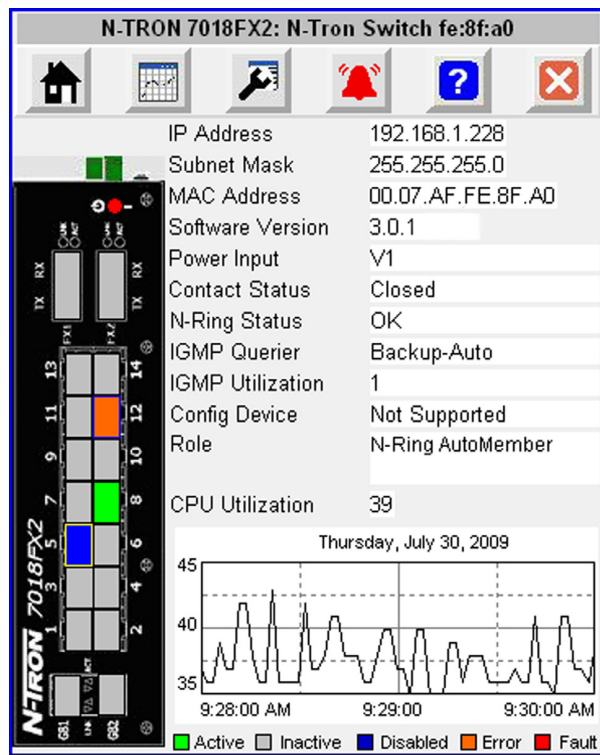


## ▶▶▶ Common Industrial Protocol (CIP)

EtherNet/IP™, better known as the Common Industrial Protocol (CIP), was designed for use in process control and industrial automation applications. CIP was designed to provide consistent device access to eliminate the need for vendor specific software for configuration and monitoring of individual devices. With embedded support for CIP, N-Tron switches deliver switch information and configuration settings directly to Programmable Logic Controllers (PLC's) and HMIs (Human Machine Interface) through standard CIP messaging. Switch status, trending and configuration are easily viewed from a PanelView Plus with screen resolutions of 640 x 480 and higher. In addition to CIP, N-Tron's robust fully managed feature set includes:

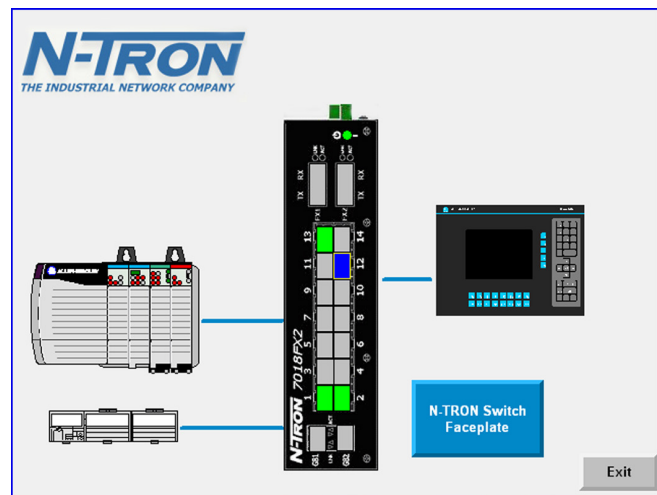
- IGMP Auto Configuration
- VLAN
- QoS
- Trunking
- Port Mirroring
- RSTP
- DHCP
- Web Browser Management
- SNMP v1, v2, v3
- N-View™ Monitoring Technology
- Extended Environmental specifications: up to -40° to 85°C
- Configurable Alarm Contact and Bi-Color Fault LED
- N-Ring Technology
- N-Link Redundant N-Ring Coupling

EtherNet/IP with CIP Messaging is a standard feature on the N-Tron fully managed switch series. CIP tags, sample projects, and diagnostic faceplates for FactoryTalk® View ME/SE software are provided for quick setup and configuration in RSLogix 5000 environments (requires RSLogix 5000 version 17 and higher).



