



## 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](http://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.