RFD90 Ultra-Rugged UHF RFID Sleds

Relentless. Versatile. Future-Proof.

Today's manufacturing, transportation and logistics operations are under pressure to deliver higher volumes at greater speeds, while struggling with unpredictable supply chains and labor pools. Fast, accurate RFID solutions can make a critical difference—now even in the most demanding environments. Zebra's RFD90 Ultra-Rugged UHF RFID Sleds are built for harsh conditions, tested for 6-foot (1.8-meter) drops to concrete and sealed to industrial-grade dual IP65 and IP67 ratings. Both the standard-range RFD9030 Sled and long-range RFD9090 Sled provide industry-leading read rates of 1,300 tags per second, an ultra-accurate item-finder mode, a tri-function user-programmable trigger and Wi-Fi 6 capability for easy device management. Changeable eConnex™ adaptors and charging cradles support rugged Zebra mobile computers, while integrated Bluetooth® 5.3 connectivity supports third-party smartphones.

Optimize Your Workflows

Ultra-Rugged Ergonomic Design
Zebra's RFD90 Ultra-Rugged UHF RFID Sleds are engineered to withstand everyday use across a wide variety of harsh conditions, including manufacturing, transportation and logistics environments. These ultra-rugged sleds are dust-proof, spray-proof, water-proof and tested for drops up to 6 feet (1.8 meters) onto concrete surfaces. And superior ergonomics contribute to worker comfort and productivity by reducing strain.

Industry-Leading Performance
With a robust read rate of 1,300 tags per second, RFD90 Sleds enable rapid inventory counts and increase workflow accuracy. The RFD9030 Sled offers a standard read range of 22 feet (6.7 meters), while the RFD9090 Sled features an extended range of 75 feet (22.9 meters). The ultra-accurate item-finder mode helps workers locate critical items quickly and easily. The tri-function user-programmable trigger offers easy access to RFID reading, barcode scanning and other features appropriate to fit the demands of your workflows. And with a 7,000 mAh battery, RFD90 Sleds keep going hour after hour.

Flexible Connectivity
RFD90 Sleds are compatible with almost any mobile device. Zebra eConnex™ adaptors allow you to mount a broad selection of rugged Zebra mobile computers, while the OtterBox uniVERSE adaptor provides support for many third-party smartphones. Integrated Bluetooth™ 5.3 wireless capability connects to almost any Android™, iOS or Windows device. Device pairing is easily accomplished using NFC tap to pair, pair by camera, and Scan-To-Connect options.

Remote Management
Built-in Wi-Fi 6 allows easy over-the-air (OTA) device management even when the sled doesn't have a mobile computer or smartphone attached. Optimize performance and support new features by deploying firmware and configuration updates without having to touch every device.

The RFD90 Ultra-Rugged Sleds deliver industry-leading performance in extreme conditions.

For more information, please visit www.zebra.com/rfd90

Adaptive Solutions

RFD90 Ultra-Rugged UHF RFID Sleds are fully enabled to support Zebra mobile computers and smartphones, as well as new mobile computers and third-party smartphones as they come out. Easy-to-change, tool-free sled adaptors allow associates to swap out an adaptor quickly while maintaining compatibility without needing to send devices to IT for retrofitting.

Extreme Durability

Virtually indestructible RFD90 Sleds are engineered for harsh conditions with industrial-grade dual IP65/IP67 sealing, a rugged 6-foot (1.8-meter) drop-to-concrete specification and an extended operating temperature range of -4°F to 131°F (-20°C to 55°C), so you can feel confident that they will meet the demands of your workplace.

Flexible and Future-Proof Charging

Charging solutions for RFD90 Sleds provide users a flexible way to power up the sled and mobile computer in a variety of ways. Featuring two sets of charging pins, each cradle cup can charge an RFD90 Sled by itself, the mobile computer by itself, or a combination of RFD90 Sled and mobile computer when attached together. A universal cradle cup provides charging for the sled and has a USB-A port to plug in a charging cable for third-party devices.

