

COGNEX

DataMan[®] 8700 Reference Manual



2023 July 03
Revision: 23.2.1.3

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Symbols

The following symbols indicate safety precautions and supplemental information:

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

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

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

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

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.

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.




You can purchase a charging base station with the 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.



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

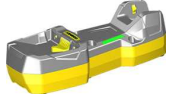
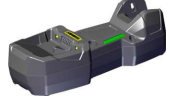
The DataMan 8700 series base stations are available with the following communication options:

|  | 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, 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 ¹ |  |
| 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 |  |

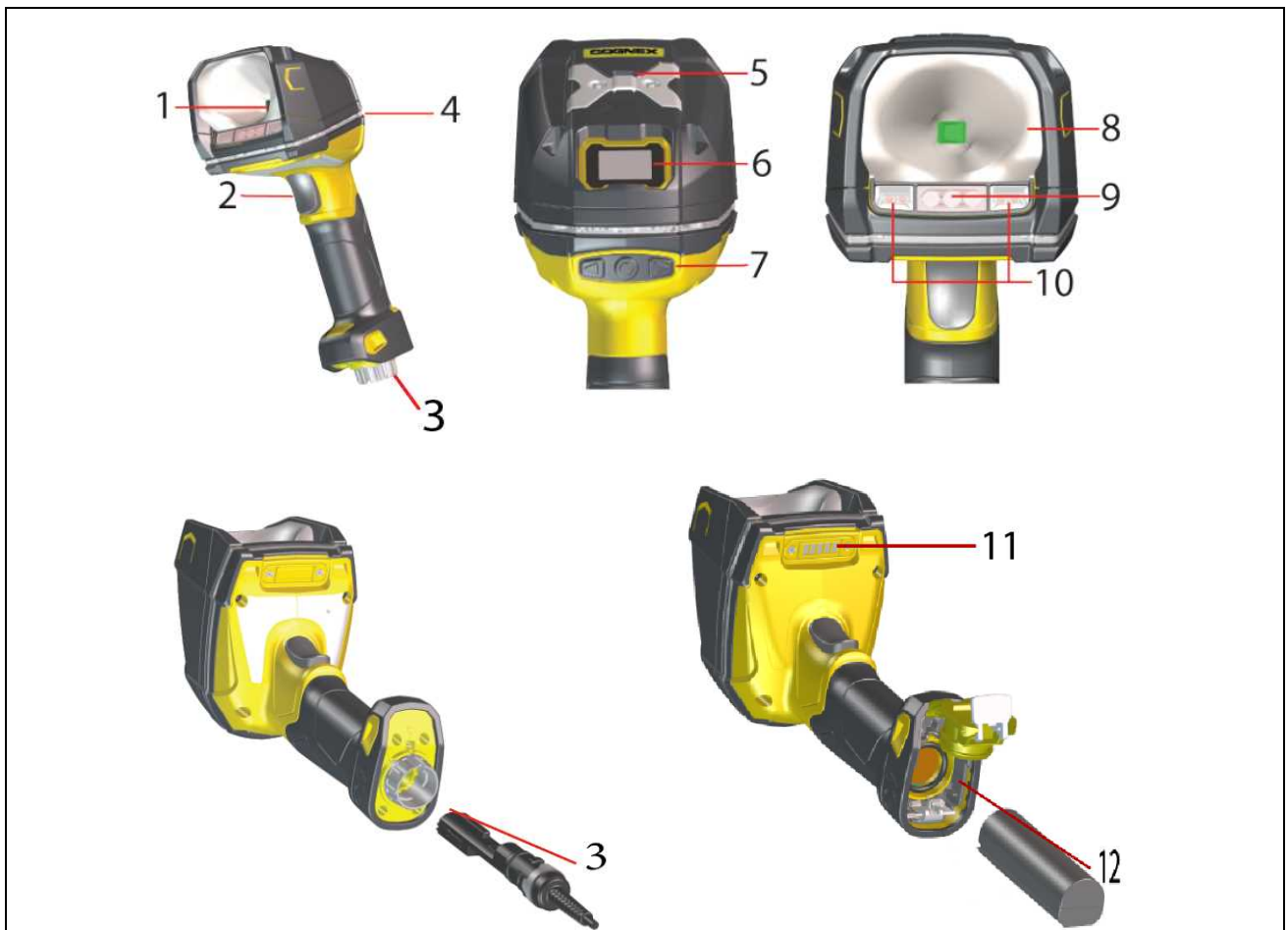
Miscellaneous Accessories

| 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 ² |  |
| 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 |  |

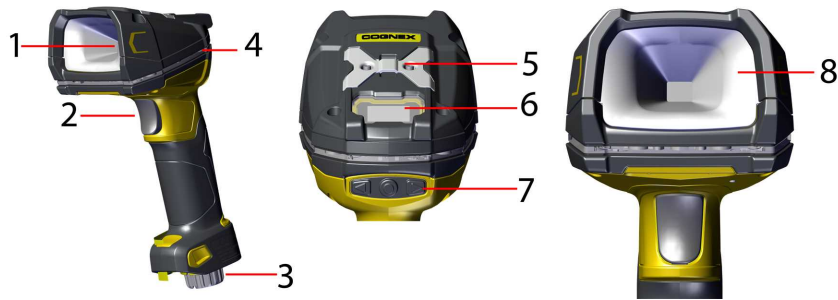
¹ Collimated cable length including DM8700-ECABLE-X should not exceed 50 m.

² 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 |



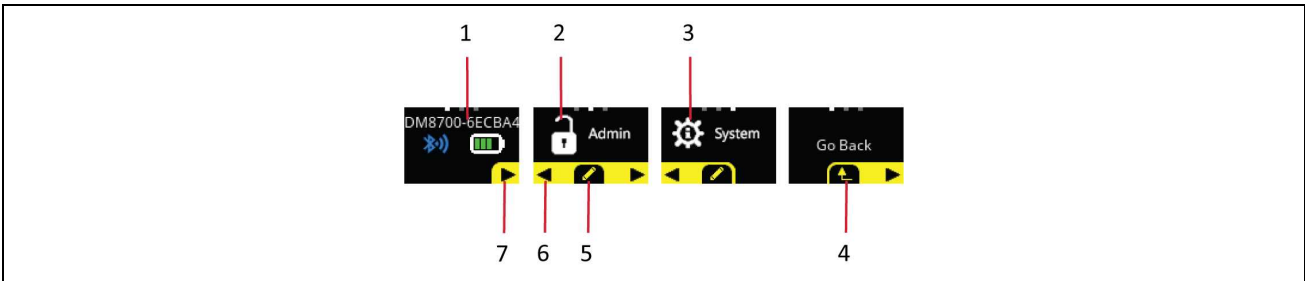
| Number | DataMan 8700 LX Reader |
|--------|---|
| 1 | LED aimer |
| 2 | Trigger (press and hold to read) |
| 3 | Cable insertion point (corded readers only) |
| 4 | 360° ring light indicator |
| 5 | Lanyard hook |
| 6 | OLED display |
| 7 | OLED input and configuration buttons |
| 8 | Direct light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



| 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

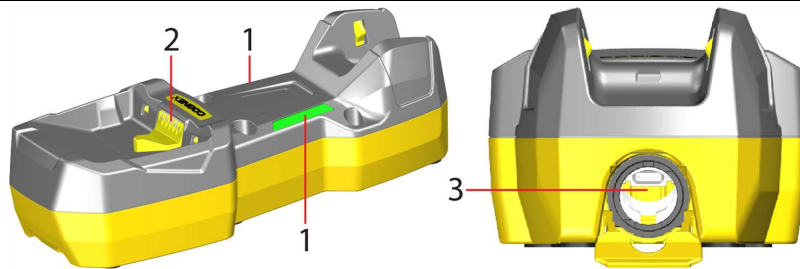
The OLED display is user interface where you can communicate with the DataMan 8700.



