

Software Developer's Manual

ZPL II Emulation Guide

TD-4420TN/4520TN

TD-4650TNWB/4650TNWBR/4750TNWB/4750TNWBR

RJ-2035B/2055WB/3035B/3055WB

TJ-4005DN/4010TN

TJ-4020TN/4021TN/4021TNR/4120TN/4121TN/4121TNR

TJ-4420TN/4520TN/4620TN/4422TN/4522TN

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Important Note

This document provides information for the label printer (See [Appendix A: Supported Printers](#)) and is available for use only if you agree to the following conditions:

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1. Introduction

ZPL emulation allows TD-4T, RJ and TJ Printers to interpret ZPL commands.

To use this feature, change the printer settings as described in [Section 2](#).

2. Printer Settings

The TD-4T, RJ and TJ Printers have built-in paper settings that are necessary to perform printing operations (position detection). The settings are saved in the device's flash memory so they are retained even if the power is turned off. Before using the ZPL emulation, printer settings (such as the paper size and type) must be set using the Brother Printer Management Tool (BPM):

- a. Start the BPM.
- b. Click **Printer Function**.
- c. Select the calibration sensor and click **Calibrate**.



- d. Click **Printer Configuration**.
- e. Select the **FBPL** tab.
- f. Set the print operations you want.
- g. Check if the paper size settings for each printer language is correct.
- h. Click **Set**.



The paper size and type can be set using the FBPL paper setting command (Refer to *FBPL Command Reference*). For more information, see the *User's Guide* on your model's Manuals page at support.brother.com.

Note:

You can download the Brother Management Tool (BPM) from your model's **Downloads** page at support.brother.com.

3. ZPL II Emulation Support Commands

ZPL II	Description
^A	Scalable/Bitmapped Font
^A@	Use Font Name to Call Font
^B0	Aztec Bar Code
^B1	Code 11 Bar Code
^B2	Interleaved 2 of 5 Bar Code
^B3	Code 39 Bar Code
^B4	Code 49 Bar Code
^B5	Planet Code Bar Code
^B7	PDF417 Bar Code
^B8	EAN-8 Bar Code
^B9	UPC-E Bar Code
^BA	Code 93 Bar Code
^BB	CODABLOCK Bar Code
^BC	Code 128 Bar Code (Subsets A, B, and C)
^BD	UPS MaxiCode Bar Code
^BE	EAN-13 Bar Code
^BF	Micro PDF417 Bar Code
^BI	Industrial 2 of 5 Bar Code
^BJ	Standard 2 of 5 Bar Code
^BK	ANSI Codabar Bar Code
^BL	LOGMARS Bar Code
^BM	MSI Bar Code
^BP	Plessey Bar Code
^BQ	QR Code Bar Code
^BR	RSS Bar Code

ZPL II	Description
^BS	UPC/EAN Extensions
^BT	TLC39 Bar Code
^BU	UPC-A Bar Code
^BX	Data Matrix Bar Code
^BY	Bar Code Field Default
^BZ	POSTNET Bar Code
^CC	Change Carets
^CD	Change Delimiter
^CF	Change Alphanumeric Default Font
^CI	Change International Font
^CM	Change Memory Letter Designation
^CO	Cache On
^CT	Change Tilde
^CV	Code Validation
^CW	Font Identifier
^DF	Download Format
^EF	Erase Stored Formats
^EG	Erase Download Graphics
^FA	Field Allocate
^FB	Field Block
^FC	Field Clock (for Real-Time Clock)
^FD	Field Data
^FH	Field Hexadecimal Indicator
^FM	Multiple Field Origin Locations
^FN	Field Number
^FO	Field Origin
^FP	Field Parameter

ZPL II	Description
^FR	Field Reverse Print
^FS	Field Separator
^FT	Field Typeset
^FV	Field Variable
^FW	Field Orientation
^FX	Comment
^GB	Graphic Box
^GC	Graphic Circle
^GD	Graphic Diagonal Line
^GE	Graphic Ellipse
^GF	Graphic Field
^GS	Graphic Symbol
^HF	Host Format
^HG	Host Graphic
^HH	Configuration Label Return
^HW	Host Directory List
^ID	Object Delete
^IL	Image Load
^IM	Image Move
^IS	Image Save
^JB	Initialize Flash Memory
^JM	Set Dot per Millimeter
^JU	Configuration Update
^LH	Label Home
^LL	Label Length
^LR	Label Reverse Print
^LS	Label Shift
^LT	Label Top

