

QUICK START

IDM1xx WIFI Hand-held Scanners



SICK
Sensor Intelligence.

1. How to use this guide

This document provides an easy reference for installing and operating IDM 142/140 WLAN and IDM162 /160 WLAN Scanners. For more information on the scanners please check out the SICK internet at <http://www.sick.com>

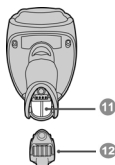
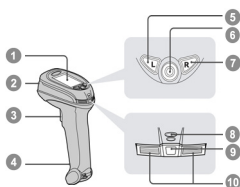
A German version of this quick start guide is available on <http://www.sick.com> – eine englische Version der Kurzanleitung steht auf <http://www.sick.com> zur Verfügung.

EC declaration of conformity

The manufacturer herewith declares that the product is in conformity with the provisions of the following EU directives R&TTE 1999/5/EG until 12.06.2017 and RED 2015/53/EU beginning from 13.06.2017 (including all applicable amendments). (download: www.sick.com).

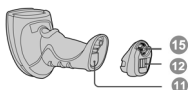
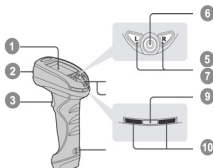
2. Overview IDM WLAN (Wi-Fi) scanner

IDM142/140WLAN



- 1 LCD Display
- 2 Scan Window
- 3 Trigger
- 4 Reset Button
- 5 Left Function Key
- 6 Navigation Key
- 7 Right Function Key
- 8 Beeper Hole
- 9 Link Indicator
- 10 Status Indicator
- 11 Battery Cavity
- 12 End Cap
- 13 Tether Plate
- 14 Lanyard Catch
- 15 Retaining Screw

IDM162/160WLAN

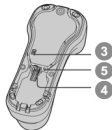
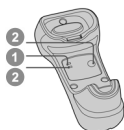
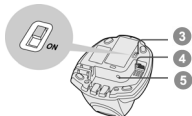
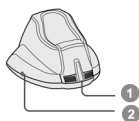


- 13 Tether Plate
- 14 Lanyard Catch
- 15 Retaining Screw



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.

IDM142/140WLAN & IDM162/160WLAN Charging Cradle



- 1 Power Indicator
- 2 Reserved
- 3 USB Bus Power Switch


- 4 USB Interface Port
- 5 DC Power Jack

3. Preparations before use

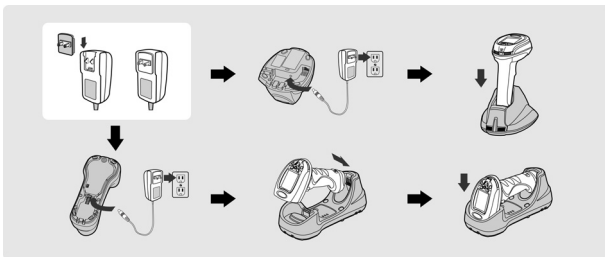
Install the Battery




- 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 (IDM14x) or via turning the integrated thumb wheel (IDM16x).

 You can use the overlapping battery label to pull out the battery if needed.

Charge the Battery



- 1 Plug the AC power plug into the appropriate AC wall socket.
- 2 Plug the DC power cord of the power supply unit into the DC power jack of the cradle. The cradle will issue the power on beeps. The power indicator of charging cradle will turn **steady blue**.
- 3 Place the scanner on 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.

 Please charge the new battery pack for 8 hours prior to the first 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.

Install Necessary Software

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

SICK 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 scanner corresponding to its IP address. Then the scanner will work as a local serial device of the remote host. Also you are able to convert WLAN/Wi-Fi data into keyboard input data

SICK IDM Wi-Fi Set Up Tool

By using the SICK IDM Wi-Fi Set Up Tool, 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 (www.sick.com) before using the Set Up Tool.

Find Out required Information for network setting

Before connecting the 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 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 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 scanners.

Local IP Address

The Local IP Address is an IP address of the scanner.

4. Getting Started

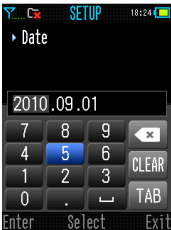
Virtual Keyboard

A unique virtual keyboard has been provided by the 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.



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.

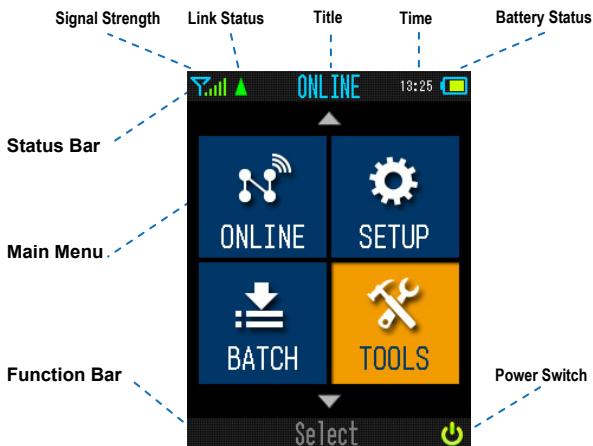


- 1 Use the virtual keyboard to complete the date information input, then press **"Enter"** (L key) to save the setting.
- 2 The **"Time"** setup screen will be displayed after the **"Date"** setup screen. Use the virtual keyboard to complete the time information input, then press **"Enter"** to save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

Other icons

- Access Point
- Security
- Independent Wireless Device
- Profile

5. Configure Your 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 scanner to IDM Wi-Fi Set Up Tool, 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.