| 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. ¹ |
| 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 |

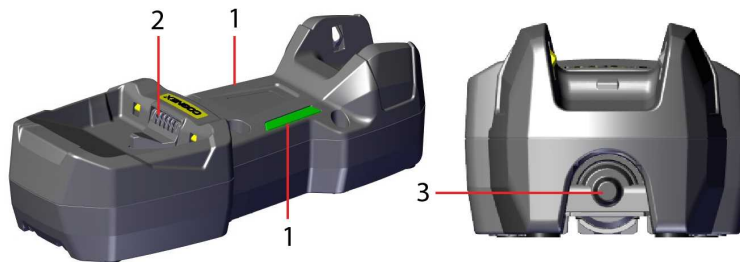
¹ The Bluetooth connection and the battery status of the reader is only displayed on wireless readers.

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"> • RED = charging, or indicating contact status with the cradle <p>Reader off base station:</p> <ul style="list-style-type: none"> • BLUE = connected via BT • OFF = no connection |
| 2 | <p>Connection point with the reader:</p> <ul style="list-style-type: none"> • Pairing reader and base station • Communication • Charging |
| 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"> • RED = charging <p>Reader off base station:</p> <ul style="list-style-type: none"> • OFF = no connection |
| 2 | <p>Connection point with the reader:</p> <ul style="list-style-type: none"> • Charging |
| 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:

When you connect the reader through USB, always use a power supply. When using a DM8700 DX 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.

When using other models including base station, connecting to a USB hub that is always enabled is not obligatory, but strongly recommended.

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 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.

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) ¹ |
| 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 | 1-D barcodes: Codabar, Code 39, Code 128, and Code 93, Interleaved 2 of 5, Postal, UPC/JAN, POSTNET, PLANET Code, GS1 IMB 2-D barcodes: 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 |

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

¹ 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 μm 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 | |
| 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 |
| Charge Time | N/A | < 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 | λ [nm] |
|--------------|------------------|----------------|
| DM8700 DX | RED | 660 |
| DM8700 DQ | WHITE | N/A |
| DM8700 LX | AMBER/RED-ORANGE | 617 |
| DM8700 HD | AMBER/RED-ORANGE | 625 |

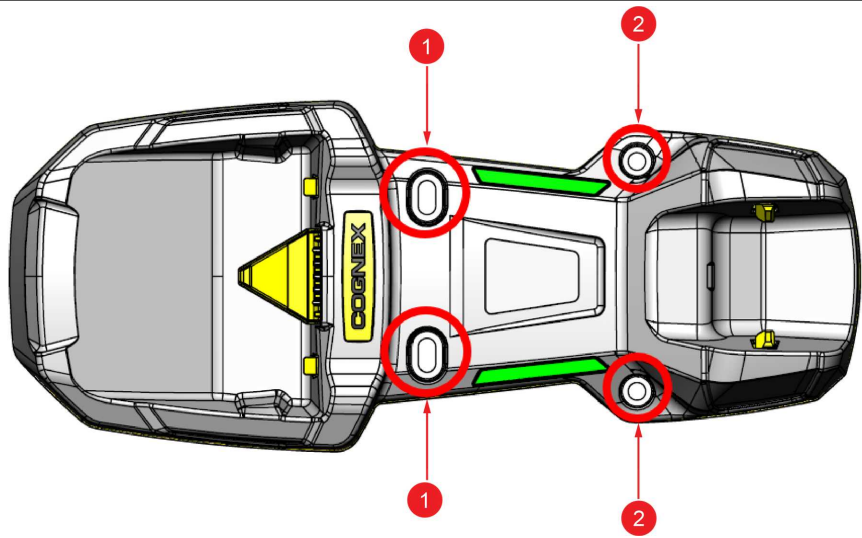
Base Station Mounting Options

You can mount the base station in the following ways:

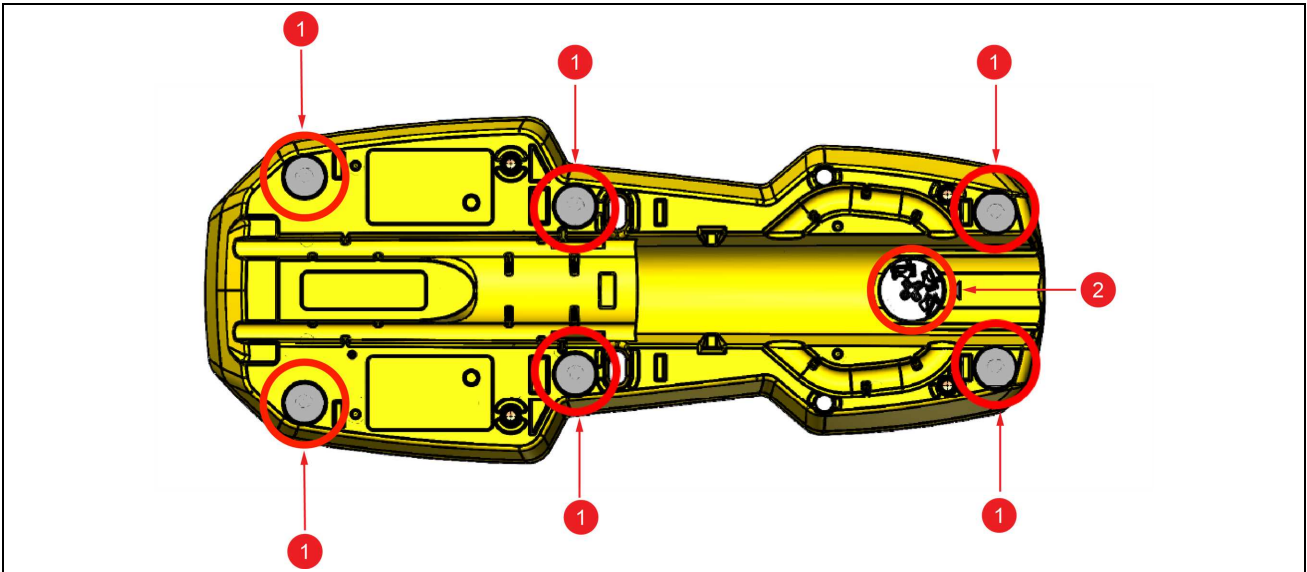
- Horizontal mounting:
 - Into wood: use a 10 x 2 inch rounded head screw.
 - Into metal: use a 10 x 1 5/8 inch socket head cap screw.
 - Into metal: use an M5 x 40 mm socket head cap screw.
- Vertical mounting:
 - Into wood: use a 10 x 2 1/4 inch rounded head screw.
 - Into metal: use a 10 x 1 7/8 inch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

i Note: If you mount the base station into drywall, use additional drywall anchors.