ZPL II	Description
^MC	Map Clear
^MD	Media Darkness
^MF	Media Feed
^ML	Maximum Label Length
^MM	Print Mode
^MN	Media Tracking
^MP	Mode Protection
^MT	Media Type
^MU	Set Units of Measurement
^MW	Modify Heading Warning
^PH	Slew to Home Position
^PM	Printing Mirror Image of Label
^PO	Print Orientation
^PP	Programmable Pause
^PQ	Print Quantity
^PR	Print Rate
^PW	Print Width
^SC	Set Serial Communications
^SE	Select Encoding
^SF	Serialization Field (with a standard ^FD String)
^SL	Set Mode and Language (for Real-Time Clock)
^SN	Serialization Data
^SO	Set Offset (for Real-Time Clock)
^ST	Set Date and Time (for Real-Time Clock)
^TB	Text Blocks
^TO	Transfer Object
^WD	Print Directory Label

ZPL II	Description
^XA	Start Format
^XB	Suppress Backfeed
^XF	Recall Format
^XG	Recall Graphic
^XZ	End Format
~CC	Change Carets
~CD	Change Delimiter
~CT	Change Tilde
~DB	Download Bitmap Font
~DE	Download Encoding
~DG	Download Graphic
~DS	Download Intellifont (Scalable Font)
~DT	Download Bounded TrueType Font
~DU	Download Unbounded TrueType Font
~DY	Download Objects
~EF	Erase Stored Formats
~EG	Erase Download Graphics
~HI	Host Identification
~HM	Host RAM Status
~HS	Host Status Return
~JA	Cancel All
~JC	Set Media Sensor Calibration
~JG	Graphing Sensor Calibration
~JK	Delayed Cut
~JL	Set Label Length
~JR	Power On Reset
~JS	Change Backfeed Sequence
~PH	Slew to Home Position
~PP	Programmable Pause
~PR	Applicator Reprint

ZPL II	Description
~PS	Print Start
~RO	Reset Advanced Counter
~SD	Set Darkness
~TA	Tear-off Adjust Position
~WC	Print Configuration Label

Appendix A: Supported Printers

TD-4T series	TD-4420TN TD-4520TN TD-4650TNWB TD-4650TNWBR TD-4750TNWB TD-4750TNWBR
RJ series	RJ-2035B RJ-2055WB RJ-3035B RJ-3055WB
TJ series	TJ-4005DN TJ-4010TN TJ-4020TN TJ-4021TN TJ-4021TNR TJ-4120TN TJ-4121TN TJ-4121TNR TJ-4420TN TJ-4520TN TJ-4620TN TJ-4422TN TJ-4522TN

Appendix B: Font Specification

The font specifications compatible with TD-4T, RJ and TJ Printer ZPL II Emulation are as follows:

Built-in Font	Fixed Font	A.FNT B.FNT D.FNT E8.FNT F.FNT G.FNT H8.FNT (H.FNT) GS.FNT
	Scalable Font	0.TTF P.TTF Q.TTF R.TTF S.TTF T.TTF U.TTF V.TTF
Downloadable Font	Compatible	

Appendix C: Print Problems when Using ZPL Commands

If a print problem occurs when using a ZPL command, the command can be disabled by using the FBPL command below. This function is available for any command which starts with the format prefix "^".

Syntax

```
SET ZPL_IGNORE "FORMAT", "command code"
```

Parameter	Description
command code	Letter or number following the format prefix "^"
- To enable this function: - use the latest firmware version; - send the command to the printer before sending the print job. - This function remains enabled until you do one of the following: - use the SET ZPL_IGNORE CLEAR command; - update your printer's firmware; - change the settings back to the factory default. - You can set a maximum of 10 ZPL commands. - To learn how to send a command to the printer, see the Brother Printer Management Tool Quick Start Guide (support.brother.com).	

Example

Sample Code

```
SET ZPL_IGNORE "FORMAT", "PW"  
SET ZPL_IGNORE "FORMAT", "PO"
```

brother