ZEBRA TECHNOLOGIES

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ZEBRA GX420D™, GX420T™ AND GX430T™ PRINTER SPECIFICATIONS

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

Standard Features

- Speed up to 6 ips (152 mm/second)
- Direct thermal (d) and Thermal transfer (t) printing of barcodes, text and graphics
- Print speed up to 4 ips (102 mm/second) - GX430t
- OpenACCESS™ design for easy media loading
- 203 dpi print resolution (8 dots/mm)
- 300 dpi print resolution (12 dots/mm) - GX430t
- 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 - GX420d
- 32 bit RISC processor
- 8 MB Std SDRAM memory (3 MB available to user)
- 4 MB Std 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 printer length tracking
- Unicode™ compliant for multi-language printing
- Simplified calibration of media
- 16 resident expandable ZPL II bitmap fonts
- One resident scalable ZPL font
- Five resident expandable EPL2 fonts
- Auto-switching 100-240V power supply
- Transmissive and reflective media sensing
- Head-up sensor
- Standard tear-off mode feature
- Programmable print speeds of 2, 3, 4, 5 & 6 ips (51, 76, 102, 127 & 152 mm/seconds)
- Zebra printer driver for Windows™

Optional Features

- **64 MB Flash Memory with Real-Time Clock** – total of 68 MB (65.5 MB available to user) for applications requiring additional levels of memory, time and date information
- **Adjustable Media Sensor** – full-width reflective black line sensor and multi-position gap sensor
- **Ethernet –** 10/100 internal offered in combination with USB v1.1 & Serial interface (replaces Parallel port)
- **Wireless** – 802.11b/g or Bluetooth™ 2.0 with LCD display (replaces Parallel port)
- **Dispenser (peeler)** – Label peel and present with present sensor
- **Cutter:**
  - Continuous paper, linered label & tag stock
  - Thickness up to 0.0069" (0.175 mm)
- **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

- **KDU Plus**™ – full-size keyboard with LCD for stand-alone printing applications
- **KDU** – Keyboard Display Unit for stand-alone printing applications where space is limited

ZebraLink™ Solutions

Software

- **ZebraDesigner Pro** – An intuitive, easy-to-use software program for creating complex label designs (optional)

- **ZebraDesigner** – Offers basic features for simple label design (standard)
- **ZebraNet Bridge Enterprise** – Centrally manage Zebra printers from a single PC screen at different places on your global network (option)
- **ZebraNet Utilities v 7.0** – Provides enhanced printing, conversion and administration capabilities; message management and more (standard)
- **Zebra Universal Driver** – A powerful driver available from Zebra for Windows 95/98/2000/2003/ME/NT/XP (standard)
- **ZebraDesigner Driver** – Zebra driver compliant with Windows 95/98/2000/2003/ME/NT/XP and Vista (downloadable from www.Zebra.com)
- **ZBI 2.0** – Powerful programming language that lets printers run stand-alone applications, connect to peripherals and much more (optional)
- **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)

Networking Options

- **Ethernet** – **10/100 internal** offered in combination with USB v1.1 & Serial interface (replaces Parallel port)
- **Wireless** – 802.11b/g or Bluetooth 2.0 with LCD display (replaces Parallel port)

Firmware

- **EPL2** – Eltron Programming Language simplifies label formatting and enables format compatibility with legacy applications
- **EPL** – Line Mode support (GX420d) enables format compatibility with legacy applications
- **ZPL II** – Universal language for Zebra printers. Simplifies label formatting and enables format compatibility with existing systems that run Zebra printers.
- **Web View** – Connect and control Zebra bar code printers via the printer's Web interface using a common Web browser (ZPL mode)
- **Alert** – Printers equipped with ZebraNet print servers will notify users via an email-enabled, wired or wireless device to decrease downtime (ZPL mode)

Printing Specifications

Resolution	203 dots/inch (dpi) (8 dots/mm)	300 dots/inch (dpi) (12 dots/mm)
Speed inch/sec - ips (mm/sec)	Programmable 2, 3, 4, 5 with up to 6 (51, 76, 102, 127 with max.152)	Programmable 2, 3 with up to 4 (51, 76, with max.102)
Dot pitch	0.0049" (0.13 mm)	0.0033" (0.08 mm)
Print length up to	39.0" (991 mm)	39.0" (991 mm)
Print length up to	One dot	One dot
Print width up to	4.09" (104 mm)	4.09" (104 mm)
Print width down to	One dot	One dot
Barcode modulus "X" dimension	5 mil to 50 mil	3.27 mil to 32.67 mil

Ribbon Specifications
NOTE: For better print quality and printer performance, use of Zebra certified ribbon is recommended as well as a notched ribbon core.
- Ribbon Width: 1.33" (33.8 mm) to 4.3" (109 mm)
- Ribbon Capacity: 1 roll of ribbon per 1 roll of 5" OD media
- Core ID: 0.5" (12.7 mm)
- Ribbon OD: 1.36" (35 mm)
- Ribbon Length: 244' (74 m) using 0.000328" ribbon thickness
- Ribbon Type: wax, wax/resin and resin

