FUZZYSCAN
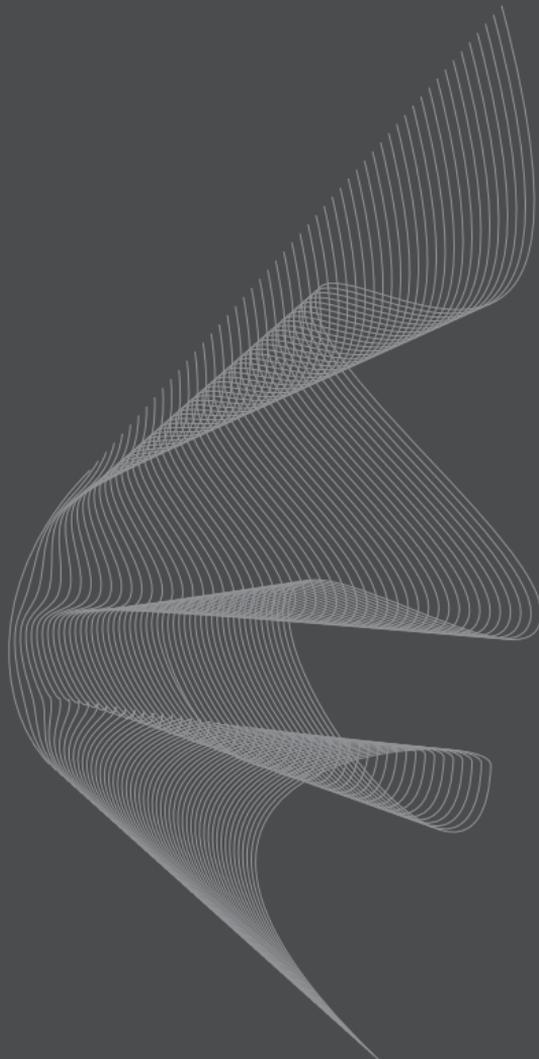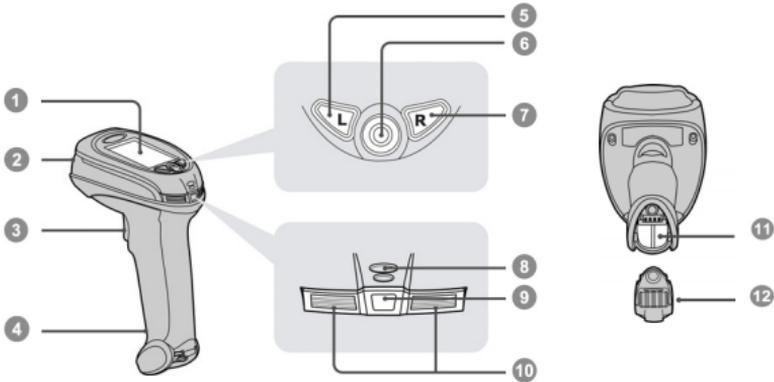
FUZZYSCAN

CORDLESS SCANNER

cino

# Getting Familiar with Wi-Fi Scanner

Thank you for choosing Cino FuzzyScan Wi-Fi Cordless Scanner. Powered by the 802.11 WLAN technology, it is not only easily integrated into an existing enterprise wireless network, but also can communicate with the remote host in real time. The Cino Wi-Fi scanner is an ideal and cost-effective solution to fulfill the needs of expandable wireless data collection. It does provide a reliable enterprise-class wireless connectivity with true business value.

This document provides an easy reference for installation and operation purpose. For more reference material, please visit our web site for details.
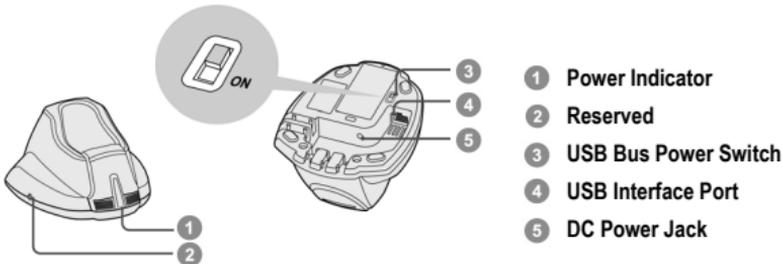
## F790WD & L780WD Series Scanner