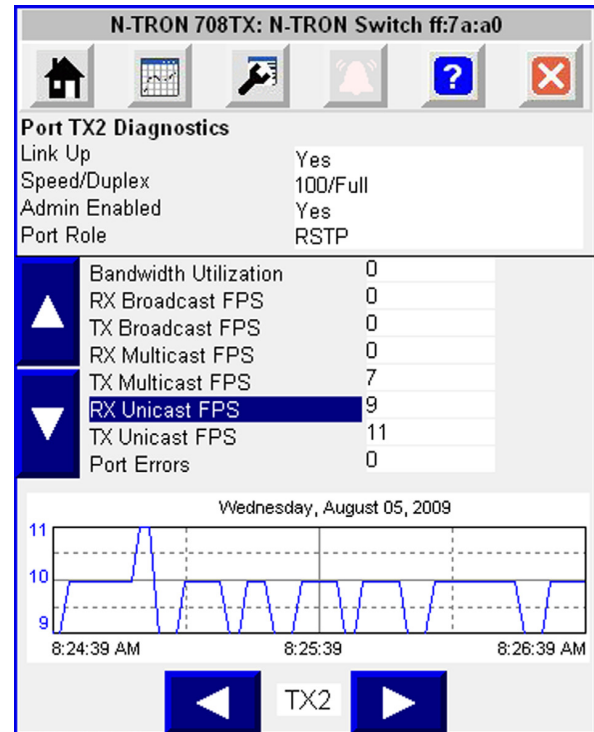
Quickly view switch status on the **Home** display

- IP Address
- Subnet Mask
- MAC Address
- Software Version
- Power Input Status
- N-Ring Status
- IGMP Querier Status
- IGMP Utilization
- Device Role
- CPU Utilization

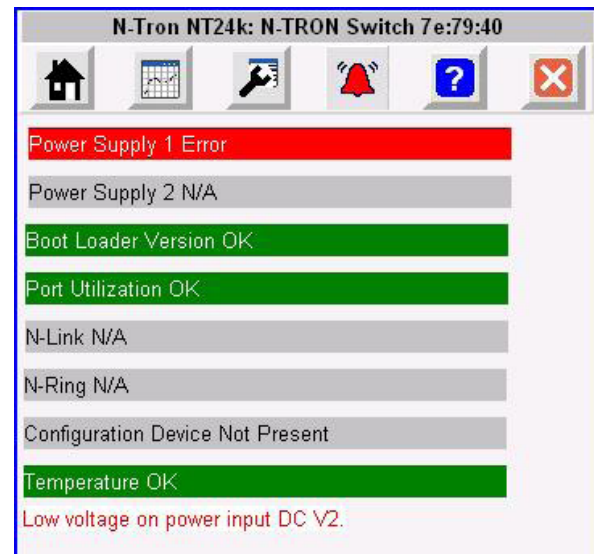
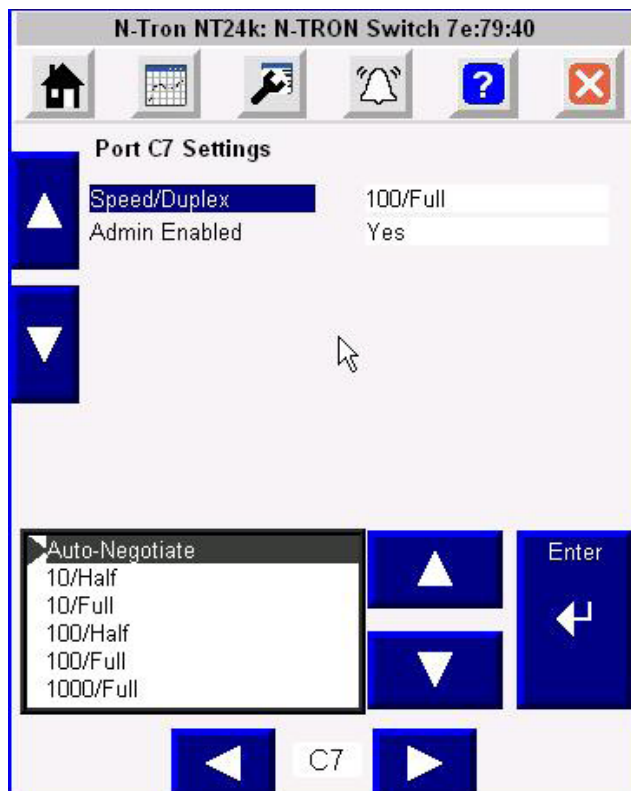