Media Specifications
NOTE: For better print quality and printer performance, use of Zebra certified supplies is recommended.
- Media Width: 0.75" (19 mm) to 4.25" (108 mm)
- Label Length:
  - Using tear-off mode:
  - With label present sensor used – down to 0.50" (12.7 mm)
  - With cutter – down to 1.0" (25.4 mm)
- With standard memory- up to 39.00" (990 mm)
- Core Inner Diameter: 0.5" (12.7 mm), 1.0" (25.4 mm), 1.5" (37.1 mm)

- 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 mark, tag stock, continuous receipt paper and wristbands
- Dispenser peeler (optional) may not work with all media types and should be tested for media compatibility

Length Down to	Model	Printing Mode
0.38" (9.7 mm)	GX420d	Direct thermal
0.38" (9.7 mm)	GX420t & GX430t	Thermal transfer
0.50" (12.7 mm)	GX420t & GX430t	Direct thermal

Calibration Procedure

- The GX420 and GX430 are 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 added 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 (0º, 90º, 180º, 270º)
- Slew command
- Programmable label quantities with print, pause
- Status messages to host upon request

ZPL Font Specifications
203 dpi (8 dots/mm)

Font	Matrix (in dots) (H x W)	Type*	Char. Size Down to (H x W)	C.P.I. Up to
A	9 x 5	U-L-D	.044" x .030"	33.3
B	11 x 7	U	.054" x .044"	22.7
C,D	18 x 10	U-L-D	.089" x .059"	16.9
E	28 x 15	OCR-B	.138" x .098"	10.2
F	26 x 13	U-L-D	.128" x .079"	12.7
G	60 x 40	U-L-D	.295" x .236"	4.2
H	21 x 13	OCR-A	.103" x .093"	10.8
GS	24 x 24	SYMBOL	.118" x .118"	8.5
P-V		U-L-D	Backward compatible w/ S-300	
Ø	15 x 12	U-L-D	Scalable (Smooth) Font	

300 dpi (12 dots/mm), GX430t

Font	Matrix (in dots) (H x W)	Type*	Char. Size Down to (H x W)	C.P.I. Up to
A	9 x 5	U-L-D	.030" x .020"	50.8
B	11 x 7	U	.037" x .030"	33.8
C,D	18 x 10	U-L-D	.060" x .040"	25.4
E	41 x 20	OCR-B	.138" x .085"	11.5
F	26 x 13	U-L-D	.085" x .053"	19.06
G	60 x 40	U-L-D	.200" x .160"	6.36
H	30 x 19	OCR-A	.100" x .098"	10.02
GS	24 x 24	SYMBOL	.80" x .80"	12.7
P-V		U-L-D		
Ø	15 x 12	U-L-D	Scalable (Smooth) Font	

U = upper case, L = lower case, 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 & 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 up to 1500 x 1500 dots
  *Contains UFST™ from Agfa Monotype Corporation

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:** PDF417, MicroPDF-417, Code 49, Maxicode, Codablock, Data Matrix, QR code, Aztec

EPL Programming Language (EPL2)

- ASCII EPL2 programming language (Page Mode)
- EPL Line 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
- Support of selected barcodes

EPL Font Specifications
203 dpi (8 dots/mm)

Font	Width (dot)	Height (dot)	C.P.I.
1	8	12	20.3
2	10	16	16.9
3	12	20	4.5
4	14	24	12.7
5	32	48	5.6
8-Simp	32	32	6.3**
8-Trad	32	32	6.3*

**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

300 dpi (12 dots/mm)

Font	Width (dot)	Height (dot)	C.P.I.
1	12	20	25.0
2	16	28	18.8
3	20	36	15.0
4	24	44	12.5
5	48	80	6.3

EPL Barcodes

- **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:** Maxicode (modes 2,3,4,6), PDF417, MacroPDF417, QR Code, Data Matrix and Aztec

Communications Specifications

- Centronics™ Parallel (36 Pin) connector ports
- RS-232 Serial interface, DB-9
- USB V1.1
- Internal 10/100 Ethernet – optional (replaces Parallel port)
- Wireless – 802.11b/g or Bluetooth with LCD display – optional (this configuration Parallel port)

Electrical Specifications

- Auto-detectable (PFC Compliant) 100-240VAC, 50-60Hz, rated at 100 Watts

Agency Approvals

- **Emissions**: FCC Part 15, Subpart B, VCCI, C-Tick
- **Emissions and Susceptibility**: (CE): EN55022 Class-B, EN61000-3-2, EN61000-3-3 and EN55024
- **Safety***: CB Scheme IEC 60950:1991 +A1 +A2 +A3 +A4, TUV NRTL, IRAM, NOM, AAMI, and CCC

Physical Specifications
(no options installed)

	GX420d	GX420t/GX430t
Height	6.0" (152 mm)	7.5" (191 mm)
Width:	6.75" (171 mm)	7.6" (193 mm)
Depth:	8.25" (210 mm)	10.0" (254 mm)
Weight:	3 lbs (1.4 kg)	4.6 lbs (2.1 kg)

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.

Preventative Maintenance

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