DATA SHEET

Ruckus ICX 7150 Switch

HIGHLIGHTS

- Offers enterprise-class stackable switching at an entry-level price, allowing organizations to buy what they need now and easily scale as demand grows and new technologies emerge
- Enterprise-class performance and scalability with up to 4×10 GbE SFP+ ports for stacking[1] or uplinks
- Delivers class-leading stacking[1] scalability with up to eight switches per stack, 320 Gbps of aggregated stacking bandwidth, and long-distance stacking up to 10 km using standard optics
- Features class-leading PoE+ budget (up to 740 watts) to power wireless access points and video surveillance equipment
- Silent operation with fanless mode supported on all models
- Simplifies network operations and protects investments with the Brocade Campus Fabric technology[1]
- Protected with Brocade Assurance Limited Lifetime Warranty

[1] Support to be available in a future software release.

Raising the Bar for Entry-Level Stackable Switches

The Brocade® Ruckus® ICX® 7150 Switch not only delivers the performance, flexibility, and scalability required for enterprise Gigabit Ethernet (GbE) access deployment, it raises the bar with non-blocking performance and up to 4×10 GbE ports for uplinks or stacking. It offers class-leading stacking[1] density with up to eight switches per stack and seamless interoperability with Brocade Ruckus wireless products to deliver unified wired and wireless network access. In addition, the Ruckus ICX 7150 combines enterprise-class features, manageability, performance, and reliability with the flexibility, cost-effectiveness, and "pay as you grow" scalability of a stackable solution.

The Ruckus ICX 7150 Switch provides enterprise-class stackable LAN switching solutions to meet the growing demands of campus networks. Designed for small to medium-size enterprises, branch offices, and distributed campuses, these intelligent, scalable edge switches deliver enterprise-class functionality at an affordable price without compromising performance and reliability. The Ruckus ICX 7150 is available in 12-, 24-, and 48-port 10/100/1000 Mbps models with 1/10 GbE dual-purpose uplink/stacking ports with or without IEEE 802.3af Power over Ethernet (PoE) and 802.3at Power over Ethernet Plus (PoE+) to support enterprise edge networking, wireless mobility, and IP communications without the need for additional power outlets or power injectors.

Brocade Campus Fabric technology[1] allows the Ruckus ICX 7150 Switch to expand with Brocade ICX 7250 Switches, Brocade ICX 7450 Switches, and Brocade ICX 7750 Switches for a complete campus network solution with consolidated management across core, aggregation, and core layers; shared network services —adding advanced Layer 3 capabilities to all switches, and scale-out flexibility to expand as needed. The Ruckus ICX 7150 is an ideal solution for unified wired and wireless network access.

Ruckus ICX 7150 Product Family

All Ruckus ICX 7150 models offer a single integrated power supply, one RJ-45 Ethernet port for out-of-band network management, one USB Type-C port for console management, one RJ-45 port for serial console management, and one USB port for external file storage.

Ruckus ICX 7150-C12P Compact Switch
12×10/100/1000 Mbps POE+ RJ-45 ports
124 W power budget
2×10/100/1000 Mbps uplink RJ-45 ports
2×1/10 GbE uplink/stacking SFP/SFP+ ports

Ruckus ICX 7150-24 Switch
24×10/100/1000 Mbps RJ-45 ports
2×10/100/1000 Mbps uplink RJ-45 ports
4×1/10 GbE uplink/stacking SFP/SFP+ ports

Ruckus ICX 7150-24P Switch
24×10/100/1000 Mbps RJ-45 PoE+ ports
370 W PoE budget
2×10/100/1000 Mbps uplink RJ-45 ports
4×1/10 GbE uplink/stacking SFP/SFP+ ports

Ruckus ICX 7150-48 Switch
48×10/100/1000 Mbps RJ-45 ports
2×10/100/1000 Mbps uplink RJ-45 ports
4×1/10 GbE uplink/stacking SFP/SFP+ ports

Ruckus ICX 7150-48P Switch
48×10/100/1000 Mbps RJ-45 PoE+ ports
370 W PoE budget
2×10/100/1000 Mbps uplink RJ-45 ports
4×1/10 GbE uplink/stacking SFP/SFP+ ports

Ruckus ICX 7150-48PF Switch
48×10/100/1000 Mbps RJ-45 PoE+ ports
740 W PoE budget
2×10/100/1000 Mbps uplink RJ-45 ports
4×1/10 GbE uplink/stacking SFP/SFP+ ports

Figure 1. Ruckus ICX 7150 Switch models.

Scale Out as Demand Grows

The Ruckus ICX 7150 is easy to deploy, manage, and integrate into both new and existing networks. Organizations can buy only what they need today, and easily scale out as demand grows and new technologies emerge.

