

Ruckus ICX 7150-48ZP (Z-Series)

Enterprise-Class Stackable Access Switch



DATA SHEET

ENTRY-LEVEL ACCESS SWITCH FAMILY DELIVERS UNPRECEDENTED PERFORMANCE AND FEATURES IN ITS CLASS

The Ruckus® ICX® 7150 family 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.

RUCKUS ICX 7150 Z-SERIES SWITCHES



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, 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 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.



Ruckus ICX 7150-48ZP

16x 100/1000 Mbps/2.5 Gbps RJ-45 PoH ports
32x 10/100/1000 Mbps RJ-45 PoE+ ports
1,480 W PoE budget (with two power supplies)
8x 1/10 GbE uplink/stacking SFP/SFP+ ports

RUCKUS ICX 7150 SWITCH FEATURES

FEATURE	Ruckus ICX 7150-48ZP
Switching capacity (data rate, full duplex)	304 Gbps
Forwarding capacity (data rate, full duplex)	226 Mbps
10/100/1000 Mbps RJ45 downlinks	32
100/1000 Mbps/2.5 Gbps RJ45 downlinks (full duplex only)	16
10/100/1000 Mbps RJ45 uplinks (full duplex only, no PoE)	N/A
1/10 Gbps SFP/SFP+ uplinks	8
PoE/PoE+ ports	32
PoH / PoE / PoE+ ports	16
Dual hot-swap power supplies	Yes
Maximum PoE Class 3 ports (15.4 W per port)	48
Maximum PoE+ Class 4 ports (30 W per port)	48 (2 PSU)
Base IPv4/v6 Layer 3 routing (static routing, RIP)	Yes
Advanced IPv4/v6 Layer 3 routing (OSPF, VRRP, PIM, PBR features)	With license
Aggregated stacking bandwidth (data rate, full duplex)	480 Gbps
Stacking density (maximum switches in a stack)	12
Stacking ports (maximum ports ² usable for stacking)	Up to 4x10 GbE SFP+
Maximum stacking distance (distance between stacked switches)	10 km

FEATURE	POWER
Power inlet (AC)	C14
Input voltage/frequency	AC: 100 to 240 VAC @ 50 to 60 Hz
Power supply rated maximum (AC)	2x 920 W
PoE power budget (AC)	1480 W (2 PSU)
Airflow	Front-to-back

FEATURE	ENVIRONMENT
Net Weight (Kg)	6.61
Dimensions (mm)	440 (w) 332(D) 44(H)
Acoustics (25°C, min fan speed)	52 dBA
MTBF (25°C)	104,626 hours

¹10 Gbps SFP+ ports are required for stacking.

RUCKUS ICX 7150 SWITCH SPECIFICATIONS

FEATURES	SPECIFICATIONS
Connector options	<ul style="list-style-type: none"> • 10/100/1000 Mbps RJ-45 • 1 Gbps SFP ports • 1/10 Gbps SFP+ ports • Out-of-band Ethernet management: 10/100/1000 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://ruckuswireless.com/optics.
DRAM NVRAM (Flash) Packet buffer size	<ul style="list-style-type: none"> • 1 GB • 2 GB • 12/24 port: 2 MB, 48 port: 4 MB
Maximum MAC addresses	<ul style="list-style-type: none"> • 16,384
Maximum VLANs Maximum PVLANS	<ul style="list-style-type: none"> • 4,095 • 32
Maximum STP (spanning trees instances)	<ul style="list-style-type: none"> • 254
Maximum VEs	<ul style="list-style-type: none"> • 128
Maximum ARP entries	<ul style="list-style-type: none"> • 4,094
Maximum routes (in hardware)	<ul style="list-style-type: none"> • 1,000 (IPv4), 1,000 (IPv6) • Next hop address: 4,094
Trunking	<ul style="list-style-type: none"> • Maximum ports per trunk: 16 • Maximum trunk groups: 128
Maximum jumbo frame size	<ul style="list-style-type: none"> • 9,216 bytes
QoS priority queues	<ul style="list-style-type: none"> • 8 per port
Multicast groups	<ul style="list-style-type: none"> • 3,072 (Layer 2) • 2,048 (Layer 3)
Quality of Service (QoS)	<ul style="list-style-type: none"> • 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
Traffic management	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 802.1X authentication • MAC authentication • Flexible authentication • Web authentication • DHCP snooping • Dynamic ARP inspection • Neighbor Discovery (ND) 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 • RADSEC (RFC 6614) • Encrypted Syslog (RFC 5425)

RUCKUS ICX 7150 SWITCH SPECIFICATIONS

SDN features	<ul style="list-style-type: none"> • OpenFlow v1.0 and v1.3 • OpenFlow with hybrid port mode • Operates with an OpenDayLight Controller
High availability	<ul style="list-style-type: none"> • Layer 3 VRRP/VRRP-E protocol redundancy • Real-time state synchronization across the stack • Hitless failover and switchover from master to standby stack controller² • Hot insertion and removal of stacked units • Layer 2 VSRP switch redundancy • In Service Software Update (ISSU)

