

DataMan[®] WebUI

Reference Manual

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Precautions

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

- The reader requires a UL or NTRL listed power supply with a 24 VDC output that meets the following rating requirements:
 - 24 VDC (+/- 10%) output connection using a UL or NTRL listed power supply
- Any other voltage creates a risk of fire or shock and can damage the components. Applicable national and local wiring standards and rules must be followed.
- 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.
- Do not install Cognex products where they are exposed to environmental hazards such as excessive heat, dust, moisture, humidity, impact, vibration, corrosive substances, flammable substances, or static electricity.
- 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.
- Do not expose the image sensor to laser light. Image sensors can be damaged by direct, or reflected, laser light. If your application requires laser light that might strike the image sensor, use a lens filter at the corresponding laser wavelength. For suggestions, contact your local integrator or application engineer.
- This product does not contain user-serviceable parts. Do not make electrical or mechanical modifications to product components. Unauthorized modifications can void your warranty.
- Changes or modifications not expressly approved by the party responsible for regulatory compliance could void the user's authority to operate the equipment.
- Include service loops with cable connections.
- 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.

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.

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About the DataMan WebUI

The DataMan WebUI provides an intuitive interface for managing your DataMan readers. The WebUI streamlines configuration and monitoring tasks. Key features include:

- **Live code review:** View real-time images of the codes being read by your DataMan reader directly within the WebUI.
- **Unified platform:** The DataMan WebUI is consistent across all models, simplifying deployment by consolidating common controls into a single page.
- **Real-time impact:** Explore how different options affect the reader in real time.
- **No additional downloads required:** You no longer need to download and install additional software.
- **Fast setup:** Save time by not having to download and install software. Systems take just a few minutes to deploy.
- **Programs:** Programs provide a convenient method of grouping and storing multiple read setups and device-level parameters, enabling you to easily switch your reader between different applications.
- The WebUI offers the same functionality as the DataMan Setup Tool, with the following differences:
 - Settings changes are automatically saved in WebUI, while DataMan Setup Tool tool requires you to manually save settings.
 - The DataMan Setup Tool tool only provides a program-level view.
 - The WebUI does not support external synchronization.

The following DataMan reader models are compatible with WebUI:

- DataMan 290 series
- DataMan 390 series

Connecting to WebUI

Perform the steps described to connect your DataMan reader to WebUI. These steps apply to both Ethernet and USB readers.

Note: USB readers always receive a random link local IPv4 address automatically to connect with.

Power on your reader and connect it to a PC. There are two ways of connecting your reader to the WebUI: using MAC address, serial number, host name, or IP address.

MAC address, Serial Number, or Host Name

1. Locate the MAC address and serial number on the sticker of your reader:



Alternatively, you can use the host name of the reader. By default, the host name of your reader is the model of your reader followed by the last six digits of the MAC address, using the following format: DM290-3BF53C.

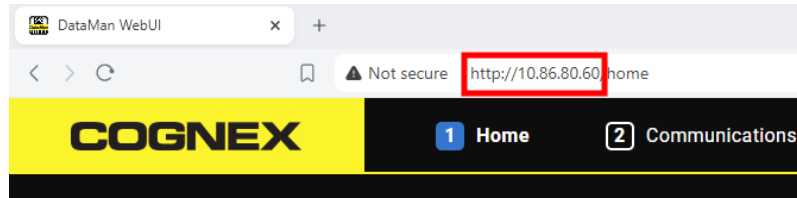
2. Type in the MAC address, serial number, or host name into the web browser followed by `.local`. For example: `00D0243BF53C.local`.

Note: Make sure that your computer and your reader are on the same subnet, otherwise you cannot use the MAC address or serial number to connect to the reader from your computer. This restriction does not apply if you are using the host name of the reader to establish the connection.

IP address

1. Find the IP address of the reader in Station Manager:
 - a. Download Station Manager. See the Cognex support site for additional information:
 - [DataMan 290 series](#)
 - [DataMan 390 series](#)
 - b. Use Station Manager to view and find the IP address of all Cognex devices on the network. To connect to a specific reader, select it and click **Connect**. Your browser automatically opens the WebUI.

2. Type your IP address into the web browser: For example: 10.86.80.60



Note: The WebUI uses a regular HTTP connection by default. If you want to set up a secure HTTPS connection, see [Secure Connection on page 40](#).

Troubleshooting

Setting your IP Address to DHCP

You must ensure that the Ethernet port of your computer is set to DHCP when connecting to a reader for the first time.

