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

<table>
<thead>
<tr>
<th>Style</th>
<th>Size</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>inches</td>
</tr>
<tr>
<td>Z-Band Direct</td>
<td>Adult</td>
<td>1 x 11</td>
</tr>
<tr>
<td>Z-Band Direct</td>
<td>Child</td>
<td>1 x 7</td>
</tr>
<tr>
<td>Z-Band Direct</td>
<td>Infant</td>
<td>1 x 6</td>
</tr>
<tr>
<td>Z-Band QuickClip</td>
<td>Adult</td>
<td>1 x 1.1875</td>
</tr>
<tr>
<td>Z-Band QuickClip</td>
<td>Child</td>
<td>1 x 7</td>
</tr>
<tr>
<td>Z-Band Splash</td>
<td>1 size only</td>
<td>1 x 10</td>
</tr>
<tr>
<td>Z-Band Fun</td>
<td>1 size only</td>
<td>1 x 10</td>
</tr>
</tbody>
</table>

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 has 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

<table>
<thead>
<tr>
<th>Attribute</th>
<th>ZD510-HC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height*</td>
<td>7.0&quot; (178 mm)</td>
</tr>
<tr>
<td>Width</td>
<td>5.0&quot; (127 mm)</td>
</tr>
<tr>
<td>Depth</td>
<td>9.5&quot; (242 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.1 lbs (1.4 kg)</td>
</tr>
</tbody>
</table>

* 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

<table>
<thead>
<tr>
<th>Font</th>
<th>Matrix (in dots) (H x W)</th>
<th>Type†</th>
<th>Minimum Character Size (H x W)</th>
<th>Max CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9 x 5</td>
<td>U-L-D</td>
<td>0.035&quot; x 0.020&quot;</td>
<td>50.5</td>
</tr>
<tr>
<td>B</td>
<td>11 x 7</td>
<td>U</td>
<td>0.043&quot; x 0.030&quot;</td>
<td>33.7</td>
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<tr>
<td>C, D</td>
<td>18 x 10</td>
<td>U-L-D</td>
<td>0.070&quot; x 0.040&quot;</td>
<td>25.3</td>
</tr>
<tr>
<td>E</td>
<td>41 x 20</td>
<td>OCR-B</td>
<td>0.160&quot; x 0.086&quot;</td>
<td>11.7</td>
</tr>
<tr>
<td>F</td>
<td>26 x 13</td>
<td>U-L-D</td>
<td>0.101&quot; x 0.053&quot;</td>
<td>18.9</td>
</tr>
<tr>
<td>G</td>
<td>60 x 40</td>
<td>U-L-D</td>
<td>0.234&quot; x 0.158&quot;</td>
<td>6.3</td>
</tr>
<tr>
<td>H</td>
<td>30 x 19</td>
<td>OCR-A</td>
<td>0.177&quot; x 0.092&quot;</td>
<td>10.8</td>
</tr>
<tr>
<td>GS</td>
<td>24 x 24</td>
<td>SYMBOL</td>
<td>0.094&quot; x 0.086&quot;</td>
<td>11.7</td>
</tr>
<tr>
<td>P</td>
<td>20 x 18</td>
<td>U-L-D</td>
<td>0.078&quot; x 0.059&quot;</td>
<td>N / A</td>
</tr>
<tr>
<td>Q</td>
<td>28 x 24</td>
<td>U-L-D</td>
<td>0.109&quot; x 0.079&quot;</td>
<td>N / A</td>
</tr>
<tr>
<td>R</td>
<td>35 x 31</td>
<td>U-L-D</td>
<td>0.137&quot; x 0.102&quot;</td>
<td>N / A</td>
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<tr>
<td>S</td>
<td>40 x 35</td>
<td>U-L-D</td>
<td>0.156&quot; x 0.116&quot;</td>
<td>N / A</td>
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<tr>
<td>T</td>
<td>48 x 42</td>
<td>U-L-D</td>
<td>0.187&quot; x 0.139&quot;</td>
<td>N / A</td>
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<tr>
<td>U</td>
<td>59 x 53</td>
<td>U-L-D</td>
<td>0.230&quot; x 0.175&quot;</td>
<td>N / A</td>
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<tr>
<td>V</td>
<td>80 x 71</td>
<td>U-L-D</td>
<td>0.312 x 0.234&quot;</td>
<td>N / A</td>
</tr>
<tr>
<td>Ø</td>
<td>15 x 12</td>
<td>U-L-D</td>
<td>Scalable (Smooth) Font</td>
<td></td>
</tr>
</tbody>
</table>

†  U = Uppercase  L = Lowercase  D = Descenders

ZPL BARCODE SYMBOLOGIES
- Barcode Ratios: 2:1 (non-rotated) and 3:1
- 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
- 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.