Summit® 200 Series

Summit 200 series 24- or 48-port 10/100 and the 24 port 100FX Ethernet switches deliver high-performance, advanced intelligence and features in a compact, low cost package.

High Availability at the Edge of the Network

- Ethernet Automatic Protection Switching (EAPS) resiliency protocol for sub-second failover
- Redundant gigabit uplink ports for greater throughput and resiliency
- Layer 2 and Layer 3 ESRP for dual-homed configuration

Maximum Scalability and Ease of Management with Stacking

- High 10/100 connectivity per inch (up to 48 ports in 1RU)
- Up to 8 switches (24 and/or 48) switches per stack
- Single management address for stack with common CLI, SNMP management

Layer 3 Intelligence and Security at the Edge to Protect the Network

- Layers 2 – 4 ACLs, web-based Network Login, 802.1x, SSH2, TACACS, RADIUS, Denial of Service (DoS) protection, MAC address security
- Routing features for maximum forwarding control at the edge
- Advanced edge ExtremeWare® features supported end-to-end throughout the network

Summit 200 series switches redefine edge switch connectivity by delivering advanced features found in much more expensive Layer 3 switches with the price competitiveness and ease of connectivity of a traditional Layer 2 switch. The most demanding edge customers can now have it all: high-performance, robust security, greatest network availability, true end-to-end manageability and advanced Layer 3 switching services, in a surprisingly compact 1RU package.

Based on award-winning ExtremeWare Layer 3 software, Summit 200 switches deliver 24- or 48-ports of 10/100 Ethernet or 24 ports of 100FX Ethernet with four physical Gigabit Ethernet uplinks (two active and two redundant). Every port delivers a vast array of ExtremeWare Layer 2 and Layer 3 features—everything from Open Shortest Path First (OSPF) routing and advanced Quality of Service (QoS) classification to the latest advancements in security, such as Network Login. Once again, Extreme Networks® demonstrates why it is the leader in Layer 3 switching.

Target Applications

- Edge security to protect networks where they are being attacked
- Wire-speed, non-blocking 10/100 connectivity to end stations
- Network edge deployments with Layer 3 intelligence and routing to increase efficiency of sub-network edge traffic
- Secure, long reach Fast Ethernet edge deployments with 100FX connections to end stations

Customer Benefits

High Availability at the Edge of the Network

High-Performance

Non-blocking wire-speed capabilities help ensure performance for the most demanding applications. DiffServ and 802.1p deliver varied levels of service for time-sensitive applications. They help ensure efficient bandwith usage. Four hardware queues provide granularity for multiple applications, and low latency/low jitter for time-sensitive applications (voice and multimedia).

High Level of Network Availability

Redundant copper and fiber gigabit uplinks enable true high availability as Summit 200 switches are able to immediately failover to the redundant port, thereby leaving the user's application unaffected. The user stays connected to the network and remains productive if a failover occurs.

Enterprise customers can now rely on an unmatched network recovery time, traditionally reserved for carriers (50ms), in their LAN network. Summit 200 switches provide connectivity and productivity with advanced high availability features, such as sub-second failover (EAPS, RFC 3619) to deliver sub-second (less than 50 ms recovery) protection switching to switches inter-connected in an Ethernet ring topology. EAPS is similar to Spanning Tree Protocol (STP), but offers the advantage of converging in significantly less time than STP or even Rapid Spanning Tree (802.1w) when a link breaks in the ring.

Extreme Standby Routing Protocol™ (ESRP) can be implemented at both Layers 2 and 3, adding Layer 2 resiliency and loop prevention and Layer 3 default router redundancy to your network. It can be used as an STP substitute and can be scaled to protect thousands of VLANs. In fact, multiple instances of ESRP in the same VLAN allow direct host attachment to standby switches.

With software redundant port feature, a specified primary port can be backed up by another port. Should the link go down on the primary port, the redundant port will establish a link and become active, thus multi-homed redundancy can be easily designed without the complexity of a protocol.

Dual-homed configurations are also supported to allow increased availability.