Port **Diagnostics** provides individual port status

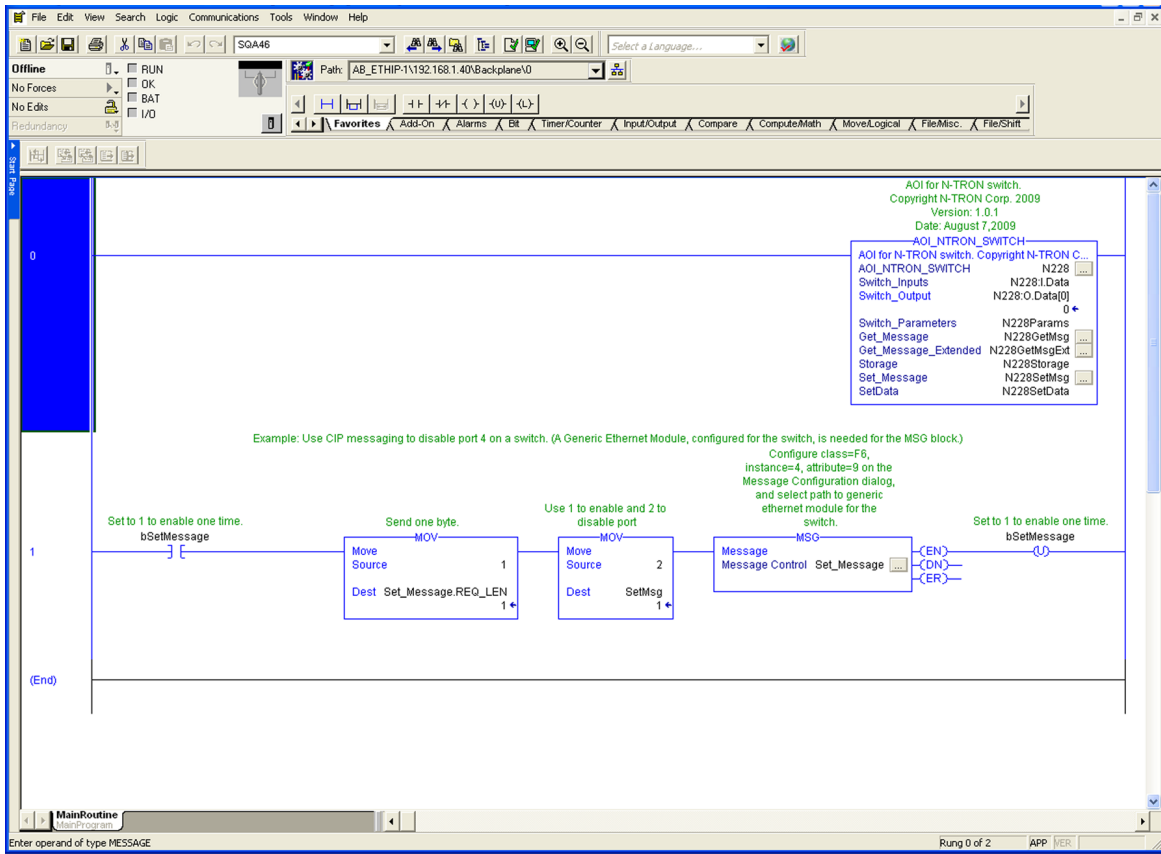
- Link Status
- Speed and Duplex setting
- Admin Enabled
- Port Role
- Trend Analysis
  - > Bandwidth utilization
  - > Broadcast transmit and receive in frames per second
  - > Multicast transmit and receive in frames per second
  - > Unicast transmit and receive in frames per second
  - > Port errors



Easily change port **Settings** or view **Alarm** status



# ▶▶▶ EtherNet/IP™ with CIP™ Messaging Specifications



Ladder logic samples are included

### CIP Status View

CIP Status: Enabled

Identity Information	
Product Name	N-Tron NT24k
Vendor	1006 (N-Tron Corporation)
Device Type	0x0C (hex) (Communications Adapter)
Major Revision	1
Minor Revision	1
Serial Number	0xAF7D95C0 (hex)

Connection Information	
Number of Multicast Connections	1
Number of Unicast Connections	0

Connection Summary						
Transport Class	Connection State	RPI	Config Assembly	Output Assembly	Input Assembly	Peer Address
1	established	1000	103	102	101	192.168.1.40

Refresh

CIP configuration and status are also available via a web browser

### CIP Configuration View

USER: admin | ACCESS: Admin | LOGOUT

HELP | SUPPORT WEBSITE | SUPPORT EMAIL

- Product Information
- Configuration
- Fault
- File Transfer
- System
- User Management
- Advanced
  - Bridging
  - CIP
    - Configuration
    - Status
  - IGMP
  - N-Link
  - N-Ring

CIP Status	
CIP Status	Enabled
Multicast RPI (ms)	300
Unicast RPI (ms)	300

Modify Refresh

CIP tags include:

