

# RUCKUS® ICX 7150

Enterprise-class stackable access switch

## Entry-Level Access Switch Series Delivers Unprecedented Performance and Features in Its Class

The RUCKUS® ICX® 7150 series of stackable switches delivers the performance, flexibility, and scalability required for enterprise access deployment, raising the bar with non-blocking performance and up to 8x10 GbE ports for uplinks or stacking. It offers seamless interoperability with RUCKUS wireless products to deliver unified wired and wireless network access. In addition, RUCKUS Multigigabit Ethernet technology offers bandwidth speeds needed to optimize performance of the latest generation high performance wireless access points and edge devices, over standard Ethernet cables.



### Benefits

#### Stackability Simplifies Management

- Class-leading stacking scalability with up to 12 switches per stack
- Long-distance stacking up to 10 km using standard optics or cables

#### 10 GbE Ports Optimize Network Performance

- Up to 8x10 GbE SFP+ ports for stacking or uplinks

#### Dual Power Supplies for High Availability

- Dual load-sharing, hot-swappable power supplies available on the Z-Series switch

#### Multigigabit Support Enables Next Generation Wireless Deployment

- Up to 16x 2.5 and 2x 2.5/5/10 GbE ports optimized for Wi-Fi 5 and 6 deployment

#### Class leading PoE Budget to Power Advanced Edge Devices

- PoE+/PoH/802.3bt budget (up to 1,480 watts)<sup>1</sup>
- Support advanced wireless APs and video surveillance equipment

#### Silent Operation for Deployment in the Work Environment

- Fanless design or fanless mode enables silent non-disruptive deployment anywhere

#### Advanced L3 Maximizes Flexibility

- OSPF, VRRP, PIM, PBR L3 features

#### Campus Fabric Reduces Cost of Operations, Increases Flexibility

- RUCKUS Campus Fabric delivers the benefits of a chassis with the flexibility of stackables
- Scales to over 1800 ports

<sup>1</sup> Up to 90W per port, IEEE 802.3bt standard pending ratification. Compatible with uPoE.

The RUCKUS ICX 7150 series of switches are available in three formats:



### RUCKUS ICX 7150 Switches

The standard RUCKUS ICX 7150 switches are available in 24-, and 48-port 10/100/1000 Mbps models with four 1/10 GbE dual-purpose uplink/stacking ports. These switches are available with or without PoE+ power. Silent operation is available for out-of-closet environments.



### RUCKUS ICX 7150 Z-Series Switch

The RUCKUS ICX 7150-48ZP 48-port switch adds higher performance, greater resiliency and increased PoE power. The switch offers Multigigabit technology (IEEE 802.3bz) to match the highest performing 802.11ac Wave 2 wireless access points available, with dual redundant, hot-swappable power supplies and fans, and up to 8x10 GbE uplink/stacking ports.

The switch offers 16 Multigigabit (100Mbps/1Gbps/2.5Gbps) ports, each with Power-over-HDBaseT (PoH) up to 90 watts and 802.3bt ready, plus 32 10/100/1000 Mbps ports with PoE+. With a maximum PoE budget of 1480 watts, this switch delivers the power, and performance, to drive PoE+ power to all 48 ports.



### RUCKUS ICX 7150 Compact Switches

The RUCKUS ICX 7150 compact switches come in 10 and 12 ports models and feature a fanless design to operate silently in out-of-closet environments such as offices, classrooms, and retail spaces. They offer PoE on all ports. The ICX 7150-C10ZP delivers up to 90W per port of PoE power and multigigabit Ethernet at 2.5/5/10 Gbps speeds. With 2x1/10 GbE uplink/stacking ports, the ICX 7150-C12P and C10ZP deliver high performance in a small package.

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## Stacking Across the ICX 7150 Series

RUCKUS stacking technology makes it possible to stack up to twelve RUCKUS ICX 7150 switches into a single logical switch. This allows the RUCKUS ICX 7150 to deliver a class-leading 480 Gbps of aggregated stacking bandwidth and offer simple and robust expandability for future growth. Stacking is supported across the ICX 7150 series and all ICX 7150 models including the ICX 7150 compact switches and the ICX 7150-48ZP can be mixed within the same stack. This stacked switch has only a single IP address that simplifies management and offers transparent forwarding across up to 600x1 GbE ports or up to 192x2.5 GbE ports, and up to 96x10 GbE ports. When new switches join the stack, they automatically inherit the stack's existing configuration file, enabling a plug-and-play network expansion.

Because the ICX 7150-48ZP switch has twice as many uplink ports, when it is added to a stack of other ICX 7150 switch models, the effective bandwidth of all the switches is doubled. By designing the stack this way, all four of the 10GbE ports on the ICX 7150 switches can be used for stacking (rather than having to split the four ports between stacking and uplinks),

and leveraging four of the 10GbE ports on the ICX 7150-48ZP for stacking and the other four 10GbE ports can be used for uplinks.

## Enterprise-Class Availability

The RUCKUS ICX 7150 Switches help deliver continuous availability to optimize the user experience. RUCKUS stacking technology provides high availability by performing real-time state synchronization across the stack and transferring switch management control from the master stack controller to the standby controller if the master stack controller experiences a failure. When hot-inserting or hot-removing a stack member to increase capacity or perform service upgrade, traffic flows will not experience interruption.

In addition to stack-level high availability, RUCKUS ICX 7150 Switches also support stack level ISSU (In Service Software Upgrade), a unique capability that allows the user to perform software upgrades to a RUCKUS ICX 7150 stack without service interruption. Taking high-availability and reliability even further, the RUCKUS ICX 7150 Z-Series switch offers redundant hot swappable load sharing power supplies and up to 2 hot swappable fans.

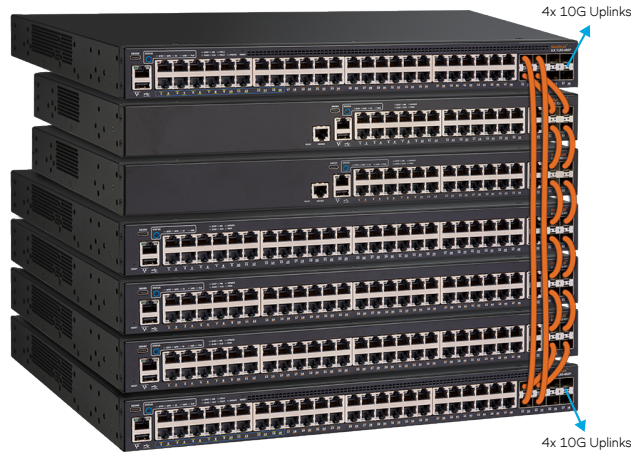


Figure 1: Up to 12 RUCKUS ICX 7150 Switches can be stacked together using up to four SFP+ 10 Gbps ports per switch for a fully redundant backplane delivering 480 Gbps of aggregated stacking bandwidth.

