Honeywell

CF4680 2D Imager Module

For Customer-Facing Designs

Installation Guide

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Web Address: sps.honeywell.com/us/en/products/sensing-and-iot

For patent information, refer to sps.honeywell.com/us/en/support/patents.

TABLE OF CONTENTS

Customer Support and Technical Assistance

For customer support, contact your local Honeywell Sales Representative or fill out the support form at sps.honeywell.com/us/en/contact-us.

Product Service and Repair

Honeywell International Inc. provides service for all of its products through service centers throughout the world. To obtain warranty or non-warranty service, return your product to Honeywell (postage paid) with a copy of the dated purchase record. To learn more, go to sps.honeywell.com/us/en/support/sensing-and-iot/technical-support.

Limited Warranty

For warranty information, go to sps.honeywell.com/us/en/support/productivity/warranties.

Product Agency Compliance

Note: *It is the OEM manufacturer's responsibility to comply with applicable regulation(s) in regard to standards for specific equipment combinations.*

Refer to www.honeywellaidc.com/compliance to review and download any publicly available documentation pertaining to the certification of this product in a given country.

CB Scheme

IEC 62368-1 Second Edition

UL/C-UL (Recognized component)

UL 62368-1 Second Edition

CAN/CSA C22.2 No. 62368-1-14, 2nd Edition

Ⓓ D-Mark Statement

Certified to EN 62368-1 Information Technology Equipment product safety.

LED Safety Statement

LEDs have been tested and classified as "LOW RISK GROUP" to the standard IEC 62471:2006.

ESD Precautions

The engine is shipped in ESD safe packaging. Use care when handling the scan engine outside its packaging. Be sure grounding wrist straps and properly grounded work areas are used.

Dust and Dirt

The engine must be sufficiently enclosed to prevent dust particles from gathering on the imager and lens. When stocking the unit, keep it in its protective packaging. Dust and other external contaminants will eventually degrade unit performance.

Product Environmental Information

Refer to www.honeywellaidc.com/environmental for the RoHS / REACH / WEEE information.

型号 (Model) : N4680
产品中有害物质的名称及含量 (Names and Content of Hazardous Substances in the Product)

部件名称 (Parts Name)	有害物质 (Hazardous Substances)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
成像式二维条码阅读器	x	o	o	o	o	o
印刷电路板	x	o	o	o	o	o
外壳	x	o	o	o	o	o

本表格依据 SJ/T11364 的规定编制。(The table is created by SJ/T11364 requirement.)
o: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T26572 标准规定的限量要求以下。(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in China’s GB/T26572.)
x: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T26572 标准规定的限量要求。(Indicates that this hazardous substance contained in at least one of the homogeneous materials for this part is above the limit requirement in China’s GB/T26572.)

CHAPTER

1 GETTING STARTED

What is the CF4680?

The CF4680 is a 2D imager module designed to be integrated into fixed mount enclosures, such as a self-service kiosk. It is optimized to read 1D and 2D bar codes on mobile phone screens, coupons, loyalty cards or tickets at close reading distances. The module includes the following:

- N4680 scan engine
- USB interface (USB-B connector)
- Exit window
- Movement detector
- User feedback pins

Required Accessories

- Standard USB-A to USB-B cable

Additional Documentation

Additional documentation is available at sps.honeywell.com/us/en/products/sensing-and-iot.