High Security for Control and Data

MAC address security allows identifying port abuse such as rogue wireless access points or hubs/switches on edge ports. It includes two features: MAC lockdown on a per port basis and limiting the number MAC addresses learned by a port. For example, MAC lockdown and saving learned MAC addresses between reboots can be used to protect ports dedicated for Voice-over-IP (VoIP) phones or printers from abuse. Limiting the number of MAC addresses learned on a port also allows enforcement of service level agreements in tenant or service provider environments.

SSHv2 allows network managers to securely configure the box remotely without any risk of packet snooping or man in the middle attacks. SSHv2, DoS protection, TACACS+ and RADIUS offers reliable and secure configuration traffic (encryption) and authentication. With IEEE 802.1x login, network managers can always control who is connected to the network and prevent unauthorized clients from gaining access.

Web-based Network Login does not require any specific client software and works with any HTTP-compliant web browser and thus is independent of the platform. Every user on every port can be authenticated so the network is protected at the most sensitive point of attack—at the edge.

Multiple Supplicant (client) enables multiple clients to be individually authenticated on the same port. Summit 200 series switches have wire-speed Layer 2-4 Access Control Lists (ACLs) on every port for maximum security while maintaining maximum throughput.

Summit 200-24fx provides secure, long reach (up to 2km on Multimode fiber) 100FX fiber connections that are difficult to tap. This allows deployment in secure environments and ensures no impact from electro-magnetic radiations.

Superior Services

Years of development enable ExtremeWare to deliver the most comprehensive Layer 3 advanced software solution set at the edge, allowing customers to easily expand and add new services to their networks without major changes. True end-to-end management results in lower operational costs and less training, while maximizing network uptime.

Maximum Scalability and Ease of Management

Summit 200 series switches and UniStack™ stacking architecture were designed to support converged services. Resiliency is of key importance for these converged applications such as video and IP Telephony and is assured by redundant bidirectional ring architecture and n-1 master redundancy, distributed Layer 2 and Layer 3 link aggregation, link redundancy, and distributed uplinks. Summit 200 series switches with UniStack delivers the best of both worlds: the benefits of a chassis at the cost of a stackable in an architecture designed to support today's evolving LAN applications. The resulting network simplification yields lower management and maintenance costs, while enhancing overall availability.

UniStack stacking on Summit 200 series switches offers a better way to contain edge complexity by integrating multiple switches into one manageable entity that simplifies configuration, upgrades, and adds and drops.

Summit 200 switches deliver an increase in 10/100 Ethernet scalability while reducing the cost per Layer 3 port to very affordable levels. Requiring only 1.75" of rack space (1RU), Summit 200 supports up to 48 ports of RJ-45 copper 10/100 Ethernet and four Gigabit Ethernet ports (two 1000BASE-T RJ-45 copper ports and two fiber gigabit ports). Summit 200 gigabit uplink ports provide the added flexibility of port redundancy between copper and fiber ports, enabling backup links to the active uplinks with sub-second (50ms) failover capability. With Summit 200 switches' non-blocking architecture, you will get full performance to the edge of every user on the network.

More 10/100 density and line-rate performance sometimes means higher price, but not with Summit 200 switches. The groundbreaking design of this platform enables Extreme Networks to price Layer 3 services on Summit 200 switches at less than the competition's Layer 2 price. Customers get more density, higher performance, and a lower cost from Extreme Networks and Summit 200 switches.

Customer Benefits

Intelligence at the Edge—Where You Need It

Customers need both Layer 2 and Layer 3 intelligent services at the edge to help ensure maximum network efficiency, and Summit 200 switches deliver the best Layers 2-3 features set at the edge. Intelligence supports security to prevent unauthorized access, high availability to help ensure network uptime, common manageability to reduce expenses—the very features that customers require at the edge of the network.

