

ZD510-HC Wristband Printer

Specifications are provided for reference and are based on printer tests using Zebra® brand wristbands. Results may vary in actual application settings Zebra recommends always qualifying any application with thorough testing.

STANDARD FEATURES

- Quick and easy media cartridge loading
- Automatic media loading — no user contact with the media during loading or removal
- 300 dpi print resolution (12 dots / mm)
- Healthcare Power Supply
- Link-OS
- Real Time Clock
- Print Speed (automatic selection based on installed wristbands)
 - Prints at 2 inches / second (51 mm / s) with healthcare wristbands
 - Prints at 4 inches / second (102 mm / s) with Fun and Splash hospitality / leisure wristbands
- Direct thermal printing of barcodes, text, and graphics
- Dual-wall frame, impact resistant plastic
- ZPL® or ZPL II® programming language
- 16 MB Standard SDRAM memory (256 MB Standard SDRAM)
- 8 MB Standard Flash memory (512 MB Standard Flash)
- E3™ Element Energy™ Equalizer
- Connectivity: USB 2.0, USB Host, Bluetooth Low Energy, 10/100 Ethernet
- Odometer for print length tracking
- Illuminated Media Low / Media Out indicator
- Tool-less printhead and platen replacement
- Unicode™ compliant for multi-language printing



- XML Enabled Printing — allows XML communications from information systems
- Instant media calibration — no wasted media
- 16 resident expandable bitmap fonts
- Resident scalable font
- Head-up sensor
- Media Low and Media Out sensors
- Standard Tear-off mode feature

OPTIONAL FEATURES

- Factory installed wireless — Wi-Fi certified 802.11ac and Bluetooth 4.1; MFi-certified (Apple)
- Font Packs — Asian and other international font kits
- ZBI 2.0 — Field installed



PRINT DNA SOFTWARE SOLUTIONS

Development Tools — An intuitive, easy-to-use software program for creating complex wristband and label designs, purchased separately (option)

Management Tools — Offers basic features for simple wrist band and label design (standard)

Productivity Tools — A design tool for designing and distributing wristband templates for later recalling and printing via XML data streams

Visibility Tools — Centrally manage Zebra printers from a single PC screen anywhere on your global network (option)

ZBI 2.0 — Powerful programming language that lets printers run standalone applications, connect to peripherals, and much more (option)

ZBI-Developer — Programming utility makes it dramatically easier for programmers to create and test complex ZBI 2.0 programs and distribute them to the printer (standard with ZBI 2.0)

Firmware

ZPL II — Universal language for Zebra printers. Simplifies wrist band and label formatting and enables format compatibility with existing systems that run Zebra printers.

Web View — Connect and control Zebra barcode printers via the printer's Web interface using a common Web browser.

Alert — Printers equipped with ZebraNet print servers will notify you via any email-enabled, wired, or wireless device to minimize downtime.

Z-BAND WRISTBAND CARTRIDGE SPECIFICATIONS

Healthcare wristbands feature silver antimicrobial coating, which test results show effectively protects the wristband against S. aureus, P. aeruginosa, E. coli, and MRSA

Select Wristband Options

Style	Size	Length	
		inches	mm
Z-Band Direct	Adult	1 × 11	25.4 × 279.4
Z-Band Direct	Child	1 × 7	25.4 × 177.8
Z-Band Direct	Infant	1 × 6	25.4 × 152.4
Z-Band QuickClip	Adult	1 × 1.1875	30.16 × 279.4
Z-Band QuickClip	Child	1 × 7	25.4 × 177.8
Z-Band Splash	1 size only	1 × 10	25.4 × 254
Z-Band Fun	1 size only	1 × 10	25.4 × 254

For a complete list of Z-band Wristbands please see Zebra.com

Healthcare

- Z-Band Direct have adhesive closure.
- Wristbands available in White, Red, Blue, Yellow, Green, Orange, Pink and Purple.
- Z-Band QuickClip have clip closure.
- Clips available in White, Red, Blue, Yellow, Green, Pink and Purple.

Hospitality / Leisure

- Z-Band Fun and Splash have adhesive closure.
- Wristbands available in Red, Blue, Yellow, Green, Orange, Pink and Purple.
- Z-Band Splash has waterproof adhesive closure.



CALIBRATION PROCEDURE

The ZD510-HC is equipped with an automatic calibration feature that doesn't waste wristbands.

