

## DataMan<sup>®</sup> 8700 Reference Manual



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# Symbols

The following symbols indicate safety precautions and supplemental information:

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 **WARNING:** This symbol indicates a hazard that could cause death, serious personal injury or electrical shock.

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 **CAUTION:** This symbol indicates a hazard that could result in property damage.

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 **Note:** This symbol indicates additional information about a subject.

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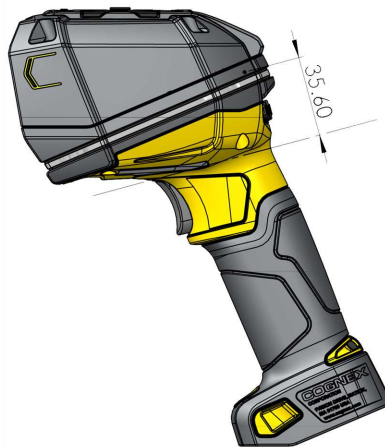
 **Tip:** This symbol indicates suggestions and shortcuts that might not otherwise be apparent.

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# Precautions

To reduce the risk of injury or equipment damage, observe the following precautions when you install the Cognex product:

- This product is intended for industrial use in automated manufacturing or similar applications.
- The safety of any system incorporating this product is the responsibility of the assembler of the system.
- This product does not contain user-serviceable parts. Do not make electrical or mechanical modifications to product components. Unauthorized modifications can void your warranty.
- Route cables and wires away from high-current wiring or high-voltage power sources to reduce the risk of damage or malfunction from the following causes: over-voltage, line noise, electrostatic discharge (ESD), power surges, or other irregularities in the power supply.
- Changes or modifications not expressly approved by the party responsible for regulatory compliance could void the user's authority to operate the equipment.
- Ensure that the cable bend radius begins at least six inches from the connector. Cable shielding can be degraded or cables can be damaged or wear out faster if a service loop or bend radius is tighter than 10X the cable diameter.
- This device should be used in accordance with the instructions in this manual.
- All specifications are for reference purposes only and can change without notice.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- **Wi-Fi reader only:** To comply with FCC RF exposure requirements, you have to maintain a minimum distance of 35 mm between your hand and the integral antenna of the device during normal handling.



For more information about RF exposure, visit the FCC website [www.fcc.gov](http://www.fcc.gov).

# Getting Started

## About DataMan 8700



The DataMan 8700 readers offer a rugged, industrial housing and advanced technology for reading 1-D and 2-D codes regardless of size, quality, printing method, or surface. DataMan 8700 is available with patented 1DMax+ with Hotbars, class leading 2-D PowerGrid algorithm, robust plastics, easy setup, and communication.

The DataMan 8700 readers use the three unique styles of Cognex lighting technology and 2DMax+ algorithms to read even the most challenging Direct Part Mark barcodes. Tri-Lucent Lighting provides flexible lighting control to create polarized, bright field, and diffuse lighting.

The DataMan 8700 readers are available with the following communication options:

- Ethernet, with industrial protocols
- USB
- RS-232
- Bluetooth to Base Station
- Bluetooth Direct Connect
- Wi-Fi

Cognex provides an intelligent Base Station for the DataMan 8700 reader that uses Bluetooth connection. The Base Station acts as a router between the reader and your computer, PLC, or network. The Base Station charges the battery in the reader.

**Note:** The Wi-Fi reader does not directly communicate with the Intelligent Base Station.




You can purchase a charging Base Station with the DataMan 8700 reader that uses Bluetooth Direct Connect or Wi-Fi. Both Bluetooth and Wi-Fi are not available together. The Base Station charges the battery in the reader and has no advanced communications.



**Note:** The term *wireless* refers to the Wi-Fi, Bluetooth, or Bluetooth direct communication options.

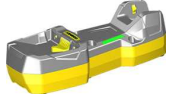
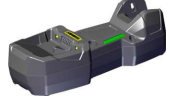
The DataMan 8700 series Base Stations are available with the following communication options:

	Base Station Communication			Wireless Protocol
	Ethernet with Industrial Protocols	USB	RS-232	Bluetooth to Base Station
DMB-8700-RS			✓	✓
DMB-8700-USB		✓		✓
DMB-8700-E	✓			✓
DMB-8700-CHARGE	The charging Base Station is compatible with Bluetooth Direct Connect and Wi-Fi readers, but has no advanced communications.			




**Note:** You can purchase additional power supplies separately.

## DataMan 8700 Accessories

### Base Stations





Accessory Name	Accessory Number	Accessory Image
DM8700 Base Station with RS-232 Slide-in	DMB-8700-RS	
DM8700 Base Station with USB Slide-in	DMB-8700-USB	
DM8700 Base Station with Ethernet Slide-in	DMB-8700-E	
DM8700 Base Station Charge-Only	DMB-8700-CHARGE	





### Power Supplies

Accessory Name	Accessory Number	Accessory Image
Power Supply for reader and Base Station	DM8700-PWR-00	
5000 mAh Battery for the wireless reader	DMA-BATTERY-5000-1	
4-bay Battery Charger for 5000 mAh Batteries	DMA-MBC-5000	









### Cables

**Note:** Cables are sold separately.

Accessory Name	Accessory Number	Accessory Image
Flying lead cable for the charging Base Station	DMB8700-CHARGE-FL	
RS-232 coiled cable for Reader with 9-pin D-sub connector, power over pin 9, 2.5 m	DMC-HH-RS232P-02C	
RS-232 coiled cable for Reader with 9-pin D-sub connector, 2.5 m	DMC-HH-RS232-02C	
RS-232 coiled cable for Reader with 9-pin D-sub connector, 4 m	DMC-HH-RS232-05C	
RS-232 Firmware update cable, RS-232 to USB converter	DMC-HH-RS232-USB	
USB straight cable with type A connector, 2.5 m	DMC-HH-USBA-02	
USB straight cable with type C connector, 2.5 m	DMC-HH-USBC-02	

Accessory Name	Accessory Number	Accessory Image
USB coiled cable with type A connector, 2.5 m	DMC-HH-USBA-02C	
USB cable with type C connector, coiled, 2.5 m	DMC-HH-USBC-02C	
Ethernet coiled cable with RJ45 connector, 5 m	DMC-HH-ENET-05C <sup>1</sup>	
Ethernet straight cable with RJ45 connector, 2.5 m	DMC-HH-ENET-02	
Ethernet straight cable with RJ45 connector, 5 m	DMC-HH-ENET-05	
Ethernet straight cable with RJ45 connector, 30 m	DMC-HH-ENET-30	
Ethernet coiled cable with M12 X-coded connector, 5 m	DMC-HH-ENETM12-05C	

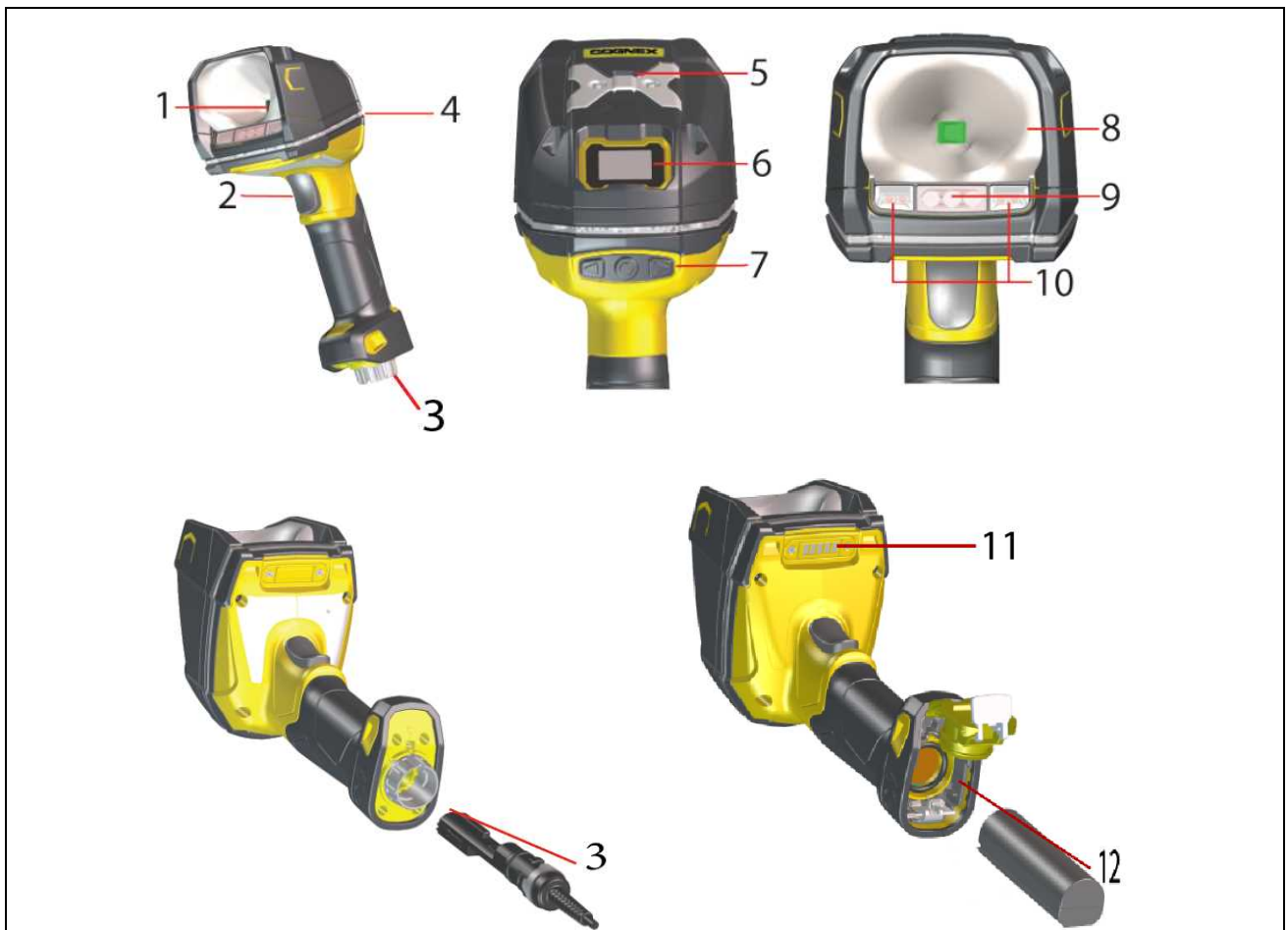
## Miscellaneous Accessories

Accessory Name	Accessory Number	Accessory Image
DM8700 slide-in communication USB conversion kit	DM8700-USB-KIT	
DM8700 slide-in communication Ethernet conversion kit	DM8700-ENET-KIT	
DM8700 slide-in communication RS-232 conversion kit	DM8700-RS-KIT	
4 Port 24 V DC Industrial PoE Supply	CPS-24V-POE4	
PoE injector for one device	CPS-AC-POE1A-xx <sup>2</sup>	
Wall Mount Bracket	DMA-WALL-8700	
Presentation Stand, can be used with wall mount bracket (DMA-WALL-8700)	DM-STAND-00	
Holster	DMA-HOLSTER-8700	

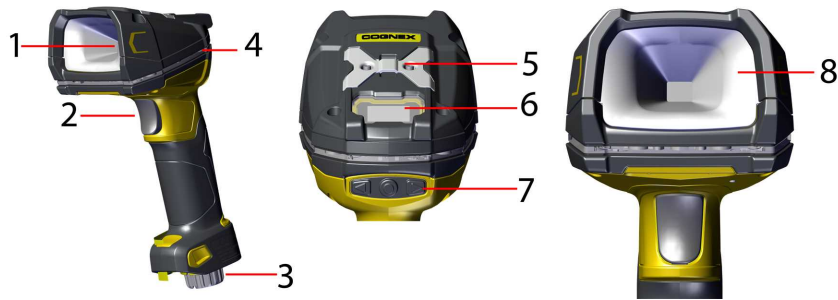
<sup>1</sup> Collimated cable length including DM8700-ECABLE-X should not exceed 50 m.

<sup>2</sup> xx can be US, EN, UK, or JP.

## Physical Layout of the Reader




Number	DataMan 8700 DX Reader
1	LED aimer
2	Trigger (press and hold to read)
3	Cable insertion point (corded readers only)
4	360° ring light indicator
5	Lanyard hook
6	OLED display
7	OLED input and configuration buttons
8	Diffused light
9	Polarized light
10	Direct light
11	Charging pins (wireless readers only)
12	Battery insertion (wireless readers only)



Number	DataMan 8700 DQ Reader
1	LED aimer
2	Trigger (press and hold to read)
3	Cable insertion point (corded readers only)
4	360° ring light indicator
5	Lanyard hook
6	OLED display
7	OLED input and configuration buttons
8	Diffused light



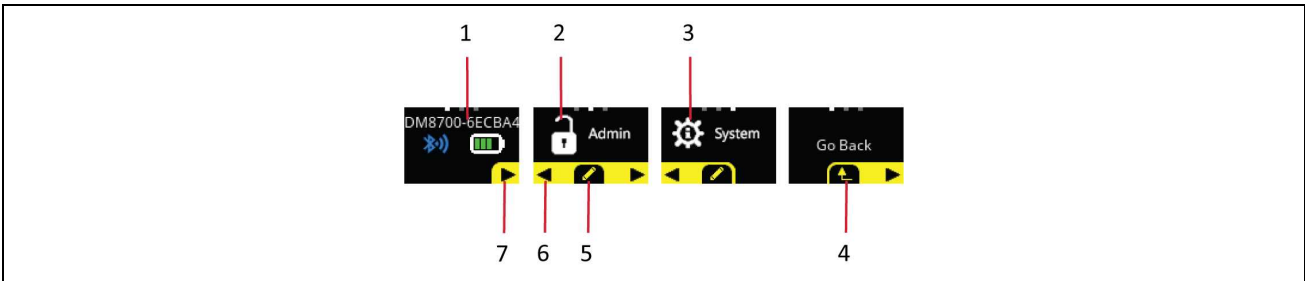
Number	DataMan 8700 LX Reader
1	LED aimer
2	Trigger (press and hold to read)
3	Cable insertion point (corded readers only)
4	360° ring light indicator
5	Lanyard hook
6	OLED display
7	OLED input and configuration buttons
8	Direct light (AMBER/RED-ORANGE or WHITE)



Number	DataMan 8700 HD Reader
1	LED aimer
2	Trigger (press and hold to read)
3	Cable insertion point (corded readers only)
4	360° ring light indicator
5	Lanyard hook
6	OLED display
7	OLED input and configuration buttons
8	Diffused light

## OLED Display Layout

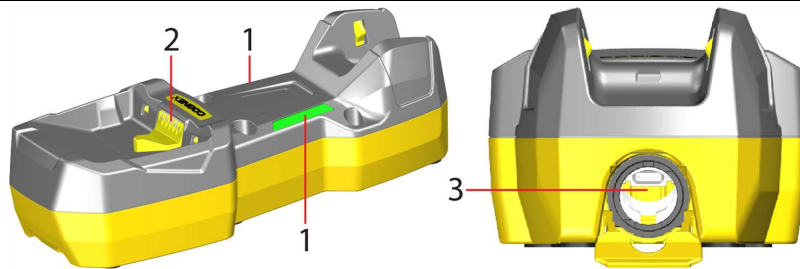
The OLED display is user interface where you can communicate with the DataMan 8700.



