ZT400 Series RFID Industrial Printers

Proven durability and versatility with UHF RFID encoding

Pairing rugged quality with UHF RFID capabilities, the ZT400 Series RFID printers/encoders help keep your critical operations running efficiently. Known as price-performance leaders in RFID labeling, the ZT400 Series offers a factory- or field-installable UHF RFID encoder to support a broad range of applications across several industries. See printer status at a glance and manage settings quickly—including RFID—using the large color touch display. Featuring Zebra DNA™ for Printers, a suite of applications, utilities and developer tools—all powered by Link-OS™—these printers are easy to integrate, manage and maintain from any location around the globe. Optimized to accurately and efficiently print and encode labels for today's item-level tracking applications, the ZT400 Series RFID printers give you greater tracking abilities, deeper visibility and enterprise insights in an ever-competitive business environment.

Versatile to Meet Your Evolving Needs

Configure Your Way With Multiple Connectivity Options
The ZT400 comes standard with Ethernet, Serial, USB, dual USB Host and Bluetooth® 4.1. Add optional dual-band wireless card, now available with 802.11ax/Bluetooth 5.3 for blazing fast and reliable wireless connections on your Wi-Fi™ 6/6E network.

Built to Handle a Wide Range of Applications Including High-Resolution

You can count on the ZT400 Series to print a variety of different label formats on a variety of different media types. When RFID-enabled, the 4-inch ZT411 and 6-inch ZT421 can print and encode labels as small as 0.6 in./16 mm. And, the ZT411 can print up to 600 dpi for extremely crisp resolution. The ZT411 RFID, available in an on-metal version, is the only dedicated option for printing and encoding on-metal tags and labels.

Dual USB Host Ports For Added Flexibility
Dual USB Host ports allow you to directly connect a wide range of USB device types. Use a memory stick to replicate firmware, files and configurations, or easily print and transfer formats. Simplify data entry by simultaneously connecting a scanner and keyboard — with two host ports, there's no need to plug and unplug peripherals.

Designed to Evolve With Your Needs
You can customize the ZT400 Series with a range of media handling options that can be easily installed in minutes. Two open media slots accommodate additional communication options. And, the open architecture, robust processing power and memory can support firmware upgrades and new Zebra DNA tools for years to come.

Effortless to Integrate and Operate

Large Color Touch Display Makes Operation a Snap
It's easy to set up and use the ZT400 with its intuitive icon-based interface, including managing RFID settings. The 4.3-inch full-color touch display allows you to quickly navigate printer settings and create frequently used shortcuts.

Keep Your Critical Operations Running Efficiently With the ZT400 Series RFID Industrial Printers/Encoders.

For more information, visit www.zebra.com/zt400rfid

See color-coded alerts from a distance when the printer is paused or in an error state, so you instantly know what the printer needs to stay up and running.

Print and Encode With Ease

Adaptive encoding technology allows for excellent media flexibility and simple RFID calibration, eliminating complex placement guidelines. And, Zebra has globally certified its RFID technology on six continents to support deployments across complex, multinational supply chains.

Easy Media and Ribbon Loading

The side-loading supplies path makes loading simpler, faster and more intuitive — even for new users. The color-coded media path guides you on how to thread the media and ribbon through the printer, while lighted paths make it easy to see, even in poorly lit environments.

Space-Saving Design For an Easier Fit

Constructed using a bi-fold door, these printers are designed to easily fit in space-constrained environments. ENERGY STAR™ qualified, they save you money throughout their lifecycle.

Direct Connection to Your Industrial Ethernet Network

With the Network Connect option, you can connect ZT400 printers directly to your Industrial Ethernet network without any additional equipment. This eliminates vulnerability points, improves security and saves man-hours in setup, management and troubleshooting.

Pair Devices and Access Information at a Touch

With Print Touch™, you can pair ZT400 Series printers to NFC-enabled devices with a simple tap. Dynamic QR codes give you immediate access to the data you need, including Zebra how-to videos and product support.

Easy to Manage

Zebra DNA for Printers—Transforming Printers From the Inside

The printer hardware is just the start of what you need to maximize the value of your printers. The ZT400 Series is powered by Link-OS, Zebra's robust printer operating system, and Zebra DNA for Printers, a combination of productivity, management, development and visibility tools. The result is a superior printing experience through better performance, simplified remote manageability and easier integration.

Easily Manage All Your Printers—All From a Single Location

With our comprehensive and flexible remote management tools, you can maintain, secure and troubleshoot printers simply and easily, from anywhere, at anytime. With Printer Profile Manager Enterprise, you can manage one printer, a group of specific printers or all your printers anywhere in the world. This browser-based solution lets you instantly discover every Link-OS printer on your network—there's no need to manually track down, configure or troubleshoot printers. In addition to optional enterprise remote management tools, we offer a full suite of complimentary deployment utilities to simplify initial setup and configuration.

Seamless Integration With Your Device Management System

Get the simplicity of a single pane of glass to manage all your Zebra devices and printers—including the ZT400 Series RFID. With Zebra DNA for Printer's MDM Connectors, you can easily integrate networked ZT400 printers into your existing AirWatch or SOTI® MobiControl device management system.