Tethered Operation

RFD90 Sleds can be connected to a Windows-based PC or other host via a cable cup, which enables an RFD90 Sled to be used as a tethered RFID reader.

World-Class Development and Enablement Tools

Quickly transition to the latest generation of products without the need for a major application rewrite. Software Development Kits (SDKs) for RFD90 Sleds are based on current Zebra RFID handheld SDKs. Only a recompile of the current application with the new SDK is required for you to get up and running on RFD90 Sleds.

123RFID

Configure your RFD90 Sleds live or offline using 123RFID Mobile and 123RFID Desktop via cable cup or Bluetooth. Use 123RFID Desktop for proofs-of-concepts, demos and performing firmware upgrades.

Interchangeable Cradles

When you're ready to upgrade, Zebra's game-changing cradles were developed so mobile computers can be swapped out with ease. Using just a coin screw, you can make changes without tools or the hassle of plugging or unplugging any wire harnesses, simplifying the experience for all users.

Innovative Cradle Solutions

Cradles that support RFD90 Sleds come in both one-slot and multi-slot options, as well as charge-only and communication variants. One-slot communication cradles have a Micro-USB port for connection to a host PC, while the multi-slot cradles possess an Ethernet port for connection to a corporate network. This connectivity allows you to manage your RFD90 Sleds while in the cradle and also provides the ability to set configuration, push out firmware upgrades and monitor device health, so you get more information about your devices with less effort.

Why Zebra for RFID?

The time to implement RFID is now. Rely on the industry's deepest, field-proven portfolio to drive full-scale transformation without the risks. Designed for your environment, application and conditions, Zebra RFID solutions are engineered to make you more effective.

Specifications

Physical Characteristics

Dimensions	RFD9030: 7.4 x 3.2 x 6.8 in./189 x 83.4 x 173 mm RFD9090: 9.8 x 3.8 x 6.8 in./248 x 96.3 x 173 mm
Weight	RFD9030 with SE4750MR: 25 oz./714 grams RFD9030 with SE4850: 26.5 oz./751 grams RFD9090 with SE4750MR: 26.8 oz./759 grams RFD9090 with SE4850: 28.2 oz./799 grams
Power	Quick-Release, PowerPrecision+ Li-Ion 7,000 mAh battery
Notification	Bluetooth Status LED Wi-Fi Status LED Decode LEDs Battery Status LED Beeper
User Input	Tri-Function User Programmable Trigger

RFID Performance

Standards Supported	EPC Class 1 Gen 2; EPC Gen2 V2
RFID Engine	Zebra Proprietary Radio Technology
Fastest Read Rate	1,300+ tags/sec
Nominal Read Range	RFD9030: ~22 ft./~6.7 m RFD9090: ~75 ft./~22.9 m
Frequency Range and RF System Output	RFD9030: US: 902–928 MHz; 0–30 dBm (EIRP) EU: 865–868 MHz; 0–30 dBm (EIRP) 916.3, 917.5, and 918.7 MHz; 0–30 dBm (EIRP) Japan: 916–921 MHz (w LBT), 0–30 dBm (EIRP) RFD9090: US: 902–928 MHz; 5.5–35.5 dBm (EIRP) EU: 865–868 MHz; 5.5–35.0 dBm (EIRP) 916.3, 917.5, and 918.7 MHz; 5.5–35.5 dBm (EIRP) Japan: 916–921 MHz (w LBT), 5.5–35.5 dBm (EIRP)