Recommended torque for mounting the base station:



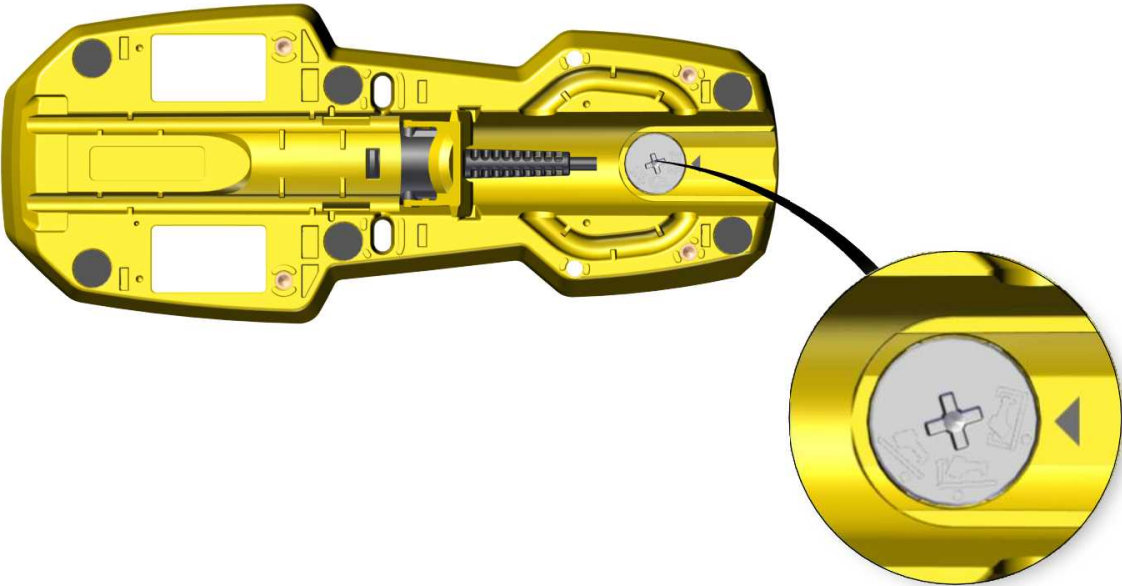
| Number | Description | Maximum Recommended Torque |
|--------|-------------------------|----------------------------|
| 1 | Top-side mounting holes | 0.5 Nm |
| 2 | Top-side mounting holes | 0.2 Nm |



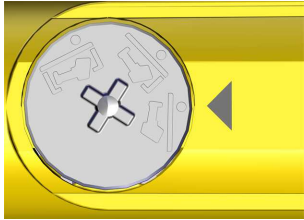
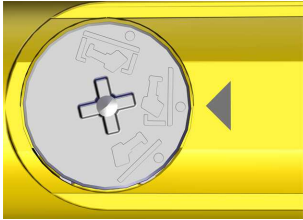
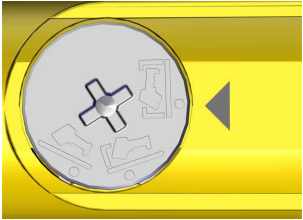
| Number | Description | Maximum Recommended Torque |
|--------|------------------------------|----------------------------|
| 1 | Bottom-side threaded inserts | 0.5 Nm |
| 2 | Grip strength tuner | - |

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.

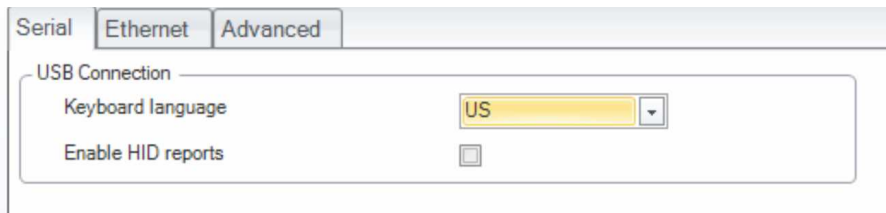
If the reader still does not appear, you can use the **Add Device** option in the DataMan Setup Tool.

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.

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.

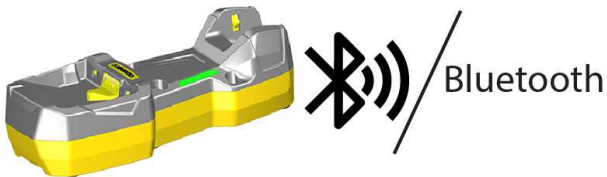


You can enable HID reports by ticking the checkbox in DataMan Setup Tool.



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.



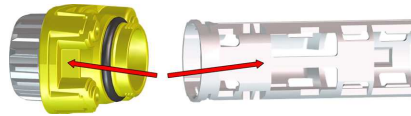
2. Push in the locking pin with the tip of a screwdriver, or with a similar pointy instrument, then twist the end cap.



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.

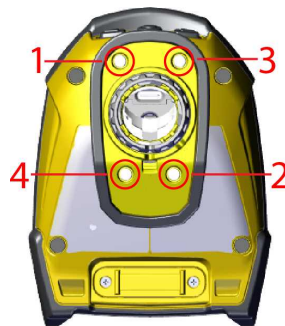


7. Replace the end cap assembly.



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 Connect backstage page in the DataMan Setup Tool and check the IP address of the reader in the Address column. |


Note:

When you connect the reader through USB, always use a power supply. When using a DM8700 DX with a USB cable (DMC-HH-USBA-02 or DMC-HH-USBC-02) or base station, make sure to connect the USB connector to a USB hub  that stays enabled even if the PC or notebook goes to sleep.

When using other models including base station, connecting to a USB hub that is always enabled is not obligatory, but strongly recommended.

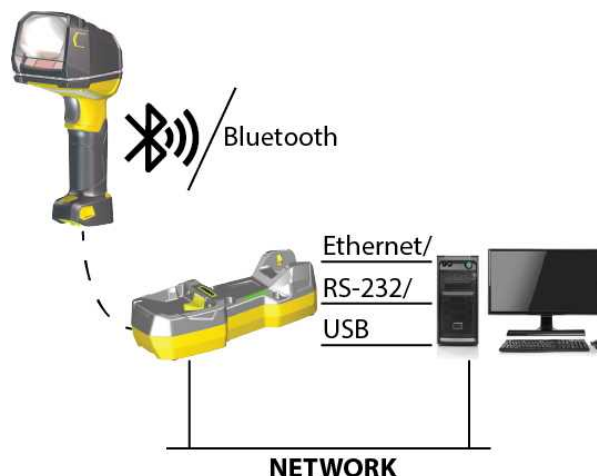
Intelligent Base Station Routing Capabilities

The base station is visible as connected through either 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.