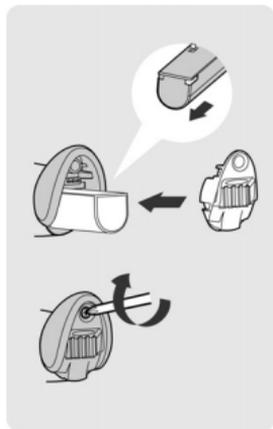| | | | | | |
|---|---|---|---|---|---|
| ❶ | LCD Display | ❺ | Left Function Key | ❾ | Link Indicator |
| ❷ | Scan Window | ❻ | Navigation Key | ❿ | Status Indicator |
| ❸ | Trigger | ❼ | Right Function Key | ⓫ | Battery Cavity |
| ❹ | Reset Button | ❽ | Beeper Hole | ⓬ | End Cap |

📝 **The Navigation Key provides up, down, left and right 4-direction navigation. And the Center key is used to launch an application, select an item, or activate the Virtual Keyboard.**

## HB2100 Charging Cradle



| | |
|---|---|
| ❶ | Power Indicator |
| ❷ | Reserved |
| ❸ | USB Bus Power Switch |
| ❹ | USB Interface Port |
| ❺ | DC Power Jack |

# Preparations before Use

## Install the Battery

1. Ensure the battery contacts of the battery pack are facing the charging contacts inside the battery cavity.

2. Slide the battery pack into the battery cavity until hearing a click sound before locking it with the end cap. If the battery pack still has power, the scanner will be powered on and give 4 beeps. And you will see the "**Date**" setup screen after the welcome message.

3. Secure the end cap with the screw provided.

📎 **Please note that the battery pack has to be fully charged before using**.

## Charge the Battery
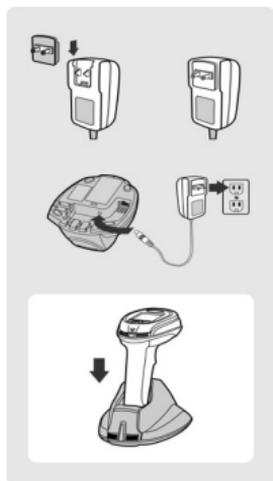
1. Choose an appropriate plug and slot it into the power adapter cavity until it is locked. Then plug the AC power plug into the AC wall socket.

2. Plug the DC power cord of power supply unit into the DC Jack of charging cradle. Please make sure the power indicator of charging cradle turns **steady blue**.

3. Place the scanner onto the cradle. The status indicator of scanner will turn **steady red** if the battery is not fully charged. When the battery is fully charged, the status indicator of scanner will **flash green** at regular interval.

📎 **For first use, please charge the new battery pack for 8 hours prior to use.**

## Use USB Bus Power
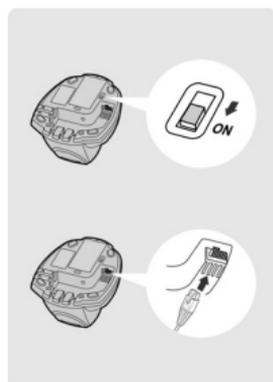
1. If a USB 3.0 Host Port is available in your host machine, both battery charging and regular operation can be supported by the USB Bus Power without using external power supply.

2. If you want to use this feature, please slide the USB bus power switch to "ON". Then connect the cradle and host machine via USB cable.

📎 **If only a USB 2.0 Host Port is available in your host machine, you are recommended to use power supply as power source.**

## Install Necessary Software

Before you start using the Wi-Fi scanner, you are recommended to install following software into your host machine.

**Cino WaveCentre**

The WaveCentre is a useful Windows-based wireless management utility together with an IP virtual COM software driver. Once you installed WaveCentre into your host machine, it can create a virtual COM port for each connected Wi-Fi scanner corresponding to its IP address. Then the Wi-Fi scanner will work as a local serial device of the remote host.

**FuzzyScan Wi-Fi PowerTool**

By using the FuzzyScan Wi-Fi PowerTool, you can create Wi-Fi profiles, change configurations and upgrade firmware with ease. Please note that you have to install the USB virtual COM software driver before using the PowerTool.