Wireless LAN

Radio	IEEE 802.11 ax/ac/a/b/g/n 2X2, MU-MIMO, IPv4
Data Rate	5 GHz PHY data rates up to 1.2 Gbps; 2.4 GHz PHY data rates up to 458 Mbps
Operating Channels	Channel 1–14: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14; Channel 36–196: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165, 172, 183, 184, 185, 187, 188, 189, 192, 196; Channel Bandwidth: 20, 40, 80 MHz
Security and Encryption	TKIP, AES, EAP-TLS, EAP-PEAPv2, EAP-TTLS, EAP-FAST, PEAP, LEAP

SE4750MR Standard Range Imager

Sensor Resolution	1280 x 960 pixels
Field of View	31° horizontal, 23° vertical
Skew Tolerance	±60°
Pitch Tolerance	±60°

User Environment

Drop Specification	Multiple 6 ft./1.8 m drops to concrete
Tumble Specification	500 cycles (1,000 drops, 1.6 ft./0.5 m) at room temperature
Operating Temperature	-4°F to 131°F/-20°C to 55°C
Storage Temperature	-40°F to 158°F/-40°C to 70°C
Humidity	5–85% non-condensing
Electrostatic Discharge	±15 kV air discharge ±8 kV direct discharge ±8 kVdc indirect discharge
Sealing	IP65 (spray) and IP67 (submersion)

Accessories

Cradles and Charging	Cable Cup USB Wall Brick for Cable Cup 1-Slot Charging Cradle 1-Slot Charging and USB Cradle Multi-Slot Charging Cradle Multi-Slot Charging and Ethernet Cradle 4-Slot Battery Toaster
Other Accessories	eConnex™ Adaptors for Supported Zebra Mobile Computers Battery Locking Foot Belt Holster

Communication

Host Connection	Electronic 8-Pin Connection (eConnex™) Bluetooth 5.3 USB Cable Cup
Host Computer	Zebra mobile computers and tablets 3rd-party smartphones and tablets Windows-based PCs
Mobile Computer Adaptors	eConnex, Bluetooth, OtterBox uniVERSE Case System
Bluetooth Profiles Supported	SPP Profile HID Profile Apple iAP2/MFi
Remote Management	Wi-Fi 6 Ethernet Cradles Via Attached Host Device

Regulatory

EMI/EMC	FCC Part 15 Subpart B Class B; ICES 003 Class B; EN 301 489-1; EN 301 489-3; EN 55024; EN 55032 Class B
Electrical Safety	IEC 62368-1 (ed.2) UL 62368-1, second edition, CAN/CSA-C22.2 No. 62368-1-14
RF Exposure	EU: EN 50364, EN 62369-1, EN 50566, EN 62311; USA: FCC Part 2. 1093 OET Bulletin 65 Supplement 'C'; Canada: RSS-102
RFID	EU EN 302 208, FCC Part 15 Subpart C; Canada: RSS-247

Markets and Applications

Transportation and Logistics

- Baggage Tracking
- Cycle Counting
- Item Locating
- Cold Chain
- Returnable Transport Object (RTO) Tracking

Manufacturing

- Work in Progress (WIP) Tracking
- Raw Materials Inventory
- Pipeline/Utility Tracking
- Item Locating
- RTO Tracking

Government

- Kitting
- Asset Tracking
- Item Locating
- Chain of Custody
- Personnel Control

SE4750MR Standard Range Imager

Roll Tolerance	360°
Focal Distance	14.2 in./36.1 cm from front of engine
Aiming LED	655 nm laser
Illumination	2X warm white LEDs

SE4850 Extended Range Imager

Sensor Resolution Sensor Resolution	1280 x 800 pixels
Field of View	Far: 12° horizontal, 7.6° vertical Near: 32° horizontal, 20° vertical
Skew Tolerance	±60°
Pitch Tolerance	±60°
Roll Tolerance	360°
Focal Distance	Far: 15–350 in./38.1–889 cm from front of engine Near: 11 in./27.8 cm from front of engine
Aiming Element	655 nm laser
Illumination Element	Hyper red 660 nm LED
Minimum Print Contrast	25%

Regulatory

LED Classification	IEC 62471

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