Number	Screen or Icon	Description
1	Main Screen	First screen after boot up is complete. The main screen contains information about the name of the reader, the Bluetooth connection and the battery status of the reader. <sup>1</sup>
2	Admin Screen	Enter the menu on the admin screen, where you can set passwords and other permissions.
3	System Screen	Enter the system menu, where you can configure settings
4	Return arrow	Return one level up in the menu
5	Action button	Displays a pencil, a check mark, or a toggle icon to select, acknowledge or change a setting.
6	Left arrow	Move to previous screen.
7	Right arrow	Move to next screen

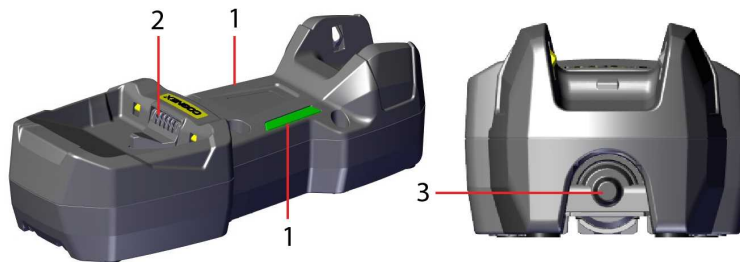
<sup>1</sup> The Bluetooth connection and the battery status of the reader is only displayed on wireless readers.

## Physical Layout of the Base Stations



### DMB8700 Intelligent Base Station (Bluetooth, WiFi, and Bluetooth Direct Connect)

1	<p>Base Station status indicators</p> <p>Reader on Base Station:</p> <ul style="list-style-type: none"> <li>• RED = charging, or indicating contact status with the cradle</li> </ul> <p>Reader off Base Station:</p> <ul style="list-style-type: none"> <li>• BLUE = connected via BT</li> <li>• OFF = no connection</li> </ul>
2	<p>Connection point with the reader:</p> <ul style="list-style-type: none"> <li>• Pairing reader and Base Station</li> <li>• Communication</li> <li>• Charging</li> </ul>
3	<p>Cable plug</p>



### DMB8700 Charging Base Station

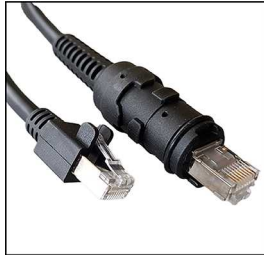
1	<p>Base Station status indicators</p> <p>Reader on Base Station:</p> <ul style="list-style-type: none"> <li>• RED = charging</li> </ul> <p>Reader off Base Station:</p> <ul style="list-style-type: none"> <li>• OFF = no connection</li> </ul>
2	<p>Connection point with the reader:</p> <ul style="list-style-type: none"> <li>• Charging</li> </ul>
3	<p>Permanently glued cable</p>

# Setting up Your DataMan 8700

## Setting up the Reader

To connect to the reader or Base Station on your computer:

1. Select the connection type: Ethernet, RS-232 Serial, or USB, and connect the cables respectively.



Ethernet



RS-232



USB

### Note:

- i** When you connect the reader through USB, always use a power supply. When using a DM8700 with a USB cable (DMC-HH-USBA-02 or DMC-HH-USBC-02), make sure to connect the USB connector to a USB hub that stays enabled even if the PC or notebook goes to sleep. Otherwise, the Base Station cannot charge the reader when the computer is in sleep mode.

## Install the DataMan SetupTool and Connect to Reader

1. Check the DataMan **Release Notes** for a full list of system requirements.
2. Download the DataMan Setup Tool from [cognex.com/support/dataman](http://cognex.com/support/dataman) and follow the on-screen steps.
3. Connect the DataMan 8700 to your PC.
4. Launch the DataMan Setup Tool and click **Refresh**. The reader or Base Station appears under **COM ports** or **Network devices**.
5. Select a **COM port** or a **Network device** and click **Connect**.

## Firmware Update

For Bluetooth readers, you have to update the firmware on the intelligent Base Station first. Make sure that the reader is paired to the Base Station, and that it is mounted securely in the Base Station, with the cradle contacts making connection with the pins in the handle of the reader. After the Base Station firmware upgrade is complete, the reader firmware gets automatically updated.

- i Note:** If you have a Bluetooth readers paired to a Base Station, you cannot update the reader firmware directly from the DataMan Setup Tool.

For Bluetooth Direct Connect, Wi-Fi, and corded models, you can perform a firmware update by connecting to the DataMan Setup Tool, and upgrading the firmware on the reader.

## DataMan 8700 Specifications

Specification	DataMan 8700 Reader
Weight	DX Corded: 463g (15.90 oz) + ~132 g (4.60 oz) cables DX Wireless: 548 g (18.70 oz) (battery included)
	DQ Corded: 395 g (13.90 oz) + ~132 g (4.60 oz) cables DQ Wireless: 479 g (16.90 oz) (battery included)
	LX Corded: 399 g (14.07 oz) + ~132 g (4.60 oz) cables LX Wireless: 483 g (17.03 oz) (battery included)
	HD Corded: 409 g (14.43 oz) + ~132 g (4.60 oz) cables HD Wireless: 493 g (17.39 oz) (battery included)
Operating Temperature	0 °C — 40 °C (32 °F — 104 °F) <sup>1</sup>
Storage Temperature	-40 °C — 60 °C (-40 °F — 140 °F)
Maximum Humidity	< 95% (non-condensing)
Environmental	Compliant with latest EU RoHS and China RoHS For indoor use only
Symbologies	<b>1-D barcodes:</b> Codabar, Code 39, Code 128, and Code 93, Interleaved 2 of 5, Postal, UPC/JAN, POSTNET, PLANET Code, GS1 IMB <b>2-D barcodes:</b> MaxiCode, Aztec Code, Data Matrix™, QR Code and microQR Code, PDF 417
Power Supply Requirements	Serial/USB: 5.5 V DC, 6.0 W maximum LPS or NEC Class 2 power supply Ethernet: PoE Class 2 power supply IEEE 802.3at Wireless: 3.6 V, 5000 mAh Li-ion battery
Battery Life for Wireless reader (typical use case)	The expected life time of the battery is 5 years.
Battery Run/Recharge Times	Charging time through PoE: 10-11 hours Charging time through USB with external power: 6.2 hours
Ethernet	10/100 Base-T FULL/HALF DUPLEX, IEEE 802.3at
Bluetooth (R00082, R00085, and R00086 only)	Bluetooth 4.2, Dual Mode (BR/EDR & Low Energy), 2.4~2.4835 GHz
Wi-Fi (R00082, R00085, and R00086 only)	IEEE 802.11 a/b/g/n/ac, 2.4~2.4835 GHz and 5.18-5.835 GHz
Protection	ISO 16750-5 IP67 Endures multiple drops from 2.5 m height on concrete Altitude of 2000 m Pollution degree II

**Note:** A reader triggering at consistently high frequencies may overheat even when below the max operating temperature in some applications or environmental circumstances.

<sup>1</sup> In presentation mode, use the Motion Detection feature to prevent overheating as the reader generates significant heat when triggering constantly.

## DataMan 8700 Imager Specifications

Specifications	DataMan 8700 Imager
Image Sensor	1/3 inch CMOS
Image Sensor Properties	3.45 $\mu\text{m}$ square pixels
Image Resolution	1440 x 1080 pixels

## DataMan 8700 Base Station Specifications

Base Station Specifications

Specification	DMB-8700-USB, DMB-8700-RS, DMB-8700-E	DMB-8700-CHARGE
Weight	500 g (17.63 oz)	607 g (21.41 oz)
Operating Temperature	0 °C — 40 °C (32 °F — 113 °F)	
Storage Temperature	-40 °C — 60 °C (-40 °F — 140 °F)	
Maximum Humidity	95% (non-condensing)	
Power Supply Requirements	5.5 V DC, 6 W maximum LPS or NEC Class 2 power supply or PoE Class 2 power supply	Requirement: 24 V DC, min 0.5 A Consumption: Up to 12 W
Protection	IP65 Altitude of 2000 m Pollution degree II	
Ethernet	10/100 Base-T FULL/HALF DUPLEX, IEEE 802.3	N/A
Bluetooth	Bluetooth 4.2, BR/EDR, 2.4~2.4835 GHz	N/A
Wi-Fi	IEEE 802.11 a/b/g/n/ac, 2.4~2.4835 GHz and 5.18-5.835 GHz	N/A
Output Rating	5 V DC for charging the reader	
Time to Charge Battery	Charging time through PoE: 10-11 hours Charging time through USB with external power: 6.2 hours	< 8 hours
Cable Lengths	N/A	2.5 m + 2.5 m, 5 m total

## LED Wavelengths for DataMan 8700 Readers

**Note:** The data below refer to the LED Illumination accessory of the reader, not to the LED indicators.

The following table shows LED types and the related wavelengths:

Reader Model	LED	$\lambda$ [nm]
DM8700 DX	RED	660
DM8700 DQ	WHITE	N/A
DM8700 LX	AMBER/RED-ORANGE	617
DM8700 LX	WHITE	N/A
DM8700 HD	AMBER/RED-ORANGE	625

## DataMan 8700 Power Supply Requirements

DM8700 Model	Communications Module	Wireless	PSU Requirement
DX, LX, DQ, HD	USB	No	No For the best performance, use the DM8700-PWR-00 power supply
DX, LX, DQ, HD	PoE	No	Class 2 PoE injector required
DX, LX, DQ, HD	RS-232	No	Yes (DM8700-PWR-00) OR DMC-HH-RS232P-02C cable for Power over DB9 pin 9
DX, LX, DQ, HD	USB	Yes	Yes (DM8700-PWR-00)
DX, LX, DQ, HD	PoE	Yes	Class 2 PoE injector required
DX, LX, DQ, HD	RS-232	Yes	Yes (DM8700-PWR-00) OR DMC-HH-RS232P-02C cable for Power over DB9 pin 9

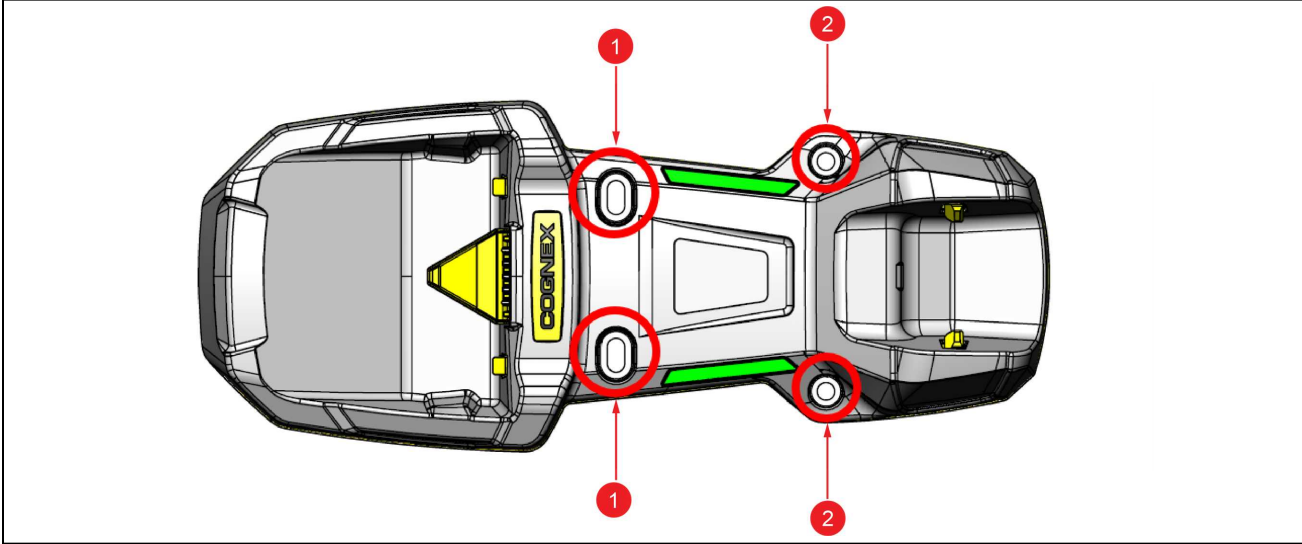
## Base Station Mounting Options

You can mount the Base Station in the following ways:

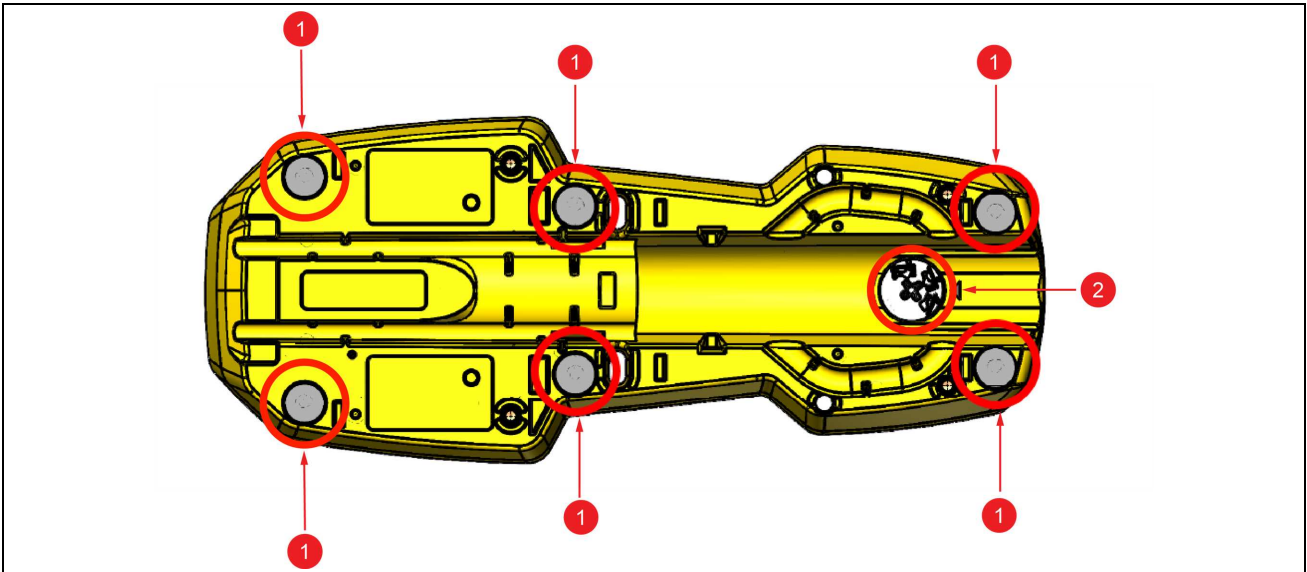
- Horizontal mounting:
  - Into wood: use a 10 x 2 inch rounded head screw.
  - Into metal: use a 10 x 1 5/8 inch socket head cap screw.
  - Into metal: use an M5 x 40 mm socket head cap screw.
- Vertical mounting:
  - Into wood: use a 10 x 2 1/4 inch rounded head screw.
  - Into metal: use a 10 x 1 7/8 inch socket head cap screw.
  - Into metal: use an M5 x 40 mm socket head cap screw.