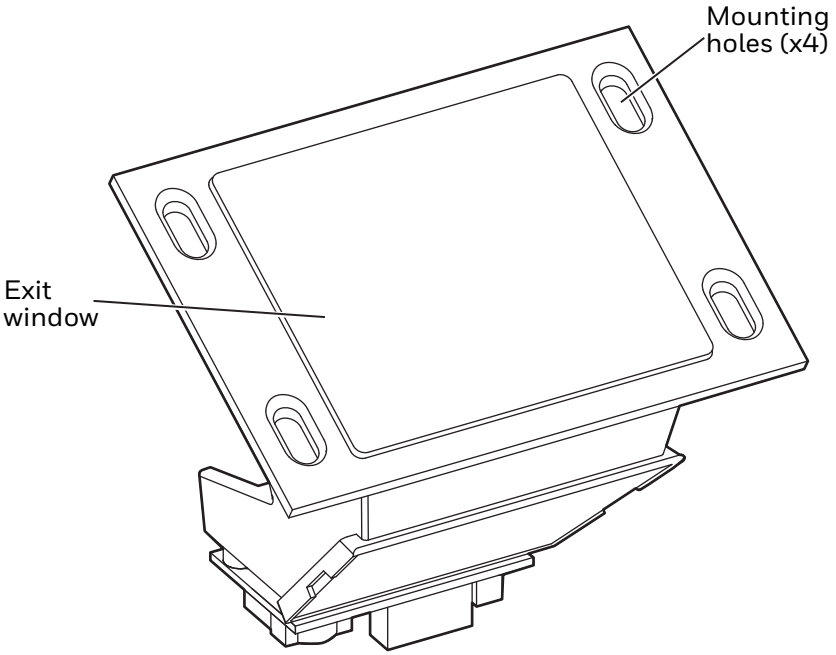
For information on configuring your CF4680 2D Imager Module and all configuration bar codes, see the *N4680/CF4680 User Guide* (contact your local Honeywell OEM representative).

Configuration

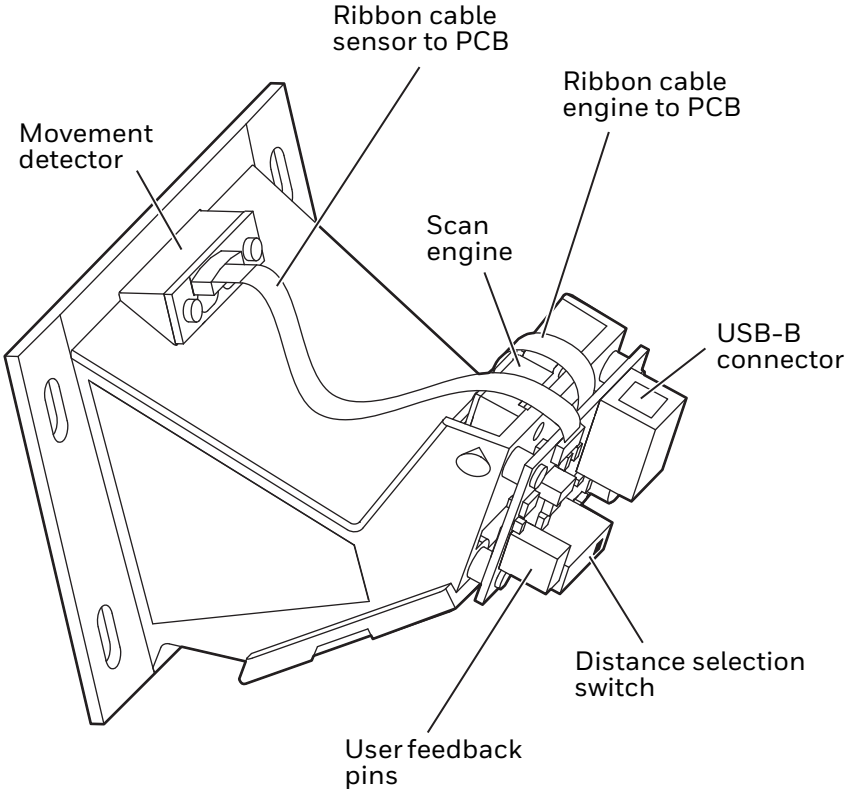
The CF4680 can be configured by reading configuration bar codes, using EZConfig for Scanning Tool or by sending serial commands. For more information see the *N4680 User Guide* as described above.