### Silent Operation

The RUCKUS ICX 7150 compact switches, along with the RUCKUS ICX 7150-24 and the ICX 7150-48 switches, feature a fanless design that enables it to operate silently.

The RUCKUS ICX 7150-24P and the ICX 7150-48P offer a “silent mode” configuration option, enabling these switches to operate with the fan disabled while providing a PoE budget of 150 watts. This RUCKUS-exclusive feature enables users in hospitality, education, healthcare, and retail industries to deploy these switches outside of the wiring closet without disrupting the work environment.

### Multigigabit Ethernet Support

The RUCKUS ICX® 7150-48ZP Switch raises the bar for entry-level switches even further with 16x IEEE 802.3bz compliant 2.5 GbE ports, up to 8x10 GbE uplink ports, dual redundant load sharing power supplies and class-leading stacking density with up to 12 switches per stack. The ICX 7150-C10ZP delivers multigigabit speeds in a compact form factor with support for 2.5/5 and 10 Gbps. Both switches stack with all other members of the ICX 7150 series allowing organizations to buy what they need now and easily scale as the need for Multigigabit support emerges. It is designed to work seamlessly with RUCKUS wireless access points to deliver unified wired and wireless network access.

### Power Next-Generation Edge Devices

All ICX 7150 series members offer PoE options. The compact 12 port switch delivers PoE+ on all ports with a 124W PoE budget. The 24- and 48-port ICX 7150 switches offer up to 740W of PoE+ power and the ICX 7150 Z-Series offers an industry leading 1480W PoE budget when equipped with 2 power supplies. In addition to supporting PoE and PoE+, the RUCKUS ICX 7150 Z-Series also offers Power over HDBaseT (PoH) and is 802.3bt ready.<sup>1</sup> This new, high power standard delivers up to 90 watts per port through a standard Ethernet cable, simplifying the wiring of next-generation Ethernet-connected devices such as high-performance wireless APs, large HD displays, video surveillance equipment, and VDI thin terminals, enabling data and power to be carried by a single Ethernet wire. The PoE, PoE+ and PoH capabilities reduce the number of required power receptacles and power adapters while increasing reliability and wiring flexibility.






With a 1,480-watt power budget per switch (with two power supplies), the RUCKUS ICX 7150 48ZP model can supply Class 4 PoE+ power (30 watts) to every port and PoH 802.3bt ready power (90 watts) on 16 dedicated Multigigabit ports.

<sup>1</sup> Up to 90W per port, IEEE 802.3bt support pending software update. Compatible with uPoE.

## RUCKUS ICX 7150 Product Series


### RUCKUS ICX 7150

These 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.

	<b>RUCKUS ICX 7150-24 Switch</b>	<ul style="list-style-type: none"> <li>• 24x 10/100/1000 Mbps RJ-45 ports</li> <li>• 2x 10/100/1000 Mbps uplink RJ-45 ports</li> <li>• 4x 1/10 GbE uplink/stacking SFP/SFP+ ports</li> </ul>
	<b>RUCKUS ICX 7150-24P Switch</b>	<ul style="list-style-type: none"> <li>• 24x 10/100/1000 Mbps RJ-45 PoE+ ports</li> <li>• 370 W PoE budget</li> <li>• 2x 10/100/1000 Mbps uplink RJ-45 ports</li> <li>• 4x 1/10 GbE uplink/stacking SFP/SFP+ ports</li> </ul>
	<b>RUCKUS ICX 7150-48 Switch</b>	<ul style="list-style-type: none"> <li>• 48x 10/100/1000 Mbps RJ-45 ports</li> <li>• 2x 10/100/1000 Mbps uplink RJ-45 ports</li> <li>• 4x 1/10 GbE uplink/stacking SFP/SFP+ ports</li> </ul>
	<b>RUCKUS ICX 7150-48P Switch</b>	<ul style="list-style-type: none"> <li>• 48x 10/100/1000 Mbps RJ-45 PoE+ ports</li> <li>• 370 W PoE budget</li> <li>• 2x 10/100/1000 Mbps uplink RJ-45 ports</li> <li>• 4x 1/10 GbE uplink/stacking SFP/SFP+ ports</li> </ul>
	<b>RUCKUS ICX 7150-48PF Switch</b>	<ul style="list-style-type: none"> <li>• 48x 10/100/1000 Mbps RJ-45 PoE+ ports</li> <li>• 740 W PoE budget</li> <li>• 2x 10/100/1000 Mbps uplink RJ-45 ports</li> <li>• 4x 1/10 GbE uplink/stacking SFP/SFP+ ports</li> </ul>



### RUCKUS ICX 7150 Z-Series

The RUCKUS ICX 7150 Z-Series Switch offers redundant hot swappable load sharing power supplies, up to 2 hot swappable fans, 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.

	<b>RUCKUS ICX 7150-48ZP</b>	<ul style="list-style-type: none"> <li>• 16x 100/1000 Mbps/2.5 Gbps RJ-45 PoH, 802.3bt ready ports<sup>1</sup></li> <li>• 32x 10/100/1000 Mbps RJ-45 PoE+ ports</li> <li>• 1,480 W PoE budget (with two power supplies)</li> <li>• 8x 1/10 GbE uplink/stacking SFP/SFP+ ports</li> </ul>
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### RUCKUS ICX 7150 Compact Switches

The RUCKUS ICX 7150 compact switches offer a single integrated power supply, one RJ-45 Ethernet port for out-of-band network management<sup>2</sup>, one USB Type-C port for console management, one RJ-45 port for serial console management<sup>2</sup>, and one USB port for external file storage<sup>2</sup>.