Summit 200 switches support advanced Layer 3 services like RIP, OSPF, Network Address Translation, and Layers 2 – 4 ACLs. Summit 200 switches also support Layer 2 services like QoS classification, dynamic VLANs, EAPS, and ACLs. End users now enjoy services such as better security, faster forwarding and routing, and more uptime because Summit 200 switches support ExtremeWare Layer 2 and Layer 3 services. Moreover, Summit 200 switches are the only edge switches on the market capable of supporting ExtremeWare Layer 2 and advanced Layer 3 features yet priced lower than many entry level Layer 2 switches.

End-to-End Solution—Edge, Aggregation and Core

Summit 200 switches are fully integrated into Extreme Networks edge, aggregation, and core end-to-end solution. ExtremeWare Layer 2 and Layer 3 features implemented in Summit 200 switches are shared with other Extreme Networks platforms in the Summit product line as well as with Alpine® and BlackDiamond® switches. This common code base makes it easy to configure features like ACLs and EAPS, commonly throughout the network. Summit 200 switches also use the same Command Line Interface (CLI), EPICenter® graphical management interface and management commands as other Extreme Networks' switches, so training time and expenses are reduced as management expertise can be shared over an entire network solution. Integration of Summit 200 switches into an Extreme Networks end-to-end solution reduces the cost of networking and significantly improves the overall efficiency of the network.

Summit 200 Switches Feature Set Summary

Hardware Features

- 24 and 48 10/100 auto-negotiating Ethernet ports in a 1RU footprint allow more network connections per inch of rack space
- 24 fixed 100BASE-FX (MMF) ports deliver high-density fiber connectivity in 1.75-inch high (1RU) form factor
- 2-10/100/1000BASE-T copper ports and 2 mini-GBIC ports deliver two active gigabit uplinks for greater throughput and two redundant uplinks
- Single AC power supply

Performance Features

- Non-blocking wire-speed architecture
- 23.6 Gbps switching fabric (Summit 200-48), 11.8 Gbps switching fabric on the Summit 200-24 and Summit 200-24fx enabling all ports to operate at line-rate
- Flow-based central rate limiting that can be applied to any classified packet flow
- 255 port based and MAC based VLANs
- 8,191 MAC addresses
- 4 hardware queues per port
- 4 Gigabit Ethernet uplink ports, 2 active and 2 redundant with Layer 1 failover
- ACLs for optimal security and diverse traffic classification

Management Features

- Serial management port on the front panel for ease of installation
- Extensive management through SNMP, RMON and CLI
- Secure remote management with strong encryption using SSH2
- Port mirroring

ExtremeWare Features

Intelligent Services

- QoS
  - 4 priority queues
  - 802.1p priority marking
  - Layer 2 classification
  - Layer 3 DiffServ
  - Layer 2/3/4 ACLs
- Routing
  - RIP v1/v2
  - OSPF Edge
  - Extreme Standby Router Protocol aware (ESRP)
- Multicast
  - IGMP v1/v2
  - IGMP snooping
  - PIM/SM edge
- Ethernet Automatic Protection Switching-edge (EAPS-edge)
- Network Address Translation
- Multicast-edge

Security

- Network Login
- 802.1x
- Web-based Network Login
- SSH2 server
- Layer 2/3/4 ACLs
- DoS
- RADIUS support
- TACACS+ support
- MAC Address Security (lockdown + limit)
- IP Address Security: Disable ARP learning
- Intelligent Network Access with integration with EPICenter Policy Manager, including compatibility with Sygate host integrity checking RADIUS authentication separated between Network Access and Device Management Security
- Management Security: SNMPv3, SSH2-client, SCP/SFTP
- DoS Protect
- IP Address Security: DHCP Option 82

Resiliency

- Software Redundant Port
- ESRP (in Advanced Edge license)
- VRRP (in Advanced Edge license)
- Loop detection via Lbdetect and ELRP CLI EAPS is now for free
- STP: 802.1w Rapid Spanning Tree
- STP: Compatibility mode for PVST+, EMISTP (1 domain per port)

Extensibility and Scalability

- Static Multicast Routes
- Multicast: static IGMP membership
- LACP for edge deployment (server connectivity)
- Stacking

