

# **ZD421 and ZD621 Series**

Desktop Printers



**ZEBRA**

## **User Guide**

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# About This Guide

This guide is for integrators and operators of the Zebra ZD421 and ZD621 Desktop Printers. Use this guide to install, configure, operate, and support your printer(s).

Zebra has made the following resources available online to assist you:

- How-to videos
- Product page links to printer specifications
- Printer accessory, supplies, parts, and software links
- Setup, configuration, and programming guides
- Printer drivers (Windows, Apple, OPOS, etc.), firmware, and utilities
- Printer fonts
- Knowledge base and support contacts
- Printer warranty and repair links

The specific product pages for your printer model(s) are:

- ZD421 Direct Thermal printer — [zebra.com/zd421d-info](http://zebra.com/zd421d-info)
- ZD421 Thermal Transfer printer — [zebra.com/zd421t-info](http://zebra.com/zd421t-info)
- ZD421 Thermal Transfer Ribbon Cartridge printer — [zebra.com/zd421c-info](http://zebra.com/zd421c-info)
- ZD621 Direct Thermal printer — [zebra.com/zd621d-info](http://zebra.com/zd621d-info)
- ZD621 Thermal Transfer printer — [zebra.com/zd621t-info](http://zebra.com/zd621t-info)
- ZD621R Thermal Transfer RFID printer — [zebra.com/zd621r-info](http://zebra.com/zd621r-info)

## Other Valuable Printer Resources

Zebra has a large suite of free and fee based software, Apps (applications), and other technical resources for your Zebra Link-OS printer.

These are just some of the extensive software and resource areas available online:

- ZebraDesigner label design software: [zebra.com/zebradesigner](http://zebra.com/zebradesigner)
- Printer management tools
- Virtual devices for legacy languages normally associated with other printer brands
- Cloud-based enterprise printer management and printing

- XML and PDF format file printing
- Oracle and SAP support
- Zebra Savanna Data Intelligence platform - turns raw data from devices (IoT) and sensors into actionable intelligence for your business
- A suite of Link-OS Mobile Apps (applications for phones, tablets, etc.)
- Link-OS software development kit (SDK)
- Additional Operating Systems (OS) and Service platforms

For more information, see ZebraLink, Zebra Link-OS, and the Zebra Savanna cloud data platform at [zebra.com/software](http://zebra.com/software).

## Zebra OneCare Printer Service and Support

For maximum productivity, we can help your business ensure its Zebra printers are online and ready for business.

See the descriptions of the Zebra OneCare service and support options available for your printers at [zebra.com/zebraonecare](http://zebra.com/zebraonecare).

## Notational Conventions

The following conventions are used in this document:

- **Bold** text is used to highlight the following:
  - Dialog box, window, and screen names
  - Dropdown list and list box names
  - Checkbox and radio button names
  - Icons on a screen
  - Key names on a keypad
  - Button names on a screen
- Bullets (•) indicate:
  - Action items
  - List of alternatives
  - Lists of required steps that are not necessarily sequential.
- Sequential lists (for example, those that describe step-by-step procedures) appear as numbered lists.

## Icon Conventions

The documentation set is designed to give the reader more visual clues. The following visual indicators are used throughout the documentation set.



**NOTE:** The text here indicates information that is supplemental for the user to know and that is not required to complete a task.

## About This Guide



**IMPORTANT:** The text here indicates information that is important for the user to know.



**CAUTION:** If the precaution is not heeded, the user could receive a minor or moderate injury.



**WARNING:** If danger is not avoided, the user CAN be seriously injured or killed.



**DANGER:** If danger is not avoided, the user WILL be seriously injured or killed.

# Introduction

This section introduces the Zebra ZD421 and ZD621 desktop thermal label printers. It details your printer's features, the options available for your printer, and what ships with your printer.

This document covers the following ZD Series desktop printer models:

- ZD421 Direct Thermal printer — [zebra.com/zd421d-info](http://zebra.com/zd421d-info)
- ZD421 Thermal Transfer printer — [zebra.com/zd421t-info](http://zebra.com/zd421t-info)
- ZD421 Thermal Transfer Ribbon Cartridge printer — [zebra.com/zd421c-info](http://zebra.com/zd421c-info)
- ZD621 Direct Thermal printer — [zebra.com/zd621d-info](http://zebra.com/zd621d-info)
- ZD621 Thermal Transfer printer — [zebra.com/zd621t-info](http://zebra.com/zd621t-info)
- ZD621R Thermal Transfer RFID printer — [zebra.com/zd621r-info](http://zebra.com/zd621r-info)

## Link-OS 4 inch Desktop Thermal Printers

The Zebra Link-OS 4 inch Desktop printers are compact label printers with a wide range of features and options.

- Both Direct Thermal and Thermal Transfer printer models are available.
- This printer series includes healthcare printer models engineered with plastics that can withstand routinely-used hospital cleaning chemicals. They ship with a medical-grade power supply.
- ZD421 printers support printing speeds\* of:
  - up to 152 mm per second (6 ips) for 203 dpi printers.
  - up to 102 mm per second (4 ips) for 300 dpi printers.
- ZD621 printers support printing speeds\* of:
  - up to 203 mm/s per second (8 ips or inches per second) for 203 dpi (dots per inch print density) printers
  - up to 152 mm/s (6 ips) for 300 dpi version printers.
- Used with Link-OS virtual devices, these printers support both ZPL and EPL Zebra printer programming languages and a wide variety of other printer-control languages.



**NOTE:** \* Maximum print speeds vary by model, print resolution, and the type of media being used.

## Common Desktop Printer Features

Zebra desktop printers share the features listed here.

**Table 1** Common Desktop Printer Features

OpenAccess design	To simplify media loading.
Color-coded touch points (for operator controls and media guides) plus an enhanced user interface featuring three buttons and five status indicators	For ease of using the printer.
Field-installable media handling options	So you can use a variety of media with your printer.
Media roll support	Outer Diameter (O.D.): Up to 127 mm (5 in.) Inner Diameter (I.D.) roll cores: 12.7 mm (0.5 in.), 25.4 mm (1 in.), and additional core sizes when using optional media core adapters
Movable media sensor	Compatibility with a wide range of media types: <ul style="list-style-type: none"><li>Full and partial width black mark media and notched/slotted media.</li><li>Multi-center position transmissivity sensor for use with label gap/web media</li></ul>
Modular connectivity slot	<ul style="list-style-type: none"><li>On ZD421 models, the modular connectivity slot is available for field-installable 10/100 Ethernet (802.3 RJ-45) with an internal print server or serial (RS-232 DB-9) interface options.</li><li>On ZD621 models, the modular connectivity slot has a serial (RS-232 DB-9) port, and an Ethernet (LAN, RJ-45 connector) with an internal print server that supports 10Base-T, 100Base-TX, and Ethernet 10/100 auto-switching networks factory installed.</li></ul>
Font support	On-the-fly OpenType and TrueType font scaling and import. Unicode Resident scalable font (Swiss 721 Latin 1 font) Selection of resident bitmap fonts
Backwards-compatibility focused technology	For quick printer replacements: <ul style="list-style-type: none"><li>Drop-in replacement of legacy Zebra desktop printers.</li><li>Support for EPL and ZPL programming language instructions.</li><li>Support for Link-OS virtual devices to interpret non-Zebra printer programming language code.</li></ul>
Universal Serial Bus (USB) 2.0 interface	For convenient connectivity and quick file transfers.
Universal Serial Bus (USB) host port	To speed up print operations such as printer firmware updates.

**Table 1** Common Desktop Printer Features (Continued)

Factory-installed network models	<p>Supports printer configuration using a setup utility running on mobile devices.</p> <ul style="list-style-type: none"> <li>Use the printer's optional Bluetooth Low Energy (LE) feature for short-range communication to mobile devices. Bluetooth LE works with Zebra mobile setup utility applications to assist in printer setup, perform media calibration, and maximize print quality.</li> <li>Tap to pair devices with the printer, access printer information, and use mobile applications using Zebra's Print Touch (Near Field Communication or NFC).</li> </ul>
Zebra's Link-OS	An open platform that connects operating systems for smart Zebra devices with powerful software apps, allowing for quick integration, management, and maintenance from any location.
On-board Real Time Clock (RTC)	For internal printer timekeeping.
XML-enabled printing	For barcode label printing; lowers license fees and print server hardware requirements, reducing customization and programming costs.
Zebra global printing solution	<p>Supports the following:</p> <ul style="list-style-type: none"> <li>Microsoft Windows keyboard encoding (and ANSI), Unicode UTF-8 and UTF-16 (Unicode Transformation Formats)</li> <li>XML</li> <li>ASCII (7-bit and 8-bit used by legacy programs and systems)</li> <li>Basic single- and double-byte font encoding</li> <li>Hexadecimal encoding</li> <li>JIS and Shift-JIS (Japanese Industrial Standards)</li> <li>Custom character mapping (DAT table creation, font linking, and character remapping)</li> </ul>
Printhead maintenance reporting	Reporting can be enabled and customized to suit your needs.
Tool-free replacement	For printheads and platen (drive) rollers.
Minimum of 64 MB of internal (E:\) printer memory	To store forms, fonts, and graphics.

## Link-OS 4-inch Desktop Printer Options

Zebra Link-OS 4-inch desktop printers can be ordered with a range of factory-installed options. Other options are field upgrade kits.

- Color Touch LCD User Interface for easy setup, print configuration, printing, and use of a variety of Link-OS features.
- ZD621R thermal transfer printer — factory-installed RFID support available with the color touch display.

- Healthcare printer models:
  - Healthcare wipe-able plastics for easy disinfecting and cleaning
  - IEC 60601-1 certified power supply.
- Wired and Wireless options — factory-installed and field-installable):
  - Wi-Fi (802.11ac – includes a/b/g/n), Bluetooth Classic 4.1, and Bluetooth Low Energy (LE) 5.0 wireless connectivity.
  - Internal Ethernet Print Server (LAN, RJ-45 connector) — supports 10Base-T, 100Base-TX, and fast Ethernet 10/100 auto-switching networks for wired connectivity. This includes Bluetooth Low Energy (LE) wireless connectivity.
  - ZD621 printers — include Internal Ethernet Print Server (LAN, RJ-45 connector) with support for 10Base-T, 100Base-TX, and Ethernet 10/100 auto-switching networks; and a Serial (RS-232 DB-9) port.
- ZD421 Field installable connectivity modules
  - Internal Ethernet Print Server (LAN, RJ-45 connector) —supports 10Base-T, 100Base-TX, and Ethernet 10/100 auto-switching networks
  - Serial (RS-232 DB-9) Port
- Thermal transfer printing — A choice of models that support thermal transfer ribbon cartridge or dual-capacity ribbon rolls (74-meter and 300-meter)
- Field installable media handling options
  - Label Dispenser (peels liner off the label and dispenses the label)
  - General-purpose media cutter (cuts or tears off a label after it is printed)
- Media Core Adapter kit include adapters for media rolls with Outer Diameters (O.D.) up to 127 mm (5 in.):
  - 38.1 mm (1.5 in.) I.D. media cores
  - 50.8 mm (2.0 in.) I.D. media cores
  - 76.2 (3.0 in.) I.D. media cores
- Attached power supply base with internal power supply
- Attached battery base with removable battery
  - Attached battery base and battery are sold separately
  - The battery provides a regulated 24 VDC until shutdown for recharging, to maintain print quality. This keeps print from changing as the battery discharges with use.
  - Battery shutdown mode for shipping and storage
  - Built-in battery charge and status indicators
- Asian Language support with printer configuration options for the large Simplified and Traditional Chinese, Japanese, or Korean character sets. (Printers sold in China have the Simplified Chinese SimSun font pre-installed.)
- Zebra ZBI 2.0 (Zebra BASIC Interpreter) programming language. ZBI allows you to create custom printer operations that can automate processes, use peripherals such as scanners, scales, keyboards or the Zebra Keyboard Display Units, all without being attached to a PC or a network.
- ZD621 Direct Thermal healthcare models — Locking Media Cabinet for for additional security, and Kensington Slot for Kensington locking devices to secure the printer.

## What's in the Box?

After unpacking and inspecting the printer, make sure you have all the parts listed here. Familiarize yourself with the printer hardware so you can follow the instructions in this guide.

 <p>Printer</p>	 <p>USB cable</p>	 <p>Printer documentation</p>
 <p>Power supply and power cord. (Power cord varies by region.)</p>		
<p>The items below are included with thermal transfer printer models only. Direct thermal printers do not need ribbon for printing, so they do not ship with these..</p>		
 <p>Empty starter ribbon cores</p>	 <p>Non-Zebra 300-meter ribbon adapters</p>	

## Unpacking and Inspecting the Printer

When you receive the printer, immediately unpack it and inspect for shipping damage. Also make sure the package includes all the parts.

See the Zebra support page for your printer (listed in the introductory chapter of this guide) for videos that show how to pack and unpack your printer.

1. Save all packing materials.
2. Check all exterior surfaces for damage.
3. Open the printer and inspect the media compartment for loose or damaged components.

**4.** If you discover shipping damage on inspecting the printer:

- a) Immediately notify the shipping company and file a damage report.



**NOTE:** Zebra Technologies Corporation is not responsible for any damage to the printer incurred during shipment, and will not cover the repair of this damage under its warranty policy.

- b) Keep all packaging material for shipping-company inspection.
- c) Notify your authorized Zebra reseller promptly.

## What You Will Need to Print

Your printer is one of three parts of your printing solution. To print, you will also need print media and software.

The printer can operate in standalone mode. It does not have to be connected to other devices or systems to print.

**Table 2** Supplies, Drivers and Applications You Will Need to Print

Compatible media	<p>Depending on the printer model (direct thermal or thermal transfer), you will need appropriate media to print.</p> <p>Direct thermal printing uses chemically-treated, heat-sensitive media that blackens when it passes under the thermal printhead. For direct thermal printing, you will need direct thermal media. Ribbon is not required for direct thermal printing.</p> <p>Thermal transfer printing uses a heated ribbon to produce durable, long-lasting images on a wide variety of materials. For thermal transfer printing, you will need thermal transfer media and thermal transfer ribbon rolls (or a ribbon cartridge for Ribbon Cartridge printer models).</p> <p>You can use media that is of any supported format. Depending on your printing needs, you can use labels, tags, tickets, receipt paper, fanfold stacks, tamper-proof labels, etc.</p> <p>Use information from <a href="http://zebra.com/supplies">zebra.com/supplies</a> or from your reseller to identify and procure media for your printer and for your specific uses.</p>
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**Table 2** Supplies, Drivers and Applications You Will Need to Print (Continued)

<p>Software</p> <ul style="list-style-type: none"> <li>• Printer drivers</li> <li>• Printer programming utilities</li> <li>• Applications (such as for label design)</li> </ul>	<p>Zebra provides a complete suite of free Link-OS software applications and drivers to configure printer settings, print labels and receipts, get printer status, import graphics and fonts, send programming commands, update firmware, and download files.</p> <p>Use these drivers and applications to configure and manage your printer and your print jobs from a central device such as a PC or laptop.</p> <p>For information on installing the drivers, see <a href="#">Installing the Windows Printer Drivers</a> on page 215.</p> <p>You can use ZebraDesigner—a free application for Windows PC operating systems—to design simple labels and forms. ZebraDesigner is available to download from <a href="http://zebra.com/zebradesigner">zebra.com/zebradesigner</a>.</p>
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## Modes of Printing

Depending on your printer type, model and options, it may support one or more of these modes and media configurations.

**Table 3** Print Modes

Mode	Description
Direct Thermal printing	<p>Uses heat-sensitive media to print.</p> <p>When setting this mode, use media that supports Direct Thermal printing. See <a href="#">Determining Thermal Media Types</a> on page 371.</p>
Thermal Transfer printing	<p>Requires ribbon rolls or a thermal transfer ribbon cartridge to print. While printing, heat and pressure transfer ink from the ribbon to the media.</p> <p>When using Thermal Transfer printing, be sure to use thermal transfer media. See <a href="#">Determining Thermal Media Types</a> on page 371.</p>
Standard tear-off mode	Allows you to tear off each label or batch-print a strip of labels and tear them off after the printer has printed the label(s).
Label dispense mode	If your printer has the optional factory-installed label dispenser, the dispenser automatically peels away the backing material from a label as it is being printed before it prints the next label.
Media cutting mode	If your printer has the optional factory-installed media cutter, the printer cuts the label liner between the labels, the receipt paper, or the tag stock.
Linerless media printing	In linerless printing, the printer accommodates cut or tear-off options for the easy pick-and-place of labels.

**Table 3** Print Modes (Continued)

Mode	Description
Standalone operation (printer operates on its own without a live network connection)	<p>The printer can print an auto-running label format or form (programming based) without being actively connected to a networked device such as a computer.</p> <ul style="list-style-type: none"> <li>On printers with the color display or color-touch display option, you can use menus to access and print a label format or form.</li> <li>You can use a Link-OS app which enables you to connect to the printer using the Bluetooth (wireless) option.</li> <li>You can print using an auto-running label format or form (programming based).</li> <li>Your printer supports data-input devices that can be connected to the printer's USB Host port or serial port. Data-input devices include scanners, weighing scales, or Zebra Keyboard Display Units (ZKDUs).</li> </ul>
Shared network printing mode	Printers configured with factory-installed Ethernet (LAN) and Wi-Fi (WLAN) interface options ship with an internal print server to enable wired and wireless networking respectively.

## Opening Your Printer

Use this procedure to open the media compartment, inspect and clean the interior periodically, load printing supplies, and replace those parts as necessary that are operator-replaceable.

To open the printer, pull the release latches towards you and lift the cover.



**NOTE:** If this is the first time you are opening the printer after receiving it, check the media compartment for loose or damaged components.



**CAUTION:** The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the printhead and other electronic components.

used in this device. You must observe static-safe procedures when working with the printhead or the electronic components under the top cover.

## Closing Your Printer

Make sure printer cover is closed properly after you load media or ribbon and after you have cleaned the inside of the printer.

To close the printer cover:

1. Lower the top cover.
2. Push down firmly, either in the center or in both corners on the front of the printer, until both side latches lock.



# Printer Features

Use these support links to familiarize yourself with the internal and external physical features of your printer.

For printer features videos and other helpful information, go to:

- ZD421 Direct Thermal printer — [zebra.com/zd421d-info](http://zebra.com/zd421d-info)
- ZD421 Thermal Transfer printer — [zebra.com/zd421t-info](http://zebra.com/zd421t-info)
- ZD421 Thermal Transfer Ribbon Cartridge printer — [zebra.com/zd421c-info](http://zebra.com/zd421c-info)
- ZD621 Direct Thermal printer — [zebra.com/zd621d-info](http://zebra.com/zd621d-info)
- ZD621 Thermal Transfer printer — [zebra.com/zd621t-info](http://zebra.com/zd621t-info)
- ZD621R Thermal Transfer RFID printer — [zebra.com/zd621r-info](http://zebra.com/zd621r-info)

## Exterior Features of Your Printer

The printer's exterior features are used to power up and power down the printer, open and close the media compartment, make power and network connections, and configure and operate your printer.



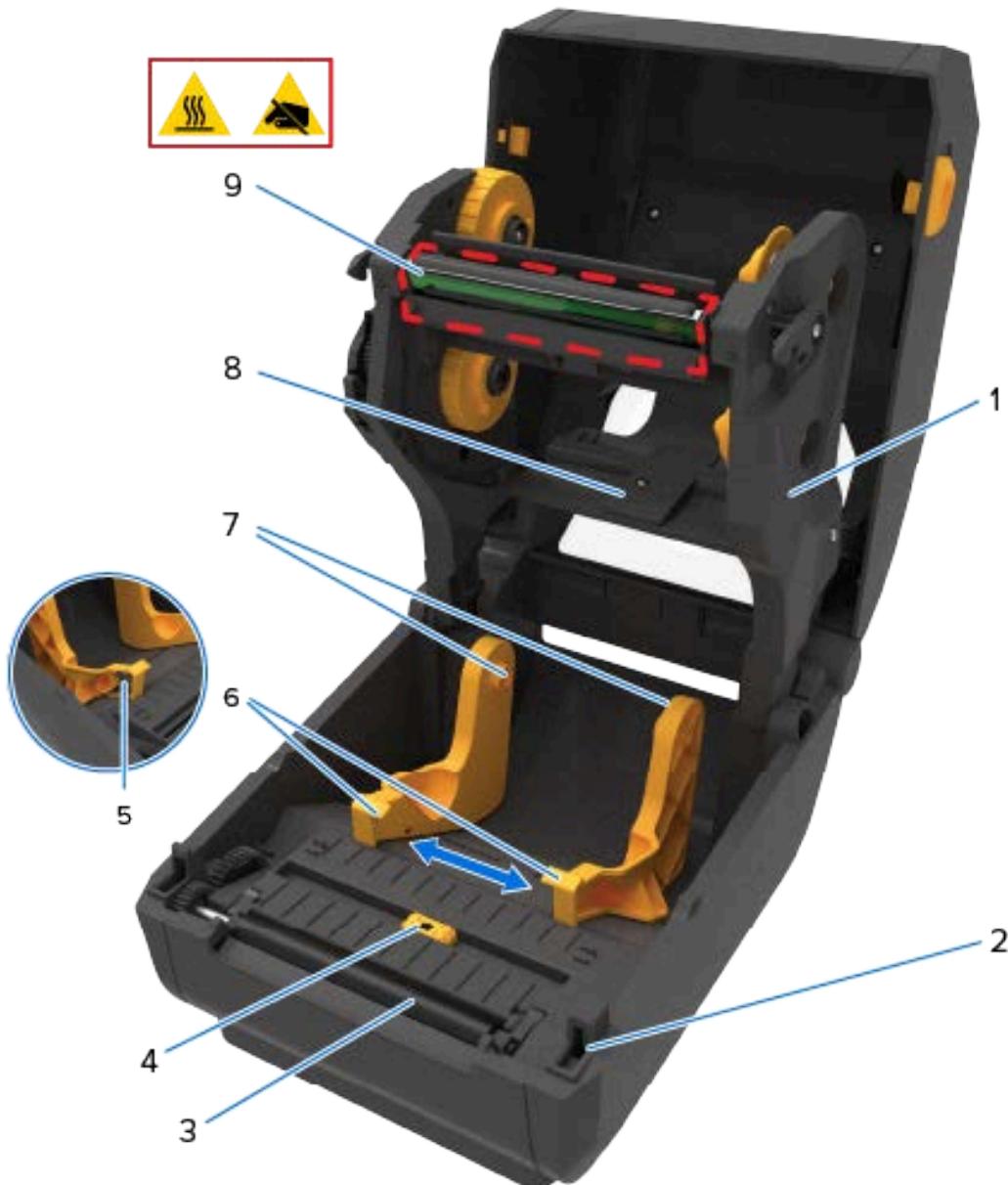
1	User interface controls and, in some models, color touch display
2	Release latch

See [Controls and Indicators](#) on page 47 for information on how to operate the printer using the interface buttons and the color touch display if your printer has one.



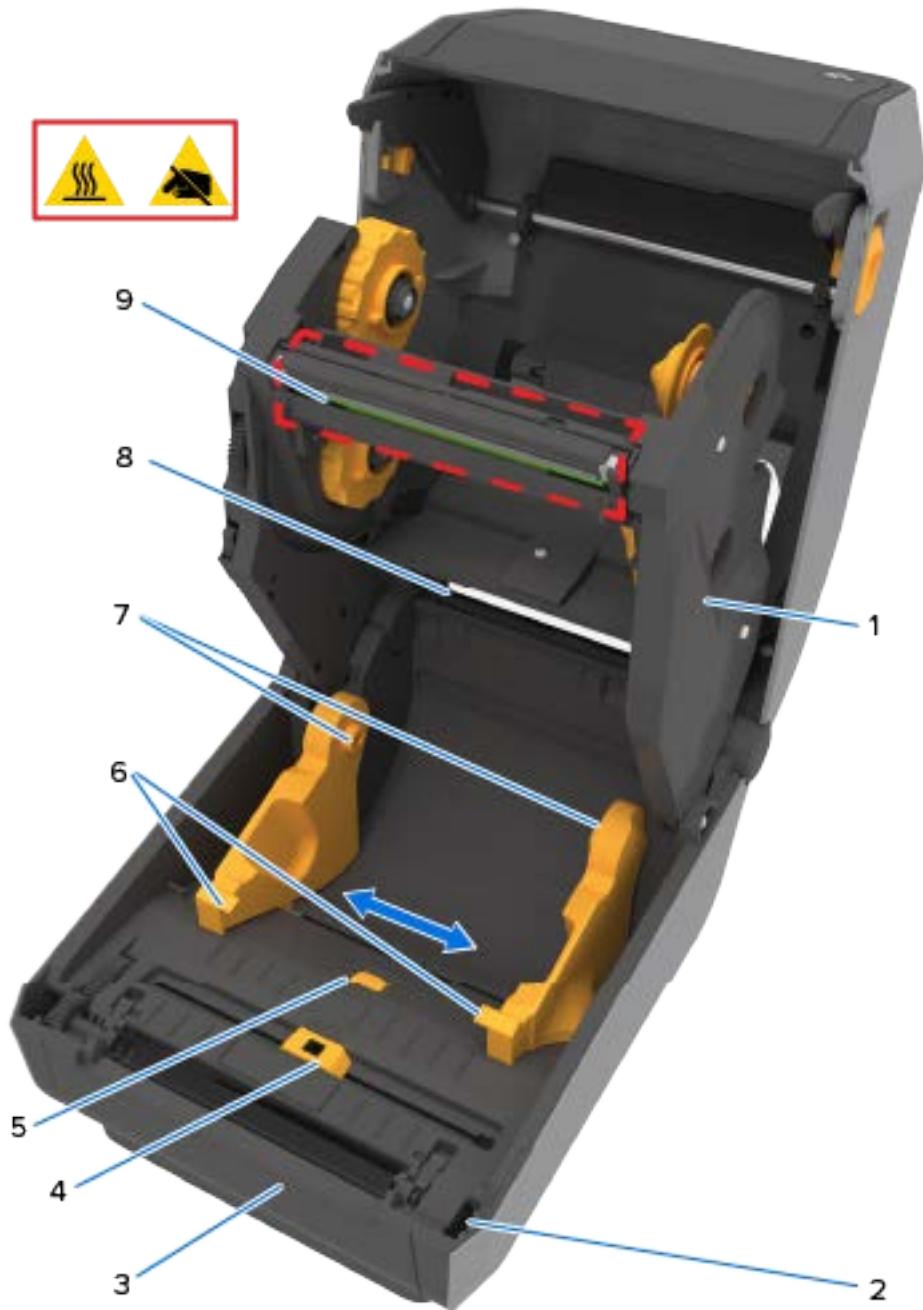
1	<b>POWER</b> button
2	Fanfold media entry slot
3	Interface and connectivity module slot access
4	DC power receptacle
5	Release latch

## Inside the ZD421 Dual-Capacity Ribbon Roll Printer



1	Ribbon carriage	6	Media guides
2	Head-up sensor (inside)	7	Roll holders
3	Platen (drive) roller	8	Upper web (gap) array sensor (other side)
4	Movable sensor (black mark and lower web/gap)	9	Printhead (may be hot – do NOT touch!)
5	Media guide stop		

## Inside the ZD621 Dual-Capacity Ribbon Roll Printer



1	Ribbon carriage	6	Media guides
2	Head-up sensor (inside)	7	Roll holders
3	Platen (drive) roller	8	Upper web (gap) array sensor (other side)
4	Movable sensor (black mark and lower web/gap)	9	Printhead (may be hot – do NOT touch!)
5	Media guide stop adjustment		

## RFID Antenna Location – ZD621R Printers Only

On ZD621R printers which are RFID-sensing printers, the RFID antenna is located between the platen roller and the channel of the movable media sensor. Other printer RFID indications on ZD621R printers include information displayed on the color touch display when it on, as also information on the product label.



1	RFID antenna dome
---	-------------------

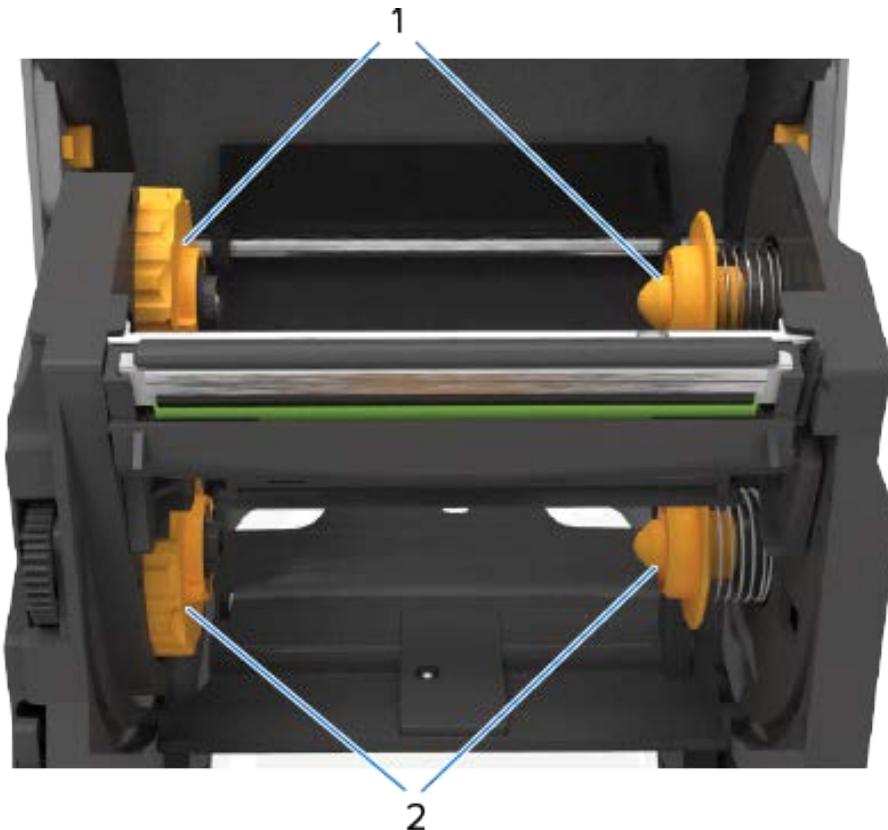
## Media Dancer – ZD621 Printers Only

In this image, the printer's window is removed and the media dancer is colored for easy identification. As seen within the printer, it is of the same color as the dark gray parts adjacent to it.



1	Media dancer (ZD621 models only)
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## Dual-Capacity Ribbon Chassis – Ribbon Roll Holders



1	Take-up spindles	2	Supply spindles (full ribbon rolls)
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## Inside the ZD421 Direct Thermal Printer



1	Printhead (may be hot – do NOT touch!)	5	Head-up sensor (inside)
2	Upper web (gap) array sensor	6	Movable sensor (black mark and lower web/gap)
3	Roll holders	7	Platen (drive) roller
4	Media guides	8	Media guide stop

## Inside the ZD621 Direct Thermal Printer



1	Printhead (may be hot – do NOT touch!)	5	Media guide stop adjustment
2	Head-up sensor (inside)	6	Media guides
3	Platen (drive) roller	7	Roll holders
4	Movable sensor (black mark and lower web / gap)	8	Upper web (gap) array sensor

## Inside the ZD421 Ribbon Cartridge Printer

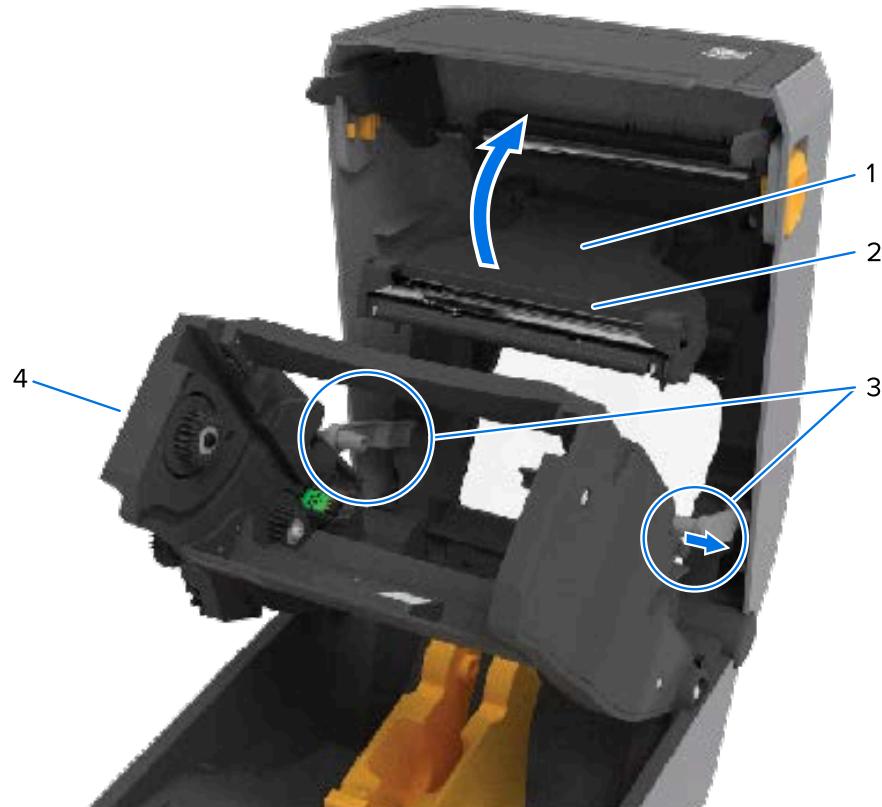


1	Ribbon drive transport	6	Platen (drive) roller
2	Release arms (2)	7	Media guides
3	Media guide adjustment stop	8	Roll holders
4	Head-up sensor (inside)	9	Upper web (gap) array sensor
5	Movable sensor (black mark and lower web / gap)	10	Ribbon cartridge (shown installed – sold separately)

## Accessing the Printhead of the ZD421 Ribbon Cartridge Printer

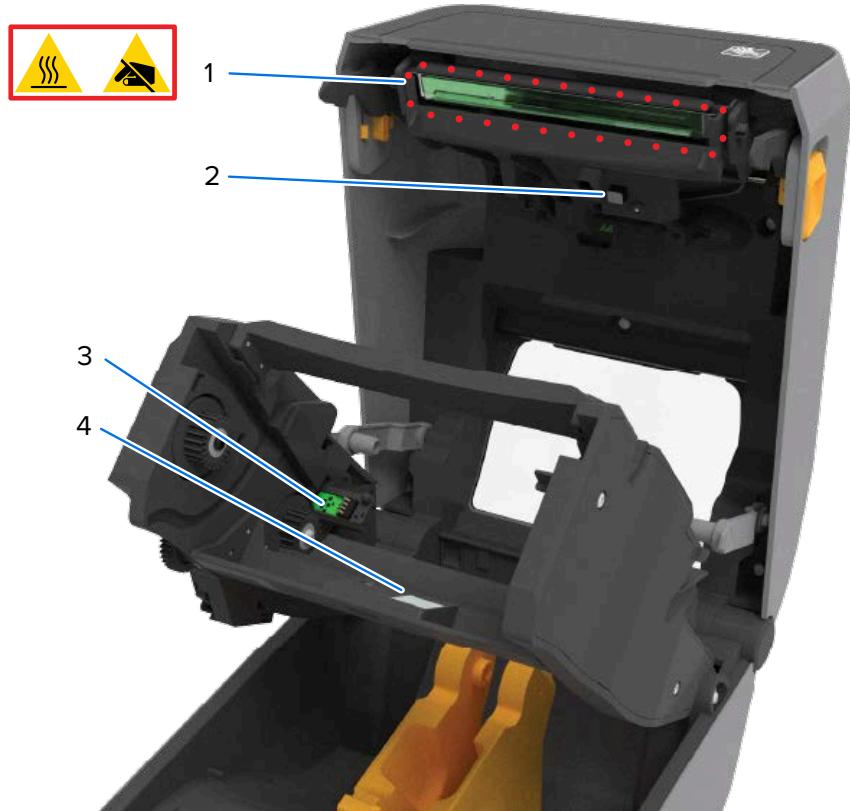
To access the printhead:

1. Pull both release arms out (lighter gray parts).  
The ribbon drive transport drops down.
2. Lift printhead actuator arm up to access the printhead.