	<b>RUCKUS ICX 7150-C10ZP Compact Switch</b>	<ul style="list-style-type: none"> <li>• 10x RJ-45 multigigabit ports, including 8x 2.5 GbE ports and 2x 2.5/5/10 GbE ports</li> <li>• 2x 1/10 GbE uplink/stacking SFP/SFP+ ports</li> <li>• 240W PoE budget. Delivers up to 90W per port on 4 PoH 802.3bt ready ports. Fanless</li> </ul>
	<b>RUCKUS ICX 7150-C12P Compact Switch</b>	<ul style="list-style-type: none"> <li>• 12x 10/100/1000 Mbps POE+ RJ-45 ports</li> <li>• 124 W PoE budget. Fanless</li> <li>• 2x 10/100/1000 Mbps uplink RJ-45 ports</li> <li>• 2x 1/10 GbE uplink/stacking SFP/SFP+ ports</li> </ul>

<sup>1</sup> Up to 90W per port, IEEE 802.3bt support pending software update. Compatible with uPoE.

<sup>2</sup> Not supported on ICX 7150 8 port models

# Enterprise-Class Features Across RUCKUS ICX Switches

The RUCKUS ICX switch family delivers the enterprise class features for flexibility, scalability and simplified management.

- RUCKUS Campus Fabric\* technology delivers unmatched flexibility, scalability and simplified management for campus network deployments. Incorporating all of the ICX 7000 switch families with up to 1800 ports in a single logical domain, Campus Fabric allows customers the benefits of a traditional chassis, with the flexibility of stackable switches at a dramatically reduced Total Cost of Ownership (TCO).
- Advanced stacking\* goes beyond traditional stacking with capabilities that take flexibility, ease of management and cost effectiveness to the next level, including:
  - Stacking on standard Ethernet ports
  - Long-distance stacking
  - No hardware module required for stacking
  - In Service Software Upgrade (ISSU) to minimize downtime
  - Superior scalability with the industry-leading number of switches per stack
  - Stacking at the access, aggregation and core layers
- Enterprise-Class Availability to improve resiliency and minimize downtime, including:
  - Hitless stack failover
  - Hot-insertion/removal of stack members
  - Redundant power supplies
  - In Service Software Upgrades for switch stacks
- RUCKUS offers a broad range of unified management solutions for organizations of all types and sizes:
  - RUCKUS SmartZone network controllers deliver the scale, flexibility to support the most sophisticated deployment scenarios.
  - RUCKUS Cloud eliminates on-premises controllers and management software, moving network management to the cloud.
  - RUCKUS Unleashed is a simple-to-setup, easy-to-run management solution in a package designed for small businesses.
- On-boarding and security policies across ICX switches and wireless networks
- OpenFlow 1.3 protocol\* support in hybrid mode allows user to deploy traditional Layer 2/3 forwarding with OpenFlow on the same port for Software Defined Network (SDN) enabled programmatic control of the network
- Open Standards based management, monitoring and authentication
  - sFlow-based network monitoring to help analyze traffic statistics and trends on every link and overcome unexpected network congestion
  - Open-standards management includes Command Line Interface (CLI), Secure Shell (SSHv2), Secure Copy (SCP), and SNMPv3
  - Support for Access Controller Access Control System (TACACS/TACACS+) and RADIUS authentication helps ensure secure operator access
  - LLDP and LLDP-MED protocol support for configuring, discovering, and managing network infrastructure such as QoS, security policies, VLAN assignments, PoE power levels, and service priorities

\* The ICX 7150-C08P does not support stacking, campus fabric and OpenFlow.

## RUCKUS ICX 7150 Feature/Model Comparison

	10, 12 RJ-45 Ports Compact Switches		24 or 48 RJ-45 Ports		24 or 48 RJ45 PoE+ Ports			Z-Series
	RUCKUS ICX 7150-C12P	RUCKUS ICX 7150-C10ZP	RUCKUS ICX 7150-24	RUCKUS ICX 7150-48	RUCKUS ICX 7150-24P	RUCKUS ICX 7150-48P	RUCKUS ICX 7150-48PF	RUCKUS ICX 7150-48ZP
<b>Feature</b>								
Switching capacity (data rate, full duplex)	68 Gbps	120 Gbps	132 Gbps	180 Gbps	132 Gbps	180 Gbps	180 Gbps	304 Gbps
Forwarding capacity (data rate, full duplex)	51 Mpps	89 Mpps	98 Mpps	134 Mpps	98 Mpps	134 Mpps	134 Mpps	226 Mpps
10/100/1000 Mbps RJ45 downlinks	12		24	48	24	48	48	32
100/1000 Mbps SFP downlinks								
100/1000 Mbps/2.5 Gbps RJ45 downlinks (full duplex only)		8						16
100/1000 Mbps/2.5/5/10 Gbps RJ45 downlinks (full duplex only)		2						
10/100/1000 Mbps RJ45 uplinks (full duplex only, no PoE)	2		2	2	2	2	2	
1/10 Gbps SFP/SFP+ uplinks	2	2	4	4	4	4	4	8
PoE/PoE+ ports	12	6			24	48	48	32
PoH / PoE / PoE+ 802.3bt ready ports <sup>1</sup>		4						16
Dual hot-swap power supplies								Yes
Maximum PoE Class 3 ports (15.4 W per port)	8	10			24	24	48	48
Maximum PoE+ Class 4 ports (30 W per port)	4	8			12	12	24	48 (2 PSU)
Energy Efficient Ethernet (802.3az)		Yes <sup>3</sup>	Yes	Yes	Yes	Yes	Yes	Yes <sup>3</sup>
Base IPv4/v6 Layer 3 routing (static routing, RIP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advanced IPv4/v6 Layer 3 routing (OSPF, VRRP, PIM, PBR features)	With license	With license	With license	With license	With license	With license	With license	With license
Aggregated stacking bandwidth (data rate, full duplex)	240 Gbps	240 Gbps	480 Gbps	480 Gbps	480 Gbps	480 Gbps	480 Gbps	480 Gbps
Stacking density (maximum switches in a stack)	12	12	12	12	12	12	12	12
Stacking ports (maximum ports <sup>2</sup> usable for stacking)	Up to 2x10 GbE SFP+		Up to 4x10 GbE SFP+					
Maximum stacking distance (distance between stacked switches)	10 km	10 km	10 km	10 km	10 km	10 km	10 km	10 km
Campus Fabric	Fabric Port Extender (PE)							

<sup>1</sup> Up to 90W per port, IEEE 802.3bt support pending software update. Compatible with uPoE.

<sup>2</sup> 10 Gbps SFP+ ports are required for stacking.