6. Connecting the Scanner

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

Before you connect the 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 SICK IDM Wi-Fi Set Up Tool.

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

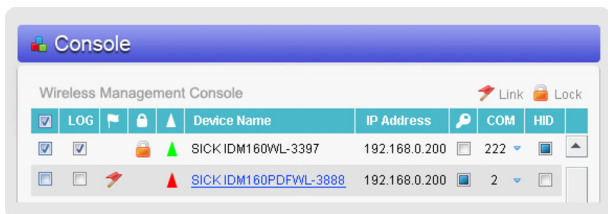
- 1 Install the WaveCentre into your host machine then double click its icon to launch WaveCentre.
- 2 Find out the IP address of the remote host and decide the listen port of WaveCentre. By default, the listen port is 63000. You can change the port number to meet your Wi-Fi setting.
- 3 Ensure the scanner 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. An extensive description of connection procedure can be found in the IDM WLAN manual.

Work with SICK WaveCentre

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



By default, each connected 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 scanner with your existing application without modification.

Function List of Scanner

The following tree view provides you a function list of your 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

7. Online Scanning

After connecting the 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.

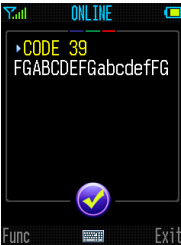
Options

Under Options, you can configure “Barcode Type Indication”, “Font Size” and so on.

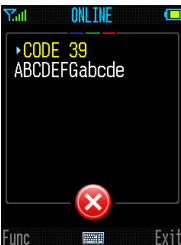
Scan Logs

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 (blue checkmark) 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 (red cross) 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.

8. 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 (driver needed) 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

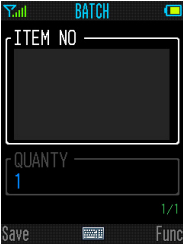
The scanner is preset to keep all stored data after data transmission in case it needs to be retrieved later. You have to delete all records manually. If you prefer the scanner to perform **“Auto Delete”** after data transmission, please enable this function.

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.

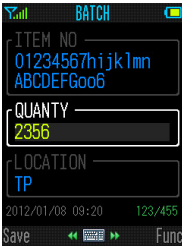


Default Screen

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.

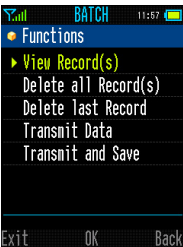


Input screen with all available input fields

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.

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.



Function Menu

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).

Transmit and Save

To work with SICK 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.

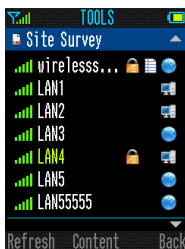
9. Useful Tools

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

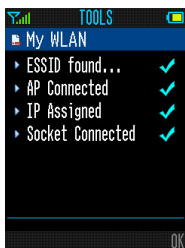
The Site Survey is a very useful tool for finding all discoverable Access Points (AP) and Independent Wireless Hosts within radio range. After the “Searching” process is completed, a list will be provided for reference. You can check the detailed wireless settings of each AP or Independent wireless host.

 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 backlight 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.

10. Useful Features

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.

11. Indications

IDM142/140WLAN and IDM162/160 WLAN scanner

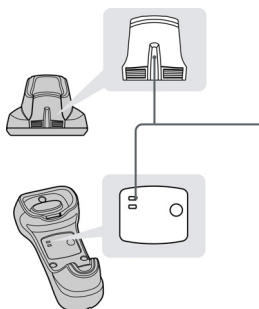


- 1 Link Indicator**
- 2 Status Indicator**

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

IDMx4x & IDMx6x Charging Cradle



Center Indicator

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

Australia

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1800 33 48 02 - tollfree

Belgium/Luxembourg

Phone +32 (0)2 466 55 66

Brasil

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Phone +45 45 82 64 00

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Great Britain

Phone +44 (0)1727 831121

India

Phone +91-22-4033 8333

Israel

Phone +972-4-6801000

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Japan

Phone +81 (0)3 5309 2112

Magyarország

Phone +36 1 371 2680

Nederland

Phone +31 (0)30 229 25 44

Norge

Phone +47 67 81 50 00

Österreich

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Polska

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România

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South Korea

Phone +82 2 786 6321/4

Suomi

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Sverige

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representatives and agencies
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SICK

Sensor Intelligence.