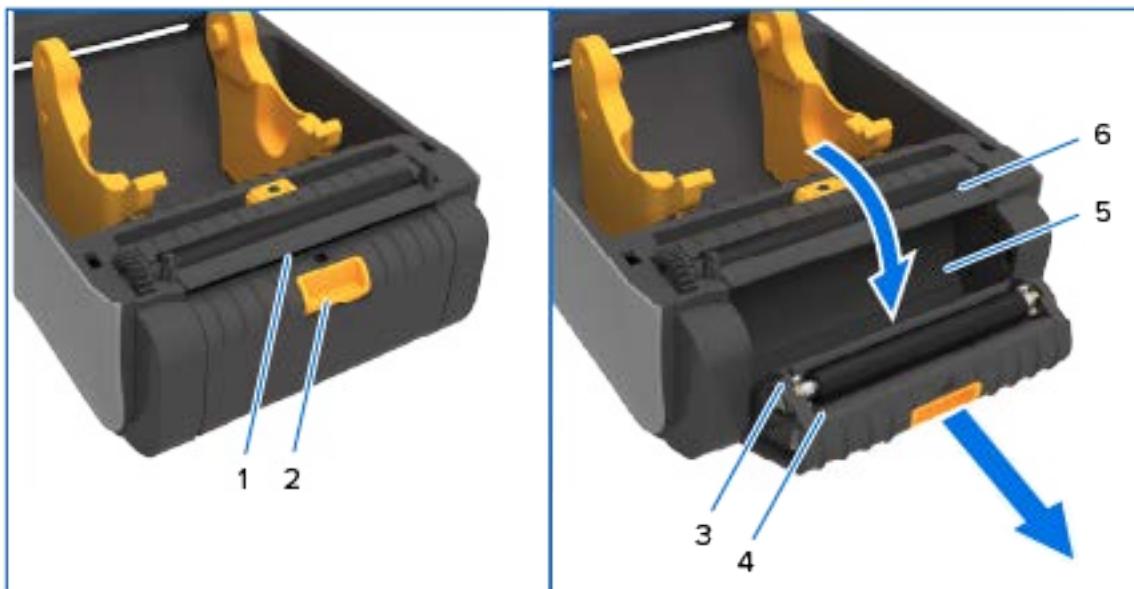
1	Printhead actuator arm	3	Release arms
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2	Back of printhead	4	Ribbon transport
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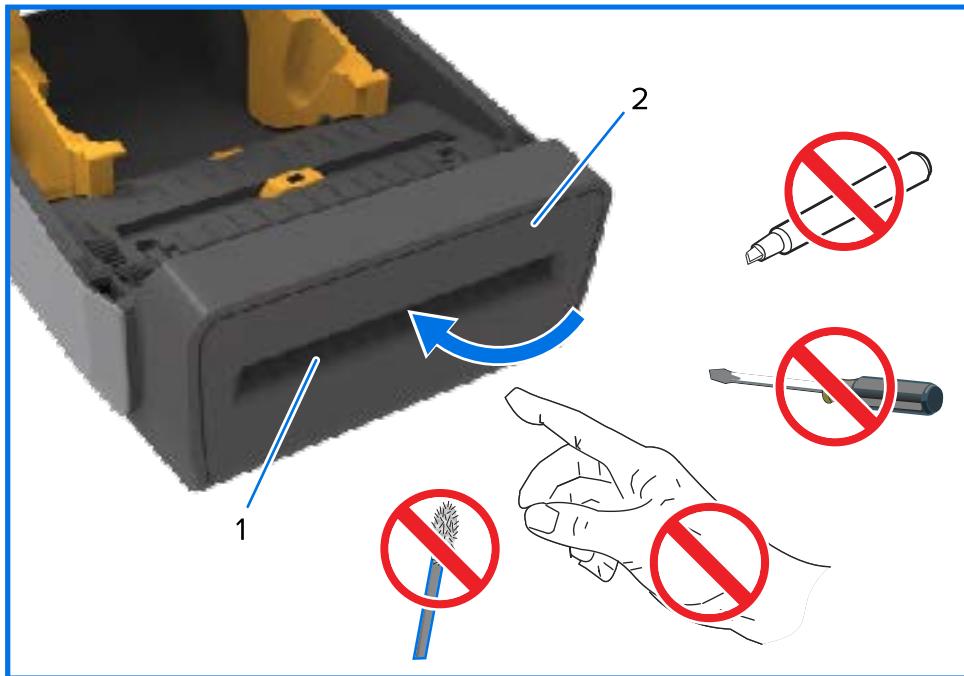
1	Printhead (may be hot Supply spindles (full ribbon rolls) – do NOT touch!	3	Ribbon cartridge authentication and status interface
2	Ribbon sensor	4	Ribbon sensor's reflector

## Label Dispenser Option (field-installable) – All Models



1	Label-taken sensor	4	Dispenser door
2	Door latch	5	Label liner exit area
3	Peel roll	6	Label peel bar

## Cutter Option (field-installable) – All Models



1	Media exit slot	2	Cutter module
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## Linerless Media Tear-Off Option – Direct Thermal Models Only



1	Label-taken sensor
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## Linerless Cutter Option – Direct Thermal Models Only



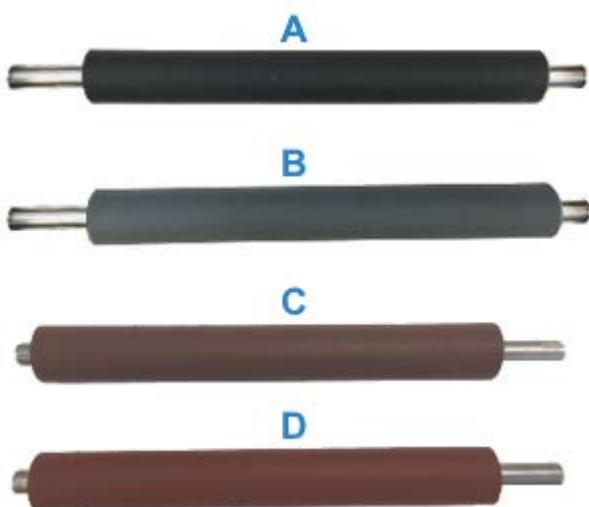
1	Label-taken sensor	2	Cut label landing area
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## Identifying Platen Drive Roller Types

The platen (drive) rollers are colored differently to identify the platen type and print resolution of your printer (and the platen).



**NOTE:** Do NOT exchange platen types unless you are specifically instructed to do so either by an upgrade procedure or by Zebra Technical Support. If incorrect platens are used, the printer will stop operating as normal and cause a variety of problems that would require resolution.



A	203 dpi standard platen (black)	C	203 dpi linerless platen (reddish-brown)
B	300 dpi standard platen (gray)	D	300 dpi linerless platen (brown)

## Printer Power Supply Options

Instead of the power supply that shipped with your printer, you can use one of two field-installable attached power options—an attached power supply base or a battery power base. Both are easily attachable to your printer with screws.

### Attached Power Supply Base



1	Rear view of attached power supply base	2	Front view of attached power supply base
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## Attached Battery Base and Battery

**Figure 1** Printer with Battery Base Installed



1	Battery power base	2	Battery status and charge indicators
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1	Power interface	3	Battery control button
2	Power input		

**Figure 2** Battery Ready to Install (left) and Printer with Battery installed (right)



1	Battery latch
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**NOTE:** A printer power supply or other approved Zebra power source is needed to charge your battery. The battery can be charged, checked, and configured for storage without being attached to the printer.

## ZD621 Direct Thermal Locking Printer Feature – Healthcare Models Only

Direct Thermal Healthcare printer models come with lock-and-key access to the printer's media compartment plus a Kensington Lock Slot on the printer's back panel to secure the printer.



1	Cabinet lock	2	Kensington lock slot
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For more information on the Locking Printer option, see [Zebra Basic Interpreter \(ZBI\)](#) on page 256.

## Zebra Print Touch for Near-Field Communications (NFC)

The Zebra Print Touch feature allows you to touch an Android-based, Near Field Communication (NFC)-enabled device such as a smart phone or tablet to the printer's Print Touch logo to pair the device to the printer.

Zebra Print Touch is available on Zebra printer models with factory-installed networking (Wi-Fi, wired Ethernet, Bluetooth, and Bluetooth Low Power). The Print Touch feature allows you to use your mobile device to provide information for which you are prompted and then print a label using that information.

This image shows Print Touch (passive NFC) location on your printer.



**IMPORTANT:** Some mobile devices may not support NFC communication with the printer until you configure the required NFC settings in your device. If you encounter difficulties, consult your service provider or your smart device manufacturer for more information.

Data encoded into the tag includes:

- a URL for a Zebra quick-help style support web page
- the printer's unique Bluetooth Low Energy MAC address
- the printer's Bluetooth Classic MAC address (if present)
- the printer's Wi-Fi (WLAN) MAC address (if present)
- the printer's Ethernet (LAN) MAC address (if present)
- the printer SKU (ex., D6A142-301F00EZ)
- the printer's unique serial number

The NFC tag can be used to:

- pair with a compatible mobile device using Bluetooth.
- launch an application.
- launch a mobile browser to a web page.

# Controls and Indicators

This section discusses the two user control panel variations and their functionality.

## User Interface

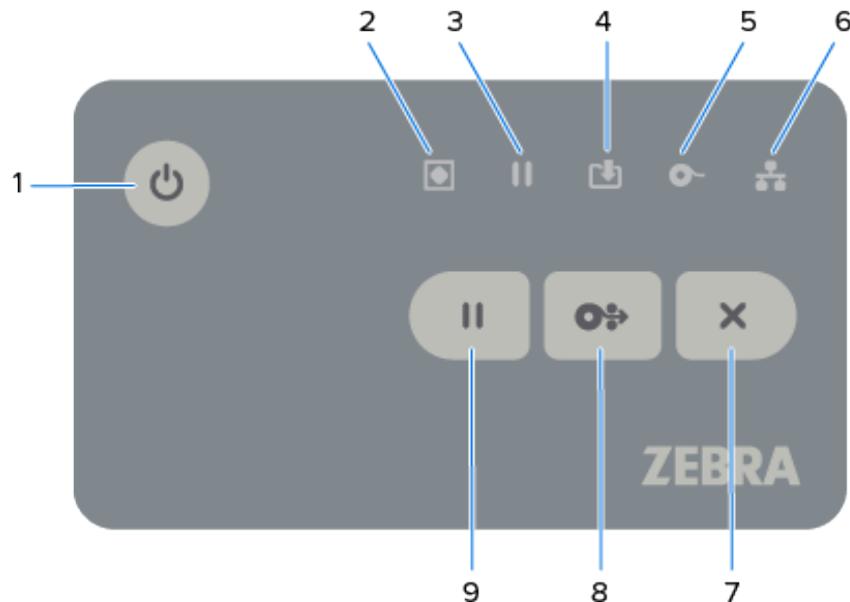
The printer's primary user interface controls are on the front of the device. Two user interface options are available on these printers.

- Standard User Interface — This interface serves basic printer control and status functions. Operating status is provided by five icon indicator lights. These lights, together and in combination, provide a wide range of printer status notifications. They are visible from a farther distance than the proximity needed to read a printer display screen. See the [Meaning of the Indicator Light Patterns](#) on page 53.
  - The printer user interface supports various routine tasks such as replacing printing supplies (labels, receipt paper, transfer ribbon, or others). For example, you are notified of a media-out condition by the color and state of two indicators.
  - Each status indicator icon represent a functional area of printer operation (such as SUPPLIES or NETWORK).
  - Depending on the operational state of the printer, the printer's status indicator lights convey the printer's status and activities (data downloading, over-temperature cooling cycle, or other) using a variety of states:
    - off (not lit — does NOT require your attention)
    - lit up red, green, or amber (orange yellow)
    - blinking / flashing
    - fading (bright to off)
    - lighting up steady in a variety of patterns
  - The color of these status indicators may be:
    - Red — indicates that your attention is needed or that the printer is not ready to print.
    - Green — indicates the printer is ready or functioning.
    - Amber (orange/yellow) — indicates a busy or active process (data downloading, over-temperature cooling cycle, etc.).
  - Control buttons—You will use these in various combinations to access internal utilities that calibrate the printer to your media and change printer settings that are modifiable.

- Color Display or Color Touch Display (available on some printer ZD printer models) — Provides the means to easily set up and configure the printer. The display is customizable by all user types. The interface includes all standard user interface controls and indicators to provide printer status information.
  - The display option on the printer provides printer status and messages. It supports 19 languages, selectable on the configuration menus or set through programming.
  - The menu system allows you to change print settings (darkness, speed, etc.), run utilities, and set the wired and wireless communication interfaces (serial, Ethernet, Wi-Fi) installed on your printer.

## Standard Interface Controls

The printer's user interface is located on the top of the printer towards the front.



**Table 4** Standard Interface Controls

Icon	Button	Descriptions
	<p>1. <b>POWER</b> button — Pressing this button turns power to the printer ON and OFF.  Also used to initiate low-power sleep and wake states.</p>	<ul style="list-style-type: none"> <li>Initial power ON — Press <b>POWER</b> until the printer's indicator lights flash on in various combinations for several seconds. This indicates the printer is performing self-diagnostics and configuration checks, and integrating optional components. The Status indicator turns solid green, indicating the printer is ready for normal print operations.</li> <li>Energy Star (low power mode) — To minimize power use, press and release <b>POWER</b> one time to place the printer in Energy Star low power mode. All the indicators will turn off except the Status Indicator which will turn on and off to indicate the printer is in Energy Star Mode.</li> <li>Power OFF with Energy Star Delayed — Press and hold <b>POWER</b> for 4–9 seconds. You can start a batch print job and put the printer into the low power consumption state of Sleep mode after the job has finished.</li> <li>Power OFF / Shutdown — Press and hold <b>POWER</b> for 4–9 seconds to turn printer power OFF.</li> <li>Power Failure Recovery Mode — This printer feature is activated by a hardware jumper setting on one of the optional Printer Connectivity Modules installed in the printer. You can turn this mode on and off by activating the jumper. <ul style="list-style-type: none"> <li>The printer automatically powers ON when connected to an active AC power source.</li> <li>Supports Sleep Mode and Power OFF with Sleep Mode Delayed features.</li> <li>When Power Failure Recovery Mode is initiated, the printer resets and runs the Initial Power ON sequence on the loss of power (Power OFF / Shutdown).</li> </ul> </li> </ul> <p> <b>NOTE:</b> Power Failure Recovery Mode is available ONLY on printers with a printer connectivity module installed.</p>

**Table 4** Standard Interface Controls

Icon	Button	Descriptions
	2. STATUS Indicator — Primary status indicator for overall printer health and operational status. Also known as the Power indicator.	<ul style="list-style-type: none"> <li>Green — The printer is ready to print and engage in data transfer.</li> <li>Green, slowly turning on and off — The printer is in sleep mode.</li> <li>Red — Media out, media detection error, head (cover/printhead) open, cut error, or printhead authentication failure.</li> <li>Amber — Printhead over temp (temperature), printhead element failure, out of memory while storing content (formats, graphics, fonts, etc.), and interface power fault for USB Host or serial ports.</li> <li>Blinking amber — Printhead under temp (temperature)</li> <li>Blinking red — Printhead over temp (temperature). This status is coupled with blinking red Pause indicator. Printer requires cooling and restart.</li> </ul>
	3. PAUSE Indicator — The printer is in Pause mode when the Pause indicator light is on. A label (print form) or all labels (print forms) in the print buffer's queue can be canceled using the <b>CANCEL</b> button when the Pause indicator is on.	<ul style="list-style-type: none"> <li>Amber — Printer is paused. The print, label feed (advance), and other label routines are suspended until you exit the printer from Pause state by pressing <b>PAUSE</b>.</li> <li>Blinking red — Printhead over temp (temperature). Coupled with blinking red Status indicator, indicates that the printer must be allowed to cool and then restarted.</li> </ul>
	4. DATA Indicator — Indicates the status of data transfer activity.	<ul style="list-style-type: none"> <li>Off — Data transfer is not occurring.</li> <li>Green — A data communication operation has not finished, but data is not actively being transferred.</li> <li>Blinking Green — Data communication in process.</li> <li>Blinking Amber — OUT OF MEMORY while storing content (formats, graphics, fonts, etc.).</li> </ul>

**Table 4** Standard Interface Controls (Continued)

Icon	Button	Descriptions
	5. SUPPLIES Indicator — Indicates status of media loaded in the printer (label, receipt, tags, transfer ribbon, ribbon cartridge, etc.)	<ul style="list-style-type: none"> <li>• Red — Media Out.</li> <li>• Blinking red — RIBBON OUT. Applies to printing in Thermal Transfer mode, (The printer does NOT require ribbon to print in Direct Thermal mode.)</li> <li>• Blinking red and amber — Ribbon Cartridge Low (ZD421 Ribbon Cartridge printers only).</li> <li>• Blinking amber — RIBBON IN (ZD421 Ribbon Cartridge printers only). Detected when the printer is set to print in Direct Thermal mode, a mode in which the printer does NOT require ribbon to print.</li> </ul>
	6. NETWORK Indicator — Indicates network activity and status.	<ul style="list-style-type: none"> <li>• Amber — 10 base Ethernet (LAN) connection detected.</li> <li>• Green — 10/100 Ethernet (LAN) connection detected or when Wi-Fi (WLAN) has a strong signal and is connected.</li> <li>• Red — when an Ethernet (LAN) or Wi-Fi (WLAN) fault occurs.</li> <li>• Blinking red — during Wi-Fi (WLAN) association.</li> <li>• Blinking amber — during Wi-Fi (WLAN) authentication.</li> <li>• Blinking green — when a Wi-Fi (WLAN) connection has been established but the signal is weak.</li> </ul>

**Table 4** Standard Interface Controls (Continued)

Icon	Button	Descriptions
	7. <b>CANCEL</b> Button — Cancels print jobs. Functional only when the printer is in Pause state.	<ul style="list-style-type: none"> <li>Cancel printing — Press <b>CANCEL</b> one time to cancel printing the next format in the print buffer.</li> <li>Cancel all print jobs — Press and hold <b>CANCEL</b> for two seconds. The printer cancels printing ALL pending formats.</li> </ul>
	8. <b>FEED</b> (Advance) Button — Advance a label (print form/format).	<ul style="list-style-type: none"> <li>Feed one label (one blank form or format length of a label, receipt, tag, ticket, etc.) — Press and release <b>FEED</b> when the printer is not printing.</li> <li>Advance multiple labels — Press and hold <b>FEED</b> when the printer is not printing. The printer advances loaded media to the beginning position of the next label (format/form) and the next until you release <b>FEED</b>.</li> <li>Reprint last label (activated using a SGD command: <code>ezpl.reprint_mode</code>) — This feature allows the reprinting a failed media print. If the printer runs out of media (paper, labels, transfer ribbon, etc.), it can re-print the last label (print form/format).</li> </ul> <p> <b>NOTE:</b> The print buffer which stores the print image for printing and reprint is automatically cleared when the printer is turned off or reset.</p>
	9. <b>PAUSE</b> Button — Pauses print and media movement.	<ul style="list-style-type: none"> <li>Stop print activities and place the printer into Pause state — Press <b>PAUSE</b>. The printer finishes printing the current label before it pauses. The <b>PAUSE</b> indicator displays Amber (orange/yellow) to indicate the printer is in Pause state.</li> <li>Exit the printer out of Pause state and return it to normal operation — Press <b>PAUSE</b> when the printer is in Pause state. If you are printing a multi-label (form or format) job or if one or more other prints job are in the print queue, the printer resumes printing the job(s) in queue.</li> </ul>

On printers with a Color Touch display, the user interface controls are mapped as shown here. The functionality of the buttons is the same as described earlier.



1	Status indicators	4	<b>CANCEL</b> button
2	<b>PAUSE</b> button	5	Color Touch display and interface
3	<b>FEED</b> button	6	<b>POWER</b> button

## Meaning of the Indicator Light Patterns

All Link-OS 4 inch printers include status indicators on their user interfaces.

The indicators may be off or on in a variety of lighting patterns of red, green, or amber (orange/yellow). They may flash (blink), fade (bright to off), alternate between colors, or simply remain lit. as indicated in the table below.

	Steady on
	Flashing
	Fade

	Off
---	-----

For information on resolving errors identified using the status of the indicator lights, see [Troubleshooting](#) on page 311.

## Status – Typical Operating Conditions

This table describes printer status under typical operating conditions.

**Table 5** Typical Operating Conditions Status Indications

Status	Description
Printer Ready 	The printer is powered on and ready to print.
Pause 	The printer is paused. Press <b>PAUSE</b> to resume print operations.
Media Out 	The printer has run out of media (labels, receipts, tags, tickets, etc.). The printer needs attention and cannot continue without user intervention.
Ribbon Out 	The printer has detected the end of a ribbon roll (reflective end on ribbon rolls) or, in case of a Ribbon Cartridge printer, a missing ribbon cartridge. Alternatively, if a Ribbon Cartridge printer is set to print in Thermal Transfer mode, the ribbon cartridge must be replaced for the printer to continue printing.
Ribbon Low (Ribbon Cartridge Printers only) 	The default value for a Ribbon Low condition is 10% of ribbon remaining. The Media indicator flashes red and yellow while the Status indicator is solid yellow.
Ribbon In (Ribbon Cartridge Printers Only) 	A Thermal Transfer printer is set to print in Direct Thermal Mode while it has a ribbon cartridge installed. Remove the ribbon cartridge to continue printing in Direct Thermal mode.

**Table 5** Typical Operating Conditions Status Indications (Continued)

Status	Description
Transferring Data 	Data communication is in process.
Data Transfers Paused 	While a data communication operation has not yet been complete, data is not actively being transferred at the time.
Out of Memory 	Out of memory while attempting to storing content such as formats, graphics, and fonts. Make sure the printer has enough storage for the data you are trying to transfer.
Cover Open/Printhead (PH) Open 	The cover (printhead) is open. The printer needs attention and cannot continue without user intervention.
Cut Error (Binding) 	The cutter blade is bound and is not moving properly. The cutter is not an operator-serviceable component. Call a service technician for assistance.  <b>NOTE:</b> Do NOT remove the cutter cover (bezel). Never attempt to insert objects or fingers in to the cutter mechanism.
Cartridge Authentication Failed (Ribbon Cartridge printers only) 	The ribbon cartridge cannot be authenticated or it has been altered. Your printer only supports Genuine Zebra Ribbon Cartridges. It cannot use refurbished ribbon cartridges or non-Zebra ribbon cartridges to print.

## Status – Printhead Operation

This table describes status indicator conditions you may see during printhead operations and what those conditions mean.

 **CAUTION:** The printhead may be hot and could cause severe burns. Allow the printhead to cool.

**Table 6** Printhead Operation Status Indications

Status	Description
Printhead Over Temp 	The printhead is over temperature and paused to allow the printhead to cool. The print operation will resume after the printhead has cooled.
Printhead Under Temp 	The printhead is under temperature. Typically, the operating environment is below the printer's minimum operational temperature.
Printhead Shutdown 	The printhead is over temperature. Turn printer power OFF. Wait several minutes to allow the printer to completely cool. Then turn printer power ON.
Printhead Resolution Error 	The printer is unable to read the printhead resolution type (dpi). The printhead has been replaced incorrectly or replaced with a non-Zebra-branded printhead.
Unauthorized Printhead Error 	The printhead was replaced with one that is not a genuine Zebra printhead. Install a genuine Zebra printhead to continue.

## Status – Bluetooth Low Energy Option

This table describes Bluetooth status indications and what they mean.

**Table 7** Bluetooth Low Energy Status Indicators

Status	Description
Bluetooth LE Paired 	Bluetooth Low Energy has paired.
Bluetooth LE Failed to Pair 	Bluetooth Low Energy has failed to pair.

## Status – Ethernet (LAN) Option

This table describes Ethernet (LAN) statuses.

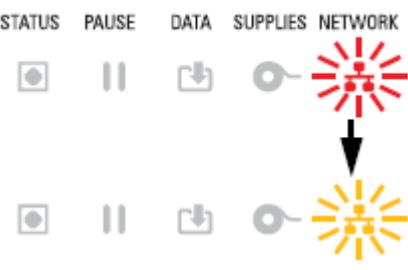
**Table 8** Ethernet (LAN) Status Indications

Status	Description
Ethernet (LAN) No Link 	No Ethernet link is available. The NETWORK status light on the back of the printer is off.
Ethernet (LAN) 100base Link 	A 100 Base link was found.
Ethernet (LAN) 10base Link 	A 10 Base link was found.
Ethernet (LAN) Link Error 	An error condition exists. The printer is not connected to your network.

## Status – Wi-Fi (WLAN) Option

This table describes Wi-Fi (WLAN) statuses.

**Table 9** Wi-Fi (WLAN) Status Indications

Status	Description
Wi-Fi Connecting to WLAN 	The light flashes red while the printer associates with the network. The light then flashes yellow while the printer is authenticating with the network.
Wi-Fi (WLAN) 100base Link 	The printer is connected to your network and the Wi-Fi signal is strong.

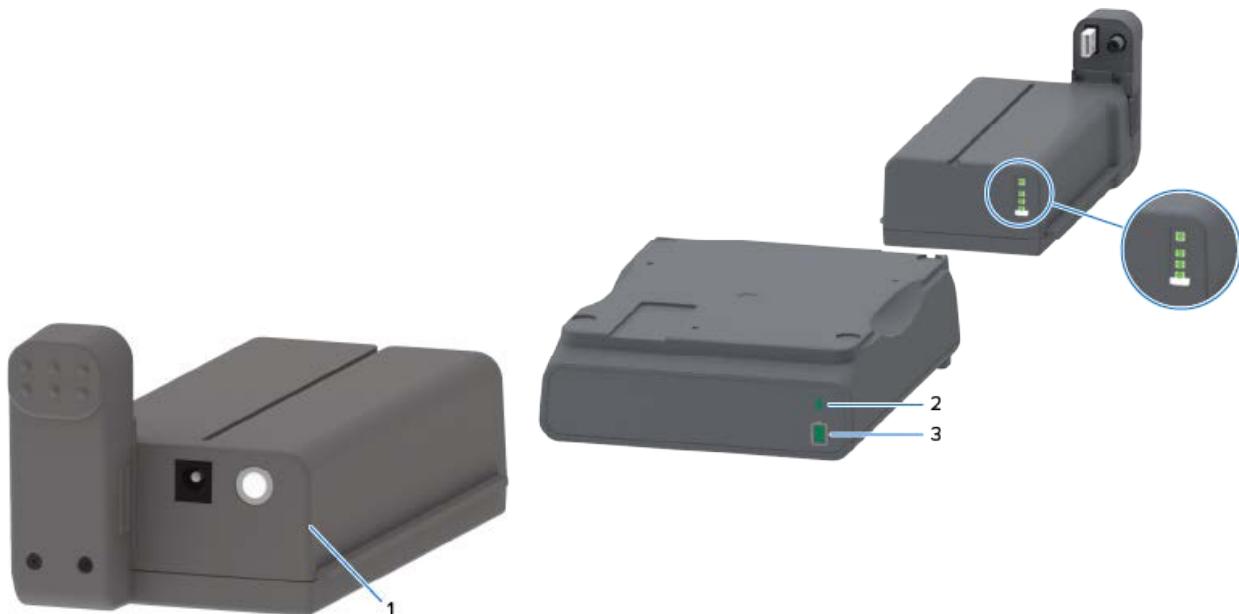
**Table 9** Wi-Fi (WLAN) Status Indications (Continued)

Status	Description
Wi-Fi (WLAN) 10base Link 	The printer is connected to your network and the Wi-Fi signal is weak.
Wi-Fi (WLAN) Link Error 	An error condition exists. The printer is not connected to your network.

## Battery Indicators and Controls

The optional printer battery accessory has a simple, one button, four-LED indicator user interface to control and display battery status and health. The battery acts as an uninterruptible power supply (UPS) for the printer.

For more information on using the battery with your printer and power saving modes (sleep, shutdown, etc.), see [Printing with the Attached Battery Base and Battery Option](#) on page 252.



1	<b>Battery Control</b> button
2	Battery health indicator (located on the back of the battery)
3	Battery charge level indicator (located on the back of the battery)

The exploded view (the circles in the image above) show the health indicator on the top and the three charge-level indicators below it.

**Table 10** Battery Indicators and Controls

Icon	Button/Indicator	Descriptions
	<b>Battery Control</b> button — Enables you to control the battery, both inside and outside of the printer.	<ul style="list-style-type: none"> <li>If you press and release this button when the battery is on, it has this effect:           <ul style="list-style-type: none"> <li>Wakes up (activates power) the battery from Sleep mode or Shutdown mode. The battery health and charge status are checked. The battery indicators all flash on and off together three times. Now, you have one minute to turn printer power on before the battery reverts to a prior Sleep or Shutdown mode.</li> <li>The battery displays its charge level in the first 10 seconds after internal battery health checks are complete</li> </ul> </li> </ul> <p>To place the printer in Shutdown mode, press and hold <b>Battery Control</b> for 10–11 seconds and release. The battery starts shutting down. Approximately three seconds later, all battery LEDs flash three times to let you know the battery has shut down.</p>
	Battery Health indicator — Displays the battery's charging status and health of the battery.	<ul style="list-style-type: none"> <li>Green — Good health, charge complete and ready to operate.</li> <li>Amber — Charging (printer is OFF).</li> <li>Red — Battery has an internal error. Remove the battery and see <a href="#">Troubleshooting</a> on page 311.</li> <li>Flashing red — Charging error (over or under temperature, internal monitoring error, or other)</li> </ul>

**Table 10** Battery Indicators and Controls (Continued)

Icon	Button/Indicator	Descriptions
	Battery Charge Level indicator — Displays the battery's charging status and health of the battery.	<ul style="list-style-type: none"> <li>Three green bars on, indicator does not flash — The battery is fully charged and does not have to continue charging.</li> <li>Two green bars on with the top bar flashing — The battery is at less than full charge.</li> <li>One green bar flash — It is time to charge your battery!</li> <li>No bars on — The battery needs charging, but the Battery Health indicator flashes when <b>Battery Control</b> is pressed. The printer CANNOT be turned on when the battery is in this state.</li> <li>Amber — The battery is charging.</li> </ul>

# Install Hardware Options

This section provides instructions for installing the common network connectivity modules and media handling options available for use with your printer.



**IMPORTANT:** To simplify and speed up the setup process, install all connectivity modules and media-handling options before you set up and use your printer for the first time.



**IMPORTANT:** We strongly recommend that you update your printer's firmware after the printer hardware options are added. Many of these options have internal firmware that require the latest firmware to be installed on your printer. For instructions, see [Updating Printer Firmware](#) on page 310.

## Field-Installable Printer Accessories and Options

This section lists the accessories and options available for the printer models covered in this guide.

### Printer Connectivity Modules

The connectivity module's access door must be removed prior to installing the following options. See [Accessing the Connectivity Module Slot](#) on page 62.

- Wireless Connectivity Module (Wi-Fi 802.11ac, Bluetooth 4.2, BTLE 5, and MFi 3.0) — see [Installing the Wireless Connectivity Module](#) on page 66.
- ZD421 Serial Port — see [Installing the Serial Port Module](#) on page 63.
  - RS-232 DB-9 connector with DTE/DTC auto-switching — see [Serial Port Interface](#) on page 342.
- ZD421 Internal Ethernet (wired LAN) — see [Installing the Internal Ethernet \(LAN\) Module](#) on page 64.
  - RJ-45 connector
  - Fast Ethernet 10/100 auto-switching, 10Base-T, and 100Base-TX networks

### Media Handling Options

The printer's standard bezel must be removed prior to installing the following options — see [Removing the Standard Bezel](#) on page 73.

- Label Dispenser (automatically peels liner off labels and dispenses the labels) — see [Installing the Label Dispenser](#) on page 74.
- General Purpose Media Cutter — see [Installing the Standard Media Cutter](#) on page 74.
- Media Roll Adapters for 38.1 mm (1.5 in.), 50.8 mm (2.0 in.), or 76.2 mm (3.0 in.) I.D. media cores — see [Media Roll Core Size Adapters](#) on page 76.
- Fanfold Media Access Cover for thermal transfer printers.

### Power Base Options

The ZD421 and ZD621 printers support power base field upgrade kits for each of the Direct Thermal and Thermal Transfer versions of these printers.

- Attached Power Supply Base (power supply included) — see [Installing the Attached Power Supply Base Options](#) on page 77.
- Battery Power Base (battery pack sold separately) — see [Installing the Attached Battery Base Options](#) on page 80.
- Battery Pack (battery power base sold separately) — see [Installing the Battery into the Attached Power Base](#) on page 81.

## Printer Connectivity Modules

The connectivity modules are easily installable without the use of tools.



**CAUTION:** The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the printhead or electronic components used in this device. You must observe static-safe procedures when working with the printhead or the electronic components.

### Power Failure Recovery Mode Jumper (OFF by Default)

All printer connectivity modules have a power failure recovery jumper that is set to the OFF position by default.

When the jumper is set to ON, the printer automatically powers on when plugged into an active AC power source.

**NOTE:** Power Failure Recovery Mode is available ONLY on printers that have a Printer Connectivity Module installed.



See also **POWER** Button — Power Failure Recovery Mode in [Standard Interface Controls](#) on page 48 for information on the power ON/OFF behaviors when the jumper is set to ON.

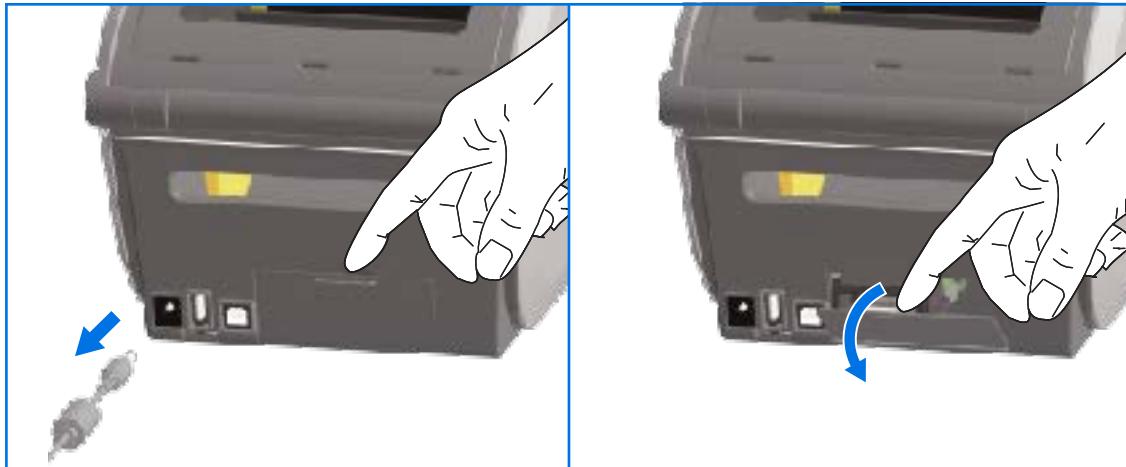
## Accessing the Connectivity Module Slot

Follow these instructions to gain access to the connectivity module slot.

- Disconnect the DC power plug from the rear of the printer.
- Open the module access door by pushing down on the top of the door with your fingertip.

This releases the latch.

3. Pull the door away from the printer and down to remove.



### Installing the Serial Port Module

Follow these instructions to install the serial port module.

1. With the DC power plug and module's access door removed, slide the serial port module into the printer. Push the circuit card in slowly but firmly until the card is just past the inside lip of the access door.



2. Align the bottom of the serial port's door cover to the bottom lip of the module access opening. Swing the door up and snap the cover closed.



1	Serial port (RS-232)
---	----------------------



**NOTE:** For best printer performance, update the printer's firmware after installing options or immediately after the printer's initial setup. See [Updating Printer Firmware](#) on page 310.

### Installing the Internal Ethernet (LAN) Module

Follow these instructions to install the Ethernet (LAN) module.

1. With the DC power plug and module's access door removed, slide the Ethernet module into the printer. Push the circuit card in slowly but firmly until the card is just past the inside lip of the access door.



2. Align the bottom of the Ethernet port's door cover to the bottom lip of the module access opening, then swing the door up and snap the cover closed.



1	Ethernet port (RJ-45)
---	-----------------------



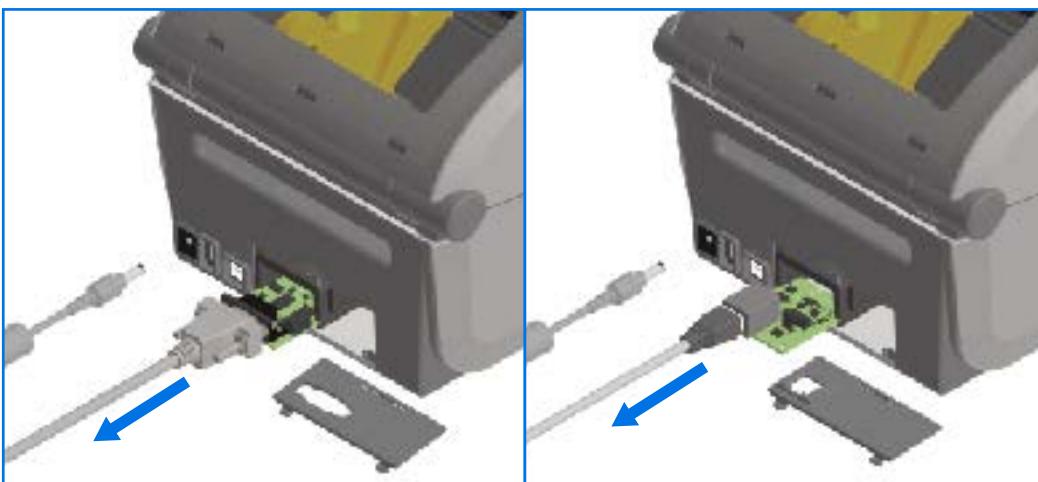
**NOTE:** For best printer performance, update the printer's firmware after installing options or immediately after the printer's initial setup. See [Updating Printer Firmware](#) on page 310.

## Removing Printer Connectivity Modules

Connectivity modules can easily be removed when you need to install another module or for printer repair. They should not, as a general practice, be removed and replaced routinely.

Follow these instructions to remove a connectivity module installed in your printer:

1. Remove the interface cable (Ethernet or Serial).
2. Remove the module access door. Push down on the top of the door with your fingertip. This releases the latch.
3. Pull the door away and down to remove.



