Barcode Blaster CL

Direct thermal linerless bar code printer

Models BL422003
BL423002

User's Guide

FCC Notice

This equipment has been tested and been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Notice

Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

> *Note:*
>
> This manual does not contain printer programming information. A disk containing the Intellidriver™, a Windows driver for printers, is shipped with every Barcode Blaster printer. The Intellidriver lets you print labels directly from your favorite Windows applications, without programming.
>
> For those who do want to control their printer directly, a file called PROGGDE.HLP on the disk contains printer programming information in Windows Help format. You can load and read this file using WINHELP.EXE provided with Microsoft Windows 3.1 or above. Please refer to your Windows documentation if you do not know how to do this.
>
> If you need programming information and are not using Windows (or cannot read the Help file for any other reason), contact our Technical Support Services Organization for assistance. Contact information is on page 14.

Contents

PRINTER SPECIFICATIONS

Print method:	Direct thermal	**Communications:**	RS232 serial and Centronics parallel interfaces
Print pitch:	BL4220: 203/101 DPI *8/4d/mm*		
	BL4230: 300/150 DPI *11.8/5.9d/mm*	**Text fonts:**	3X5, 5X7, 8X8, 9X12, 12X16, 18X23, 24X31, UltraFont A, B, & C, CG Triumvirate in 7 sizes
Max. print speed:	BL4220: 3 IPS *76mm/sec*		
	BL4230 2 IPS *51mm/sec*	**Text rotation:**	0, 90, 180, 270 deg.
Max. media width:	4.25" *108mm*	**Graphics:**	PCX, BMP file support plus Cognitive format
Min. label width:	2" *50mm*	**Bar codes:**	UPCA/E/E1, ADD2/5, EAN8/13/128, Code39, I2OF5, Code128A/B/C, CODABAR, Plessey, MSI, MSI1, Code93, POSTNET, MaxiCode
Max. media roll diameter:	4.7" *119mm*		
Max. print width:	4.1" *104mm*		
Max. print length*:	BL4220: 22" *559mm* BL4230: 10" *254mm*		
		Bar code rotation:	0 and 90 deg. CW
Media types:	Continuous form linerless label or backless receipt stock; maximum thickness 0.004" *0.10mm*	**Power:**	19.6 VAC, 80W ave. while printing. Plug-in 120 VAC power supply provided w/printer
		Environmental:	5 to 40 C operating -20 to 50 C storage 25 to 85% non-condensing relative humidity
Installed RAM:	512 kB, plus 512 kB flash memory		
		Size:	6.1"H x 6.8"W x 10.4"D *155 x 173 x 264 mm*
		Weight:	4.5 lbs. *2.1 kg* (without media)

* Maximum print length is at maximum width and pitch, default memory settings, standard RAM, minimum stored objects.

SUPPLIED AND OPTIONAL ACCESSORIES

Supplied accessories

Power supply:	120 VAC input, 80 W.
Driver disk:	*Intellidriver* allows any Microsoft Windows application to print to Barcode Blaster. Drivers are included for Windows 95, NT, and 3.1/3.11.
Label design software:	*LabelMagic* is a WYSIWYG label design program for Windows 95, NT, and 3.1/3.11.

Optional accessories

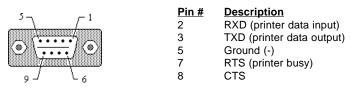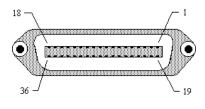|		
Cables:		
Parallel:	Standard Centronics, P/N 61-00-0002	
Serial: (null modem cfg.)	DB9 to DB9, P/N 90-88-0079	
	DB9 to DB25, P/N 90-88-0078	
Memory:	Factory installed 2 MB or 4 MB added flash RAM	
Other:	Annual service contract	

COMMUNICATION PORTS

Blaster CL printers are equipped with Centronics parallel and RS232 serial communication ports, wired as shown below.

Serial input connector (DB9S)

Pin #	Description
2	RXD (printer data input)
3	TXD (printer data output)
5	Ground (-)
7	RTS (printer busy)
8	CTS

Parallel input connector (Centronics 36 pin)

Pin #	Description
1	Strobe
2 - 9	Data bits 0 - 7
10	Acknowledge
11	Busy
12	Out of paper
13	Select
17	Chassis ground
18	+5VDC
31	Reset
32	Error
16, 33, 19-30	Signal ground
14, 15, 34-36	No connection

See "Optional Accessories" on page 2 for standard cable part numbers and descriptions.