Views

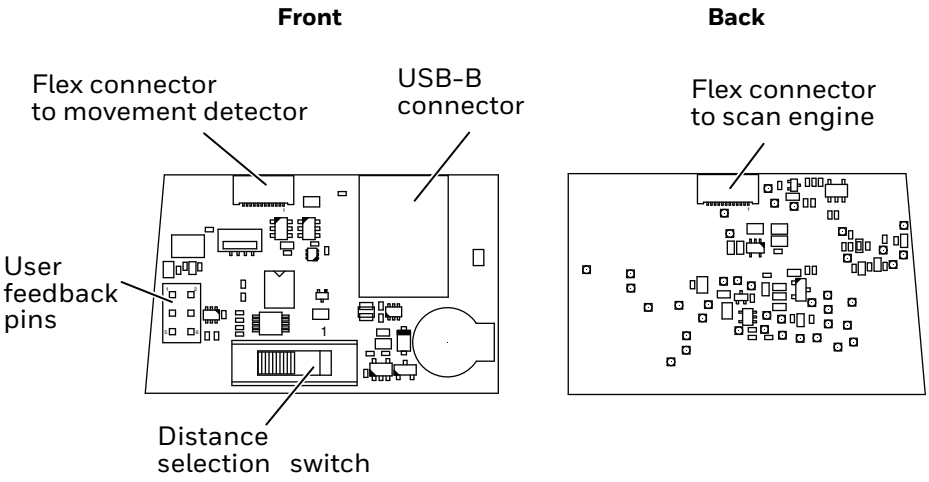
Front View



Back View



PCB

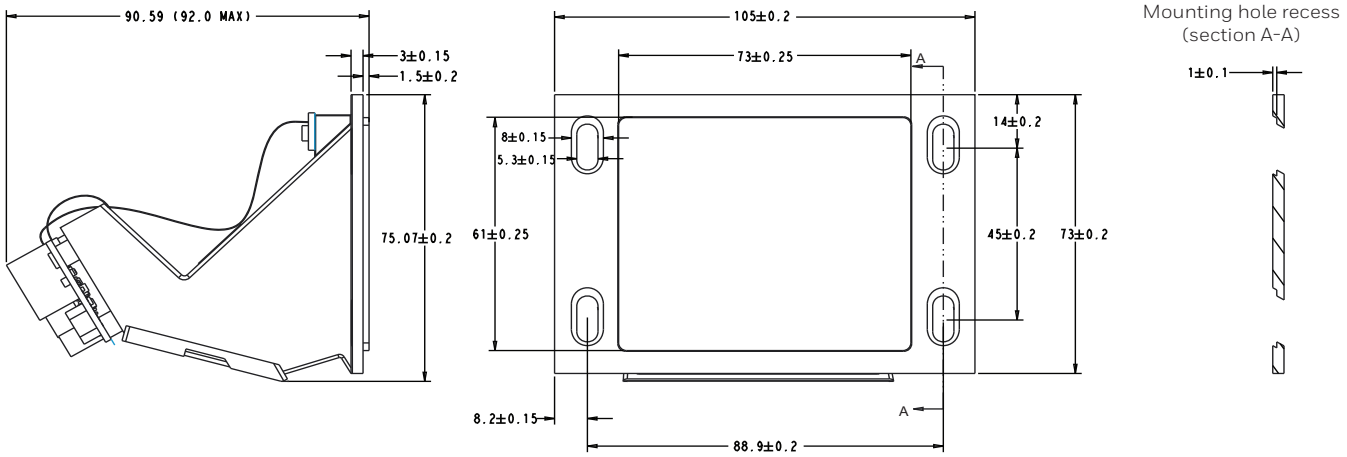


CHAPTER

2 INSTALLATION

Mechanical Dimensions

The CF4680 is designed for OEM kiosk integrations and is EVA (European Vending Association) compatible (dimension, exit window, and mounting holes).