Simplicity

- Entity MIB for inventory
- mtrace/mrinfo

Technical Specifications

ExtremeWare 7.7 Supported Protocols

General Routing and Switching
- RFC 1812 Requirements for IP Version 4 Routers
- RFC 1519 CIDR
- RFC 1256 IPv4 ICMP Router Discovery (IRDP)
- RFC 1122 Host Requirements
- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 894 IP over Ethernet
- RFC 1027 Proxy ARP
- RFC 2338 VRRP
- RFC 3619 Ethernet Automatic Protection Switching (EAPS) and EAPSv2
- IEEE 802.1D – 1998 Spanning Tree Protocol (STP)
- IEEE 802.1w – 2001 Rapid Reconfiguration for STP, RSTP
- IEEE 802.1s – 2004 Multiple Instances of STP, MSTP
- Extreme Multiple Instances of Spanning Tree Protocol (EMISTP)
- PVST+, per VLAN STP (802.1Q interoperable)
- Extreme Standby Router Protocol (ESRP)
- IEEE 802.1Q – 2003 Virtual Bridged Local Area Networks
- Extreme Discovery Protocol (EDP)
- Static Unicast Routes
- Extreme Loop Recovery Protocol (ELRP)
- Software Redundant Ports

VLANs
- IEEE 802.1Q VLAN Tagging
- IEEE 802.3ad Static configuration and dynamic (LACP) for server attached
- IEEE 802.1v: VLAN classification by Protocol and Port
- Port-based VLANs
- MAC-based VLANs
- Multiple STP domains per VLAN

Quality of Service and Policies
- IEEE 802.1D – 1998 (802.1p) Packet Priority
- RFC 2474 DiffServ Precedence, including 4 queues/port
- RFC 2598 DiffServ Expedited Forwarding (EF)
- RFC 2597 DiffServ Assured Forwarding (AF)
- RFC 2475 DiffServ Core and Edge Router Functions
- Ingress rate limiting
- Layer 1-4, Layer 7 (user name) Policy-Based Mapping
- Policy-Based Mapping/Overwriting of DiffServ code points, .1p priority
- Network Login/802.1x and DLCS (Dynamic Link Context System, WINS snooping) based integration with EPICenter Policy Manager for dynamic user/device based policies

RIP
- RFC 1058 RIP v1
- RFC 2453 RIP v2

OSPF
- RFC 2328 OSPF v2 (including MD5 authentication)
- RFC 1587 OSPF NSSA Option
- RFC 1765 OSPF Database Overflow
- RFC 2370 OSPF Opaque LSA Option

Note: OSPF Edge License includes 2 active interfaces, router priority 0

IP Multicast
- RFC 2362 PIM-SM
- RFC 1112 IGMP v1
- RFC 2236 IGMP v2
- IGMP Snooping with Configurable Router Registration Forwarding
- IGMP Filters
- Static IGMP Membership
- Static Multicast Routes
- Mtrace, draft-ietf-idmr-traceroute-ipm-07
- Mrinfo