Serial port parameters

Blaster CL printers are configured as DTE equipment, and use RTS/CTS handshaking or XON/XOFF protocol (control characters are DC1 and DC3). The serial port supports the following parameters:

Speed:	600, 1200, 2400, 4800, 9600, 19200
Parity:	Odd, Even, or None
Word length:	7 or 8 bits
Stop bits:	1 or 2 bits
Default parameters:	9600 baud, no parity, 8 data bits, 1 stop bit

Note:

All Barcode Blaster printers require a "null modem" when connected to another DTE device (i.e., a personal computer). The serial cables listed as accessories on page 2 are wired in a null modem configuration. Other cables may require an external null modem adapter.

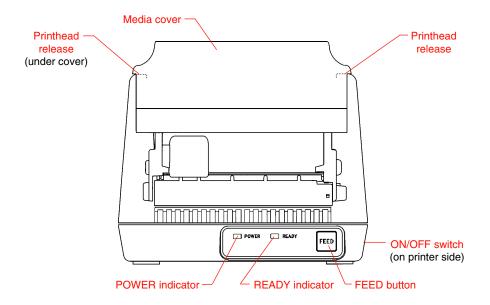Media cover

Printhead
release
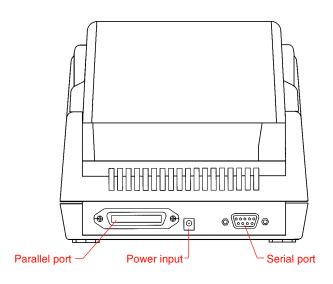(under cover)

Printhead
release

ON/OFF switch
(on printer side)

POWER indicator

READY indicator

FEED button

Figure 1. Printer front view

Parallel port

Power input

Serial port

Figure 2. Printer rear view

CONTROLS, INDICATORS, AND CONNECTIONS

Device name	Primary function	Use
ON/OFF switch	Controls printer power	ON - for normal operation OFF - for storage
FEED button	Advances print media	PRESS - to advance media PRESS and HOLD while turning printer ON - to print test label PRESS to pause or resume printing during batch mode operation
POWER indicator	Shows printer power is ON	GREEN - printer power on OFF - printer power off
READY indicator	Shows printer status	GREEN - Printer ready for data OFF - Printer busy, or in Standby RED - Printer needs attention
Power input	Connects to power supply	Connect to transformer provided with printer
Serial port	Data input	DB9 female connector for connection to host, RS232 protocol
Parallel port	Data input	Centronics compatible connector for connection to host controller
Printhead releases	Unlock printhead	Push both releases toward rear of printer to release printhead
Media cover	Protects print media	Lift to open Squeeze hinge and lift to remove

SETUP

Printer power connection

1. Plug the output of the AC power supply provided with the printer into the connector on the printer rear panel.

2. Plug the supply into an AC outlet having the proper voltage.

> **Important!**
> The required AC voltage is marked on the power supply. Confirm that your AC voltage matches the power supply requirements. **Do not use any power supply other than the one provided with the printer.**

3. Place the ON/OFF switch in the ON position. The printer should feed and cut about ¾" of media. The POWER indicator should glow green. The READY indicator will glow green after you remove the cut label.

Loading print media

1. Lift open the media cover.

2. Press the two printhead releases back to unlock the printhead.

3. Lift the printhead until it is fully raised.

> **WARNING!**
> Raising the printhead will expose some sharp edges. Watch where you put your hands when working under the front edge of the printhead.

4. Remove any print media or empty media core from the printer.

5. Unwrap the new media, and unwind a few inches from the roll.

6. Remove the paper spindle and slide the paper guide to the right.

7. Insert the spindle into the label roll. Orient the roll such that the paper guide is at the right side of the roll and the media unwinds from the top of the roll toward the front of the printer. *The media imaging surface must face up as it passes under the printhead.*

8. Lower the media roll into the paper tray and slip the free end of the media under the printhead.

9. Adjust the paper guide until the media is snug between the paper guide and the left side of the paper tray.

> **Note:**
> The media must feed straight through the printer for the cutter to work properly. The left edge of the media will align with the scribed line at the left end of the label platform if the media is correctly aligned.