In Windows, go to **Network and Sharing Center > Your Ethernet Connection > Properties > Internet Protocol Version 4 (TCP/IPv4) > Obtain an IP Address Automatically**.

Using Static IP addresses

You can use the mDNS features of the WebUI on a static network.

Ensure that the reader and your computer are on the same subnetwork, and you can connect using the MAC address, serial number or host name to connect to the reader.

Connecting on a Managed Network

Managed networks with DNS servers behave differently than connecting the reader directly into your computer. Most internal corporate networks define different domains than `.local`, and have an internal DNS server that connects computers on the internal network through hostname.

.local Addresses do not Work

A managed network might define a different domain than `.local`. For example, an internal network may use `.computer.corporate.com` instead of `.local`. In this case you need to replace `.local` in all examples above with `.computer.corporate.com`.

To check the domain of your network:

1. Type in *About* in the search bar of your computer
2. Find Domain or Workgroup settings.
3. Verify that your local domain is listed.

Connecting through Device Name Works, but MAC and Serial do not

You can only connect using the Device Name on a managed network with a DNS server. This is because managed networks typically support a single non-IP address name for each device.

Connecting through USB-C

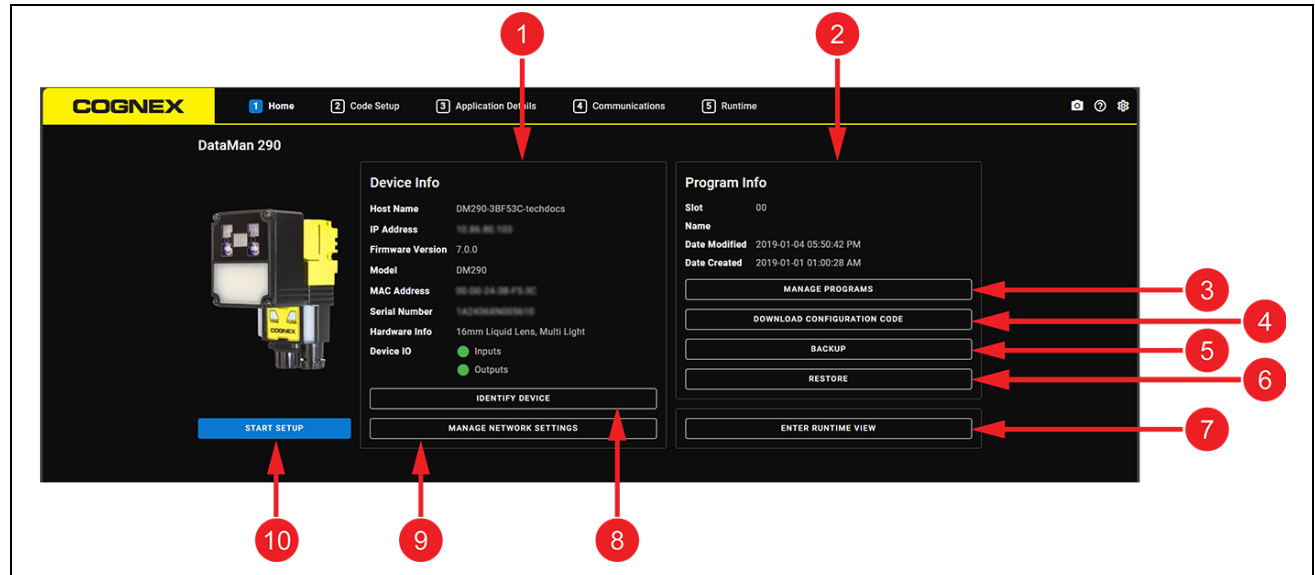
The WebUI does not support mDNS connections through USB-C.

Application Steps

WebUI provides a workflow that allows you to set up your reader through a series of guided steps.

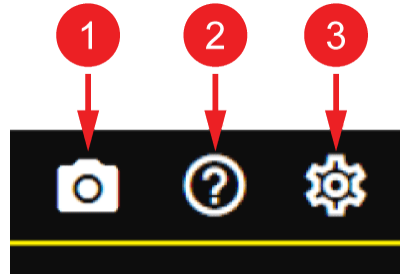
Home

The **Home** step provides an overview of your reader and serves as a central hub for reader management and configuration.