Management and Traffic Analysis
- RFC 2030 SNTP, Simple Network Time Protocol v4
- RFC 1866 HTML – web-based device management and Network Login
- RFC 2068 HTTP server
- RFC 854 Telnet client and server
- RFC 783 TFTP Protocol (revision 2)
- RFC 951, 1542 BootP
- RFC 2131 BOOTP/DHCP relay agent and DHCP server
- RFC 1591 DNS (client operation)
- RFC 1155 Structure of Mgmt Information (SMIv1)
- RFC 1157 SNMPv1
- RFC 1212, RFC 1213, RFC 1215 MIB-II, Ethernet-Like MIB & TRAPs
- RFC 1573 Evolution of Interface
- RFC 1901 – 1908 SNMP Version 2c, SMIv2 and Revised MIB-II
- RFC 2570 – 2575 SNMPv3, user based security, encryption and authentication
- RFC 2576 Coexistence between SNMP Version 1, Version 2 and Version 3
- RFC 2665 Ethernet-Like-MIB
- RFC 1757 RMON 4 groups: Stats, History, Alarms and Events
- RFC 2021 RMON2 (probe configuration)
- RFC 2668 802.3 MAU MIB
- RFC 1643 Ethernet MIB
- RFC 1493 Bridge MIB
- RFC 2737 Entity MIB, Version 2
- RFC 2674 802.1p/802.1Q MIBs
- RFC 1354 IPv4 Forwarding Table MIB
- RFC 2233 Interface MIB
- RFC 2096 IP Forwarding Table MIB
- RFC 1724 RIPv2 MIB
- RFC 1850 OSPFv2 MIB
- RFC 2787 VRRP MIB
- RFC 2925 Ping/Traceroute/NSLOOKUP MIB
- RFC 2932 – IPv4 Multicast Routing MIB
- RFC 2933 – Internet Group Management Protocol MIB
- RFC 2934 – Protocol Independent Multicast MIB for IPv4
- Draft-ietf-bridge-rstpmib-03.txt – Definitions of Managed Objects for Bridges with Rapid Spanning Tree Protocol
- draft-ietf-bridge-8021x-01.txt (IEEE8021-PAE-MIB)
- IEEE 802.1x – 2001 MIB
- Extreme extensions to 802.1x-MIB
- Secure Shell (SSHv2) clients and servers
- Secure Copy (SCPv2) client and server
- Secure FTP (SFTP) server
- Configuration logging
- Multiple Images, Multiple Configs
- BSD System Logging Protocol (SYSLOG), with Multiple Syslog Servers
- Local Messages (criticals stored across reboots)
- IEEE 802.1ab Link Layer Discovery Protocol (LLDP)

ExtremeWare vendor MIBs: includes ACL, MAC FDB, IP FDB, MAC Address Security, Software Redundant Port, NetFlow, DoS-Protect MIB, QoS policy, Cable Diagnostics, VLAN config, vMAN, VLAN Translation and VLAN Aggregation MIBs

Security
- Routing protocol MD5 authentication (see above)
- Secure Shell (SSHv2), Secure Copy (SCPv2) and SFTP with encryption/authentication
- SNMPv3 user based security, with encryption/authentication (see above)
- RFC 1492 TACACS+
- RFC 2865 RADIUS Authentication
- RFC 2866 RADIUS Accounting
- RFC 3579 RADIUS Support for Extensible Authentication Protocol (EAP)
- RFC 3580 802.1X RADIUS
- RADIUS Per-command Authentication
- MAC based Network Login using RADIUS
- Access Profiles on All Routing Protocols
- Access Profiles on All Management Methods
- Network Login (web-based DHCP/HTTP/RADIUS mechanism)
- RFC 2246 TLS 1.0 + SSL v2/v3 encryption for web-based Network Login
- IEEE 802.1x – 2001 Port-Based Network Access Control for Network Login
- Multiple supplicants for Network Login (web-based and 802.1x modes)
- Guest VLAN for 802.1x
- MAC Address Security – Lockdown, limit and aging
- IP Address Security with DHCP Option 82, DHCP Enforce/Duplicate IP Protection via ARP Learning Disable
- Network Address Translation (NAT)
- Layer 2/3/4/7 ACLs
- Source IP Lockdown – Dynamic filtering against invalidly sourced traffic

Denial of Service Protection
- RFC 2267 Network Ingress Filtering
- RPF (Unicast Reverse Path Forwarding) Control via ACLs
- Wire-speed ACLs
- Rate limiting ACLs
- IP Broadcast Forwarding Control
- ICMP and IP-Option Response Control
- SYN attack protection
- FDB table resource protection via IPDA Subnet Lookup
- CPU DOS protection with ACL integration: Identifies packet floods to CPU and sets an ACL automatically, configurable enhanced DoS Protect
- Unidirectional Session Control

