TECHNICAL SPECIFICATIONS

Ruckus ICX 7850 Switch Technical Specifications

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System Specifications

System Component	Description
Enclosure	Stackable up to 12 switches per stack, chassis-mountable (1U) in a standard 4-post rack
Power Supplies	Dual redundant, hot-swappable power supplies supported with 650 W AC intake or exhaust airflow or 650 W DC intake or exhaust airflow
Fan Assemblies	Dual redundant, hot-swappable fan assemblies with intake or exhaust airflow
Cooling	Forced-air cooling front-to-back or back-to-front
System Architecture	Non-blocking shared-memory switch
System Processors	Broadcom BCM58712D, quad-core, ARM-based A57 CPU

Ethernet

System Component	Description	Maximum Ports Supported
100 GbE QSFP28 Ports	40/100 GbE QSFP28 stacking or uplink port	32 (ICX 7850-32Q) 8 (ICX 7850-48F and ICX 7850-48FS)
25 GbE SFP28 Ports	1/10/25 GbE SFP28 port	48 (ICX 7850-48F)
10 GbE SFP+ Ports	1/10 GbE SFP+ port	48 (ICX 7850-48FS)
Ethernet Management Port	10/100/1000 Mbps RJ-45 port	1

LEDs

System Component	Description
Switch Status and Management	Seven LED types indicate switch status: PWR and PWR2 (power supply units) DIAG (diagnostics) SYS (system status) MS (stacking configuration) CLD (cloud management) UPDATE (software update) STAT, SPD, ID, USB status mode
Ports	LEDs indicate port status or switch ID based on the status mode selection

Other

System Component	Description
Serial Cable	1 (RJ-45 to RJ-45)
RJ-45 to DB9 Adapter	1
AC Power Cord	IEC 320-C14

Weight and Physical Dimensions

Model	Height	Width	Depth	Weight (with Basic Modules)
ICX 7850-32Q	4.37 cm 1.72 inches	44.00 cm 17.32 inches	44.45 cm 17.5 inches	9.1 kg 20 lb
ICX 7850-48F	4.37 cm 1.72 inches	44.00 cm 17.32 inches	44.45 cm 17.5 inches	8.8 kg 19.4 lb
ICX 7850-48FS	4.37 cm 1.72 inches	44.00 cm 17.32 inches	44.45 cm 17.5 inches	9.1 kg 20 lb

Environmental Requirements

Condition	Operational	Non-operational
Ambient Temperature	0°C to 45°C (32°F to 113°F) at sea level	-40°C to 70°C (-40°F to 158°F)
Relative Humidity (non-condensing)	10% to 90% at 50°C (122°F)	10% to 90% at 70°C (158°F)
Altitude (above sea level)	0 to 3,048 m (10,000 ft)	0 to 12,000 m (39,370 ft)
Shock	20 G, 11 ms, half-sine wave	33 G, 11 ms, half-sine wave
Vibration	1 G sine, 0.4 grms random, 5-500 Hz	2.4 G sine, 1.1 grms random, 5-500 Hz
Airflow	Nominal: 21-30 cfm, Maximum: 100-110 cfm.	N/A

Condition	Operational	Non-operational
Heat Dissipation (+/- 5%)	**NOTE:** Refer to "Power Consumption (Typical Configuration)" on page 7 and "Power Consumption (Maximum Configuration)" on page 7 for detailed information on heat dissipation.	N/A
Operating Noise	ICX 7850-32Q: 50.6 dBA ICX 7850-48F: 50.3 dBA ICX 7850-48FS: 50.3 dBA	N/A

Power Supply Specifications (per PSU)

Power Supply Model	Maximum Output Power Rating (DC)	Input Voltage	Input Line Frequency	Maximum Input Current	Input Line Protection	Maximum Inrush Current
RPS19-E	650 W	100-240V	50-60Hz	9 A	Fuses	25A
RPS19-I	650 W	100-240V	50-60Hz	9 A	Fuses	25A
RPS19DC-E	650 W	-48 - -60V	-	16.5 A	Fuses	25A
RPS19DC-I	650 W	-48 - -60V	-	16.5 A	Fuses	25A

Power Consumption (Typical Configuration)

All 10-GbE, 25-GbE, or 100-GbE ports are linked up (no other port links), loading with 10 percent traffic rate. Four fan FRUs, fans at nominal speed.