**Note:** If you mount the Base Station into drywall, use additional drywall anchors.

Recommended torque for mounting the Base Station:



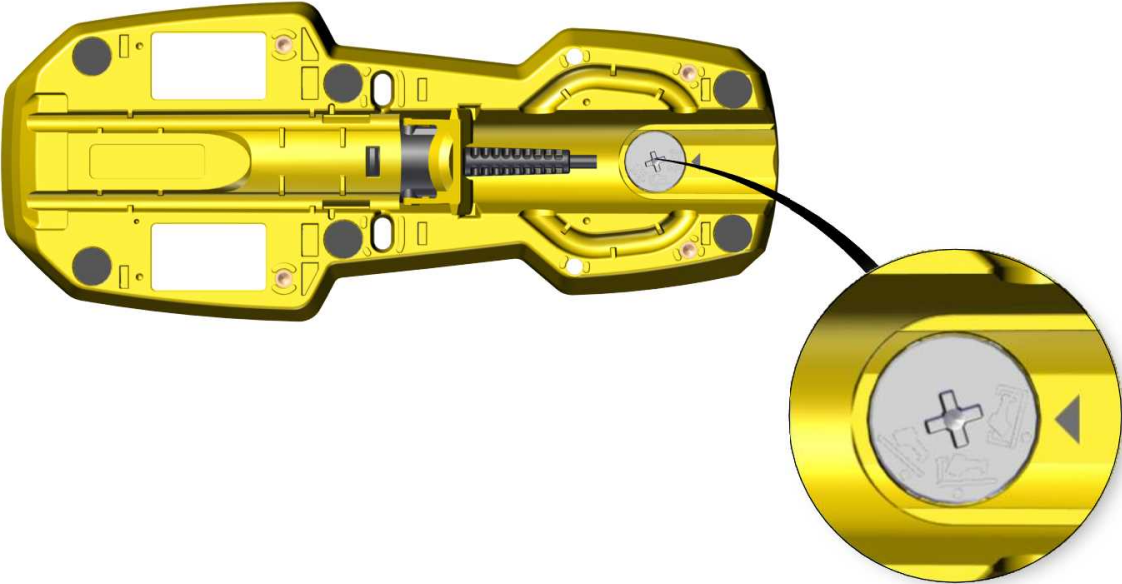
Number	Description	Maximum Recommended Torque
1	Top-side mounting holes	0.5 Nm
2	Top-side mounting holes	0.2 Nm



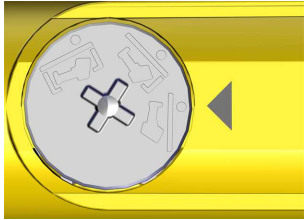
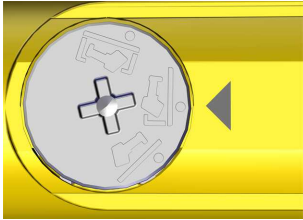
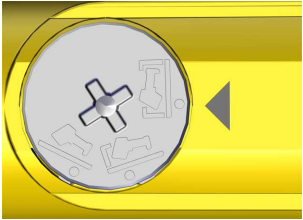
Number	Description	Maximum Recommended Torque
1	Bottom-side threaded inserts	0.5 Nm
2	Grip strength tuner	-

### Adjusting Base Station Grip Strength

To adjust the grip of the Base Station, use the tuning screw on the back.



There are three configurations:

Desktop mode	Wall-mount mode	Forklift mode
		
<i>Easy grip</i>	<i>Medium grip</i>	<i>Hard grip</i>

**i Note:** You can adjust the grip strength by turning the screw with a flat-head screwdriver or a coin.

# Connection Options

## Connecting Corded DataMan 8700

1. Use a small screwdriver or a pencil to press in the gray tab by the cable insertion.



**Note:** Disconnect the DataMan 8700 from power before inserting or removing the communication modules.

2. Turn the cable insertion mechanism to the open position.



3. Insert the cable. See available cables in chapter [Cables on page 9](#).

**Note:** USB and RS-232 devices need external power.

**Note:** Cables are sold separately.

4. Lock the cable by turning the cable insertion mechanism to the opposite direction.

## Troubleshooting an Ethernet Connection

If your reader does not appear in the list of detected network devices in DataMan Setup Tool, adjust your network settings.

1. Check your Ethernet connection and click **Refresh** in the DataMan Setup Tool.
2. Scan the **Enable DHCP** configuration code. This allows the reader to acquire a suitable IP address from a DHCP server on your subnet.

You can find in the configuration code in the *DataMan Reader Configuration Codes* document, available from the Windows **Start** menu or the Setup Tool **Help** menu.

If the reader still does not appear, you can use the **Add Device** option in the DataMan Setup Tool.

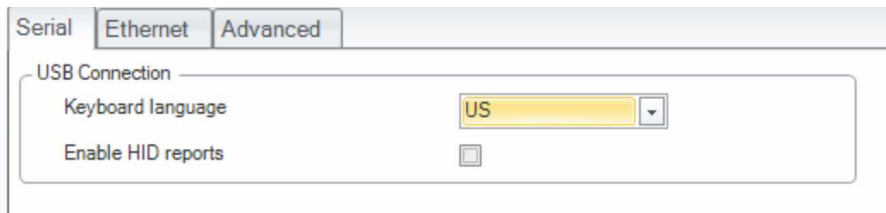
If you know the IP address of the reader, use the **Add Network Device** option under **Repair & Support**. This method allows the DataMan 8700 reader to appear in the list of **Network devices** so that you can connect to it through the DataMan Setup Tool and your Ethernet connection.

Wireless readers are using the 192.168.37.0/24 and the 192.168.148.0/30 subnets for internal communication. In case an Ethernet Base Station connects to a network which is part of the above subnets, IP address collision and routing problems can happen, causing undefined behavior.

## Using Your Device Through USB

You can connect your reader both with a coiled or a straight USB cable to use the device in USB 2.0 mode.

You can change the **USB Connection** properties in the **Serial** tab of the **Communication Settings** pane in DataMan Setup Tool to change the HID keyboard language or enable HID reports.

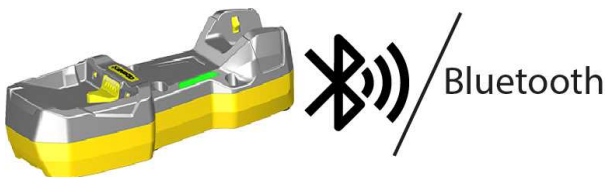


You can enable HID reports by ticking the checkbox in DataMan Setup Tool.



1. Open the target window. Make sure that the target window is the active window.
2. Start scanning codes with the reader.

You can also enable HID reports by the following steps:



1. Disconnect from the DataMan Setup Tool, if you are connected.
2. Scan the **Enable HID mode (USB Keyboard)** code from the *DataMan Configuration Codes* document.
3. Start scanning codes with the reader.

You can switch the DM8700 and the Base Station to the HID-only mode using the **Enable HID only mode** reader configuration code in the *DataMan Configuration Codes* document.

**Note:** After enabling the HID-only mode, make sure to reboot the device.

In HID-only mode, the reader and the Base Station appear as a single USB keyboard device for the host computer, instead of a composite device. Therefore, the host computer cannot communicate with the Base Station and the reader through DMCC codes or the DataMan Setup Tool. You can switch back to composite operational mode with the following methods:

- scanning the appropriate configuration code for the Base Station or the reader
- from the OLED display of the reader
- through the **Repair and Support** pane of DataMan Setup Tool

## Keyboard Layout Setup

To have a 100% compatibility between the reader and the Linux host, you have to use the same keyboard layout setup both on the Linux host and the reader. Use the following commands in the Linux command line:

```
MX (Xkb): setxkbmap -display :0 -model la-latin1 -layout latam
BR (Xkb): setxkbmap -display :0 -model br-abnt2 -layout br -variant abnt2
GB (Xkb): setxkbmap -display :0 -model gb -layout gb
DE (Xkb): setxkbmap -display :0 -model de-latin1 -layout de -variant nodeadkeys
```

```
FR (Xkb): setxkbmap -display :0 -model fr-latin1 -layout fr -variant oss
CZ (Xkb): setxkbmap -display :0 -model cz-lat2 -layout cz
PL (Xkb): setxkbmap -display :0 -model pl2 -layout pl
IT (Xkb): setxkbmap -display :0 -model it -layout it -variant nodeadkeys
ES (Xkb): setxkbmap -display :0 -model es -layout es
JP: setxkbmap -display :0 -model jp106 -layout jp -variant OADG109A
US: setxkbmap -display :0 -model us -layout us
```

## Changing the Communication Module in DataMan 8700 Corded Reader

The communication modularity of the DataMan 8700 reader allows using USB, Ethernet and RS-232 slide-in communication type conversion kits. See the list of serial slide-ins in [Miscellaneous Accessories on page 8](#). To change the communication conversion kit, perform the following steps:

1. Remove the four screws located on the end cap assembly at the base of the reader using a Hex 2.0 mm screwdriver.

**Note:** Save the screws for later use.



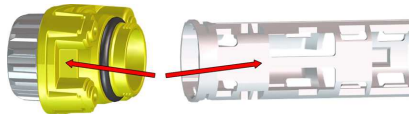
2. Push in the locking pin with the tip of a screwdriver, or with a similar pointy instrument, then twist the end cap.



3. Pull out the end cap assembly with the internal communication slide-in.



4. Separate the internal slide-in from the end cap assembly.



5. Line up the new communication slide-in with the rails on the internal sides of the reader.



6. Insert Internal communication slide-in.

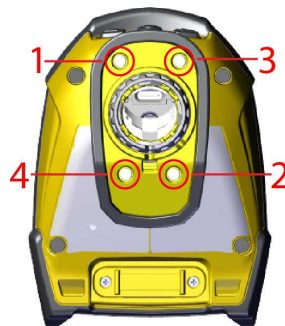


7. Replace the end cap assembly.



8. Insert the screws into the end cap assembly using a Hex 2.0 mm screwdriver.

**Note:** Use 0.6 Nm (5.31 in-lb) torque on the screws and tighten in the sequence shown in the image.



## Using DataMan 8700 Wireless Reader

Wireless readers require a Base Station for communication, charging, or both:

- DataMan 8700 Bluetooth readers transmit data to the intelligent Base Station and use it to charge batteries.
- DataMan 8700 Wi-Fi and Bluetooth Direct Connect readers use a charging Base Station to charge batteries.

## Intelligent Base Station Connection Options

The following table shows the connection options of the intelligent Base Station according to communication type:

Base Station Connection Type	How to Connect
RS-232	Connect to the cable plug of the Base Station.
USB	Connect to the cable plug of the Base Station.
Ethernet	Connect to the terminal program using the IP address of the reader. To find out the IP address, go to the <b>Connect</b> backstage page in the DataMan Setup Tool and check the IP address of the reader in the <b>Address</b> column.

**Note:**

When you connect the reader through USB, always use a power supply. When using a DM8700 with a USB cable (DMC-HH-USBA-02 or DMC-HH-USBC-02), make sure to connect the USB connector to a USB hub that stays enabled even if the PC or notebook goes to sleep. Otherwise, the Base Station cannot charge the reader when the computer is in sleep mode.

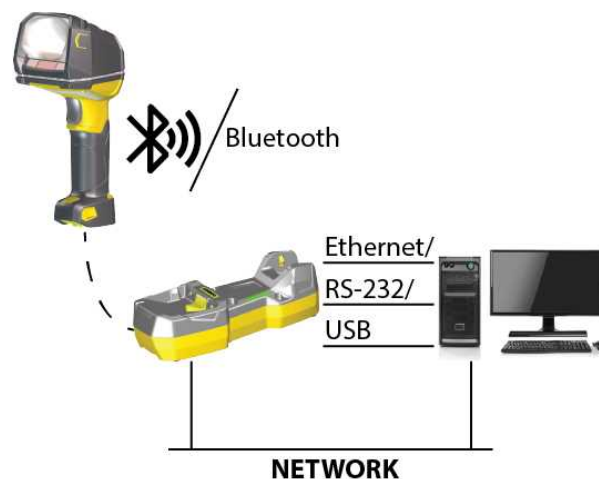
## Intelligent Base Station Routing Capabilities

The Base Station is visible when connected to RS-232, USB, or Ethernet.

**Note:** You cannot configure the Base Station to act as a network client.

The Base Station transfers data to the reader with the following methods:

- through the wireless interface
- through the cradle USB, when the reader is placed on the Base Station



## Buffering Data

When you are within the wireless range of the Base Station, your wireless reader sends decoded data to your host through the Base Station, just as if you used a corded reader. You can also see the decoded images in the DataMan Setup Tool, if it is running and is connected to the reader.

When you leave the wireless range, you lose connection to your Base Station, but you can still keep reading codes. The decoded data is saved in the buffer of the reader.

**Note:** The images acquired by the reader when it is out of the wireless range are never saved, and cannot be retrieved.