10. Lower the printhead and press it down firmly until it locks closed on both sides.

> **Note:**
> The cutter will not operate correctly unless the printhead is securely locked down on both sides.

11. Confirm that the printer is turned ON. The READY indicator will glow red.

12. Press and release the FEED button. The printer will feed and cut about ¾" of media. The READY light will glow red until you remove the cut piece from the label platform.

13. Close the media cover.

Figure 3. Printer opened for loading

Media cover

Printhead/cutter

Printhead releases

Label roll

Label platform

ON/OFF switch

Align left paper edge with line on label platform as indicated by arrow

Paper spindle

Paper guide

Spindle guide channels

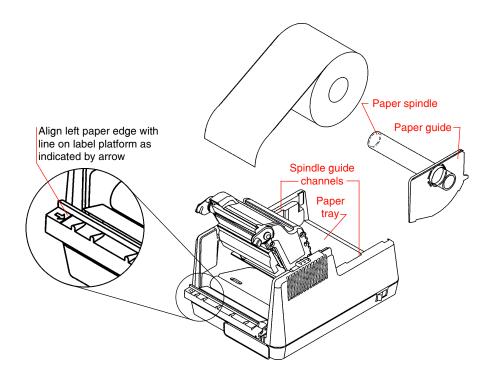Paper tray

Figure 4. Printer and adjustable paper spindle

USING THE PRINTER

Printing a self-test label

Printing a self-test label checks the printer's overall operability. To run a self-test, confirm that the printer is ready to print (media loaded, POWER and READY indicators green, no print jobs in process). Then:

1. Turn the printer OFF.

2. Press and hold in the FEED button, then turn the printer ON.

3. The printer should begin printing a self-test label. Release the FEED button after printing starts.

4. After the self-test label finishes printing, turn the printer OFF and back ON again restore normal operation.

> ### Important!
> The printer will be in hex dump mode after printing the self-test label. It cannot print normal labels in hex dump mode. The printer will return to normal operation after you reset it as described in step 4 above.

Feeding media

Press the FEED button to feed media. The printer will feed media as long as you hold in the FEED button.

Sending data to the printer

To print labels using data sent from a host computer or terminal:

1. Connect the host and printer serial or parallel ports together using a correctly wired interface cable.

2. If you are using the serial port, confirm that the host and printer are using the same communications parameters.

3. Confirm that the POWER and READY indicators are glowing green.

4. Send your data to the printer.

Printing labels

To print labels, the host computer sends commands to the printer via the serial or parallel communications port.

If you use a label printing software package, the computer and software control the entire printing process. You only need to set up

the printer, start your label printing program, and follow its instructions. Contact the software supplier or manufacturer if you encounter difficulties when using commercial software.

Controlling the printer using direct commands

You can also produce labels by sending commands directly to the printer. Simple ASCII commands control the printer. You can write command files using any word processor that can output ASCII text.

Since printer programming is potentially complex, programming information is not provided here. A printer command reference and basic programming procedures are provided on the floppy disk packed with the printer. The file PROGGDE.HLP on the disk is a Microsoft Windows Help file, readable using WINHELP.EXE provided with Microsoft Windows 3.1 or above.

If you need programming information and are not using Windows (or cannot read the Help file for any other reason), contact our Technical Support Services Organization for assistance. Contact information is on page 14 of this manual.

ROUTINE MAINTENANCE

Cognitive printers need very little maintenance other than occasional cleaning. Clean the printer body as required, using a soft cloth moistened with a mild detergent cleaner.

> **Caution!**
> Do not clean any part of the printer using abrasive or metallic objects, or ammonia-based cleaners or other harsh chemicals. These practices can cause serious damage.

Cleaning the printhead and drive roller

Clean the printhead if it appears dirty or if print quality is poor. Printhead cleaning is easy and fast (refer to Figure 5):

1. Unlock and raise the printhead if it is not already raised.

2. Using a soft cloth moistened with 99% pure isopropyl or denatured alcohol, clean all dirt and label residue from the printhead. Pay particular attention to the "burn line" (this is the thin black line near the front edge of the printhead).