<sup>3</sup> Supported in a future software release.

# RUCKUS ICX 7150 Feature/Model Comparison

	10, 12 RJ-45 Ports Compact Switches		24 or 48 RJ-45 Ports		24 or 48 RJ45 PoE+ Ports			Z-Series
	RUCKUS ICX 7150-C12P	RUCKUS ICX 7150-C10ZP	RUCKUS ICX 7150-24	RUCKUS ICX 7150-48	RUCKUS ICX 7150-24P	RUCKUS ICX 7150-48P	RUCKUS ICX 7150-48PF	RUCKUS ICX 7150-48ZP

Latency	RFC 2544 LATENCY							
64 Byte 1GE 100% Throughput (µs)	2.336	3.331	2.426	2.571	2.426	2.571	2.571	2.877
64 Byte 10GE 100% Throughput (µs)	0.948	1.961	0.961	0.989	0.961	0.989	0.989	0.949

Feature	POWER							
Power inlet (AC)	C14							
Input voltage/frequency								
Power supply rated maximum (AC)	150 W	300W	36 W	65 W	525 W	525 W	880 W	2x 920 W
PoE power budget (AC)	124 W	240W			370 W	370 W	740 W	1480 W (2 PSU)
Switch power consumption <sup>4</sup> (25°C)								
Idle (no PoE load)	20 W	27 W	14 W	24 W	32 W	47 W	50 W	89 W
10% traffic <sup>5</sup> (full PoE load)	157 W	242 W	24 W	38 W	455 W	476 W	869 W	917 W
100% traffic <sup>5</sup> (full PoE load)	157 W	245 W	24 W	39 W	472 W	491 W	893 W	932 W
Airflow	Fanless	Fanless	Fanless	Fanless	Side-to-back	Side-to-back	Side-to-back	Front-to-back
Switch heat dissipation (25°C) <sup>6</sup>								
Idle (no PoE load)	69 BTU/hr	93 BTU/hr	47 BTU/hr	83 BTU/hr	108 BTU/hr	160 BTU/hr	170 BTU/hr	304 BTU/hr
10% traffic <sup>5</sup> (full PoE load)	78 BTU/hr	128 BTU/hr	81 BTU/hr	131 BTU/hr	137 BTU/hr	196 BTU/hr	299 BTU/hr	433 BTU/hr
100% traffic <sup>5</sup> (full PoE load)	79 BTU/hr	129 BTU/hr	82 BTU/hr	132 BTU/hr	188 BTU/hr	252 BTU/hr	381 BTU/hr	523 BTU/hr

Feature	ENVIRONMENT								
Net Weight (Kg)	2.58	3.57	3.8	4.82	4.93	6.17	6.28	6.61	
Dimensions (mm)	269 (W) 213 (D) 43.4 (H)	304 (W) 305 (D) 44 (H)	440 (W) 280 (D) 43.65 (H)	440 (W) 370 (D) 43.65 (H)	440 (W) 280 (D) 43.65 (H)	440 (W) 370 (D) 43.65 (H)	440 (W) 370 (D) 43.65 (H)	440 (W) 370 (D) 43.65 (H)	440 (W) 332(D) 44(H)
Acoustics (25°C, min fan speed)	Fanless	Fanless	Fanless	Fanless	41.4 dBA	41.8 dBA	47.7 dBA	52 dBA	
MTBF (25°C)	562,889 hours	529,625 hours	871,931 hours	714,420 hours	397,428 hours	335,853 hours	312,241 hours	104,626 hours	

Feature	MANAGEMENT PORTS							
USB Type-C port (for console management)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RJ45 serial port (for serial console management)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USB Type-A port (for external file storage)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RJ45 Ethernet port (for out of band network management)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

<sup>4</sup> ICX 7150-48ZP Switch includes one AC power supply and one fan.

<sup>5</sup> Traffic load on all ports connected with maximum possible PoE/PoE+ loads (if equipped).

<sup>6</sup> PoE power not included in switch heat dissipation figures since the heat is not dissipated at the switch.

## RUCKUS ICX 7150 Specifications

Feature	SPECIFICATIONS
Connector options	<ul style="list-style-type: none"> <li>* 10/100/1000 Mbps RJ-45</li> <li>* 1 Gbps SFP ports</li> <li>* 1/10 Gbps SFP+ ports*</li> <li>* Out-of-band Ethernet management: 10/100/1000 Mbps RJ-45*</li> <li>* Console management: RJ45 serial port and USB Type-C port with serial communication device class support*</li> <li>* File transfer: USB port, standard-A plug*</li> <li>* For the latest information about supported optics, please visit <a href="http://www.ruckusnetworks.com">www.ruckusnetworks.com</a>.</li> </ul>
DRAM NVRAM (Flash) Packet buffer size	<ul style="list-style-type: none"> <li>* 1 GB</li> <li>* 2 GB</li> <li>* 8/10/12/24 port: 2 MB, 48 port: 4 MB</li> </ul>
Maximum MAC addresses	* 16,384
Maximum VLANs Maximum PVLANS	<ul style="list-style-type: none"> <li>* 4,095</li> <li>* 32</li> </ul>
Maximum STP (spanning trees instances)	* 254
Maximum VEs	* 382
Maximum ARP entries	* 4,094
Maximum routes (in hardware)	<ul style="list-style-type: none"> <li>* 1,000 (IPv4), 1,000 (IPv6)</li> <li>* Next hop address: 4,094</li> </ul>
Trunking	<ul style="list-style-type: none"> <li>* Maximum ports per trunk: 8</li> <li>* Maximum trunk groups: 128</li> </ul>
Maximum jumbo frame size	* 9,216 bytes
QoS priority queues	* 8 per port
Multicast groups	<ul style="list-style-type: none"> <li>* 3,072 (Layer 2)</li> <li>* 2,048 (Layer 3)</li> </ul>
Quality of Service (QoS)	<ul style="list-style-type: none"> <li>* ACL Mapping and Marking of ToS/DSCP (CoS)</li> <li>* ACL Mapping and Marking of 802.1p</li> <li>* ACL Mapping to Priority Queue</li> <li>* Classifying and Limiting Flows Based on TCP Flags</li> <li>* DiffServ Support</li> </ul> <ul style="list-style-type: none"> <li>* Honoring DSCP and 802.1p (CoS)</li> <li>* MAC Address Mapping to Priority Queue</li> <li>* Priority Queue Management using Weighted Round Robin (WRR), Strict Priority (SP), and a combination of WRR and SP</li> </ul>
Traffic management	<ul style="list-style-type: none"> <li>* ACL-based inbound rate limiting and traffic policies</li> <li>* Broadcast, multicast, and unknown unicast rate limiting</li> <li>* Inbound rate limiting per port</li> <li>* Outbound rate limiting per port and per queue</li> </ul>
Security	<ul style="list-style-type: none"> <li>* 802.1X authentication</li> <li>* MAC authentication</li> <li>* Flexible authentication</li> <li>* Web authentication</li> <li>* DHCP snooping</li> <li>* Dynamic ARP inspection</li> <li>* Neighbor Discovery (ND) Inspection</li> <li>* Bi-level Access Mode (Standard and EXEC Level)</li> <li>* EAP pass-through support</li> <li>* IEEE 802.1X username export in sFlow</li> <li>* Protection against Denial of Service (DoS) attacks</li> <li>* Authentication, Authorization, and Accounting (AAA)</li> </ul> <ul style="list-style-type: none"> <li>* MAC Address Locking MAC Port Security</li> <li>* Advanced Encryption Standard (AES) with SSHv2</li> <li>* RADIUS/TACACS/TACACS+</li> <li>* Secure Copy (SCP)</li> <li>* Secure Shell (SSHv2)</li> <li>* Protected Ports</li> <li>* Local Username/Password</li> <li>* Change of Authorization (CoA) RFC 5176</li> <li>* Trusted Platform Module</li> <li>* RADSEC (RFC 6614)</li> <li>* Encrypted Syslog (RFC 5425)</li> </ul>
SDN features	<ul style="list-style-type: none"> <li>* OpenFlow1 v1.0 and v1.3</li> <li>* OpenFlow with hybrid port mode</li> <li>* Operates with an OpenDayLight Controller</li> </ul>