## Required Information for Network Setting

Before connecting the Wi-Fi scanner to your desired remote host, you have to create a Wi-Fi profile for your scanner. You will need following information for wireless network setting before creating a new profile.

**SSID**

The SSID is an 802.11 service set identifier of Independent Wireless Host or Access Point (AP).

**Operation Mode**

The Wi-Fi scanner supports both "Infrastructure" and "Ad-Hoc" modes. Please note that if you select Ad-Hoc mode, you are suggested to use the Static IP. And the Gateway and Subnet Mask have to be the same as the remote host.

**Region and Channel**

The region is where the Wi-Fi scanner is used, and the channel number must be the same as the channel setting of AP or the remote host.

**Security**

The Encryption and Authentication will be used to communicate with the AP or the remote host, such as WEP, WPA and WPA2.

**IP Type**

Both Static IP and DHCP can be used in your wireless network. But you are recommended to use Static IP for better management purpose,

**Remote IP Address and Port**

The Remote IP Address is an IP address of the remote host. And the Port will be a listen port of WaveCentre used to communicate with your Wi-Fi scanners.

**Local IP Address**

The Local IP Address is an IP address of the Wi-Fi scanner.

# Getting Started

## Virtual Keyboard

A unique virtual keyboard has been provided by the Wi-Fi scanner to fulfill various inputs of alphabet, number, symbol and ASCII value. You can use 4 toggle keys ( ABC  123  &#+  ASCII ) to switch into different keyboard layout before using the navigation key to locate your desired inputs for information entering.



**Alphabet Keyboard**

**Symbol Keyboard**

**ASCII Keyboard**

## Date and Time Setup

After installing the fully charged battery pack into the battery cavity, the scanner will be powered on and booted automatically. You will hear power on beeps and the "**Date**" setup screen will be displayed after the welcome message.

1. Use the virtual keyboard to complete the date information input, then press "**Enter**" (L key) to save the setting.

2. The "Time" setup screen will be displayed after the "Date" setup screen. Use the virtual keyboard to complete the time information input, then press "**Enter**" to save the setting.

Once you completed the Date and Time settings, a "**No Profile**" message box will pop-up to remind you there is no profile existing in your Wi-Fi scanner. Press OK to enter the Desktop (main screen) then go to "SETUP" to create a new Wi-Fi profile.

## Desktop

The Desktop is the main screen of Wi-Fi scanner which contains three parts, including **Status Bar**, **Main Menu**, and **Function Bar**.
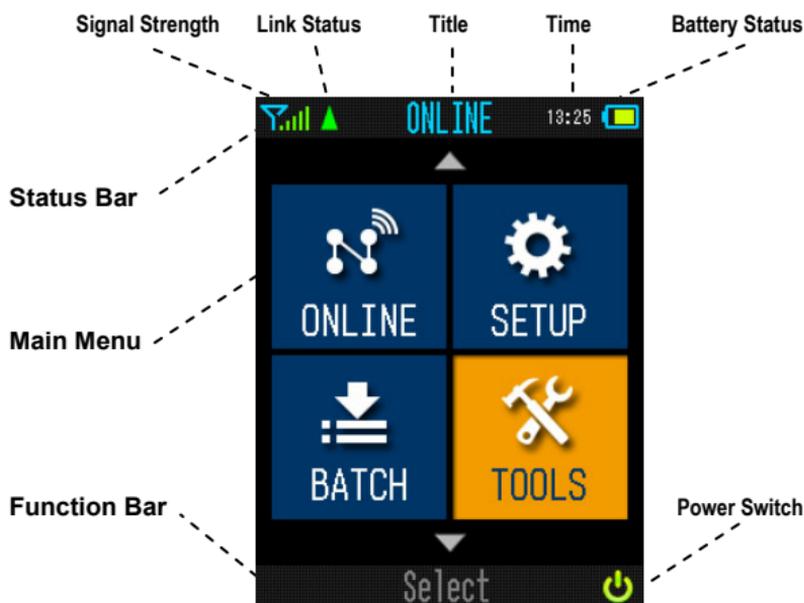


**Signal Strength**

- 📶 Connecting to the server
- 📶 Disconnected
- 📶 Almost no signal
- 📶 Very low signal
- 📶 Low signal
- 📶 Medium signal
- 📶 Good signal