Units are in millimeters

Connect to the Host

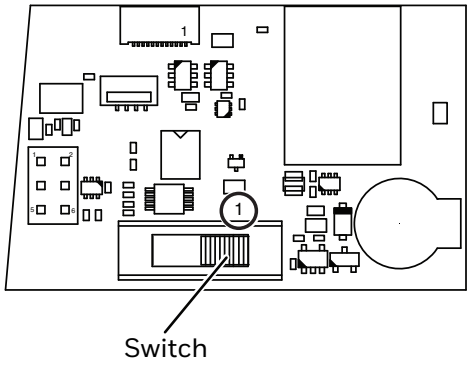
The CF4680 is connected to the host using a standard USB-A to USB-B cable (not provided). The default interface is USB PC Keyboard. To select a different interface, see Configuration on page 2.

1. Connect a standard USB cable (standard USB-A to USB-B) to the CF4680 and to the USB port on the host.
2. Power-up the host.
3. Verify that the CF4680 is on by presenting a bar code in front of the scan window. The white LED should turn on and read the bar code.

Note: *The CF4680 does not beep to indicate a good read unless this has been setup by the user with the user feedback pins (see User Feedback Pins on page 7).*

Distance Selection Switch

The CF4680 is equipped with a movement detector that triggers the scanner when an object is detected. It is configured using the distance selection switch located on the PCB. The CF4680 can detect objects from contact (on the exit window) up to 30 cm (12 inches) ±15% (typical tolerance - for reference only).

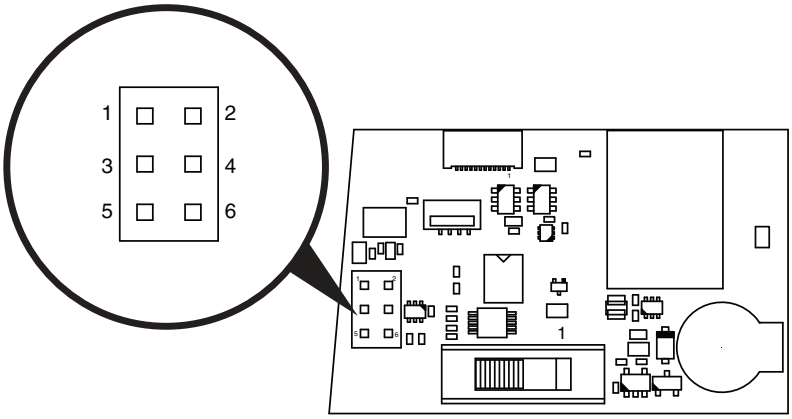


- Position 1—0 to 10 cm (4 in)
- Position 2—0 to 20 cm (8 in)
- Position 3—0 to 30 cm (12 in)

Note: *Only position 1 is indicated on the PCB.*

User Feedback Pins

User feedback pins give access to certain pins on the scan engine so the customer can add additional functions.



User Feedback Pins

Pin	Name	I/O	Description
1	Vout	Power	Power supply voltage output, 5V ±5%
2	nBeeper	Output	Open drain, 100K pull up on engine; idle high signal that can be active low DC or PWM controlled AC signal used to drive an external beeper.
3	nGoodRead	Output	Open drain, 100K pull up on engine; active low signal for driving a low current Good Read LED current. See explanation below.
4	nTrig	Input/ Output	Open drain, weak pull up on engine; Trigger is active low signal to trigger the engine. Leave the signal floating for inactive state and connect to ground for active state.
5	GND	Ground	Supply and signal ground.
6	GND	Ground	Supply and signal ground.

Connector

Use a compatible connector with a 2.54 mm (0.1 inch) pitch and 2.54 mm (0.1 inch) row spacing (for example Molex P/N 22-55-2061).

Beeper (Pin 2)

Pin 2 (nBEEPER) provides a PWM output for generating audible feedback to the user. This signal is used to indicate the status of the device using a variety of patterns and frequencies.

This signal is driven by an Open Drain NC7WZ07 device with a V_{Omax} = 5.5V through the 100K pull up resistor on the engine.

Installation Recommendations

- Do not cover the exit window with another window or replace it with a different window.
- Do not block the movement detector or place anything in front of it.
- Avoid direct light shining in to the scanner.