If you were connected to a terminal program when you left the wireless range, the buffered data appears on your PC again when you come back within the wireless range.

Buffered read results on the reader are not displayed in the DataMan Setup Tool; they are only transmitted over an existing keyboard emulation, RS-232 Serial or TCP/IP Telnet connection.

While you are still within the wireless range, the reader periodically blinks BLUE to indicate that the wireless connection is established.

When the reader leaves the wireless range, the signal of the Base Station turns off.



Blinking BLUE status indicator: wireless connection is alive.



When you leave the wireless range, a long beep and a single MAGENTA flash on the indicator signals that the reader is going offline. Lack of BLUE blinking on the status indicator: your reader is offline.



When the reader is offline, good reads are indicated with 2 short beeps and the selected good read status indicator color (GREEN by default). The status indicator beeps twice: your reader is offline while decoding symbols.



When the buffer is full, no more codes are read. The reader does not discard the oldest read, the reader beeps and the status indicator changes to WHITE.



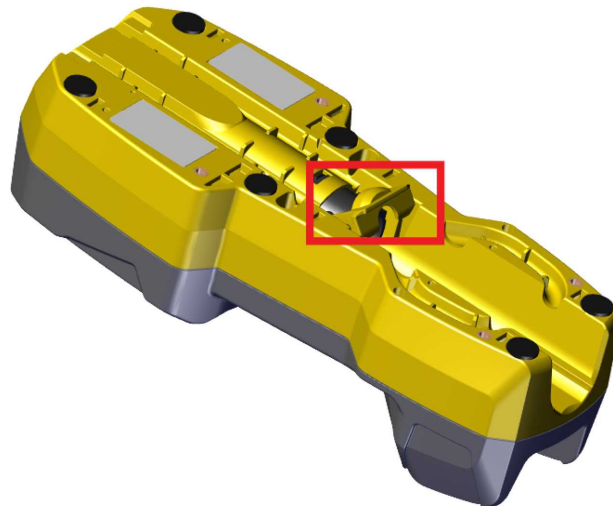
### Summary of Intelligent Base Station Buffering Indicators

Condition	Status Indicator: Reader	Status Indicator: Base Station	Sounds
Reader connected to Base Station	When the reader is awake, blinking BLUE indicates wireless connection with the base. When the reader is offline, there is no indicator. Pull the trigger to wake it up and it will blink BLUE. Good read: GREEN No read: RED	Reader out of the Base Station and awake: steady BLUE. Reader out of the Base Station and offline: LED off. Reader in the Base Station charging: RED. Reader in the Base Station when charged: RED.	Long beep: reader-to-base connection is established or re-established Good read: 1 beep (default) No read: no beep (default)
Reader out of wireless range or not connected to Base Station	Offline: When the reader wakes up out of the wireless range, there is no indicator. Good read: GREEN (default) No read: RED (default)	Reader offline: LED off.	Long beep when you leave the wireless range. Good read: 2 beeps No read: no beep
Reader not connected to Base Station, buffer is full	Good read: GREEN and then white. No read: RED (default)	Reader offline: steady RED. Reader offline: LED off.	Good read: long beep No read: no beep

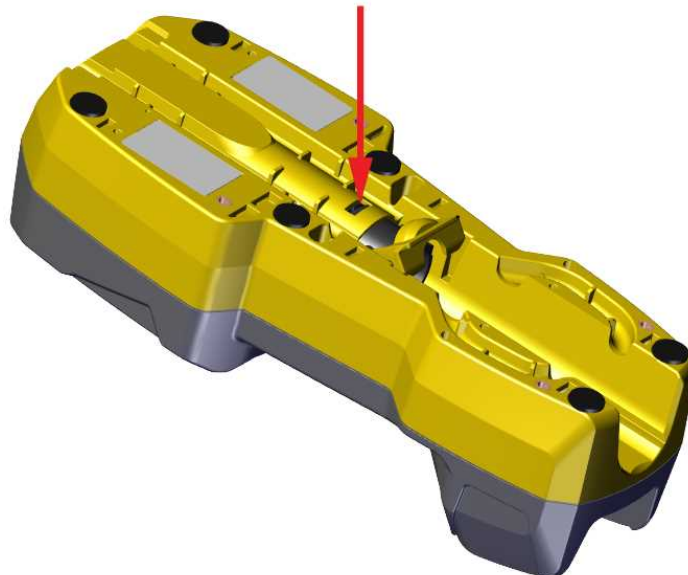
## Changing Communication Module On Intelligent Base Station

The communication modularity of the DataMan 8700 reader allows using USB, Ethernet, and RS-232 slide-in communication type conversion kits. See the list of serial slide-ins in [Miscellaneous Accessories on page 8](#). Follow the steps to change the communication conversion kit:

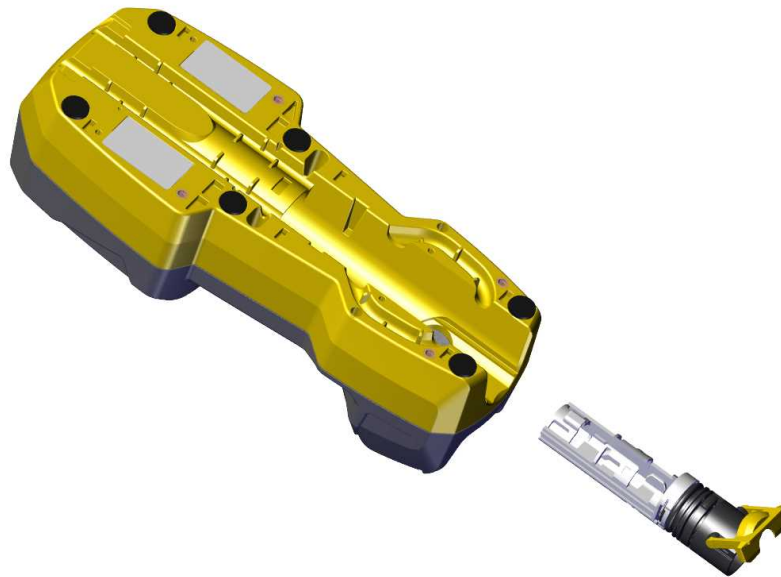
1. Lift the yellow latch.



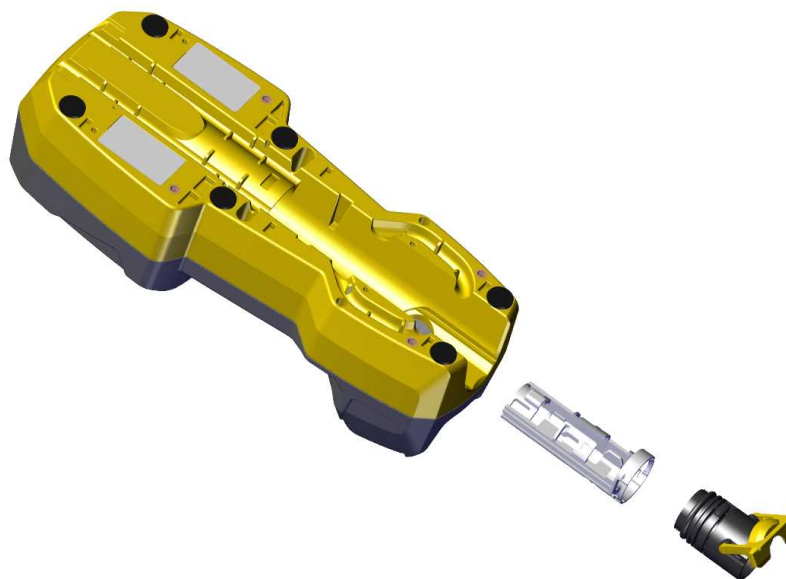
2. Press the black tab down.



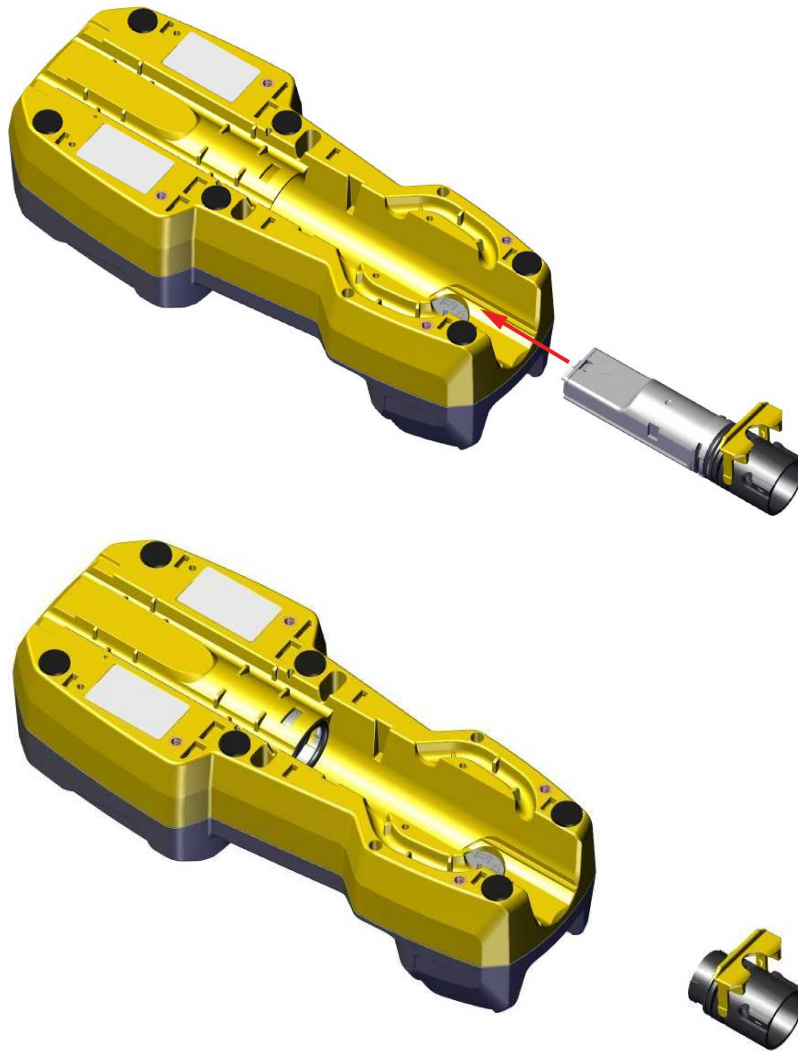
3. Pull the slide-in assembly out.



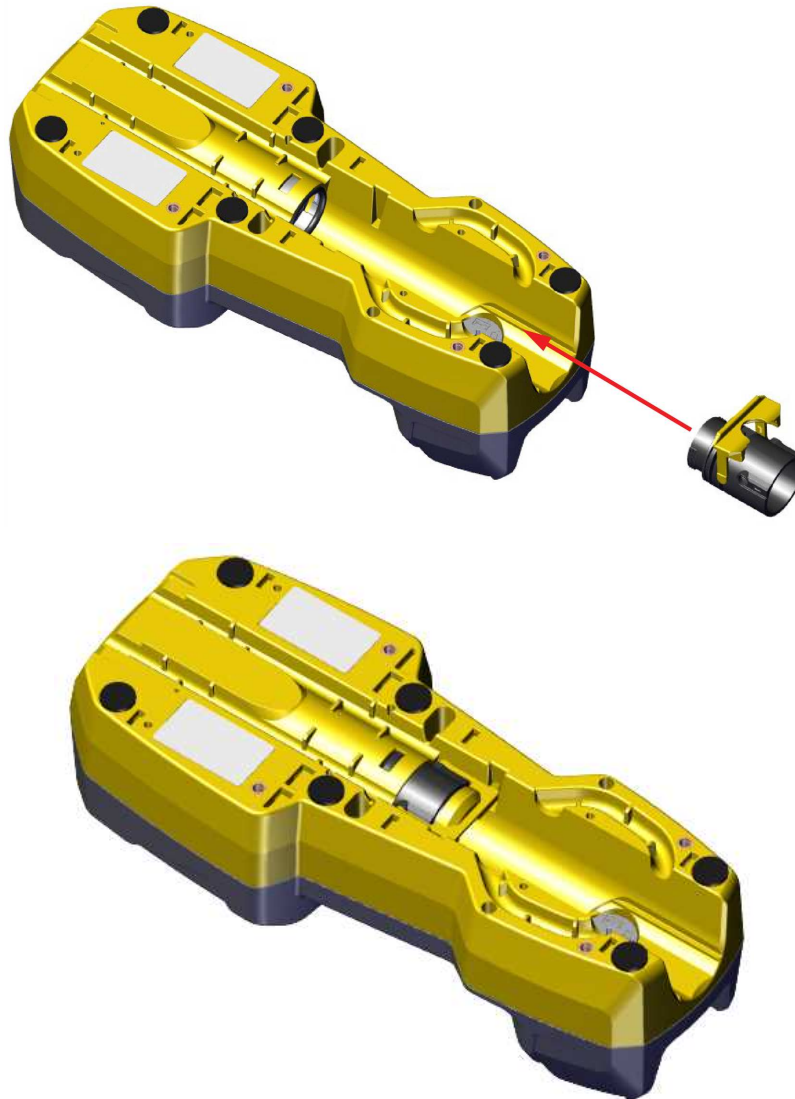
4. Detach the slide-in from the end cap assembly.



5. Insert the new slide-in.




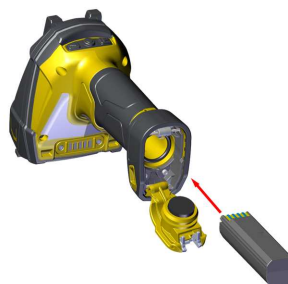
6. Insert the end cap and lock the yellow latch.



### Connecting to a Bluetooth DataMan 8700 Through an Intelligent Base Station

1. Open end cap and insert the battery. Make sure you insert the battery into the slot with the metal contact pins pushed in first.

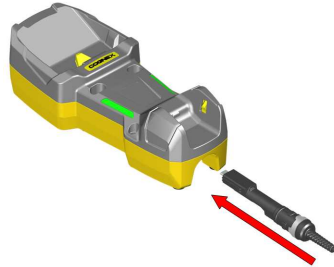
 **Tip:** A small triangle on one side of the battery is also indicating the correct placement.



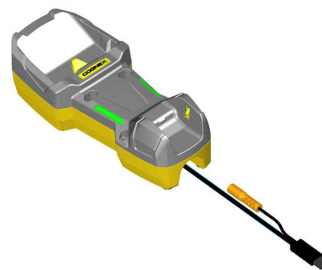
2. Press the metal tab until you hear a click to close the end cap.