Model Name (Input Power ±5%)	@100 VAC Input	@200 VAC Input	@-48 VDC Input	Minimum Number of Power Supplies	Notes
ICX 7850-32Q	328 W 1119 BTU/hr	333.4 W 1138 BTU/hr	329.8 W 1126 BTU/hr	1 x 650 W AC	1 PSU
	336.5 W 1149 BTU/hr	384.2 W 1311 BTU/hr	339.1 W 1158 BTU/hr	2 x 650 W AC	2 PSUs
ICX 7850-48F	267.8 W 913.9 BTU/hr	289.7 W 988.7 BTU/hr	285 W 972.8 BTU/hr	1 x 650 W AC	1 PSU
	282.4 W 963.7 BTU/hr	357.9 W 1221 BTU/hr	297.7 W 1016 BTU/hr	1 x 650 W AC	2 PSUs
ICX 7850-48FS	325 W 1109 BTU/hr	328 W 1119 BTU/hr	322.9 W 1102 BTU/hr	1 x 650 W AC	1 PSU
	336.5 W 1149 BTU/hr	405.2 W 1383 BTU/hr	333.7 W 1139 BTU/hr	1 x 650 W AC	2 PSUs

Power Consumption (Maximum Configuration)

All 10-GbE, 25-GbE, or 100-GbE ports are linked up (no other port links), loading with 100 percent traffic rate. Two PSUs, five fan FRUs, fans at high speed.

Model Name (Input Power ±5%)	@100 VAC Input	@200 VAC Input	@-48 VDC Input	Minimum Number of Power Supplies	Notes
ICX 7850-32Q	474.1 W 1618 BTU/hr	470.6 W 1606 BTU/hr	480.8 W 1641 BTU/hr	2 x 650 W AC	1 PSU
	479.6 W 1637 BTU/hr	517.3 W 1766 BTU/hr	482.8 W 1648 BTU/hr	2 x 650 W AC	2 PSUs required
ICX 7850-48F	393.3 W 1342 BTU/hr	386.4 W 1319 BTU/hr	400.8 W 1368 BTU/hr	1 x 650 W AC	1 PSU
	396.2 W 1352 BTU/hr	437.2 W 1492 BTU/hr	404.9 W 1382 BTU/hr	1 x 650 W AC	2 PSUs required
ICX 7850-48FS	439.9 W 1501 BTU/hr	433.1 W 1478 BTU/hr	427.8 W 1460 BTU/hr	1 x 650 W AC	1 PSU
	443.1 W 1512 BTU/hr	490 W 1672 BTU/hr	438.7 W 1497 BTU/hr	1 x 650 W AC	2 PSUs

Data Port Specifications (Ethernet)

Model Name	Port Type	Number (in Module)	Description
ICX 7850-32Q	100 GbE	12 (slot 1)	QSFP28 ports, 40/100 Gbps, compatible with optical transceivers, or direct attached copper cable.
	100 GbE	12 (slot 2)	QSFP28 ports, 40 /100 Gbps, compatible with optical transceivers, or direct attached copper cable.
	100 GbE	8 (slot 3)	QSFP28 stacking ports, 40/100 Gbps, compatible with optical transceivers, or direct attached copper cable.
ICX 7850-48F	100 GbE	8 (slot 2)	QSFP28 stacking ports, 40/100 Gbps, compatible with optical transceivers, or direct attached copper cable.
	25 GbE	48 (slot 1)	SFP28 ports, 1/10/25 Gbps, compatible with optical transceivers, or direct attached copper cable.
ICX 7850-48FS	100 GbE	8 (slot 2)	QSFP28 stacking ports, 40/100 Gbps, compatible with optical transceivers, or direct attached copper cable.
	10 GbE	48 (slot 1)	SFP+ ports, 1/10 Gbps, compatible with optical transceivers, or direct attached copper cable.