PRINTING SPECIFICATIONS

- Resolution: 300 dots / inch (dpi) (12 dots / mm)
- Dot size (W x L): 0.0033" x 0.0039" (0.084mm x 0.099mm)
- Minimum print length: 3" (76 mm)
- 3 wristband widths: 0.75", 1.00", and 1.1875" (19.05, 25.4, and 30.16 mm)
- Barcode modulus "X" dimension: 300 dpi = 3.33 mil to 32.67 mil

PHYSICAL SPECIFICATIONS

Attribute	ZD510-HC
Height*	7.0" (178 mm)
Width	5.0" (127 mm)
Depth	9.5" (242 mm)
Weight	3.1 lbs (1.4 kg)

* Requires 6 in. (153mm) above printer to load cartridge

ZPL PROGRAMMING LANGUAGE (ZPL/ZPL II)

- Communicates in printable ASCII characters
- Compatible with mainframe, mini, and PC hosts
- Downloadable objects include graphics and bitmap fonts, wristband templates and formats
- Automatic memory allocation for format while printing
- Automatic serialization of fields
- Format inversion (white on black)
- Mirror-image printing
- Four position field rotation (0°, 90°, 180°, 270°)
- Programmable wristband quantities with print, pause
- Status messages to host upon request

FONT MATRICES: 300 DPI (12 DOTS / MM) PRINTHEADS

Font	Matrix (in dots) (H x W)	Type†	Minimum Character Size (H x W)	Max CPI
A	9 x 5	U-L-D	0.035" x 0.020"	50.5
B	11 x 7	U	0.043" x 0.030"	33.7
C, D	18 x 10	U-L-D	0.070" x 0.040"	25.3
E	41 x 20	OCR-B	0.160" x 0.086"	11.7
F	26 x 13	U-L-D	0.101" x 0.053"	18.9
G	60 x 40	U-L-D	0.234" x 0.158"	6.3
H	30 x 19	OCR-A	0.177" x .0092"	10.8
GS	24 x 24	SYMBOL	0.094" x 0.086"	11.7
P	20 x 18	U-L-D	0.078" x 0.059"	N / A
Q	28 x 24	U-L-D	0.109" x 0.079"	N / A
R	35 x 31	U-L-D	0.137" x 0.102"	N / A
S	40 x 35	U-L-D	0.156" x 0.116"	N / A
T	48 x 42	U-L-D	0.187" x 0.139"	N / A
U	59 x 53	U-L-D	0.230" x 0.175"	N / A
V	80 x 71	U-L-D	0.312" x 0.234"	N / A
Ø	15 x 12	U-L-D	Scalable (Smooth) Font	

† U = Uppercase L = Lowercase D = Descenders

- Character Fonts: Standard bitmapped Zebra fonts: A, B, C, D, E (OCR-B), F, G, H, (OCR-A), GS, P, Q, R, S, T, U, V and Ø Smooth font (CG Triumvirate™ Bold Condensed).
- Supports user defined fonts and graphics — including custom logos
- Bitmap fonts are expandable up to 10 times, height and width independent. Fonts E and H (OCR-B and OCR-A), however, are not considered in spec when expanded.
- Smooth scalable font Ø (CG Triumvirate™ Bold Condensed) is expandable dot-by-dot, height and width independent, while maintaining edges to a maximum 1500 x 1500 dots.

ZPL BARCODE SYMBOLOGIES

- Barcode Ratios: 2:1 (non-rotated) and 3:1
- Linear Barcodes: Code 11, Code 39, Code 93, Code 128, UPC-A, UPC-E, EAN-8, EAN-13, EAN-14, UPC-A and UPC-E with EAN 2 or 5 digit extensions, Plessey, POSTNET, Standard 2 of 5, Industrial 2 of 5, Interleaved 2 of 5, LOGMARS, MSI, Codabar, and GS1 DataBar™ (formerly RSS)
- 2D Barcodes: PDF417, MicroPDF-417, Code 49, Maxicode, Codablock, Data Matrix, QR code, and Aztec

ELECTRICAL SPECIFICATIONS

Universal power supply (PFC Compliant)
100-240VAC, 50-60Hz (70 Watts) External
Power Supply

AGENCY APPROVALS

- Emissions: FCC Part 15, Subpart B, VCCI, RCM
- Emissions & Susceptibility – (CE): EN 55032:2012 class B & EN 55024:2010, EN 61000-3-2, EN 61000-3-3, CISPR 32:2015
- Safety: CB Scheme IEC 60950-1 & IEC 62368-1, TUV NRTL
- Power Supply: IEC 60601-1:2012

ZD510-HC ENVIRONMENTAL SPECIFICATIONS

- Operating Temperature: 32 to 104 (0 to 40 C) for operating temperature
- Storage Temperature: -40° to 140°F (-40° to 60°C)
- Operating Humidity: 20% to 85% non-condensing R.H.
- Storage Humidity: 5% to 85% non-condensing R.H.

WRISTBAND CARTRIDGE ENVIRONMENTAL SPECIFICATIONS

- Service Temperature: -40° to 140° F (-40° to 60° C)
- Storage Temperature: 32° to 70° F (0° to 21° C) at 35% to 50% RH

PREVENTATIVE MAINTENANCE

Zebra recommends cleaning the printer on a regular basis using standard Zebra printer parts and cleaning supplies. Consult your User Guide for further details.

Disinfectants / Cleaning Solutions

Please consult the Guide to Cleaning and Disinfecting Zebra Healthcare Printers on Zebra.com for a full list of approved cleaning and disinfecting agents.

