HARDENED NETWORKS

ITS- 8042+ V3

HARDENED NETWORKS ITS-8042+ V3 Overview V3 Technology

Where Innovation Meets Reliability

Now with Base Layer 3 & Flex-Technology

- Hardened Base Layer 3
- Next generation ITS-8040+
- 10 Gb USFP+ (Ultra SFP+)
- 2.5 Gb ESFP (Enhanced SFP)
- 96 GB Back- Plane
- S-Flow network usage monitoring
- V3 Technology
- FL APL Approval #: 684-002-028
- Exceeds NEMA TS-2 Specifications
- Bypass Fiber Ports

Our exciting new Flex-Technology revolutionizes speed upgrades in hardened switches!

Now you can purchase switches with any higher speed SFPs 10gig /2.5 gig and connect them to your existing slower speed 100 or 1000 optics without requiring like optics. Make your upgrade path fast, simple, and pain-free!

Ask your sales representative today!

- Designed for heavy video use in unicast/multi-cast in extreme environments
- Bypass switching time <10ms
- Layer 3 managed hardened IGMP switch
- 2 USFP+ ports 100Mb/1000Mb/2.5Gb/10Gb (Ultra SFP+ ports)
- 2 ESFP ports 100Mb/1000Mb/2.5Gb (Enhanced SFP ports)
- 8 copper ports 10Mb/100Mb/1000Mb TX
- Easy to configure web interface designed by ITS users
- Optical monitoring with mapping capabilities
- Fast ITS ring recovery time< 10ms over 250 units of connections
- Remote monitoring of utilization and data flow with RMON
- File transfer options include SFTP, FTP, SCP, TFTP, HTTP, and HTTPS
- Ring Protocols: STP, RSTP, MSTP, RPVST +, R-RVST+, ITS- Ring, Moxa/ Herschman/ Advatech Rings (PVST+ or RPVST+ Cisco compatibility)
- Notifications for link up, link down, SFP power/temperature, topology change ring environment, SMTP, SNMP, and relay output
- ESFP/USFP+ mix and match all speeds single or multi-mode, dual strand (LX,EX,ZX, ZR) or single strand fiber (BX, BR) 100Mb/1000Mb/2.5Gb/10Gb
- VeriPHY (advanced real-time copper cable testing)
- Swapable primary and secondary software instances with multiple configuration storage
- Separate memory for forwarding plane, firmware, and startup configuration
- Optical Bypass Function supporting any speed and links, including 2 port duplex (dual strand), or 4 port simplex (single strand) fiber connection.Bypass switching time <10ms

ITS Express/ Hardened Networks switches have been specifically engineered to handle the challenging demands of extreme environmental conditions and 8k multi-cast high bandwidth video applications.

A vast array of redundancy protocols combined with dual redundant power capabilities ensure maximum uptime for mission-critical applications.

Hardened Networks provides state-of-the-art designed switches, which all feature next-generation ASICs, robust backplanes, and dependable firmware. This gives you the “best-of-breed” in environmentally challenging switch products.

Switch Model	ITS-8042+ V3
Physical Ports	
USFP+ 100Mb/1G/2.5GB/10GB Base-X SFP+	2
ESFP 100Mb/1G/2.5GB Base-X SFP	2
Copper TX 10Mb/100Mb/1000Mb Ports in RJ45 Auto MDI/MDIX	8
Technology	
Ethernet Standards	-IEEE 802.3-2018 for 10/100/1000 Base- T(X), 100/1000/2.5Base- (F)X, 10G Base-R -IEEE 802.3ab for 1000Base-T -IEEE 802.3z for 1000Base-X -IEEE 802.3x for Flow control -IEEE 802.3ad for LACP (Link Aggregation Control Protocol) -IEEE 802.1p for COS (Class of Service) -IEEE 802.1Q-2014 for VLAN Tagging, STP, RSTP, and MSTP -IEEE 802.1w R-PVST+ Cisco natively compatible for all VLANs -IEEE 802.1x for Authentication -IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	32k
Processing	Adaptive cut-through w/ fallback to store-and-forward
Priority Queues	8
Protocols	CSMA/CD
Packet Buffer	32Mbits
Jumbo Frame	Up to 10k Bytes
Switch Properties	-Switching bandwidth: 96Gbps -Maximum number of available VLANs: 4095 -VLAN ID range : VID 0 to 4095 -IGMP multicast groups: 64 for each VLAN -Port Loop Protection
Security Features	-Device binding security features -MAC based port security, device binding, alive check -Port based network access control (802.1x) -MAC-based authentication -MAC address limit -VLAN (802.1Q) to segregate and secure network traffic -AAA RADIUS/TACACS+ User/Password management selectable by management method -SNMPv3 encrypted authentication and access security HTTPS/SSH/SSL to encrypt network management traffic -Access management enabled by method with whitelisted network/ host -Profile based authorization (15 levels per criteria) profile assigned to user -IP source guard DHCP address snopping and protection -DOS/DDOS auto prevention