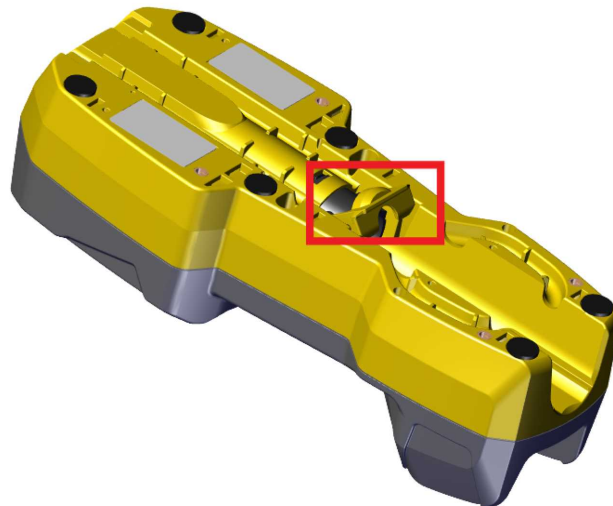
Summary of Intelligent Base Station Buffering Indicators

| 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 |

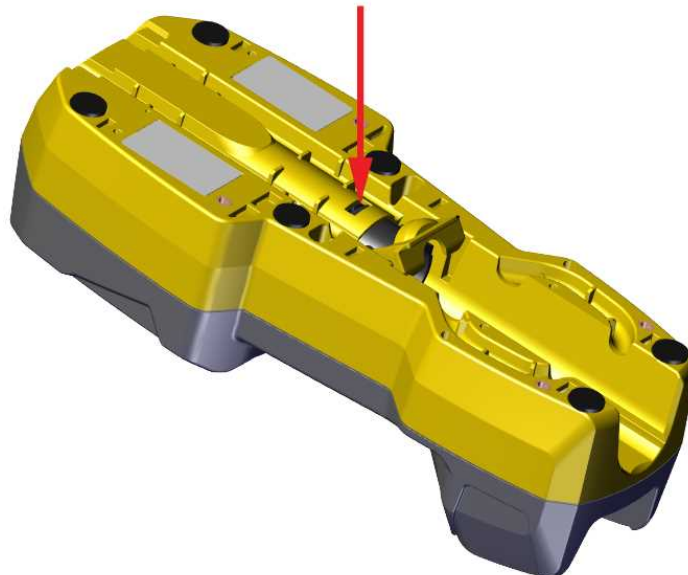
Changing Communication Module On Intelligent Base Station

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:

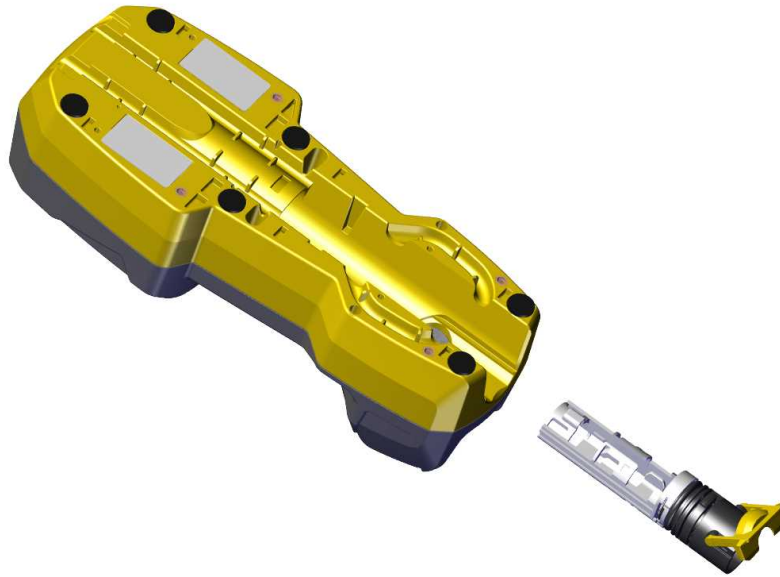
1. Lift the yellow latch.



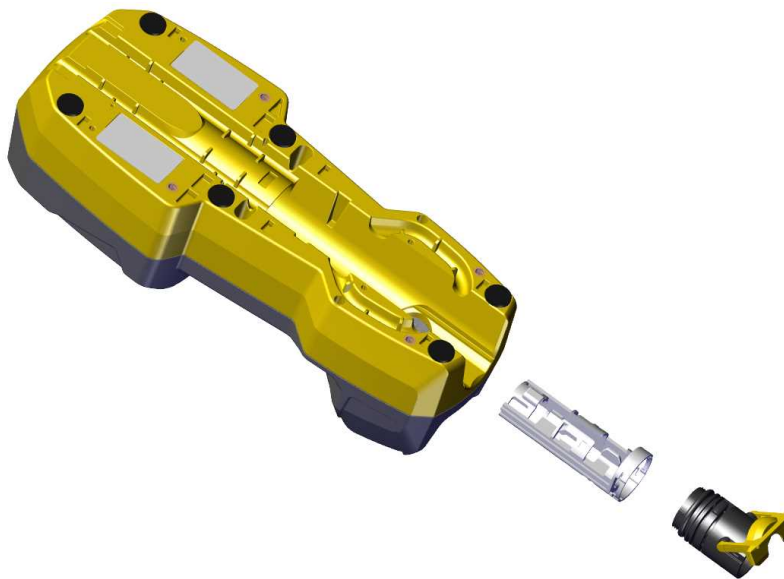
2. Press the black tab down.



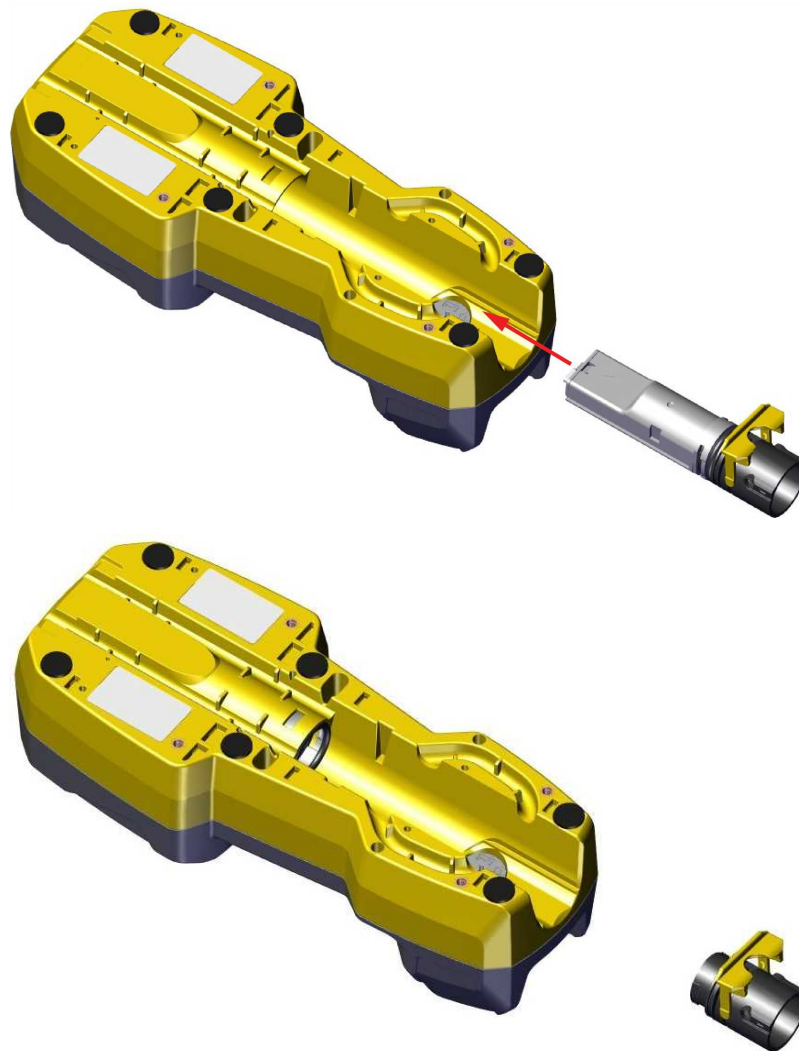
3. Pull the slide-in assembly out.