**Link Status**

- Ⓧ No Wi-Fi Profile
- 🔺 COM Port Close
- 🔺 COM Port Open

**Battery Status**

- 🔋 Low battery
- 🔋 Battery is 20% full
- 🔋 Battery is 40% full
- 🔋 Battery is 60% full
- 🔋 Battery is 80% full
- 🔋 Battery is fully charged
- 🔋 Battery Charging

# Configure Your Wi-Fi Scanner

Once you entered the "**SETUP**" from the main menu of Desktop, you will find all available configuration items, including Wi-Fi Profiles, System Settings, Scanner Settings, Interface Settings, Online Scanning, Batch Scanning and Advanced Settings.

## Wi-Fi Profiles

Here, not only you can create a new Wi-Fi profile, you can also edit or delete the existing Wi-Fi profiles.

## System Settings

In System Setting, you can set or change the date and time, device name, language, LCD brightness, LCD backlight duration, key tones, administrator and user password and so on.

## Scanner Settings

In Scanner Setting, you can set or change the details of each bar code symbology and all available options of Operation and Output.

## Interface Settings

In Interface Setting, you can define the detailed working behaviors of Wi-Fi, USB COM and USB HID.

## Online Scanning

In this setting, you can configure all available options of Online Scanning, including barcode type indication, display font size, record suffix, transmission format, and all detailed controls of Host ACK function.

## Batch Scanning

In this setting, you can configure all available options of Batch Scanning, including desired input fields with validation, transmission sequence, field and record delimiters, timestamp format, "Auto Save" and "Auto Delete" functions, link control, transmission interface and so on.

## Advanced

In Advanced Setting, you can enter Host Link Mode for connecting the Wi-Fi scanner to FuzzyScan Wi-Fi PowerTool, and perform Factory Default, Master Default and System Reset. Moreover, you are able to turn on/off the Wi-Fi radio through the setting of Radio Control.

# Connecting the Wi-Fi Scanner

To integrate FuzzyScan Wi-Fi scanner into your application, the simplest way is to use Cino **WaveCentre** together with the scanners. Once you installed WaveCentre into your desired host machine, it can create a virtual COM port for each connected Wi-Fi scanner corresponding to its IP address. All connected Wi-Fi scanners will work as **local serial devices** of the remote host.

Before you connect the Wi-Fi scanner to a remote host, you have to create a correct Wi-Fi profile for the Wi-Fi connection. There are two ways to create Wi-Fi profiles. The easy way is to use the scanner "**SETUP**" to create a new profile. If you want to create multiple profiles at the same time, you may consider using Cino FuzzyScan Wi-Fi PowerTool.

Once you collected all required information for network setting, please follow the steps below to establish the connection between the Wi-Fi scanner and the remote host.

1. Install the WaveCentre into your host machine then double click its icon to launch WaveCentre.

2. Find out the IP address of the remote host and decide the listen port of WaveCentre. By default, the listen port is 6300. You can change the port number to meet your WLAN setting.

3. Ensure the scanner is activated within radio range then enter "SETUP" from the Desktop main menu. Select "**Wi-Fi Profiles**", then press "**New**" (L key) to add a Wi-Fi Profile. Select "**Auto Search**", the scanner will perform "Searching" to find out all discoverable Access Points and Independent Wireless Hosts, and provide you a list.

4. For "Infrastructure" mode, select a suitable AP which is able to connect to your remote host then complete the profile setting. If you want to build a peer-to-peer connection by using Ad-Hoc mode, please select your desired remote host then complete the profile setting as well.

5. Once you completed the Wi-Fi profile setting, the scanner will try to connect the remote host automatically. You will see the "**Connecting to ……**" screen, the scanner will give continuous short clicks and the link indicator of scanner will flash blue quickly during connecting process.

6. If your Wi-Fi setting is correct and there is no mistake during link process, the link process will be completed and you will hear 4 beeps in ascending tone. You will see the link indicator of scanner giving **1 blue blink per 2.5 seconds** to indicate the scanner is in radio-connected state.