3. Connect the USB or RS-232 cable with external power or the Power over Ethernet (PoE) cable to the Base Station.



4. Connect the other end of the cable to the computer or to the hub.



5. If using PoE cable, skip this step. For cables with RS-232 or USB-A connector, connect the 5.5 V power supply.



**Note:**

When you connect the reader through USB, always use a power supply. When using a DM8700 with a USB cable (DMC-HH-USBA-02 or DMC-HH-USBC-02), make sure to connect the USB connector to a USB hub that stays enabled even if the PC or notebook goes to sleep. Otherwise, the Base Station cannot charge the reader when the computer is in sleep mode.

## Pairing Wireless Readers to Base Station Through Bluetooth

1. Place the Bluetooth reader in the Base Station.
2. A dialog appears on the OLED display of the reader asking if you want to pair the reader with the Base Station.
3. Confirm assignment by using the buttons under the OLED display.

**Note:** A new reader and a new Base Station pair automatically.

4. Lift your reader up from the Base Station and start reading codes.

Consider the following aspects when using the DataMan 8700 Bluetooth reader:

- When the reader is on the Base Station, communication is established by means of cradle contacts. When the reader is in the cradle, the wireless communication is still enabled.
- Changed settings immediately synchronize between the DataMan 8700 wireless reader and the Base Station. To assign a static IP address to the Base Station when communicating via Ethernet, connect to the Base Station in the DataMan Setup Tool. The Base Station, however, auto-assigns the IP address<sup>1</sup> to the reader when they become paired.
- When you connect with the Base Station to a terminal program, your wireless reader sends decode results to the terminal.
- Set the default DMCC communication to the reader or to the Base Station using the `COM.DMCC-DEFAULT-TARGET` or `COM.DMCC-TARGET` commands. These are `GET/SET` commands.

---

<sup>1</sup> Do not use the networks 192.168.37.0/24 and 192.168.148.0/24 for base stations. The Ethernet Base Stations cannot work on these networks because they are used for internal communication.

## Charging Base Station

You can purchase a charging Base Station with a DataMan 8700 reader that uses Bluetooth Direct Connect or Wi-Fi. The Base Station charges the battery in the reader and has no advanced communications.

### Changing the Power Source for Charging Base Station

The following table shows the power options for the charging Base Station.

Power Source Unit	Specifications	How to Connect
Cognex PSU	DMA-24V-MBC-00	Connect to the cable plug of the Base Station to a power source. You do not need to use a flying leads cable.
Third-party PSU	Requirement: 24 V DC, 0.5 A min Consumption: up to 12 W	Use flying leads cable DMB8700-CHARGE-FL.

### Summary of Charging Base Station Indicators

Condition	Status Indicator: Reader	Status Indicator: Base Station	Sounds
Reader connected to Base Station	When the reader is off, there is no indicator. When the reader is charging, the light ring is RED.	Reader out of the Base Station: LED off. Reader in the Base Station and charging: RED.	No sound.

## Using DataMan 8700 Wireless Reader through Wi-Fi

### Connecting in Access Point Mode

Access Point (AP) mode is the out-of-the box Wi-Fi mode which allows the user to connect to the device from a Wi-Fi client, for example a Windows laptop. AP mode is primarily aimed for initial setup and connecting the reader to the DataMan Setup Tool.

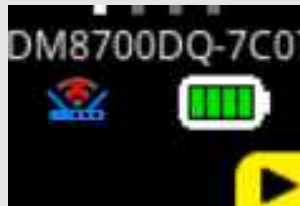
To configure your reader, perform the following procedures:

#### Connect to the Reader in Access Point Mode:

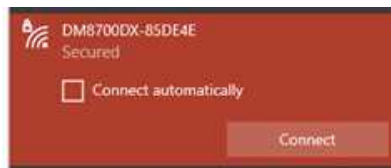
1. Power up the reader.
2. Make sure the display of the reader is showing an Access Point icon.



**Note:** If the reader display shows a router icon, the reader is already configured to connect to a Wi-Fi network. If you want to connect to the reader in AP mode, navigate to **Settings > Communication > Connect > Reset to AP Mode** on the reader display, or scan the Switch to Access-Point Wi-Fi network type configuration code.



3. On your PC, bring up the list of available Wi-Fi networks.
4. Select the network that has the same name (SSID) as the reader.



**Note:** If the network of the reader is not visible, it means the reader is already configured to connect to a Wi-Fi network.

5. Enter the device-specific passphrase of the Access Point on the PC.

**Note:** The passphrase always starts with **CGNXPW**, and continues with the last six numbers of the serial number of the device. The reader display can show the actual AP mode passphrase. To reach the AP mode passphrase, navigate to **Wi-Fi Connection Status > AP Passphrase**.



Now you can configure your reader using the DataMan Setup Tool.

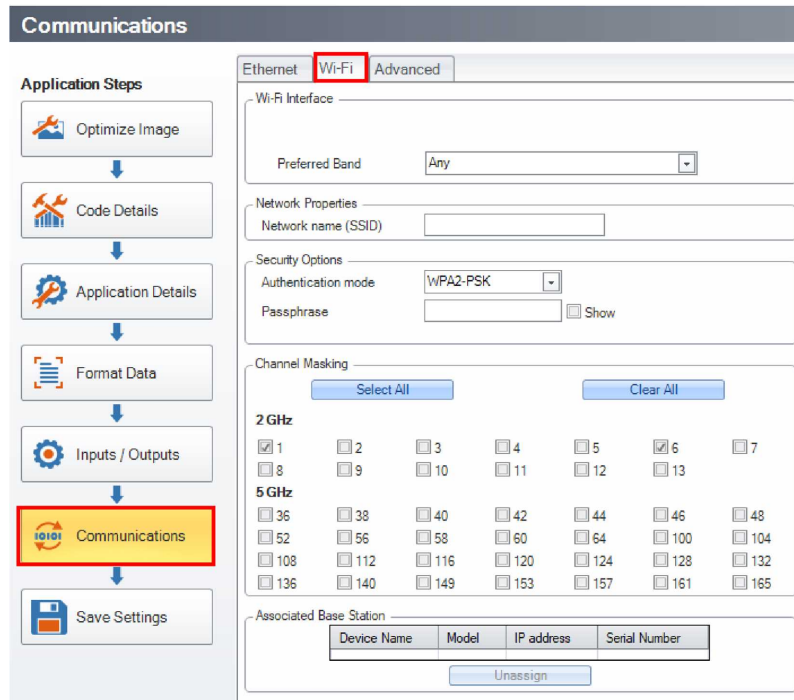
**Connect to a Wi-Fi network through the DataMan Setup Tool:**

1. Open the DataMan Setup Tool.
2. Connect to the reader.

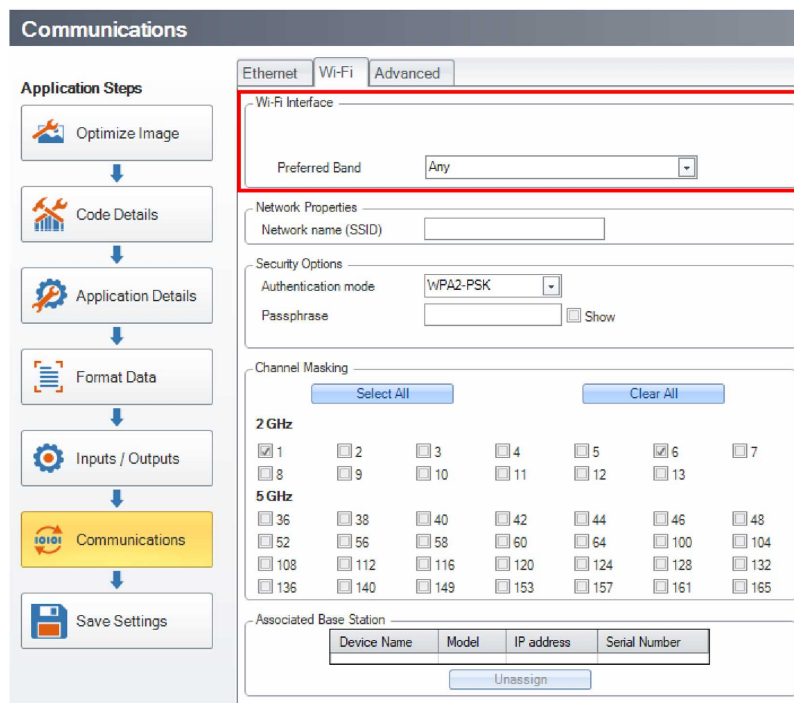


**Note:** Check the Wi-Fi connection in Windows if the reader is not listed in the DataMan Setup Tool.

3. Navigate to the **Communications** application step and choose the **Wi-Fi** tab.



4. Set the **Preferred Band** to **Any**.



**Note:** The layout of this dropdown menu can change depending on the country code of your reader.

5. Enter the **Network name (SSID)**.

The screenshot shows the 'Communications' settings page with the 'Advanced' tab selected. The 'Network name (SSID)' field is highlighted with a red box. The 'Authentication mode' is set to 'WPA2-PSK'.

**Application Steps:**

- Optimize Image
- Code Details
- Application Details
- Format Data
- Inputs / Outputs
- Communications**
- Save Settings

**Wi-Fi Interface:**

Preferred Band: Any

**Network Properties:**

Network name (SSID):

**Security Options:**

Authentication mode: WPA2-PSK

Passphrase:   Show

**Channel Masking:**

Select All Clear All

**2 GHz:**

1  2  3  4  5  6  7

8  9  10  11  12  13

**5 GHz:**

36  38  40  42  44  46  48

52  56  58  60  64  100  104

108  112  116  120  124  128  132

136  140  149  153  157  161  165

**Associated Base Station:**

Device Name	Model	IP address	Serial Number
Unassign			

6. Select the **Authentication mode** your network uses. Enter the passphrase if needed.

The screenshot shows the 'Communications' settings page with the 'Advanced' tab selected. The 'Security Options' section is highlighted with a red box. The 'Authentication mode' is set to 'WPA2-PSK'.

**Application Steps:**

- Optimize Image
- Code Details
- Application Details
- Format Data
- Inputs / Outputs
- Communications**
- Save Settings

**Wi-Fi Interface:**

Preferred Band: Any

**Network Properties:**

Network name (SSID):

**Security Options:**

Authentication mode: WPA2-PSK

Passphrase:   Show

**Channel Masking:**

Select All Clear All

**2 GHz:**

1  2  3  4  5  6  7

8  9  10  11  12  13

**5 GHz:**

36  38  40  42  44  46  48

52  56  58  60  64  100  104

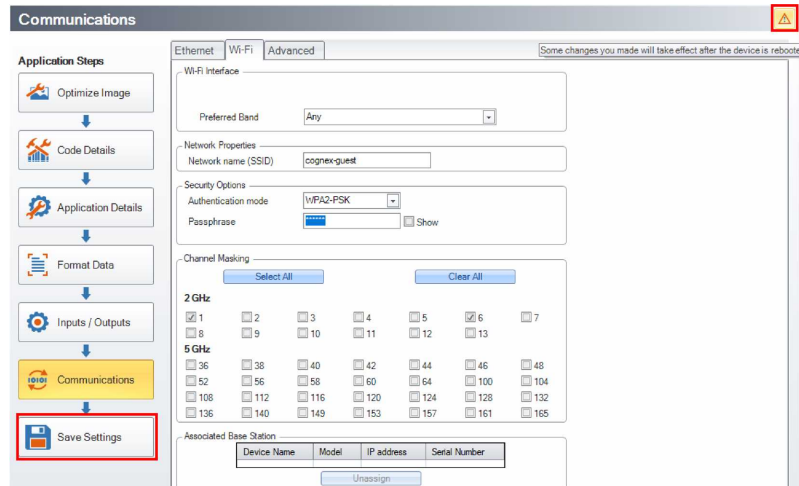
108  112  116  120  124  128  132

136  140  149  153  157  161  165

**Associated Base Station:**

Device Name	Model	IP address	Serial Number
Unassign			

7. Save the changes and reboot the reader by clicking on the triangle icon in the upper-right corner.



While the reader reboots, it connects to the Wi-Fi network. You can confirm this on the reader screen, which displays a router icon with signal strength indicator. Up to ten seconds delay can occur until the signal shows up. Now, Infrastructure mode is active and configured.



**Note:** If the reader display shows a router icon with a red X, it means the reader failed to connect to the network, or the reader is out of range. Make sure your settings are correct.



### Connecting in Infrastructure Mode

In Infrastructure mode, the reader connects to your Wi-Fi network through Wi-Fi Access Points or Wi-Fi routers. A reader connected in Infrastructure mode is available on the network just like other network devices. Infrastructure mode is aimed to be the primary connection mode in production environments, where the wireless reader connects to a router, which is then connected to a computer.

Connect the reader and your computer to the same network. Then, use the **Wireless** tab under **Communication Settings** to activate and configure Infrastructure mode. Alternatively, scan the Switch to Access-Point Wi-Fi network type configuration code.

Infrastructure mode requires a router as an Access Point. See the *DataMan Communications and Programming Guide* for detailed information.

Authentication mode	Encryption	Requirements
Open System	N/A	N/A

Authentication mode	Encryption	Requirements
WPA-PSK	TKIP, AES-CCMP	Passphrase
WPA2-PSK	TKIP, AES-CCMP	Passphrase
EAP-TLS	TLS	Client certificate CA certificate (optional) Client private key Client identity Password of private key

## Wi-Fi Channels

The following tables include the available channels and bands for each country.

The green color means the channel is available, while the red color means the channel is unavailable in that country.