Performance You Can Count On

On-Metal RFID Option Enables Metal Asset Tagging

Zebra offers an optional version of the ZT411 for on-metal RFID tagging. This solution enables users to print and encode on-metal RFID labels such as Silverline that are designed to work on a variety of surfaces including IT assets, tools, equipment, returnable containers and other challenging surfaces. The ZT411 RFID On-metal Solution gives you greater flexibility that is globally available—including simple-to-install, field-upgradeable technology up to 300 dpi.

Rugged Durability For Demanding Applications

You can count on the ZT400 to serve your business for years. Its durable metal frame holds up in the most demanding environments, while a long life coating protects the printheads when printing in direct thermal mode, reducing the need to replace printheads. Ensure optimal print quality with the printhead element out detection feature. Every detail has been carefully designed and tested to deliver maximum uptime over the printer's life.

Consistently Exceptional Zebra Certified Supplies

Printing supplies can impact everything from printhead lifespan to operational efficiency. That's why we design, produce and rigorously pretest our own line of thermal printing supplies to ensure consistent, optimized performance in your Zebra printer.

Maximize Uptime, Business Operations and Printer Visibility With Services

You invest in Zebra printers to boost the efficiency of your critical operations. Now, you can ensure predictable performance and eliminate unbudgeted repair expenses with Zebra OneCare. You get unmatched technical support direct from Zebra, as well as comprehensive repair services, including accidental damage and defined repair turn-around times. And Zebra's Support and Visibility Services provide the real-time insight into printer operational information you need to increase printer availability and optimize utilization within your workflows.

Specifications

RFID

• Integrated RFID system is user-upgradable in the field
• Optional field-upgradeable on-metal version available (ZT411 only)
• Prints and encodes tags with a minimum pitch of 0.6 in./16 mm
• Supports tags compatible with: UHF EPC Gen 2 V2.1, ISO/IEC 18000-63 and RAIN RFID protocols
• Compliant with Global RFID radio to support multinational deployments
• Automatically eliminate complex RFID placement guidelines with adaptive encoding technology
• Variable inlay placement supports a range of inlay positions for maximum media flexibility
• Track performance with RFID job-monitoring tools
• Support for industry standard multi-vendor chip-based serialization (MCS)
• Supports block permalocking of user memory compatible with ATA Spec 2000
• Integrated RFID reader/encoder

Standard Features

• Print Methods: Thermal transfer and direct thermal printing
• Construction: Metal frame and bi-fold metal media cover with enlarged clear viewing window
• Side-loading supplies path for simplified media and ribbon loading
• Thin film printhead with E3™ Element Energy™ Equalizer for superior print quality
• Communications: USB 2.0, high-speed, RS-232 Serial, 10/100 Ethernet, Bluetooth 4.1, Dual USB Host
• 4.3-inch color touch display with intuitive menu for quick operation and settings management
• Bi-colored status LEDs for quick printer status
• ENERGY STAR™ qualified

Physical Characteristics

Dimensions (closed)	ZT411: 19.5 in. L x 10.6 in. W x 12.75 in. H 495 mm L x 269 mm W x 324 mm H ZT421: 19.5 in. L x 13.25 in. W x 12.75 H 495 mm L x 336 mm W x 324 mm H
Weight	ZT411: 36 lbs./16.33 kg ZT421: 40 lbs./18.14 kg

Printer Specifications

Resolution	203 dpi/8 dots per mm 300 dpi/12 dots per mm (optional) 600 dpi/24 dots per mm (optional for ZT411 only)
Memory	256 MB SDRAM memory 512 MB on-board linear Flash memory
Maximum Print Width	ZT411: 4.09 in./104 mm ZT421: 6.6 in./168 mm
Maximum Print Speed	ZT411: 14 ips/356 mm per second ZT421: 12 ips/305 mm per second
Media Sensors	Adjustable dual media sensors: transmissive and reflective
Print Length	ZT411• 203 dpi: 157 in./3988 mm • 300 dpi: 73 in./1854 mm • 600 dpi: 39 in./991 mm ZT421• 203 dpi: 102 in./2591 mm • 300 dpi: 45 in./1143 mm

Electrical

Auto-detectable (PFC Compliant) 100-240VAC, 50-60Hz
ENERGY STAR qualified

Options and Accessories

On-metal RFID	Field-installable on-metal RFID kit available (ZT411 only, not available on the 600 dpi model)
Connectivity	Two open communication slots to add internal cards for:• Dual band 802.11ax Wi-Fi and Bluetooth 5.3 • Dual band 802.11ac Wi-Fi and Bluetooth 4.2 • Parallel (bi-directional interface) • 10/100 Ethernet • Applicator interface
Media Handling	Rewind: Internally rewinds a full roll of printed labels on 3" core, or peels and rewinds liner (factory installed only) Peel: Front-mount, passive peel option Peel: Liner take-up — additional full-roll liner take-up spindle accommodates standard printer base Cutter: Front-mount guillotine cutter and catch tray 1 in. I.D. Core media supply hanger (ZT411 only) Ink-side in ribbon supply spindle (ZT411 only)
Keyboard Display Unit	ZKDU™ keyboard display units for stand-alone printing applications
Automation	Field-installable kit for the ZT411 for use with automatic labeling system. Includes:• Extended peel mechanism • Captured media spindle • Applicator interface card