✎ **If you have difficulty to make a successful link, please go to "TOOLS" to run "Link Diagnostic" to get the detailed report of each link step for locating problem.**

## Work with Cino WaveCentre

After you have successfully connected the Wi-Fi scanner to WaveCentre running on your remote host, you will see the device name and IP address of Wi-Fi scanner shown on the console of WaveCentre. And a "Flag" 🚩 icon will be displayed to indicate the Wi-Fi scanner is connecting to this host machine.



By default, each connected Wi-Fi scanner work as a local serial device of your remote host. You are able to design your application without involving complicated TCP/IP (socket) programming. This is helpful for your application to work with multiple scanners.

### HID Conversion

To enable this feature, please select the HID check box. By doing so, all incoming data from that scanner will be converted as HID keyboard inputs. This is very useful for using the Wi-Fi scanner with your existing application without modification.

## Function List of Wi-Fi Scanner

The following tree view provides you a function list of your Wi-Fi scanner.

**DESKTOP (Main Screen)**

— **ONLINE** (Online Scanning)

— **BATCH** (Batch Scanning)

— **SETUP** (On-scanner Configuration)

   Wi-Fi Profiles / System Settings / Scanner Settings
   Interface Settings / Online Scanning / Batch Scanning
   Advanced

— **TOOLS** (Useful Tools)

   Site Survey / Link Diagnostic / Data Validation
   Scan Test / System Test / Device Information / User Settings

# Online Scanning

After connecting the Wi-Fi scanner to the remote host, you are able to perform the online scanning function by entering "**ONLINE**" from the main menu of Desktop. You will see following screen shown on the LCD display of scanner, and you are ready to scan a barcode. Under this mode, all scanned barcodes will be displayed on the screen and sent to the remote host concurrently.

If the scanner was unable to read very poor or invalid barcode, you can press the "Keyboard" icon to activate **Virtual Keyboard** for data entering.

To press "**Func**" (L key), you are able to view the scan logs and configure the display option.

**Options**
Under Options, you can configure "Barcode Type Indication", "Font Size" and so on.

**Scan Logs**
All scan logs will be automatically recorded until the log storage is full. If necessary, you can enter this to view all scan logs.

## Host Acknowledgement

For more Reliable Data Transfer, the useful Host Acknowledgement function provides a helpful handshaking protocol to ensure the scanned data is successfully received by host application. Once this function was enabled, the scanner will wait for an **ACK** or a **NAK** message issued by the host application after each scan. And the scanner can not scan any barcode before it completes the handshaking process.

If the scanner received an ACK message, a "Check" icon will be shown on the screen to identify the scanned data has been successfully received by the remote host. If the scanner received a NAK message or the ACK timeout occurred, a "Cross" icon will be shown on the screen of the scanner.

To enable this function, please go to "SETUP" then "Online Scanning" to configure related settings, such as Transmit Format, Host ACK Timeout, NAK Retry Count, ACK Indication, and ACK Timeout Indication.

# Batch Scanning

Thanks to the Batch Scanning function, the scanner is capable of storing all input data into memory storage. It is an ideal cost-effective solution to fulfill most inventory applications.

## Configure Batch Scanning Options

Before you start to use batch scanning, please enter "**SETUP**" then select "**Batch Scanning**" to configure all available options listed below. Moreover, the "Auto Save" and "Auto Delete" functions will help you to simplify the routine operation of data collecting.

### Input Fields

Besides the field of "**Item No.**", three more input fields are available for choice, including "**Quantity**", "**Location**" and **"Timestamp"**. By default, both "Item No." and "Quantity" fields are enabled. Please note that if you changed the composition of input fields, all stored data will be **DELETED**.

### Validation

You can set the desired input range of each field. The scanner will do the validation automatically after the inputs of each field are completed.

### Field and Record Delimiters

Both field delimiter and record delimiter can be changed to meet your application demand.

### Transmission Sequence

The transmission sequence of each field can be re-arranged to meet your needs.

### Transmission Interface

The scanner is preset to transmit all stored data through **Wi-Fi**. Alternatively, you can transmit the stored data through physical USB interface by changing the transmission interface to USB COM or USB HID. In this case, a charging cradle has to be used together with your scanner.

### Auto Save

After completing the inputs of each record, the scanner will save the data into storage automatically then go to next record input immediately. You do not need to press "**Save**" (L Key) to save data. If you still prefer to save data manually, please disable this Auto Save function.

