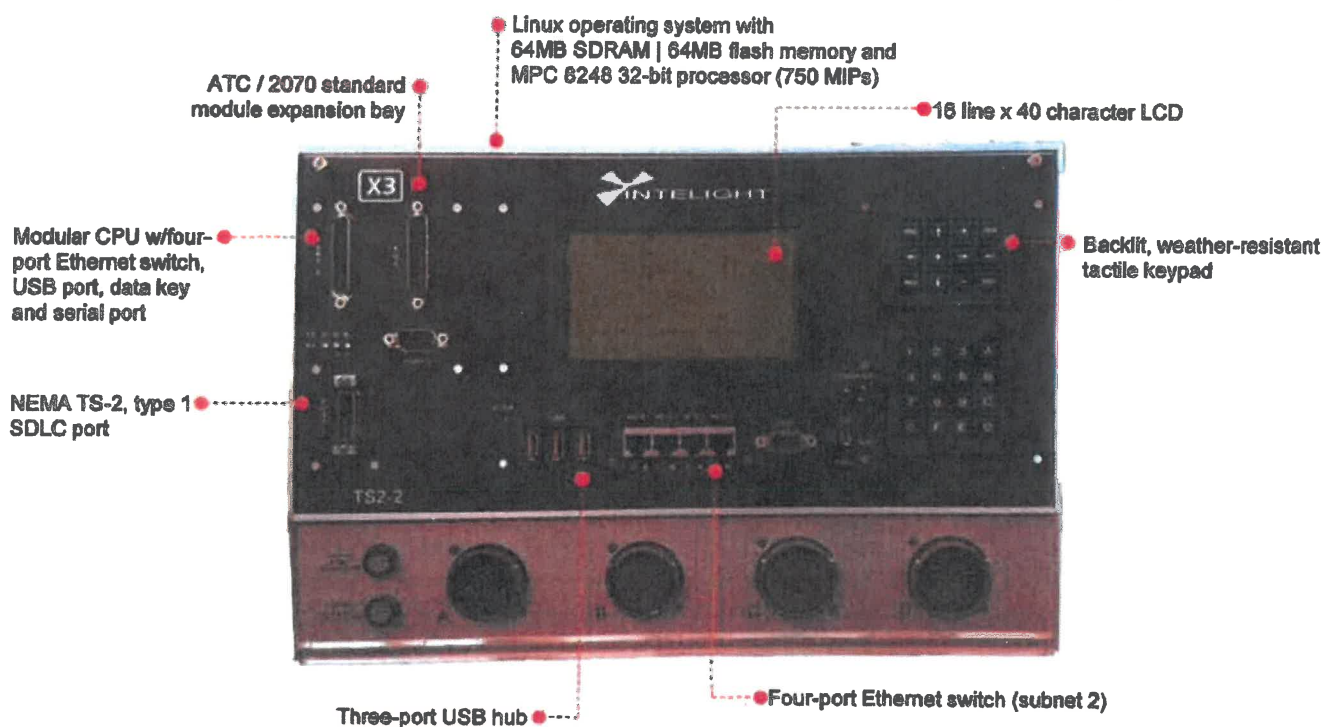# INTEL:GHT / X3

NEVER STAND STILL

NEMA TS-2 Type 2 Traffic Signal Controller

> All the other controllers in the RHYTHM corridor are Eagle controllers, EAGLE is preferred. (Model SEPAC rev. 458)

Overview

The X-3 controller is part of Intelight's award winning X-Series NEMA controller line. The X-3 meets and exceeds the current ATC, NEMA and NTCIP standards providing agencies with a robust, industry-leading, true open architecture hardware platform. The X-3 can help agencies organize and improve operations and reduce the amount of equipment in the signal cabinet. Contact Intelight today to see how the X-3 Controller can help update your signal operations system to 21st century technology.

