACP Module will operate with network settings obtained from a DHCP server or internally generated Link-Local compatible parameters. However, it is not guaranteed that the same IP Address will always be available following a power cycle. ***CTI highly recommends that static network parameters be assigned before using the JACP Module in a control application.***

The JACP module offers two different methods for assigning static network parameters: IP Address, Subnet Mask, and Gateway Address for initial setup or following a configuration reset, depending on whether your network has a DHCP server.

1) **Connect to JACP via DHCP-assigned parameters**

   By default, the JACP Module will automatically obtain network settings from a DHCP server if available. This allows easy access to the controller web server for setting a fixed IP Address and configuration parameters.

   If a DHCP server is available, the network parameters obtained via DHCP are scrolled on the front panel display. Your PC should also be able to obtain an IP Address on the same subnet from the DHCP server, and you are ready to connect to the JACP Module.

   You must connect an Ethernet cable from your PC directly or via network switch to Port 1 on the JACP Module.

   Make a connection to the JACP Module web server by entering the DHCP-assigned IP Address displayed on the JACP Module front panel into your browser URL address bar and select 'Configuration / Network Settings' from the web server menu.

Enter the static network parameters into the 'IP Address 1 Configuration' table. Press 'Apply' button at the bottom of the page to assign new IP address parameters.

2) **Connect to JACP Module via Link-Local compatible settings**

If a DHCP server is not available, the Link Local compatible settings generated by the Janus CPU are displayed on the front panel. Link-Local settings are displayed only when no other network settings have been configured and can be identified by the '169.254.x.x' format of the IP Address on the display.

The Link-Local parameters are assigned as shown below:

IP Address in IPV4 Link-Local range: 169.254.0.0 – 169.254.255.255
Subnet Mask: 255.255.0.0 (CIDR 16)
Gateway Address: 0.0.0.0

In this case, you must manually assign an IP Address for your **PC** Network 'Local Area Connection' TCP/IPv4 that is in the Link-Local range shown above and set Subnet Mask = 255.255.0.0.

Connect an Ethernet cable from your PC directly or via network switch to Port 1 of the JACP Module.

Make a connection to the JACP Module web server by entering the Auto-IP Address displayed on the JACP Module front panel into your browser URL address bar and select 'Configuration / Network Settings' from the web server menu.

Enter the static network parameters into the 'IP Address 1 Configuration' table. Press 'Apply' button at the bottom of the page to assign new IP address parameters.

Application Development Software

Janus Workbench Software (Order# 2500P-WB-USB) is required for application development and configuration of communications for the JACP Module. Contact CTI for more information. Contact information is listed at the bottom of this document. You can download a demo copy here:

https://controltechnology.com/support/software-revision

Firmware Update

Prior to using the Janus Controller, you should verify that the controller firmware is current. The firmware version number displayed in the Product Information page of the embedded web server.

The current firmware version is available on the CTI web site at the following link:
http://www.controltechnology.com/support/software-revision/ .

See Chapter 6 in the *Janus Controller Installation and Operation Guide* for information on updating firmware.

Technical Assistance

If you need assistance from CTI, please email CTI Technical Support at support@controltechnology.com or contact call us at 865-584-0440 or 800-537-8398 (USA only).