

The *N-TRON*® 7506GX2 Fully Managed Industrial Ethernet Switch provides all gigabit performance in a compact form factor. The 7506GX2 is ideally suited for use in high traffic industrial applications such as security and video surveillance where maximum throughput, a small footprint and industrial ruggedness are required.

## PRODUCT FEATURES

- Four 10/100/1000BaseT(X) RJ-45 Ports
- Two SFP (Mini-GBIC) Gigabit Transceivers (Optional)
  - 1000BaseSX/LX Fiber with LC style connectors or
  - 1000BaseT Copper with RJ-45 connectors
- -40° to 80°C Operating temperature
- ESD and Surge Protection Diodes on all Ports
- Auto Sensing 10/100/1000BaseT(X), Duplex, and MDIX
- Store-and-forward Technology
- Rugged DIN-Rail Enclosure
- Onboard Temperature Sensor
- Redundant Power Inputs (10-49VDC)
- Configurable Bi-Color Fault Status LED

## Fully Managed Features:

- SNMP v1, v2, v3 and Web Browser Management
- Configuration backup via Optional SD card (NTCD)
- Jumbo Frame Support (9720 Bytes)
- EtherNet/IP™ CIP Messaging
- Detailed Ring Map and Fault Location Charting
- N-Ring™ Technology with ~30ms Healing
- N-View™ OPC Monitoring
- N-Link™ Redundant N-Ring Coupling
- IGMP Auto Configuration
- 802.1Q tag VLAN and Port VLAN
- 802.1p QoS and Port QoS, and DSCP
- LLDP (Link Layer Discovery Protocol)
- Port Trunking
- Port Mirroring
- 802.1d, 802.1w, 802.1D RSTP
- DHCP Server, Option 82 relay, Option 61
- Local Port IP Addressing

## Management Features

The 7506GX2 offers several management functions that can be easily configured using a web browser.

**Automatic IGMP Snooping** - Internet Group Management Protocol is a feature that allows the 7506GX2 switch to forward and filter multicast traffic intelligently.

**VLAN** - Virtual Local Area Network allows you to segment the switch in order to create two or more separate local area network domains.

**QoS** - Quality of Service provides prioritization of network traffic in order to provide better network service. The primary goal of QoS is to improve the latency of prioritized Ethernet packets required for ring management, real-time video, and other interactive applications.

**Port Trunking** - Trunking (link aggregation) enables multiple physical ports to be linked together and function as one uplink to another *N-TRON* trunking capable switch configured in the same manner, thereby increasing the bandwidth between switches. This configuration can provide increased bandwidth and redundancy to applications requiring high levels of fault tolerant operation.

**Port Mirroring** - This function allows the traffic on one port to be duplicated and sent to a designated mirror port. Port mirroring can be used to monitor Ethernet traffic on the designated source port using the assigned mirror port.

**Rapid Spanning Tree Protocol** - RSTP allows the switch to be configured in a ring or mesh topology, and provides support for redundant path communications with high speed (rapid) healing.



**Remote Monitoring Options** - For ease of configuration and monitoring, the 7506GX2 offers web browser management and *N-View* OLE for process control (OPC) server software. The *N-TRON N-View* software can be combined with popular HMI software packages to add network traffic monitoring, trending, and alarming to any application using *N-TRON* switches. In addition, SNMP is available for switch link and status monitoring. The status LED can be configured to respond to power failure on power input 1 or input 2, *N-Link* fault, port usage fault, *N-Ring* broken, partial break high, partial break low, or if multiple ring managers are detected.

**N-Ring Technology** - *N-TRON's* 7506GX2 ring manager using *N-TRON's* *N-Ring* technology offers expanded ring size capacity, detailed fault diagnostics, and a standard healing time of ~30ms. The 7506GX2 ring manager periodically checks the health of the ring via heart beat packets. If the ring manager stops receiving these health check packets, it converts the ring to a linear topology within ~30ms. When all switches in the ring are *N-TRON* fully managed switches, a detailed ring map and fault location chart will also be provided on the ring manager's web browser and OPC server to identify the health status of the ring. *N-Link*™ allows the linking of two *N-Rings*. Up to 250 fully managed *N-TRON* switches can participate in *N-Ring* topologies.