Number	Element
1	Information about the reader.
2	Information about the currently active program on the reader.
3	The Manage Programs button opens the window where you can manage the programs on the reader. For more information, see Program Management on page 34 .
4	The Download Configuration Code button downloads the current reader configuration as a series of 2D codes.
5	The Backup button opens the window to save a backup file.
6	The Restore button opens the window to upload the selected backup file.
7	The Enter Runtime View button takes you to the Runtime step, where you can see the reader reading barcodes in real time.
8	The Identify Device button activates the ring light indicator of the reader.
9	The Manage Network Settings button opens the connectivity settings panel.
10	The Start Setup button takes you to the Code Setup step, where you can perform the initial positioning and tuning for your application.

The top right corner has the following options:



Number	Element
1	The Trigger button manually triggers the reader.
2	The available help information, including page help and documentation: <ul style="list-style-type: none">• Click Page Help to get additional information for the step that you are on.• Click Getting Started Guide to open an external website with extended help materials.• Click Launch Help Walkthrough to get an interactive overview of the given step.
3	The Settings panel. For more information, see Settings on page 31 .

Code Setup

The Code Setup step allows you to set up, test, and review the positioning and tuning of your reader to ensure that your reader settings are optimized for the code that you are trying to read. Follow the substeps in the menu on the left side to configure your reader.

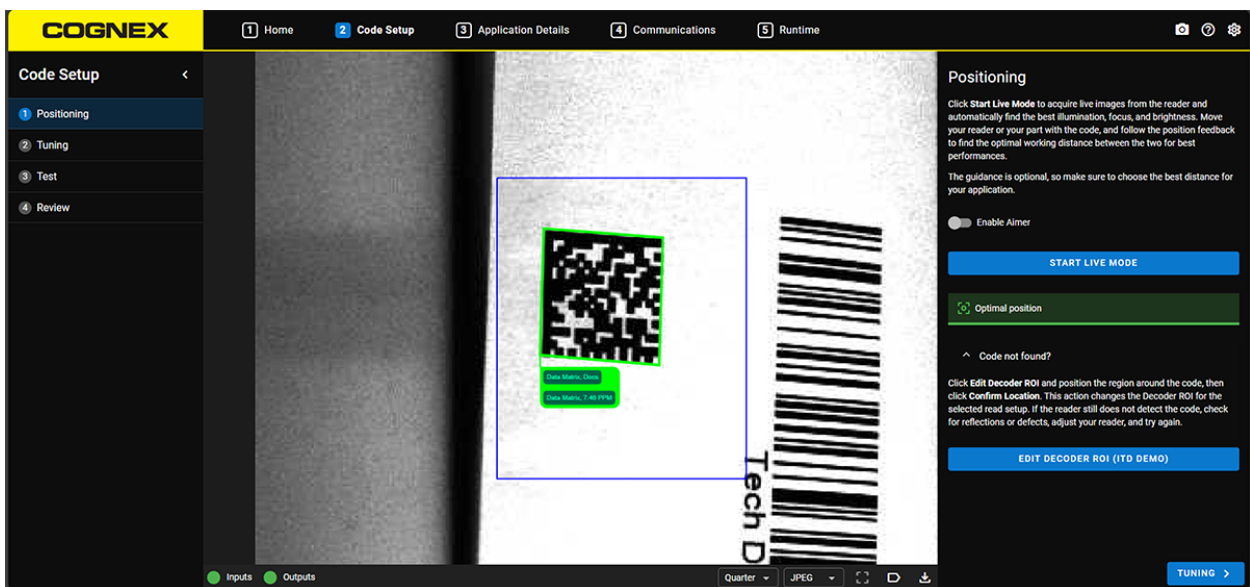
Positioning

The **Positioning** substep allows you to view live images from your reader, and read codes as you install and mount your reader.

The **Positioning** substep provides real time position guidance for the distance between the reader and the part, such as instructing you to move your reader closer to or further away from the part with the code.

Note: Position guidance is an optional guideline for finding the best possible decoding speed and consistency on challenging part markings. You can proceed with code setup regardless of your current position guidance.

You can trigger the reader manually using the **Trigger** button, or you can click **Start Live Mode** to automatically adjust the lighting, focus, and exposure for optimal results while you adjust the positioning.



Click **Start Live Mode** to acquire live images from the reader and automatically find the best illumination, focus, and brightness. Move your reader or your part with the code, and follow the position feedback to find the optimal working distance between the two for best performances.