\* Not supported on ICX 7150 8 port models

## RUCKUS ICX 7150 Specifications (continued)

<b>High availability</b>	<ul style="list-style-type: none"> <li>• Layer 3 VRRP/VRRP-E protocol redundancy</li> <li>• Real-time state synchronization across the stack</li> <li>• Hitless failover and switchover from master to standby stack controller</li> <li>• Hot insertion and removal of stacked units</li> <li>• Layer 2 VSRP switch redundancy</li> <li>• In Service Software Update (ISSU)</li> </ul>
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Feature	FEATURE SETS	
<b>Layer 2 feature set</b>	<ul style="list-style-type: none"> <li>• 802.1s Multiple Spanning Tree</li> <li>• 802.1x Authentication</li> <li>• Auto MDI/MDIX</li> <li>• BPDU Guard, Root Guard</li> <li>• Dual-Mode VLANs</li> <li>• MAC-based VLANs, Dynamic MAC-based VLAN activation</li> <li>• Dynamic VLAN Assignment</li> <li>• Dynamic Voice VLAN Assignment</li> <li>• Fast Port Span</li> <li>• GVRP: GARP VLAN Registration Protocol</li> <li>• IGMP Snooping (v1/v2/v3)</li> <li>• IGMP Proxy for Static Groups</li> <li>• IGMP v2/v3 Fast Leave</li> <li>• Inter-Packet Gap (IPG) adjustment</li> <li>• Link Fault Signaling (LFS)</li> <li>• MAC Address Filtering</li> <li>• MAC Learning Disable</li> </ul>	<ul style="list-style-type: none"> <li>• MLD Snooping (v1/v2)</li> <li>• Multi-device Authentication</li> <li>• Per-VLAN Spanning Tree (PVST/PVST+/PRST)</li> <li>• Mirroring: Port-based, ACL-based, MAC Filter-based, and VLAN-based</li> <li>• PIM-SM v2 Snooping</li> <li>• Port Loop Detection</li> <li>• Private VLAN</li> <li>• Remote Fault Notification (RFN)</li> <li>• Single-instance Spanning Tree</li> <li>• Trunk Groups (static, LACP)</li> <li>• Uni-Directional Link Detection (UDLD)</li> <li>• Metro-Ring Protocol (MRP) (v1, v2)</li> <li>• Virtual Switch Redundancy Protocol (VSRP)</li> <li>• Q-in-Q and selective Q-in-Q</li> <li>• VLAN Mapping</li> <li>• Topology Groups</li> </ul>
<b>Base Layer 3 IP routing feature set*</b>	<ul style="list-style-type: none"> <li>• IPv4 and IPv6 static routes               <ul style="list-style-type: none"> <li>– RIP v1/v2, RIPng</li> </ul> </li> <li>• ECMP</li> <li>• Port-based Access Control Lists</li> <li>• Layer 3/Layer 4 ACLs</li> </ul>	<ul style="list-style-type: none"> <li>• Host routes</li> <li>• Virtual Interfaces</li> <li>• Routed Interfaces</li> <li>• Route-only Support</li> <li>• Routing Between Directly Connected Subnets</li> </ul>
<b>Premium Layer 3 IP routing feature set with software license*</b>	<ul style="list-style-type: none"> <li>• IPv4 and IPv6 dynamic routes</li> <li>• OSPF v2, v3</li> <li>• PIM-SM, PIM-SSM, PIM-DM, PIM passive (IPv4, IPv6)</li> <li>• PBR</li> </ul>	<ul style="list-style-type: none"> <li>• Virtual Route Redundancy Protocol VRRP (IPv4)</li> <li>• VRRP v3 (IPv6)</li> <li>• VRRP-E(IPv4/IPv6)</li> </ul>