- Linux operating system with 64MB SDRAM | 64MB flash memory and MPC 8248 32-bit processor (750 MIPs)
- ATC / 2070 standard module expansion bay
- 16 line x 40 character LCD
- Modular CPU w/four-port Ethernet switch, USB port, data key and serial port
- Backlit, weather-resistant tactile keypad
- NEMA TS-2, type 1 SDLC port
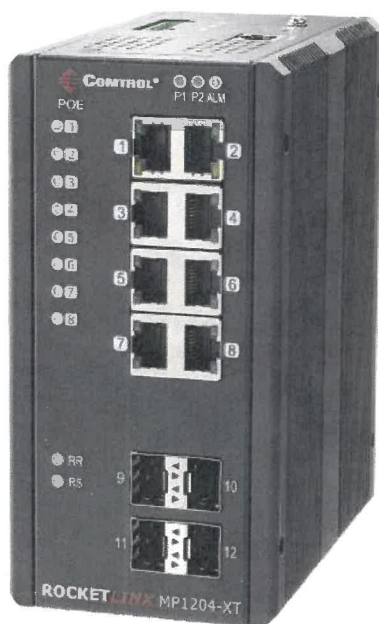- Three-port USB hub
- Four-port Ethernet switch (subnet 2)

Highlights

- Compliant with NEMA TS-2 and ATC 5201 and 5401 Standards
- Linux operating system
- Two independent 10/100 Mbit network cards
- TS-1 and/or TS-2 operation (requires type 2)
- Supports serial and/or Ethernet communications
- 2070 hardware expansion bay for device integration
- MaxTime local controller software

- 40 phases, 16 rings, 32 overlaps, 16 preempts
- Monitor and configure timings wirelessly from a laptop, tablet or smartphone without database editor or third party software
- Built-in master/closed loop functionality
- Peer-to-peer communications
- Advanced TSP included

RocketLinx® MP1204-XT

Part Number: 32145-3

KEY FEATURES AND BENEFITS

- Provides eight 10/100/1000 BASE-TX PoE ports and four 100/1000BASE-FX SFP slots
- IEEE 802.3af 15.4W / IEEE 802.3at 30W High Power PoE
- Total PoE power budget: Maximum. 240W PSE power delivered
- LLDP-MED
- Voice VLAN
- Supports TACACS+
- Network redundant LACP, STP, RSTP, MSTP, and quick ring protection(< 20 ms)
- Port-based /tag-based VLAN, IEEE 802.1 ad/QinQ VLAN, Add/remove VLAN
- Multicasting supports IGMP v1/v2/v3, proxy and snooping
- Multicast/broadcast/flooding storm control
- IEEE802.1x access control
- VLAN mirroring
- CLI/Web/SNMP management interfaces
- PoE PSE power management and PD power consumption monitoring
- Dual power input and reverse power protection
- DIN-rail and wall mounting option
- Green Ethernet (EEE, ActiPHY, and PerfectReach)
- Extended temperature range, -40° – 75° C

PRODUCT DESCRIPTION

The RocketLinx MP1204-XT is a Gigabit 12-port industrial PoE switch with eight PoE Plus ports, which are IEEE 802.3af and IEEE 802.3at compliant and also provides four SFP slots. The MP1204-XT provides an extended operating temperature range, which is ideal for IP camera, access point, and critical PoE devices.

connect. communicate. control.

ROCKETLINX SPECIFICATIONS

HARDWARE

Network Interface
Eight 10/100/1000 BASE TX PoE ports and four
100/1000BaseFX SFP slots

Connector Types
8 – RJ45 copper ports
4 – SFP slots

Ingress Protection   IP30
Enclosure   Steel
Installation Method   EN50022 DIN Rail
LED Indicators
Power, Alarm, PoE, Link/Activity, Ring Role, and Ring Status

Alarm Relay
Relay output with current carrying capacity of 0.5A @ 24VDC.
Configurable alarm profile to enable Alarm LED, alarm relay
and SNMP traps

Serial Console Port
RJ45 to DB9 RS-232 (TxD, RxD, Signal Ground

Dimensions
6.06"(H) x 5.04"(D) x 3.03"(W)
154mm(H) x 128mm(D) x 77mm(W)

Switch Technology
Store and forward, L2 wire-speed/non-blocking switching
engine

Product Weight
3.15 lbs
1.43kg

ETHERNET SPECIFICATIONS

Number of Ports   12
RJ45
8: 10/100/1000BASE-T PoE Plus
Auto MDI/MDIX, Auto-negotiation (Speed/Duplex mode)

SFP Slots
4: SFP (pluggable) Ports 100/1000BASE
Auto-negotiation (Speed/Duplex Mode)

SFPs (Optional)
Supports 100FX SFP transceivers or 1000BASE-TX SFP
transceivers

Cable Types
Cat 3, Cat 4, Cat 5, Cat 5e, Cat 6 (UTP or STP)

Link Distances
RJ45: 100 meters
SFP (Depends on the SFP model)