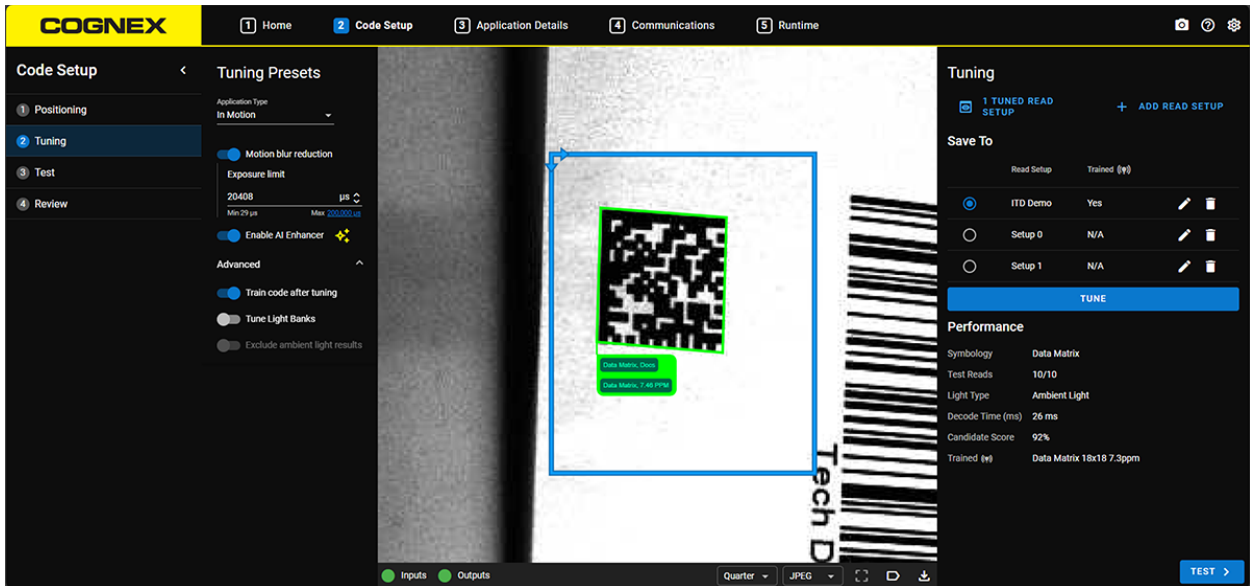
The guidance is optional, so make sure to choose the best distance for your application.

If the reader cannot find the code, open the **Code not found?** dropdown to mark the code manually.

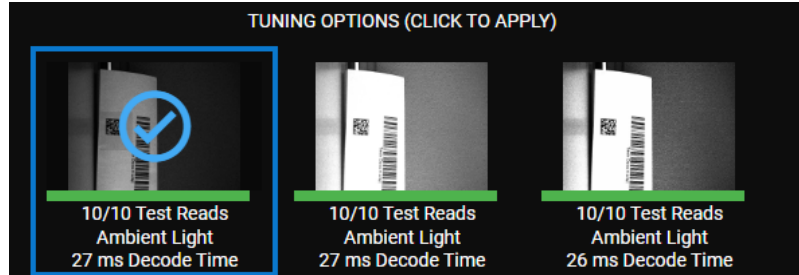
Click **Edit Decoder ROI** and position the region around the code, then click **Confirm Location**. This action changes the Decoder ROI for the selected read setup. If the reader still does not detect the code, check for reflections or defects, adjust your reader, and try again.

Tuning

The **Tuning** substep allows you to automatically find the best code reading settings for the reader.



Drag and drop the blue rectangle to define the decoder Region of Interest (ROI). The reader only decodes symbols that appear in the ROI. Click the **Tune** button to start the process of tuning the reader to the code. Once tuning is complete, WebUI displays the tuning options with the highest candidate scores, and the best candidate of the tuning options is automatically applied. You can switch to any of the other generated tuning options if you do not want to use the best candidate.



The tuning procedure optimizes the following image acquisition parameters to obtain the best decode time and decoder performance:

- Exposure
- Gain
- Light bank usage
- Image-filtering usage
- Focus
- Symbology

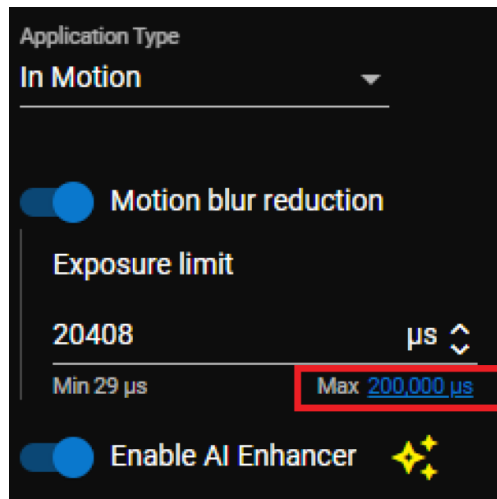
You can also configure your tuning settings in the **Tuning Presets** column. Open the **Advanced** dropdown to access advanced parameters.