4. Reattach the interface cable to the connectivity module and secure the cable.
5. Gently pull on the interface cable that is secured to the connectivity module, then slowly pull the module out of the printer.
6. Install a different connectivity module or reinstall the connectivity module's access door as required. Align it to the bottom lip of the access opening and swing it up to snap and lock in place.

## Installing the Wireless Connectivity Module

Use this procedure to install the Wireless Connectivity Module.



**CAUTION:** The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the printhead or electronic components used in this device. You must observe static-safe procedures when working with the printhead or the electronic components.

No tools are needed to perform this procedure.

To prepare for the installation, remove any loaded media, turn printer power OFF, and disconnect any power or interface cables from the printer.

1. Access the wireless connectivity area by turning the printer over to access the wireless connectivity door.
2. Push the latch at the top with your fingertip to open the module access door. The printer base has a recessed area for your fingertip.  
The latch releases.
3. Lift and swing the door up to remove it.



4. Align the antenna arm (marked 1 in the next figure) into the well.
5. Lower and align the module (2) to the printer's Wi-Fi connector (3).

6. Push the module (2) in gently but firmly until fully seated.

**Figure 3** Seating the Module (steps 4–6)



1	Antenna arm
2	Module
3	Wi-Fi connector

7. Align the shortest side of the wireless connectivity door (show as 1 in the next image) to the shortest side of the opening.
8. Swing the door (1) on the tab in the middle of the door, then swing the door closed.

9. Push the door (1) to lock the latch.

**Figure 4** Closing the Wireless Connectivity Door (steps 7–9)



**NOTE:** The wireless connectivity door (1) will not close correctly if the module has not been fully seated. Being able to close this door properly is a good indication that the module is correctly seated.

**10.** Place the compliance label that shipped with the module on the bottom of the printer.

The compliance label has the appropriate regulatory marks needed to use the printer in your country.

**Figure 5** Label Locations for Thermal Transfer Printers



1	Location for the label	2	Label affixed
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**Figure 6** Label Locations for Direct Thermal Printers



1	Location for the label	2	Label affixed
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## Finding Your Printer's Media Access Control (MAC) Address

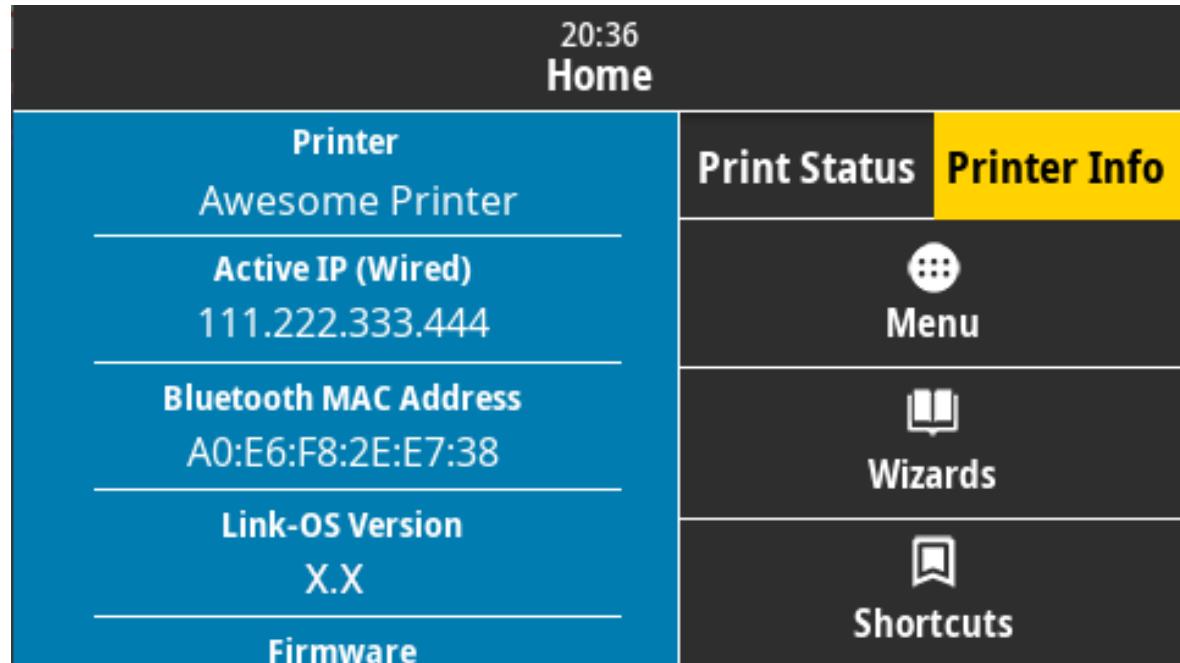
Use this procedure to find your printer's MAC address.



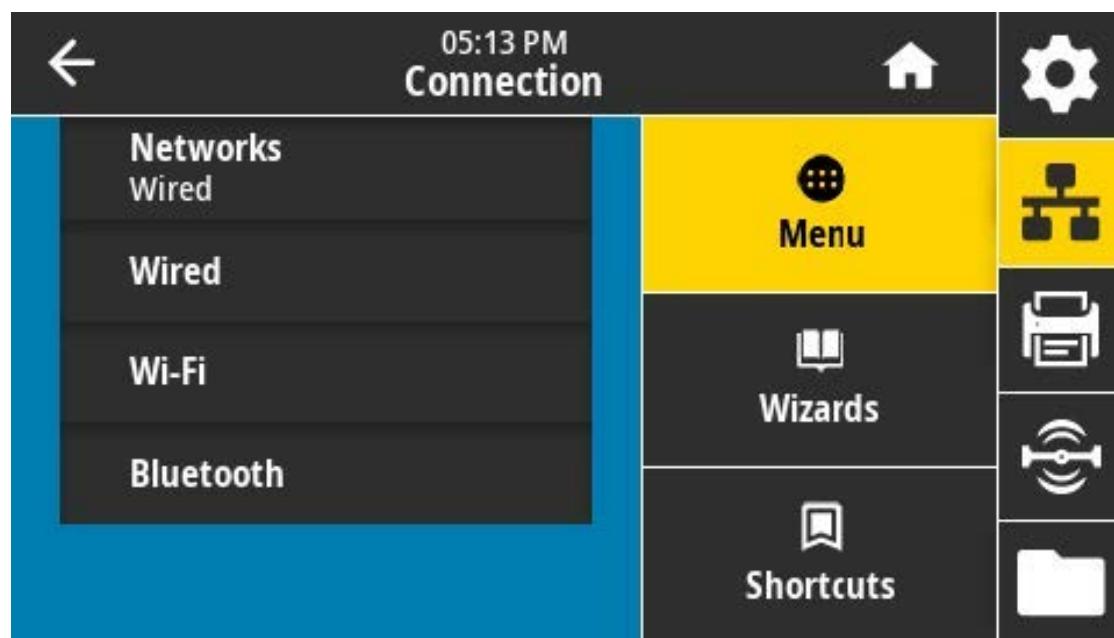
**NOTE:** If your printer came with a Wi-Fi/Bluetooth module installed, the labels with the MAC address can be found the bottom of the printer.

1. If your printer has a color-touch display, use this step. (Otherwise, skip to step 2.)

Tap **Printer Info** on the display...

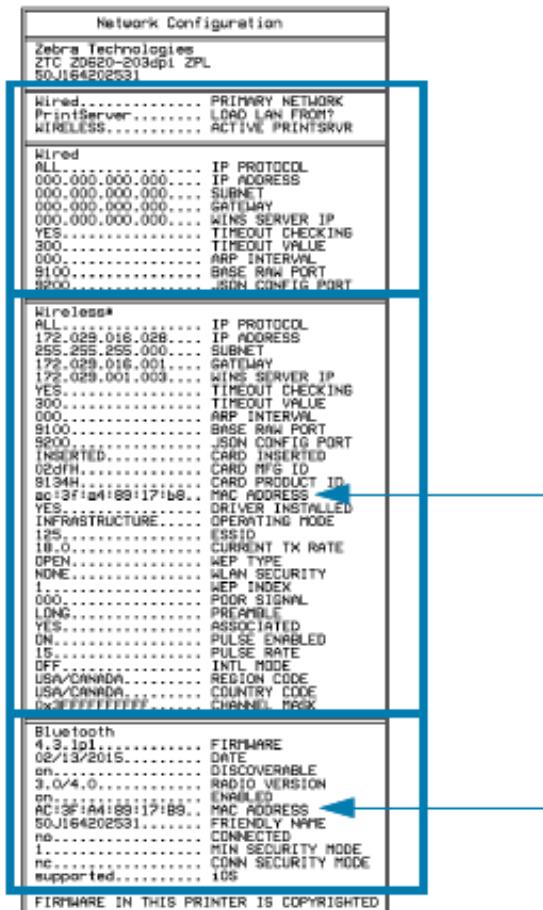


Alternatively, tap **Menu** > **Network** > **Wi-Fi**, and scroll down.





2. If your printer does NOT have a color touch display and you want to locate the printer's MAC address, press and hold **FEED** and **CANCEL** simultaneously for a few seconds while the printer is in Ready state. The printer prints a network configuration report that lists its MAC address.



## Media Handling Options

This section describes the various media handling options available with your printer.

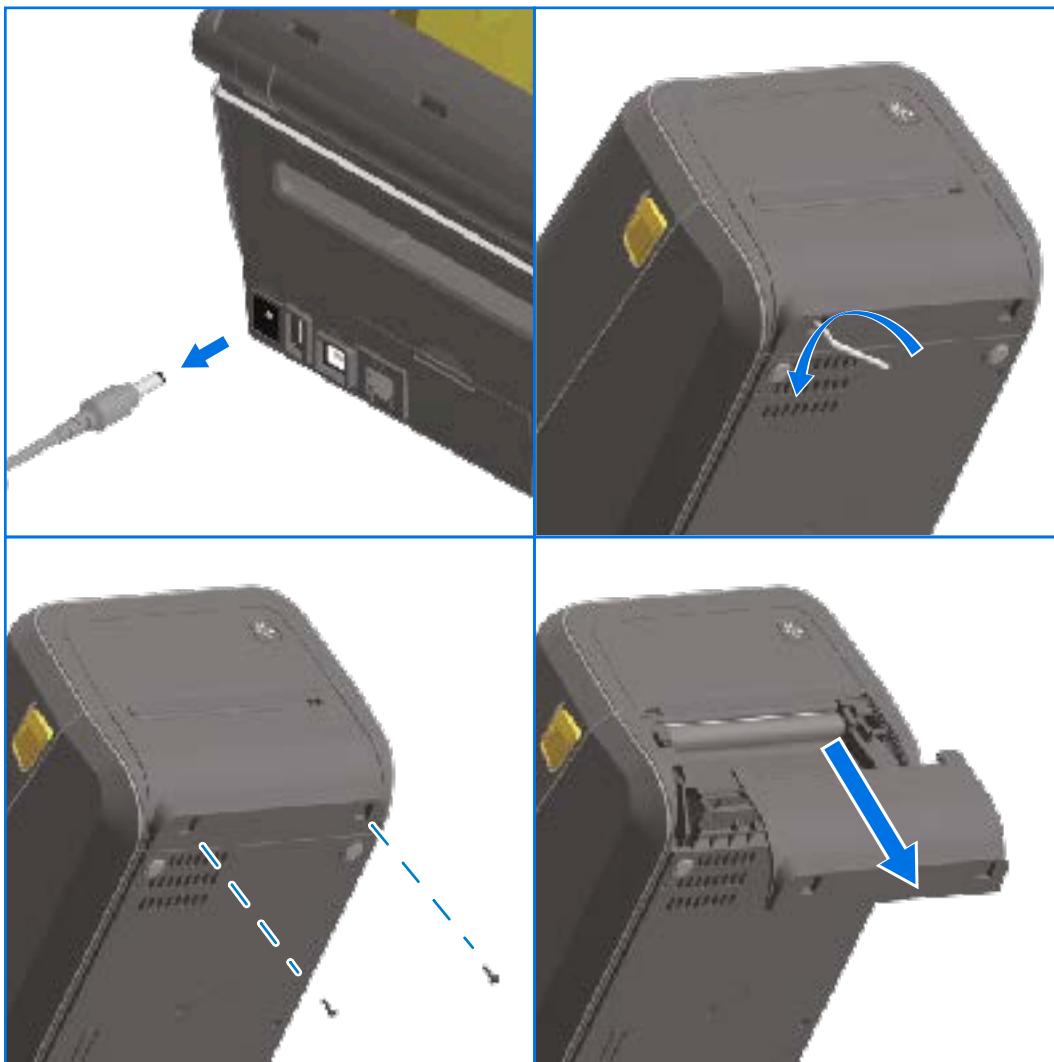


**CAUTION:** The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the printhead or electronic components used in this device. You must observe static-safe procedures when working with the printhead or the electronic components.

### Removing the Standard Bezel

Use this procedure to remove the standard bezel before mounting your media-handling option.

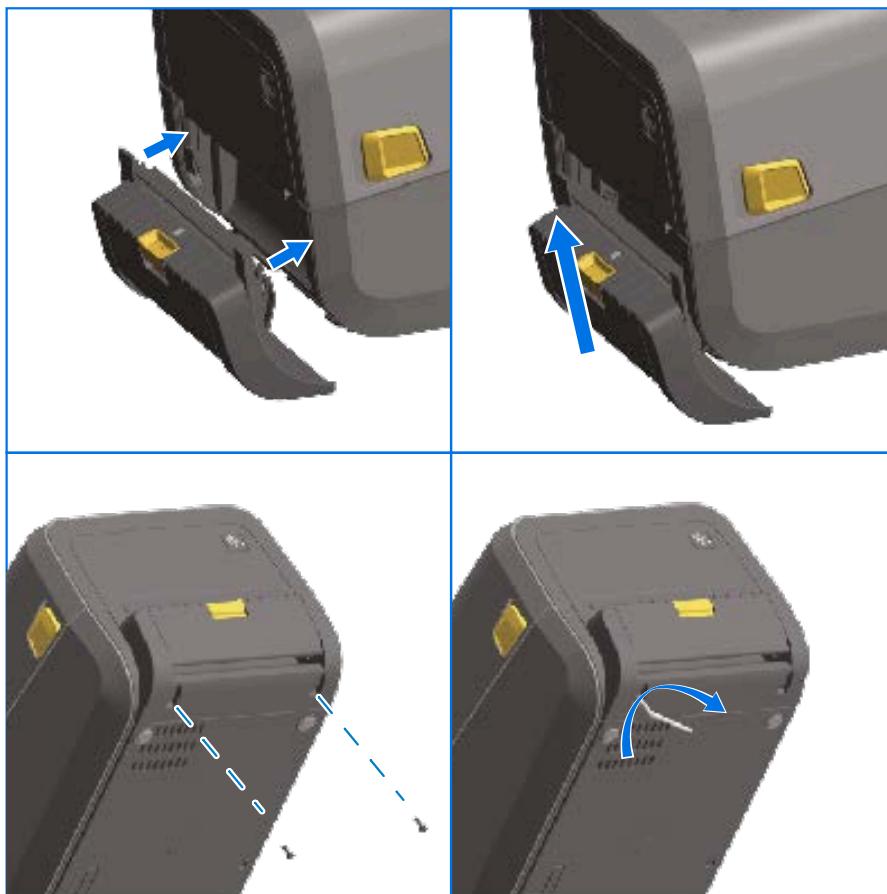
1. Disconnect the printer's DC power input plug from the rear of the printer.
2. Turn the printer upside down. Use the the supplied Torx wrench to remove the two mounting screws. Save the screws to reinstall the bezel later.
3. Slide the bezel down the front about 12.5 mm (0.5 in.) until it comes loose and pull it out.



## Installing the Label Dispenser

To install the label dispenser, you must remove the standard bezel and disconnect DC input power to the printer. See [Removing the Standard Bezel](#) on page 73.

1. Place the label dispenser module and printer right side up with the top of the module 12.5 mm (0.5 in.) below the bottom of the top cover. Center and push the module into the front of the printer and slide it up until it stops.
2. Turn the printer upside down, then use the Torx wrench to attach the module to the printer with the two supplied screws.



**NOTE:** For optimal printer performance, update the printer's firmware after installing options or immediately after the printer's initial setup. See [Updating Printer Firmware](#) on page 310.

## Installing the Standard Media Cutter

To install the standard media cutter, you must remove the standard bezel and disconnect DC input power to the printer. See [Removing the Standard Bezel](#) on page 73.

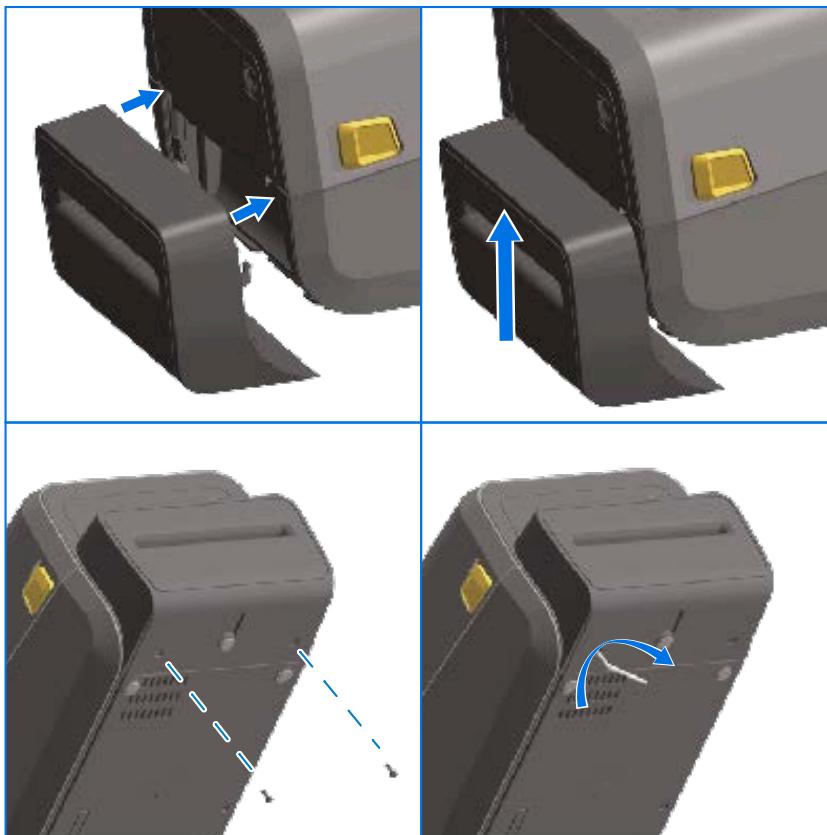


**CAUTION:** There are no operator serviceable parts in the cutter unit. Never remove the cutter cover (bezel). Never attempt to insert objects or fingers into the cutter mechanism.



**IMPORTANT:** Using unapproved tools, cotton swabs, solvents, etc. may damage or shorten the cutter's usable life or cause the cutter to bind.

1. Place the cutter module and printer right side up with the top of the module even with the bottom of the top cover.
2. Center and push the module into the front of the printer and slide it up until it stops.
3. Turn the printer upside down, then use the Torx wrench to attach the module to the printer with the two supplied screws.



**NOTE:** For optimal printer performance, update the printer's firmware after installing options or immediately after the printer's initial setup. See [Updating Printer Firmware](#) on page 310.

## Media Roll Core Size Adapters

The media roll adapters kit includes three pairs of media roll adapters. The kits are for the following inner diameter (I.D.) media cores:

- 38.1 mm (1.5 in.)
- 50.8 mm (2.0 in.)
- 76.2 mm (3.0 in.)

The adapters are intended to be permanently installed in the printer. You can replace them as needed to support other media roll sizes that require one of these adapter sizes.



**IMPORTANT:** The adapters may wear out if they are changed too often.



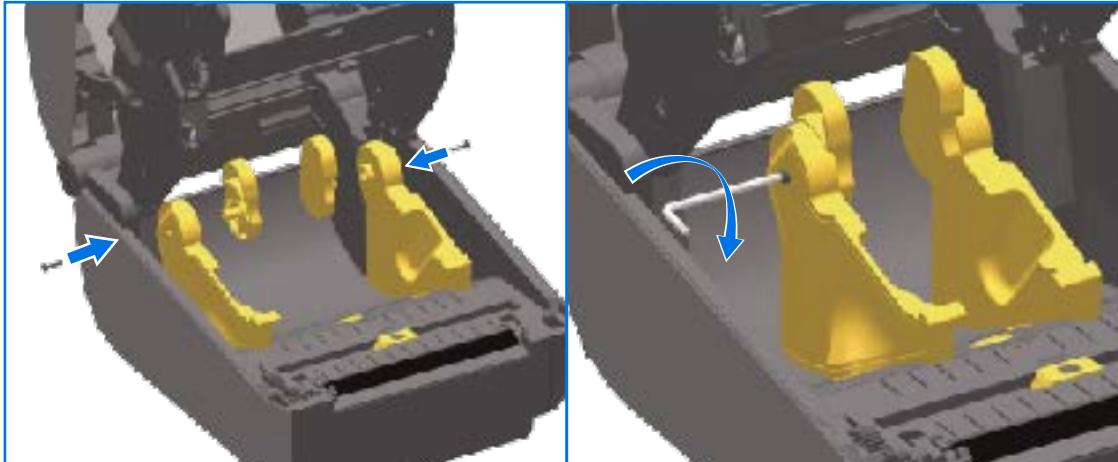
**NOTE:** When you remove the media adapters to print on standard roll cores, the plastic pieces on the sides of the media roll holders may rub against the roll. If this is the case, push the attached pieces back into the side of the media roll holder.

### Installing the Media Roll Adapters

1. Place one screw in the top adapter mounting hole of both of the roll holders. Turn the screws clockwise using the Torx wrench until the tip of the screw barely protrudes through the inside of the roll holder.



**NOTE:** The screws are self-tapping.



2. Place the adapter on the inside of the roll holder, making sure the large side is on top and the smooth side (no ribs) face the middle of the printer.
3. Align the adapter's top screw hole to the protruding screw tip and pinch it tightly to the roll holder body. Tighten the screw until there is no gap between the adapter and roll holder. Do not tighten beyond this point.



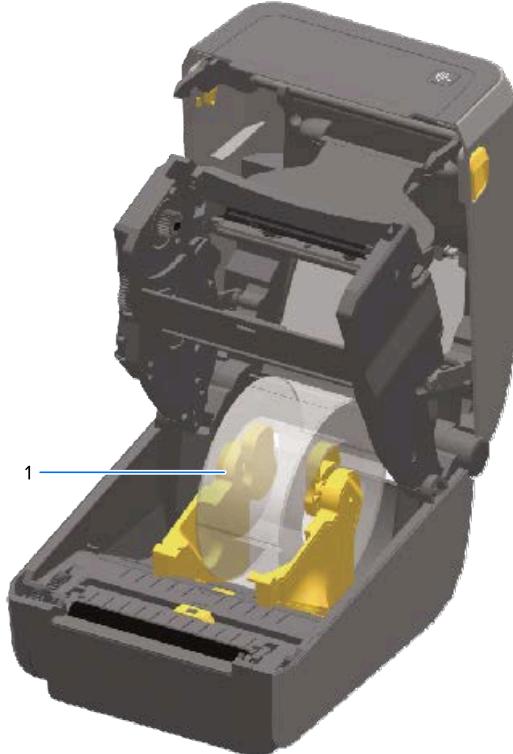
**IMPORTANT:** Over-tightening will strip the thread.

4. Insert a screw in the bottom adapter mounting hole. Pinch the adapter tightly to the roll holder while tightening the screw. Tighten the screw until there is no gap between the adapter and roll holder. Do not tighten beyond this point.



**IMPORTANT:** Over-tightening will strip the thread.

5. Repeat the above steps to install the other adapter and roll holder.



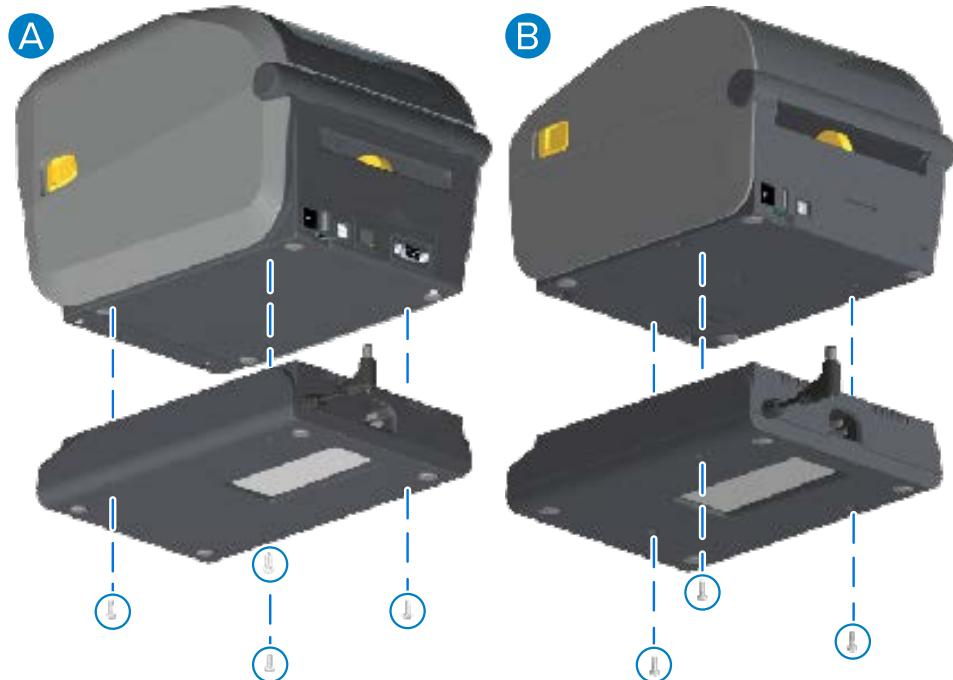
1	Label roll with 76.2 mm (3.0 in.) inner core mounted on media core adapters (shown as an example)
---	---

## Installing the Attached Power Supply Base Options

The power base is designed for quick installation using mounting screws (provided with the upgrade kit) and a Torx T10 wrench that you supply.

1. Remove media rolls (if any) from the printer.
2. Unplug the power supply cable from the back of the printer.
3. Turn the printer over and align the power base to the bottom of the printer, making sure the printer power plug is oriented toward the back of the printer. The printer's rubber feet should align with recesses on the top of the power base.

4. Use the screws provided to attach the power base to the printer. Thermal Transfer printer models use four screws (A), and Direct Thermal printer models use three screws (B). Tighten the screws using the T10 wrench provided in the kit.



A	Thermal Transfer printers	B	Direct Thermal printers
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5. Insert the DC input power plug into the printer.



1	DC input power plug
---	---------------------



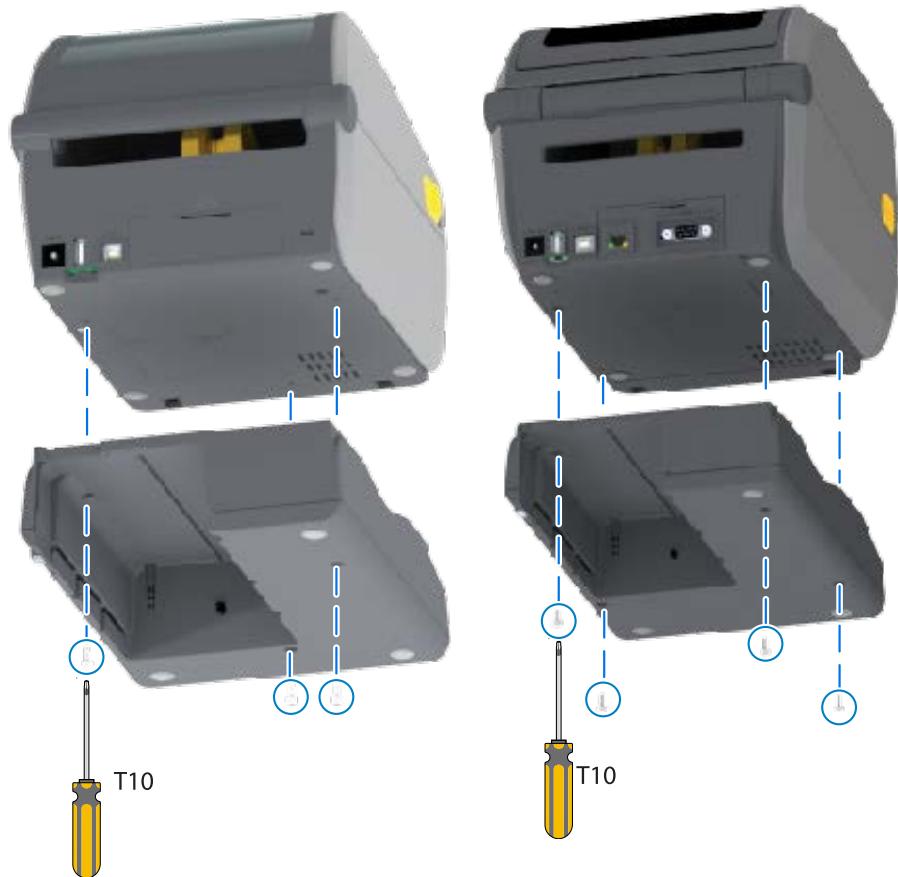
2	DC input power plug
---	---------------------

6. Re-connect the AC power cord to the printer power base.

## Installing the Attached Battery Base Options

The battery base is ready to attach to the printer. The base is installed using a Torx T10 wrench and the mounting screws provided with the upgrade kit.

1. Remove media rolls (if any) from the printer. Detach the original power supply cable from the back of the printer.
2. Turn the printer over and align the power base to the bottom of the printer with the printer power plug oriented toward the back of the printer. The printer's rubber feet should align with the recesses in the top of the power base.
3. Use the screws provided to attach the power base to the printer. Thermal Transfer printer models use four screws (image on the left below) and Direct Thermal printer models use three screws (image on the right below). Tighten the screws using the Torx wrench supplied in the kit.



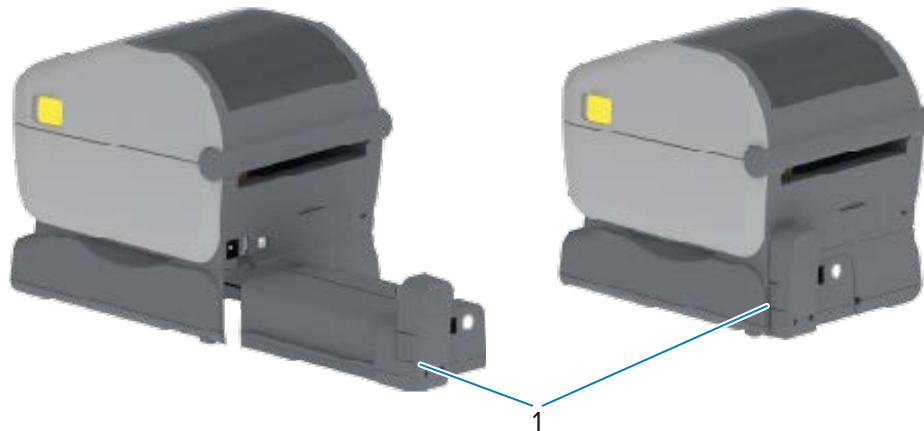
## Installing the Battery into the Attached Power Base



**IMPORTANT:** The attached battery base must be properly installed and securely connected your printer to keep from damaging the printer or the battery.

1. Disconnect the printer's external power supply from the DC power input connector located on the rear of the printer.
2. Slide the battery into the battery slot on the battery base. Push the battery into the base until battery pack is flush to the rear of the battery base, and the connectors on the battery pack are engaged with the ports on the back of the printer.

This image shows the position of the battery when it is ready to install (left) and the battery installed in the base (right).



1	Battery latch
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**NOTE:** Batteries are shipped in shutdown mode for safety and to keep the battery from discharging during storage and shipping. The battery requires charging prior to initial use with the printer.

3. Attach the printer's power supply to the battery to wake up the battery from shutdown mode and begin its initial charge.



**4.** The battery must be fully charged before first use. See [Battery Indicators and Controls](#) on page 58 to learn how to:

- turn the battery on.
- discover battery-charge-saving features and behaviors.
- check the battery's charge level and health.

The battery takes approximately two hours to reach full charge. The battery status/ health indicator (lighting bolt) turns from amber (charging) to green (charged) when the battery reaches full charge.

# Color Touch Display and Controls

The optional Color Touch Display available with select printers in this printer series lets you access printer features and run print jobs, use wizards for commonly-performed tasks, and troubleshoot issues if any with your printer.

## Color Touch Display Printer Controls

The Color-Touch Display interface option (available with some ZD series printer models) makes it easy for you to operate your printer. It is customizable for all user types and includes standard controls and indicators.



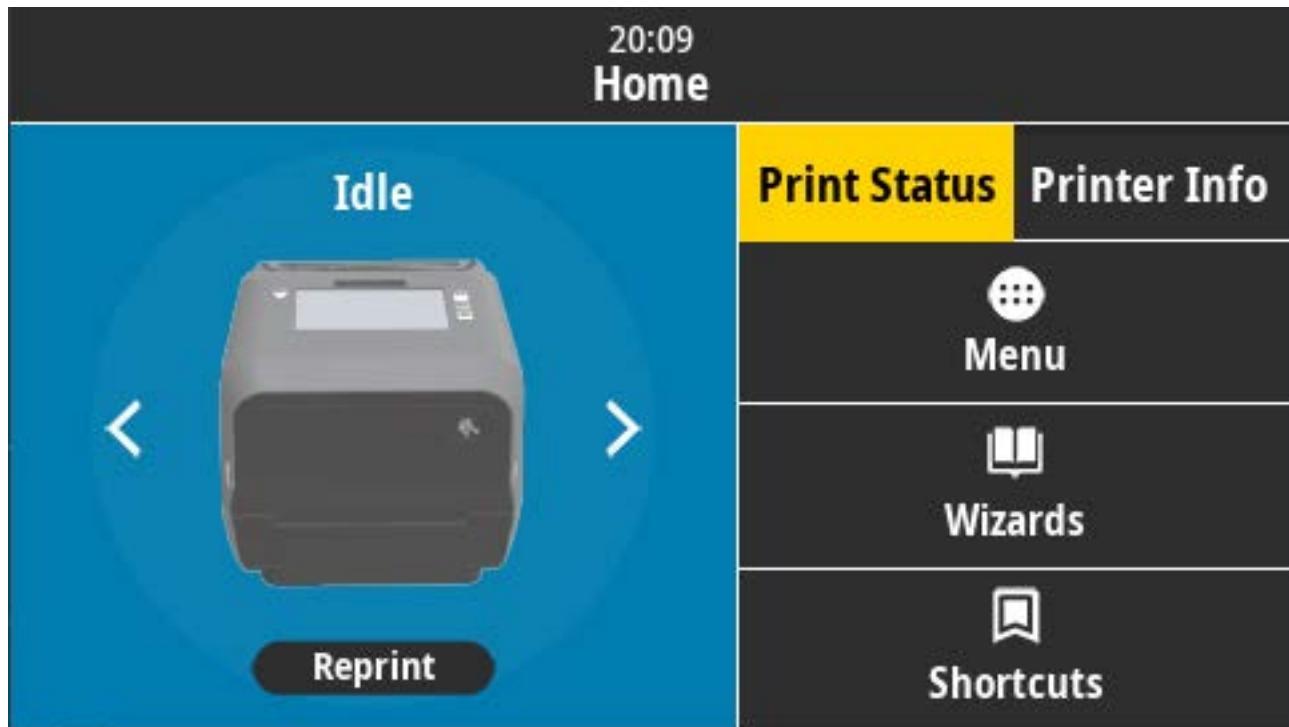
1	Status indicators	4	<b>CANCEL</b> button
2	<b>PAUSE</b> button	5	Color-touch display and Interface
3	<b>FEED</b> button	6	<b>POWER</b> button

See [Controls and Indicators](#) on page 47 for information on the printer's Standard Interface controls (**POWER**, **PAUSE**, **FEED**, and **CANCEL** buttons) and the five printer status indicators.

