ZEBRA® GK420D™ & GK420T™
PRINTER SPECIFICATIONS

Specifications are provided for reference and are based on printer tests using Genuine Zebra™ supplies and accessories. Results may vary in actual application settings or when using other-than-recommended Zebra supplies. Zebra recommends always qualifying any application with thorough testing.

**Standard Features**

- Maximum speed 5 ips (127 mm/sec)
- OpenACCESS™ design for easy media loading
- 203 dpi print resolution (8 dots/mm)
- Direct thermal (d) and Thermal transfer (t) printing of bar codes, text, and graphics
- Fully-enclosed 5.0” (127 mm) media compartment
- Dual-wall frame construction
- ZPL II® programming language
- EPL2 page mode programming language
- EPL Line Mode support (GK420d)
- 32 bit RISC processor
- 8 MB Standard SDRAM memory (3 MB available to user)
- 4 MB Standard Flash memory (1.5 MB available to user)
- Zebra E³™ Printhead Energy Control
- Triple communications interface: Serial, USB & Parallel
- User interface feed button (ZPL® style)
- Odometer for print length tracking
- Unicode™ compliant for multi-language printing
- Auto-calibration of media
- 16 resident expandable bitmap fonts (ZPL language)
- One resident scalable font (ZPL language)
- 5 resident expandable bitmap fonts (EPL language)
- Auto-switching 100-240V power supply
- IEC 60601-1 Certified (GK420 Healthcare models only)
- Transmissive and reflective media sensing
- Head-up sensor
- Programmable print speed: 2, 3, 4 & 5 ips (51, 76, 102, 127 mm/sec)
- Standard tear-off mode feature
- Zebra printer driver for Windows®
- ENERGY STAR® 2.0 qualified

**Optional Features**

- Dispenser (peeler) – Label peel and present with label present sensor (not available on GK420 Healthcare)
- Ethernet - 10/100 internal offered in combination with USB interface (replaces Serial and Parallel ports)
- Font Packs – Asian and other international font kits
- Power Cord – US, Europe, UK, Australia, Argentina, Japan, and China
- ZBI 2.0™ – Field installed via activation key

**Accessories**

- ZKDU™ and KDU Plus™ – keyboard display units for stand-alone printing solutions

**ZebraLink Solutions**

**Software**

- ZebraDesigner™ Pro – An intuitive, easy-to-use software program for creating complex label designs (option)
- ZebraDesigner – Offers basic features for simple label design (standard)
- ZebraNet™ Bridge Enterprise – Centrally manage Zebra printers anywhere on your global network from a single PC screen (option)
- ZebraNet Utilities v 7.0 – Provides printer administration, management, alerting capabilities and more for Windows® 95/98/2000/2003/ME/NT/XP (standard)
• ZBI 2.0 – Powerful programming language that lets printers run standalone applications, connect to peripherals, and much more (option)
• ZBI-Developer – Programming environment for developers to simplify creation, testing and distribution to printers of complex ZBI 2.0 programs (standard with ZBI 2.0)
• POS Driver – Supports Integration with Windows-based point-of-sale applications.

Networking Options

Ethernet - 10/100 internal - Offered in combination with USB & Serial interface (replaces Serial and Parallel ports)

Firmware

• EPL2 – Eltron Programming Language simplifies label formatting and enables format compatibility with legacy applications
• EPL – Line Mode support (GK420d) enables format compatibility with legacy applications
• ZPL II – Zebra Programming Language Provides sophisticated label formatting and printer control. Compatible with tabletop and mobile Zebra printers.
• Web View – Connect and control Zebra bar code 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

Printing Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>203 dpi (8 dots/mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dot pitch</td>
<td>0.0049&quot; (0.125 mm)</td>
</tr>
<tr>
<td>Maximum print length</td>
<td>39.0&quot; (991 mm)</td>
</tr>
<tr>
<td>Minimum print length</td>
<td>0.005&quot; (0.127 mm – one dot)</td>
</tr>
<tr>
<td>Print length in line mode</td>
<td>Unlimited (GK420d)</td>
</tr>
<tr>
<td>Maximum print width</td>
<td>4.09&quot; (104 mm)</td>
</tr>
<tr>
<td>Minimum print width</td>
<td>0.005&quot; (0.127 mm – one dot)</td>
</tr>
<tr>
<td>Programmable print speed</td>
<td>2, 3, 4 &amp; 5 ips (51, 76, 102, 127 mm/sec)</td>
</tr>
<tr>
<td>Bar code modulus “X” dimension</td>
<td>203 dpi = 5 mil to 50 mil</td>
</tr>
</tbody>
</table>