Software Features	- Powerful GUI and CLI co-developed with our users -Redundant Ring (ITS-Ring) with recovery time less than 10ms -VLAN (802.1Q) with VLAN tagging -Port configuration, status, statistics, monitoring, security -DHCP server/client/relay -NTP recurring Daylight Saving Time option - Layer 3 static routing/multiple interface IPs
Multicast Features	-IGMP v1, 2, 3 - RFCs: 3376 with 4604 update -IPv6 Multicast Listener Discovery Protocol (MLDv2) -IGMP snooping globally or per VLAN -Configurable SSM Range designation -Selectable auto mode or IGMP/MLD version per VLAN -IGMP Snooping Port Group Filtering Profiles -IGMP/MLD Querier Election per VLAN
Traffic Prioritization	-TOS/Diffserv supported -CoS -Application based QoS -IP based bandwidth management -Port rate limiting: user define -Storm Control -Port Classification -Port Tag Remarking -Port DSCP -Port Policing and Shaping -Queue Policing and Shaping -DSCP- based QOS -WRED (Weighted Random Early Detection) for congestion avoidance
Network Redundancy	-ITS-Ring -Express-Chain -Express-Ring (Express Ring now integrates with Moxa, Advantech, and Hirchmann ring protocols) -STP/RSTP/MSTP(IEEE 802.1 d/w/s)/ (PVST+ or RPVST+ Cisco compatibility)
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1
LED Indicator	
Power Indicator (PWR)	Green : Power LED x 2
Ring Master Indicator (R.M.)	Green : Indicates that the system is operating in Ring Master mode

LED Indicator	
Redundant-Ring Indicator (Ring)	-Green: Indicates that the system operating in redundant-ring mode -Green Blinking: Indicates that the ring is broken
Fault Indicator (Fault)	Amber: Indicate unexpected event occurred
10/100/1000Base-T(X) RJ45 Port Indicator	-Green for port link/act (upper) -Dual color LED for speed: Green for 1000Mbps -Link light amber for 100Mbps (upper), and amber for 10Mbps (lower)
1G/2.5GBase-X SFP Port Indicator	Green for port link and green flashing for activity
1G/10Gbase-X SFP Port Indicator	Green for port link and green flashing for activity
Power	
Redundant power input	Dual DC inputs 12-48VDC on 6-pin terminal block
Power Consumption (Typ.)	21.7 Watts
Overload Current Protection	Present
Reverse Polarity Protection	Present
Fault Contact	
Relay	Relay output to carry capacity of 1A at 24VDC
Reset Button	<5 sec: system reboot; >5 sec: factory default
Physical Characteristics	
Enclosure	IP-30
Weight (lb/g)	2.60 lb/1176g
Dimension (W x D x H)	74.3 (W) x 125 (D) x 153.6 (H) mm (2.93 x 4.3 x 6.05 inches)
Environmental	
Storage Temperature	-40 to 90C (-40 to 194F)
Operating Temperature	-40 to 85C (-40 to 185F)
Operating Humidity	5% to 95% Non-condensing
Regulatory Approvals	
EMC	EN55032, EN55024(CE EMC), FCC Part 15B, EN61000-3-2, EN61000-3-3
EMI	CISPR 32, EN55032, FCC Part 15B class A
EMS	-EN 61000-4-2 (ESD) -EN 61000-4-3 (RS) -EN 61000-4-4 (EFT) -EN 61000-4-5 (Surge) -EN 61000-4-6 (CS) -EN 61000-4-8 (PFMF) EN 61000-4-11 (DIP)
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-31
Vibration	IEC 60068-2-6
Safety	EN60950-1, UL 60950, EN 60950-1
Warranty	5 Years