FEATURES	FEATURE SETS	
Layer 2 feature set	<ul style="list-style-type: none"> • 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 • Inter-Packet Gap (IPG) adjustment • Link Fault Signaling (LFS) • MAC Address Filtering 	<ul style="list-style-type: none"> • 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 • Remote Fault Notification (RFN) • Single-instance Spanning Tree • Trunk Groups (static, LACP) • Uni-Directional Link Detection (UDLD) • Metro-Ring Protocol (MRP) (v1, v2) • Virtual Switch Redundancy Protocol (VSRP)¹ • Q-in-Q and selective Q-in-Q • Topology Groups
Base Layer 3 IP routing feature set	<ul style="list-style-type: none"> • IPv4 and IPv6 static routes • RIP v1/v2, RIPng • ECMP • Port-based Access Control Lists • Layer 3/Layer 4 ACLs 	<ul style="list-style-type: none"> • Host routes • Virtual Interfaces • Routed Interfaces • Route-only Support • Routing Between Directly Connected Subnets
Premium Layer 3 IP routing feature set with software license	<ul style="list-style-type: none"> • IPv4 and IPv6 dynamic routes • OSPF v2, v3 • PIM-SM, PIM-SSM, PIM-DM, PIM passive (IPv4, IPv6) • PBR 	<ul style="list-style-type: none"> • Virtual Route Redundancy Protocol VRRP (IPv4) • VRRP v3 (IPv6) • VRRP-E(IPv4/IPv6)

FEATURES	STANDARD COMPLIANCE	
IEEE standards compliance	<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • 802.1 AX-2008 Link Aggregation • 802.3ae 10 Gigabit Ethernet • 802.3af Power over Ethernet • 802.3at Power over Ethernet Plus • 802.3bz Multigigabit Ethernet • 802.3u 100Base-TX • 802.3x Flow Control • 802.3z 1000Base-SX/LX • 802.3 MAU MIB (RFC 2239) • 802.1Q VLAN Tagging • 802.1BR Bridge Port Extension
RFC standards compliance	For a complete list of RFCs supported by the ICX 7000 product family, please visit support.ruckuswireless.com .	

RUCKUS ICX 7150 SWITCH SPECIFICATIONS

FEATURES	NETWORK AND DEVICE MANAGEMENT
Management	<ul style="list-style-type: none"> • 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 • USB file management and storage • Macro for batch execution • Out-of-band Ethernet Management • TFTP • TELNET Client and Server • SSH / SSH V2 <ul style="list-style-type: none"> • 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 • Network Time Protocol (NTP) • Multiple Syslog Servers • SCP • Virtual Cable Tester (VCT) • For management MIB, please visit ruckuswireless.com
Ruckus Campus Fabric technology	<ul style="list-style-type: none"> • The Ruckus ICX 7150 can operate in fabric Port Extender (PE) mode • Up to 36 PEs per fabric (up to 1800 ports) • PE cascade depth up to 6 units

FEATURES	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

FEATURES	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	RUCKUS ICX 7150 SWITCHES WITH 2×10 GBE UPLINKS
ICX7150-48ZP-E2X10G	Ruckus ICX 7150 Z-Series Switch, 16×100/1000 Mbps/2.5 Gbps PoH ports, 32x10/100/1000 PoE+ ports, 6x1 GbE SFP uplink ports and 2×10 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 8×10 GBE UPLINKS AND LAYER 3 FEATURES
ICX7150-48ZP-E8X10GR	Ruckus ICX 7150 Z-Series switch, 16×100/1000 Mbps/2.5 Gbps PoH ports, 32x10/100/1000 PoE+ ports, 8×10 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).
PART NUMBER	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.
ICX7150-48ZP-E8X10GR-RMT3	Ruckus ICX 7150 Z-Series switch, 16×100/1000 Mbps/2.5 Gbps PoH ports, 32x10/100/1000 PoE+ ports, 8×10 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	TAA-COMPLIANT RUCKUS ICX 7150 SWITCHES
	The Ruckus ICX 7150 models with the SKUs below meet the requirements of the Trade Agreements Act (TAA).
ICX7150-48ZP-E8X10GR2-A	Ruckus ICX 7150 Z-Series switch, 16×100/1000 Mbps/2.5 Gbps PoH ports, 32x10/100/1000 PoE+ ports, 8×10 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.
PART NUMBER	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-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	FRUS AND ACCESSORIES
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 Switch.
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 Compact Switch Rack Mount Kit
ICX7000-C12-WMK	ICX7150-C12P 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.

RUCKUS ICX 7150 SWITCH ORDERING INFORMATION

PART NUMBER	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
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.

PART NUMBER	OPTICS WITH EXTERNAL LRM SFP+ ADAPTER
10G-SFPP-LRM-1-ADP	10GBASE-LRM SFP+ optic (LC), for up to 220 m over MMF, 1-pack. Includes one LRM adapter device.
10G-SFPP-LRM-2-ADP	10GBASE-LRM SFP+ optic (LC), for up to 220 m over MMF, 2-pack. Includes one LRM adapter device.

PART NUMBER	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
10G-SFPP-TWX-P-0101	Passive Direct-attached SFP+ copper cable, 1 m, 1-pack, active
10G-SFPP-TWX-P-0301	Passive Direct-attached SFP+ copper cable, 3 m, 1-pack, active
10G-SFPP-TWX-P-0501	Passive 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 (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.

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 ICX 7150 compact switch can be ordered configured with either 2×1 GbE SFP or 2×10 GbE SFP+ uplinks.

The Ruckus ICX Z-Series 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 Z-Series 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. For details, visit www.ruckuswireless.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

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