### Global Specification

Applicable for readers with the following product IDs:

- DMR-8700DX-WIFI-GS
- DMR-8700LX-WIFI-GS
- DMR-8700DQ-WIFI-GS
- DMR-8700HD-WIFI-GS

Wi-Fi Band	Channel No.	USA	Canada	Brazil	EEA Region	UK	South Korea	Japan	China	Mexico	India	Rest of the World
2.4 GHz (11b/g/n)	CH 1-11											
	CH 12-13											
5 GHz (11a/n/ac)	CH36-48											
	CH52-64											
	CH100-116											
	CH120-128											
	CH132-140											
	CH144											
	CH149-165											

### EU Specification

Applicable for readers with the following product IDs:

- DMR-8700DX-WIFI-EU
- DMR-8700LX-WIFI-EU

- DMR-8700DQ-WIFI-EU
- DMR-8700HD-WIFI-EU

Wi-Fi Band	Channel No.	USA	Canada	Brazil	EEA Region	UK	South Korea	Japan	China	Mexico	India	Rest of the World
2.4 GHz (11b/g/n)	CH 1-11											
	CH 12-13											
5 GHz (11a/n/ac)	CH36-48											
	CH52-64											
	CH100-116											
	CH120-128											
	CH132-140											
	CH144											
	CH149-165											

**US Specification**

Applicable for readers with the following product IDs:

- DMR-8700DX-WIFI-US
- DMR-8700LX-WIFI-US
- DMR-8700DQ-WIFI-US
- DMR-8700HD-WIFI-US

Wi-Fi Band	Channel No.	USA	Canada	Brazil	EEA Region	UK	South Korea	Japan	China	Mexico	India	Rest of the World
2.4 GHz (11b/g/n)	CH 1-11											
	CH 12-13											

Wi-Fi Band	Channel No.	USA	Canada	Brazil	EEA Region	UK	South Korea	Japan	China	Mexico	India	Rest of the World
5 GHz (11a/n/ac)	CH36-48											
	CH52-64											
	CH100-116											
	CH120-128											
	CH132-140											
	CH144											
	CH149-165											

## Connecting in Bluetooth Direct Connect Mode

The Bluetooth Direct Connect (BTDC) mode allows you to connect your reader to a mobile device, or a PC, using Bluetooth connection. Bluetooth Direct Connect offers the possibility to easily integrate DataMan 8700 readers to your existing mobile tooling and infrastructure.

Several options are available to use your reader in BTDC mode:

- Using mobile applications (Cognex Quick Setup, Cognex Keyboard)

**Note:** You can write your own mobile application that uses cmbSDK to communicate with the reader. To make the pairing process easier, you can use cmbSDK Toolkit. For more information, see [Cognex Knowledgebase](#).

- Using the Bluetooth application of your mobile device
- Using a PC, or a laptop

## Connect the Reader using Cognex Applications

Cognex mobile applications allow you to connect your reader quickly. After connection, you can start to read barcodes with your reader.

The following applications are available both on Android and iOS devices:

- Cognex Quick Setup
- Cognex Keyboard

### One-Step Pairing

1. Start one of the Cognex applications on your mobile device.
2. In the **Settings** menu, click on the **Scanner** button and choose Bluetooth.

**Note:** In the Cognex Quick Setup, the application skips this step and automatically shows the pairing code as in step 3.

3. Scan the pairing code that the application shows with your reader.

**Note:** You do not need to set your reader into discoverable mode, because the pairing code automatically puts your reader into this mode.

4. Confirm the pairing request through the pop-up displayed on the mobile device screen.

### Advanced Pairing

You can use advanced pairing in case if you cannot connect your reader in one-step pairing.

1. Start the Cognex application on your mobile device.
2. Click on the **Advanced Pairing** button.
3. Activate discoverable mode on your reader by either navigating to **Settings > Communications > Pair > Bluetooth Direct Connect Device** on the reader screen, or scanning the `Bluetooth Discoverable ON` configuration code.
4. The application lists the available readers. Choose the reader you want to connect to from the list.
5. Confirm the pairing request.

### Troubleshooting

If you have a DataMan 8700 connected to an Android device and cannot see the soft keyboard, you need to adjust the input method settings on your device. Go to the Bluetooth connection screen, select the settings for the DataMan 8700, and disable the input method option, which is enabled by default. The input method toggle may be labeled **Text Input**, **Input device**, or similar, depending on your Android OS.

### Connect with Bluetooth Direct Connect of your Mobile Device Bluetooth Application

1. Power up the reader.
2. Activate discoverable mode on your reader by either navigating to **Settings > Communications > Connect > BT Device** on the reader screen, or scanning the `Bluetooth Discoverable ON` configuration code.
3. Enable HID Result on your reader by navigating to **Settings > Communications > HID ON/OFF**, or using the `Enable HID mode` configuration code.

**Note:** The **HID ON/OFF** menu only appears on the reader screen, if you have an active Bluetooth connection, or the reader is paired with a Base Station.

4. Open the Bluetooth application of your device OS, and initiate a Bluetooth search, and add your reader.

In HID mode, the reader acts as a keyboard. This means that the reader sends the read barcodes as keyboard key presses. Make sure that the keyboard language set on the reader is the same language as the keyboard language configured on the mobile device, otherwise the content of the barcodes you read appears as unexpected characters. If you see a delay in getting results or the wrong results, check the language setups and other HID options of your reader.

### Connect your Reader to a PC or a Laptop Running Windows Operating System

1. Power up the reader.
2. Activate the discoverable mode on your reader by either navigating to **Settings > Communications > Connect > BT Device** on the reader screen, or scanning the `Bluetooth Discoverable ON` configuration code.
3. **Enable Bluetooth on your computer.**
4. Click on the **Add a Device** button to pair your reader with the computer.

**Note:** The computer recognizes your reader as a keyboard. Enable HID results, if you want to receive read results as keypresses. You can enable HID results by navigating to **Settings > Communications > HID ON/OFF**, or using the `Enable HID mode` configuration code.

Optionally, you can connect your reader using the DataMan Setup Tool:

1. Open the DataMan Setup Tool.
2. Connect to the reader by selecting it on the **Connect** tab.
3. Navigate to the **Communications** tab and set your keyboard language.

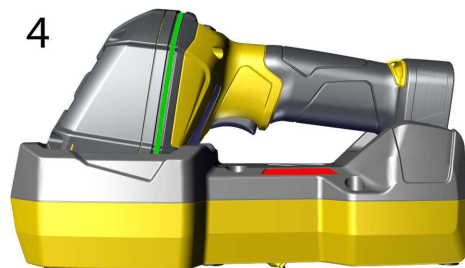
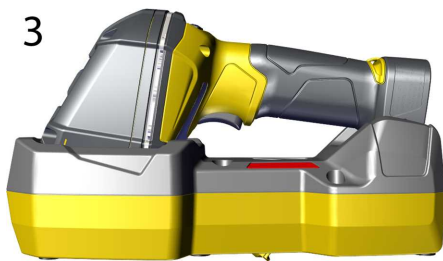
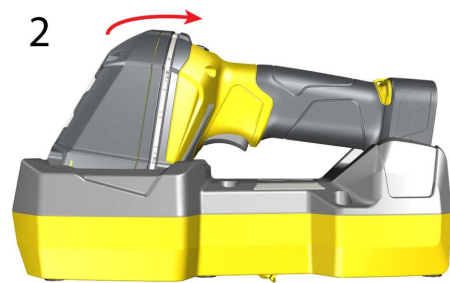
## Charging

Blinking red status indicators on your wireless reader and a warning on the OLED display signal a low battery. As the battery discharges, the blink frequency increases. A blinking red status indicator indicates low battery or thermal shutdown mode. During thermal shutdown mode, the reader reduces performance for 30 seconds to cool down.



You can also check the battery status icon on the OLED display .

Place the reader on the Base Station for charging. Make sure that the pins at the end of the handle make contact with the pins in the Base Station.



**Reader Charging**

**Reader Fully Charged**

Summary of indicator charging signals:

Condition	Status Indicator: Reader <sup>1</sup>	Status Indicator: Base Station
Battery low	One RED blink in every one to four seconds based battery level	Steady BLUE, indicating connection
Reader is charging in the Base Station	Indicator is off until fully charged	Steady RED, indicating battery charging

<sup>1</sup> Every time the reader is connected to the base station, the reader is blinking BLUE to indicate the connection with the Base Station.

Condition	Status Indicator: Reader <sup>1</sup>	Status Indicator: Base Station
Reader is fully charged in the Base Station	Steady GREEN indicators	Steady RED, indicating contact status with the cradle
Thermal shutdown mode	Two fast RED blinks in every second	Steady BLUE, indicating connection

## Changing Batteries

To change batteries, perform the following steps:

1. Lift the metal tab and open the end cap of the reader.



2. Hold the reader in an upright position and the battery slides out of the handle.


**Note:** You may need to shake the reader slightly.

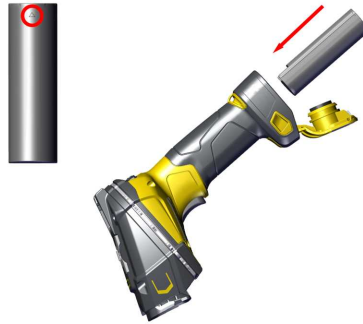


**WARNING:** The battery used in these devices may present a risk of fire or chemical burn if mistreated. Do not disassemble, heat above 60 °C (140 °F), or incinerate. Replace battery with Cognex DMA-BATTERY-5000 only. Any other battery may present a risk of fire or explosion.

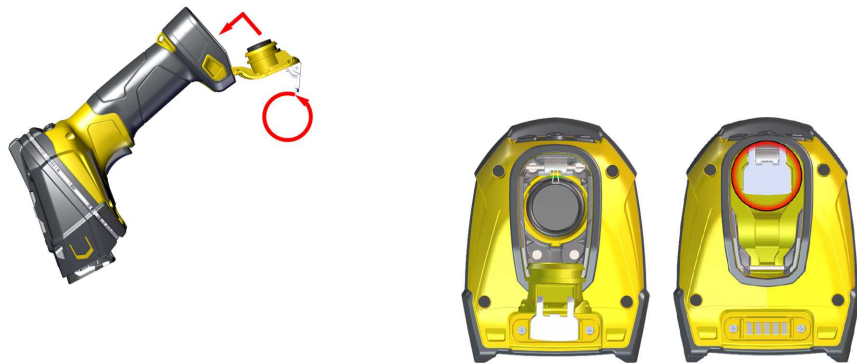
<sup>1</sup> Every time the reader is connected to the base station, the reader is blinking BLUE to indicate the connection with the Base Station.


- Put the replacement battery into the slot with the metal contact pins pushed in first.

 **Tip:** A small triangle on one side of the battery is also indicating the correct placement.



- Press the metal tab until you hear a click to close the end cap.



 **WARNING:** Dispose of the used battery promptly. Keep it away from children. Do not disassemble and do not burn it. Use the appropriate separate take-back systems for battery disposal.

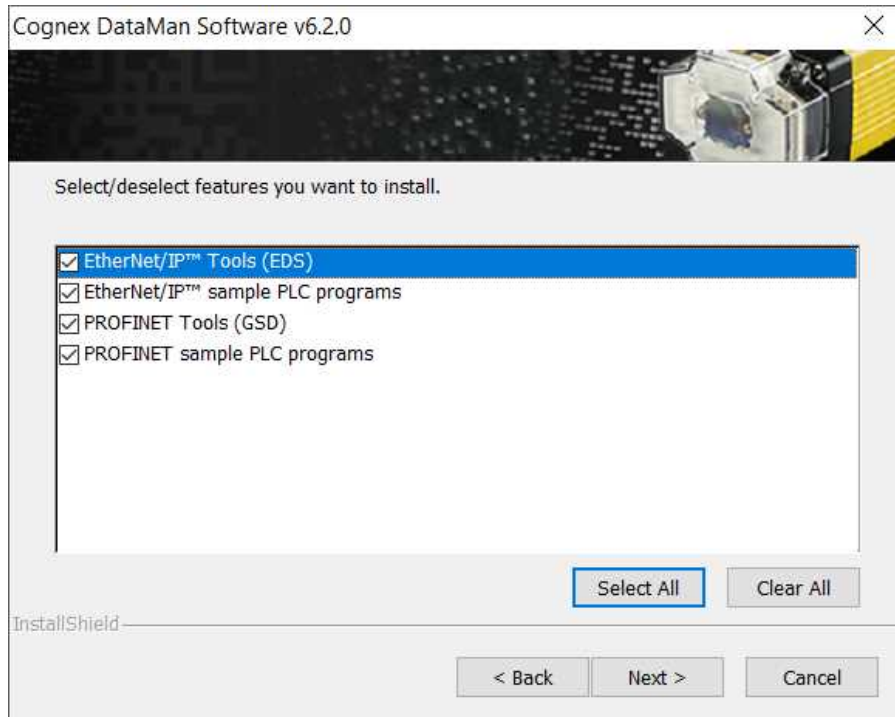
# Reading Codes with the DataMan 8700

## Industrial Protocols

The DataMan 8700 readers support the following industrial protocols:

- EtherNet/IP™
- PROFINET

Select the industrial protocol tools and sample programs when installing the DataMan Setup Tool.



There are three ways to enable or disable Industrial Protocols. Using either method, rebooting the reader is required for the changes to take effect.

- Enable the protocols using the **Industrial Protocols** pane of the DataMan Setup Tool under **Communication Settings**.
- Scan the appropriate **Reader Configuration codes** (see the *Reader Configuration Codes Manual* available through the Windows **Start** menu, the Setup Tool **Help** menu, or the [Cognex Documentation Portal](#)).
- Send the appropriate **DMCC** (see the *DataMan Control Commands Documentation* available through the Windows **Start** menu or the Setup Tool **Help** menu).

For more information on using the industrial protocols, see the *Industrial Protocols Manual* available through the Windows **Start** menu, the Setup Tool **Help** menu, or the [Cognex Documentation Portal](#).

## Trigger Types

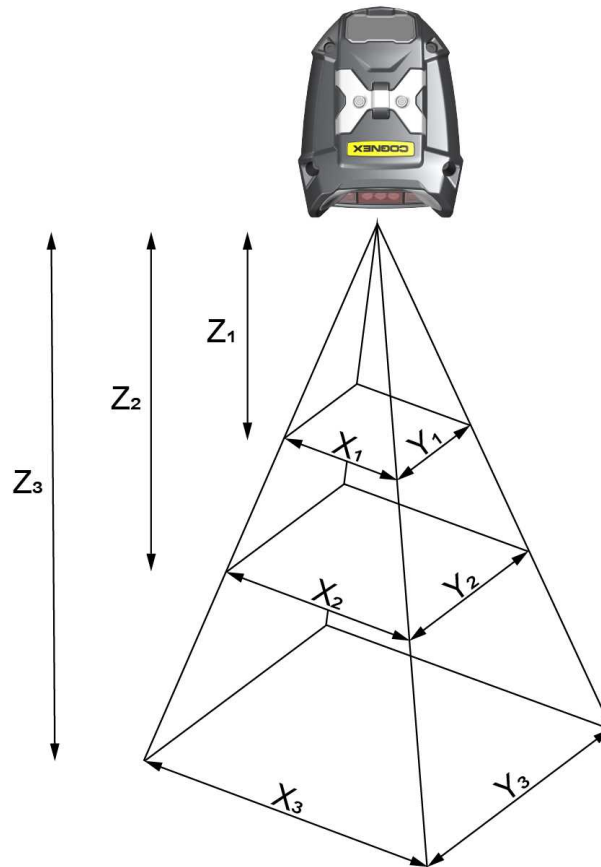
The DataMan 8700 trigger mode determines when the reader attempts to read a code. Use the DataMan Setup Tool or the appropriate reader configuration codes to change trigger types.