Robust Against Common Network Attacks
- CERT (http://www.cert.org)
  - CA-2003-04: "SQL Slammer"
  - CA-2002-36: "SSHredder"
  - CA-2002-03: SNMP vulnerabilities
  - CA-98-13: tcp-denial-of-service
  - CA-98.01: smurf
  - CA-97.28: Teardrop_Land -Teardrop and "LAND attack"
  - CA-96.26: ping
  - CA-96.21: tcp_syn_flooding
  - CA-96.01: UDP_service_denial
  - CA-95.01: IP_Spoofing_Attacks_and_Hijacked_Terminal_Connections
  - IP Options Attack

Host Attacks
- Teardrop, boink, opentear, jolt2, newtear, nestea, syndrop, smurf, fraggle, papasmurf, synk4, raped, winfreeze, ping –f, ping of death, pepsi5, Latierra, Winnuke, Simping, Sping, Ascend, Stream, Land, Octopus

Technical Specifications

General Specifications

Switch Fabric

- Bandwidth, Gbps: non-blocking
  - 23.6 Gbps (Summit 200-48),
  - 11.8 Gbps (Summit 200-24 and Summit 200-24fx)

Forwarding Rate

- 10.15 million packets/second (Summit 200-48)
- 6.55 million packets/second (Summit 200-24 and Summit 200-24fx)
- Max Packet Size: 1522

Ports

- 24/48 RJ-45 10/100 ports (IEEE 802.3 Type 10BASE-T; 802.3u Type 100BASE-TX) or 24 fixed 100BASE-FX (MMF) ports
- 2 dual personality ports: Either RJ-45 10/100/1000 ports (IEEE 802.3 Type 10BASE-T; 802.3u Type 100BASE TX; 802.3ab 1000BASE-T Gigabit Ethernet) or open mini-GBIC slot

General

- Number of QoS queues/port: 4
- Number of VLANs: 255
  - VLAN Types: Port, IEEE 802.1Q, and MAC-based
- Number of ACL Rules/lines: 1014 (can be applied to either ingress or egress)

Forwarding Tables

- Layer 2/MAC addresses: 8K
- Layer 3 forwarding database in hardware: 2K
- Layer 3 routing table size: 8K

Rate Limiting

- Flow-based bandwidth policing/rate limiting: pool of 315 rate limiters that can be applied to any classified ACL flow (including ingress or egress flows)
- Rate limiting Granularity: 1Mb/s on 10/100BASE-T and 100FX ports. 8Mb/s on 1000BASE-T ports

Physical Specifications

Height: 1.75 inches/4.45 cm
Width: 17.32 inches/44 cm
Depth: Summit 200-48: 12.2 inches/31 cm
Summit 200-24: 8.1 inches/20.85 cm
Summit 200-24fx: 12.3 inches/31 cm

Weight:
- Summit 200-48: 9.7 lbs/4.4kg
- Summit 200-24: 5.72 lbs/2.6kg
- Summit 200-24fx: 9.5 lbs/4.3kg

Operating Temperature Range,
- 0° to 40° C (32° to 104° F)

Storage Temperature Range,
- Degrees/Degrees Celsius: -40° to +70° C (-40° to 158° F)
- Humidity Range: 10-95% (RH) non-condensing

Power

Min Voltage/Associated Current:
- Summit 200-48: 100VAC/0.640A
- Summit 200-24: 100VAC/0.414A
- Summit 200-24fx: 100VAC/0.52A

Max Voltage/Associated Current:
- Summit 200-48: 240VAC/0.328A
- Summit 200-24: 240VAC/0.223A
- Summit 200-24fx: 240VAC/ 0.41A

Heat Dissipation, Watts/BTU:
- Summit 200-48: 48W/164 BTU/hr
- Summit 200-24: 24.1W/82 BTU/hr
- Summit 200-24fx: 45W/153 BTU/hr

Acoustic
- Summit 200-24: 51.7 dBA – Sound Pressure
- Summit 200-48: 51.6 dBA – Sound Pressure

Regulatory/Safety

Summit 200-24 and Summit 200-48

North America
- cULus Listed device – UL 60950 3rd Edition (U.S. Safety) – CAN/CSA-C22.2 No. 60950-00 (Canadian Safety)