**LLDP** - Link Layer Discovery Protocol is a vendor neutral discovery protocol that allows switches and other LLDP capable devices on an IEEE802 LAN to advertise their capabilities to, and discover information from neighboring LAN members. Discovered information is stored in a MIB accessible through SNMP management tools such as *N-TRON's* iSNMP.

**DHCP** - Dynamic Host Configuration Protocol is a network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network. DHCP can make it easy to add new machines to the network. *N-TRON* supports DHCP Server, Client, Option 61, and Option 82. The 7506GX2 also supports Local Port IP Addressing. This allows an IP address to be assigned to a specific port without using DHCP.

**Industrial Packaging and Specifications** - The 7506GX2 is designed to operate in industrial environments. It is housed in a rugged extruded aluminum DIN-Rail enclosure. It has extended industrial specifications and features to meet or exceed the operating parameters of connected equipment. These include extended temperature ratings, extended shock and vibration specs, redundant power inputs, and high MTBF (greater than 2M hours).

**Ease of Use** - The 10/100/1000BaseT(X) ports are auto sensing and auto configuring. Each copper port is automatically negotiated for maximum speed and performance by default, but can also be hard coded through the user interface. A high speed processor allows wire speed capability on all 10/100/1000BaseT(X) ports simultaneously.

## 7506GX2 Industrial Ethernet Switch Ordering Information

|               |  |
|---------------|--|
| 7506GX2       | Four 10/100/1000BaseT(X) Ports and two SFP ports without (optional) modules                      |
| 7506GX2-SX    | Four 10/100/1000BaseT(X) Ports and two SFP ports with 2 NTSFP-SX Multimode modules installed     |
| 7506GX2-LX-10 | Four 10/100/1000BaseT(X) Ports and two SFP ports with 2 NTSFP-LX-10 Singlemode modules installed |
| NTSFP-TX      | Optional SFP (Mini-GBIC) Transceiver with One 1000BaseT GB Copper Port                           |
| NTSFP-SX      | Optional SFP (Mini-GBIC) Transceiver with One 1000BaseSX Multimode GB Fiber Optic Port           |
| NTSFP-LX-ZZ   | Optional SFP (Mini-GBIC) Transceiver with One 1000BaseLX Singlemode GB Fiber Optic Port          |
| NTCD-128      | Optional SD Card, Configuration Device   |
| NTPS-24-1.3   | N-TRON Power Supply - (1.3 Amp @ 24VDC)  |
| 1000-PM       | Panel Mount kit  |
| URMK          | Universal Rack Mount Kit   |

Where: ZZ = 10, 40, or 70 for GB Singlemode

## 7506GX2 Specifications

### Switch Properties

|                          |                   |
|--------------------------|-------------------|
| Number of MAC Addresses: | 4000              |
| Aging Time:              | Programmable      |
| Latency Typical:         | 1.6 $\mu$ s       |
| Switching Method:        | Store-and-Forward |

### Case Dimensions

|                 |                 |
|-----------------|-----------------|
| Height:         | 3.8" (9.6cm)    |
| Width:          | 2.0" (5.1cm)    |
| Depth:          | 3.9" (9.9cm)    |
| Weight (max):   | 1.1lbs (0.48kg) |
| DIN-Rail Mount: | 35mm            |

### Electrical

|                          |                        |
|--------------------------|------------------------|
| Redundant Input Voltage: | 10-49 VDC (Regulated)  |
| Input Current (max):     | 440mA max. @24VDC      |
| N-TRON Power Supply:     | NTPS-24-1.3 (1.3A@24V) |

### Environmental

|                        |                               |
|------------------------|-------------------------------|
| Operating Temperature: | -40°C to 80°C                 |
| Storage Temperature:   | -40°C to 85°C                 |
| Operating Humidity:    | 5% to 95%<br>(Non Condensing) |
| Operating Altitude:    | 0 to 10,000 ft.               |