Brocade Ethernet switch stacking[2] technology makes it possible to stack up to eight Ruckus ICX 7150 switches into a single logical switch. This allows the Ruckus ICX 7150 to deliver a class-leading 320 Gbps of aggregated stacking bandwidth and offer simple and robust expandability for future growth at the network edge. This stacked switch simplifies management with only a single IP address and offers transparent forwarding across a pool of up to 400×1 GbE ports and 32×10 GbE ports. When new switches join the stack, they automatically inherit the stack's existing configuration file, enabling true plug-and-play network expansion. Flexible licensing of 1 GbE to 10 GbE ports for uplink and stacking allows organizations to optimize network performance based on specific requirements. Brocade stacking technology also delivers high availability, enabling instantaneous hitless failover to a standby stack controller if the master stack controller fails. In addition, organizations can use hot-insertion and removal of stack members to avoid interrupting network services.

[2] Support to be available in a future software release.

Next-Level Ease of Management and Scalability with Brocade Campus Fabric Technology

Brocade Campus Fabric technology[3] brings campus networks into the modern era to better support seamless wireless mobility, security, and ease of application deployment. This innovative technology collapses multiple network layers into a single logical switch, flattening the network and eliminating deployment complexity while simplifying network management and reducing operating costs.

Brocade Campus Fabric technology enables organizations to build networks that deliver:

- **Consolidated management:** Reduces unnecessary network layers to create large management domains that eliminate individual switch touch points, reducing maintenance time and costs.
- **Shared network services:** Allows premium and entry-level switches to mesh together into a single logical switch and share advanced Layer 2/3 services, delivering lower price-per-port functionality without compromising performance.
- **Scale-out networking:** Integrates high performance, fixed form-factor switches to create a single distributed logical switch that is independent of physical location and allows organizations to add ports whenever and wherever needed across the campus without adding complexity.

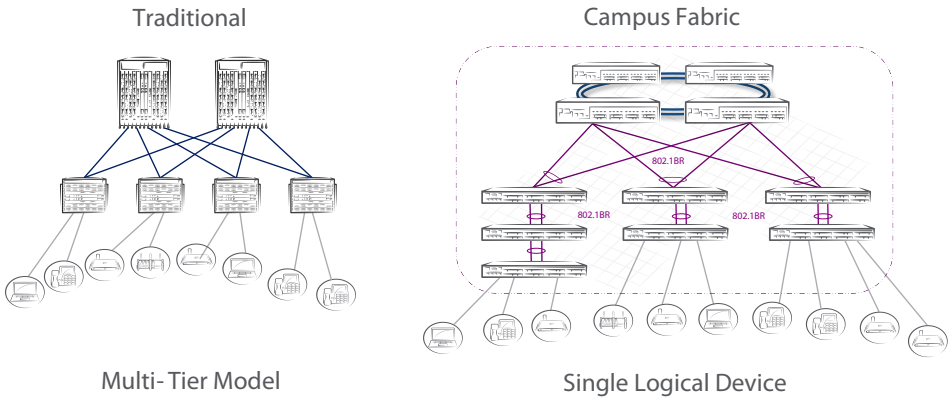

Figure 2. Traditional network versus campus fabric.

Simplified, Open-Standards-based Management and Monitoring

The Ruckus ICX 7150 provides simplified, standards-based management capabilities that help organizations reduce administrative time and effort while securing their networks.

sFlow-based "Always-On" Network Monitoring

sFlow is a modern, standards-based network export protocol (RFC 3176) that addresses many of the challenges that network managers face today. By embedding sFlow hardware support into the Ruckus ICX 7150, Brocade delivers an "always-on" technology that operates with wire-speed performance. sFlow dramatically reduces implementation costs compared to traditional network monitoring solutions that rely on mirrored ports, probes, and line-tap technologies. Moreover, sFlow gives organizations full, enterprise-wide monitoring capability for every port in the network.

Simplified, Automated Deployment with Auto-Configuration

The Ruckus ICX 7150 supports auto-configuration, simplifying deployment with a true plug-and-play experience. Organizations can use this feature to automate IP address and feature configuration of the switches without requiring a highly trained network engineer onsite. When the switches power up, they automatically receive an IP address and configuration from DHCP and Trivial File Transport Protocol (TFTP) servers. At this time, the switches can also automatically receive a software update to be at the same code revision as currently installed switches.

Open-Standards Management

The Ruckus ICX 7150 includes an industry-standard Command Line Interface (CLI) and supports Secure Shell (SSHv2), Secure Copy (SCP), and SNMPv3 to restrict and encrypt management communications to the system. In addition, support for Terminal Access Controller Access Control System (TACACS/TACACS+) and RADIUS authentication helps ensure secure operator access.

[3] Support to be available in a future software release.

Figure 3. Up to eight Ruckus ICX 7150 switches can be stacked together into a single logical switch using standard SFP+ 10 Gbps ports and copper cables or optics.