Select from the preset options to refine the tuning procedure:

- **Application Type:** choose between **Stationary** or **In Motion**. If your application type is In Motion, enabling the AI enhancer can help reduce motion blur by calculating the maximum exposure.
- **Enable AI Enhancer:** use the AI Enhancer to decode damaged and degraded barcodes. Requires feature key. The AI enhancer uses artificial intelligence to identify the region of the image that contains the code. It then enhances that region to improve decoding performance. The **Visibility** slider highlights this region on the image, and does not affect decoding performance.
- **Advanced options:**
 - **Train code after tuning:** enable this option if the codes you want to decode have a consistent symbology type and characteristics. Training the reader with the tuned symbology and its characteristics can decrease the time required to decode subsequent symbols.
 - **Tune Light Banks:** enable to tune the reader illumination type.
 - **Exclude ambient light results:** the tuning procedure ignores images acquired without illumination.

For **In Motion** type applications with **Motion blur reduction**, you can use the **Max Exposure Calculator** to calculate the recommended maximum exposure time:

1. Click on the **Suggested max** number to open the **Max Exposure Calculator** dialog.



2. Enter the **Code Element Size** and **Max Line Speed** values.

The WebUI automatically calculates the recommended maximum exposure time.

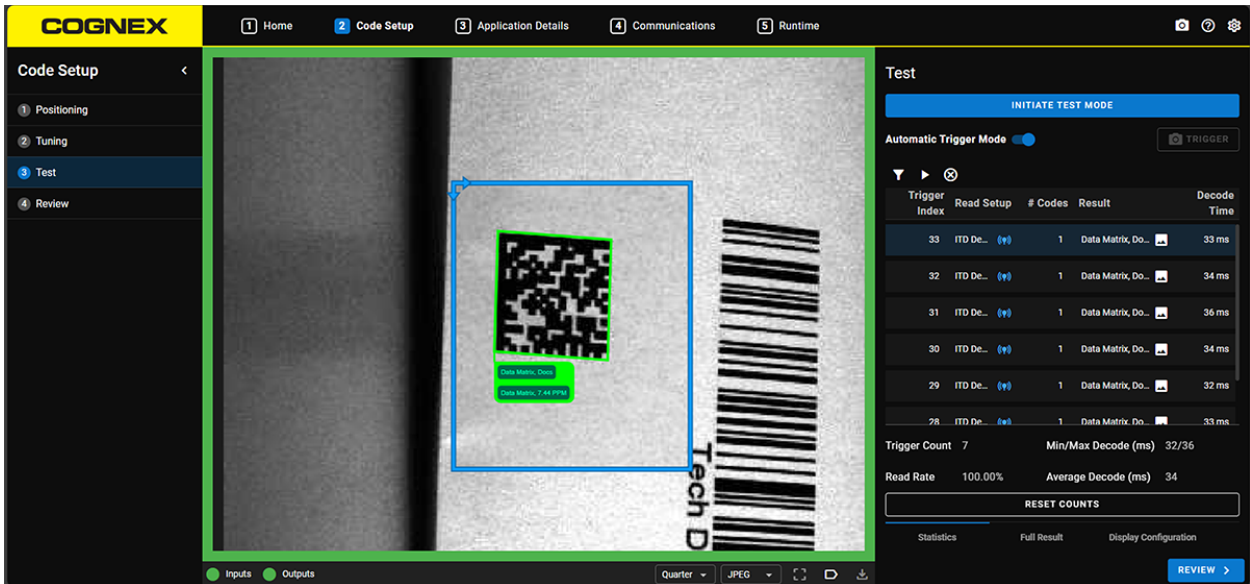
3. Click **Apply** to use the calculated value as your **Exposure limit**.

You can apply the tuning results to an existing read setup by selecting the target read setup in the **Save To** column. You can also click **Add Read Setup** to create a new read setup for the current tuning settings. You can use multiple read setups when there is wide variation between parts.

When you create a new read setup, you can copy the settings from an existing read setup, or you can perform tuning to save a new set of settings to the read setup.

Test

The **Test** substep allows you to test your tuning results without configuring a live trigger.