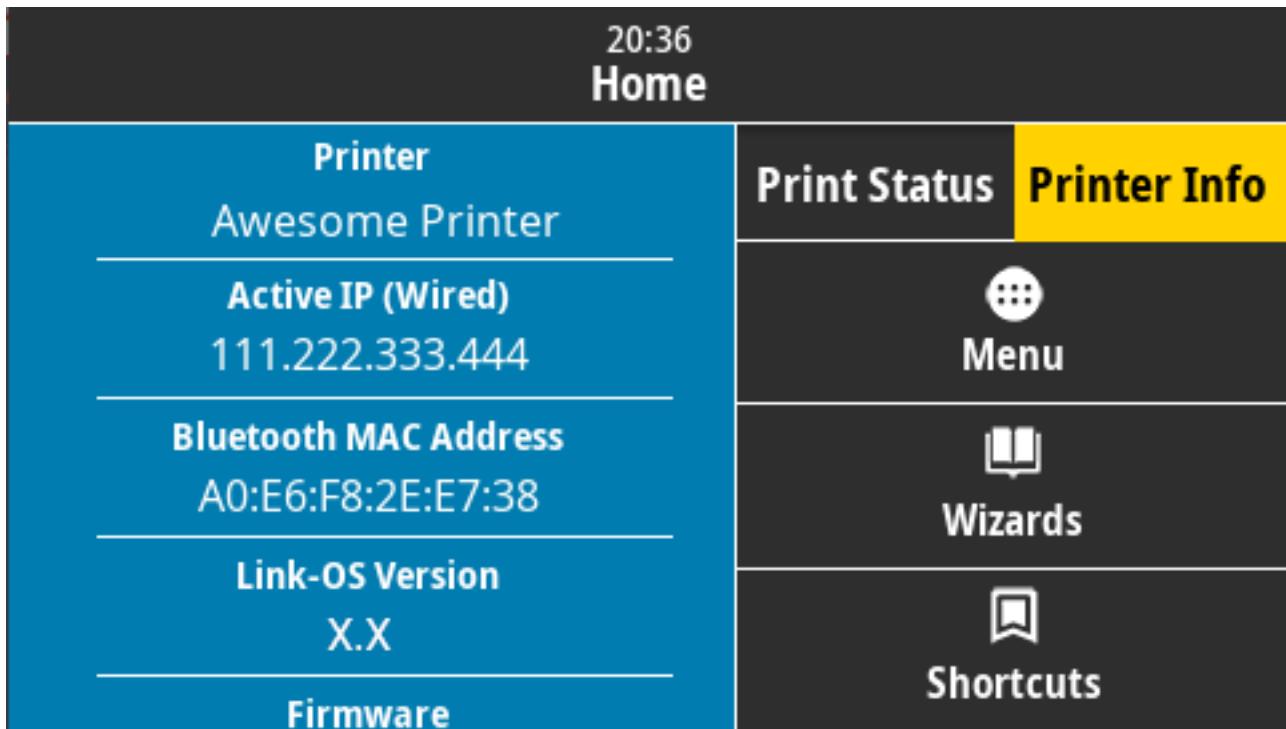
## Home Screen

The Home screen on the printer's display shows you the printer's current status and provides a way for you to access the printer's menus. You can rotate the image of the printer 360 degrees to view the information on it from all angles.

### Printer Status

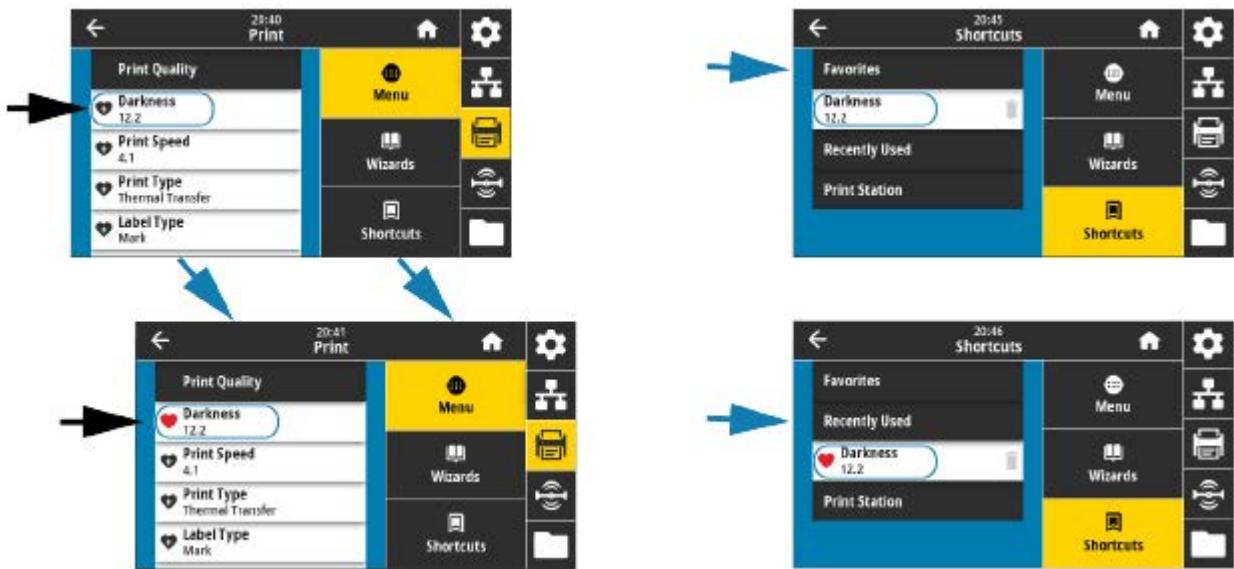


## Printer Info



Printers with the optional Color Touch Display interface include the following features:

- The printer's Standard Interface controls and status indicators provide a way for you to place the printer in various modes, recognize printer status, and operate the printer.
- The interactive Color Touch Display shows the normal operation status of the Home Screen with access to:
  - Print Status and Printer Info — Provide information about the printer.
  - Menu — Navigate the menu to establish and change settings, and to control print operations and file transfers.
  - Wizards — Use these to change printer settings by going through prompts. See [Printer Wizards](#) on page 88.
  - Shortcuts — Use these to quickly access the most recent menu items and to save your favorites. Touch the darkened heart icon next to a menu item to save it to your list of favorites. Items in the favorites are shown in the order in which they were saved.



The Color Touch Display displays alerts and error messages. If the background color of the Home Screen is yellow or red, the printer is in an alert or error state. For more information, see [Resolving Alerts and Errors](#) on page 311.

The Color Touch Display also shows a quick link to online instructions and how-to videos that you can access using mobile devices. And it provides access to onboard help.

## Printer Wizards

Printer wizards are designed to assist you by walking you through the setup process for various printer settings and features.

The following wizards are available:

- **Set All Wizard** — runs all the Wizards in sequence.
- **System Wizard** — sets up non-print related operating system settings.
- **Connection Wizard** — configures the printer's connectivity options.
- **Print Wizard** — configures key printing parameters and features.
- **RFID Wizard** — sets up the RFID subsystem's operations.

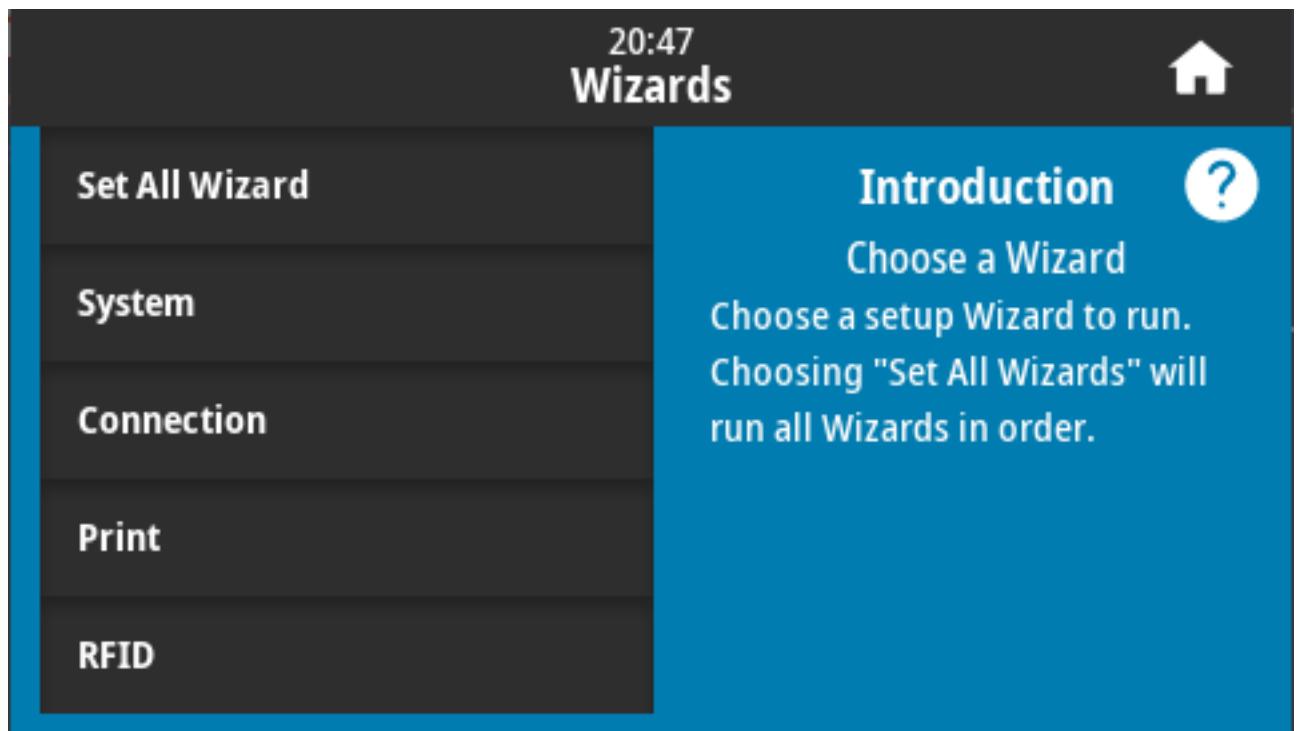


**NOTE:** When using the Wizards, do not send data to the printer from the host.



**NOTE:** For optimal results, use full-width media when running the Print or Set All Wizards. If the media is shorter than an image to be printed, the image may be truncated or it may print across multiple labels.

On the Home screen, touch **Wizards** to see the available options. For more information about individual settings set by any of the wizards., See [User Menus](#) on page 89.

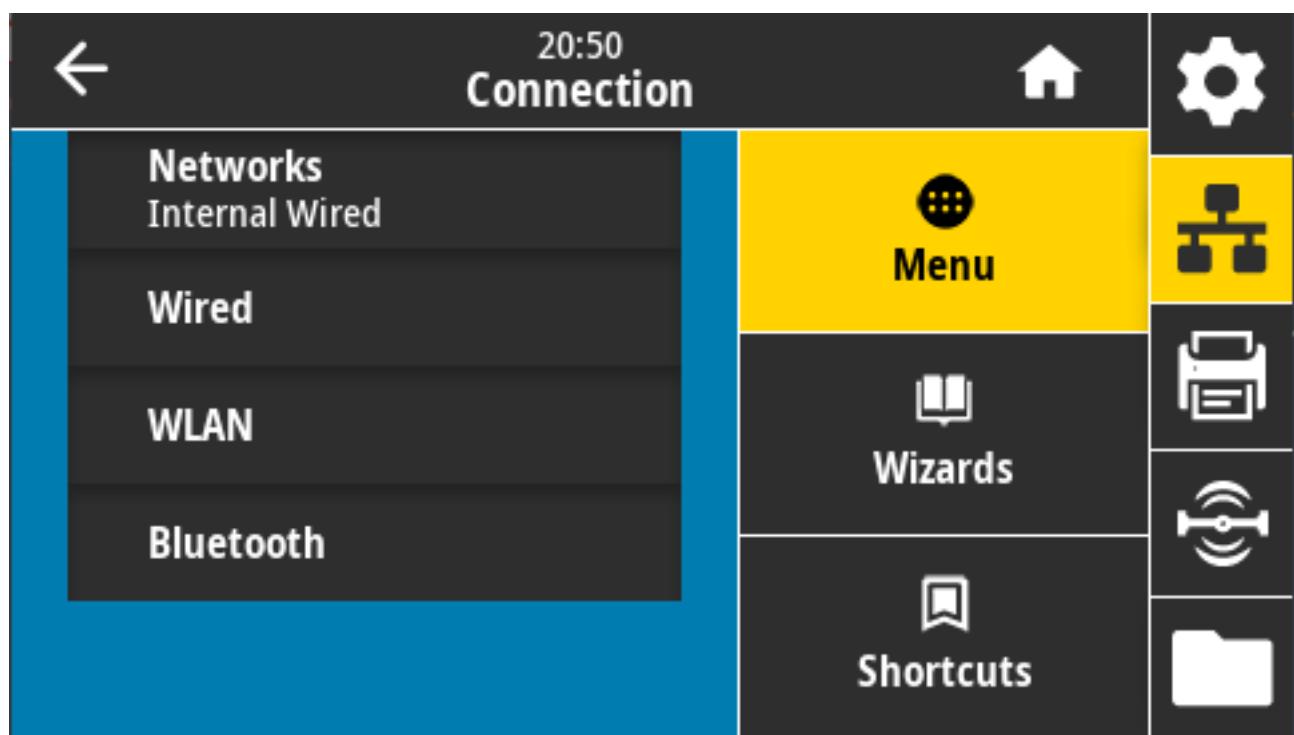
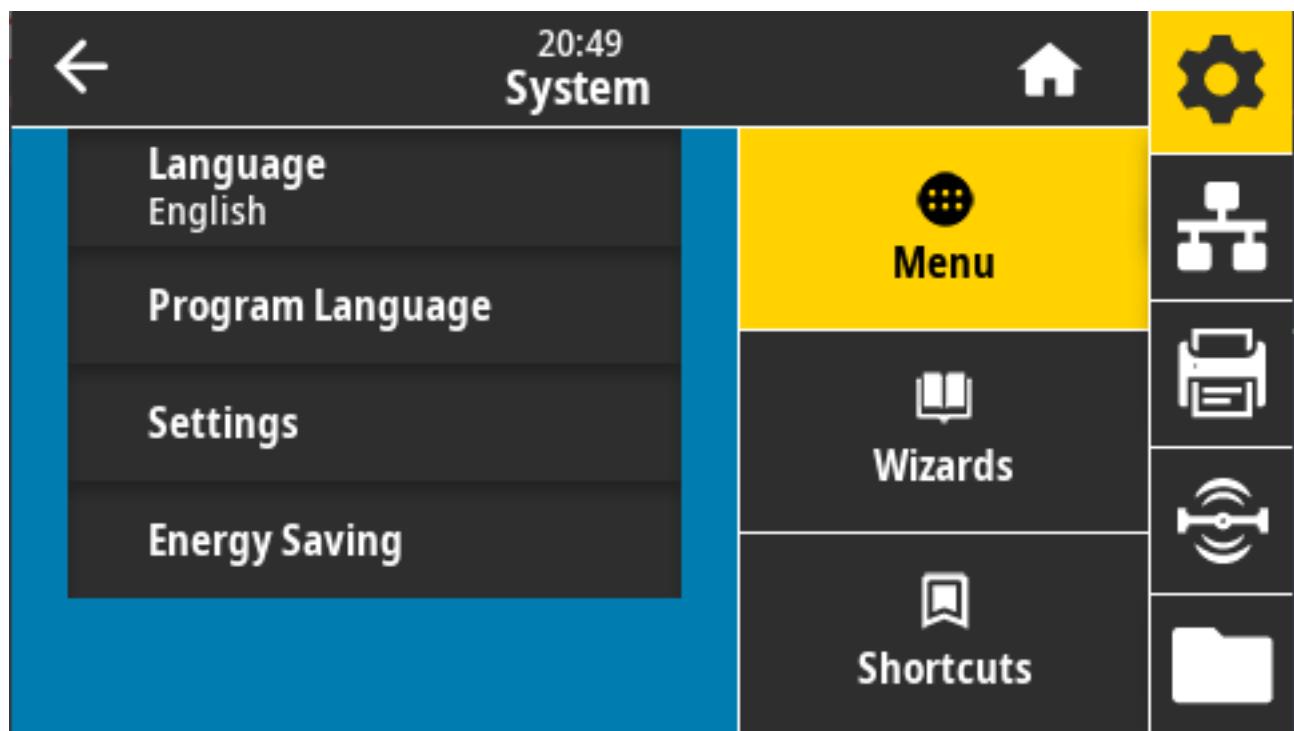


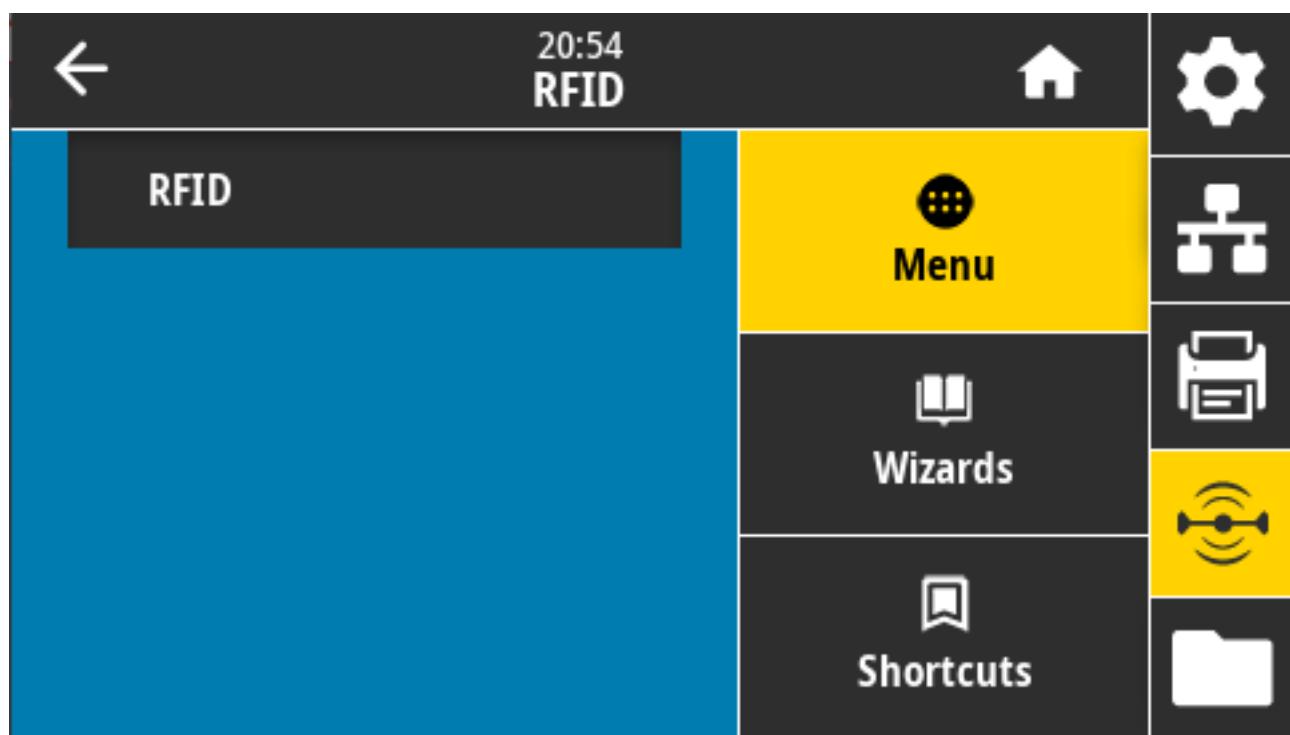
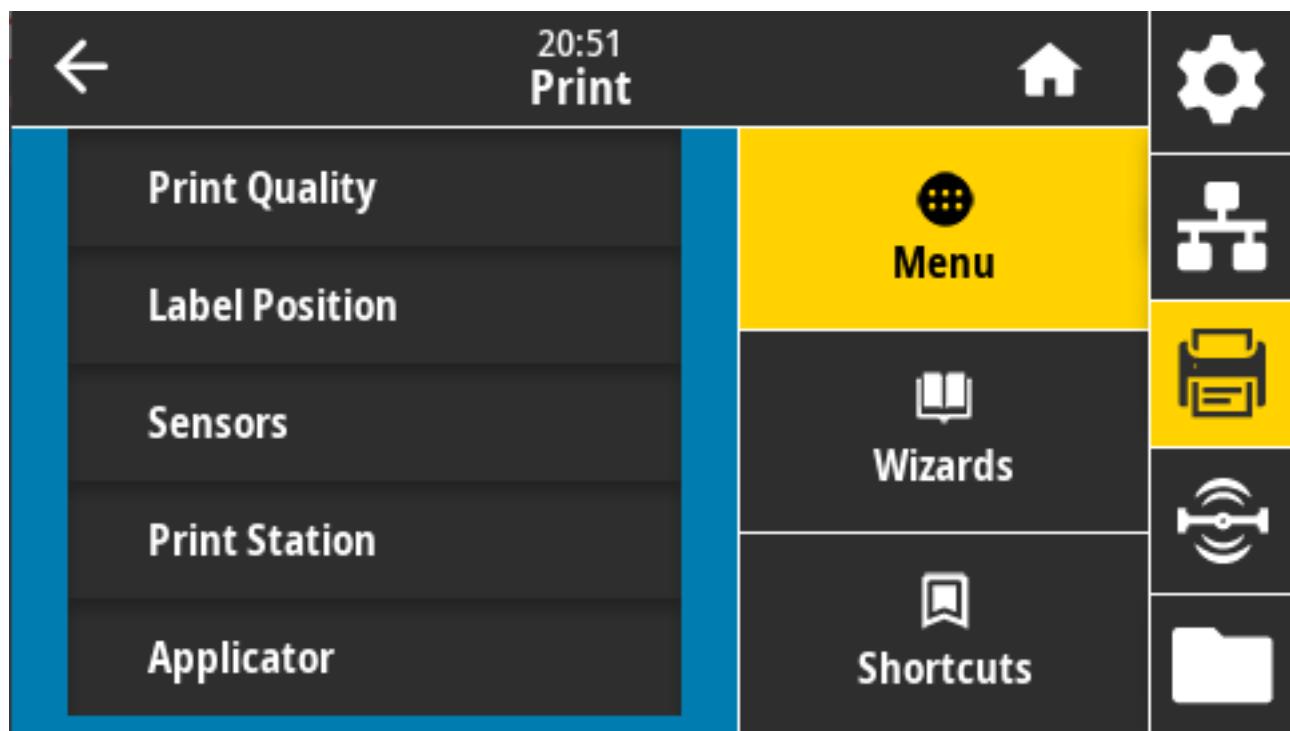
## User Menus

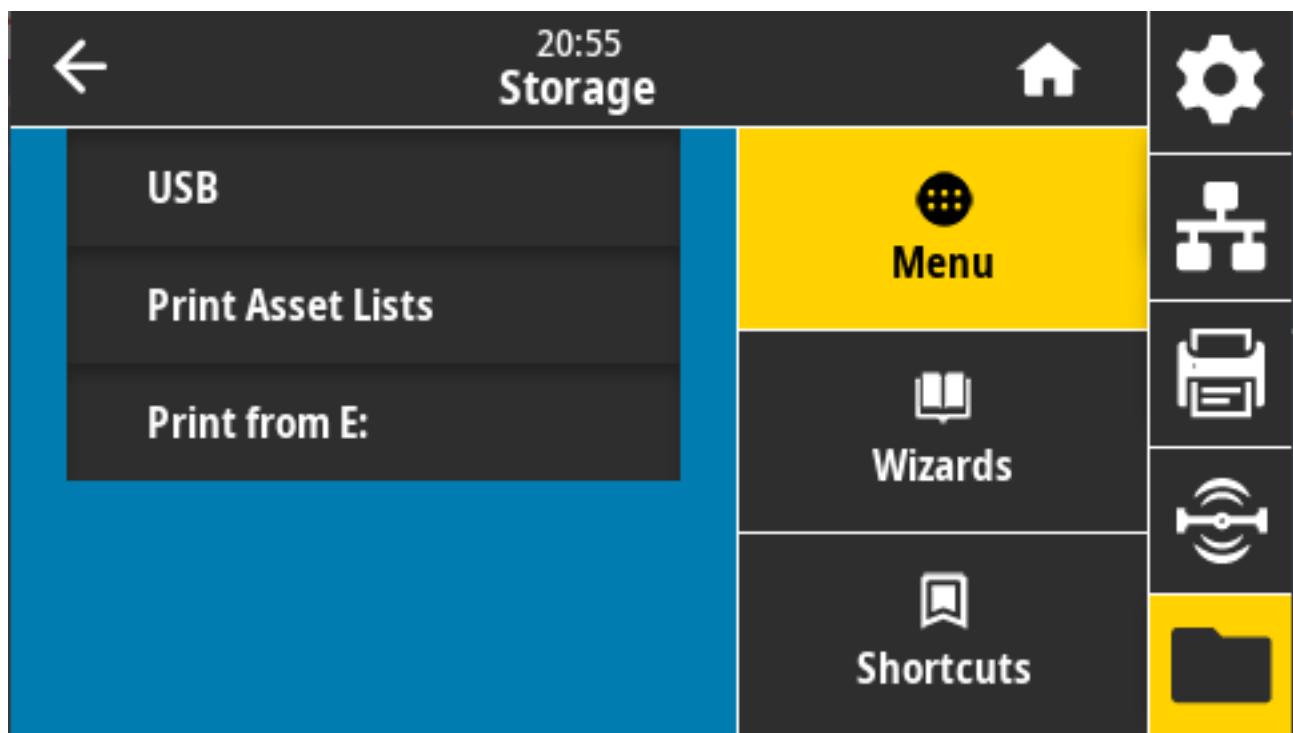
The printer's user menus enable you to configure the printer.

The following menus are available:

- System menu
- Connection menu
- Print menu
- RFID menu
- Storage menu



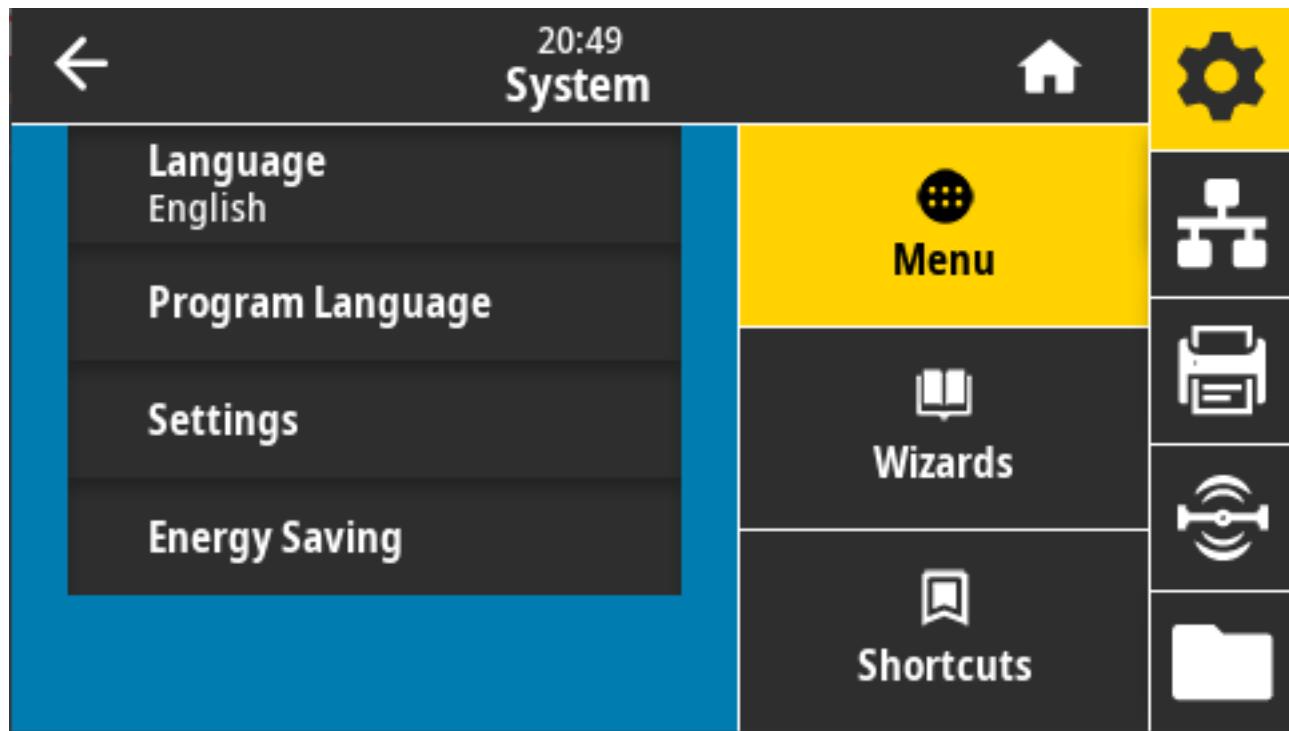




The user menu descriptions include other ways to change the same settings when other options exist. You can also use the printer's wizards to change some of the settings. See [Printer Wizards](#) on page 88.

## System Menu

Use System menu items to specify settings for printer function and printer options, set the display language, and restore defaults.

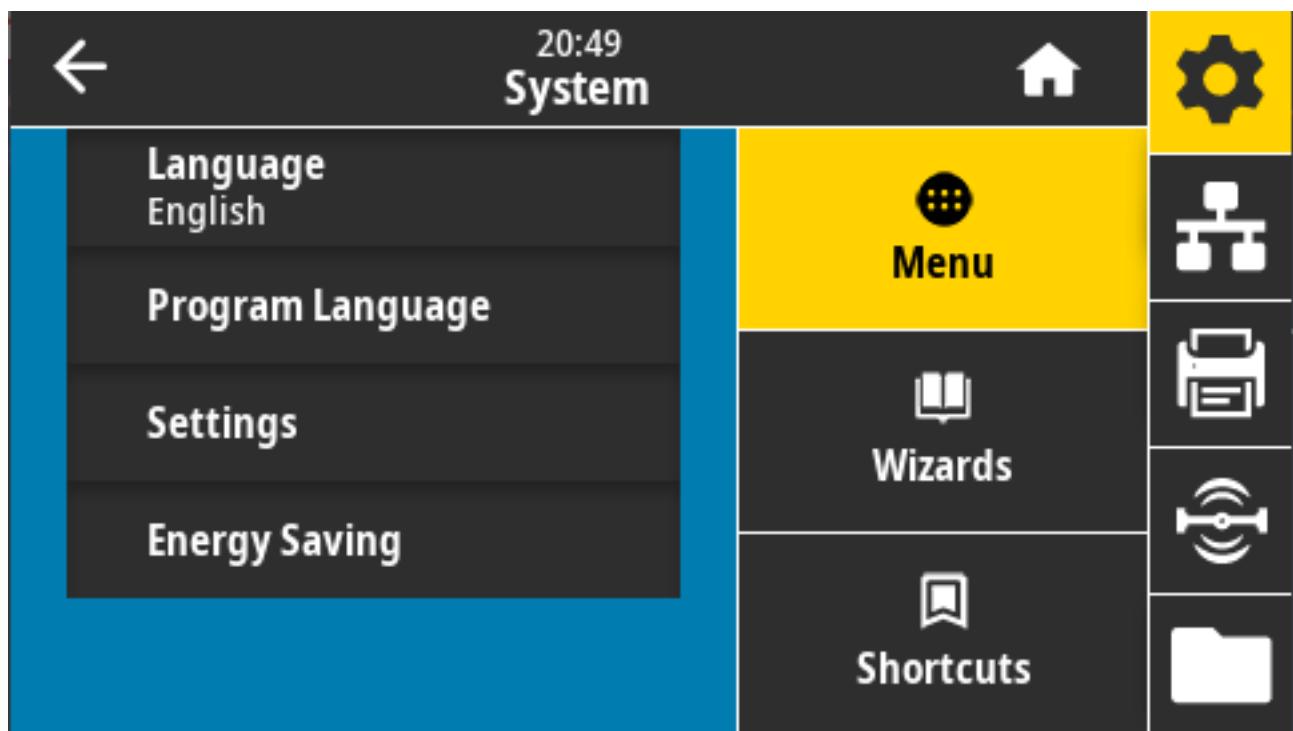


### System > Language

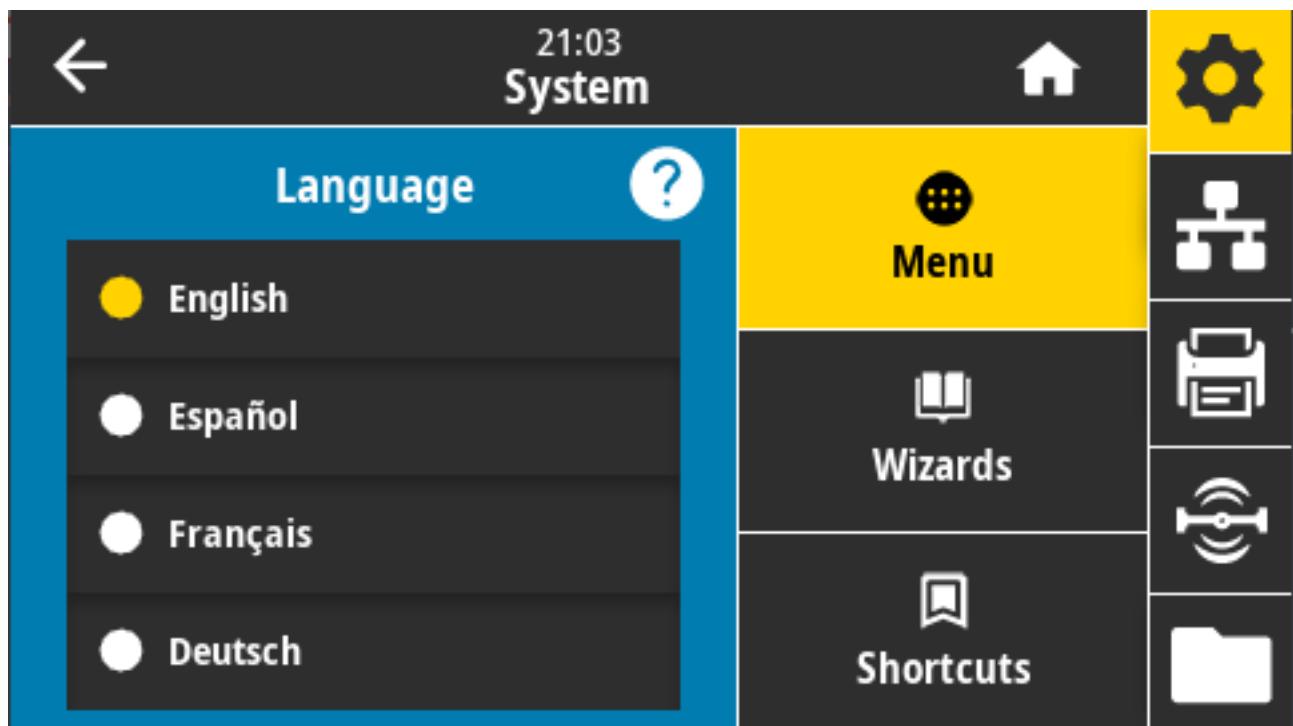
Use this setting to select one of 19 language choices for your printer display.



**NOTE:** The language selections for this parameter are displayed by language name in the language of the displayed name.