SDN-Enabled Programmatic Control of the Network

Software-Defined Networking (SDN) is a powerful new network paradigm designed for the world's most demanding networking environments and promises breakthrough levels of customization, scale, and efficiency. The Ruckus ICX 7150 enables SDN by supporting the OpenFlow 1.3 protocol[4], which allows communication between an OpenFlow controller and an OpenFlow-enabled switch. Using this approach, organizations can control their networks programmatically, transforming the network into a platform for innovation through new network applications and services.

The Ruckus ICX 7150 delivers OpenFlow in true hybrid port mode, which allows organizations to simultaneously deploy traditional Layer 2/3 forwarding with OpenFlow on the same port. This unique capability provides a pragmatic path to SDN by enabling network administrators to progressively integrate OpenFlow into existing networks, giving them the programmatic control offered by SDN for specific flows while the remaining traffic is forwarded as before. Ruckus ICX 7150 hardware support for OpenFlow enables organizations to apply these capabilities at line rate.

Plug-and-Play Operations for Powered Devices

Brocade ICX Switches support the IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and ANSI TIA 1057 Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED) standards that enable organizations to deploy interoperable multivendor solutions for Unified Communications (UC). Configuring IP endpoints such as VoIP phones can be a complex task, requiring manual and time-consuming configuration. LLDP and LLDP-MED provide a standard, open method for configuring, discovering, and managing network infrastructure.

The LLDP protocols also reduce operational costs by simplifying and automating network operations. For example, LLDP-MED provides an open protocol for configuring Quality of Service (QoS), security policies, Virtual LAN (VLAN) assignments, PoE power levels, and service priorities.

Silent Operation

The Ruckus ICX 7150-24, the Ruckus ICX 7150-48, and the Ruckus ICX 7150-C12P compact switch feature a fanless design that enables them to operate silently. The Ruckus ICX 7150-24P and the Ruckus ICX 7150-48P offer a "fanless mode" configuration option, enabling these switches to operate with the fan disabled while providing a PoE budget of 150 watts.

This Brocade-exclusive feature enables the Ruckus ICX 7150 Switches to be deployed outside of the wiring closet without disrupting the environment. This capability is critical for organizations such as hospitality, education, healthcare, and retail where networking equipment needs to be deployed into a work environment or living space such a classroom, hotel room, patient room, operating room, or retail space with minimal disruption.

Enterprise-Class Availability

When every second matters, the Ruckus ICX 7150 Switches help deliver continuous availability to optimize the user experience. Brocade stacking technology delivers high availability, performing real-time state synchronization across the stack and enabling instantaneous hitless failover to a standby controller in the unlikely event of a failure of the master stack controller. Organizations also can use hot-insertion/removal of stack members to avoid interrupting service when adding a switch to increase the capacity of a stack or replacing a switch that needs servicing.

In addition to stack-level high availability, Ruckus ICX 7150 Switches also support stack level ISSU[3] (In Service Software Upgrade), a unique capability that enables a Ruckus ICX 7150 stack to go through a software upgrade without service interruption.

Layer 3 Capabilities

All Ruckus ICX 7150 Switches come with basic Layer 3 support[4] including static routing and RIP. An upgrade license can be acquired to bring premium Layer 3 capabilities to the network edge, reducing complexity and enhancing the reliability of enterprise networks.

[4] Support to be available in a future software release.

Unified Wired/Wireless Network Management with Brocade Network Advisor

Managing enterprise campus networks continues to become more complex due to the growth in services that rely on wired and wireless networks. Services such as Internet, e-mail, video conferencing, real-time collaboration, and distance learning all have specific configuration and management requirements. At the same time, organizations face increasing demand to provide uninterrupted services for high-quality voice and Unified Communications (UC), wireless mobility, and multimedia applications.

To reduce complexity and the time spent managing these environments, the easy-to-use Brocade Network Advisor discovers, manages, and deploys configurations to groups of IP devices. By using Brocade Network Advisor, organizations can configure Virtual LANs (VLANs) within the network, manage wireless access points, and execute commands on specific IP devices or groups of IP devices. sFlow-based proactive monitoring is ideal for performing network-wide troubleshooting, generating traffic reports, and gaining visibility into network activity from the edge to the core. Brocade Network Advisor centralizes management of the entire family of Brocade wired and wireless products.

Warranty

Ruckus ICX 7150 Switches are covered by the Brocade Assurance Limited Lifetime Warranty. For details, visit www.brocade.com/warranty.

Best-in-Class Support

Ruckus ICX 7150 Switches are supported by next-business-day advance replacement where available, as well as software defect repairs and maintenance updates. 90 days remote support is included with the product purchase. Many on-site and remote support options are available and can be purchased bundled with the product or separately.