3. Wipe the drive roller with the cleaning cloth. To reach all portions of the drive roller, press the FEED button. The roller will rotate backwards ¼ turn each time you press the FEED button.
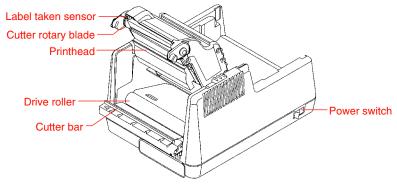
Figure 5. Printer open for cleaning

Caution!
Keep all objects clear of the drive roller when you press the
FEED button.

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4. Confirm that the label taken sensor is unobstructed. Clean away any obstruction with a soft brush if necessary.

5. Load media as required, or if there is already media in the printer, lower and lock the printhead and press the FEED button once.

Cleaning the cutter

WARNING!
Don't clean the cutter with the printhead down. Turn the
printer OFF and raise the printhead first. *Never* push objects
into the front of the printer while the printhead is down.

Clean the cutter with 98% to 99% pure isopropyl or denatured alcohol and cotton tipped swabs as follows:

1. Confirm that the printer is turned OFF, then open the media cover.

2. Press the two printhead releases toward the rear of the printer to unlock the printhead. Lift the printhead until it is fully raised.

3. Remove any installed label media.

4. Using a cotton swab moistened with alcohol, clean all dirt and label residue from the cutter bar and the cutter rotary blade.

5. Check the paper path for label debris or obstructions. Clean the paper path as required.

6. Reinstall the label media.

7. Lower the printhead and press it down until it locks closed.

WHAT TO DO IF...

Cognitive printers are very reliable, so printing problems are unlikely. If you do think you have a printer problem, proceed as follows:

1. Confirm that the printer has the right media installed, and that it is loaded correctly. See page 6 for media loading instructions.

2. Confirm that the printer is connected to its power supply and the supply is plugged into an AC outlet having the proper voltage.

3. Open the printhead and inspect the media path. Remove any obstructions and clean the printhead, drive roller, and cutter according to the instructions on pages 9 and 10.

4. Press down firmly on the printhead to confirm that it is closed.

5. Confirm that the printer READY indicator glows green.

6. Print a self-test label as described on page 8.

7. Press FEED to confirm that the printer will feed media.

8. Review the common problems described in the following section.

9. If these steps do not correct the problem, contact your Cognitive Solutions dealer or our Technical Services Department. You will find Technical support contact information on page 14.

> **Note:**
> The information here assumes you are using label printing software. If you are programming the printer, please review the troubleshooting information in the PROGGDE.HLP file.

Common problems and their solutions

POWER indicator is not lit

Double-check the AC source and the power supply connections. If this does not correct the problem, the power supply may have a blown fuse. Contact our Technical Support Services Department for assistance.

READY indicator is not lit

Disconnect the cable between the printer and host, then turn the printer OFF and back ON again. If the READY light glows with the host disconnected, suspect a host computer or cabling problem.

READY indicator glows red

1. Confirm that the print media is not exhausted.

2. Confirm that the printhead is securely latched down on both sides.

3. Press the FEED button to assure that the printer is not paused in batch mode printing.

4. Remove any cut labels from the label platform, and confirm that the label taken sensor is unobstructed.

5. If you have been printing many labels, the printer may have overheated. Normal operation will resume after the printer has cooled sufficiently.

Self-test label will not print

1. Confirm that you have loaded direct thermal media.

2. Disconnect the cable between the printer and the host computer. Turn the printer OFF and back ON again, remove any cut media from the label platform, then repeat the self-test.

Media will not feed

1. Confirm that the print media is loaded correctly.

2. Turn the printer OFF and back ON again, remove any cut media from the label platform, confirm that the READY indicator glows green, then press the FEED button.

3. If the printer still does not feed, disconnect the communications cable and repeat step 2. If the printer feeds with the cable disconnected, suspect a problem with the host computer or cable.

Host stops responding or displays "printer not ready" message

1. Review your software setup, following the instructions provided with the software.

2. Confirm that the host-to-printer communication cable is connected and undamaged. If the printer is connected to the serial port on a personal computer or other DTE device, confirm that you are using a null modem cable or adapter.

3. If using the serial port, confirm that the host and printer are both using the same serial port parameters. The self-test label shows the current printer serial port parameters.

4. If using a communications switch between the host and printer, remove the switch and connect the printer directly to the host.