Touch/select **Language** to see and select from the available choices:



Accepted values: ENGLISH, SPANISH, FRENCH, GERMAN, ITALIAN, NORWEGIAN, PORTUGUESE, SWEDISH, DANISH, DUTCH, FINNISH, CZECH, JAPANESE, KOREAN, ROMANIAN, RUSSIAN, POLISH, SIMPLIFIED CHINESE, TRADITIONAL CHINESE

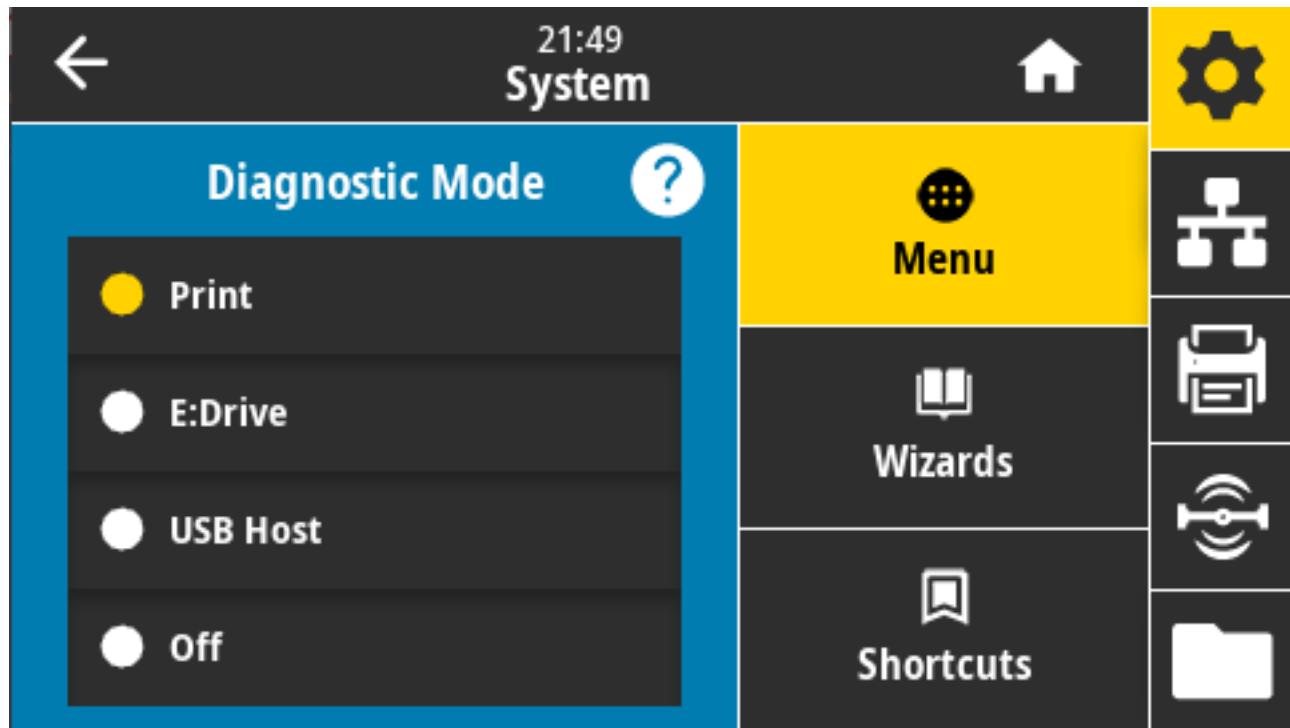
Related ZPL command(s): ^KL

SGD command used: `print.tone`

**View and Modify Printer Settings > General Setup > Language**

## System > Program Language > Diagnostic Mode

Use Communications Diagnostics Mode to enable the printer to output all communication as printed data for advanced troubleshooting



Accepted values: Print, E: Drive, USB Host, Off

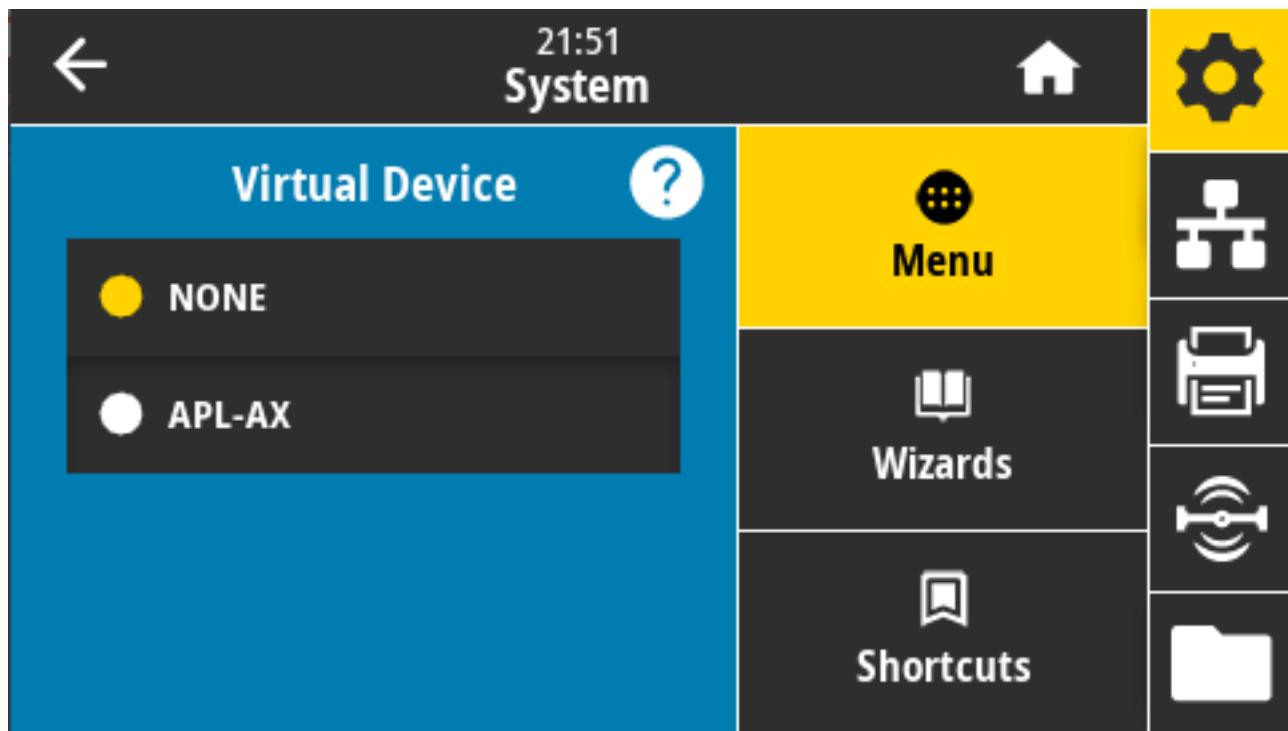
Related ZPL command(s): For Print Diagnostics only: `~JD` to enable, `~JE` to disable

Print Server web page: **View and Modify Printer Settings > General Setup > Language**

Control panel key(s): For print diagnostics only, with the printer in Ready state, press **PAUSE + FEED** simultaneously and hold for two seconds.

## System > Program Language > Virtual Device

If any Virtual Device applications are installed on your printer, you may view or enable/disable them from this user menu.

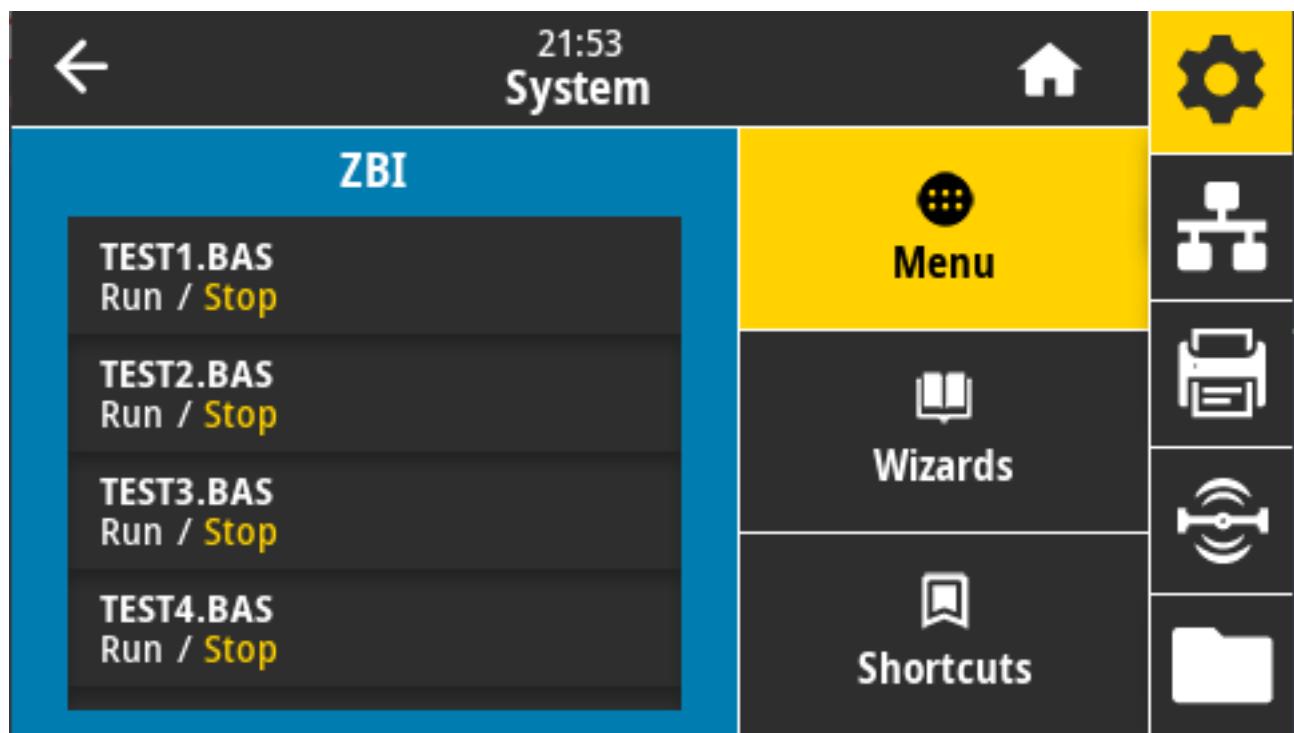


Values displayed: NONE, (followed by a list of any connected Link-OS Virtual Devices)

## System > Program Language > ZBI

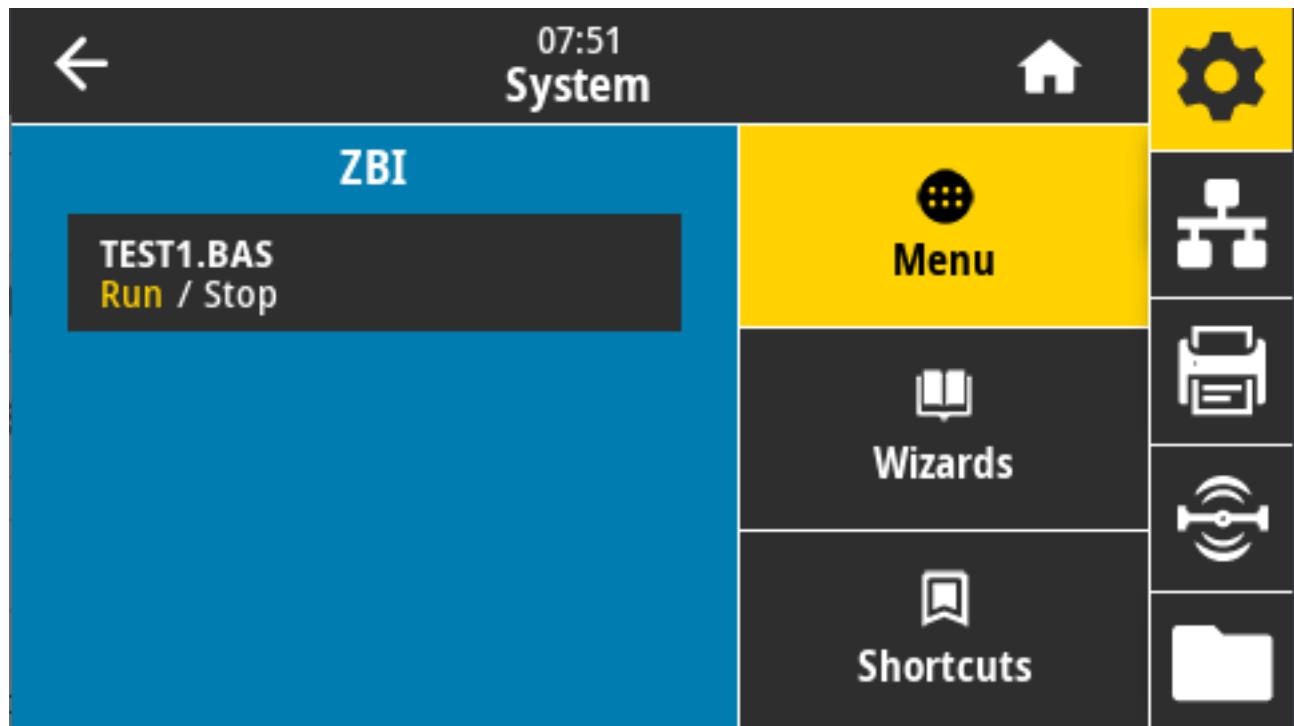
Zebra Basic Interpreter (ZBI 2.0) is a purchasable printer programming option.

If you would like to purchase this option, contact your Zebra reseller.



If ZBI programs have been downloaded to your printer, you may select one to run using this menu item. If no program exists on your printer, the display shows NONE.

When ZBI programs have been downloaded but none are running, the printer lists all available programs. To run one of them, touch **Run** under the program name.

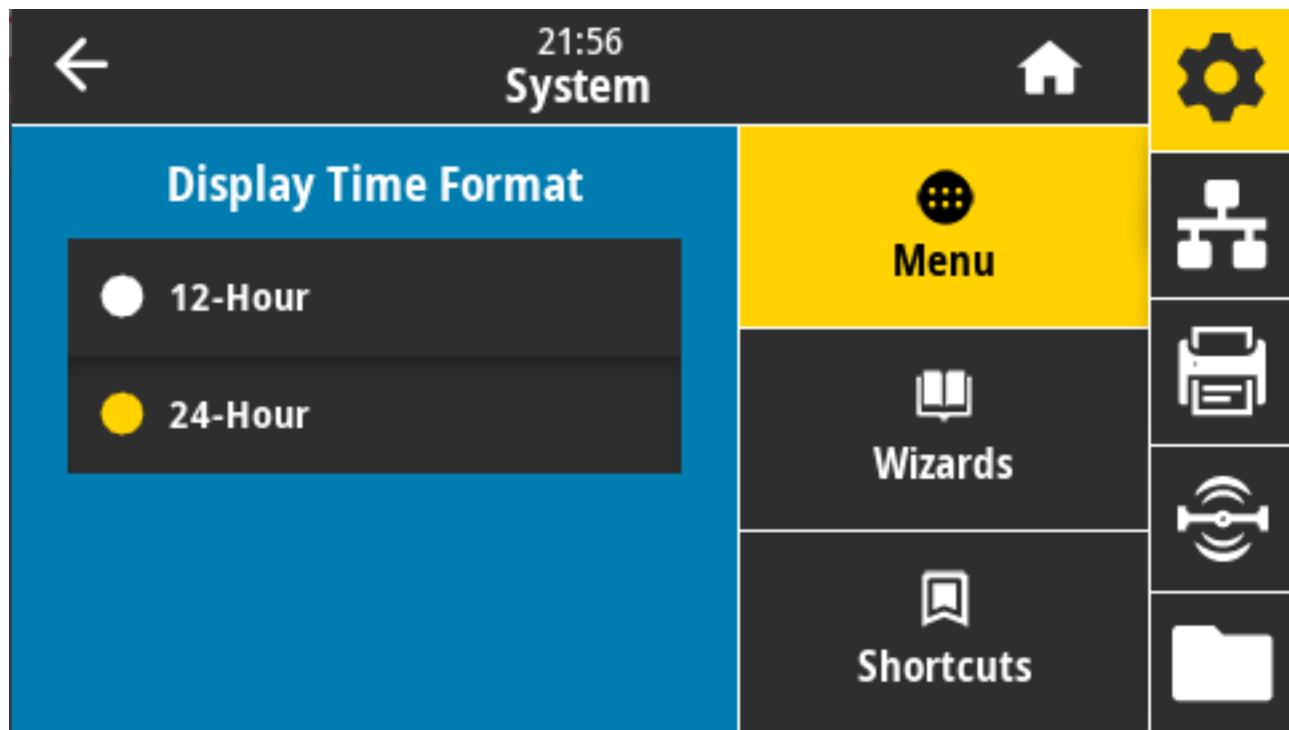


After the selected program is initiated, only that program is listed on the display. Touch **Stop** to end the program.

SGD command used: `zbi.key` (identifies if the ZBI 2.0 option is enabled or disabled on the printer)

## System > Settings > Display Time Format

Use this setting to select the time format used by the printer.

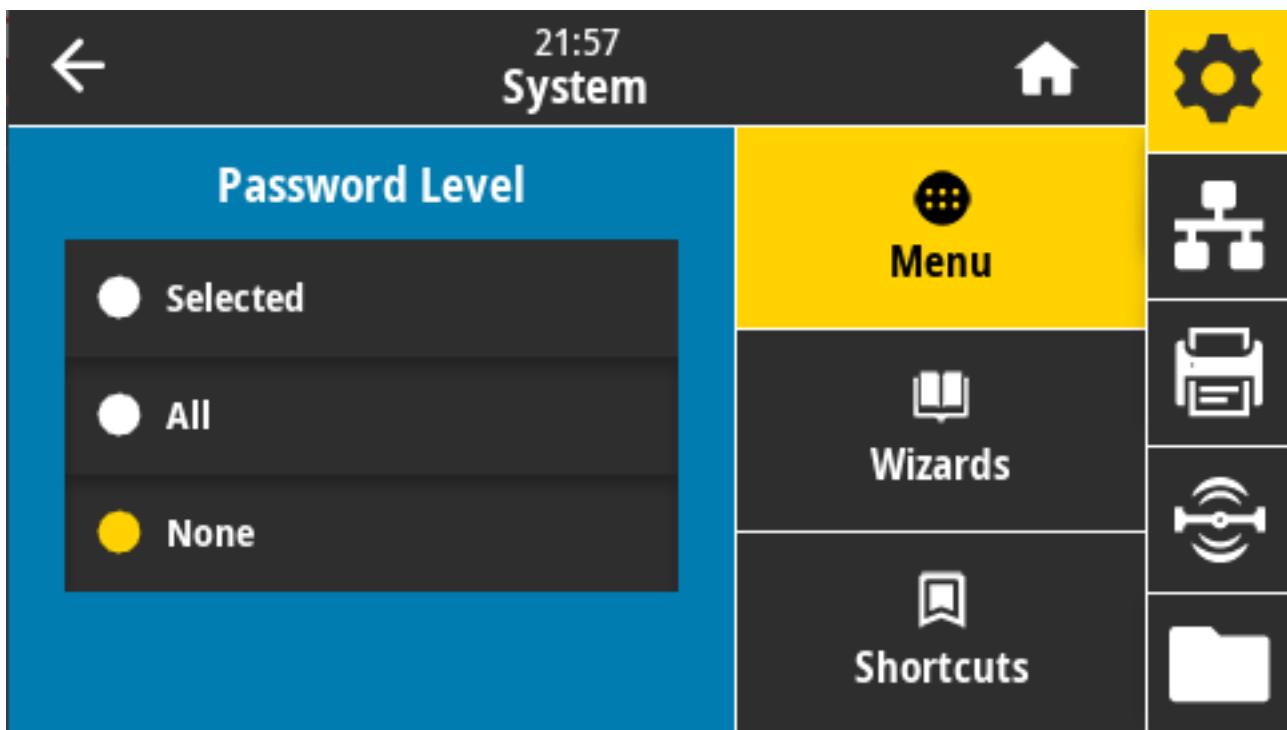


Accepted values: 12-Hour, 24-Hour

SGD command used: `device.idle_display_value`

## System > Settings > Password Level

Use this setting to select the level of password protection for user menu items.

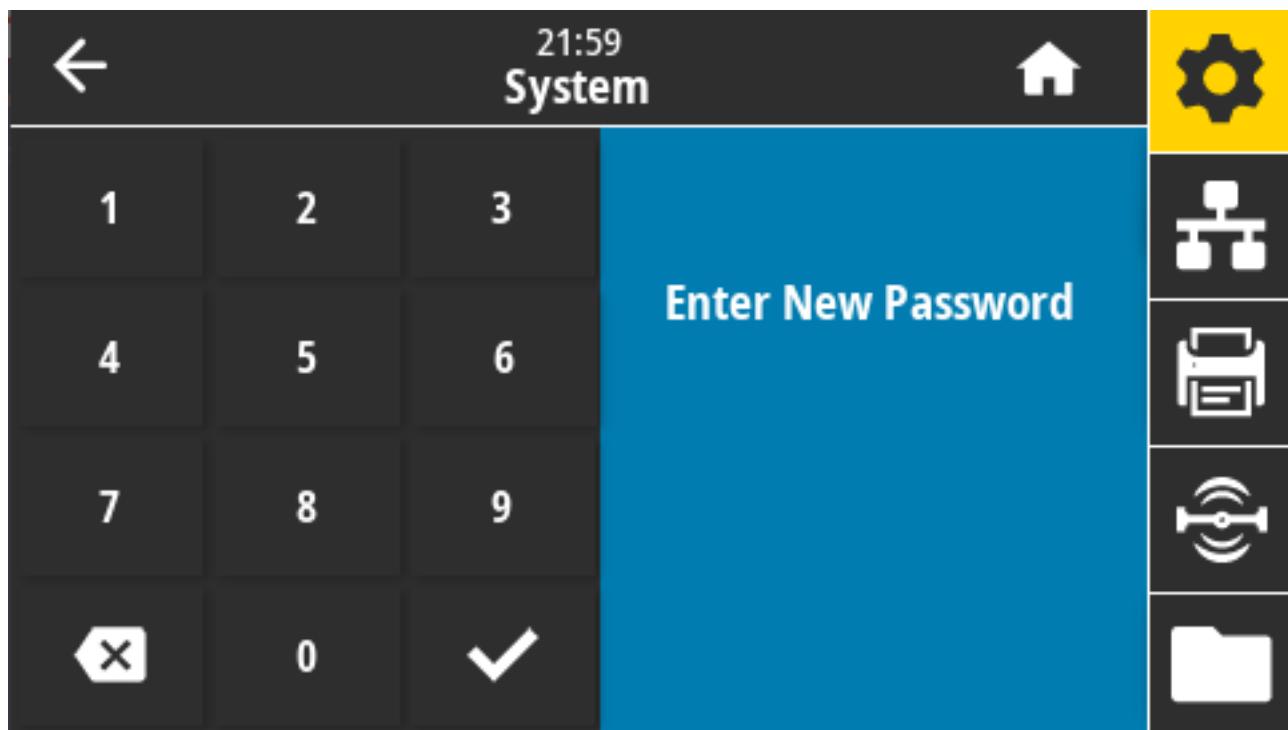


Accepted values: Selected, All, None

Related ZPL command(s): `^KP` (to change the printer password)

**System > Settings > Set Password**

Set a new printer password for menu items protected by the previous parameter.

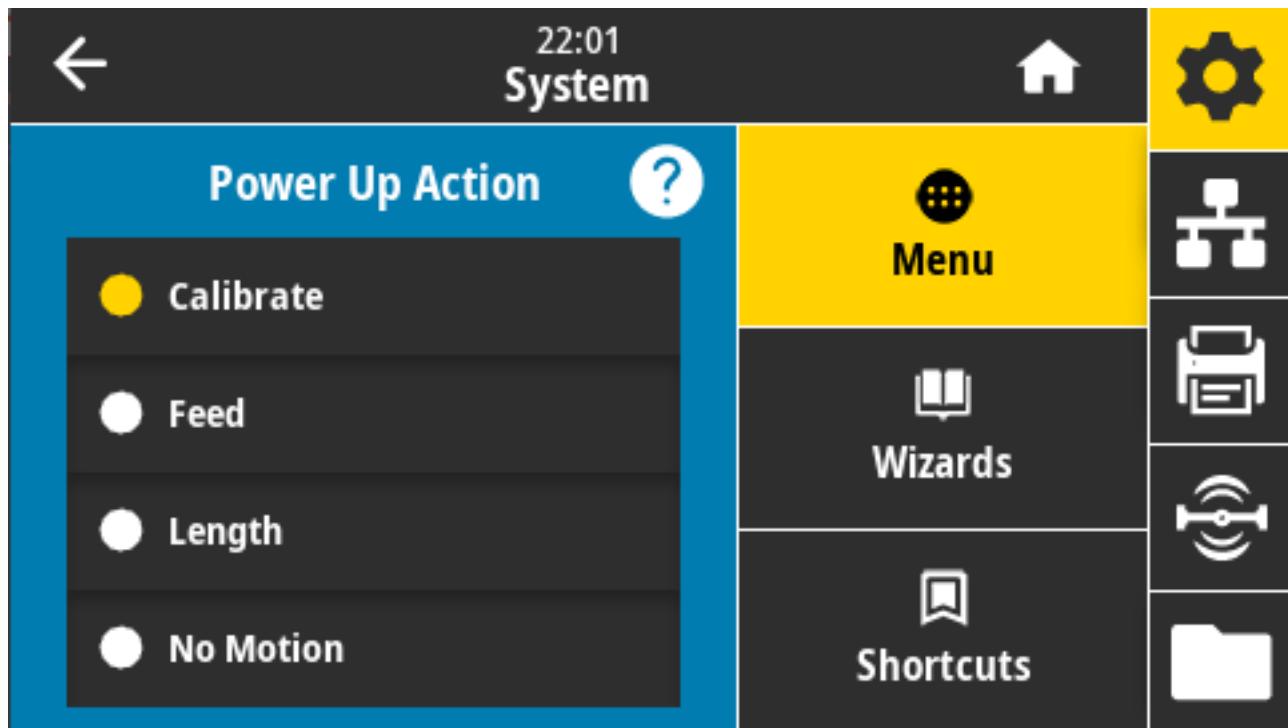


Accepted values: Numerals 0–9 The default printer password is 1234.

Related ZPL command(s): ^KP

## System > Settings > Power Up Action

Set the action for the printer to take during the power-up sequence.



Accepted values:

- CALIBRATE—Adjusts sensor levels and thresholds, determines the label length, and feeds the media to the next web.
- FEED—Feeds the labels to the first registration point.
- LENGTH—Determines the label length using current sensor values, and feeds the media to the next web.
- NO MOTION—Tells the printer not to move the media. You must manually ensure that the web is positioned correctly, or press **FEED** to position the next web.
- SHORT CAL—Sets the media and web thresholds without adjusting sensor gain, determines the label length, and feeds the media to the next web.

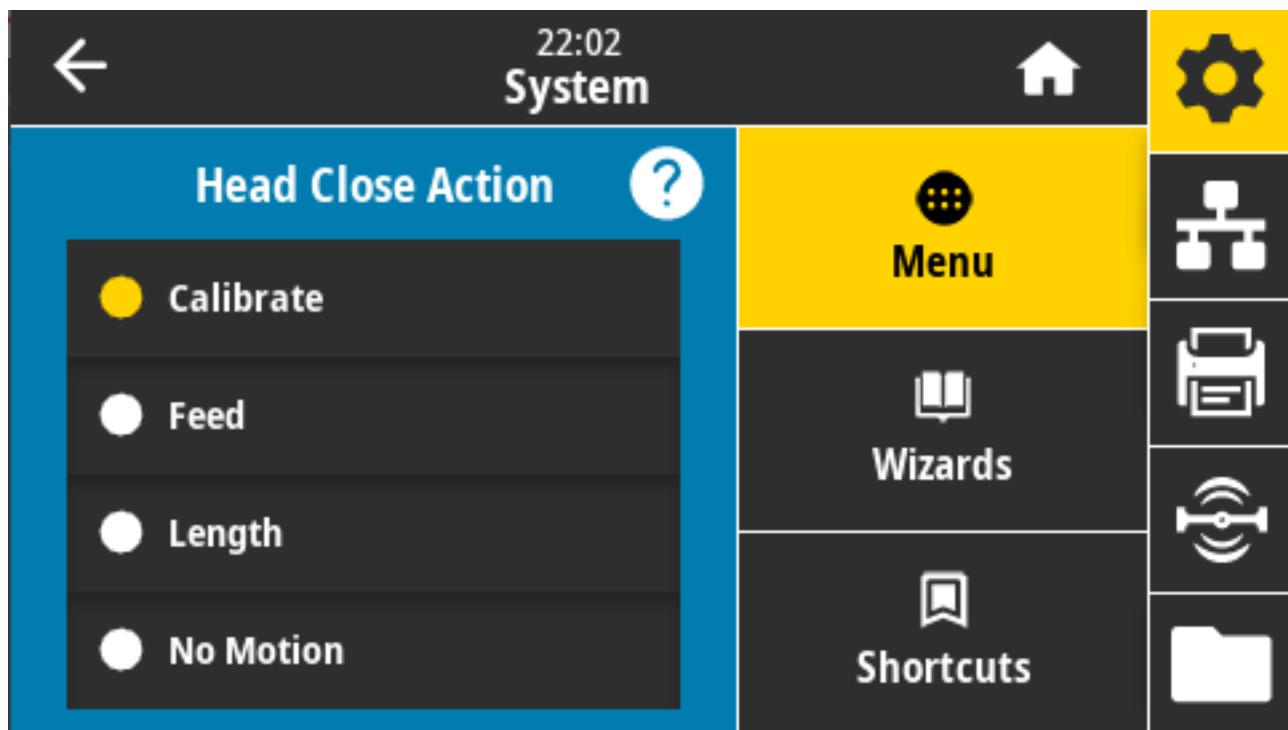
Related ZPL command(s): ^MF

SGD command used: ezpl.power\_up\_action

Printer web page: **View and Modify Printer Settings > Calibration**

## System > Settings > Head Close Action

Set the action for the printer to take when you close the printhead.



Accepted values:

- CALIBRATE—Adjusts sensor levels and thresholds, determines the label length, and feeds the media to the next web.
- FEED—Feeds the labels to the first registration point
- LENGTH—Determines the label length using current sensor values, and feeds the media to the next web.
- NO MOTION—Tells the printer not to move the media. You must manually ensure that the web is positioned correctly, or press feed to position the next web.
- SHORT CAL—Sets the media and web thresholds without adjusting sensor gain, determines the label length, and feeds the media to the next web.

Related ZPL command(s): ^MF

SGD command used: ezpl.head\_close\_action

Printer web page: **View and Modify Printer Settings > Calibration**

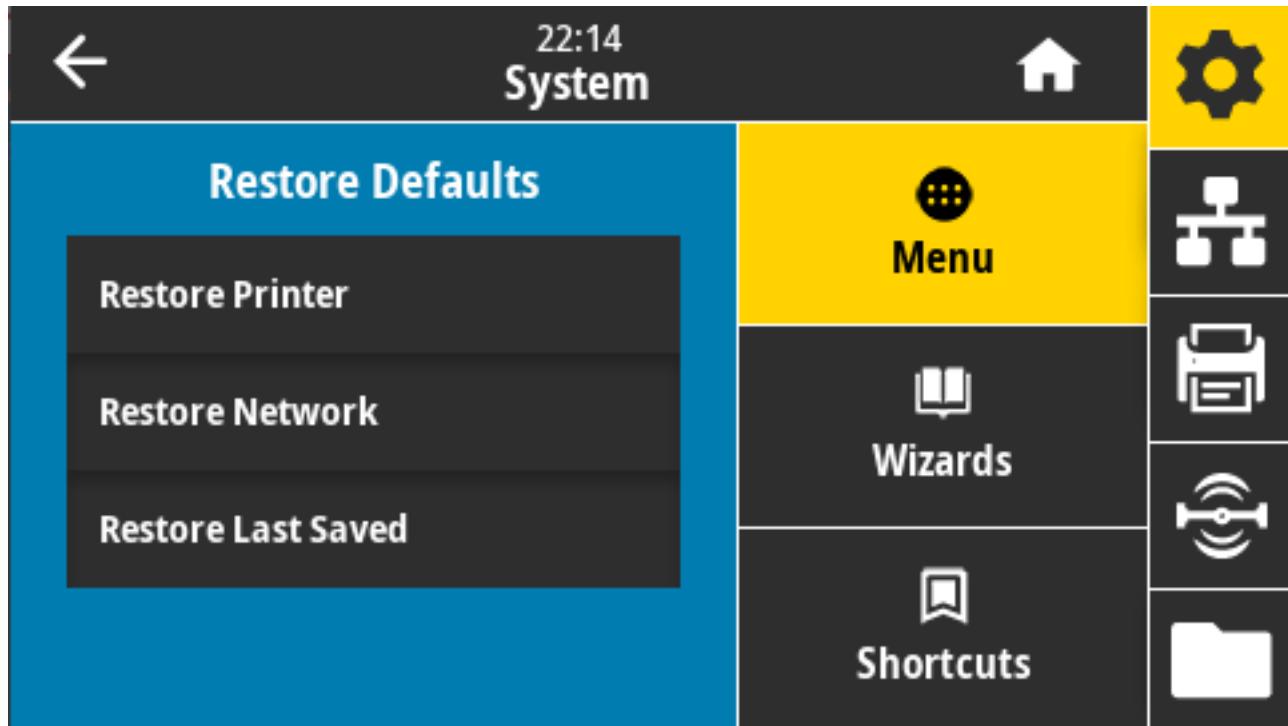
**System > Settings > Screen Calibration**

Touch each crosshair to calibrate the screen.



## System > Settings > Restore Defaults

Restore specific printer, print server, and network settings back to the factory defaults.



Use care when loading defaults because you will need to reload all settings that you changed manually. This menu item is available through two user menus with different default values for each.

Accepted values:

- PRINTER—Restores all printer settings other than the network settings back to factory defaults. Use care when loading defaults because you will need to set all settings that you had changed manually before the reset.
- NETWORK—Reinitializes the printer's wired or wireless print server. With a wireless print server, the printer also re-associates with your wireless network.
- LAST SAVED—Loads settings from the last permanent save.
- NO MOTION—Tells the printer not to move the media. You must manually ensure that the web is positioned correctly, or press **FEED** to position the next web.
- SHORT CAL—Sets the media and web thresholds without adjusting sensor gain, determines the label length, and feeds the media to the next web.

Related ZPL command(s):

- PRINTER—^JUF
- NETWORK—^JUN
- LAST SAVED—^JUR

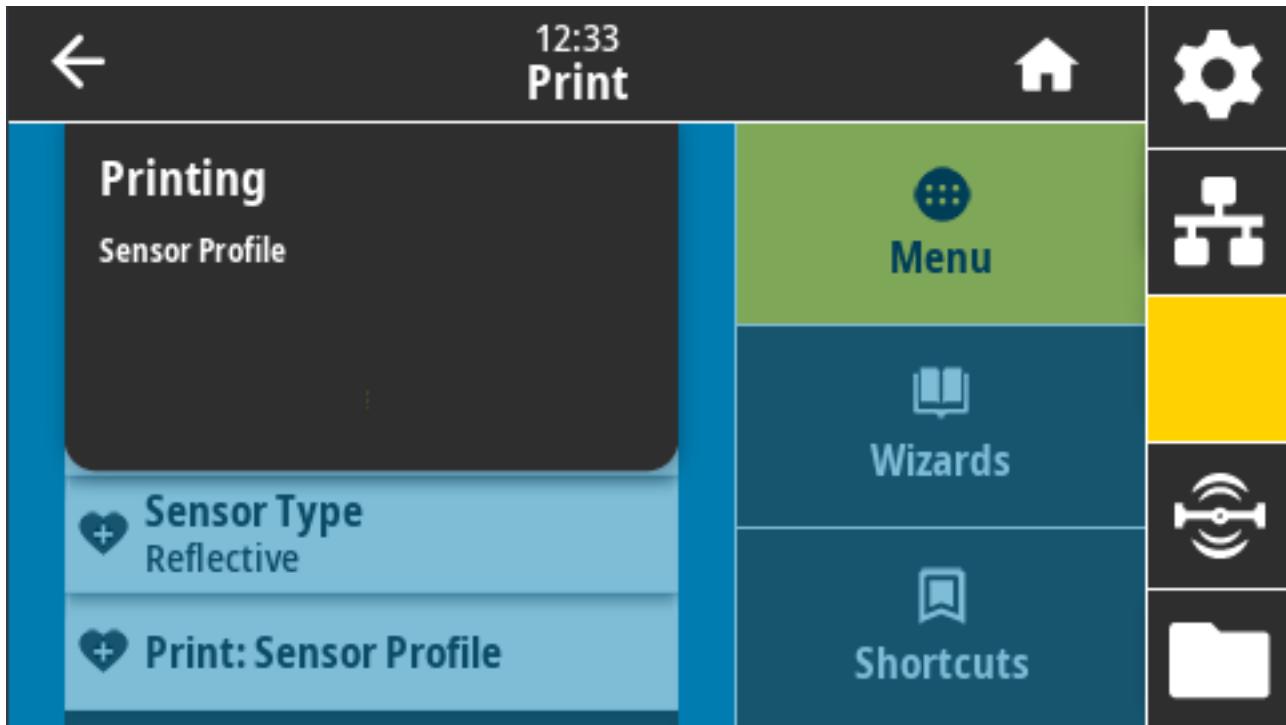
Control panel key(s): To reset the printer parameters to factory values, hold **FEED** + **PAUSE** simultaneously during printer power-up.

Printer web pages:

- PRINTER—**View and Modify Printer Settings** > **Restore Default Configuration**
- NETWORK—**Reset Print Server** > **Print Server Settings**
- LAST SAVED—**View and Modify Printer Settings** > **Restore Saved Configuration**

## System > Settings > Print: System Settings

Prints a printer configuration report.



Related ZPL command(s): ~WC

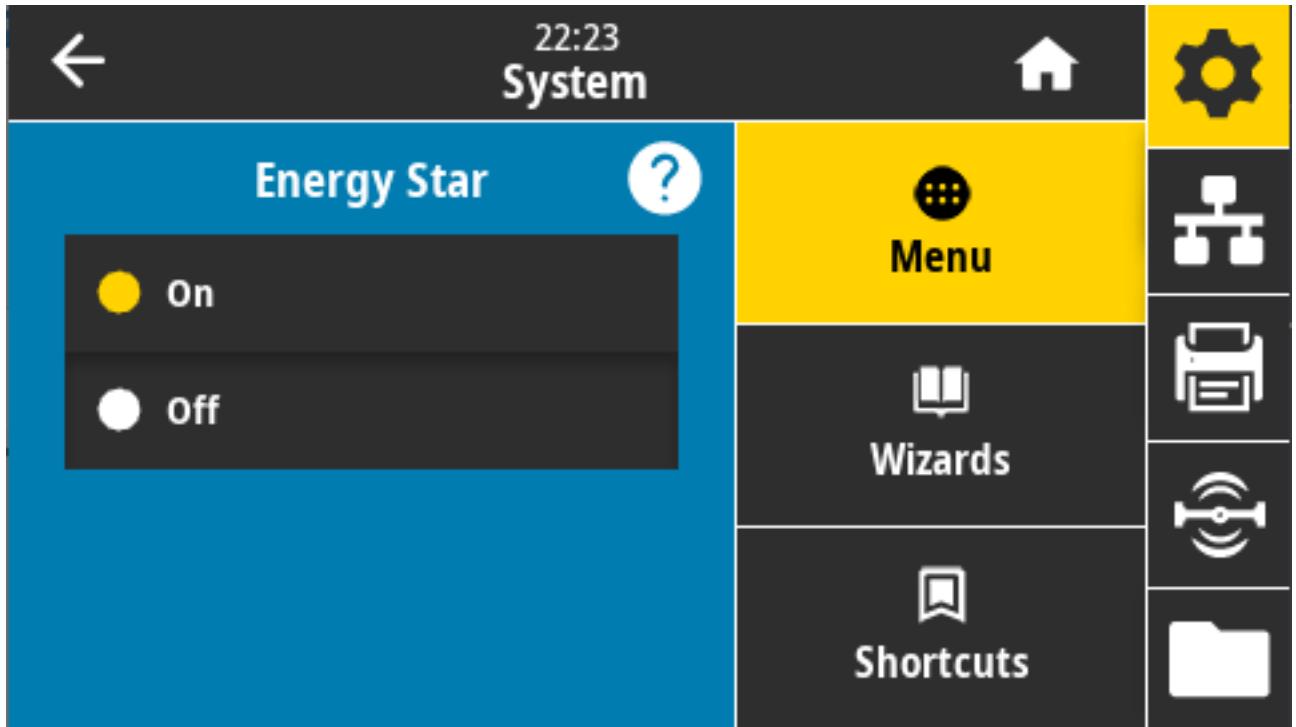
Control panel key(s):

- Hold **CANCEL** for two seconds during printer power-up.
- With the printer in Ready state, press and hold **FEED** + **CANCEL** simultaneously for two seconds.