Brocade Global Services

Brocade Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 20 years of expertise in storage, networking, and virtualization, Brocade Global Services delivers world-class professional services, technical support, and education services, enabling organizations to maximize their Brocade investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

Affordable Acquisition Options

Brocade Capital Solutions helps organizations easily address their IT requirements by offering flexible network acquisition and support alternatives. Organizations can select from purchase, lease, Brocade Network Subscription, and Brocade Subscription Plus options to align network acquisition with their unique capital requirements and risk profiles.

To learn more, visit www.brocade.com/capitalsolutions.

Maximizing Investments

To help optimize technology investments, Brocade and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Brocade sales partner or visit www.brocade.com.

Ruckus ICX 7150 Switch Feature/Model Comparison

	24 or 48 RJ-45 Ports		12 RJ45 PoE+ Ports	24 or 48 RJ45 PoE+ Ports		
	Ruckus ICX 7150-24	Ruckus ICX 7150-48	Ruckus ICX 7150-C12P	Ruckus ICX 7150-24P	Ruckus ICX 7150-48P	Ruckus ICX 7150-48PF
Switching capacity (data rate, full duplex)	132 Gbps	180 Gbps	68 Gbps	132 Gbps	180 Gbps	180 Gbps
Forwarding capacity (data rate, full duplex)	98 Mpps	134 Mpps	51 Mpps	98 Mpps	134 Mpps	134 Mpps
Fixed ports: 10/100/1000 Mbps RJ45	24	48	12	24	48	48
Fixed ports: 10/100/1000 Mbps RJ45 uplinks (full duplex only, no PoE)	2	2	2	2	2	2
Fixed ports: 1/10 Gbps SFP/SFP+ uplinks	4	4	2	4	4	4
PoE/PoE+ ports			12	24	48	48
Maximum PoE Class 3 ports (15.4 W per port)			8	24	24	48
Maximum PoE+ Class 4 ports (30 W per port)			4	12	12	24
Base IPv4/v6 Layer 3 routing[5] (static routing, RIP)	Yes	Yes	Yes	Yes	Yes	Yes
Advanced IPv4/v6 Layer 3 routing[5] (OSPF, VRRP, PIM, PBR features)	With license	With license	With license	With license	With license	With license
Aggregated stacking bandwidth[5] (data rate, full duplex)	320 Gbps	320 Gbps	160 Gbps	320 Gbps	320 Gbps	320 Gbps
Stacking density[5] (maximum switches in a stack)	8	8	8	8	8	8
Stacking ports[5] (maximum ports[6] usable for stacking)	Up to 4×10 GbE SFP+		Up to 2×10 GbE SFP+	Up to 4×10 GbE SFP+		
Maximum stacking distance[6] (distance between stacked switches)	10 km	10 km	10 km	10 km	10 km	10 km

[5] Feature to be supported in a future release.

[6] 10 Gbps SFP+ ports are required for stacking.

Ruckus ICX 7150 Switch Feature/Model Comparison (Continued)

Power						
Power inlet (AC)	C14					
Input voltage/frequency	AC: 100 to 240 VAC @ 50 to 60 Hz					
Power supply rated maximum (AC)	36 W	65 W	150 W	525 W	525W	880 W
PoE power budget (AC)			124 W	370 W	370 W	740 W
Airflow	Fanless	Fanless	Fanless	Side-to-back	Side-to-back	Side-to-back
Environment						
Dimensions (mm)	440 (W) 280 (D) 43.65 (H)	440 (W) 370 (D) 43.65 (H)	269 (W) 213 (D) 43.4 (H)	440 (W) 280 (D) 43.65 (H)	440 (W) 370 (D) 43.65 (H)	440 (W) 370 (D) 43.65 (H)

Ruckus ICX 7150 Switch Specifications

Specifications	
Connector options	• 10/100/1,000 Mbps RJ-45 • 1 Gbps SFP ports • 1/10 Gbps SFP+ ports • Out-of-band Ethernet management: 10/100/1,000 Mbps RJ-45 • Console management: RJ45 serial port and USB Type-C port with serial communication device class support • File transfer: USB port, standard-A plug For the latest information about supported optics, please visit http://brocade.com/optics.
DRAM NVRAM (Flash) Packet buffer Size	1 GB 2 GB 12/24 port: 2 MB, 48 port: 4 MB
Maximum MAC addresses	16,384
Maximum VLANs Maximum PVLANs	4,095 32
Maximum STP (Spanning trees instances)	254
Maximum VEs	128
Maximum ARP entries	4,094
Maximum routes (in hardware)[7]	1,000 (IPv4), 1,000 (IPv6) Next hop address: 4,094
Trunking	Maximum ports per trunk: 8 Maximum trunk groups: 128
Maximum jumbo frame size	9,216 bytes
QoS priority queues	8 per port
Multicast groups	3,072 (Layer 2) 2,048 (Layer 3)
Layer 2 switching	• 802.1s Multiple Spanning Tree • 802.1x Authentication • Auto MDI/MDIX • BPDU Guard, Root Guard • Dual-Mode VLANs • MAC-based VLANs, Dynamic MAC-based VLAN activation • Dynamic VLAN Assignment • Dynamic Voice VLAN Assignment • Fast Port Span • GVRP: GARP VLAN Registration Protocol • IGMP Snooping (v1/v2/v3) • IGMP Proxy for Static Groups • IGMP v2/v3 Fast Leave • IGMP Tracking • Inter-Packet Gap (IPG) adjustment • Link Fault Signaling (LFS) • MAC Address Filtering • MAC Learning Disable • MLD Snooping (v1/v2) • Multi-device Authentication • Per-VLAN Spanning Tree (PVST/PVST+/PRST) • Mirroring: Port-based, ACL-based, MAC Filter-based, and VLAN-based • PIM-SM v2 Snooping • Port Loop Detection • Private VLAN • Protocol VLAN (802.1v), Subnet VLAN • Remote Fault Notification (RFN) • Single-instance Spanning Tree • Single-link LACP • Trunk Groups (static, LACP) • Uni-Directional Link Detection (UDLD) • Metro-Ring Protocol (MRP) (v1, v2) • Virtual Switch Redundancy Protocol (VSRP)[8] • VLAN Stacking (Q-in-Q) • Topology Groups