### Shock and Vibration (bulkhead mounted)

|                    |                        |
|--------------------|------------------------|
| Shock:             | 200g @ 10ms            |
| Vibration/Seismic: | 50g, 5-200Hz, Triaxial |

### Reliability

|       |                  |
|-------|------------------|
| MTBF: | >2 Million Hours |
|-------|------------------|

### Recommended Wiring Clearance

|        |               |
|--------|---------------|
| Front: | 4" (10.16 cm) |
| Side:  | 1" (2.54 cm)  |

## SFP Gigabit Fiber Transceiver Characteristics

| Fiber Length              | 550m for 50/125 $\mu$ m* | 10km**          | 40km**     | 70km**     |
|---------------------------|--------------------------|-----------------|------------|------------|
| <i>TX Power Min</i>       | -9.5dBm/-4dBm            | -9.5dBm/-3.5dBm | -2dBm/3dBm | 0dBm/5dBm  |
| <i>RX Sensitivity Max</i> | -17dBm                   | -20dBm          | -22dBm     | -24dBm     |
| <i>Wavelength</i>         | 850nm                    | 1310nm          | 1310nm     | 1550nm     |
| <i>Assumed Fiber Loss</i> |                          | -0.5dB/km       | -0.35dB/km | -0.25dB/km |
| <i>Laser Type</i>         | VCSEL                    | FP              | DFB        | DFB        |

\* SX Fiber Optic Cable  
\*\* LX Fiber Optic Cable

### Network Media

|            |              |
|------------|--------------|
| 10BaseT:   | >Cat3 Cable  |
| 100BaseTX: | >Cat5 Cable  |
| 1000BaseT: | >Cat5e Cable |

### Connectors

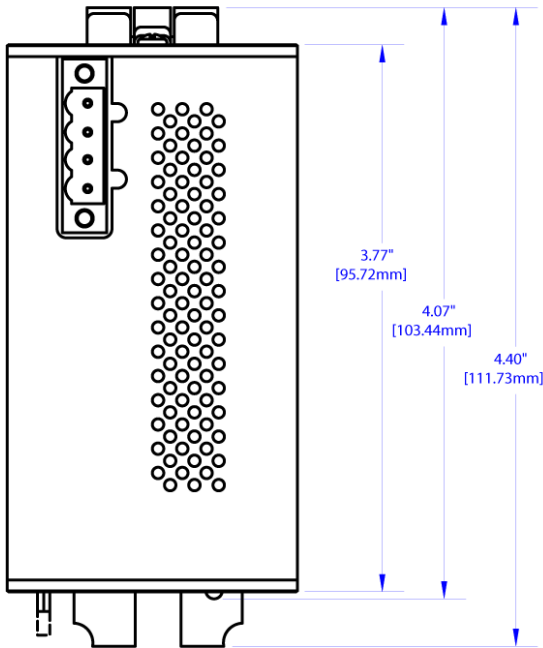
|                      |  |
|----------------------|--|
| 10/100/1000BaseT(X): | Four (4) RJ-45 Copper Ports                            |
| 1000BaseT:           | Up to Two (2) RJ-45 Gigabit Copper Ports (optional)    |
| 1000BaseSX/LX:       | Up to Two (2) LC Duplex Gigabit Fiber Ports (optional) |

### Regulatory Approvals

FCC Title 47, Part 15, Subpart B - Class A; ICES-003 - Class A  
CE: EN61000-6-2:2001; EN61000-6-4:2007  
EN61000-4-2, 3, 4, 5, 6  
GOST-R Certified, RoHS Compliant

Designed to comply with:

UL Listed (US and Canada) 1604; ANSI/ISA-12.12.01-2007  
Class I, Div. 2, Groups A, B, C, D, and T4A  
IEEE 1613 for Electric Utility Substations  
NEMA TS1/ TS2 for Traffic control



## 7506GX2