ITS-8042+ V3

The ITS-8042+ is the ITS-8042 with a built-in optical bypass switch, which in the event of a power outage, the fiber links on either side of the down switch will be directly linked in a ring or star topology.

The ITS-8042+ is designed for extreme weather conditions associated with power outages, including snow and ice storms, severe thunderstorms, tornadoes, hurricanes, and other inclement weather.

The ITS-8042+ provides two sets of bypass fiber ports giving the ESFP/USFP+ ports additional redundancy capability in either simplex or duplex modes.

The process is this simple:
Connect a LC fiber cable from ESFP/USFP+ fiber port to a SFP-labeled bypass port. Connect another LC fiber cable from the corresponding PANEL labeled bypass port with the same pair letter (A or B) to the fiber patch panel.

Once the cabinet and switch lose power, the transit traffic will travel through the bypass module and onto the next active switch.

Note that the fiber ports will work if they are not connected to a bypass port. This feature is a significant upgrade in resiliency because there is no disadvantage.

Bypass Specification	
Bypass Physical Ports	LC Connector: 4 simplex or duplex single-mode LC Connector
Fiber Ethernet	Optical Fiber: single mode 9/125nm Operating Wavelength: 1260-1570nm Switch Time: <10ms
Fault Contact	Relay output for power failure warning

Other Solutions

Hardened Networks has created variety of high quality products to fit your needs. If you did not find what you needed in the ITS-8042+ V3, please try the ITS-8042 V3, or browse our other solutions.

Ethernet Switches

ITS-3416

- 4 Ultra Fiber Ports SFP+ 100Mb/1Gb/2.5Gb/10Gb
- 16 Copper Ports 10Mb/100Mb/1000TX
- 156 GBPS Back-Plane
- Hardened Base Layer 3

ITS-8012-24 V3

- 4 Ultra Fiber Ports SFP+ 100Mb/1000Mb/2.5Gb/10Gb
- 4 Enhanced Fiber Ports SFP 100Mb/1000Mb/2.5Gb
- 16 Copper Ports 10Mb/100Mb/1000Mb
- 176 GBPS Back-Plane

ITS-3488

- 4 Ultra Fiber Ports SFP+ 100Mb/1Gb/2.5Gb/10Gb
- 8 Enhanced Fiber Ports SFP Ports 100Mb/1Gb/2.5Gb
- 8 Copper Ports 10Mb/100Mb/1000TX
- 156 GBPS Back-Plane
- Hardened Base Layer 3

ITS-8012-24+ V3

- 4 Ultra Fiber Ports SFP+ 100Mb/1000Mb/2.5Gb/10Gb
- 4 Enhanced Fiber Ports SFP 100Mb/1000Mb/2.5Gb
- 16 Copper Ports 10Mb/100Mb/1000Mb
- Two sets of bypass fiber ports
- 176 GBPS Back-Plane

Communications

ITS- MC-1000

- 10Mb/100Mb/1000tMbps Ethernet BASE-T/TX to SFP (MM or SM)
- Optical port supports 100Mb or 1000Mb full duplex data

ITS- MC-100

- 10Mb/100Mbps Ethernet BASE-T/TX to SFP (MM or SM)
- Flexible power 18-46VAC/12-60 VDC

ITS- VC-100

- High Speed VDSL-2 Technology
- 10Mb/100Mbps Ethernet BASE-T/TX to a pair of copper cables
- Flexible power 18-46VAC/12-60 VDC

We here at Hardened Networks are proud to carry products that are certified by:

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