CHAPTER

3 TECHNICAL SPECIFICATIONS

CF4680 Technical Specifications

Physical Specifications

Parameter	Specification
Dimensions (typical)	W10.5 cm x H7.51 cm x D9.05 cm (W4.13 in x H2.95 in x D3.56 in)
Weight	50g ±5g
Interface	USB-B connector

Electrical Specifications

Parameter	Specification
Input Voltage	5 VDC ±0.25 V
Operating Current	216 mA
Standby Current	78mA (idle), 2.5mA (USB suspend)
Host System Interface	USB 2.0

Environmental Specifications

Parameter	Specification
Operating Temperature	-30°C to 60°C (-22°F to 140°F)
Storage Temperature	-40°C to 60°C (-40°F to 185°F)
Relative Humidity	0 to 95% relative humidity, non- condensing
Shock	18 shocks of 2500G for 0.4 msec @23°C (73.4°F)
Vibration	1G, (500Hz to 2000Hz)
Light Levels	0 to 100 000 lux
Illumination	White LED, Risk Group 1
MTBF	The engines have a calculated MTBF of greater than 776 975 hours based upon MIL-HDBK-217F (release December 1, 1991). The calculation is based on the part count method for the Ground Benign (GB) environmental conditions.

Scanning Specifications

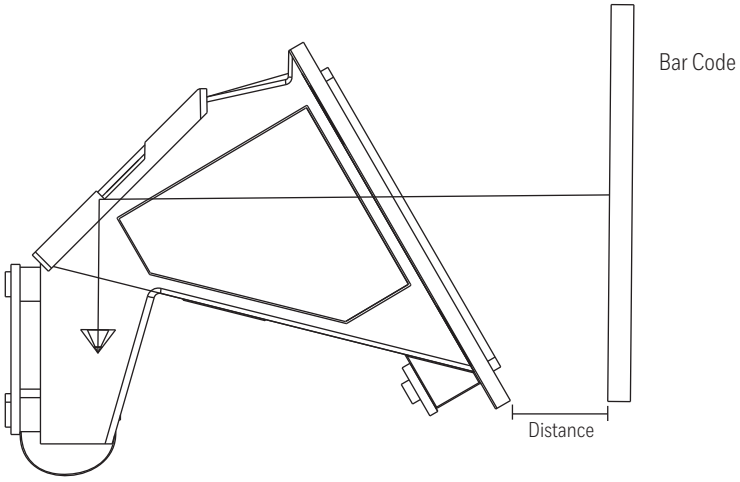
Parameter	Specification
Scan Pattern	Area Imager (640 x 480 pixel array)
Movement Detector	Configurable, 3 positions (0 to 30cm/12in) ±15% (typical tolerance - for reference only)
Motion Tolerance	2m/s (6.56 ft/s) max at 2 cm (0.87 in)
Print Contrast	20% 13 mil UPCA

Illumination

White LED illumination.

Depth of Field

Reading distances are measured from the lower side of product with the window tilted 30° as shown below:



Guaranteed Specifications

The guaranteed depth of field measurements used the following parameters:

- Distances are measured from the front of the exit window of the module.
- +23°C (+73°F), 0 lux
- Photographic quality codes
- Default configuration

Symbology	Near Distance (in/cm)	Far Distance (in/cm)
10 mil C39	0	16 cm / 6.2 in
20 mil C39	0	29 cm / 11.4 in
100% UPC-A	0	19.5 cm / 7.6 in
20 mil QR	0	19 cm / 7.4 in

Typical Specifications

The typical depth of field measurements used the following parameters:

- Distances are measured from the front of the exit window of the module.
- +23°C (+73°F), 200 lux, office lighting.
- Photographic quality codes
- Default configuration

Symbology	Near Distance (in/cm)	Far Distance (in/cm)
10 mil C39	0	25.5 cm / 10.1 in
20 mil C39	0	68 cm / 26.8 in
100% UPC-A	0	28.5 cm / 11.3 in
20 mil QR	0	26.5 cm / 10.5 in