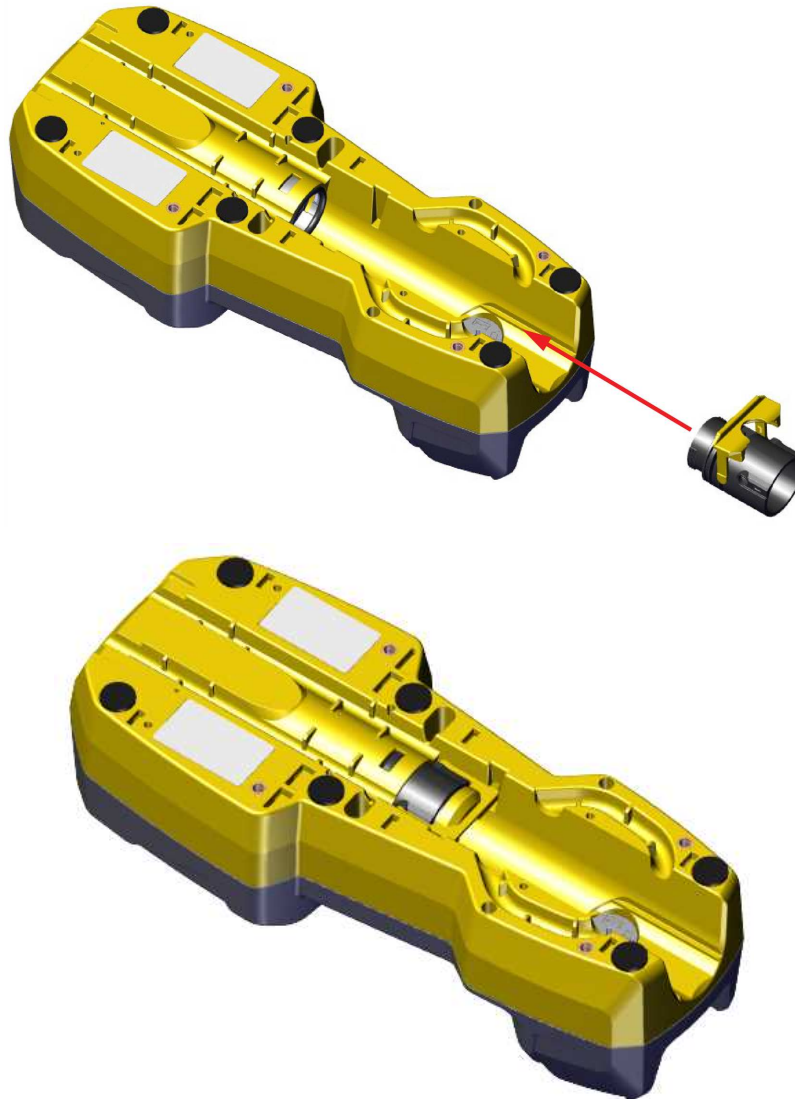
4. Detach the slide-in from the end cap assembly.



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.

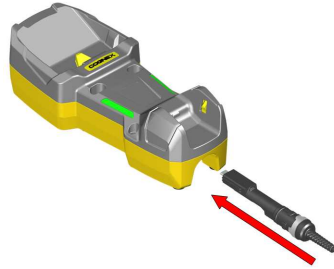
 **Tip:** A small triangle on one side of the battery is also indicating the correct placement.



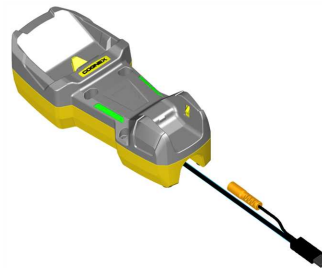
2. Press the metal tab until you hear a click to close the end cap.



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 DX with a USB cable (DMC-HH-USBA-02 or DMC-HH-USBC-02) or base station, make sure to connect the USB connector to a **i** USB hub that stays enabled even if the PC or notebook goes to sleep.

When using other models including base station, connecting to a USB hub that is always enabled is not obligatory, but strongly recommended.

Pairing Wireless Readers to Base Station Through Bluetooth

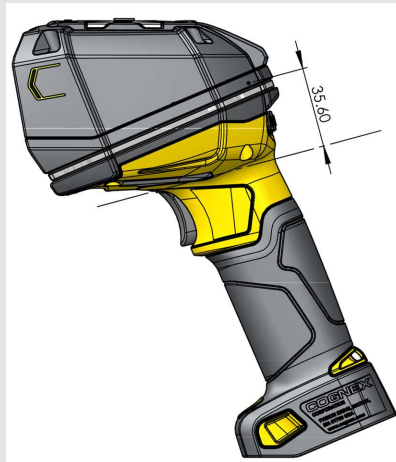
1. Place the Bluetoothreader in the base station.
2. A dialog appears on the OLED display of the reader asking if you want to pair the reader with the base station.
3. Confirm assignment by using the buttons under the OLED display.

i Note: A new reader and a new base station pair each other automatically.

4. Lift your reader up from the base station and start reading codes.

Note:

To comply with FCC RF exposure requirements, you have to maintain a minimum separation distance of 35 mm between your hand and the integral antenna of the device during normal handling of the device.



For more information about RF exposure, visit the FCC website www.fcc.gov.

Consider the following aspects when using the DataMan 8700Bluetooth 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.
- Configure wireless communication settings by connecting to the base station. In order for the changed settings to be synchronized between the DataMan 8700 wireless reader and the base station, place your reader in the base station after your changes are saved. 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 address¹ 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.
- DMCC commands are sent to the reader through the base station.

¹ Do not use the networks 192.168.37.0/24 and 192.168.148.0/24 for base stations.

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.

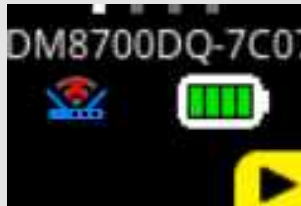
To configure your reader, perform the following procedures:

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 reset the reader to factory default.



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.