Printer web page: **View and Modify Printer Settings** > **Print Listings on Label**

## System > Energy Saving > Energy Star

When Energy Star mode is enabled, the printer goes into a “sleep” mode after a timeout period, thereby lowering power consumption. Press any button on the control panel to bring the printer back to an active state.



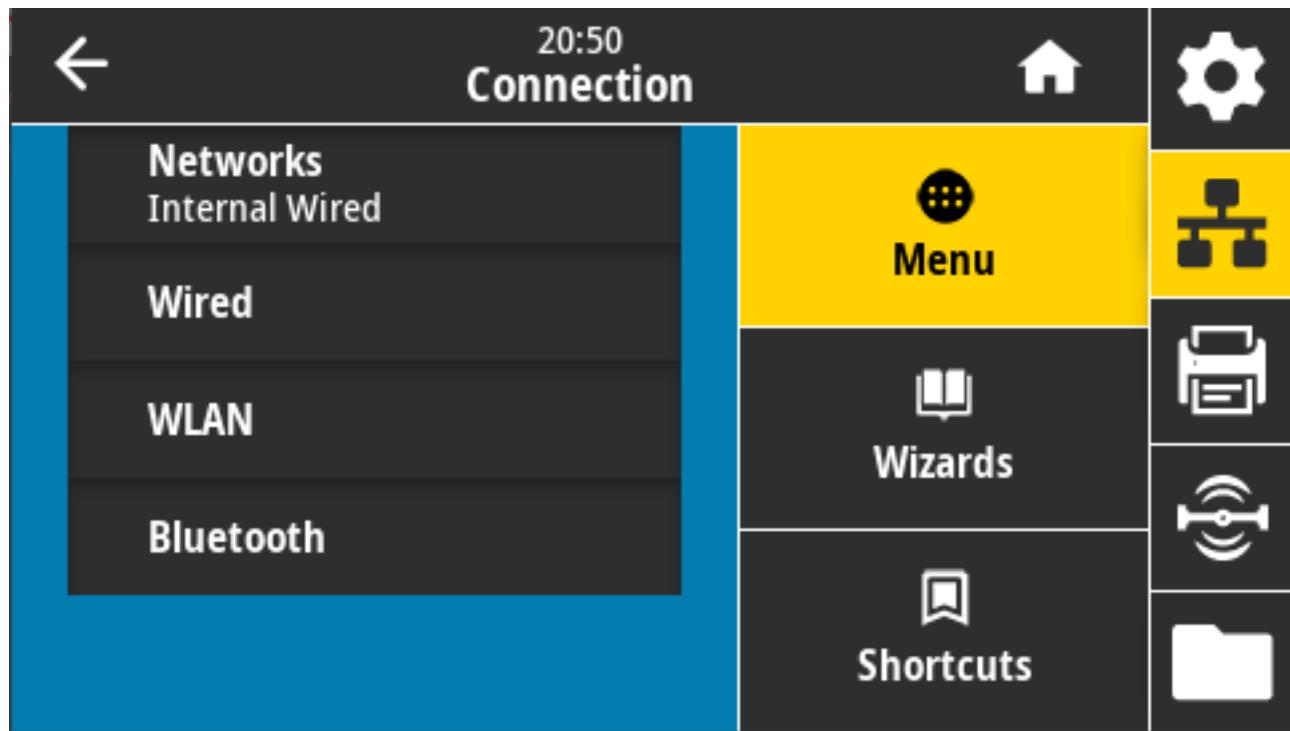
Accepted values: ON, OFF

SGD command(s) used:

- `power.energy_star.enable`
- `power.energy_star_timeout`

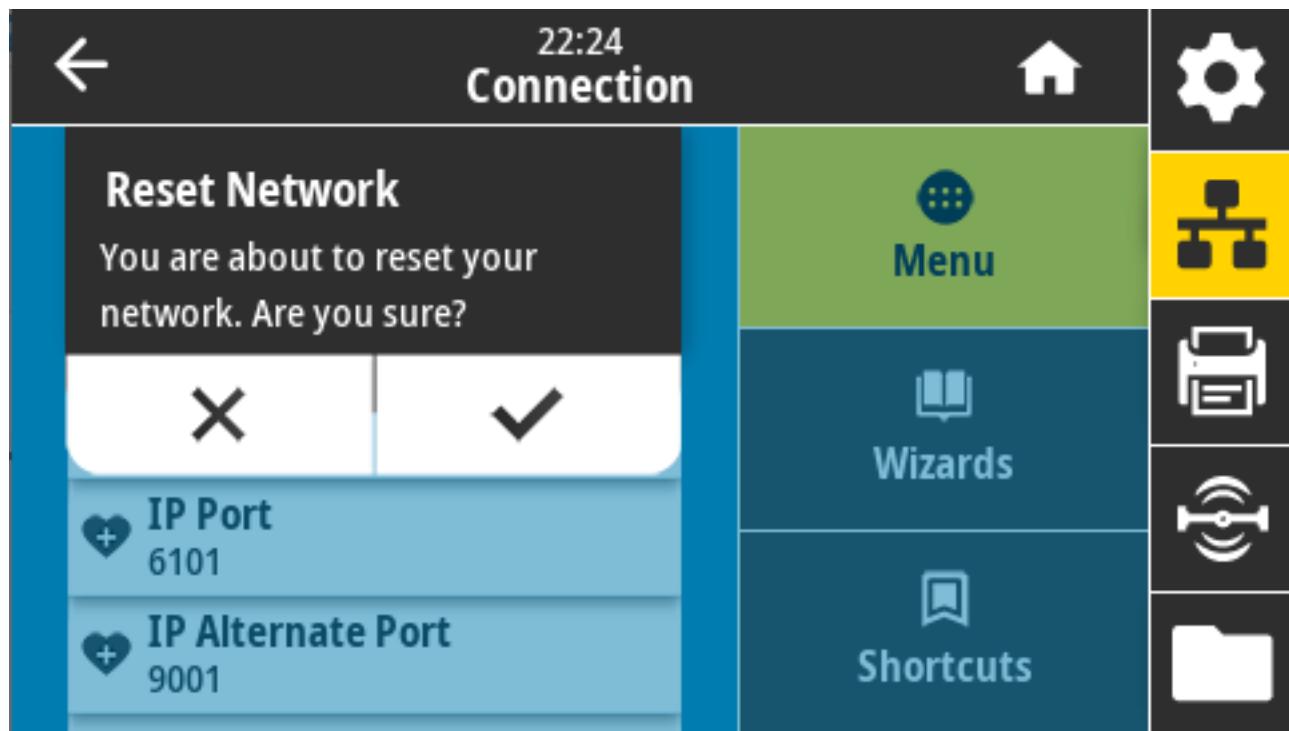
## Connection Menu

Use this menu to set connection parameters for wired and wireless (Wi-Fi and Bluetooth) printer communication.



## Connection > Networks > Reset Network

This option resets the wired or wireless print server and saves any changes that you made to any network settings. You must reset the print server to allow changes to the network settings to take effect.



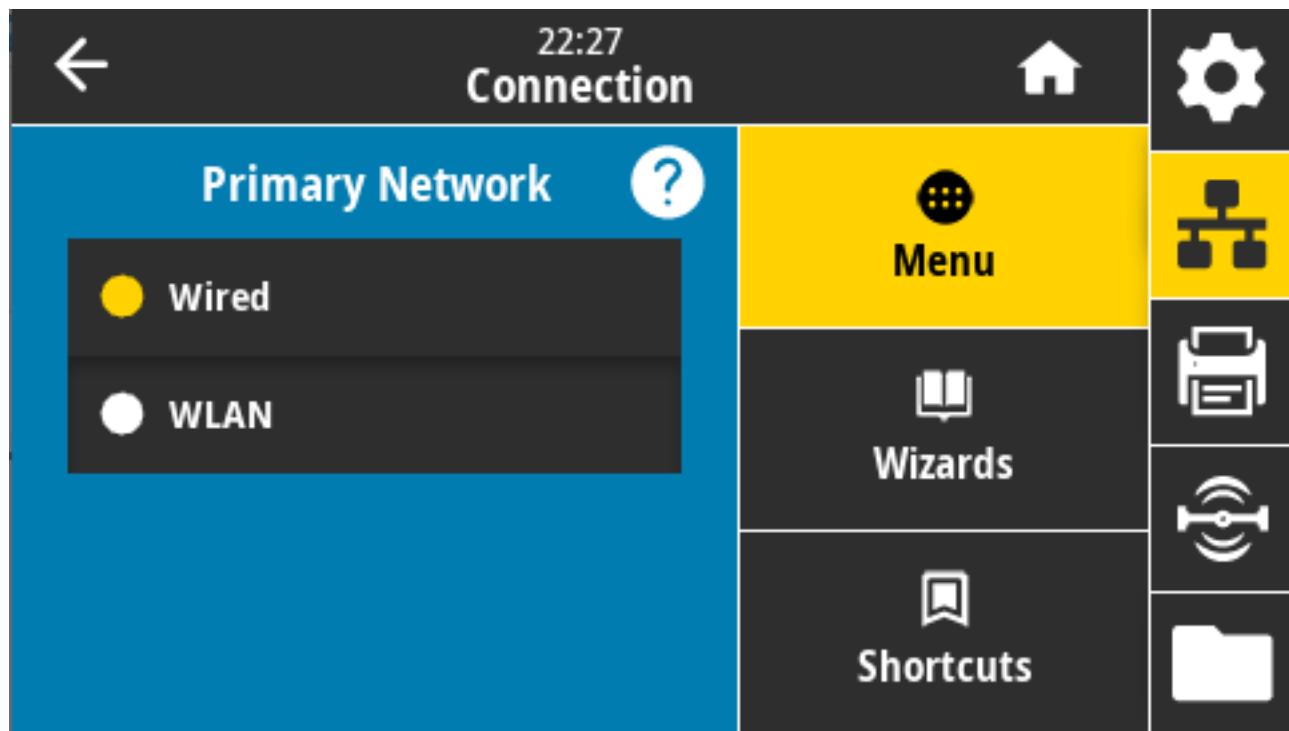
Related ZPL command(s): ~WR

SGD command used: device.reset

Printer web page: **Print Server Settings > Reset Print Server**

## Connection > Networks > Primary Network

View or modify whether the wired or wireless print server is considered primary. You have the ability to select the primary.



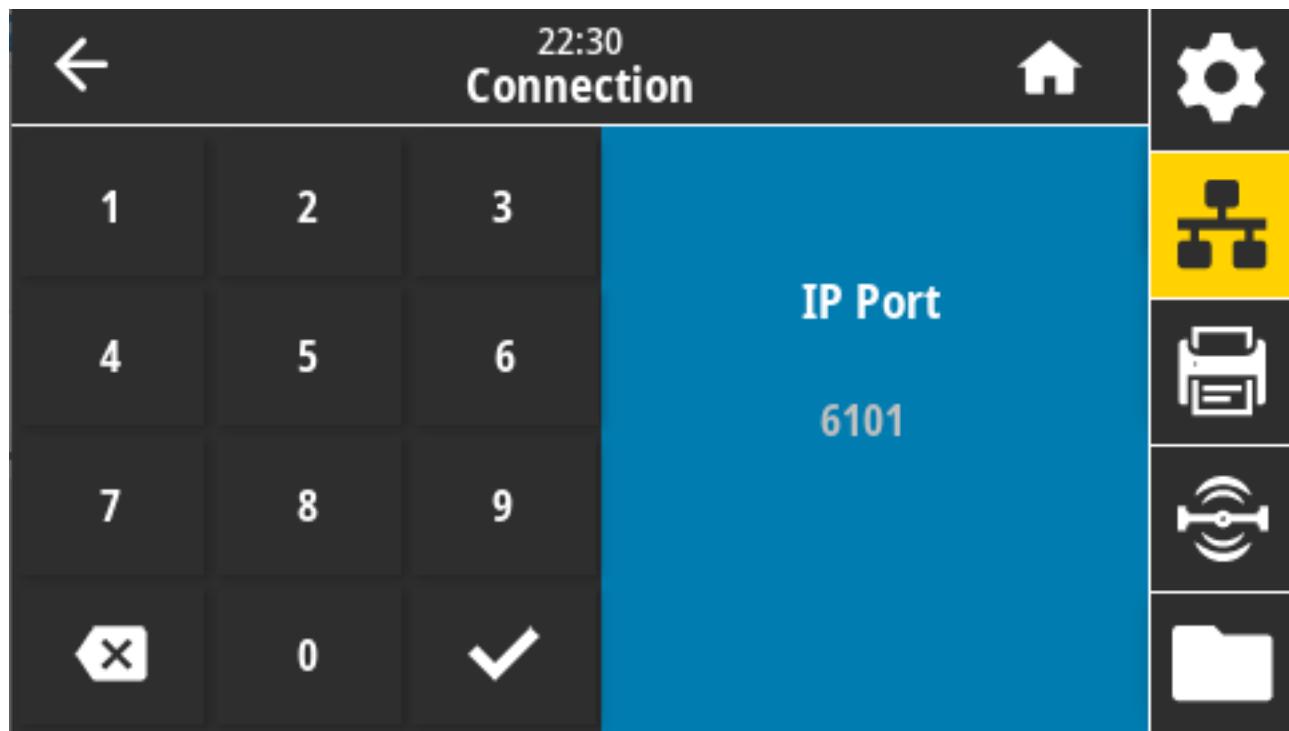
Accepted values: Wired, WLAN

Related ZPL command(s): ^NC

SGD command used: ip.primary\_network

## Connection > Networks > IP Port

This printer setting refers to the internal wired print server's port number that the TCP print service is listening on. Normal TCP communications from the host should be directed to this port.

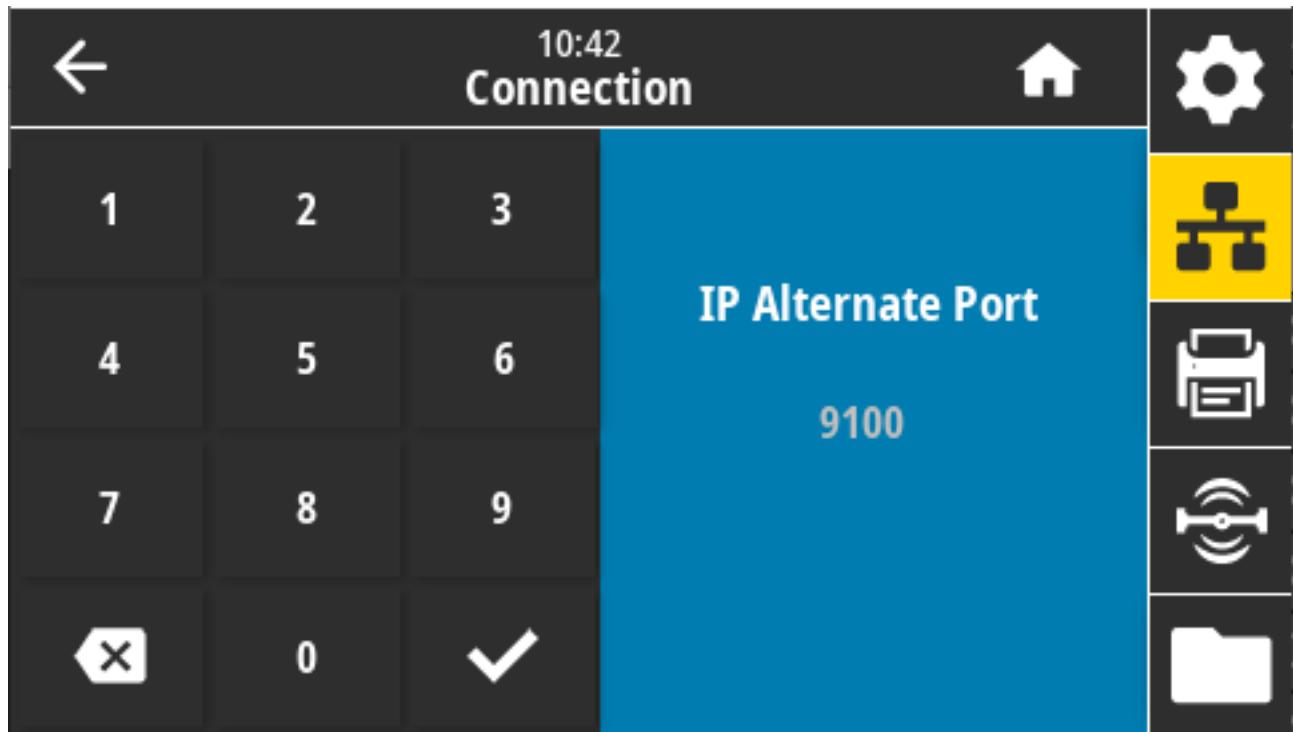


SGD command used: `internal_wired.ip.port`

Printer web page: [View and Modify Printer Settings > Network Communications Setup > TCP/IP Settings](#)

## Connection > Networks > IP Alternate Port

This command sets the port number of the alternate TCP port. Print servers supporting this command will monitor both the primary port and the alternate port for connections at the same time.



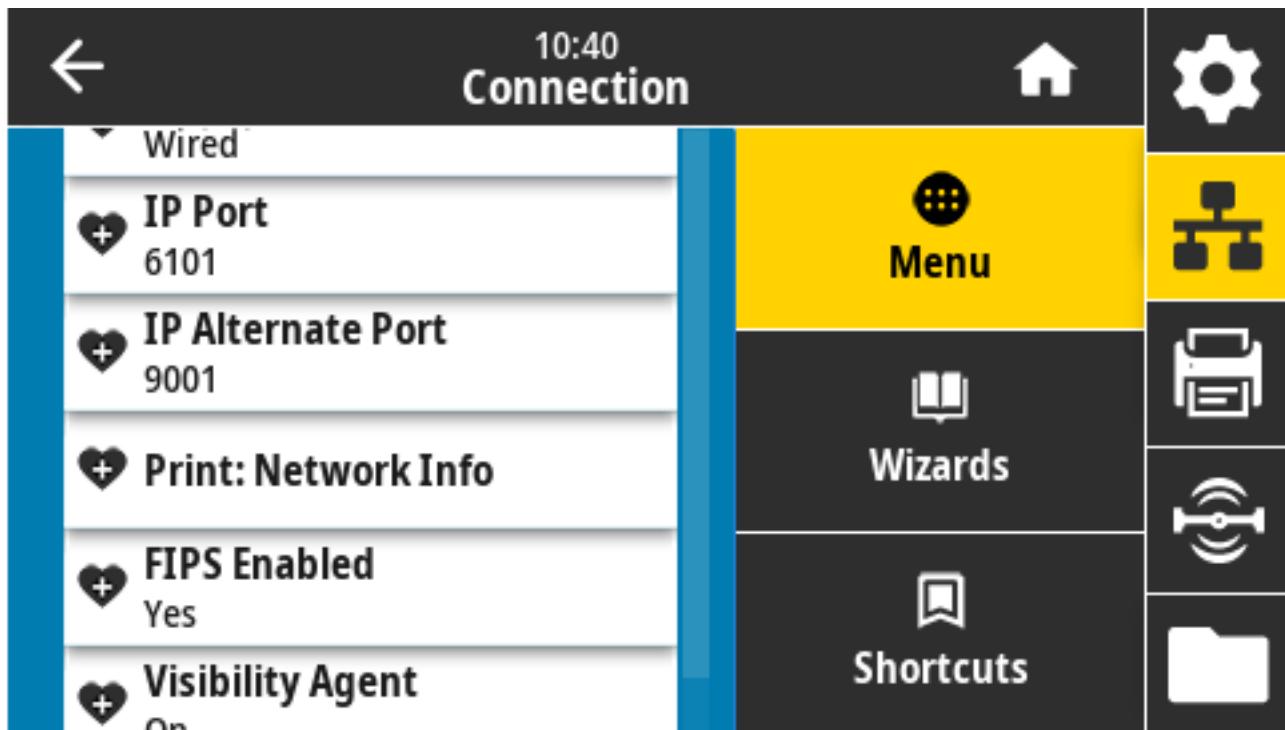
SGD command(s) used:

- internal\_wired.ip.port\_alternate
- wlan.ip.port\_alternate

Printer web page: [View and Modify Printer Settings > Network Communications Setup > TCP/IP Settings](#)

## Connection > Networks > Print: Network Info

Prints the settings for any print server or Bluetooth device that is installed.



Related ZPL command(s): ~WL

Control panel key(s):

- During printer power-up, hold **CANCEL** down for two seconds.
- While the printer is in Ready state, press and hold **FEED + CANCEL** simultaneously for two seconds.

The printer prints the Network Configuration label.

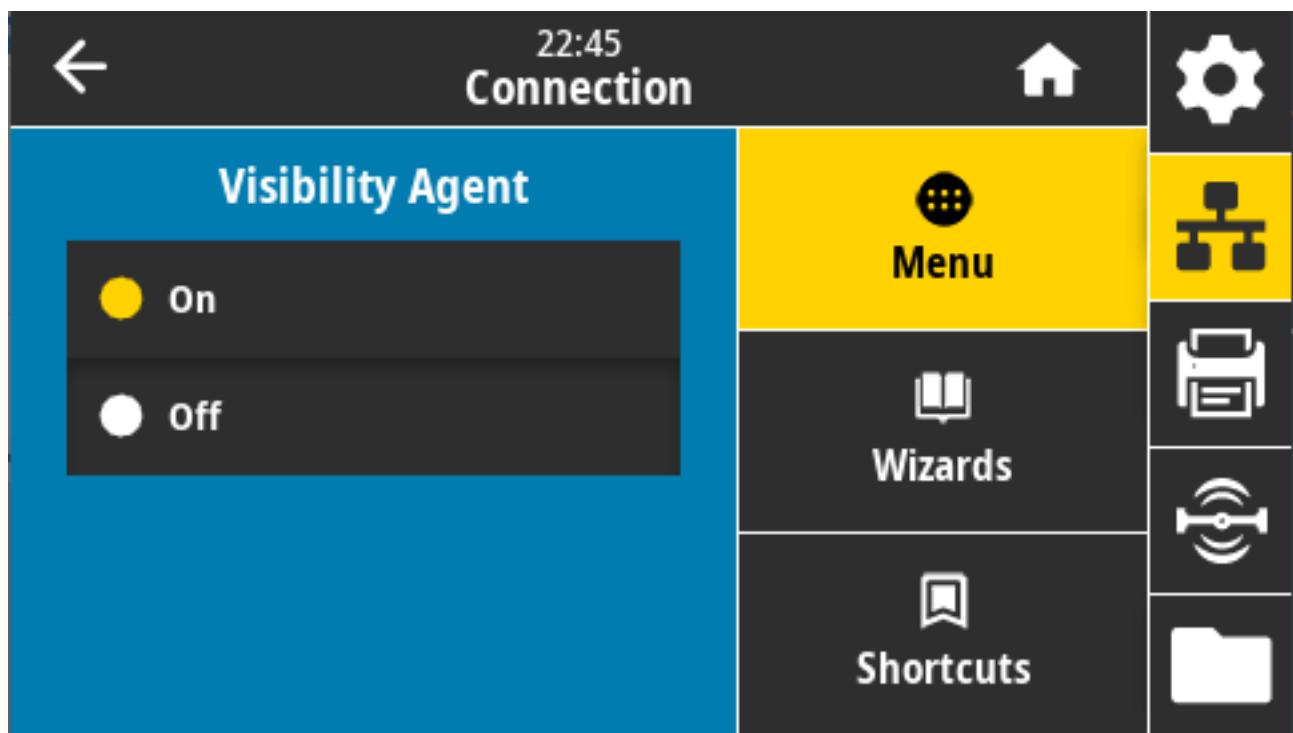
Printer web page: [View and Modify Printer Settings > Print Listings on Label](#)

Network Configuration	
Zebra Technologies ZTC ZT620R-203dpi ZPL 76J162700886	
Wired.....	PRIMARY NETWORK
PrintServer.....	LOAD LAN FROM?
INTERNAL WIRED.....	ACTIVE PRINTSRVR
Wired*	
ALL.....	IP PROTOCOL
192.168.000.017.....	IP ADDRESS
255.255.255.000.....	SUBNET
192.168.000.254.....	GATEWAY
000.000.000.000.....	WINS SERVER IP
YES.....	TIMEOUT CHECKING
300.....	TIMEOUT VALUE
000.....	ARP INTERVAL
9100.....	BASE RAW PORT
9200.....	JSON CONFIG PORT
Wireless	
ALL.....	IP PROTOCOL
000.000.000.000.....	IP ADDRESS
255.255.255.000.....	SUBNET
000.000.000.000.....	GATEWAY
000.000.000.000.....	WINS SERVER IP
YES.....	TIMEOUT CHECKING
300.....	TIMEOUT VALUE
000.....	ARP INTERVAL
9100.....	BASE RAW PORT
9200.....	JSON CONFIG PORT
INSERTED.....	CARD INSERTED
02dfH.....	CARD MFG ID
9134H.....	CARD PRODUCT ID
ac:3f:a4:82:05:9c.....	MAC ADDRESS
YES.....	DRIVER INSTALLED
INFRASTRUCTURE.....	OPERATING MODE
125.....	ESSID
1.0.....	CURRENT TX RATE
OPEN.....	WEP TYPE
WPA PSK.....	WLAN SECURITY
1.....	WEP INDEX
000.....	POOR SIGNAL
LONG.....	PREAMBLE
NO.....	ASSOCIATED
ON.....	PULSE ENABLED
15.....	PULSE RATE
OFF.....	INTL MODE
USA/CANADA.....	REGION CODE
USA/CANADA.....	COUNTRY CODE
0x?FF.....	CHANNEL MASK
Bluetooth	
4.3.1p1.....	FIRMWARE
02/13/2015.....	DATE
on.....	DISCOVERABLE
3.0/4.0.....	RADIO VERSION
on.....	ENABLED
AC:3F:A4:82:05:9D.....	MAC ADDRESS
76J162700886.....	FRIENDLY NAME
no.....	CONNECTED
1.....	MIN SECURITY MODE
nc.....	CONN SECURITY MODE
supported.....	iOS
FIRMWARE IN THIS PRINTER IS COPYRIGHTED	

## Connection > Networks > Visibility Agent

When connected to a wired or wireless network, the printer will try and connect to Zebra's Asset Visibility Service, through the cloud-based Zebra printer connector. To opt out of the feature, disable this setting.

The printer uses an encrypted, certificate-authenticated, web-socket connection to send discovery, settings, and alerts data. It does NOT transmit data printed using label formats.



Accepted values: ON, OFF

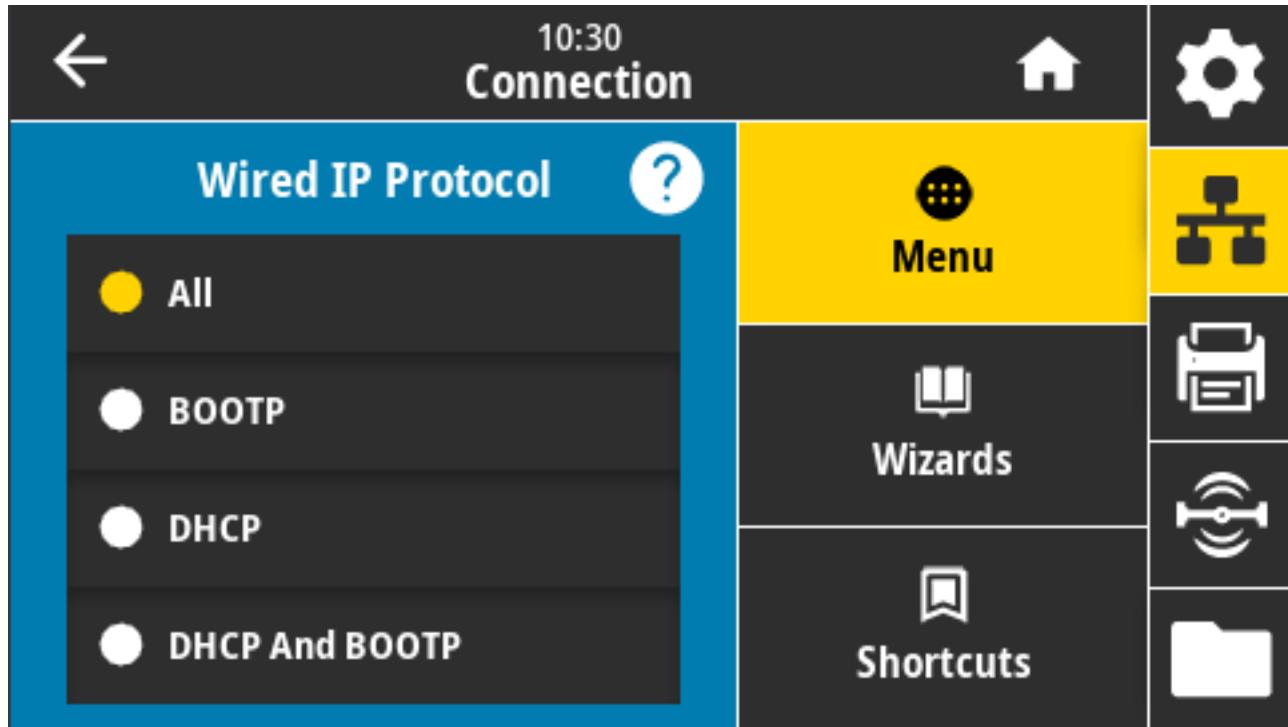
SGD command used: weblink.zebra\_connector.enable

Printer web page: **View and Modify Printer Settings > Network Configuration > Cloud Connect Settings**

For more information, see the application note titled “Opting Out of the Asset Visibility Agent”. It is available through search on [zebra.com/support](http://zebra.com/support).

## Connection > Wired > Wired IP Protocol

The wired print server's IP address can be set by you ("permanent") or be selected by the server ("dynamic"). When a dynamic option is chosen, this parameter specifies the method(s) by which the print server receives the IP address from the server.



You must reset the print server to allow changes to the network settings to take effect. See [Connection > Networks > Reset Network](#) on page 108.

Accepted values: ALL, GLEANING ONLY, RARP, BOOTP, DHCP, DHCP & BOOTP, PERMANENT

Related ZPL command(s): ^ND

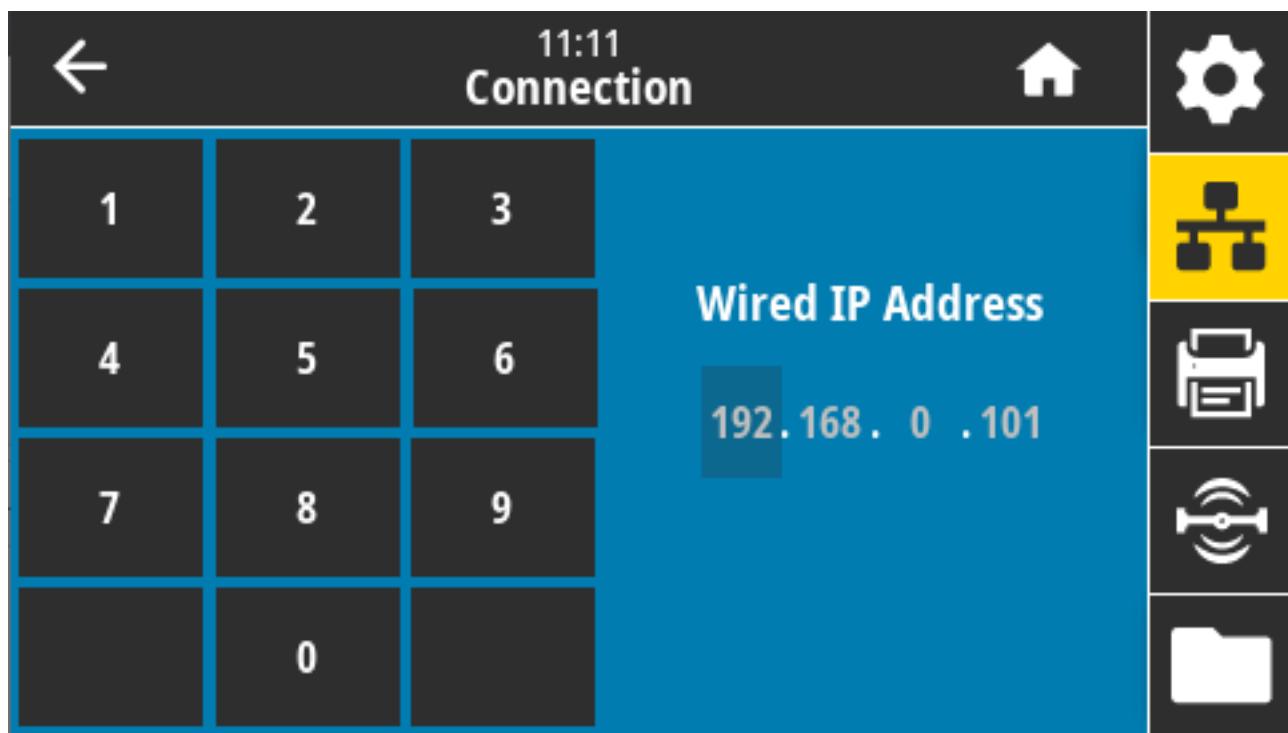
SGD command used: `internal_wired.ip.protocol`

Printer web page: [View and Modify Printer Settings > Network Communications Setup > TCP/IP Settings](#)

## Connection > Wired > Wired IP Address

View and, if necessary, change the printer's wired IP address.

To save any changes you make to this setting, set **Connection > Wired > Wired IP Protocol** to PERMANENT. Then reset the print server (see [Connection > Networks > Reset Network](#) on page 108).



Accepted values: 000 to 255 (for each field)

Related ZPL command(s): ^ND

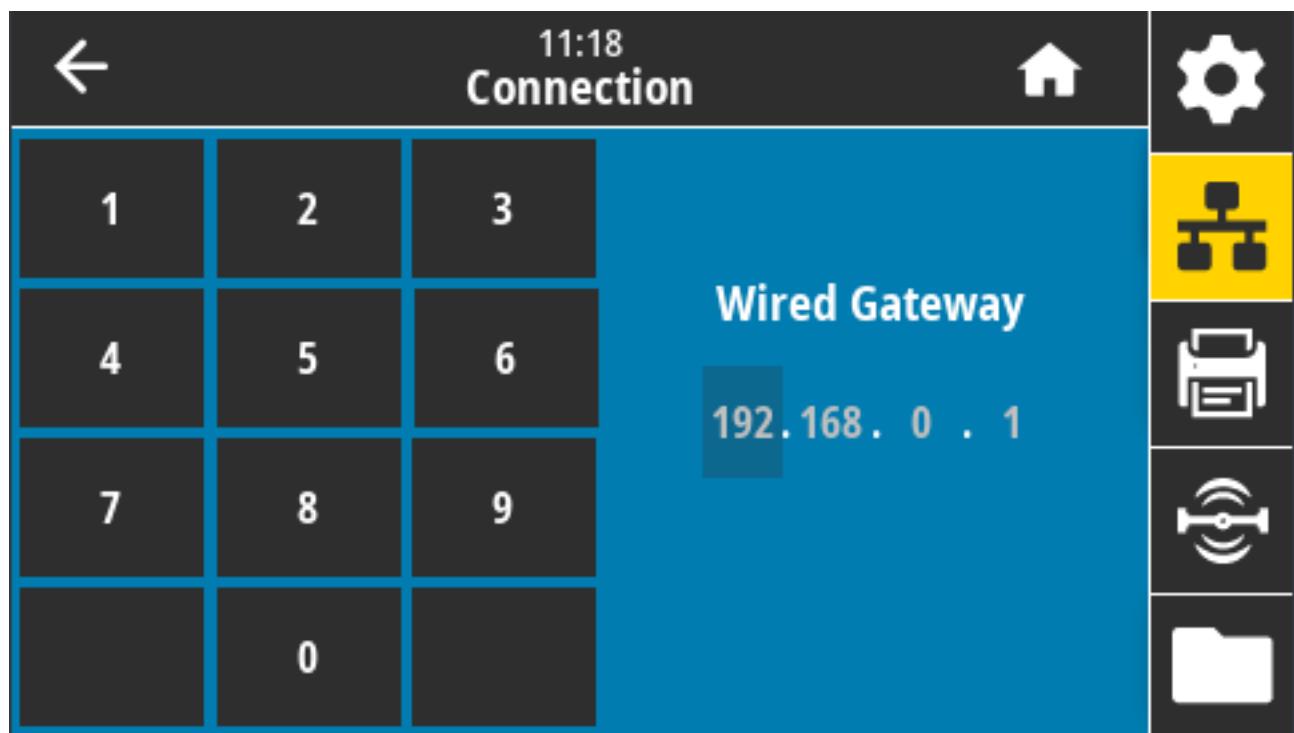
SGD command used: internal\_wired.ip.addr

Printer web page: **View and Modify Printer Settings > Network Communications Setup > TCP/IP Settings**

## Connection > Wired > Wired Gateway

Use this screen to view and if necessary change the default wired gateway.