Field of View/Resolution

Decode Field of View

Focus	CF4680
Horizontal Field Angle (degrees)	40° ±1.0°
Vertical Field Angle (degrees)	30° ±1.0°

Note: *DPI can be calculated based on the following formula:*
Horizontal DPI = 640 pixels/width of horizontal field of view (inches)
Vertical DPI = 480 pixels/width of vertical field of view (inches)

Bar Code Reading Angles

Note: *The following angles are not cumulative.*

Parameter	Specification
Specular Reflection Angle	±5°
Pitch	±50° typical for 13 mil UPC
Skew	±50° typical for 13 mil UPC
Tilt	360° 1D code also depends on length of code - up to 360° 2D code 360°

CHAPTER

4 MAINTENANCE

Clean the Exit Window

The exit window is made of chemically strengthened glass and is scratch resistant. To clean the window, use one of the following:

- Sani-Cloth® HB wipes
- Sani-Cloth® Plus wipes
- Super Sani-Cloth® wipes
- Isopropyl Alcohol wipes (70%)
- CaviWipes™
- Virex® 256
- 409® Glass and Surface Cleaner
- Windex® Blue
- Clorox® Bleach – 10%
- Gentle dish soap and a small amount of water (CF4680 is not waterproof)

Note: *For best scanner and movement detector performance, do not cover the existing exit window with another window or use a different exit window.*

Exit Window Replacement

If the exit window becomes scratched or damaged it can be replaced.

Caution: To prevent injury, use the protective gear as specified in the procedure.

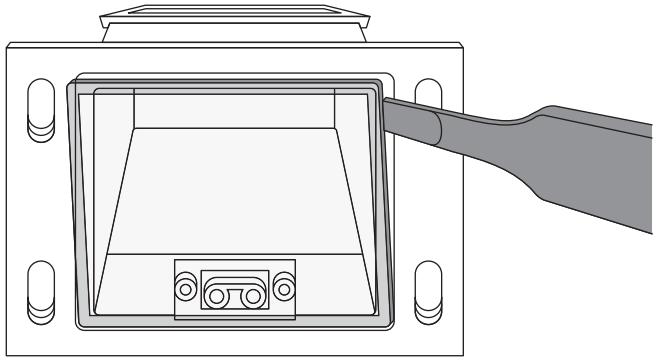
What You Need

- Protective eye wear
- Cut resistant gloves
- Pry tool (such as a spudger) made of plastic or with a plastic tip
- Cotton tipped applicators
- Isopropyl alcohol

Replace the Exit Window

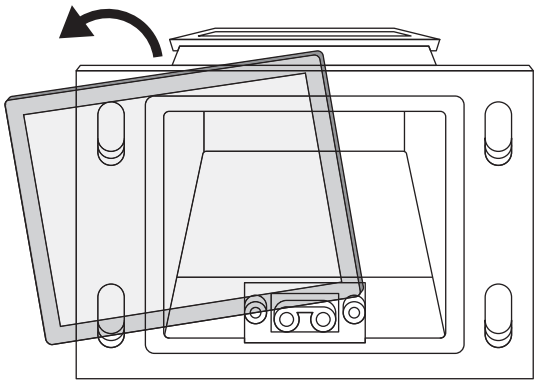
To replace the exit window:

1. Put on the protective eye wear and cut resistant gloves.
2. Insert the edge of the pry tool under the edge of the glass window. Slowly apply pressure to pry glass away from the plastic housing.