5. Turn the printer OFF and back ON again, reset the host computer and software, and try printing again.

Printer feeds media continuously

If using continuous-form media, the printer should only feed media while you hold in the FEED button. It should stop feeding after it prints the last dot row on each label. If the printer will not stop feeding media:

1. Confirm that the print media is loaded correctly.

2. Turn the printer OFF and back ON again to assure that it is operating in its default indexing mode.

3. Print a self-test label as described on page 8, and confirm that the printer is set for BAR indexing. If it is set for GAP indexing, change the index method in your label printing software or use the VARIABLE FEED_TYPE command to set the index method to BAR. Refer to the PROGGDE.HLP file for more information.

Automatic label cutter does not run

1. Confirm your label printing software is correctly configured for Barcode Blaster CL. Refer to your software documentation for details. If writing your own label formats, confirm that VARIABLE AUTOCUT is ON, or that there is a HALT command in every label format. Refer to the PROGGDE.HLP file for more information.

2. The cutter may be jammed. Clean the cutter as described on page 10, and check the cutter and paper path for obstructions.

Cutter does not fully cut labels

1. Confirm that the print media is straight in the paper path, with the label roll snug between the paper guide and the left side of the paper tray.

2. Confirm that the printhead is fully locked down on both sides.

3. Confirm that you are using approved linerless label media or backless receipt stock, with a thickness of 0.004″ or less.

4. If the above items do not resolve the problem, remove the print media and clean the cutter, then reinstall the print media.

Poor print quality

1. Confirm that the print media is properly loaded, and there is no side-to-side motion of the paper as it feeds through the printer.

2. Check your software's print darkness and print speed settings. These settings may need adjustment for optimum results.

3. Try different print media. Old or inferior quality media will degrade print quality.

4. Thoroughly clean the printhead, and examine the printhead and drive roller for physical damage.

TECHNICAL SUPPORT

Please contact your local dealer first for technical support. Your dealer is knowledgeable about Cognitive printers, printing software, and your unique system. Contact our Technical Support Services Department if you still need technical assistance after talking to your dealer.

If you must return any products to the factory, first obtain a returned material authorization number (RMA) from our Technical Support Services Department. When calling, *please* have your printer model number and serial number handy.

APPENDIX A: SUPPLIED SOFTWARE

Software is included with every Barcode Blaster printer for use with Microsoft Windows 95, Windows NT, Windows for Workgroups, or Windows 3.1/3.11. Two basic packages are provided:

- The *Intellidriver*™ lets you print labels with your printer using virtually any Windows application.

- *LabelMagic*™ is a full-featured WYSIWYG label layout and printing package specifically designed for use with Cognitive printers.

These software packages and a Blaster printer give Microsoft Windows users an easy to use label printing solution with nothing else to buy.

Intellidriver installation and use

An automatic setup program, SETUP.EXE, is provided with the Intellidriver. Install the desired printer drivers by running SETUP.EXE from within Windows and following the displayed instructions. Restart your system after installing the Intellidriver.

After the drivers are installed, you can send data to your label printer just like any other printer on your system: simply specify Barcode Blaster CL in the print dialog box of your Windows application. To print bar codes, enter bar code data using any text font, then highlight the information you want to print as a bar code and select the desired bar code font from your application's font menu. The driver will convert the text to an on-screen representation of a generic bar code.

On-line help for the Intellidriver is available from the printer setup window, which is accessible from the print dialog box of most Windows applications. Please refer to the on-line help and the README.TXT file on the Intellidriver disk for detailed operating instructions.

LabelMagic installation and use

An automatic installation program, SETUP.EXE, is provided on the LabelMagic installation disk. Install LabelMagic by running SETUP.EXE and following the displayed instructions. The installation program will copy the program files to your system and install program icons on your desktop and/or system Start Menu.

LabelMagic has a complete context-sensitive help system that describes all aspects of the program's use. You can access the help system by selecting **Help** from the program's main menu. Please refer to the help system and the README.TXT file on the LabelMagic installation disk for detailed operating instructions.

The print media listed below was designed especially for use with Barcode Blaster CL and is in stock for immediate delivery. We also have other media for specialized applications and can manufacture custom media as well. Contact your dealer or our Sales Department for complete media information, or to find the perfect media for your unique application.

Direct thermal labels

Part number	Width	Material/description	Length
03-02-2057	2.0"	Paper, self-adhesive, linerless	3936"
03-02-2058	4.0"	Paper, self-adhesive, linerless	3936"