Ethernet Link Tags	Switch Tags	Faults Tags	CIP Identity
<i>Interface_Speed</i> <i>Interface_Flags</i> <i>Physical_Address</i> <i>InOctets</i> <i>InUcastPackets</i> <i>InNucastPacket</i> <i>InDiscards</i> <i>InErrors</i> <i>InUnknownProtos</i> <i>OutOctets</i> <i>OutUcastPackets</i> <i>OutNucastPacket</i> <i>OutDiscards</i> <i>OutErrors</i> <i>Alignment_Errors</i> <i>FCS_Errors</i> <i>Single_Collisions</i> <i>Multiple_Collisions</i> <i>SQE_Test_Errors</i> <i>Deferred_Transmissions</i> <i>Late_Collisions</i> <i>MAC_Transmit_Errors</i> <i>Carrier_Sense_Errors</i> <i>Frame_Too_Long</i> <i>MAC_Receive_Errors</i> <i>Control_Bits</i> <i>Forced_Interface_Speed</i> <i>Interface_Type</i> <i>Interface_State</i> <i>Admin_State</i> <i>Interface_Label</i> <i>Interface_Description</i> <i>Interface_Utilization</i> <i>Utilization_Alarm_Upper_Threshold</i> <i>Utilization_Alarm_Lower_Threshold</i> <i>Broadcast_Limit</i> <i>TX_Unicast_Packet_Rate</i> <i>RX_Unicast_Packet_Rate</i> <i>TX_Multicast_Packet_Rate</i> <i>RX_Multicast_Packet_Rate</i> <i>TX_Broadcast_Packet_Rate</i> <i>RX_Broadcast_Packet_Rate</i> <i>TX_Multicast_Packets</i> <i>RX_Multicast_Packets</i> <i>TX_Broadcast_Packets</i> <i>RX_Broadcast_Packets</i> <i>Port_Role</i>	<i>Device_Uptime</i> <i>Port_Count</i> <i>Valid_Ports</i> <i>Global_Admin_Status</i> <i>Global_Link_Status</i> <i>System_Faults</i> <i>IGMP_Querier_Status</i> <i>IGMP_Version</i> <i>IGMP_Resource_Usage</i> <i>IGMP_Active_Querier</i> <i>CPU_Usage</i> <i>Class1_Connections</i> <i>Class3_Connections</i> <i>Temperature_Alarm_Upper_Threshold</i> <i>Temperature_Alarm_Lower_Threshold</i> <i>Contact_Status</i> <i>Temperature_C</i> <i>Temperature_F</i> <i>Reset_MIB_Counts</i> <i>Device_MAC_Address</i> <i>Device_Role</i> <i>Config_Device_Status</i> <i>System_Configuration</i> <i>System_Firmware_Version_String</i> <i>System_Boot_Loader_Version_String</i> <i>System_Fault_String</i>	<i>Faults</i> <i>Power_Supply_1</i> <i>Power_Supply_2</i> <i>NRing_Full</i> <i>NRing_Part_Low</i> <i>NRing_Part_High</i> <i>NRing_Part_Multiple_Managers</i> <i>System</i> <i>Config_Device</i> <i>Nlink</i> <i>Boot_Loader_Version</i> <i>Port_Utilization</i> <i>Temperature</i>  <b>TCP/IP Interface Tags</b>  <i>Status</i> <i>Configuration_Capability</i> <i>Configuration_Control</i> <i>Path_Size</i> <i>Object_Path_1</i> <i>Object_Path_2</i> <i>IP_Address</i> <i>Network_Mask</i> <i>Gateway_Address</i> <i>Name_Server_1</i> <i>Name_Server_2</i> <i>Domain_Name</i> <i>Host_Name</i>	<i>Vendor_ID</i> <i>Device_Type</i> <i>Product_Code</i> <i>Major_Revision</i> <i>Minor_Revision</i> <i>Status</i> <i>Serial_Number</i> <i>Product_Name</i> <i>Assigned_Name</i> <i>Geographic_Location</i>  <b>Generic Inputs</b>  <i>Admin_Status (1-64)</i> <i>Link_Status (1-64)</i> <i>Utilization_Alarm (1-64)</i> <i>Class1_Connections</i> <i>Class3_Connections</i> <i>Configuration_Control</i> <i>Temperature_C</i> <i>Temperature_F</i> <i>CPU_Utilization</i> <i>Contact_Status</i> <i>Utilization (1-64)</i> <i>Update_Counter</i>