[7] To be supported in a future software release.

Ruckus ICX 7150 Switch Specifications (Continued)

Base Layer 3 IP routing[8]	• IPv4 and IPv6 static routes • RIP v1/v2, RIPng • ECMP • Port-based Access Control Lists • Layer 3/Layer 4 ACLs	• Host routes • Virtual Interfaces • Routed Interfaces • Route-only Support • Routing Between Directly Connected Subnets
Premium Layer 3 IP routing[8] with software license	• IPv4 and IPv6 dynamic routes • OSPF v2, v3 • PIM-SM, PIM-SSM, PIM-DM, PIM passive • PBR	• Virtual Route Redundancy Protocol VRRP (IPv4) • VRRP v3 (IPv6) • VRRP-E(IPv4/IPv6)
Quality of Service (QoS)	• ACL Mapping and Marking of ToS/DSCP (CoS) • ACL Mapping and Marking of 802.1p • ACL Mapping to Priority Queue • Classifying and Limiting Flows Based on TCP Flags • DiffServ Support	• Honoring DSCP and 802.1p (CoS) • MAC Address Mapping to Priority Queue • Priority Queue Management using Weighted Round Robin (WRR), Strict Priority (SP), and a combination of WRR and SP • Priority Flow Control (per device)
Traffic management	• ACL-based inbound rate limiting and traffic policies • Broadcast, multicast, and unknown unicast rate limiting • Inbound rate limiting per port • Outbound rate limiting per port and per queue	
Security	• 802.1X authentication • MAC authentication • Flexible authentication • Web authentication • DHCP snooping • Dynamic ARP inspection • Neighbor Discovery Inspection • Bi-level Access Mode (Standard and EXEC Level) • EAP pass-through support • IEEE 802.1X username export in sFlow • Protection against Denial of Service (DoS) attacks	• Authentication, Authorization, and Accounting (AAA) • MAC Address Locking MAC Port Security • Advanced Encryption Standard (AES) with SSHv2 • RADIUS/TACACS/TACACS+ • Secure Copy (SCP) • Secure Shell (SSHv2) • Local Username/Password • Change of Authorization (CoA) RFC 5176 • Trusted Platform Module
SDN features[8]	• OpenFlow v1.0 and v1.3 • OpenFlow with hybrid port mode • Operates with the Brocade SDN Controller and the applications running on the controller	

[8] To be supported in a future software release.

Ruckus ICX 7150 Switch Specifications (Continued)