Serial Port Specifications (Pinout - USB Type-C)

Pin	Signal	Description
A1	USB-C_GND	Ground
A2	Reserved	Not used
A3	Reserved	Not used
A4	USB_TYPE_C_5V_IN	5 V bus power
A5	USB-C_CC1	Configuration channel
A6	USB-C_AD1+	Data A positive

Pin	Signal	Description
A7	USB-C_AD1-	Data A negative
A8	Reserved	Not used
A9	USB_TYPE_C_5V_IN	5 V bus power
A10	Reserved	Not used
A11	Reserved	Not used
A12	USB-C_GND	Ground
B1	USB-C_GND	Ground
B2	Reserved	Not used
B3	Reserved	Not used
B4	USB_TYPE_C_5V_IN	5 V bus power
B5	Reserved	Not used
B6	USB-C_BD2+	Data B positive
B7	USB-C_BD2-	Data B negative
B8	Reserved	Not used
B9	USB_TYPE_C_5V_IN	5 V bus power
B10	Reserved	Not used
B11	Reserved	Not used
B12	USB-C_GND	Ground

Serial Port Specifications (Pinout RJ-45)

Pin	Signal	Description
1	Not supported	N/A
2	Not supported	N/A
3	UART1_TXD	Transmit data to ICX
4	GND	Logic ground
5	Not supported	N/A
6	UART1_RXD	Receive data from ICX
7	Not supported	N/A
8	Not supported	N/A

Serial Port Specifications (Protocol)

Parameter	Value
Baud	9600
Data bits	8
Parity	None

Parameter	Value
Stop bits	1
Flow control	None

Memory Specifications

Memory	Type	Size
Main memory	DDR4 2133 SO-DIMM	4 GB
Boot Flash	SPI Flash (dual boot)	16 MB
SATA SSD Flash	NAND flash	32 GB

Regulatory Compliance (EMC)

- FCC Part 15, Subpart B (Class A)
- EN 55032 (CE mark) (Class A)
- EN 55024 (CE mark) (Immunity) for Information Technology Equipment
- ICES-003 (Canada) (Class A)
- AS/NZ 55032 (Australia/New Zealand) (Class A)
- VCCI (Japan) (Class A)
- EN 300 386
- CNS 13438 (BSMI) (Taiwan) (Class A)
- KN 32 (South Korea) (Class A)
- KN 35 (South Korea) (Class A)
- TCVN 7189 / TCVN 7317 (Vietnam) (Class A)
- EN 61000-3-2
- EN 61000-3-3

Regulatory Compliance (Safety)

- CAN/CSA-C22.2 No. 60950-1/UL 60950-1 - Safety of Information Technology Equipment
- EN 60825 Safety of Laser Products - Part 1: Equipment Classification, Requirements and User's Guide
- EN 60950-1/IEC 60950-1 Safety of Information Technology Equipment

Regulatory Compliance (Environmental)

- 2014/35/EU and 2014/30/EU
- 2011/65/EU – Restriction of the use of certain hazardous substance in electrical and electronic equipment (EU RoHS)
- 2012/19/EU – Waste electrical and electronic equipment (EU WEEE)
- 94/62/EC – packaging and packaging waste (EU)

- 2006/66/EC – batteries and accumulators and waste batteries and accumulators (EU battery directive)
- 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (EU REACH)
- Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 – U.S. Conflict Minerals
- 30/2011/TT-BCT – Vietnam circular
- SJ/T 11363-2006 Requirements for Concentration Limits for Certain Hazardous Substances in EIPs (China)
- SJ/T 11364-2006 Marking for the Control of Pollution Caused by EIPs (China)