### Auto Delete

The scanner is preset to keep all stored data after data transmission in case it needs to be retrieved later. You have to delete all records manually. If you prefer the scanner to perform "Auto Delete" after data transmission, please enable this function.

### Link Control

For power saving, the Radio can be disabled during batch scanning. When you want to transmit the data via Wi-Fi, the scanner will activate the Radio and re-connect automatically.

## Run Batch Scanning

After completing all necessary settings of batch scanning, you can enter "**BATCH"** from the main menu of Desktop to perform batch scanning.
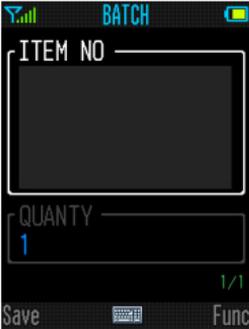


**Default Screen**

Under this mode, all input data will be stored until the memory storage is full. If the "Auto Save" is enabled, all data will be saved automatically after the inputs of each record are completed. You can continue to the next record input immediately.

**Navigation Key**
For manual inputs, you can use the Navigation Key to activate virtual keyboard for manual data entry. Moreover, you can use the navigation key to browse previous input records as well.

Press "**Func**" (R key) to enter the function menu of batch scanning. Then select your desired function to perform the data transmission or to manipulate the stored records.



**Input screen with all available input fields**

**Transmit Data**
The scanner is preset to transmit the stored data through Wi-Fi. During the transmission process, the scanner will give continuous short clicks and blue blinks. Then the scanner will give two short beeps after data transmission is completed.

If you want to transmit the stored data through USB interface, please make sure a cradle has been properly connected to the host with a USB cable. You have to place the scanner onto the cradle right after you press "Transmit Data". All stored data will be transmitted via your specified interface (USB COM or USB HID).



**Function Menu**

**Transmit and Save**
To work with Cino WaveCentre, all transmitted data can be saved as a "**TXT**" or "**CSV**" file into your desired destination (folder) of the remote host. Please note that this function is only available for transmission via Wi-Fi interface.

**Delete all Record(s)**
If "Auto Delete" function is disabled, the scanner still keeps all stored data after transmission. You have to manually delete all stored records by executing this function.

# Useful Tools

Enter "**TOOLS**" from the main menu of Desktop, you can find several useful tools, including Site Survey, Link Diagnostic, Data Validation, Scan Test, System Test, Device Information and User Settings.

## Site Survey

The Site Survey is a very useful tool for finding all discoverable Access Points (AP) and Independent Wireless Hosts within radio range. After the "Searching" process is completed, a list will be provided for reference. You can check the detailed wireless settings of each AP or Independent wireless host.

🌐 **Access Point**　　💻 **Independent Wireless Device**
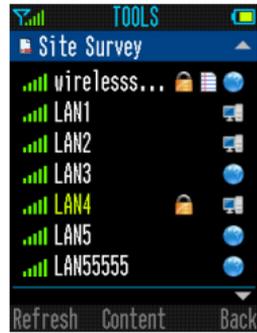
## Link Diagnostic

The Link Diagnostic is a tool for providing detailed link report. Once you run this tool, you have to select a desired Wi-Fi profile to perform diagnostic. After that, a detailed report of each link process will be provided for reference (see right screen). It's very helpful for locating link problem if you have difficulty to make a successful link.

## Data Validation

The Data Validation is a very useful tool for you to check valid input with ease. You are able to set and store maximum 10 master data for validation. Once you completed the master data setting, you can scan the barcodes and the scanner will compare the scanned data for you. If the scanned data is same as one of master data, a "Check" icon 🌀 will be shown on the screen. Otherwise, a "Cross" icon ❌ will be shown on the screen instead.

## System Test

In System Test, you are able to perform most equipment tests, including LCD display, light source, LED indicator, buzzer, vibrator and keypad.

## User Settings

In User Setting, the user is able to configure frequently used settings, such as LCD backlit duration control, key tone and buzzer tone settings, and vibrator control.

## Device Information

You can find most detailed information of your scanner, such as model number, firmware version, MAC address, device name and so on.

# Useful Features

## Remote Control

A complete serial command set has been implemented into the Wi-Fi scanner. You can use the Remote Control commands to control Wi-Fi scanner(s) from the remote host. The most useful remote commands are listed below for your reference.



