Zebra® R110*Xi*™ and R170*Xi*™

Multi-Protocol Printer/Encoders for EPC UHF Tags

Unprecedented Flexibility in RFID Printer/Encoders

Built on the solid, tested *Xi*III*Plus*™ platform, Zebra's R110*Xi* and R170*Xi* printer/encoders offer an unprecedented level of on-demand printing flexibility in tag placement and label size (4-inch and 6-inch), as well as unique features such as XML encoding for a seamless integration into enterprise systems, automatic inlay position calibration, program positioning, multiple power levels for precisely encoding small labels, and statistics tracking, which allows customers to track the number of good and unusable labels.

In addition to providing advanced UHF EPC-compliant Class 1, Class 0, Matrics' 0+ read/write, and ISO 18000-06B capabilities, Zebra's R110*Xi* and R170*Xi* are the only printer/encoders to embed ThingMagic's Mercury4e RFID reader module, which supports both multiple protocols and multiple antennas. The Mercury4e uses advanced software-defined radio technology to read any tag, including all variants of EPC Class 1 and 0, as well as Matrics 0+, ISO 18000-06B and Philips UCODE 1.19, with no compromise in performance. The reader's unique software architecture also allows remote software upgrades for new protocols, including the forthcoming EPC Generation 2. ThingMagic LLC is a leading developer of RFID sensing and embedded computing technologies and the inventor of the agile RFID reader and the first EPC-reader.

The high-performance R110*Xi* (for 4-inch smart labels) and the R170*Xi* (for 6-inch smart labels) have been designed for case- and pallet-level identification for companies needing to streamline logistics and supply chain management and other applications including:

• Asset Tracking

• Inventory Management

• Work in Process

• Shipping/Receiving

• Distribution

powered by
ThingMagic

Built on the Solid *Xi*III*Plus* Platform

The R110*Xi* and the R170*Xi* printer/encoders offer superior connectivity solutions including:

▶ XML-enabled printing—Direct-connect integration for bar code label printing that eliminates license fees and print server hardware, and lowers customization and programming costs

▶ ZebraNet® Wireless Print Server—Secure wireless network connectivity for location-independent printer operations anytime, anywhere

▶ ZebraNet 10/100 Print Server—Flexible 10/100 Ethernet connectivity for high-performance and industrial-strength printers

▶ ZebraLink™ offers effortless installation and convenient real-time, remote printer management

R110*Xi*

The R110*Xi* for 4-inch-wide smart labels is designed for high performance and mission-critical ruggedness in the most demanding environments.

MAXIMUM PRINT WIDTH
203 dpi: 4.0" (103 mm)
300 dpi: 4.0" (103 mm)

RESOLUTION
203 dpi/8 dots per mm
300 dpi/12 dots per mm

PRINT SPEED
203 dpi: 2.4" (61 mm), 3" (76 mm) through 10" (254 mm) per second in 1" (25 mm) increments
300 dpi: 2.4" (61 mm), 3" (76 mm) through 8" (203 mm) per second in 1" (25 mm) increments

PHYSICAL CHARACTERISTICS
Width: 10.37" (263.5 mm)
Height: 15.5" (393.7 mm)
Depth: 19.5" (495.3 mm)
Weight: 50 lbs. (22.7 kg)

MEDIA CHARACTERISTICS
Label and liner width: 203 dpi and 300 dpi: .79" (20 mm) to 4.5" (114 mm)
Ribbon width: 203 dpi and 300 dpi: .79" (20 mm) to 4.33" (110 mm)

R170*Xi*

The R170*Xi* for 6-inch-wide smart labels delivers the legendary 'round-the-clock reliability and heavy-gauge-steel durability of Zebra's high-performance *Xi*™ series.

MAXIMUM PRINT WIDTH
203 dpi: 6.6" (168 mm)
300 dpi: 6.6" (168 mm)

RESOLUTION
203 dpi/8 dots per mm
300 dpi/12 dots per mm

PRINT SPEED
203 dpi: 2.4" (61 mm), 3" (76 mm) through 12" (305 mm) per second in 1" (25 mm) increments
300 dpi: 2.4" (61 mm), 3" (76 mm) through 8" (203 mm) per second in 1" (25 mm) increments

PHYSICAL CHARACTERISTICS
Width: 13.15" (334.4 mm)
Height: 15.5" (393.7 mm)
Depth: 19.5" (495.3 mm)
Weight: 67 lbs. (30.5 kg)

MEDIA CHARACTERISTICS
Label and liner width: 2.0" (51 mm) to 7.1" (180 mm)
Ribbon width: 2.0" (51 mm) to 6.7" (170 mm)

R110*Xi* / R170*Xi*

▶ STANDARD FEATURES

Fully integrated ThingMagic® UHF RFID reader/encoder for transponder types:
- EPC Class 1
- EPC Class 0
- Matrics' 0+
- ISO18000-06B
- EPC "Gen2" via firmware update

RFID processes optimized for fastest label throughput

New RFID ZPL® commands allow ease of RFID set up with maximum flexibility

Program position allows users to place transponders virtually anywhere within a smart label

RFID calibration feature automatically selects the program position for optimal transponder placement

RFID counters keep track of the good and unusable labels

Variable RFID power settings for both read and write allows maximum flexibility for printing small labels

Full function front panel and multilingual back-lit LCD display with user-programmable password protection

ZebraLink, WebView, (requires optional ZebraNet PrintServer II) and Alert (requires optional ZebraNet PrintServer II)

Thin film printhead with E^3® Element Energy Control

Thermal transfer and thermal direct printing of bar codes, text, and graphics

XML-enabled printing

32 bit 133 MHz RISC processor

Type I, II linear memory up to 32 MB and future availability of Type III Series PC Card Interface