IEEE standards compliance	• 802.1AB LLDP/ LLDP-MED • 802.1D MAC Bridging • 802.1p Mapping to Priority Queue • 802.1s Multiple Spanning Tree (MST) • 802.1w Rapid Reconfiguration of Spanning Tree (RSTP) • 802.1x Port-based Network Access Control (PNAC) • 802.3 Carrier Sense Multiple Access/Collision Detection (CSMA/CD) • 802.3ab 1000BASE-T • 802.3 10Base-T • 802.3ad Link Aggregation (Dynamic and Static)	• 802.1 AX-2008 Link Aggregation • 802.3ae 10 Gigabit Ethernet • 802.3af Power over Ethernet • 802.3at Power over Ethernet Plus • 802.3u 100Base-TX • 802.3x Flow Control • 802.3z 1000Base-SX/LX • 802.3 MAU MIB (RFC 2239) • 802.3az Energy Efficient Ethernet[9] • 802.1Q VLAN Tagging • 802.1BR Bridge Port Extension[9]
RFC standards compliance	For a complete list of RFCs supported by the ICX 7000 product family, please visit www.brocade.com/icx7rfc.	
High availability	• Layer 3 VRRP/VRRP-E protocol redundancy[9] • Real-time state synchronization across the stack[9] • Hitless failover and switchover from master to standby stack controller[9] • Hot insertion and removal of stacked units[9] • Layer 2 VSRP switch redundancy[9] • ISSU (In Service Software Update)[9]	
Network and Device Management		
Management	• DHCP Auto Configuration • Configuration Logging • Digital Optical Monitoring • Display Log Messages on Multiple Terminals • Embedded Web Management (HTTP/HTTPS) • Embedded DHCP Server • Industry-standard Command Line Interface (CLI) • Brocade Network Advisor (sold separately) • CLI activation of optional software features • Integration with HP OpenView: • USB file management and storage • Macro for batch execution • Out-of-band Ethernet Management • TFTP • TELNET Client and Server	• Bootp • SNMPv1/v2c • DHCP Server and DHCP Relay • SNMPv3 Intro to Framework • Architecture for Describing SNMP Framework • SNMP Message Processing and Dispatching • SNMPv3 Applications • SNMPv3 User-based Security Model • SNMP View-based Access Control Model SNMP • sFlow • NTP Network Time Protocol • Multiple Syslog Servers • SCP • Virtual Cable Tester (VCT) For management MIB, please visit www.brocade.com.
Brocade Campus Fabric technology	• The Ruckus ICX 7150 can operate in fabric Port Extender (PE) mode[9] • Up to 36 PEs per fabric • PE cascade depth up to 6 units	

[9] To be supported in a future software release.

Ruckus ICX 7150 Switch Specifications (Continued)

Environment	
Temperature	• Operating temperature: -5°C to 45°C • Storage temperature: -25°C to 70°C
Humidity	• Operating relative humidity: 5% to 95% at 45°C, non-condensing • Non-operating relative humidity: 0% to 95% at 70°C, non-condensing
Altitude	• Operating altitude: 10,000 ft (3,000 m) maximum • Storage altitude: 39,000 ft (12,000 m) maximum
Compliance/Certification	
Electromagnetic emissions	FCC Class A (Part 15); EN 55022/CISPR-22 Class A; VCCI Class A; ICES-003 Electromagnetic Emission; AS/NZS 55022; EN 61000-3-2 Power Line Harmonics; EN 61000-3-3 Voltage Fluctuation and Flicker; EN 61000-6-3 Emission Standard (supersedes: EN 50081-1)
Safety	CAN/CSA-C22.2 NO. 60950-1-07; UL 60950-1 Second Edition; IEC 60950-1 Second Edition; EN 60950-1:2006 Safety of Information Technology Equipment; EN 60825-1 Safety of Laser Products—Part 1: Equipment Classification, Requirements and User's Guide; EN 60825-2 Safety of Laser Products—Part 2: Safety of Optical Fibre Communication Systems
Immunity	EN 61000-6-1 Generic Immunity and Susceptibility (supersedes EN 50082-1); EN 55024 Immunity Characteristics (supersedes EN 61000-4-2 ESD); EN 61000-4-3 Radiated, Radio Frequency, Electromagnetic Field; EN 61000-4-4 Electrical Fast Transient; EN 61000-4-5 Surge; EN 61000-4-6 Conducted Disturbances Induced by Radio-Frequency Fields; EN 61000-4-8 Power Frequency Magnetic Field; EN 61000-4-11 Voltage Dips and Sags
Environmental regulatory compliance	RoHS-compliant (6 of 6); WEEE-compliant
Vibration	IEC 68-2-36, IEC 68-2-6
Shock and drop	IEC 68-2-27, IEC 68-2-32

Ruckus ICX 7150 Switch Ordering Information

Part Number	Description
Ruckus ICX 7150 Switches with 1 GbE uplinks	
ICX7150-C12P-2X1G	Ruckus ICX 7150 Compact Switch, 12×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 2×1 GbE SFP uplink-ports upgradable to 2×10 GbE SFP+ with license. 124 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-24-4X1G	Ruckus ICX 7150 Switch, 24×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 4×1 GbE SFP uplink-ports upgradable to up to 4×10 GbE SFP+ with license, basic Layer 3 (static routing and RIP).
ICX7150-24P-4X1G	Ruckus ICX 7150 Switch 24×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×1 GbE SFP uplink ports upgradable to up to 4×10 GbE SFP+ with license, 370 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-48-4X1G	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 4×1 GbE SFP uplink-ports upgradable to up to 4×10 GbE SFP+ with license, basic Layer 3 (static routing and RIP).
ICX7150-48P-4X1G	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×1 GbE SFP uplink ports upgradable to up to 4×10 GbE SFP+ with license, 370 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-48PF-4X1G	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×1 GbE SFP uplink ports upgradable to up to 4×10 GbE SFP+ with license, 740 W PoE budget, basic Layer 3 (static routing and RIP).
Ruckus ICX 7150 Switches with 2×10 GbE uplinks	
ICX7150-C12P-2X10GR	Ruckus ICX 7150 Compact Switch, 12×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 2×10 GbE SFP, 124 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-24-2X10G	Ruckus ICX 7150 Switch, 24×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 2×1 GbE SFP and 2×10 GbE SFP+ uplink-ports upgradable to 4×10 GbE SFP+ with license, basic Layer 3 (static routing and RIP).
ICX7150-24P-2X10G	Ruckus ICX 7150 Switch, 24×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 2×1 GbE SFP and 2×10 GbE SFP+ uplink-ports upgradable to 4×10 GbE SFP+ with license, 370 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-48-2X10G	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 2×1 GbE SFP and 2×10 GbE SFP+ uplink-ports upgradable to 4×10 GbE SFP+ with license, basic Layer 3 (static routing and RIP).
ICX7150-48P-2X10G	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 2×1 GbE SFP and 2×10 GbE SFP+ uplink-ports upgradable to 4×10 GbE SFP+ with license, 370 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-48PF-2X10G	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 2×1 GbE SFP and 2×10 GbE SFP+ uplink-ports upgradable to 4×10 GbE SFP+ with license, 740 W PoE budget, basic Layer 3 (static routing and RIP).