To save any changes you make to this setting, set **Connection > Wired > Wired IP Protocol** to **PERMANENT**. Then reset the print server (see [Connection > Networks > Reset Network](#) on page 108).



Accepted values: 000 to 255 (for each field)

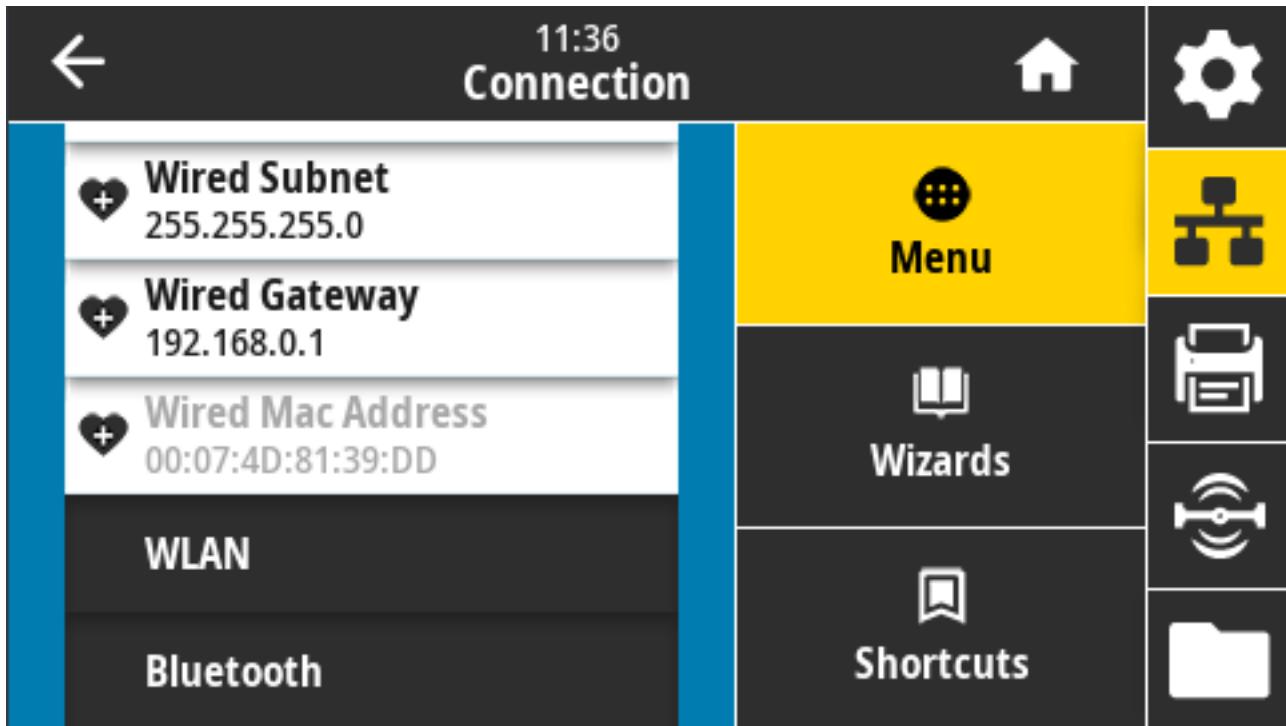
Related ZPL command(s): ^ND

SGD command used: internal\_wired.ip.gateway

Printer web page: **View and Modify Printer Settings > Network Communications Setup > TCP/IP Settings**

## Connection > Wired > Wired MAC Address

View the Media Access Control (MAC) address of the wired print server. This value cannot be modified.



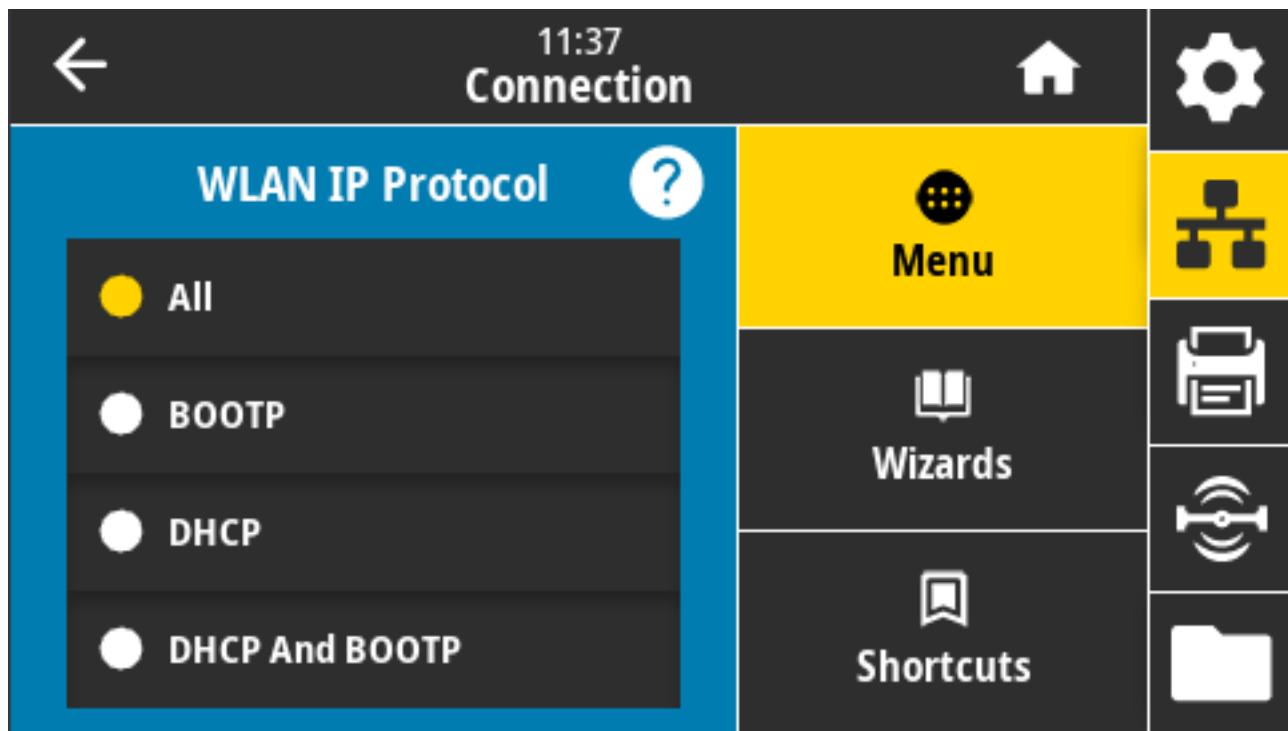
SGD command used: `internal_wired.mac_addr`

Printer web page: [View and Modify Printer Settings > Network Communications Setup > TCP/IP Settings](#)

## Connection > WLAN > WLAN IP Protocol

You can set the wireless print server's IP address ("permanent") or the server can set it ("dynamic"). When a dynamic option is chosen, this parameter tells the method(s) by which this print server receives the IP address from the server.

You must reset the print server to allow changes to the network settings to take effect (see [Connection > Networks > Reset Network](#) on page 108).



Accepted values: ALL, GLEANING ONLY, RARP, BOOTP, DHCP, DHCP & BOOTP, PERMANENT

Related ZPL command(s): ^ND

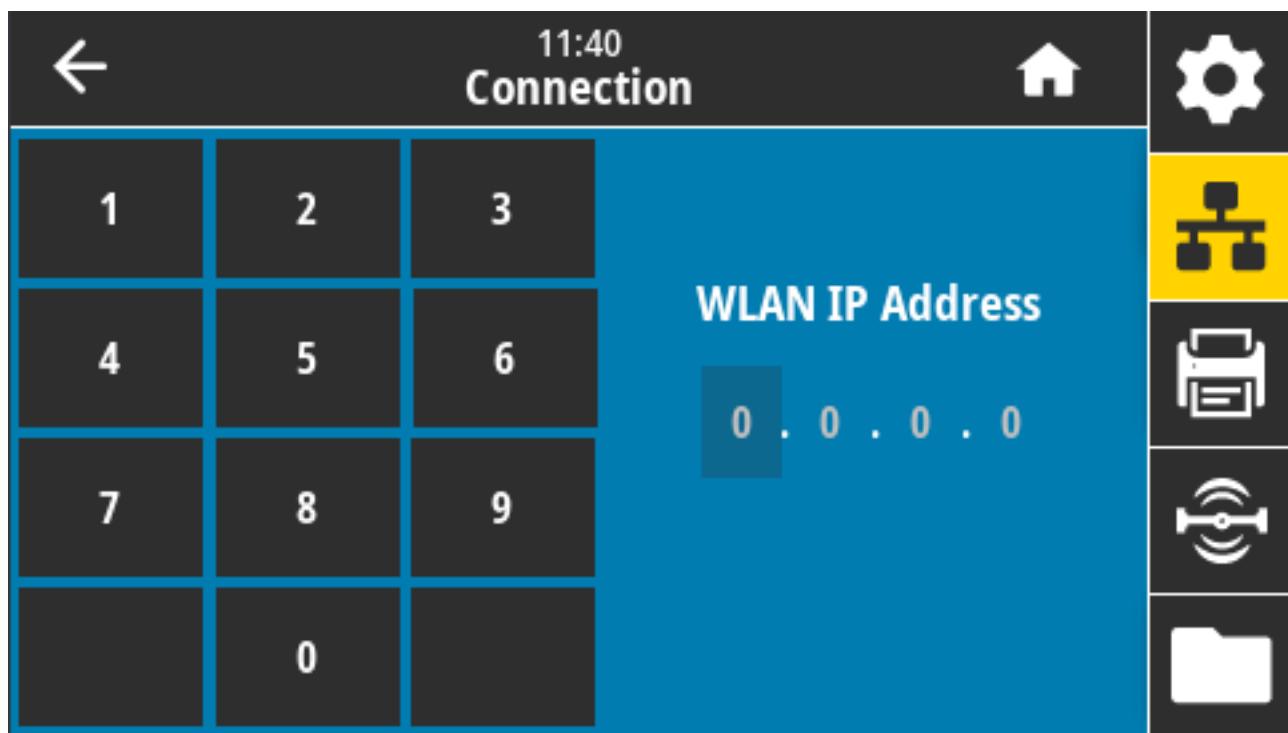
SGD command used: wlan.ip.protocol

Printer web page: [View and Modify Printer Settings](#) > [Network Communications Setup](#) > [Wireless Setup](#)

## Connection > WLAN > WLAN IP Address

Use this screen to view and if necessary change the printer's wireless IP address.

To save changes to this setting, set **Connection > WLAN > WLAN IP Protocol** to PERMANENT. Then reset the print server. See [Connection > Networks > Reset Network](#) on page 108.



Accepted values: 000 to 255 (for each field)

Related ZPL command(s): ^ND

SGD command used:

- ip.addr
- wlan.ip.addr

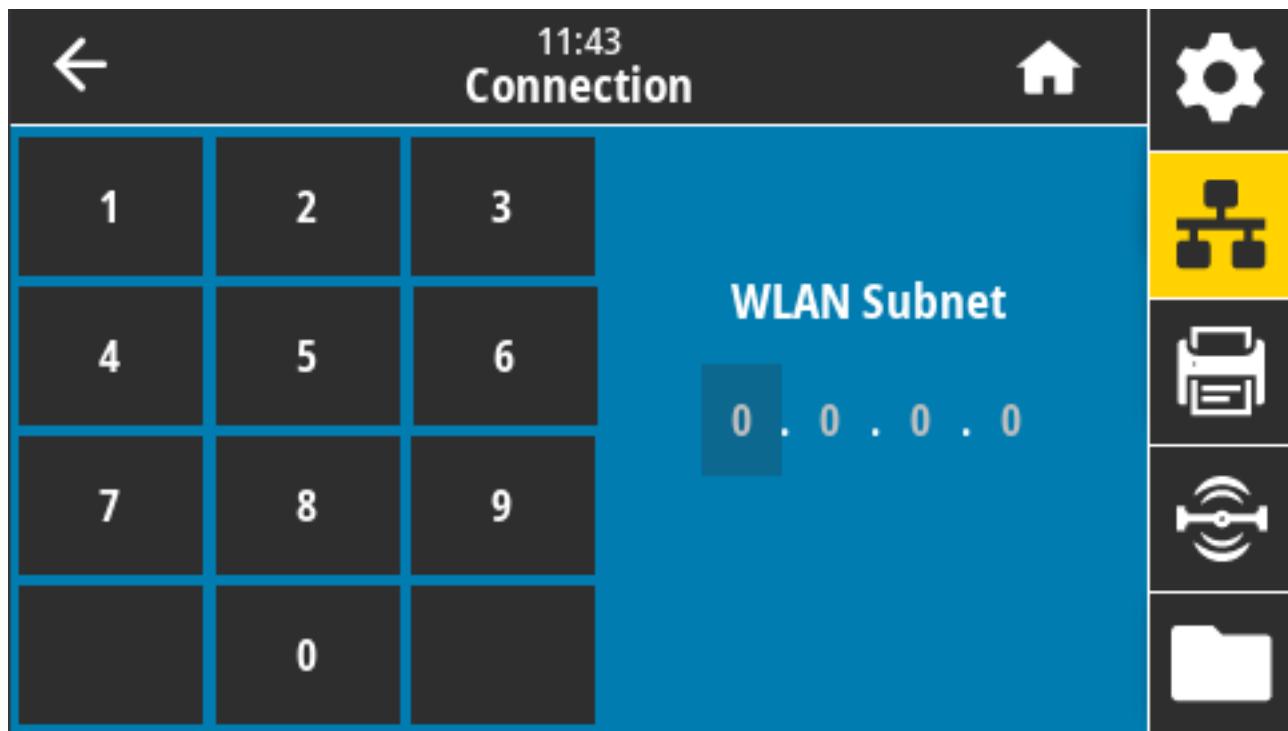
Printer web page:

[View and Modify Printer Settings > Network Communications Setup > Wireless Setup](#)

## Connection > WLAN > WLAN Subnet

Use this screen to view and if necessary change the wireless subnet mask.

To save changes to this setting, set **Connection > WLAN > WLAN IP Protocol** to PERMANENT. Then reset the print server. See [Connection > Networks > Reset Network](#) on page 108.



Accepted values: 000 to 255 (for each field)

Related ZPL command(s): ^ND

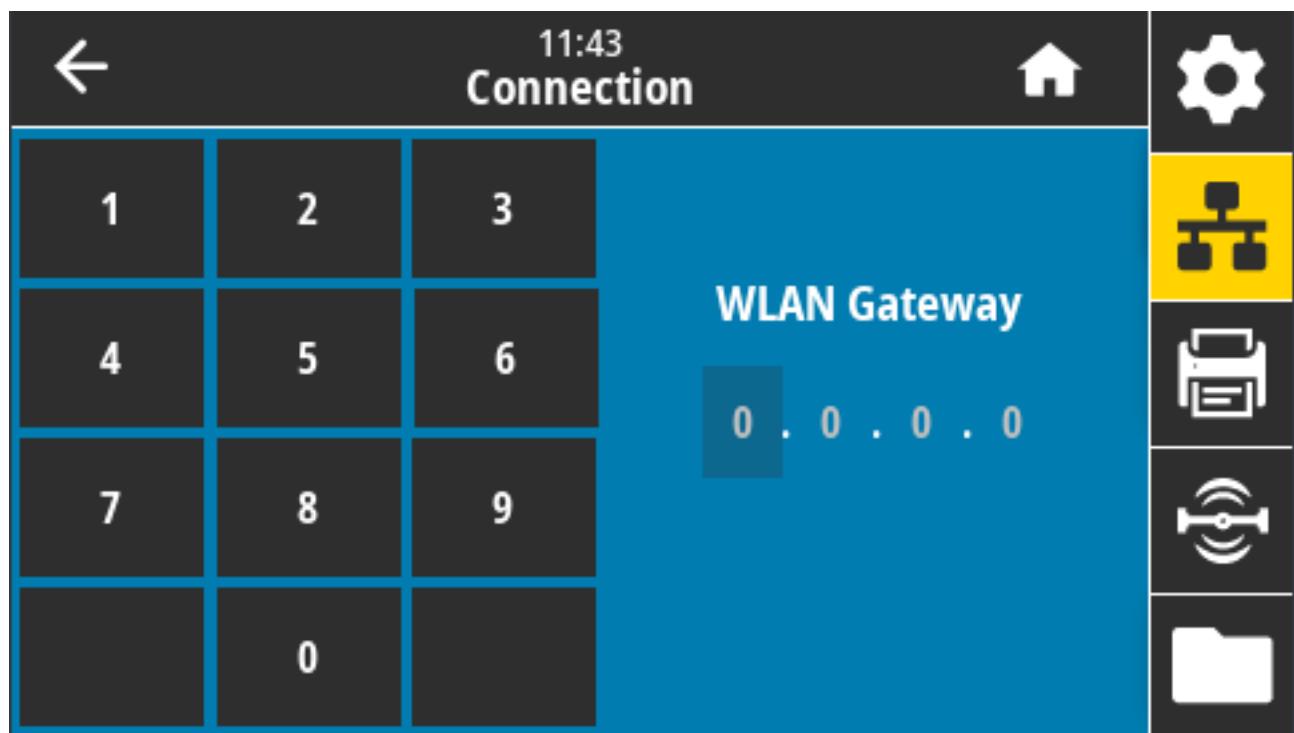
SGD command used: wlan.ip.netmask

Printer web page: **View and Modify Printer Settings > Network Communications Setup > Wireless Setup**

## Connection > WLAN > WLAN Gateway

View and, if necessary, change the default wireless gateway.

To save changes you make to this setting, set **Connection > WLAN > WLAN IP Protocol** to PERMANENT. Then reset the print server. See [Connection > Networks > Reset Network](#) on page 108.



Accepted values: 000 to 255 (for each field)

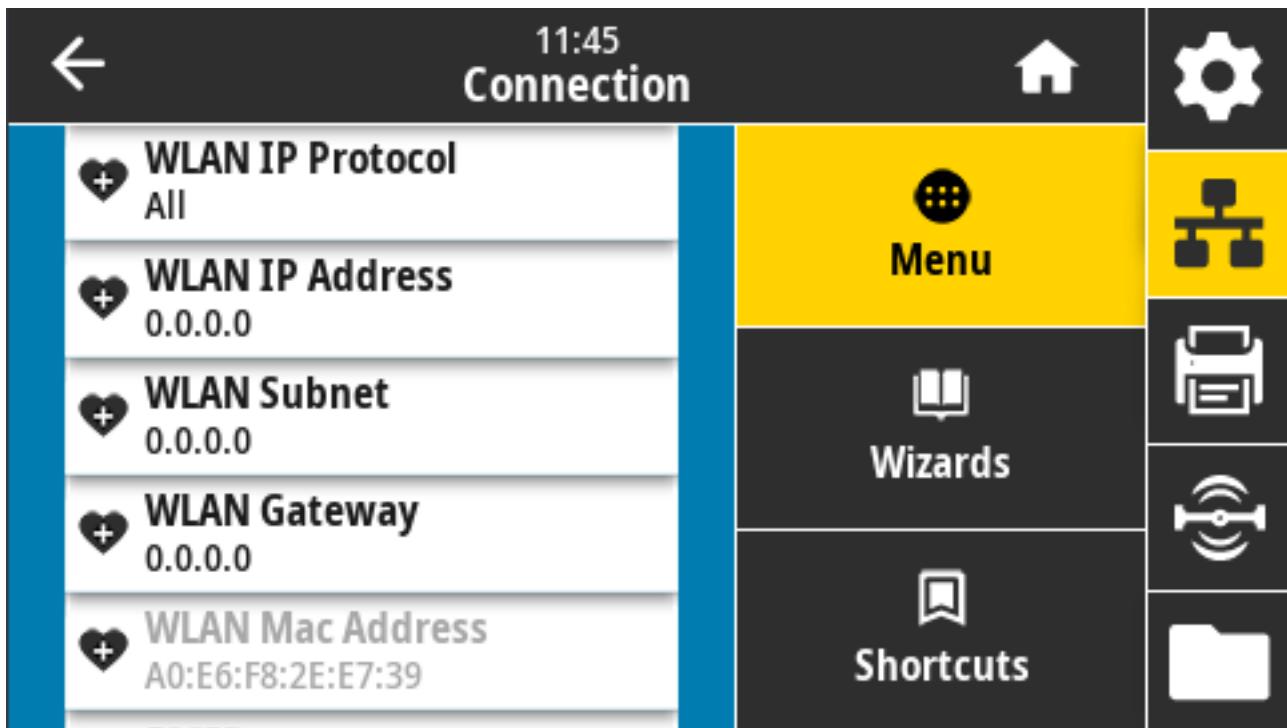
Related ZPL command(s): ^ND

SGD command used: wlan.ip.gateway

Printer web page: **View and Modify Printer Settings > Network Communications Setup > Wireless Setup**

**Connection > WLAN > WLAN MAC Address**

View the Media Access Control (MAC) address of the wireless print server. This value cannot be modified.

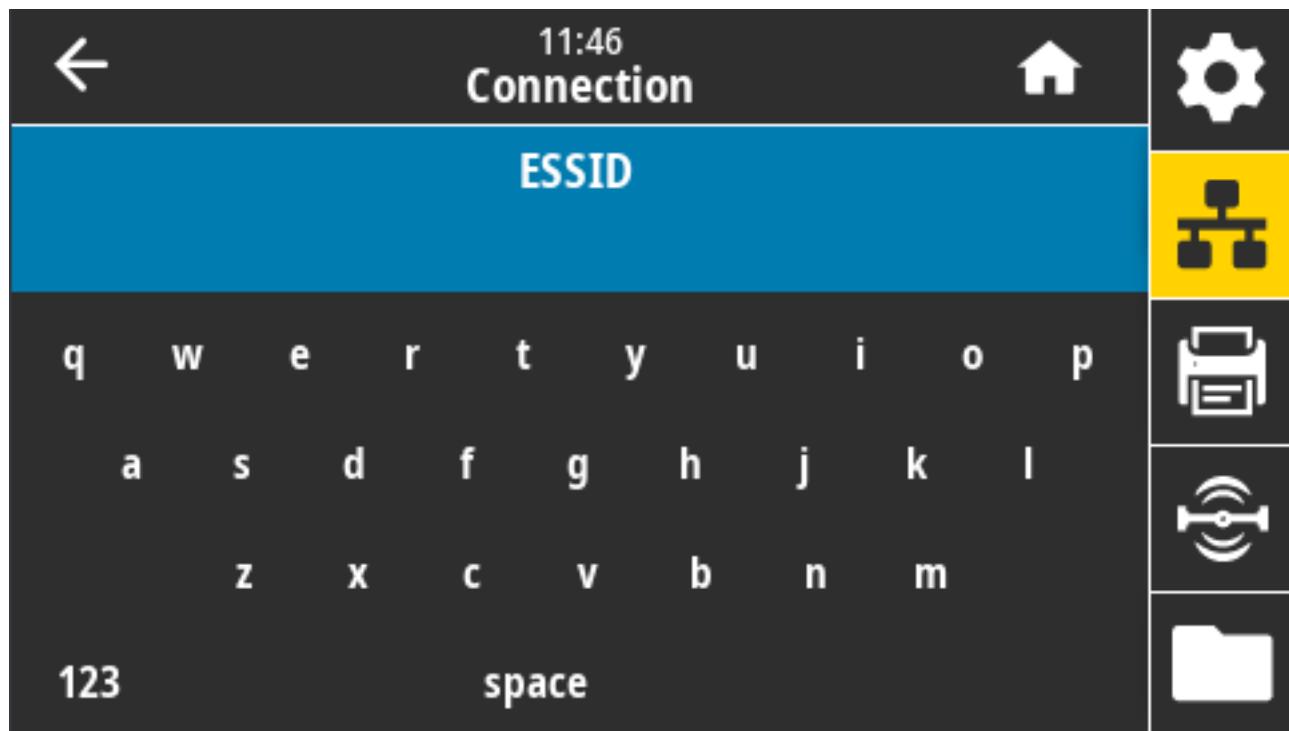


SGD command used: wlan.mac\_addr

Printer web page: [View and Modify Printer Settings > Network Communications Setup > Wireless Setup](#)

## Connection > WLAN > ESSID

The Extended Service Set Identification (ESSID) is an identifier for your wireless network. Specify the ESSID for the current wireless configuration.



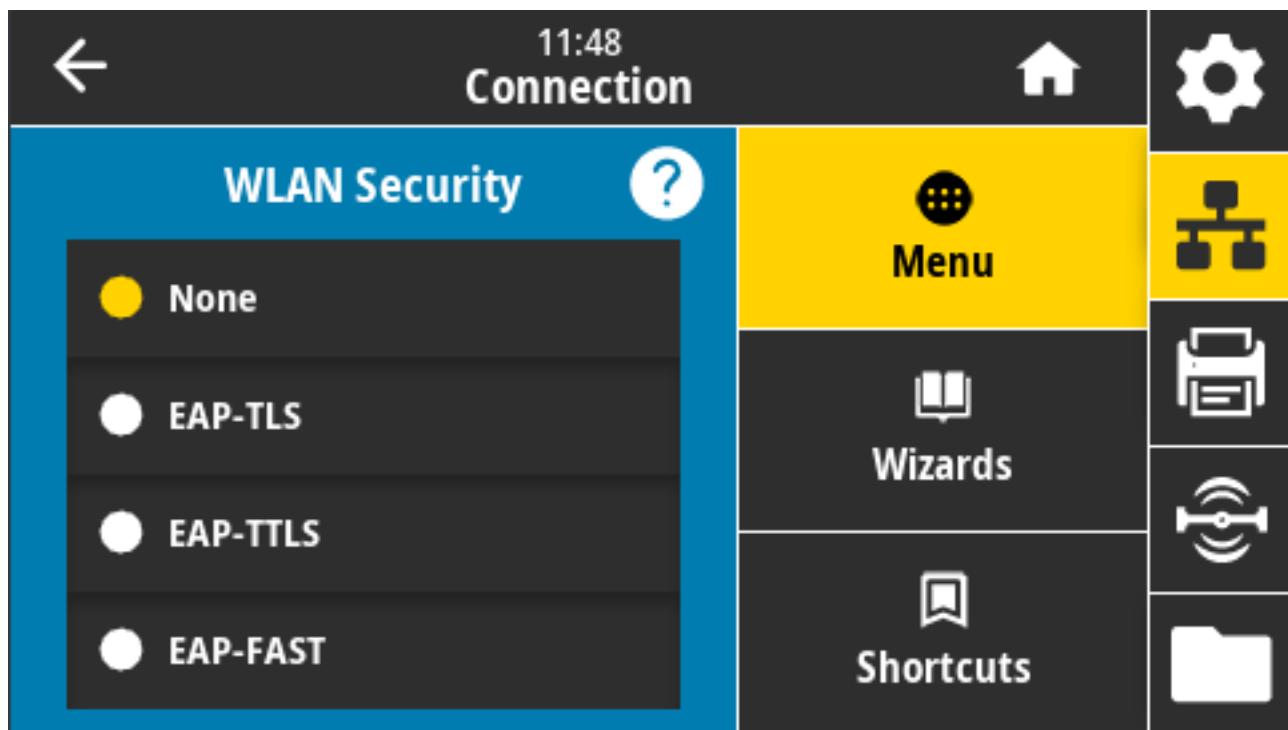
Accepted values: 32-character alphanumeric string (default: 125)

SGD command used: wlan.essid

Printer web page: [View and Modify Printer Settings > Network Communications Setup > Wireless Setup](#)

## Connection > WLAN > WLAN Security

Select the security type being used on your WLAN.



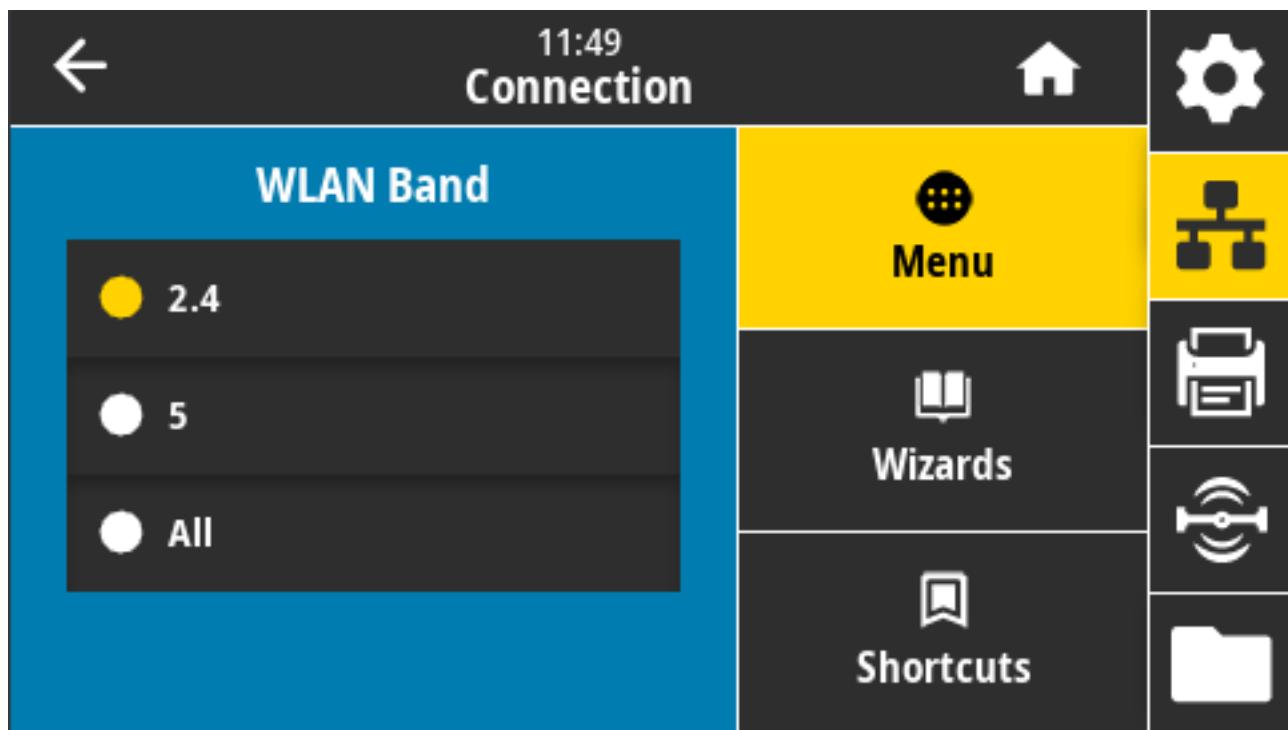
Related ZPL command(s): ^WX

SGD command used: wlan.security

Printer web page: **View and Modify Printer Settings > Network Communications Setup > Wireless Encryption Setup**

**Connection > WLAN > WLAN Band**

Set a preferred band to connect with via Wi-Fi.



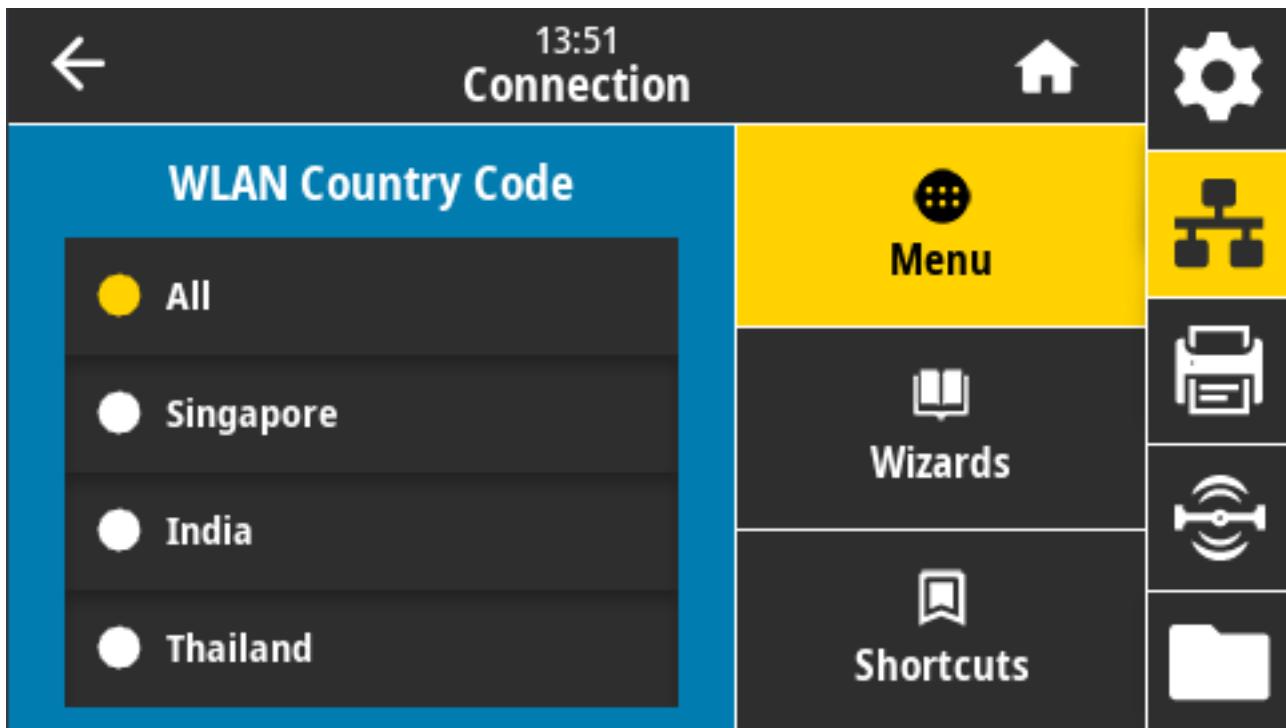
Accepted values: 2.4, 5, None

SGD command used: `wlan.band_preference`

Printer web page: **View and Modify Printer Settings > Network Communications Setup > Wireless Setup**

## Connection > WLAN > WLAN Country Code

The country code defines the regulatory country for which the wireless radio is currently configured.



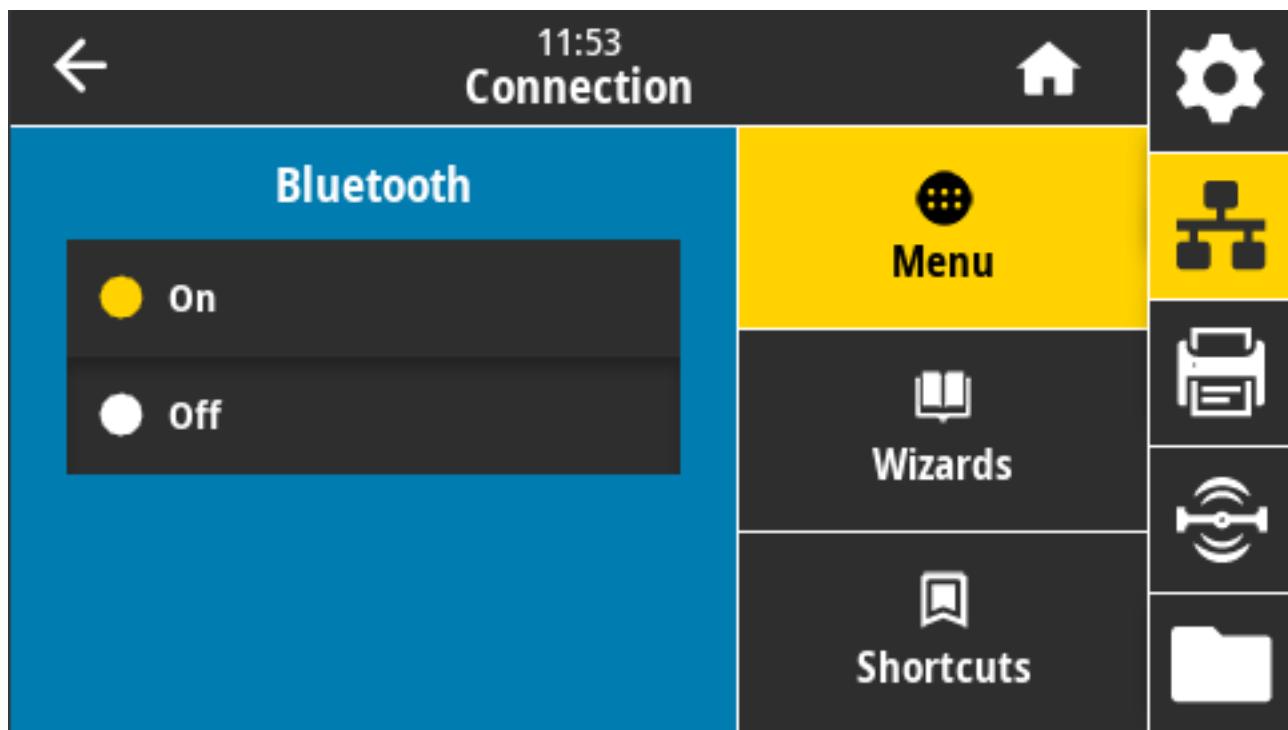
**NOTE:** The list of country codes is specific to each printer. It depends on the printer model and the wireless radio configuration of the printer. This list is subject to change, addition, or deletion with any firmware update, at any time, without notice.

To determine the country codes available on your printer, issue the `! U1 getvar "wlan"` command to return all commands related to WLAN settings. Locate the `wlan.country.code` string in the results and view the country codes available for your printer.