Supported trigger types:

- Manual (default): Pressing the trigger button on the reader starts image acquisition. The reader continues to acquire images until there is a detectable and decoded image or until the release of the trigger button.
- Presentation: When motion is detected in front of the reader, the reader turns on and scans for a symbol. When no motion is detected, the LED aimer and the lights turn off. The reader relies on an internal timing mechanism to acquire images.

**Note:** Corded DataMan 8700 readers need a power supply in presentation mode.

## Field of View and Reading Distances

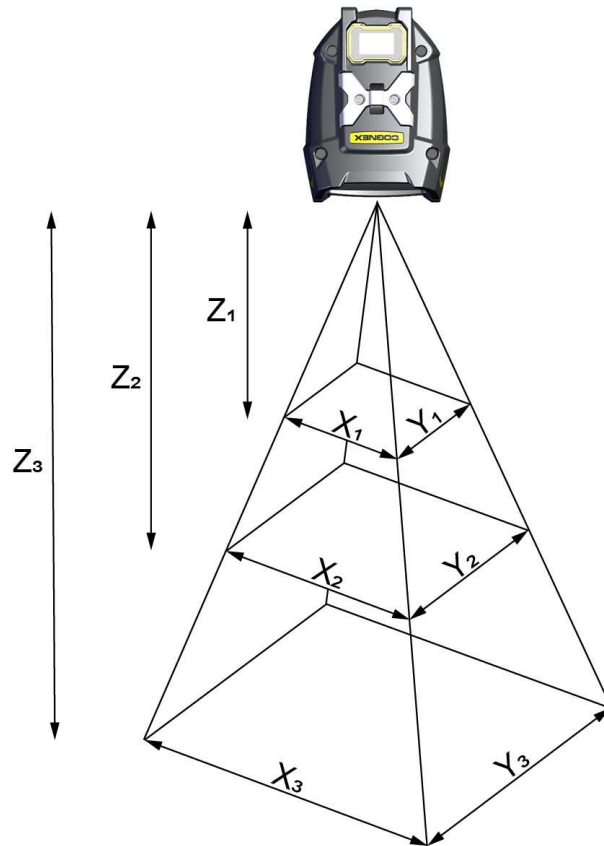


DM8700 DX Field of View Values		
Working Distance	Horizontal Values	Vertical Values
$Z_1 = 40 \text{ mm (1.5 in)}$	$X_1 = 63 \text{ mm (2.5 in)}$	$Y_1 = 47 \text{ mm (1.8 in)}$
$Z_2 = 140 \text{ mm (5.5 in)}$	$X_2 = 126 \text{ mm (5 in)}$	$Y_2 = 95 \text{ mm (3.7 in)}$
$Z_3 = 300 \text{ mm (11.8 in)}$	$X_3 = 228 \text{ mm (11.3 in)}$	$Y_3 = 171 \text{ mm (6.7 in)}$

**Note:** All values beginning with 0 denote the minimum distance where the Field of View is able to see the entire code.

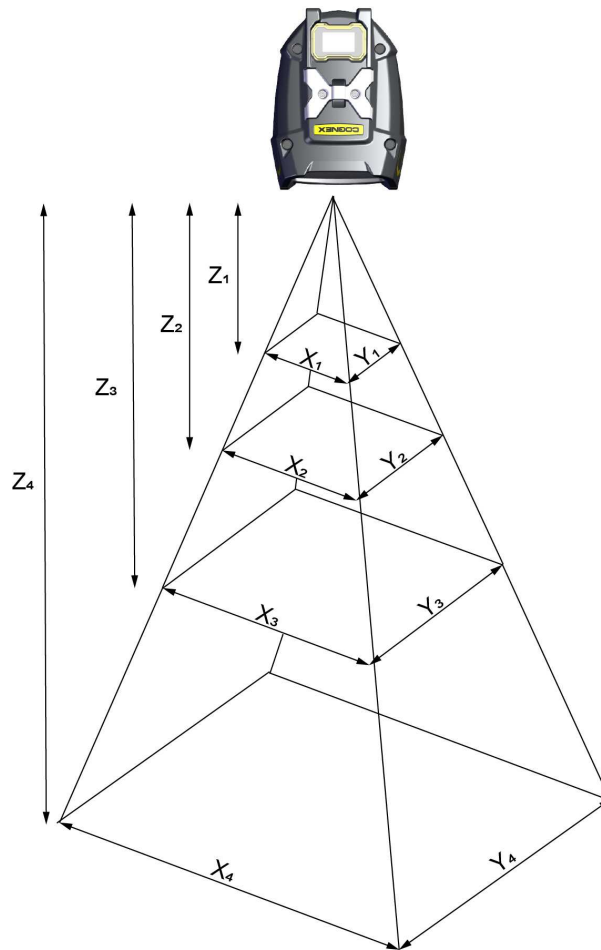
DM8700 DX Depth of Field Values			
Distances in mm / 1D min code		Distances in mm / 2D min code	
18-58	3 MIL	10-71	5 MIL

DM8700 DX Depth of Field Values			
Distances in mm / 1D min code		Distances in mm / 2D min code	
10-175	10 MIL	10-155	10 MIL
0-650	50 MIL	0-650	50 MIL
0-1000	100 MIL	0-1000	100 MIL



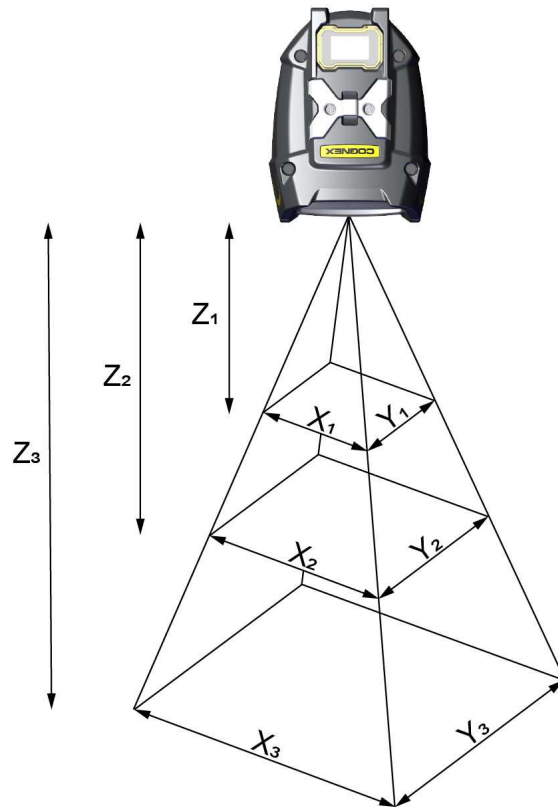
DM8700 DQ Field of View Values		
Working Distance	Horizontal Values	Vertical Values
$Z_1 = 48 \text{ mm (1.9 in)}$	$X_1 = 79 \text{ mm (3.1 in)}$	$Y_1 = 60 \text{ mm (2.4 in)}$
$Z_2 = 140 \text{ mm (5.5 in)}$	$X_2 = 148 \text{ mm (5.8 in)}$	$Y_2 = 111 \text{ mm (4.4 in)}$
$Z_3 = 300 \text{ mm (11.8 in)}$	$X_3 = 275 \text{ mm (10.8 in)}$	$Y_3 = 206 \text{ mm (8.1 in)}$

DM8700 DQ Depth of Field Values			
Distances in mm / 1D min code		Distances in mm / 2D min code	
25-70	3 MIL	10-60	5 MIL
55-300	30 MIL		



DM8700 LX Field of View Values		
Working Distance	Horizontal Values	Vertical Values
Z <sub>1</sub> = 30 mm (1.2 in)	X <sub>1</sub> = 11 mm (0.4 in)	Y <sub>1</sub> = 15 mm (0.6 in)
Z <sub>2</sub> = 180 mm (7.1 in)	X <sub>2</sub> = 116 mm (4.5 in)	Y <sub>2</sub> = 87 mm (3.4 in)
Z <sub>3</sub> = 300 mm (11.8 in)	X <sub>3</sub> = 193 mm (7.6 in)	Y <sub>3</sub> = 149 mm (5.9 in)
Z <sub>4</sub> = 650 mm (25.6 in)	X <sub>4</sub> = 418 mm (16.5 in)	Y <sub>4</sub> = 320 mm (12.6 in)

DM8700 LX Depth of Field Values			
Distances in mm / 1D min code		Distances in mm / 2D min code	
70-180	4 MIL	30-270	10 MIL
45-300	6 MIL		
40-650	20 MIL		



DM8700 HD Field of View Values		
Working Distance	Horizontal Values	Vertical Values
$Z_1 = 20 \text{ mm (0.8 in)}$	$X_1 = 25 \text{ mm (0.9 in)}$	$Y_1 = 20 \text{ mm (0.8 in)}$
$Z_2 = 45 \text{ mm (1.8 in)}$	$X_2 = 35 \text{ mm (1.4 in)}$	$Y_2 = 25 \text{ mm (0.9 in)}$
$Z_3 = 90 \text{ mm (3.5 in)}$	$X_3 = 55 \text{ mm (2.1 in)}$	$Y_3 = 40 \text{ mm (1.6 in)}$

DM8700 HD Depth of Field Values			
Distances in mm / 1D min code		Distances in mm / 2D min code	
27-50	3 MIL	25-40	2 MIL
85-100	20 MIL	20-50	5 MIL

# Cleaning and Maintenance

## Cleaning the Reader Housing

To clean the outside of the reader housing, use a small amount of mild detergent cleaner or isopropyl alcohol on a cleaning cloth. Do not pour the cleaner on the reader housing.

**⚠ CAUTION:** Do not attempt to clean any DataMan product with harsh or corrosive solvents, including lye, methyl ethyl ketone (MEK) or gasoline.

## Cleaning the Reader Lens Cover

To remove dust from the lens cover, use a pressurized air duster. The air must be free of oil, moisture or other contaminants that could remain on the lens cover. To clean the plastic window of the lens cover, use a small amount of isopropyl alcohol on a cleaning cloth. Do not scratch the plastic window. Do not pour the alcohol on the plastic window.

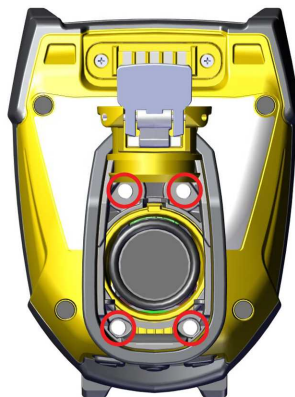
## Replacing the Latch

In the case of a latch failure, you can replace the latching function using replacement parts.

1. Lift the metal tab and open the end cap of the reader.



2. Remove the four screws in the gray base using a 2 mm Allen key.

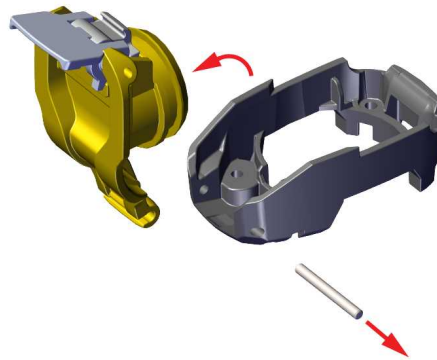


3. Remove the yellow latch and the gray base.

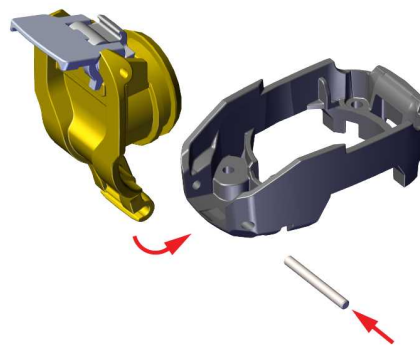


4. Remove the yellow latch from the gray base by opening it further until it snaps off the connector rod. Once the yellow latch is removed, you can slide the rod out of the gray base.

**i Note:** Make sure to keep the connector rod for use with the replacement parts.



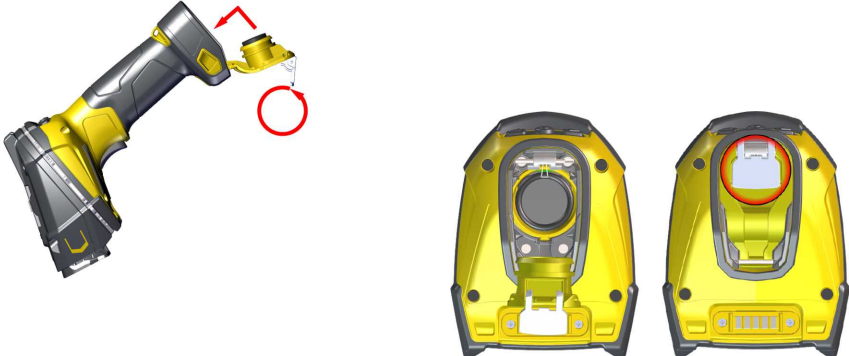
5. Slide the rod into the replacement gray base. Snap the yellow latch onto the gray base.



6. Insert the gray base into the reader. Screw the four screws back in.



7. Press the metal tab until you hear a click to close the end cap.



# Compliance Information, Warnings and Notices

## Regulations and Conformity

The corded DataMan 8700 LX/HD, DX, and DQ readers have Regulatory Model R00081, R00083, and R00084 respectively. The wireless DataMan 8700 LX/HD, DX, and DQ readers have Regulatory Model R00082, R00085, and R00086 respectively and meets or exceeds the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow. Please read these guidelines carefully before using your device.


**Note:** For the most current CE declaration and regulatory conformity information, see the Cognex support site: [cognex.com/support](http://cognex.com/support).