Ruckus ICX 7150 Switch Ordering Information (Continued)

Part Number	Description
Ruckus ICX 7150 Switches with 4×10 GbE uplinks and Layer 3 Features	
ICX7150-24-4X10GR	Ruckus ICX 7150 Switch, 24×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-24P-4X10GR	Ruckus ICX 7150 Switch, 24×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-48-4X10GR	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-48P-4X10GR	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-48PF-4X10GR	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports , 740 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR).
Ruckus ICX 7150 Switches with Three-Year Remote Support	
Please note that three-year remote support can be ordered separately to cover any Ruckus ICX 7150 model.	
ICX7150-C12P-2X10GR-RMT3	Ruckus ICX 7150 Compact Switch, 12×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 2×10 GbE SFP, 124 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-24-4X10GR-RMT3	Ruckus ICX 7150 Switch, 24×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-24P-4X10GR-RMT3	Ruckus ICX 7150 Switch, 24×10/100/1000 Mbps PoE+ ports, 2×1G RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-48-4X10GR-RMT3	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-48P-4X10GR-RMT3	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-48PF-4X10GR-RMT3	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, 740 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
TAA-Compliant Ruckus ICX 7150 Switches	
The Ruckus ICX 7150 models with the SKUs below meet the requirements of the Trade Agreements Act (TAA).	
ICX7150-C12P-2X10GR-A	Ruckus ICX 7150 Compact Switch, 12×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 2×10 GbE SFP, 124 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-24-4X10GR-A	Ruckus ICX 7150 Switch, 24×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-24P-4X10GR-A	Ruckus ICX 7150 Switch, 24×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-48-4X10GR-A	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-48P-4X10GR-A	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-48PF-4X10GR-A	Ruckus ICX 7150 Switch, 48×10/100/1000 Mbps PoE+ ports, 2×1 GbE RJ45 uplink-ports, 4×10 GbE SFP+ uplink-ports, 740 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.

Ruckus ICX 7150 Switch Ordering Information (Continued)