SGD command used: `wlan.country_code`

**Connection > Bluetooth > Bluetooth**

Select if the printer is “Discoverable” for Bluetooth device pairing.



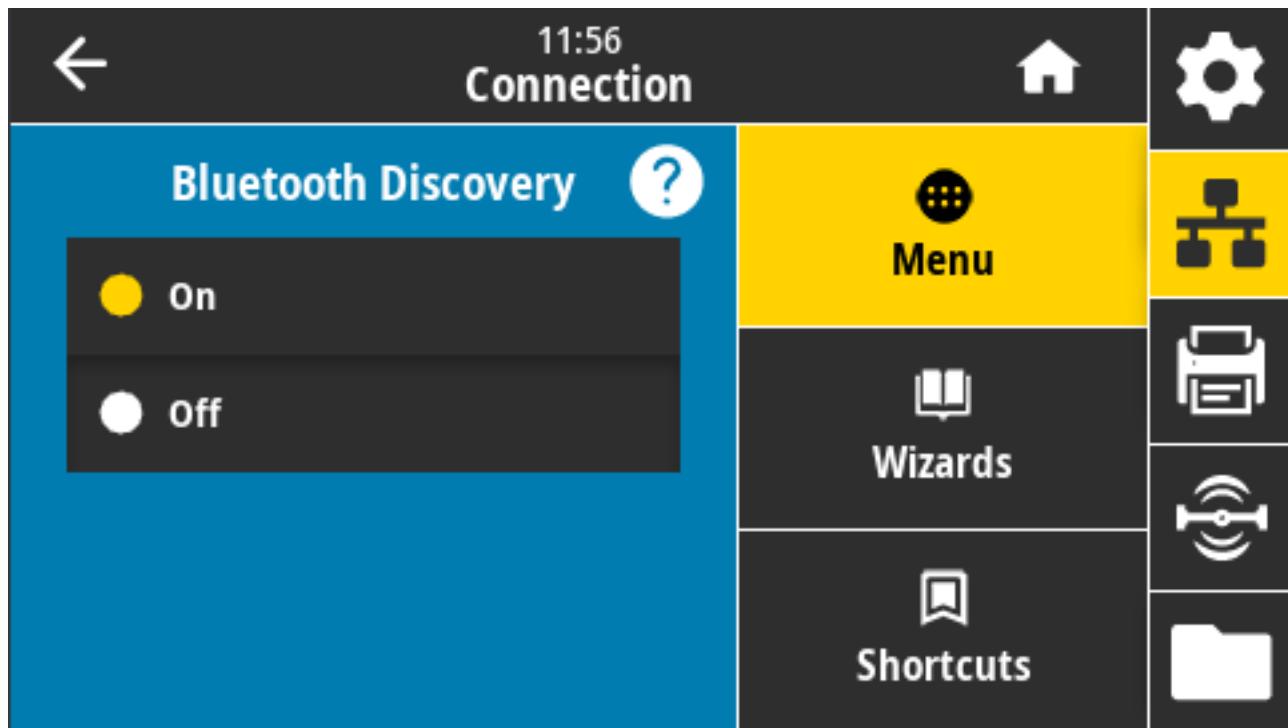
Accepted values:

- ON—Enables the Bluetooth radio.
- OFF—Disables the Bluetooth radio.

SGD command used: `bluetooth.enable`

## Connection > Bluetooth > Bluetooth Discovery

Use this parameter to specify if the printer is “discoverable” for Bluetooth device pairing.



Accepted values:

- ON—Enables Bluetooth discoverable mode.
- OFF—Disables Bluetooth discoverable mode.

SGD command used: `bluetooth.discoverable`

## Connection > Bluetooth > Friendly Name

This command sets the friendly name, which is used during service discovery.

For changes to take effect, turn printer power OFF and ON. Alternatively, issue the `device.reset` command.

Another way to reset the network is to use the Reset Network menu option. See [Connection > Networks > Reset Network](#) on page 108.

If you do not set a friendly name for the printer for easier discovery, the name defaults to the printer serial number.



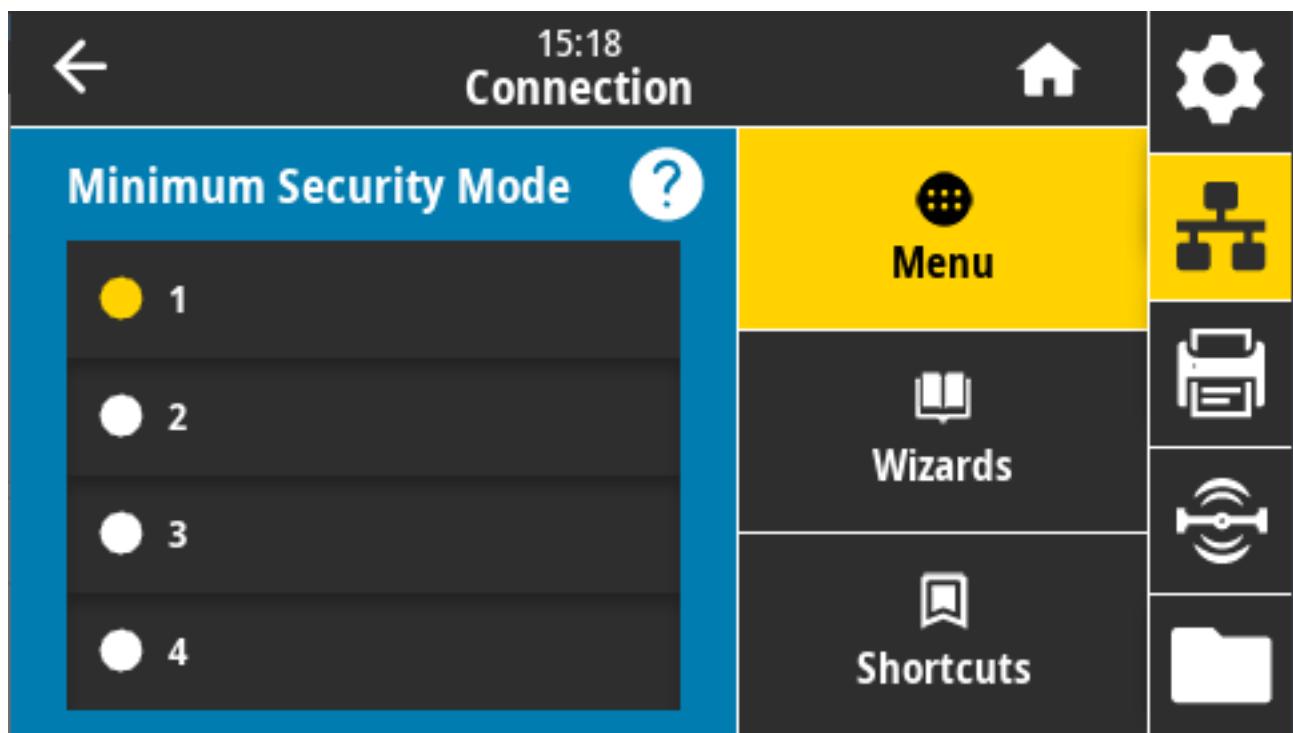
Accepted values: 17-character text string

SGD command used: `bluetooth.friendly_name`

### Connection > Bluetooth > Minimum Security Mode

This printer setting establishes the Minimum Security mode for Bluetooth connections.

The Minimum Security Mode provides for various levels of security, depending on the printer radio version and printer firmware.



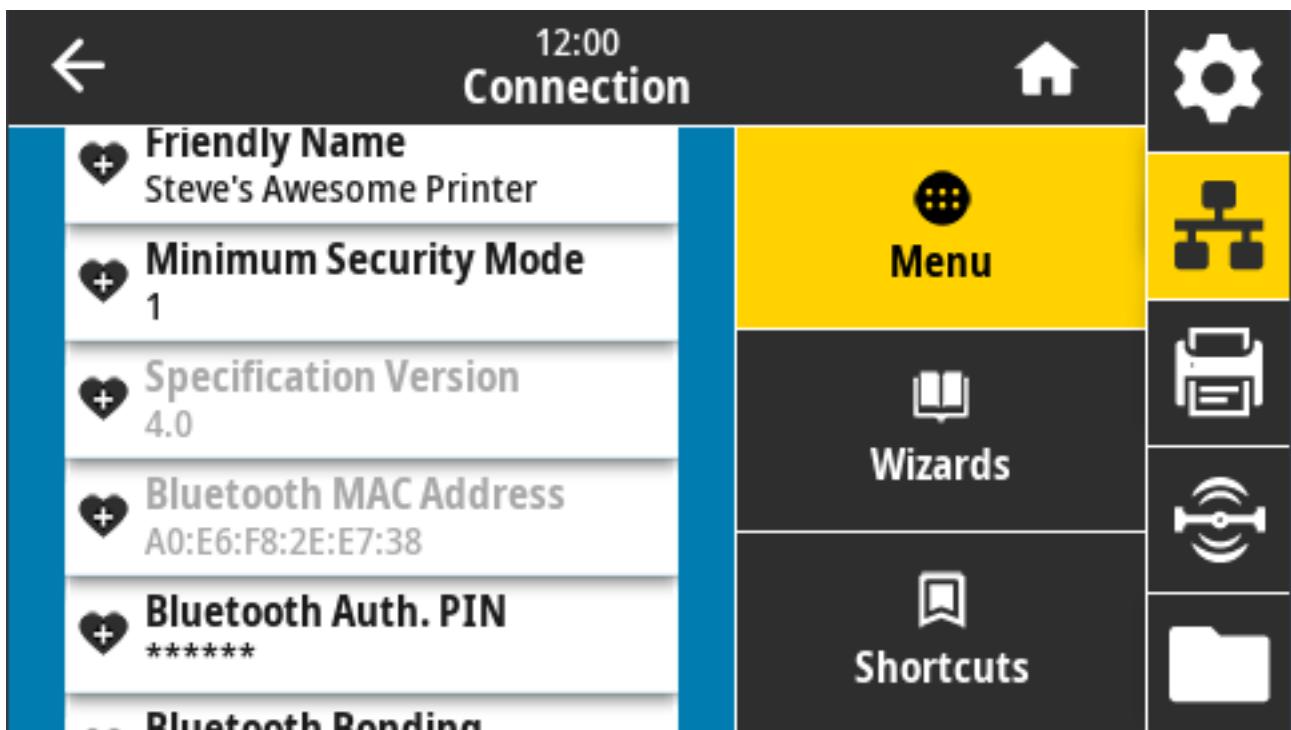
For details, refer to the Zebra Programming Guide at [zebra.com/manuals](http://zebra.com/manuals).

Accepted values: 1, 2, 3, 4

SGD command used: `bluetooth.minimum_security_mode`

## Connection > Bluetooth > Specification Version

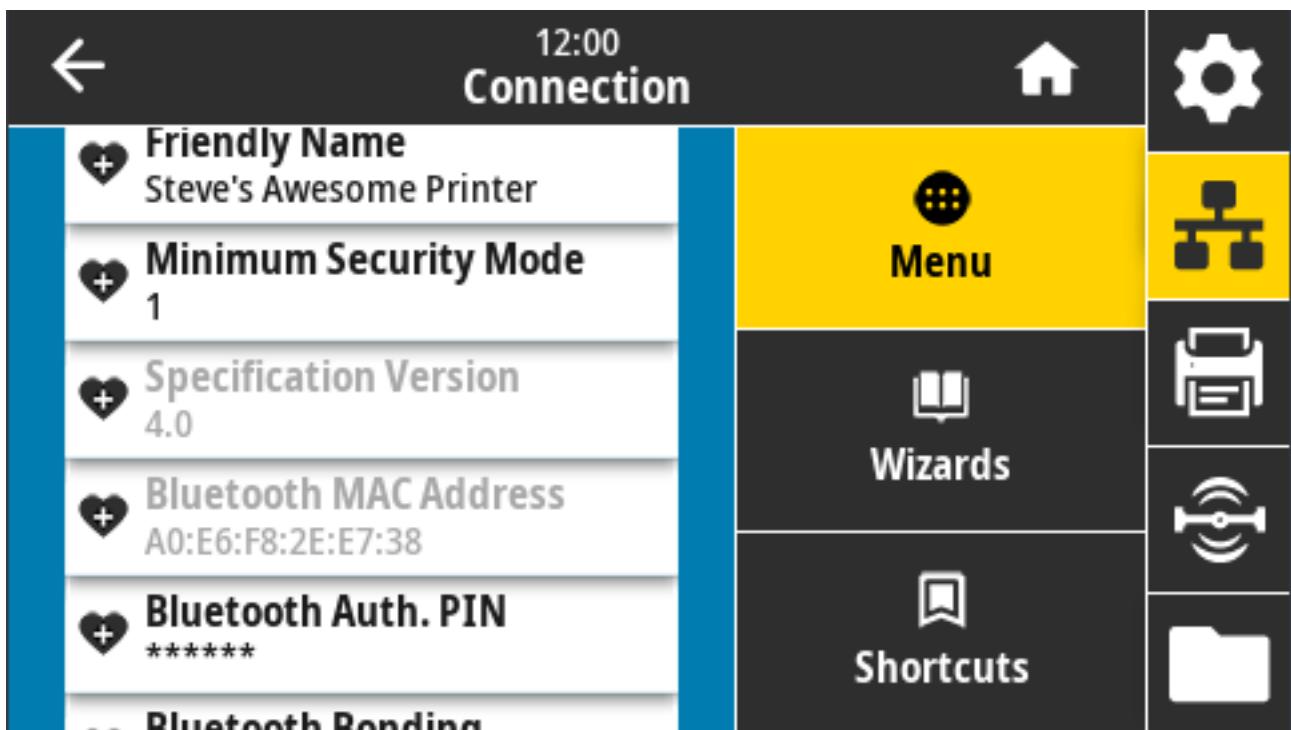
This parameter displays the Bluetooth library version number.



SGD command used: bluetooth.version

**Connection > Bluetooth > MAC Address**

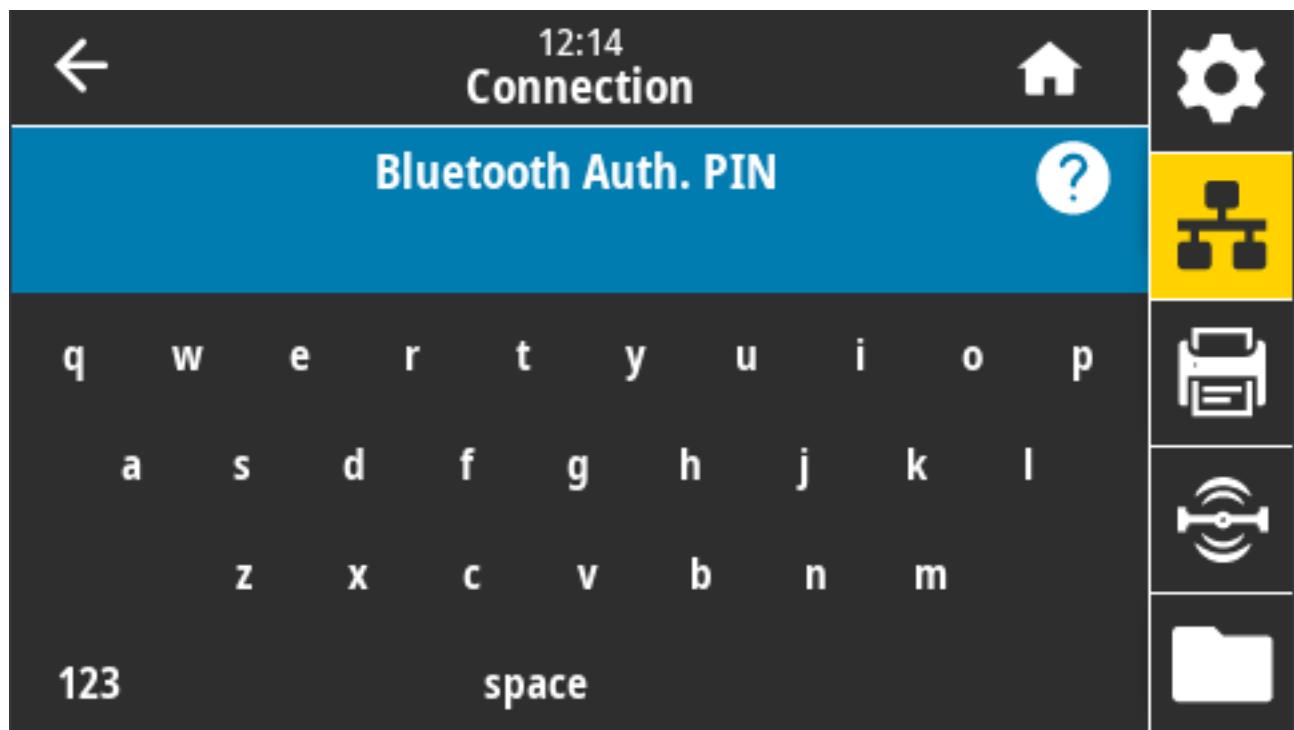
This parameter displays the Bluetooth device address.



SGD command used: bluetooth.address

**Connection > Bluetooth > Bluetooth Auth. PIN**

This parameter displays the Bluetooth device address.

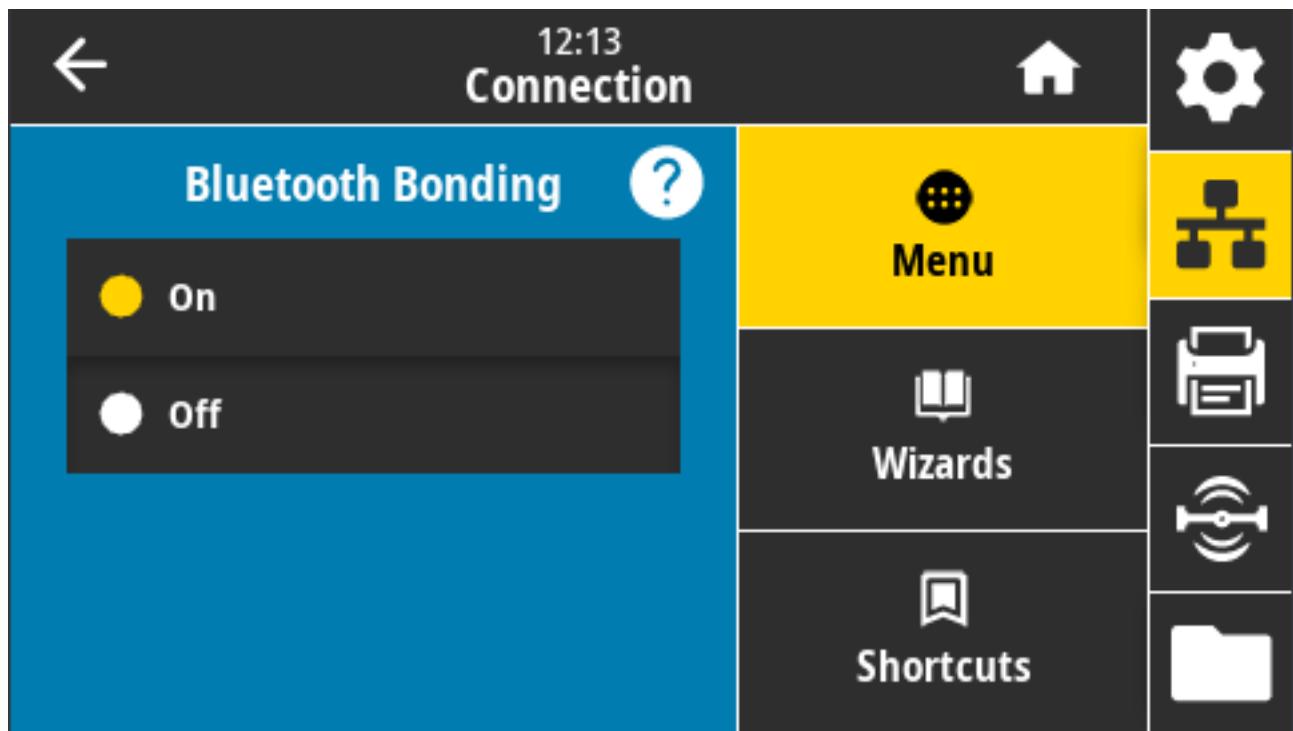


SGD command(s) used:

- To set the PIN: `bluetooth.bluetooth_pin`
- To enable authentication using the PIN: `bluetooth.authentication`

## Connection > Bluetooth > Bluetooth Bonding

This setting is used to specify if the Bluetooth stack will “bond” or will save link keys for devices that successfully connect to the printer.



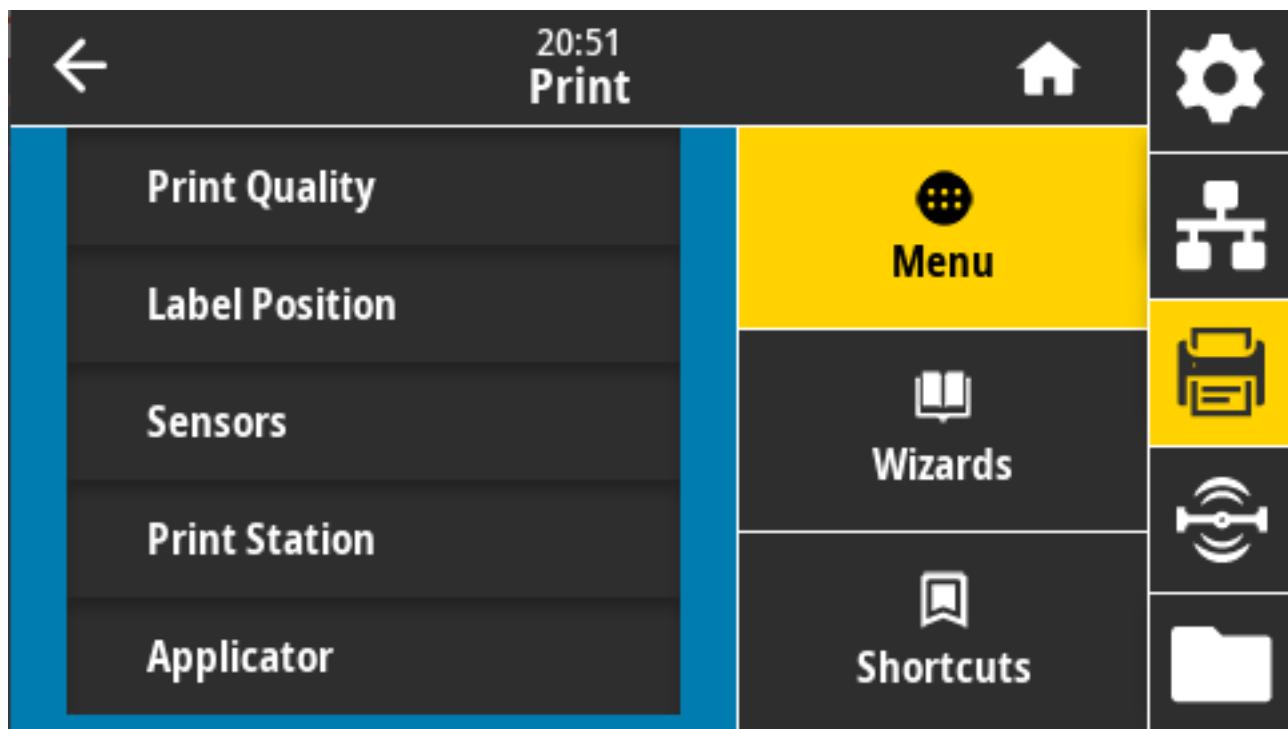
Accepted values:

- ON—Enables Bluetooth bonding.
- OFF—Disables Bluetooth bonding.

SGD command used: `bluetooth.bonding`

## Print Menu

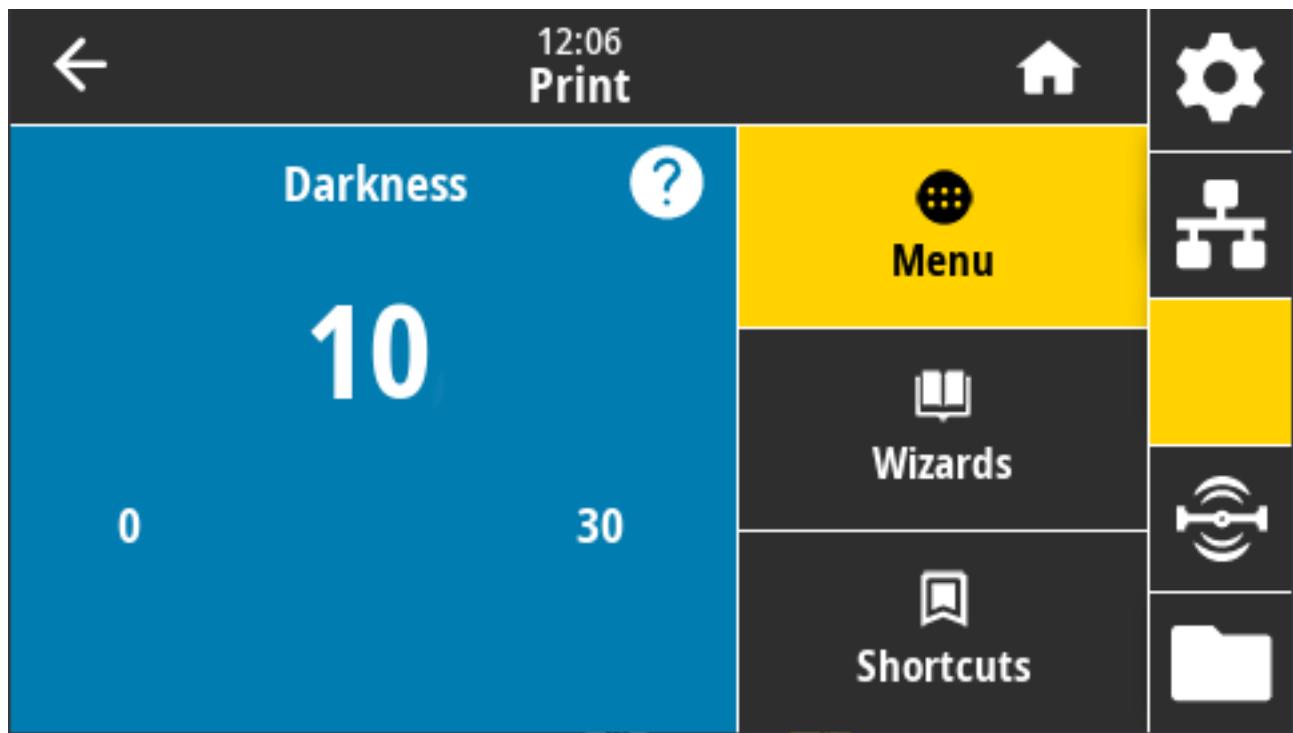
Use this menu to set and change print settings such as print darkness, speed, and size.



### Print > Print Quality > Darkness

Set the print darkness to the lowest setting that provides good print quality.

If you set the darkness too high, the label image may print unclearly, barcodes may not scan correctly, the ribbon may burn through, or the printhead may wear prematurely.



Accepted values: 0.0 to 30.0

Related ZPL command(s):

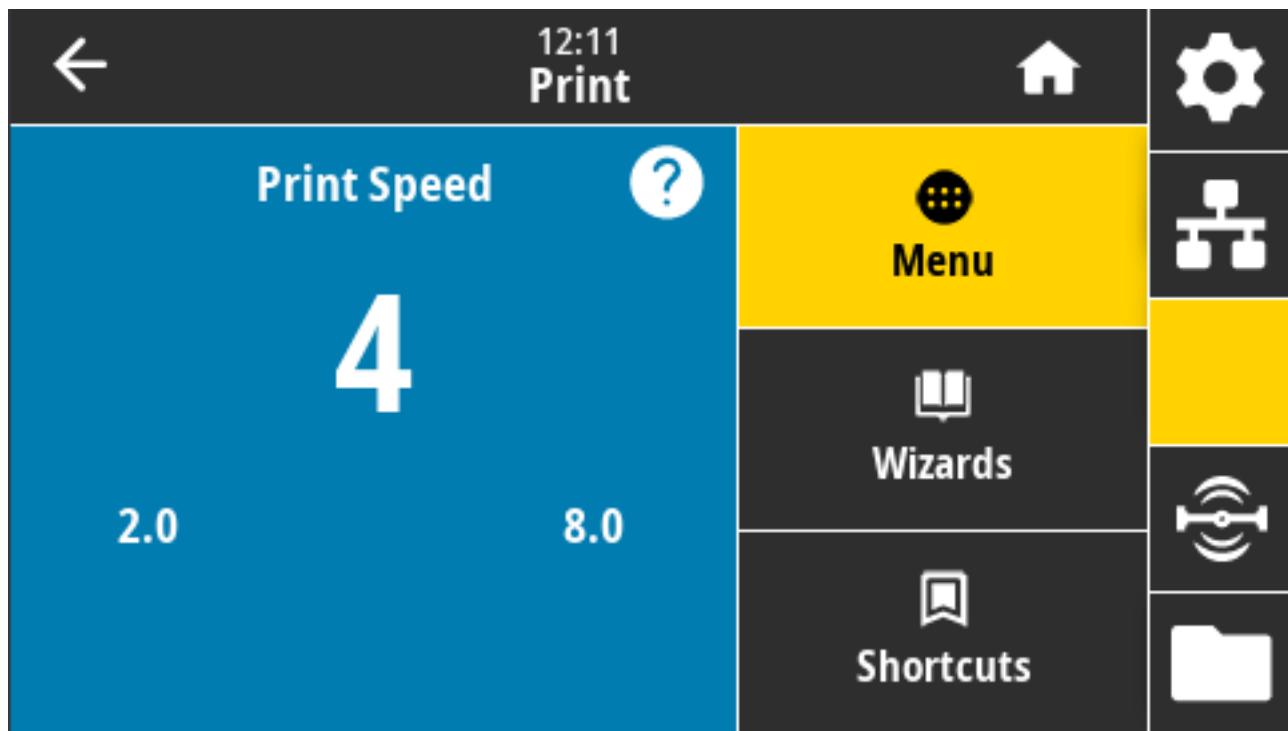
- ^MD
- ~SD

SGD command used: `print.tone`

Printer web page: **[View and Modify Printer Settings > General Setup > Darkness](#)**

## Print > Print Quality > Print Speed

Select the speed in inches per second (ips), for printing a label. Slower print speeds typically yield better print quality.



Accepted values:

- ZD621 203 dpi = 2 to 8 ips
- ZD621 300 dpi = 2 to 6 ips

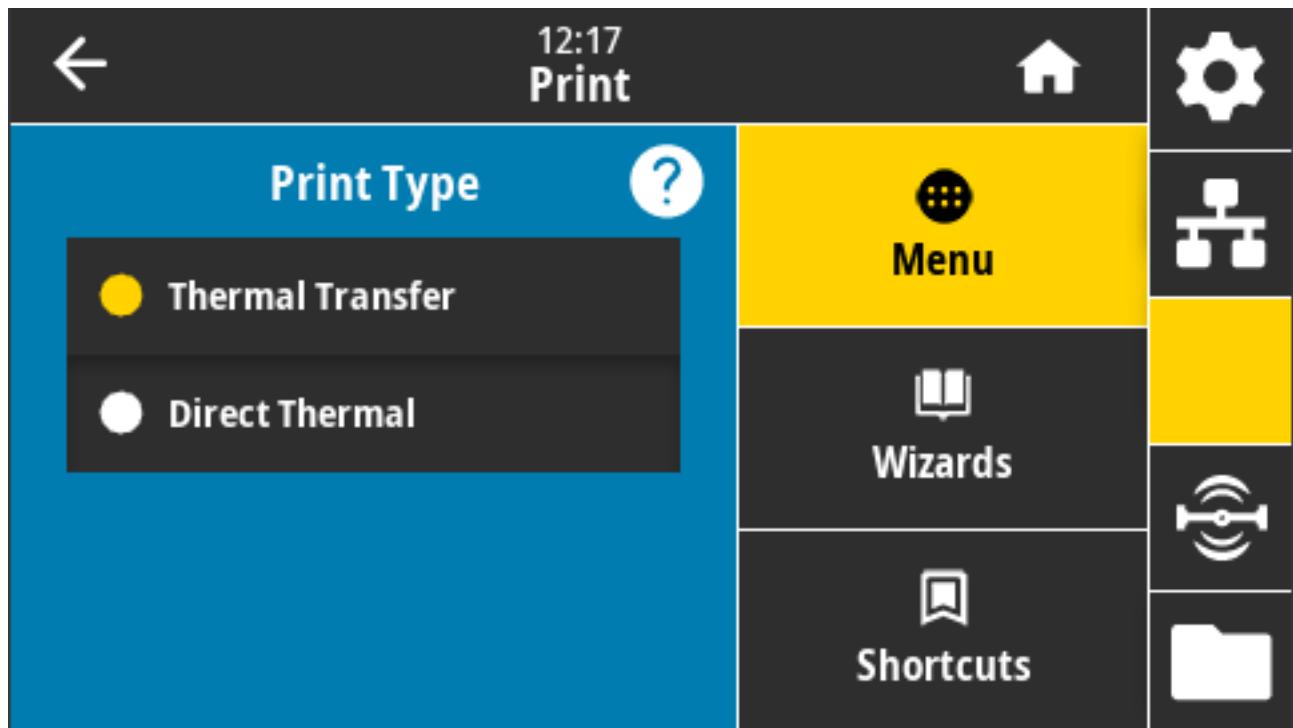
Related ZPL command(s): ^PR

SGD command used: media.speed

Printer web page: [View and Modify Printer Settings > General Setup > Print Speed](#)

## Print > Print Quality > Print Type

Specify if the printer needs to use ribbon for printing.



Accepted values:

- Thermal Transfer—Uses ribbon and thermal transfer media.
- Direct Thermal—Uses direct thermal media and no ribbon.

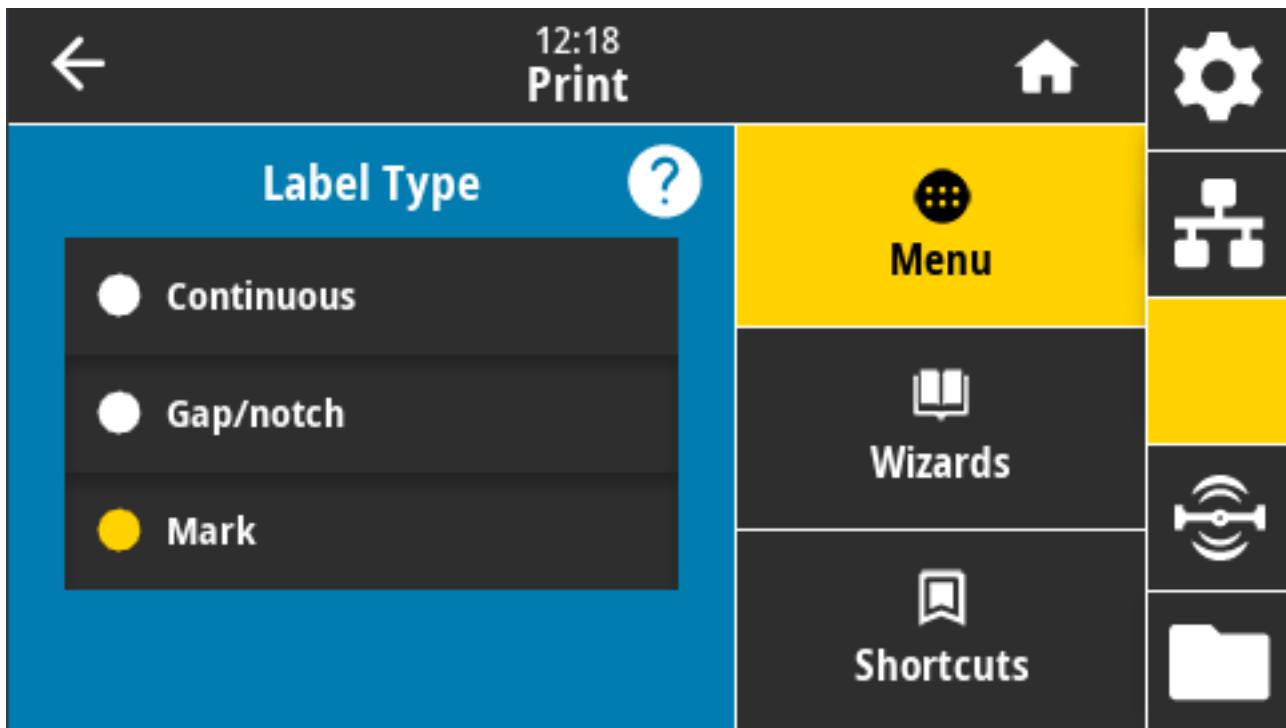
Related ZPL command(s): ^MT

SGD command used: ezpl.print\_method

Printer web page: [View and Modify Printer Settings > Media Setup > Print Method](#)

## Print > Print Quality > Label Type

Select the type of media that you are using.



If you select Continuous, you must include a label length (see [Print > Print Quality > Label Length](#) on page 141) in your label format layout (^LL if you are using ZPL).

If you select Gap/Notch or Mark for various non-continuous media, the printer feeds the media to calculate the label length.

Accepted values: Continuous, Gap/Notch, Mark

Related ZPL command: ^MN

SGD command used: ezpl.media\_type

Printer web page: **View and Modify Printer Settings > Media Setup > Media Type**

**Print > Print Quality > Label Length**

View the calibrated label length in dots. This value cannot be modified.