Media Specifications

NOTE: For optimum print quality and printer performance, use of Zebra genuine supplies is recommended.
• Media Width: 0.75" (19 mm) – 4.25" (108 mm)
• Label Length:
  – Using tear off mode:

<table>
<thead>
<tr>
<th>Minimum Length</th>
<th>Model</th>
<th>Printing Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.38&quot; (9.7 mm)</td>
<td>GK420d</td>
<td>Direct thermal</td>
</tr>
<tr>
<td>0.38&quot; (9.7 mm)</td>
<td>GK420t</td>
<td>Thermal transfer</td>
</tr>
<tr>
<td>0.5&quot; (12.7 mm)</td>
<td>GK420t</td>
<td>Direct thermal</td>
</tr>
</tbody>
</table>

  – Minimum using dispenser - 0.50" (12.7 mm)
  – Maximum - 39.00" (990 mm)
• Core Inner Diameter: 0.5" (12.7 mm), 1.0" (25.4 mm), 1.5" (37.1 mm)
• Max Roll Diameter: 5.00" (127 mm)
• Media Thickness: 0.003" (0.08 mm) - 0.0075" (0.19 mm)
• Media Sensing: fixed reflective and transmissive gap, black line, and notch
• Media Types: Roll-fed or fan-fold, die cut or continuous direct thermal labels with or without black line, tag stock, continuous receipt paper, and wristbands
• Dispenser peeler (optional) may not work with all media types and should be tested for media compatibility.

Calibration Procedure

• The GK420 is equipped with a standard auto-calibration feature that can be set to initiate automatically during start-up of the printer – utilizing two to four labels to calibrate for efficient operation and less waste. The printer will also save the new settings in memory until the next calibration is performed.
• A manual calibration procedure can also be performed, if required. Consult your User’s Guide for more details on the specific manual calibration steps.

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, label 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°)
- Slew command
- Programmable label quantities with print, pause
- Status messages to host upon request

**ZPL Font Specifications**

### 203 dpi (8 dots/mm)

<table>
<thead>
<tr>
<th>Font</th>
<th>Matrix (in dots) (H x W)</th>
<th>Type*</th>
<th>Minimum Char. Size (H x W)</th>
<th>Maximum C.P.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9 x 5</td>
<td>U-L-D</td>
<td>.044&quot; x .030&quot;</td>
<td>33.3</td>
</tr>
<tr>
<td>B</td>
<td>11 x 7</td>
<td>U</td>
<td>.054&quot; x .044&quot;</td>
<td>22.7</td>
</tr>
<tr>
<td>C,D</td>
<td>18 x 10</td>
<td>U-L-D</td>
<td>.089&quot; x .059&quot;</td>
<td>16.9</td>
</tr>
<tr>
<td>E</td>
<td>28 x 15</td>
<td>OCR-B</td>
<td>.138&quot; x .098&quot;</td>
<td>10.2</td>
</tr>
<tr>
<td>F</td>
<td>26 x 13</td>
<td>U-L-D</td>
<td>.128&quot; x .079&quot;</td>
<td>12.7</td>
</tr>
<tr>
<td>G</td>
<td>60 x 40</td>
<td>U-L-D</td>
<td>.295&quot; x .236&quot;</td>
<td>4.2</td>
</tr>
<tr>
<td>H</td>
<td>21 x 13</td>
<td>OCR-A</td>
<td>.103&quot; x .093&quot;</td>
<td>10.8</td>
</tr>
<tr>
<td>GS</td>
<td>24 x 24</td>
<td>SYMBOL</td>
<td>.118&quot; x .118&quot;</td>
<td>8.5</td>
</tr>
<tr>
<td>P-V</td>
<td>15 x 12</td>
<td>U-L-D</td>
<td>Backward compatible w/ S-300</td>
<td></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 = upper case, L = lower case, D = descenders

- 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 max. 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)
- **2-dimensional Barcodes:** PDF417, MicroPDF-417, Code 49, Maxicode, Codablock, Data Matrix, QR code, and Aztec

**EPL Programming Language (EPL2)**

- ASCII EPL2 programming language (Page Mode)
- Field Rotations
- Variable field support (up to 100)
- Counter support (up to 10)
- Variable field addition and subtraction
- Status reporting
- Form, fonts, and graphics storage
- Simple set of formatting commands

**EPL Font Specifications**

### 203 dpi (8 dots/mm)

<table>
<thead>
<tr>
<th>Font</th>
<th>Width (dot)</th>
<th>Height (dot)</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>12</td>
<td>20.3</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>16</td>
<td>16.9</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>20</td>
<td>4.5</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>24</td>
<td>12.7</td>
</tr>
<tr>
<td>5</td>
<td>32</td>
<td>48</td>
<td>5.6</td>
</tr>
<tr>
<td>8-Simp</td>
<td>32</td>
<td>32</td>
<td>6.3*</td>
</tr>
<tr>
<td>8-Trad</td>
<td>32</td>
<td>32</td>
<td>6.3*</td>
</tr>
</tbody>
</table>