Part Number	Description
Upgrade Licenses	
All Ruckus ICX 7150 switch models with 1 GbE SFP uplink ports can be upgraded to 10 GbE SFP+ ports with a license.	
BR-ICX-7150C-21U210R-P-01	License to upgrade the Ruckus ICX 7150 compact switch from 2×1 GbE SFP to 2×10 GbE SFP+ uplink ports. Also includes Layer 3 features (OSPF, VRRP, PIM, PBR).
BR-ICX-7150-41U210-P-01	License to upgrade any Ruckus ICX 7150 1 RU model from 4×1 GbE SFP to 2×1 GbE SFP and 2×10 GbE SFP+ uplink ports.
BR-ICX-7150-41U410R-P-01	License to upgrade any Ruckus ICX 7150 1 RU model from 4×1 GbE SFP to 4×10 GbE SFP+ uplink ports. Also includes Layer 3 features (OSPF, VRRP, PIM, PBR).
BR-ICX-7150-210U410R-P-01	License to upgrade any Ruckus ICX 7150 1RU model from 2×1 GbE SFP and 2×10 GbE SFP+ to 4×10 GbE SFP+ uplink ports. Also includes Layer 3 features (OSPF, VRRP, PIM, PBR).
Accessories	
ICX6400-C12-MGNT	Magnet Mount Kit for Ruckus ICX 7150/6450/6430 12 Port Compact Switch.
ICX6400-C12-RMK	2-post Rack Mount Kit for Ruckus ICX 7150/6450/6430 12 Port Compact Switch.
XBR-R000295	Universal Rack Mount Kit ,4 post FRU.
ICX7000-RMK	Rack Mount Kit, 2-post FRU for ICX 7000 series 24/48 port models.
RMK-LRM-ADP	Rack Mount Kit for LRM adapters. This 1RU shelf can accommodate up to 8 LRM adapters.
Optics	
E1MG-TX	1000BASE-TX SFP copper, RJ-45 connector
E1MG-SX-OM	1000BASE-SX SFP optic, MMF, LC connector, optical monitoring-capable
E1MG-LX-OM	1000BASE-LX SFP optic, SMF, LC connector, optical monitoring-capable
E1MG-LX-A	1000BASE-LX SFP optic, SMF, LC connector, optical monitoring-capable, TAA-compliant
E1MG-LHA-OM-T	1000BASE-LHA SFP optic, SMF, LC connector, optical monitoring-capable
E1MG-BXU	1000BASE-BXU SFP optic SMF, transmits at 1,310 nm and receives at 1,490 nm, LC connector, single-strand SMF fiber
E1MG-BXD	1000BASE-BXD SFP optic SMF, transmits at 1,490 nm and receives at 1,310 nm, LC connector, single-strand SMF fiber
10G-SFPP-USR	10GE USR SFP+ optic (LC), target range 100 m over MMF, 1-pack
10G-SFPP-USR-SA	10GE USR SFP+ optic (LC), target range 100 m over MMF, 1-pack, standard temperature, TAA-compliant
10G-SFPP-SR	10GBASE-SR, SFP+ optic (LC), target range 300 m over MMF
10G-SFPP-SR-SA	10GBASE-SR, SFP+ optic (LC), target range 300 m over MMF, standard temperature, TAA-compliant
10G-SFPP-SR-S	10GBASE-SR, SFP+ optic (LC), target range 300 m over MMF, standard temperature
10G-SFPP-LR	10GBASE-LR, SFP+ optic (LC), for up to 10 km over SMF

Ruckus ICX 7150 Switch Ordering Information (Continued)

Part Number	Description
Optics (continued)	
10G-SFPP-LR-SA	10GBASE-LR, SFP+ optic (LC), for up to 10 km over SMF, standard temperature, TAA-compliant.
10G-SFPP-LR-S	10GBASE-LR, SFP+ optic (LC), for up to 10 km over SMF, standard temperature.
10G-SFPP-ER	10GBASE-ER SFP+ optic (LC), for up to 40 km over SMF.
10G-SFPP-ZR	10GBASE-ZR SFP+ optic (LC), for up to 80 km over SMF.
10G-SFPP-LRM-1-ADP	10GBASE-LRM SFP+ optic (LC), for up to 220 m over MMF, 1-pack. Includes one Brocade LRM adapter device.
10G-SFPP-LRM-2-ADP	10GBASE-LRM SFP+ optic (LC), for up to 220 m over MMF, 2-pack. Includes one Brocade LRM adapter device.
Direct-Attached Cables	
1G-SFP-C-0x01	Direct-attached SFP copper cable, 1 m, 1-pack, passive
10G-SFPP-TWX-0101	Direct-attached SFP+ copper cable, 1 m, 1-pack, active
10G-SFPP-TWX-0301	Direct-attached SFP+ copper cable, 3 m, 1-pack, active
10G-SFPP-TWX-0501	Direct-attached SFP+ copper cable, 5 m, 1-pack, active

Ordering Notes

All Ruckus ICX 7150 switches come with an accessory kit that includes a rubber foot kit, power cord clip, rack mount kit, US AC power cord, USB console cable (type A to type C), RJ45 flat cross over console cable. Stacking cables and optics need to be ordered separately.

All Ruckus ICX 7150 switch models with 1 GbE SFP uplink ports can be upgraded to 10 GbE SFP+ ports with a license.

Ruckus ICX 7150 1 RU Switch models can be ordered configured with either 4×1 GbE SFP, 2×1 GbE SFP, and 2×10 GbE SFP+, or 4×10 GbE SFP+ uplinks.
The Ruckus ICX 7150 compact switch can be ordered configured with either 2×1 GbE SFP or 2×10 GbE SFP+ uplinks.

Upgrade licenses are available to upgrade Ruckus ICX 7150 1 RU switches to either 2×1 GbE SFP and 2×10 GbE SFP+ or to 4×10 GbE SFP+ and the Ruckus ICX 7150 compact switch to 2×10 GbE SFP+.

Ruckus ICX 7150 Switches with 4×10 GbE SFP+ (2×10 GbE SFP+ for the compact switch) are licensed to enable Layer 3 features (OSPF, VRRP, PIM, PBR).

Special SKUs have been created to enable customers to order specific Ruckus ICX 7150 models with three-year remote support included. Please note that three-year remote support can always be ordered separately to cover any Ruckus ICX 7150 model. Contact a Brocade or channel partner representative for details about Brocade support options and support part numbers.

Legal Disclaimer

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