The following specifications apply to the corded DataMan 8700 LX, HD, DX, and DQ readers:

Regulator	Specification
USA	FCC Part 15, Class A
Canada	ICES-003
European Community	EN 61010-1 EN 61326-1

The following table shows Safety and Regulatory Information for corded readers:

Safety and Regulatory	
Manufacturer	Cognex Corporation One Vision Drive Natick, MA 01760 USA
<b>CE</b>	Corded DataMan 8700 LX and HD: Regulatory Model R00081 Corded DataMan 8700 DX: Regulatory Model R00083 Corded DataMan 8700 DQ: Regulatory Model R00084 This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take immediate measures. This equipment complies with the essential requirements of the EU Directive 2014/30/EU. Declarations are available from your local representative.
EU RoHS	Compliant to the most recent applicable directive.
FCC	FCC Part 15, Class A This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Canada	This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Safety and Regulatory	
Brazil	<p>Corded DataMan 8700 LX and HD: Regulatory Model R00081                      Corded DataMan 8700 DX: Regulatory Model R00083                      Corded DataMan 8700 DQ: Regulatory Model R00084                      Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.                      Para maiores informações, consulte o site da ANATEL <a href="http://www.anatel.gov.br">www.anatel.gov.br</a>.</p>
TÜV	<p>Corded DataMan 8700 LX and HD: Regulatory Model R00081                      Corded DataMan 8700 DX: Regulatory Model R00083                      Corded DataMan 8700 DQ: Regulatory Model R00084                      NRTL: TÜV SÜD SCC/NRTL OSHA Scheme for UL/CAN 61010-1.                      CB report available upon request. TÜV SÜD, IEC/EN 61010-1.</p>
Korea 	<p>Corded DataMan 8700 LX and HD: Regulatory Model R00081                      Corded DataMan 8700 DX: Regulatory Model R00083                      Corded DataMan 8700 DQ: Regulatory Model R00084                      This device is certified for office use only and if used at home, there can be frequency interference problems.                      이 장치는 사무실 전용으로 인증받았으며, 가정에서 사용할 경우 주파수 간섭 문제가 발생할 수 있습니다.</p>
Mexico	<p>Corded DataMan 8700 LX and HD: Regulatory Model R00081                      Corded DataMan 8700 DX: Regulatory Model R00083                      Corded DataMan 8700 DQ: Regulatory Model R00084                      La operación de este equipo está sujeta a las siguientes dos condiciones:                      (1) Es posible que este equipo o dispositivo no cause interferencia perjudicial y                      (2) Este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.</p>


The following specifications apply to the DataMan 8700 LX, HD, DX and DQ wireless reader:

Regulator	Specification
USA	FCC Part 15B, Class A FCC Part 15C contains FCC ID: TXH-50165
Canada	ICES-003 RSS 247 contains IC: 6315A-50165
European Community	For Bluetooth and Wi-Fi EN61010-1 EN ETSI 301 489-1/-17 EN ETSI 300 328, EN ETSI 301893, EN ETSI 300440

The following table shows Safety and Regulatory Information for wireless readers:


Safety and Regulatory	
Manufacturer	Cognex Corporation One Vision Drive Natick, MA 01760 USA

<b>Safety and Regulatory</b>	
<b>CE</b>	<p>Wireless DataMan 8700 LX and HD: Regulatory Model R00082                      Wireless DataMan 8700 DX: Regulatory Model R00085                      Wireless DataMan 8700 DQ: Regulatory Model R00086</p> <p>This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take immediate measures. This equipment complies with the essential requirements of the EU Directive 2014/53/EU. Declarations are available from your local representative.</p>
EU RoHS	Compliant to the most recent applicable directive.
FCC	<p>FCC Part 15</p> <p>This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard (s). Operation is subject to the following two conditions:</p> <p>(1) This device may not cause harmful interference, and                      (2) this device must accept any interference received, including interference that may cause undesired operation.</p> <p>Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.</p>
Canada	<p>This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard (s). Operation is subject to the following two conditions:</p> <p>(1) This device may not cause harmful interference, and                      (2) this device must accept any interference received, including interference that may cause undesired operation.</p> <p>Le présent appareil est conforme aux Innovation, Science and Economic Development Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:</p> <p>(1) l'appareil ne doit pas produire de brouillage, et                      (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.</p>
Brazil	<p>Wireless DataMan 8700 LX and HD: Regulatory Model R00082, ANATEL ID: 07649-22-08330                      Wireless DataMan 8700 DX: Regulatory Model R00085, ANATEL ID: 12815-21-08330, 07185-22-08330                      Wireless DataMan 8700 DQ: Regulatory Model R00086, ANATEL ID: 12815-21-08330, 07188-22-08330</p> <p>Este produto está homologado pela ANATEL de acordo com os procedimentos regulamentados para avaliação da conformidade de produtos para telecomunicações e atende aos requisitos técnicos aplicados, incluindo os limites de exposição da Taxa de Absorção Específica referente a campos elétricos, magnéticos e eletromagnéticos de radiofrequência. O máximo valor medido da Taxa de Absorção Específica referente à exposição localizada no tronco foi de 0,0009250 W/kg.</p> <p>Para maiores informações, consulte o site da ANATEL <a href="http://www.anatel.gov.br">www.anatel.gov.br</a>.</p>
TÜV	<p>Wireless DataMan 8700 LX and HD: Regulatory Model R00082                      Wireless DataMan 8700 DX: Regulatory Model R00085                      Wireless DataMan 8700 DQ: Regulatory Model R00086</p> <p>NRTL: TÜV SÜD SCC/NRTL OSHA Scheme for UL/CAN 61010-1.                      CB report available upon request. TÜV SÜD, IEC/EN 61010-1.</p>

Safety and Regulatory	
Korea 	Wireless DataMan 8700 LX and HD: Regulatory Model R00082, KC ID: R-R-CGX-R00082 Wireless DataMan 8700 DX: Regulatory Model R00085, KC ID: R-R-CGX-R00085, R-R-CGX-R00085A Wireless DataMan 8700 DQ: Regulatory Model R00086, KC ID: R-R-CGX-R00086, R-R-CGX-R00086A This device is certified for office use only and if used at home, there can be frequency interference problems. 이 장치는 사무실 전용으로 인증받았으며, 가정에서 사용할 경우 주파수 간섭 문제가 발생할 수 있습니다.
Mexico	Wireless DataMan 8700 LX and HD: Regulatory Model R00082 Wireless DataMan 8700 DX: Regulatory Model R00085, IFETEL ID: RCPCOR022-1453 Wireless DataMan 8700 DQ: Regulatory Model R00086, IFETEL ID: RCPCOR022-1453-A1 La operación de este equipo está sujeta a las siguientes dos condiciones: (1) Es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) Este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.
Taiwan	Wireless DataMan 8700 LX and HD: Regulatory Model R00082 Wireless DataMan 8700 DX: Regulatory Model R00085 Wireless DataMan 8700 DQ: Regulatory Model R00086 取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾 Warning users: To avoid electromagnetic interference, this product should not be installed or used in a residential environment.
Japan	Wireless DataMan 8700 LX: Regulatory Model R00082, MIC ID: R 003-210336 Wireless DataMan 8700 DX: Regulatory Model R00085, MIC ID: R 201-210058, R 003-210336 Wireless DataMan 8700 DQ: Regulatory Model R00086, MIC ID: R 201-210058, R 003-210336
China	Wireless DataMan 8700 LX: Regulatory Model R00082, CMIIT ID: 2022AJ1367 Wireless DataMan 8700 DX: Regulatory Model R00085, CMIIT ID: 2021DJ8188, 2022AJ1323 Wireless DataMan 8700 DQ: Regulatory Model R00086, CMIIT ID: 2021DJ15763, 2022AJ1235

## Compliance Statements: DataMan Wireless Base Station


The DataMan Wireless Base Station has the Regulatory model R00087 and meets or exceeds the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow.

 **Note:** For the most current CE declaration and regulatory conformity information, see the Cognex support site: [cognex.com/support](http://cognex.com/support).

Please read these guidelines carefully before using your device.

Regulator	Specification
USA	FCC Part 15B, Class A FCC Part 15C contains FCC ID: TXH-50165

Canada	ICES-003 RSS 247 contains IC: 6315A-50165
European Community	For Bluetooth and WiFi EN61010-1 EN ETSI 301 489-1/-17 EN ETSI 300 328, EN ETSI 301893, EN ETSI 300440

<b>Safety and Regulatory</b>	
Manufacturer	Cognex Corporation One Vision Drive Natick, MA 01760 USA
	Intelligent Base Station: Regulatory Model R00087 This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take immediate measures. This equipment complies with the essential requirements of EU Directive 2014/53/EU. Declarations are available from your local representative.
EU RoHS	Compliant to the most recent applicable directive.
FCC	FCC Part 15 This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard (s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Canada	This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard (s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Le présent appareil est conforme aux Innovation, Science and Economic Development Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
Brazil	DMB-8700-RS, DMB-8700-USB, and DMB-8700-E DataMan Base Station: Regulatory Model R00087, ANATEL ID: 13026-21-08330, 06820-22-08330 Este produto está homologado pela ANATEL de acordo com os procedimentos regulamentados para avaliação da conformidade de produtos para telecomunicações e atende aos requisitos técnicos aplicados, incluindo os limites de exposição da Taxa de Absorção Específica referente a campos elétricos, magnéticos e eletromagnéticos de radiofrequência. O máximo valor medido da Taxa de Absorção Específica referente à exposição localizada no tronco foi de 0,0009250 W/kg. Para maiores informações, consulte o site da ANATEL <a href="http://www.anatel.gov.br">www.anatel.gov.br</a> .
TÜV	DMB-8700-RS, DMB-8700-USB, and DMB-8700-E DataMan Base Station: Regulatory Model R00087 NRTL: TÜV SÜD SCC/NRTL OSHA Scheme for UL/CAN 61010-1. CB report available upon request. TÜV SÜD, IEC/EN 61010-1.

Safety and Regulatory	
Korea	DMB-8700-RS, DMB-8700-USB, and DMB-8700-E DataMan Base Station: Regulatory Model R00087, KC ID: R-R-CGX-R00087 This device is certified for office use only and if used at home, there can be frequency interference problems. 이 장치는 사무실 전용으로 인증받았으며, 가정에서 사용할 경우 주파수 간섭 문제가 발생할 수 있습니다.
Mexico	La operación de este equipo está sujeta a las siguientes dos condiciones: (1) Es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) Este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.
Taiwan	取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾 Warning users: To avoid electromagnetic interference, this product should not be installed or used in a residential environment.
Japan	DMB-8700-RS, DMB-8700-USB, and DMB-8700-E DataMan Base Station: Regulatory Model R00087, MIC ID: R 201-210058, R 003-210336
China	DMB-8700-RS, DMB-8700-USB, and DMB-8700-E DataMan Base Station: Regulatory Model R00087, CMIIT ID: 2021DJ8199, 2022AJ1646

## Compliance Statements: DataMan Charging Base Station

The DataMan Charging Base Station has the Regulatory model R00090 and meets or exceeds the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow.

**Note:** For the most current CE declaration and regulatory conformity information, see the Cognex support site: [cognex.com/support](https://cognex.com/support).

Please read these guidelines carefully before using your device.

Safety and Regulatory	
Manufacturer	Cognex Corporation One Vision Drive Natick, MA 01760 USA
<b>CE</b>	Charging Base Station: Regulatory Model R00090 This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take immediate measures. This equipment complies with the essential requirements of EU Directive 2014/53/EU. Declarations are available from your local representative.
EU RoHS	Compliant to the most recent applicable directive.

Safety and Regulatory	
FCC	FCC Part 15, Class A This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Canada	This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.
TÜV	Charging Base Station: Regulatory Model R00090 NRTL: TÜV SÜD SCC/NRTL OSHA Scheme for UL/CAN 61010-1. CB report available upon request. TÜV SÜD, IEC/EN 61010-1.
Korea	Charging Base Station: Regulatory Model R00090, KC ID: R-R-CGX-R00090
Taiwan	Charging Base Station: Regulatory Model R00090 為避免電磁干擾,本產品不應安裝或使用於住宅環境 To avoid electromagnetic interference, this product should not be installed or used in a residential environment.

## 限用物質含有情況標示聲明書 (Information for Taiwan RoHS Compliance)

設備名稱 : Base Station 基站, 型號 ( 型式 ) : R00090 Equipment name Type designation (Type)						
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr+6)	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
連接器	○	○	○	○	○	○
塑殼	○	○	○	○	○	○
PCB版	○	○	○	○	○	○
電子料	○	○	○	○	○	○
電源供應器	○	○	○	○	○	○
<p>Note 1: "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition. 備考1. "超出0.1 wt %" 及 "超出0.01 wt %" 係指限用物質之百分比含量超出百分比含量基準值。</p> <p>Note 2: "○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence. 備考2. "○" 係指該項限用物質之百分比含量未超出百分比含量基準值。</p> <p>Note 3: The "-" indicates that the restricted substance corresponds to the exemption. 備考3. "-" 係指該項限用物質為排除項目。</p>						

## For European Community Users

Cognex complies with Directive 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE).

This product has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment, if not properly disposed.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems for product disposal. Those systems will reuse or recycle most of the materials of the product you are disposing in a sound way.



The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You may also contact your supplier for more information on the environmental performance of this product.

## 中国大陆RoHS (Information for China RoHS Compliance)

根据中国大陆《电子信息产品污染控制管理办法》(也称为中国大陆RoHS), 以下部份列出了本产品中可能包含的有毒有害物质或元素的名称和含量。



Table of toxic and hazardous substances/elements and their content, as required by China's management methods for controlling pollution by electronic information products.

Part Name 部件名称	Hazardous Substances 有害物质					
	Lead (Pb) 铅	Mercury (Hg) 汞	Cadmium (Cd) 镉	Hexavalent Chromium (Cr (VI)) 六价铬	Polybrominated biphenyls (PBB) 多溴联苯	Polybrominated diphenyl ethers (PBDE) 多溴二苯醚
Regulatory Model R00081	X	O	O	O	O	O
Regulatory Model R00082						
Regulatory Model R00083						
Regulatory Model R00084						
Regulatory Model R00085						
Regulatory Model R00086						
Regulatory Model R00087						
Regulatory Model R00090						

This table is prepared in accordance with the provisions of SJ/T 11364.

这个标签是根据SJ/T 11364 的规定准备的。

O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB / T26572 - 2011.

表示本部件所有均质材料中含有的有害物质低于GB / T26572 - 2011 的限量要求。

X: Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB / T26572 - 2011.

表示用于本部件的至少一种均质材料中所含的危害物质超过GB / T26572 - 2011 的限制要求。