Port Alarm Relay   Yes
Jumbo Frame Size   9K Bytes
Standards
IEEE 802.3u: 10BASE-T Ethernet
IEEE 802.3u: 100BASE-TX Fast Ethernet
IEEE 802.3u: 100BASE-FX Fast Ethernet Fiber
IEEE 802.3z: Gigabit Ethernet Fiber
IEEE 802.3ab: 1000BASE-T Gigabit Ethernet Copper
IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)
IEEE 802.1ad: Double Tagging (Q in Q)
IEEE 802.1D-2004: Rapid Spanning Tree Protocol (RSTP)
IEEE 802.1p: Class of Service
IEEE 802.1Q: VLAN Tagging, GVRP, and Double Tag VLAN
IEEE 802.1s: Multiple Spanning Tree Protocol (MSTP)
IEEE 802.1w: RSTP
IEEE 802.1X: Port Based Network Access Control
IEEE 802.3ad: Port Trunking with Link Aggregation Control
Protocol (LACP)
IEEE 802.3x: Flow Control and Back-Pressure
Internet Protocol   Supports IPv4 and IPv6

PoE FEATURES

PoE Modes
802.3af
802.3at (2-event)
802.3at (LLDP-MED)

Number of PoE Plus Injector Ports 8
PSE Type
802.3at Type 2
Alternative A
Standards
IEEE 802.3af PoE
IEEE 802.3at LLDP PoE Plus
LLDP-MED
Extension of IEEE 802.1ab and is defined by ANSI/TIA-1057
Maximum PoE Power/Port
15.4W (IEE 802.3af)
30W (IEEE 802.3at)
Total Power Budget (Max)   240W
Power Consumption
Without PD load (Max): 14W
PoE with PD load (Max): 265W with 240W PSE
IEEE 802.3af: 2.92A @ 48VDC [134W]
IEEE 802.3 at: 4.89A @ 53VDC [247W]
PoE Control
Enable or disable PoE, set/port PoE mode, and schedule-
based PoE functions
Real-Time PoE Status   Yes
PoE Output Pin-Out (RJ45)

Pins 1, 2 - V+
Pins 3, 6 - V-
PoE Scheduling
PoE ports are configurable as On/Off by hourly/daily/weekly
basis

MANAGEMENT FEATURES

Configuration and Monitoring Interfaces
Out-Band Management: console port with Command Line
Interface (CLI) - Similar to Cisco CLI
In-Band Management: web interface (HTTP/HTTPS) or a
telnet/ssh console with CLI
System Upgrade/Backup
Web interface support for firmware upgrade and
configuration backup/restore
SNMP   SNMP v1, v2c and v3
SNMP MIB
RFC 1757 RMON 1,2,3,9; RFC 2674 Q-Bridge MIB, RFC-1213
MIB-II; RFC-1493 Bridge MIB; RFC 2233 IF MIB
System Log
Supports server mode syslog

SECURITY FEATURES

Port Security
IP and MAC-based access control
IEEE 802.1X authentication network access control
NAS
Supports system and port configuration
User Privilege
16 configurable user privileges.
Authentication Levels
Console, telnet, ssh, and http
Access Management   Up to 16 entries
Server Authentication   RADIUS and TACACS+

NETWORK REDUNDANCY

Loop Protection
Provides Layer 2 loop prevention through STP, RSTP, and
MSTP. Loop protection increases the efficiency of STP, RSTP,
and MSTP by preventing ports from moving into a forwarding
state that would result in a loop in the network
Multiple Spanning Tree
IEEE 802.1s MSTP
Rapid Spanning Tree Protocol
IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP),
Compatible with legacy STP and IEEE 802.1w
Redundant Ring Technology
Supports single and multiple rings; ring coupling; dual-
homing; chain
Port Trunk with LACP
Static trunk or dynamic via LACP (Link Aggregation Control
Protocol)