Europe
- Low Voltage Directive (LVD)
  - TUV-R GS Mark by German Notified Body– EN60950:2000 (European Safety)

International
- CB Scheme – IEC60950: 2000 with all country deviations (International Safety) Country · Mexico NOM/NYCE (Product Safety & EMCApproval) Specific · Australia/New Zealand AS/NZS 3260 (ACA DoC, Safety of ITE)
  - Argentina S-Mark
  - GOST (Russia)

Laser Safety

North America
- FCC 21 CFR subpart (J) (Safety of Laser Products)

Europe
- CDRH Letter of Approval (U.S. FDA Approval Europe
- EN60825-2 (European Safety of Lasers)

EMI/EMC

North America
- FCC 47 CFR Part 15 Class A (U.S. Emissions)
- ICES-003 Class A (Canada Emissions)
- Europe 89/336/EEC EMC Directive
- ETSI/EN 300 386:2001 (EU Telecommunication Emissions & Immunity)
- EN55022:1998 Class A (Europe Emissions)
- EN55024:1998 includes IEC/EN 61000-2,3,4,5,6,11 (Europe Immunity)
- EN 61000-3-2, -3 (Europe Harmonics and Flicker)

International
- IEC/CISPR 22:1997 Class A (International Emissions)
- IEC/CISPR 24:1998 (International Immunity)
- IEC/EN 61000-4-2 Electrostatic Discharge
- IEC/EN 61000-4-3 Radiated Immunity
- IEC/EN 61000-4-4 Transient Bursts
- IEC/EN 61000-4-5 Surge
- IEC/EN 61000-4-6 Conducted Immunity
- IEC/EN 61000-4-11 Power Dips & Interruptions

Country Specific
- Japan Class A (VCCI Registration, Emissions) Specific
- Australia/New Zealand AS/NZS 3548 (ACA DoC, Emissions)
- Korean MIC Mark (MIC Approval, Emissions & Immunity)
- Mexico NOM/NYCE (Product Safety & EMC Approval)
- GOST (Russia)Taiwan CNS 13438:1997 Class A (BSMI Approval, Emissions)

Environmental

Standard

- EN 300 019-2-1 (2000-09) – Storage Class 1.2 - Packaged
- EN 300 019-2-2 (1999-09) – Transportation Class 2.3 Packaged
- EN 300 019-2-2 (1999-09) – Stationary Use at Weather Protected locations, Class 3.1e - Operational
- EN 300 753 (1997-10) – Acoustic Noise - Operational
- ASTM D5276 * - Drop – Packaged
- ASTM D3332 * – Shock – Unpackaged
- ASTM D3580 * – Random Vibration – Unpackaged
- ASTM D6179 * – Tilt – Packaged

*Additional testing requested by Extreme Networks

Reliability

MTBF

- Calculated MTBF:
  - Summit 200-48: 123,000 hours
  - Summit 200-24: 150,000 hours
  - Method: Bellcore TR-332 Operating @ 40° C

Summit 200-24fx

North American Safety of ITE
- UL 60950-1:2003 1st Ed., Listed Device (US)
- CSA 22.2#60950-1-03 1st Ed (Canada)
- Complies with FCC 21 CFR Chapter 1, Subchapter J (US Laser Safety)
- CDRH Letter of Approval (US FDA Approval)
- IEEE 802.3af 6-2003 Environment A for PoE Applications

European Safety of ITE
- EN60950-1:2001
- EN 60825-1+A2:2001 (Lasers Safety)
- TUV-R GS Mark by German Notified Body
- 73/23/EEC Low Voltage Directive

International Safety of ITE
- CB Report & Certificate per IEC 60950-1:2001 + All Country Deviations
- AS/NZX 3260 (Australia /New Zealand)

EMI/EMC Standards

North America EMC for ITE
- FCC CFR 47 part 15 Class A (USA)
- ICES-003 Class A (Canada)