Fonts and Graphics

16 resident expandable ZPL II bitmap and two resident scalable ZPL fonts
Asian and other international scalable and smooth bitmapped fonts
Unicode™: For multi-language printing
Downloadable objects include graphics, scalable and bitmap fonts, label templates and formats
IBM Code Page 850 international character sets are available in the fonts A, B, C, D, E, F, G and 0 through software control
Code Page 1250, 1252, 1253, 1254, 1255 Support with font 0
64 MB user-available non-volatile memory storage for downloadable objects
8 MB user-available SDRAM

Barcode Symbologies

Linear Barcodes	Code 11, Code 39, Code 93, Code 128 with subsets A/B/C and UCC Case Codes, ISBT-128, UPC-A, UPC-E, EAN-8, EAN-13, UPC and EAN 2- or 5-digit extensions, Plessey, Postnet, Standard 2-of-5, Industrial 2-of-5, Interleaved 2-of-5, Logmars, MSI, Codabar, Planet Code
Two Dimensional Barcodes	Codablock, PDF417, Code 49, DataMatrix, MaxiCode, QR Code, TLC 39, MicroPDF, RSS-14 (and composite), Aztec

The ZT400 Series RFID is ideal in:

Manufacturing

• Item-level tagging
• Asset tagging
• Work-in-process
• Product iD/serial numbers
• Packaging labels
• Receiving/put-away labeling

Transportation and Logistics

• Order picking/packing
• Shipping/Receiving
• Cross-docking
• Compliance labeling
• Pallet/asset tagging

Retail

• Back-of-store operations
• Item-level tagging
• Distribution centers
• Security tagging

Healthcare

• Laboratory labeling
• Specimen labeling
• Pharmacy labeling
• Asset management/tagging

Media Characteristics

Media Width	ZT411• 1.00 in./25.4 mm to 4.5 in./114 mm tear/cutter • 1.00 in./25.4 mm to 4.25 in./108 mm peel/rewind ZT421• 2.00 in./51 mm to 7.0 in./178 mm tear/cutter • 2.00 in./51 mm to 6.75 in./171 mm peel/rewind
Maximum Media Roll Size	8.0 in./203 mm O.D. on a 3 in./76 mm I.D. core
Thickness	0.0023 in./0.058 mm to 0.010 in./0.25 mm On-metal option: up to 0.059 in./1.5 mm
Media Types	Continuous, die-cut, notch, black-mark

Ribbon Characteristics

Standard Length	1476 ft./450 M
Width	ZT411: 2.00 in./51 mm to 4.33 in./110 mm ZT421: 2.00 in./51 mm to 6.85 in./174 mm
Core I.D.	1.0 in./25 mm

Environmental

Operating Temperature	Thermal transfer: 40° F to 104° F/5° C to 40° C Direct thermal: 32° F to 104° F/0° C to 40° C
Storage/Transportation Temperature	-40° F to 140° F/-40° C to 60° C
Operating Humidity	20% to 85% non-condensing
Storage Humidity	5% to 85% non-condensing

Programming Languages

ZBI 2.0™ — Optional powerful programming language that lets printers run standalone applications, connect to peripherals, and much more.
ZPL and ZPL II™ — Zebra Programming Language provides sophisticated label formatting and printer control and is compatible with all Zebra printers.
EPL and EPL2™ — Eltron™ Programming Language with Line Mode simplifies label formatting and enables format compatibility with legacy applications. (EPL available on 203 dpi models only.)

Agency Approvals

Safety and EMC	IEC 62368, Class B, EN 55032, EN 55035, EN 61000-3-2, EN 61000-3-3
Product Markings	Including, not limited to, cTUVus, CE, FCC, ICES-003(B), VCCI, RCM, NOM, S-Mark, CCC, EAC, BSMI, KCC, SABS, In-Metro, BIS.

Recommended Services

	Zebra OneCare™ maintenance plans provide peak performance and device uptime while protecting your critical operations and your printers with defined service levels. For more information go to www.zebra.com/zebraonecare
Zebra OneCare Select	Comprehensive Coverage, including printheads, normal wear and accidental breakage Priority access 24x7 live technical support and software updates Advance Replacement and Express Shipping (Next Day Device Replacement) Standard Commissioning Online Return Material Authorization (RMA) support
Zebra OneCare Essential	Comprehensive Coverage, including printheads, normal wear and accidental breakage Priority access 8x5 live technical support and software updates Three-day depot repair turnaround time plus free return ground shipping Online Return Material Authorization (RMA) support
	Note: Service availability may vary by region.

Zebra DNA for Printers

This printer is supported by our powerful Zebra DNA suite of applications, utilities and developer tools that give our printers better performance, simplified remote manageability, and easier integration. Zebra DNA features may vary by model and a Support Contract may be required. For more information, please visit:
www.zebra.com/zebradna