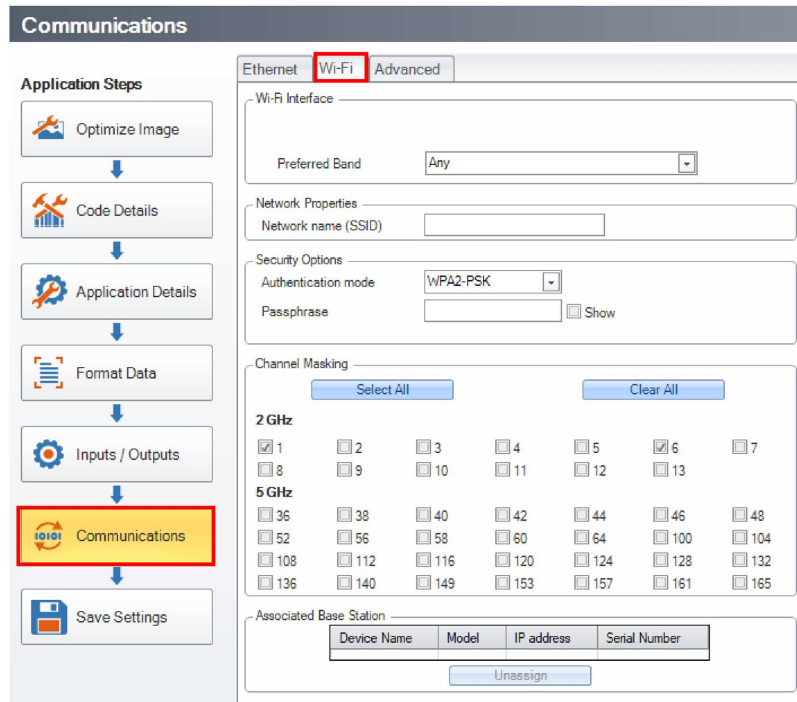
Connect to a Wi-Fi network through the DataMan Setup Tool:

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

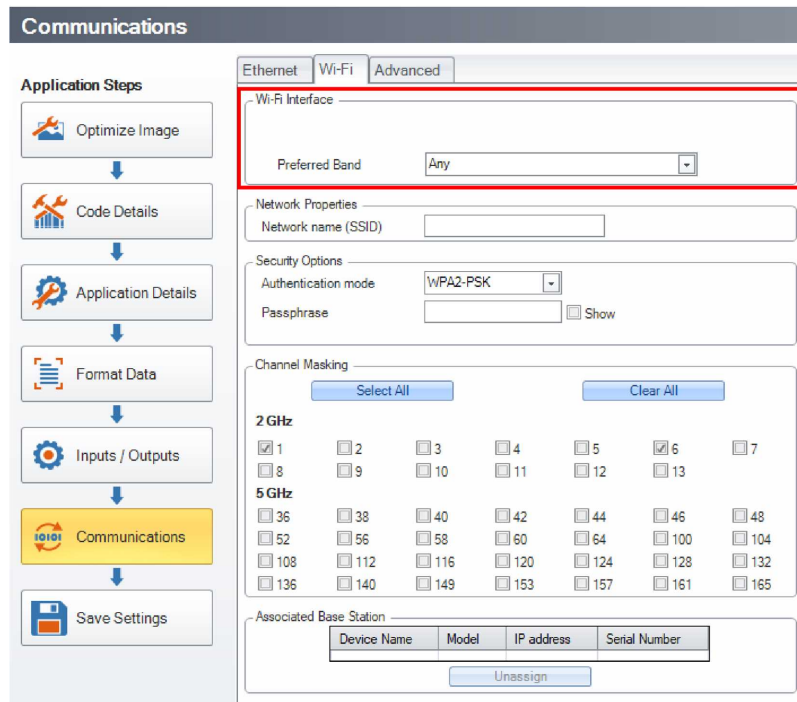


Note: Check the Wi-Fi connection in Windows if the reader is not listed in the DataMan Setup Tool.

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

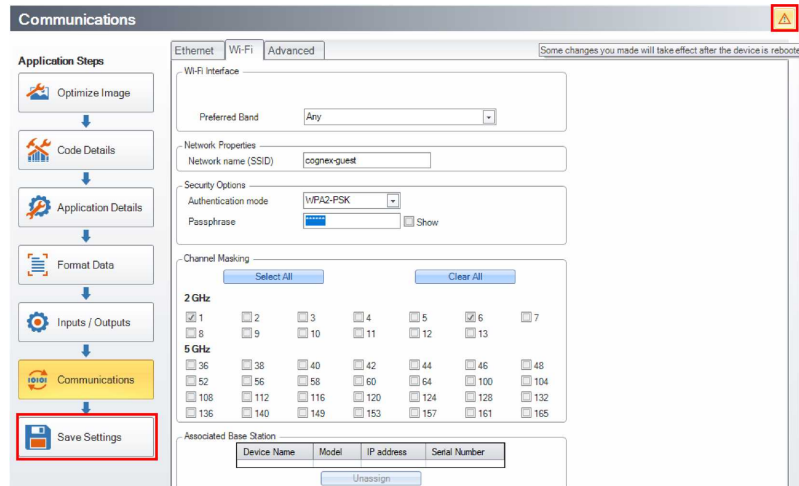
108 112 116 120 124 128 132

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.



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 networked 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.

It is possible to connect to the reader in Infrastructure mode using Wi-Fi connection. You need to reset the reader to factory defaults, connect to the reader in Access Point mode, and then use the **Wireless** tab under **Communication Settings** to activate and configure Infrastructure mode.

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 |
| WPA-PSK | TKIP, AES-CCMP | Passphrase |

| Authentication mode | Encryption | Requirements |
|---------------------|----------------|---|
| 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 | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 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 > Connect > BT Device** on the reader screen, or scanning the reader pairing 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 reader 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 reader 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.

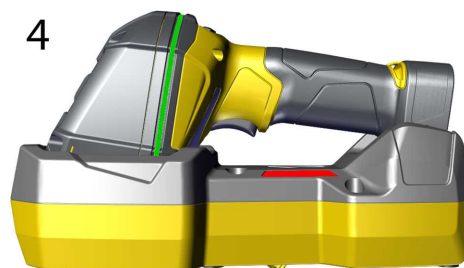
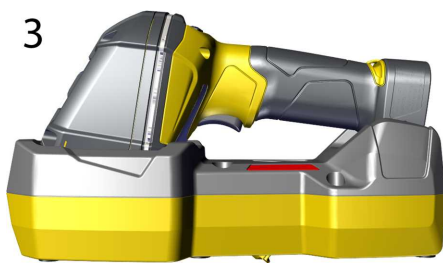
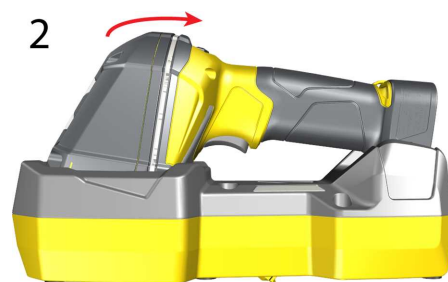
Charging

When you are reading codes with your wireless reader, blinking red status indicators 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.



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 ¹ | Status Indicator: Base Station |
|---|---------------------------------------|---|
| Battery low | flashing RED indicators | steady BLUE, indicating connection |
| Reader is charging in the base station | indicator is off until fully charged | steady RED, indicating battery charging |
| Reader is fully charged in the base station | steady GREEN indicators | steady RED, indicating contact status with the cradle |

¹ Every time the reader is connected to the base station, the reader is blinking BLUE to indicate the connection with the base station.

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.