Clear media side door—easy monitoring of supplies usage without opening the printer systems

Zebra printer driver for Windows® 3.X and 95/98/NT/2000 operating systems

Internal real-time clock

Advanced label/media counters

Auto calibration—printer calibrates when printer is turned on or when printhead is closed with approximately two labels

Early Warning Systems for low label, low ribbon, and clean printhead alerts

▶ PRINTER SPECIFICATIONS

Memory
Standard 16 MB SDRAM (12 MB available for user); 4 MB Flash (2.0 available to user)

Optional: PCMCIA or CompactFlash® (up to 256 MB memory each)

Print length
Maximum non-continuous: 39" (991 mm) with standard memory

Media Sensors
Dual media sensors: transmissive and reflective

▶ MEDIA CHARACTERISTICS – SMART LABELS

Maximum label and liner length
39"/991 mm with standard memory

Maximum roll outside diameter
8.0" (203 mm)

Core diameter
3" (76 mm) core

Media thickness
.003" (.076 mm) to .0012" (.305 mm)

Media types
Continuous, die-cut, black mark

For optimum print quality and performance, use Genuine Zebra Supplies

▶ RIBBON CHARACTERISTICS

Outside diameter
3.2" (81.3 mm)

Standard length
1476' (450 m) or 984' (300 m); provides 3:1 & 2:1 media roll to ribbon ratios

Ratio
Ribbon is recommended to be at least as wide as media.

Ribbon setup
Ribbon wound coated side out

Core I.D.
1.0" (25.4 mm)

▶ OPERATING CHARACTERISTICS

Environmental
Operating temperature:
Thermal transfer = 41° F/5° C to 104° F/40° C
Thermal direct = 32° F/0° C to 104° F/40° C

Storage temperature: -40° F/-40° C to 140° F/60° C

Operating humidity: 20% to 85% non-condensing R.H.

Storage humidity: 5% to 85% non-condensing R.H.

Electrical
Universal power supply with power-factor correction 90-264 VAC, 48-62 Hz

Agency approvals
Bi-National UL 60950 3rd edition/CSA CAN/CSA-C22.2 No. 60950-00 Third Edition; FCC Part 15.107 & 15.109 Class B; FCC Part 15.247; Canadian ICES-003, Class B; IC RSS-210

▶ RELATED PRODUCTS

Options and Accessories
ZebraNet PrintServer II
- ZebraNet 10/100 Print Server
- ZebraNet Wireless Print Server
- Additional fonts
- RS-422/485 multi-drop (optional adaptor)
- Applicator interface
- IBM® twinax interface
- IBM coax interface
- BAR-ONE® software
- Media supply spindle

(continued)

For More Information

Contact your Zebra representative for additional printer specifications. For information on Zebra's other printers, supplies, software and accessories, ask your reseller, call +1 800 423 0442, or visit our Web site **www.rfid.zebra.com**.

R110*Xi* / R170*Xi*

Options and Accessories (cont.)
Media rewind spindle
Linear PCMCIA cards
ATA-Style PCMCIA cards or CompactFlash (CF) cards

Connectivity
High-speed serial interface
High-speed bi-directional, IEEE 1284-1994 parallel interface
RS-232C with DB9F connector
USB 2.0 port

PROGRAMMING LANGUAGES

Zebra Printer Management
ZebraLink™
ZebraNet™ Utilities
ZebraNet Bridge

Programming Language
ZPL II®—Universal language for Zebra printers. Simplifies label formatting and enables format compatibility with other Zebra printers.
ZBI™—Controls and interprets text and data from peripherals and non-ZPL printer programming languages. Transmits captured data over LAN, WAN, or wireless network via e-mail or TCP/IP messaging.

BAR CODES/SYMBOLOGIES

Linear
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, and Planet Code

FONTS AND GRAPHICS

Character Fonts
Standard bitmapped Zebra fonts: A, B, C, D, E (OCR-B), F, G, H, (OCR-A), GS & Ø Smooth scalable font (CG Triumvirate™ Bold Condensed).

Contains UFST® from Agfa Monotype Corp.

Character Sets
IBM Code Page 850 International characters & graphic symbols

Supports user defined fonts and graphics—including custom logos

Smooth scalable font Ø (CG Triumvirate™ Bold Condensed) is expandable dot-by-dot, height and width independent, while maintaining edges to a max. 1500 x 1500 dots.

IBM Code Page 850 International Characters available in fonts A,B,D,E,F,G and Ø through software control.

Cutting-Edge Features

- Automatic inlay position calibration —Only from Zebra! Saves users the time and frustration of manually calculating the inlay program position on new labels.

- Multiple RFID power settings—Users can adjust the pitch or "spread" of radio waves to accommodate different-sized transponders, for even the smallest labels.

- Flexible inlay placement—A Zebra exclusive since our very first printer/encoder, this feature lets users keep label formats intact while ensuring higher read rates.

- XML-enabled printing—Unique to Zebra's RFID printer/encoders, allows easy integration into enterprise systems without middleware—lowering cost of ownership and easing transition to new label formats.

- Models for 4- and 6-inch label widths—Gives users the flexibility to print and encode most popular label and transponder sizes. Zebra's is the first 6-inch printer/encoder.

- Easier programming—The Zebra Programming Language is now even better! We streamlined it to make it more intuitive and easier to use while ensuring continued support to legacy ZPL applications.

- Front panel display offers more detailed information on tag data, error status and self-test, ensuring that support personnel have the information they need to optimize production and get the maximum quality output from each roll of smart labels.

- Flash upgradeable—Assures maximum flexibility for upgradeability to future protocols like EPCglobal's Gen2, and other future RFID protocols as they evolve.

- Faster throughput—Eliminated backfeed for RFID batches and faster VOID printing means better overall smart label printing performance.