European EMC Standards
- EN 55022:1998 Class A
- EN 55024:1998 Class A
  - includes IEC 61000-4-2, 3, 4, 5, 6, 8, 11
- EN 61000-3-2,3 (Harmonics & Flicker)
- ETSI EN 300 386:2001 (EMC Telecommunications)
- 89/336/EEC EMC Directive

International EMC Certifications
- CISPR 22:1997 Class A (International Emissions)
- CISPR 24:1997 Class A (International Immunity)
- IEC/EN 61000-4-2 Electrostatic Discharge, 8kV Contact, 15kV Air, Criteria A
- IEC/EN 61000-4-3 Radiated Immunity 10V/m, Criteria A
- IEC/EN 61000-4-4 Transient Burst, 1kV, Criteria A
- IEC/EN 61000-4-5 Surge, 2kV, 4kV, Criteria A
- IEC/EN 61000-4-6 Conducted Immunity, 0.15-80MHz, 10V/m unmod. RMS, Criteria A
- IEC/EN 61000-4-11 Power Dips & Interruptions, >30%, 25 periods, Criteria C

Country Specific
- VCCI Class A (Japan Emissions)
- AS/NZS 3548 ACA (Australia Emissions)
- CNS 13438:1997 Class A (BSMI-Taiwan)
- MIC Mark, EMC Approval (Korea)

Telecom Standards

- ETSI EN 300 386:2001 (EMC Telecommunications)
- ETSI EN 300 019 (Environmental for Telecommunications)

Technical Specifications

Operational & Transportation Standards

- EN/ETSI 300 019-2-1 v2.1.2 – Class 1.2 Storage
- EN/ETSI 300 019-2-2 v2.1.2 – Class 2.3 Transportation
- EN/ETSI 300 019-2-3 v2.1.2 – Class 3.1e Operational
- EN/ETSI 300 753 (1997-10) – Acoustic Noise
- ASTM D3580 Random Vibration Unpackaged 1.5G

Optical Parameters for the Summit 200-24fx

Connector Type: LC fixed 100FX MMF
Distance range up to 2km on Multimode Fiber (MMF)

Characteristics of Output Interface

- Center wavelength (nm): 1270 to 1380
- Average power (db): -20 to -14
- Rise time (ns) (10% - 90%): 0.6 to 3.5
- Fall time (ns) (90% to 10%): 0.6 to 3.5
- Duty Cycle distortion, peak-peak (ns): 0 to 1
- Data Dependant jitter, peak-peak (ns): 0 to 0.6
- Random jitter, peak-peak (ns): 0 to 0.76
- Extinction ratio (%): 0 to 10

Characteristics of Input Interface

- Center wavelength (nm): 1270 to 1380
- Average power (db): -31 to -14
- Rise time (ns) (10% - 90%): 0.6 to 5
- Fall time (ns) (90% to 10%): 0.6 to 5
- Duty Cycle distortion, peak-peak (ns): 0 to 1
- Data Dependant jitter, peak-peak (ns): 0 to 1.2
- Random jitter, peak-peak (ns): 0 to 0.76
- Extinction ratio (%): 0 to 10

Warranty

- Limited Lifetime Hardware Warranty
- 90-day Warranty on Software

Ordering Information

Part Number	Name	Description
13232	Summit 200-24fx	Summit 200-24fx with ExtremeWare Edge software license
13240	Summit 200-24	Summit 200-24 with ExtremeWare Edge software license
15040	Summit 200-48	Summit 200-48 with ExtremeWare Edge software license
13233	Summit 200-24fx Voucher	Advanced Edge software voucher for Summit 200-24fx
13243	Summit 200-24 Voucher	Advanced Edge software voucher for Summit 200-24
15041	Summit 200-48 Voucher	Advanced Edge software voucher for Summit 200-48

Accessories

10051	SX mini-GBIC	Mini-GBIC, SFP, 1000BASE-SX
10052	LX mini-GBIC	Mini-GBIC, SFP, 1000BASE-LX
10053	ZX mini-GBIC	Mini-GBIC, SFP, 1000BASE-ZX

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