Feature	STANDARD COMPLIANCE	
<b>IEEE standards compliance</b>	<ul style="list-style-type: none"> <li>• 802.1AB LLDP/ LLDP-MED</li> <li>• 802.1D MAC Bridging</li> <li>• 802.1p Mapping to Priority Queue</li> <li>• 802.1s Multiple Spanning Tree (MST)</li> <li>• 802.1w Rapid Reconfiguration of Spanning Tree (RSTP)</li> <li>• 802.1x Port-based Network Access Control (PNAC)</li> <li>• 802.3 Carrier Sense Multiple Access/Collision Detection (CSMA/CD)</li> <li>• 802.3ab 1000BASE-T</li> <li>• 802.3 10Base-T</li> <li>• 802.3ad Link Aggregation (Dynamic and Static)</li> <li>• 802.1 AX-2008 Link Aggregation</li> </ul>	<ul style="list-style-type: none"> <li>• 802.3ae 10 Gigabit Ethernet</li> <li>• 802.3af Power over Ethernet</li> <li>• 802.3at Power over Ethernet Plus</li> <li>• 802.3bz Multigigabit Ethernet</li> <li>• 802.3u 100Base-TX</li> <li>• 802.3x Flow Control</li> <li>• 802.3z 1000Base-SX/LX</li> <li>• 802.3 MAU MIB (RFC 2239)</li> <li>• 802.1Q VLAN Tagging</li> <li>• 802.1BR Bridge Port Extension</li> <li>• 802.3az Energy Efficient Ethernet</li> </ul>
<b>RFC standards compliance</b>	For a complete list of RFCs supported by the ICX 7000 product family, please visit <a href="http://www.ruckusnetworks.com">www.ruckusnetworks.com</a> .	

\* Not supported on ICX 7150 8 port models

## RUCKUS ICX 7150 Specifications (continued)

Feature	NETWORK AND DEVICE MANAGEMENT
<b>Management</b>	<ul style="list-style-type: none"> <li>• DHCP Auto Configuration</li> <li>• Configuration Logging</li> <li>• Digital Optical Monitoring</li> <li>• Display Log Messages on Multiple Terminals</li> <li>• Embedded Web Management (HTTP/HTTPS)</li> <li>• Embedded DHCP Server</li> <li>• Industry-standard Command Line Interface (CLI)</li> <li>• RUCKUS SmartZone, RUCKUS Cloud, RUCKUS Unleashed</li> <li>• CLI activation of optional software features</li> <li>• USB file management and storage</li> <li>• Macro for batch execution</li> <li>• Out-of-band Ethernet Management</li> <li>• RSPAN</li> <li>• TFTP</li> <li>• TELNET Client and Server</li> <li>• SSH / SSH V2</li> </ul> <ul style="list-style-type: none"> <li>• Bootp</li> <li>• SNMPv1/v2c</li> <li>• DHCP Server and DHCP Relay</li> <li>• SNMPv3 Intro to Framework</li> <li>• Architecture for Describing SNMP Framework</li> <li>• SNMP Message Processing and Dispatching</li> <li>• SNMPv3 Applications</li> <li>• SNMPv3 User-based Security Model</li> <li>• SNMP View-based Access Control Model SNMP</li> <li>• sFlow</li> <li>• Network Time Protocol (NTP)</li> <li>• Multiple Syslog Servers</li> <li>• SCP</li> <li>• Virtual Cable Tester (VCT)</li> <li>• From management MIB, please see the ICX technical documentation at <a href="http://www.ruckusnetworks.com">www.ruckusnetworks.com</a></li> </ul>
<b>RUCKUS Campus Fabric technology*</b>	<ul style="list-style-type: none"> <li>• The RUCKUS ICX 7150 can operate in fabric Port Extender (PE) mode</li> <li>• Up to 36 PEs per fabric (up to 1800 ports)</li> <li>• PE cascade depth up to 6 units</li> </ul>

Feature	ENVIRONMENT
<b>Temperature</b>	Operating Temperatures: 0°C to 45°C (0°C to 40°C for ICX7150-C10P) Storage Temperatures: -40°C to 70°C
<b>Humidity</b>	Operating relative humidity: 5% to 95% at 45°C, non-condensing Non-operating relative humidity: 0% to 95% at 70°C, non-condensing
<b>Altitude</b>	Operating altitude: 10,000 ft (3,000 m) maximum Storage altitude: 39,000 ft (12,000 m) maximum

Feature	COMPLIANCE/CERTIFICATION
<b>Electromagnetic emissions</b>	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)
<b>Safety</b>	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
<b>Immunity</b>	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
<b>Environmental regulatory compliance</b>	RoHS-compliant (6 of 6); WEEE-compliant
<b>Vibration</b>	IEC 68-2-36, IEC 68-2-6
<b>Shock and drop</b>	IEC 68-2-27, IEC 68-2-32

\* Not supported on ICX 7150 8 port models

## RUCKUS ICX 7150 Ordering Information

Part Number	RUCKUS ICX 7150 Switches with 1 GbE Uplinks
ICX7150-C12P-2X1G	RUCKUS ICX 7150 Compact Switch, 12x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 2x1 GbE SFP uplink-ports upgradable to 2x10 GbE SFP+ with license. 124 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-24-4X1G	RUCKUS ICX 7150 Switch, 24x10/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 4x1 GbE SFP uplink-ports upgradable to up to 4x10 GbE SFP+ with license, basic Layer 3 (static routing and RIP).
ICX7150-24P-4X1G	RUCKUS ICX 7150 Switch 24x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x1 GbE SFP uplink ports upgradable to up to 4x10 GbE SFP+ with license, 370 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-48-4X1G	RUCKUS ICX 7150 Switch, 48x10/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 4x1 GbE SFP uplink-ports upgradable to up to 4x10 GbE SFP+ with license, basic Layer 3 (static routing and RIP).
ICX7150-48P-4X1G	RUCKUS ICX 7150 Switch, 48x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x1 GbE SFP uplink ports upgradable to up to 4x10 GbE SFP+ with license, 370 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-48PF-4X1G	RUCKUS ICX 7150 Switch, 48x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x1 GbE SFP uplink ports upgradable to up to 4x10 GbE SFP+ with license, 740 W PoE budget, basic Layer 3 (static routing and RIP).