NETWORK PERFORMANCE

Access Control List
Permit/ Deny Access Control Lists
Back-Pressure
IEEE 802.3x Back-Pressure(Half Duplex)
Class of Service (CoS)
IEEE 802.1p - 8 Priority Queues/Port
DHCP
Client, Server, Relay, Snooping, Option 82
Flow Control Pause Frame   IEEE 802.3x (Full Duplex)
Green Ethernet
EEE, ActiPHY, and PerfectReach
IEEE 802.1ad
Double-Tag for Private VLAN Access
IGMP
IGMP v1/v2/v3, proxy, snooping, and querying
IP Source Guard
Assign authorized IP addresses to specific port, 112 rules
permitted per switch
LLDP
IEEE 802.1ab: Link Layer Discovery Protocol
LLDP-MED
Supports Link Layer Discovery Protocol Media Endpoint
Discovery
Port-Based Network Access Control/EAP
IEEE 802.1X: Port-Based network access control with EPoL
(Extensible Authentication Protocol over LAN) to permit
or deny interface access with remote RADIUS server
authentication, TACACS+
Port Configuration
Port link speed, link mode, port status, enable/disable
Port Mirroring
Online traffic monitoring on multiple selected ports
Port Security
Assign authorized MAC addresses to specific port using the
dynamic ARP inspection table, which can contain up to 256
entries
Port Trunk/Link Aggregation
IEEE 802.3ad LACP – Port Aggregation and Static Port Trunk
Each trunk member supports up to 12 ports

Maximum of 6 trunk groups including Gigabit Ethernet ports
Private VLAN
Direct client ports in isolated/community VLAN to port in
primary VLAN
sFlow   Supported
Time Synchronization
NTP protocol with Daylight Saving Function and Localize Time
Sync Function.
Traffic Prioritization (QoS)
8 physical queues per port
Weighted Fair Queuing (WRR) or Strict Priority Scheme, which
follows 802.1p QoS tag ID and IPv4 ToS/ Diffserv information
to prioritize network traffic
Traffic shaper, which provides port-based shaping
RADIUS-assigned QoS class
VLAN
IEEE 802.1Q VLAN with 4K (Max)
IEEE 802.1ad double tagging (Q in Q)
Maximum four multicast VLANS (MVR)
Port based
MAC-based VLAN
Protocol-based VLAN
IP Subnet-based VLAN
RADIUS assigned
VoIP   Voice VLAN, LLDP-MED

ELECTRICAL SPECIFICATIONS

Device
DC Input Voltage   46-58 VDC
Power Consumption
  Max. 14W without PD connected
  265W with 240W PSE power delivered
Number of Power Inputs   2
Power Connector Type   6-Pin Screw Terminal Block
Power Input Redundancy   Dual Redundant Inputs
Reverse Polarity Protection   Yes
Digital Output (Relay Output) 1
DC Input Voltage   24VDC
Current Consumption (30VDC)   0.5A Maximum
Multi-Event Relay Feature   Low and High Temperature
                                  Port Link

ENVIRONMENTAL SPECIFICATIONS

Air temperature
System On   -40° to 75 C
System Off   -40° to 85 C
Operating Humidity (non-condensing)
0% to 90%
Mean Time Between Failures   >25 years

EXPORT INFORMATION

Packaged Shipping Weight
4.1 lbs
1.86kg
Package Dimensions
9.5" x 7.5" x 5.2"
240mm x 190mm x 132mm
UPC Code   7-56727-32145-3
ECCN   5A991
Schedule B Number   8517.62.0050

REGULATORY APPROVALS

Emissions
European Standard 61000-6-4
  Canadian EMC Requirements - ICES-003
  CISPR 22
  FCC Part 15 Subpart B
  Class A limit
Immunity
European Standard 61000-6-2:
  IEC 1000-4-2/EN61000-4-2: ESD
  IEC 1000-4-3/EN61000-4-3: RF
  IEC 1000-4-4/EN61000-4-4: Fast Transient/ Burst
  IEC 1000-4-5/EN61000-4-5: Surge
  IEC 1000-4-6/EN61000-4-6: Conducted Disturbance
  IEC 1000-4-8/EN61000-4-8: Magnetic Field
  IEC 1000-4-9/EN61000-4-9: Pulse Magnetic Field
  IEC 1000-4-9/EN61000-4-11: Dips and Voltage Variations
Safety
  IEC 60950/EN60950
  CSA C22.2 No. 60950/UL60950
Other
European Standard: 2011/65/EU RoHS2
NEMA TS2 Compliant
Vibration   IEC60068-2-6
Shock   IEC 60068-2-27
Free Fall   IEC 60068-2-32
Regulatory Approvals

84 in

18 in

Nw Pryor Rd

9 in · 12 in

6 in · 6 in · 6 in

120 in

18 in

Nw Lowenstein Dr

9 in · 12 in

6 in · 6 in · 6 in