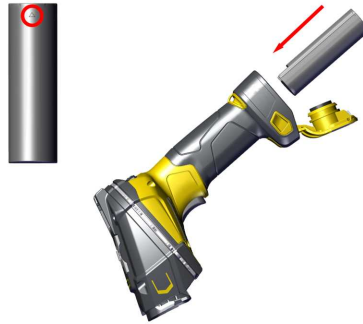
Note: You may need to shake the reader slightly.



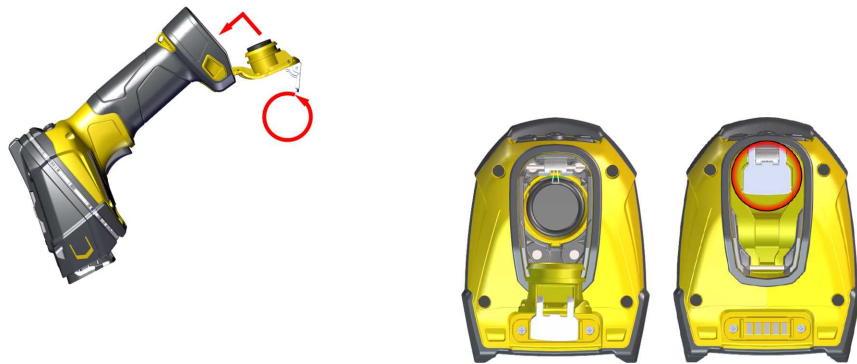
WARNING: The battery used in these devices may present a risk of fire or chemical burn if mistreated. Do not disassemble, heat above 60 °C (140 °F), or incinerate. Replace battery with Cognex DMA-BATTERY-5000 only. Any other battery may present a risk of fire or explosion.


- 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.

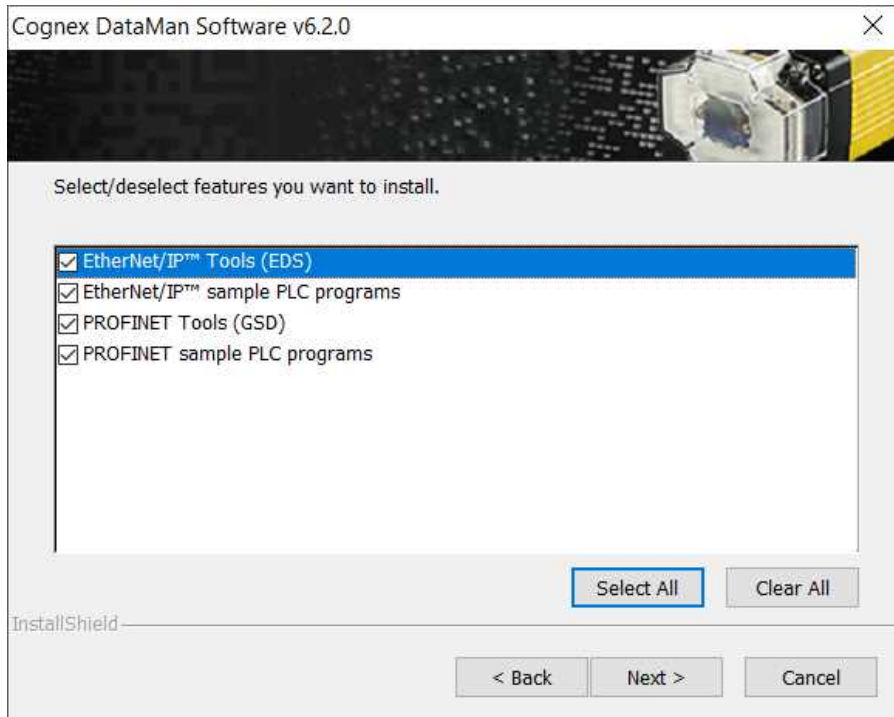
Reading Codes with the DataMan 8700

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](#).

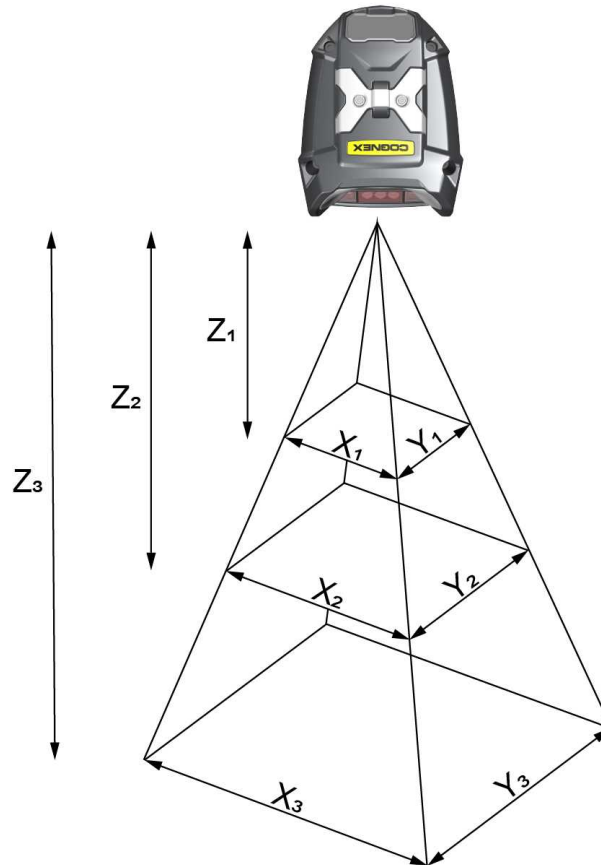
Trigger Types

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.

Field of View and Reading Distances

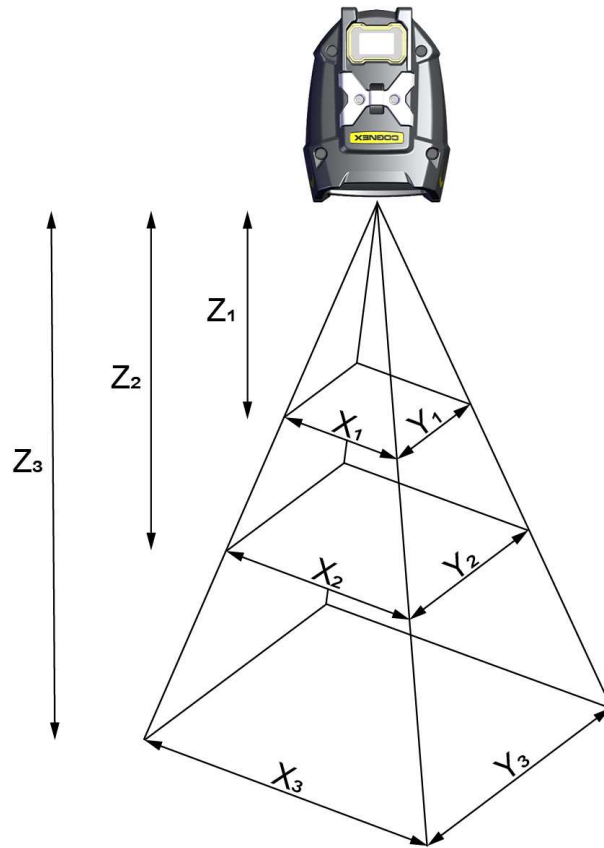


| DM8700 DX Field of View Values | | |
|----------------------------------|----------------------------------|---------------------------------|
| Working Distance | Horizontal Values | Vertical Values |
| $Z_1 = 40 \text{ mm (1.5 in)}$ | $X_1 = 63 \text{ mm (2.5 in)}$ | $Y_1 = 47 \text{ mm (1.8 in)}$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