Part Number	RUCKUS ICX 7150 Switches with 2x10 GbE Uplinks
ICX7150-C12P-2X10GR	RUCKUS ICX 7150 Compact Switch, 12x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45, 2x10 GbE SFP+ stacking/uplink-ports, 124 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-C10ZP-2X10GR	RUCKUS ICX 7150 Compact Switch, 2x 100/1000/2.5/5/10G PoH ports, 2x 100/1000/2.5G PoH ports, 6x 100/1000/2.5G PoE+ ports, 2x 10G SFP+ stacking/uplink-ports, 240W PoE budget, L3 features (OSPF, VRRP, PIM, PBR).
ICX7150-24 -2X10G	RUCKUS ICX 7150 Switch, 24x10/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 2x1 GbE SFP and 2x10 GbE SFP+ stacking/uplink-ports upgradable to 4x10 GbE SFP+ with license, basic Layer 3 (static routing and RIP).
ICX7150-24P-2X10G	RUCKUS ICX 7150 Switch, 24x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 2x1 GbE SFP and 2x10 GbE SFP+ stacking/uplink-ports upgradable to 4x10 GbE SFP+ with license, 370 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-48-2X10G	RUCKUS ICX 7150 Switch, 48x10/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 2x1 GbE SFP and 2x10 GbE SFP+ stacking/uplink-ports upgradable to 4x10 GbE SFP+ with license, basic Layer 3 (static routing and RIP).
ICX7150-48P-2X10G	RUCKUS ICX 7150 Switch, 48x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 2x1 GbE SFP and 2x10 GbE SFP+ stacking/uplink-ports upgradable to 4x10 GbE SFP+ with license, 370 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-48PF-2X10G	RUCKUS ICX 7150 Switch, 48x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 2x1 GbE SFP and 2x10 GbE SFP+ stacking/uplink-ports upgradable to 4x10 GbE SFP+ with license, 740 W PoE budget, basic Layer 3 (static routing and RIP).
ICX7150-48ZP-E2X10G	RUCKUS ICX 7150 Z-Series Switch, 16x100/1000 Mbps/2.5 Gbps PoH ports, 32x10/100/1000 PoE+ ports, 6x1 GbE SFP uplink ports and 2x10 GbE SFP+ stacking/uplink-ports upgradable to up to 8x10 GbE SFP+ with license, 1x 920 W AC power supply, 1 fan, 740 W PoE budget, base L3 (static routing and RIP).

Part Number	RUCKUS ICX 7150 Switches with up 4 or 8x10 GbE Uplinks and Layer 3 Features
ICX7150-24-4X10GR	RUCKUS ICX 7150 Switch, 24x10/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-24P-4X10GR	RUCKUS ICX 7150 Switch, 24x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-48-4X10GR	RUCKUS ICX 7150 Switch, 48x10/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-48P-4X10GR	RUCKUS ICX 7150 Switch, 48x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-48PF-4X10GR	RUCKUS ICX 7150 Switch, 48x10/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, 740 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR).
ICX7150-48ZP-E8X10GR	RUCKUS ICX 7150 Z-Series switch, 16x100/1000 Mbps/2.5 Gbps PoH ports, 32x10/100/1000 PoE+ ports, 8x10 GbE SFP+ stacking/uplink-ports (max 4 for stacking), 1x920 W AC power supply, 1 fan, 740 W PoE budget, L3 features (OSPF, VRRP, PIM, PBR).

## RUCKUS ICX 7150 Ordering Information (continued)

Part Number	<b>RUCKUS ICX 7150 Switches with Three-Year Remote Support</b> 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, 12x100/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 2x10 GbE SFP+ stacking/uplink-ports, 124 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-C10ZP-2X10GR-RMT3	RUCKUS ICX 7150 Compact Switch, 2x 100/1000/2.5/5/10G PoH ports, 2x 100/1000/2.5G PoH ports, 6x 100/1000/2.5G PoE+ ports, 2x 10G SFP+ stacking/uplink-ports, 240W PoE budget, L3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-24-4X10GR-RMT3	RUCKUS ICX 7150 Switch, 24x100/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-24P-4X10GR-RMT3	RUCKUS ICX 7150 Switch, 24x100/100/1000 Mbps PoE+ ports, 2x1G RJ45 uplink-ports, 4x10 GbE SFP+ stacking/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, 48x100/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-48P-4X10GR-RMT3	RUCKUS ICX 7150 Switch, 48x100/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/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, 48x100/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, 740 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), three-year remote support.
ICX7150-48ZP-E8X10GR-RMT3	RUCKUS ICX 7150 Z-Series switch, 16x100/1000 Mbps/2.5 Gbps PoH ports, 32x100/100/1000 PoE+ ports, 8x10 GbE SFP+ stacking/uplink-ports (max 4 for stacking), 1x 920 W AC power supply, 1 fan, 740 W PoE budget, L3 features (OSPF, VRRP, PIM, PBR). Three-year remote support

Part Number	<b>TAA-Compliant RUCKUS ICX 7150 Switches</b> 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, 12x100/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 2x10 GbE SFP+ stacking/uplink-ports, 124 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-C10ZP-2X10GR-A	RUCKUS ICX 7150 Compact Switch, 2x 100/1000/2.5/5/10G PoH ports, 2x 100/1000/2.5G PoH ports, 6x 100/1000/2.5G PoE+ ports, 2x 10G SFP+ stacking/uplink-ports, 240W PoE budget, L3 features (OSPF, VRRP, PIM, PBR), TAA compliant.
ICX7150-24-4X10GR-A	RUCKUS ICX 7150 Switch, 24x100/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-24P-4X10GR-A	RUCKUS ICX 7150 Switch, 24x100/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-48-4X10GR-A	RUCKUS ICX 7150 Switch, 48x100/100/1000 Mbps ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-48P-4X10GR-A	RUCKUS ICX 7150 Switch, 48x100/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, 370 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-48PF-4X10GR-A	RUCKUS ICX 7150 Switch, 48x100/100/1000 Mbps PoE+ ports, 2x1 GbE RJ45 uplink-ports, 4x10 GbE SFP+ stacking/uplink-ports, 740 W PoE budget, Layer 3 features (OSPF, VRRP, PIM, PBR), TAA-compliant.
ICX7150-48ZP-E8X10GR2-A	RUCKUS ICX 7150 Z-Series switch, 16x100/1000 Mbps/2.5 Gbps PoH ports, 32x100/100/1000 PoE+ ports, 8x10 GbE SFP+ stacking/uplink-ports (max 4 for stacking), 2x920 W AC power supply, 2 fans, 1480 W PoE budget, L3 features (OSPF, VRRP, PIM, PBR). TAA compliant.