* Spacing of Asian characters is controlled via the i command. The formula for CPI is 203 / (32 + i). Thus as i increases, CPI decreases. For example: If i = 2, CPI = 203/34 = 6.0
EPL Barcodes Symbologies
- **Linear barcodes**: Code 39, Code 128A, B & C (User selectable/Auto), UCC/EAN-128, Code 93, Codabar, Interleaved 2 of 5, UPC-A, UPC-E, UPC-A with 2 and 5 add on, UPC-E with 2 and 5 add on, EAN 13, EAN 8, EAN 13 with 2 and 5 add on, EAN 8 with 2 and 5 add on, Postnet (5, 9, 11, & 13 digit), Japanese Postnet, Plessey (MSI-1), MSI-3, German Post Code, and GS1 DataBar (formerly RSS)
- **2-dimensional Barcodes**: Maxicode (modes 2,3,4,6), PDF417, MacroPDF417, QR Code, Data Matrix, and Aztec

Communications Specifications
- Centronics® Parallel (36 Pin) connector ports
- RS-232 auto-sensing, adaptive Serial interface, DB-9
- USB V1.1, bi-directional
- Internal 10/100 Ethernet – optional (replaces Serial and Parallel ports)

Electrical Specifications
- Auto-detectable (PFC Compliant) 100-240VAC, 50-60Hz rated at 70Watts
- ENERGY STAR 2.0 qualified printers
- IEC 60601-1 Certified (GK420 Healthcare models only)

Agency Approvals
**G-Series GK420 Models (excluding Healthcare):**
- **Emissions**: FCC Part 15, Subpart B (Class B), ICES 003, VCCI, C-Tick, CQC, EAC, KCC, BSMI, ICES-003
- **Emissions and Susceptibility**: EN55022 (Class B), EN55024, EN61000-3-2, EN61000-3-3
- **Safety**: CB Scheme IEC 60950-1, TUV NRTL, C-Tick, CCC, NOM, EAC, KCC, BSMI, BIS

**GK420 Healthcare Models:**
- **Emissions**: FCC Part 15, Subpart B (Class B), ICES 003
- **Emissions and Susceptibility**: EN55022 (Class B), EN55024, EN61000-3-2, EN61000-3-3
- **Safety**: CB Scheme IEC 60950-1, TUV NRTL

Physical Specifications *(no options installed)*

<table>
<thead>
<tr>
<th></th>
<th>GK420d</th>
<th>GK420t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>6.0” (152 mm)</td>
<td>7.5” (191 mm)</td>
</tr>
<tr>
<td>Width</td>
<td>6.75” (171 mm)</td>
<td>7.6” (193 mm)</td>
</tr>
<tr>
<td>Depth</td>
<td>8.25” (210 mm)</td>
<td>10.0” (254 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.0 lbs (1.4 kg)</td>
<td>4.6 lbs (2.1 kg)</td>
</tr>
</tbody>
</table>

Environmental Specifications
- Operating Temperature: 40º to 105ºF (4.4º to 41ºC)
- Storage Temperature: -40º to 140ºF (-40º to 60ºC)
- Operating Humidity: 10% to 90% non-condensing R.H.
- Storage Humidity: 5% to 95% non-condensing R.H.

Healthcare Features *(Healthcare models only)*
- Disinfectant-ready plastics
- Approved cleaning agent ingredients (see separate “Guide to Disinfecting and Cleaning Zebra Healthcare Printers” for more details):
  - Isopropyl and Ethyl alcohol (including wipes)
  - Ammonium
  - Hydrogen peroxide
  - Phosphoric acid
  - Bleach/sodium hypochlorite
  - Mild dish soap
- Medical-grade power supply certified to IEC 60601-1 standards to protect patient and staff safety by reducing the risk of electrical shock
- Enable production of labels that meet the Clinical and Laboratory Standards Institute® (CLSI) harmonization standard
- Certified and recommended by all of the leading Electronic Health Records (EHR) providers
Preventative Maintenance
Zebra recommends cleaning the printer on a regular basis using standard Zebra printer parts and cleaning supplies. Consult your User’s Guide for further details.

Cleaning: The exterior is cleaned with a lint-free cloth and, if necessary, a mild detergent solution or desktop cleaner. Interior components are cleaned with 70% isopropyl alcohol (IPA) or blown air to remove any particles. (For Healthcare models see separate “Guide to Disinfecting and Cleaning Zebra Healthcare Printers”)

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