**Remote Message**
This command allows you to send message together with beeping and vibration.

**Remote Indication**
This command allows you to page the scanner, or send beeping and vibration from the remote host.

**Remote Lock & Unlock**
You can use this command to lock or unlock the scanner remotely. Once you locked the scanner, the scanner can't work till you send unlock command.
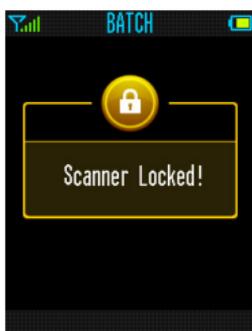


**How to use remote control**
If you used Cino WaveCentre together with your Wi-Fi scanner, you can easily use all remote control functions without writing a program. If you want to use the remote control in your application, please contact your supplier to obtain a detailed documentation and SDK for development.

## Administrator and User Password

Once you enabled the Administrator Password, the scanner will ask you to enter the administrator password before you can enter "**SETUP"** to configure the scanner. If you enable the User Password, it will help to prevent any unauthorized use of the scanner. Moreover, you can limit the available functions for all users.

When the scanner enters into sleep mode, you have to enter administrator password or user password right after the scanner wakes up. Please note there is **NO** master password available. You are recommended to keep your preset passwords in a safe condition for future use.
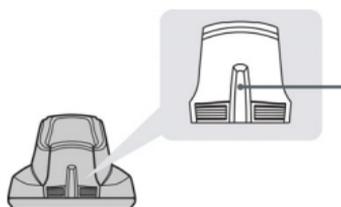
# Indications



**Link Indicator**

**Status Indicator**
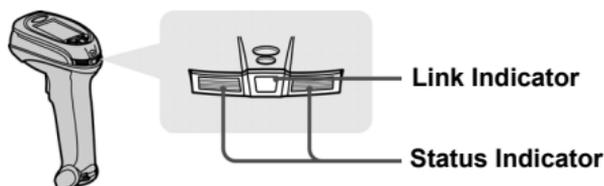
| Descriptions | Link Indicator | Beeper |
|---|---|---|
| Radio connected | 1 blue blink per 3.5 sec. | Off |
| Radio disconnected | 3 blue blinks per 3.5 sec. | Off |
| During connection | Quick blue blinks | Short clicks |
| Radio connection built | 1 blue blink per 3.5 sec. | 4 beeps in ascending tone |
| Radio connection lost | 3 blue blinks per 3.5 sec. | 4 beeps in descending tone |
| Data Transmission | Quick blue blink | Short clicks |

| Descriptions | Status Indicator | Beeper |
|---|---|---|
| Under charging (on cradle) | Steady red | Off |
| Fully charged (on cradle) | 1 green blink at regular interval | Off |
| Out of memory | 2 red blinks | 2 long beeps |
| Battery power low | 1 red blink at regular interval (30sec) | 1 beep at regular interval(30sec) |
| Battery power extremely low | 8 red blinks | 8 beeps |
| Good read | 1 green blink | 1 good read beep |
| Under Configuration | Steady red | Off |
| Upgrade state | Steady red | Short click |
| Sleep state / Battery no power | Off | Off |
| ACK Time-out Indication | Off | 3 long beeps |
| Host ACK received | Off | 1 beep |
| Error Beep | Off | 1 long beep |

**HB2100 Charging Cradle**



**Center Indicator**
**Once you supplied the power to the cradle via power supply unit or USB interface, the center indicator will be steady blue.**

FuzzyScan Wi-Fi Cordless Scanner Quick Start Guide
International Edition, Rev. A1

P/N: YMAUB30010030R0

## Disclaimer

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## Regulatory

| | | |
|---|---|---|
| **FC** FCC part 15B, FCC part 15C | | MIC T401 |
| **CE** EN61000-6-2, EN61000-6-3, EN60950-1, EN301 489-1, EN301 489-1-17, EN300 328 | | LP0002 |
| CNS13438, CNS14336 | LED Eye Safety | IEC60825-1, EN60825-1 |
| | Laser Eye Safety | IEC60825-1, Class 1 |
| AS/NZS CISPR 22:2009 Class B | | |

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