## RUCKUS ICX 7150 Ordering Information (continued)

Part Number	<b>Upgrade Licenses</b> 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 12 ports compact switches from 2x1 GbE SFP to 2x10 GbE SFP+ stacking/uplink-ports. Also includes Layer 3 features (OSPF, VRRP, PIM, PBR).
BR-ICX-7150-41U210-P-01	License to upgrade any RUCKUS ICX 7150 24/48 ports except the Z-Series from 4x1 GbE SFP to 2x1 GbE SFP and 2x10 GbE SFP+ stacking/uplink-ports.
BR-ICX-7150-41U410R-P-01	License to upgrade any RUCKUS ICX 7150 24/48 ports except the Z-Series from 4x1 GbE SFP to 4x10 GbE SFP+ stacking/uplink-ports. Also includes Layer 3 features (OSPF, VRRP, PIM, PBR).
BR-ICX-7150-210U410R-P-01	License to upgrade any RUCKUS ICX 7150 24/48 ports except the Z-Series from 2x1 GbE SFP and 2x10 GbE SFP+ to 4x10 GbE SFP+ stacking/uplink-ports. Also includes Layer 3 features (OSPF, VRRP, PIM, PBR).
BR-ICX-7150Z210U810R-P-01	License to upgrade ICX 7150 Z-Series model from 6x1 GbE SFP and 2x10 GbE SFP+ to 8x10 GbE SFP+ stacking/uplink-ports (max 4 for stacking). Also includes L3 features (OSPF, VRRP, PIM, PBR).

Part Number	<b>FRUs and Accessories</b>
RPS20-E	RUCKUS ICX 7150-48ZP 920 W AC hot-swap PoE power supply, front to back airflow (up to 2 per switch). Only applicable to the Z-Series
ICX-FAN11	RUCKUS ICX 7150-48ZP hot-swap fan tray (up to 2 per switch). Only applicable to the Z-Series
ICX6400-C12-MGNT	Magnet Mount Kit for RUCKUS ICX 7150/6450/6430 12 Port Compact Switches
CC-RJ45-DB9	Console cable RJ45-RJ45 with RJ-45-DB9 Adapter (for RJ-45 console port on ICX 7150)
CC-USBC-USBA	USB 2.0 Cable, Type-C to Type-A, 1 meter (for USB Type-C console port on ICX 7150)
ICX7000-C12-RMK	ICX7150-C12P & ICX7150-C08P & ICX7150-C08PT Compact Switch Rack Mount Kit
ICX7000-C10ZP-RMK	ICX7150-C10ZP Compact Switch Rack Mount Kit
ICX7000-C12-WMK	ICX7150-C12P & ICX7150-C08P & ICX7150-C08PT & ICX7150-C10ZP Compact Switch Wall Mount & Under Desk Mount Kit
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.
ICX-ADP-PLT	ICX Compact Switch Adapter Plate
ICX-DIN-MNT	ICX Compact Switch DIN Rail Mount Kit

## RUCKUS ICX 7150 Ordering Information (continued)

OPTICS	
See Optics Datasheet at <a href="http://www.ruckusnetworks.com">www.ruckusnetworks.com</a>	RUCKUS offers a unique set of high-performance, reliable, and cost-effective optical transceivers to help enterprises and service providers meet the challenges of diverse network topologies. To ensure maximum quality, RUCKUS selects and tests the most reliable, highest-performing optical transceivers on the market, and then warrants their availability, capacity, and performance in RUCKUS® product.” for a the specific list of optics supported by each ICX product see the <a href="#">Optics Datasheet</a> at <a href="http://www.ruckusnetworks.com">www.ruckusnetworks.com</a> .

MANAGEMENT SOFTWARE	
<a href="#">RUCKUS SmartZone</a>	SmartZone network controllers simplify network setup and management, enhance security, minimize troubleshooting and ease upgrades for networks built on RUCKUS switches and access points. Whether you’re building complex multi-geo networks or delivering multi-tier managed networking services, SmartZone network controllers deliver the scale, flexibility and openness to support the most sophisticated deployment scenarios.
<a href="#">RUCKUS Cloud</a>	RUCKUS Cloud takes the complexity of deploying and managing a distributed network out. It enables faster response to organizational needs while also reducing IT overhead. RUCKUS Cloud eliminates the need to deploy on-premises controllers and management software, moving network management to the cloud. Your multi-site network can be centrally managed through a single pane of glass web-based UI and full-featured mobile app.
<a href="#">RUCKUS Unleashed</a>	Unleashed is a simple-to-setup, easy-to-run management solution in a package designed and priced for small businesses. With built-in controller functionality, there’s no need to invest in a separate appliance for Wi-Fi control or in network management software. You can manage your entire network from your phone or web browser including all your APs and switches together.

## Ordering Notes

All RUCKUS ICX 7150 switches come with an accessory kit that includes a rubber foot kit, power cord clip, rack mount kit (for 24/48 ports model), RJ-45 console cable and US AC power cord. Stacking cables, USB console cables, compact switch rack mount kit, 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 except for the ICX 7150-C08P.

Standard 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 ICX7150-C12P compact switch can be ordered configured with either 2×1 GbE SFP or 2×10 GbE SFP+ uplinks.

The RUCKUS ICX7150-48ZP switch can be ordered configured with 2×10 GbE SFP+ uplinks and 6×1 GbE SFP, or 8×10 GbE SFP+ uplinks.

Upgrade licenses are available to upgrade standard RUCKUS ICX 7150 1 RU switches to either 2×1 GbE SFP and 2×10 GbE SFP+ or to 4×10 GbE SFP+, the RUCKUS ICX 7150 compact switch to 2×10 GbE SFP+, and the RUCKUS ICX7150-48ZP switch to 8×10 GbE SFP+.

RUCKUS ICX 7150 Switches with 4×10 GbE SFP+ and 8×10 GbE SFP+ (2×10 GbE SFP+ for the compact switch) include a license 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 additional years of remote support can always be ordered separately to cover any RUCKUS ICX 7150 model. Contact RUCKUS or channel partner representative for details about RUCKUS support options and support part numbers.

For your convenience, a fully loaded ICX 7150-48ZP model with dual power supplies and 8×10 GbE ports bundle has been created. It comes with factory installed power supplies, fans and 8×10 GbE port licenses.

## Warranty

RUCKUS ICX 7150 Switches are covered by the RUCKUS Assurance Limited Lifetime Warranty except for the ICX 7150-C08PT which is covered by a 13 month hardware warranty. For details, visit [www.ruckusnetworks.com/warranty](http://www.ruckusnetworks.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.

## Legal Disclaimer

Product features, functionality and specifications may change or be discontinued without notice. Nothing in this document shall be deemed to create a warranty of any kind, either express or implied, statutory or otherwise, including but not limited to, any implied warranties of merchantability, fitness for a particular purpose, non-infringement of third-party rights or availability with respect to any products and services.

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