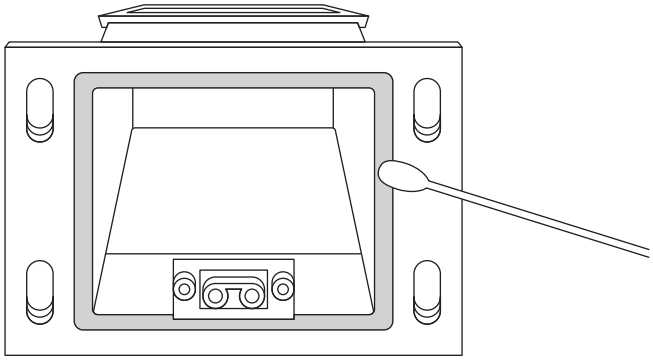


Caution: The pry tool should be made of plastic or have a plastic tip to avoid chipping, cracking, or shattering the glass window.

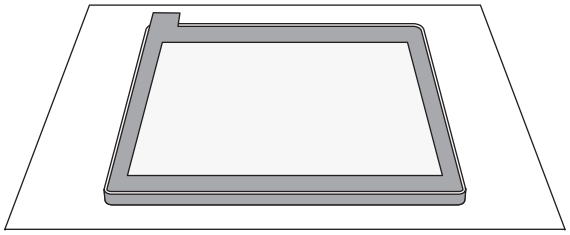
3. Once the glass is released, lift it way from the housing.



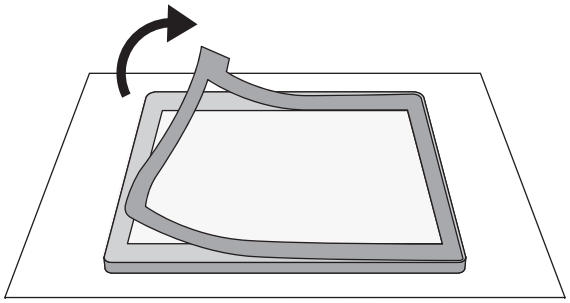
4. Remove remaining adhesive material around the window and clean with isopropyl alcohol and a cotton tipped applicator.



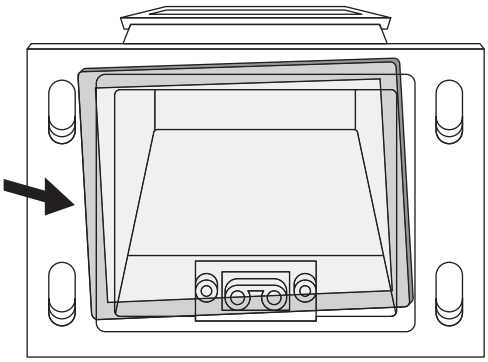
5. Inspect the interior and clean/remove any dust or debris.
6. Open and remove the top plastic cover on the new window with red release paper facing upwards.



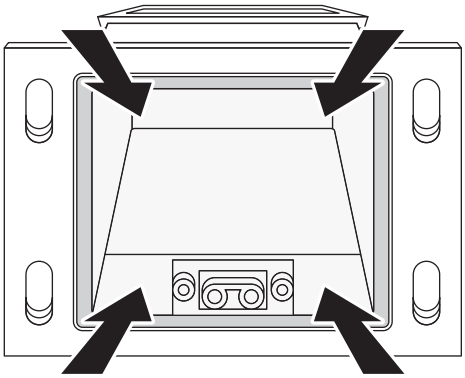
7. Remove the red release paper. **Do not touch the window with your fingers**!



8. Carefully apply the window (tape side down) onto the housing like the previous window.



9. Carefully press the window into place.



Upgrade the Firmware

To upgrade the firmware, use the EZConfig for Scanning Tool. To download the tool:

1. Access the Honeywell Technical Support Downloads Portal at https://hsmftp.honeywell.com/.
2. Register (if you haven't already), then login.
3. Browse to **Software/Barcode Scanners/Software/Tools and Utilities/EZConfig for Scanning** > **Current** and download the tool.

To upgrade the firmware:

1. Connect the scanner to the PC using the USB cable.
2. Launch EZConfig.
3. Click the **Connected Device** button. EZConfig detects your device.
4. Click the **Update Firmware** button and following the directions.

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sps.honeywell.com/us/en/products/sensing-and-iot

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