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

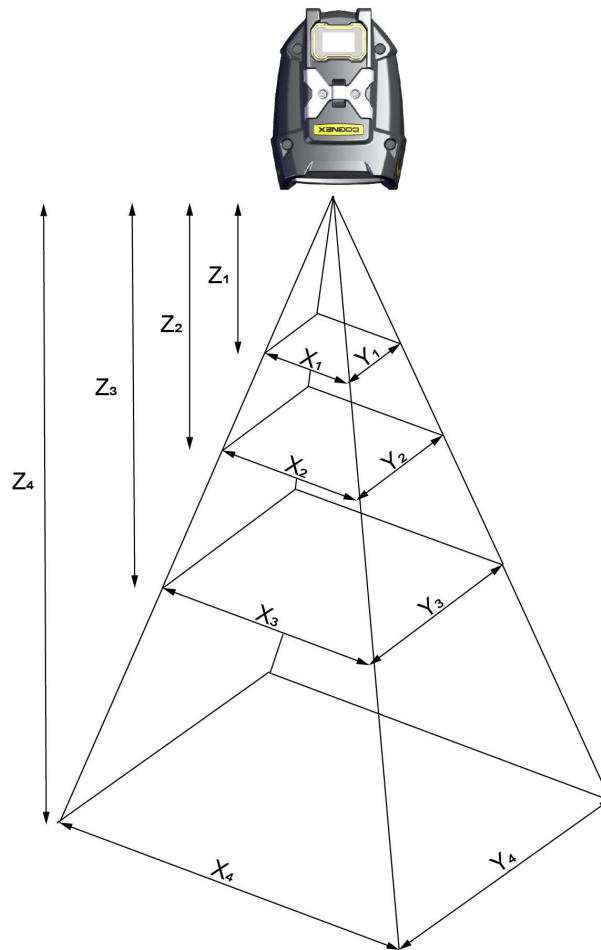
| DM8700 DX Depth of Field Values | | | |
|---------------------------------|--------|-------------------------------|--------|
| Distances in mm / 1D min code | | Distances in mm / 2D min code | |
| 18-58 | 3 MIL | 10-71 | 5 MIL |
| 10-175 | 10 MIL | 10-155 | 10 MIL |

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



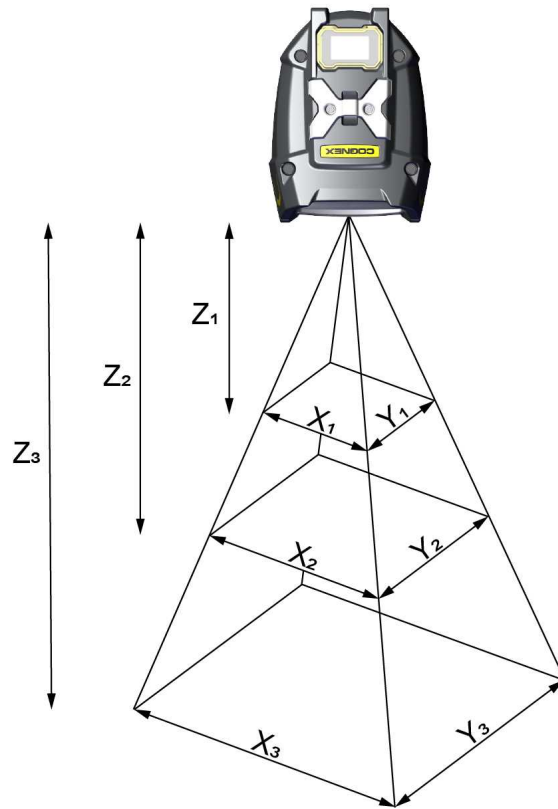
| DM8700 DQ Field of View Values | | |
|----------------------------------|----------------------------------|---------------------------------|
| Working Distance | Horizontal Values | Vertical Values |
| $Z_1 = 48 \text{ mm (1.9 in)}$ | $X_1 = 79 \text{ mm (3.1 in)}$ | $Y_1 = 60 \text{ mm (2.4 in)}$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

| 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 ₁ = 30 mm (1.2 in) | X ₁ = 11 mm (0.4 in) | Y ₁ = 15 mm (0.6 in) |
| Z ₂ = 180 mm (7.1 in) | X ₂ = 116 mm (4.5 in) | Y ₂ = 87 mm (3.4 in) |
| Z ₃ = 300 mm (11.8 in) | X ₃ = 193 mm (7.6 in) | Y ₃ = 149 mm (5.9 in) |
| Z ₄ = 650 mm (25.6 in) | X ₄ = 418 mm (16.5 in) | Y ₄ = 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.

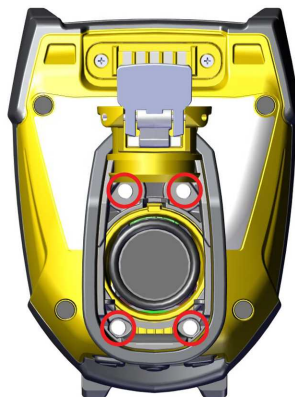
Replacing the Latch

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.

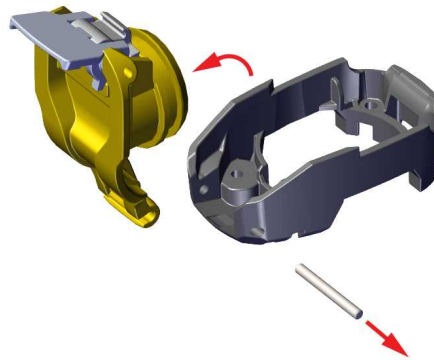


3. Remove the yellow latch and the gray base.

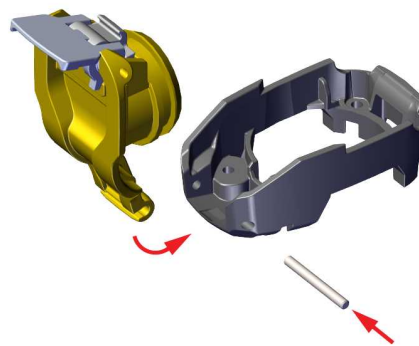


4. Remove the yellow latch from the gray base by opening it further until it snaps off the connector rod. Once the yellow latch is removed, you can slide the rod out of the gray base.

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.

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 |
| CE | 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 www.anatel.gov.br.</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 |

| Safety and Regulatory | |
|------------------------------|--|
| CE | <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 www.anatel.gov.br.</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.

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 |

| Safety and Regulatory | |
|---|--|
| Manufacturer | Cognex Corporation One Vision Drive Natick, MA 01760 USA |
|  | Intelligent 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. |
| 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 www.anatel.gov.br . |
| 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.

Please read these guidelines carefully before using your device.

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

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。