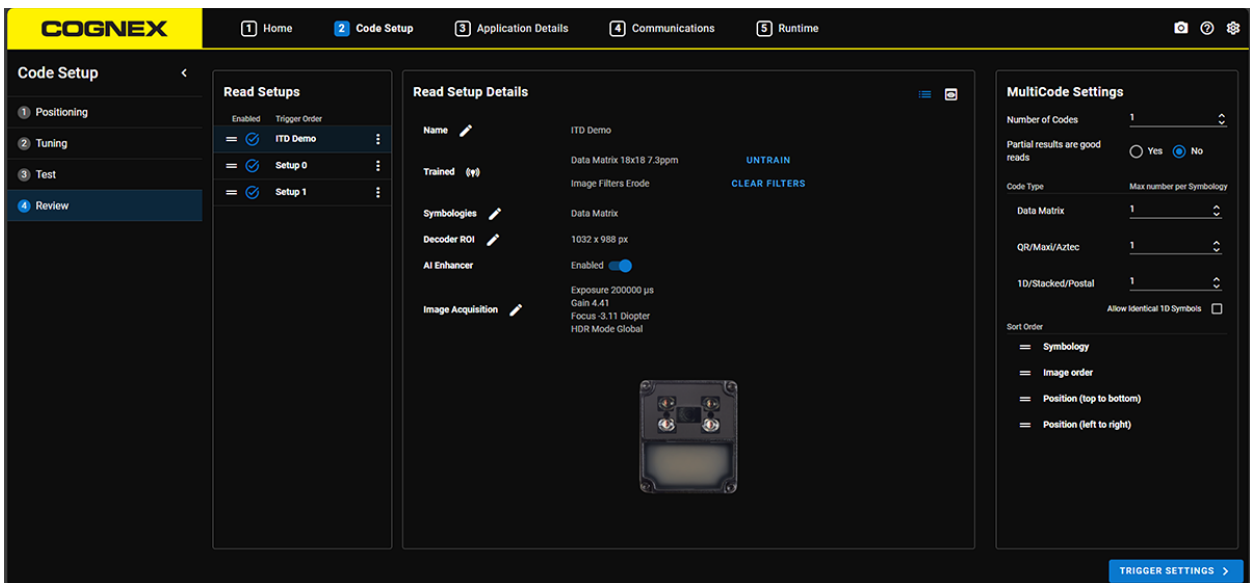
You can trigger the reader with the manual trigger button or switch to automatic mode. In **Automatic Trigger Mode**, the reader triggers as fast as possible.

Test mode automatically uses all enabled read setups. You can select the read setups you want to use for runtime in the **Review** substep.

Use the result history and statistics to determine if your current reader settings are suitable for your application.

Review

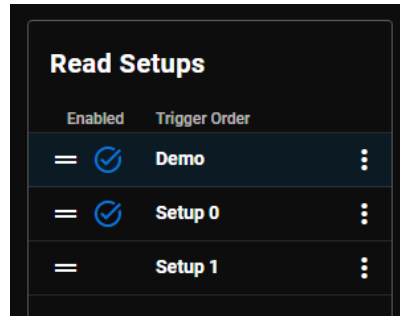
The **Review** substep allows you to view and modify your tuned settings, select which read setups to enable, delete read setups, or compare settings between them.



The **Review** substep provides a high-level overview of the tuning parameters, such as symbology, gain, and exposure for each read setup. You can also edit current read setups and configure **MultiCode Settings**.

A read setup is a set of image acquisition and decoding settings. The reader cycles through all enabled read setups until the trigger ends or the read result is complete. Use the **Read Setups** pane to enable or disable read setups, and change their **Trigger Order** by dragging the handles.

Manage all your configured read setups on the **Review** substep. The checkmark near a read setup means that this setup is currently enabled.



Click the three dots to the right of a read setup to open the read setup dropdown, where you can edit, compare, disable, or delete that setup.

You can check and configure each read setup individually. The settings shown in the **Read Setup Details** pane are based on the results of the **Tuning** substep. You can also view the image from which the tuned settings were derived, and compare the settings of two different read setups.

The following information is available for each read setup. Click on the pen icon to change a given setting:

- **Name:** The name of the currently selected read setup.
- **Trained:**
 - The type and size of the code that was trained during the Tuning step. Click **Untrain** to reset the trained code.
 - The filters that the Tuning procedure applies to the image to achieve the tuned image. Click **Clear Filters** to remove the filter.

Note: Use Setup Tool or DMCC commands to modify the training and filter configuration.

- **Symbologies:** The list of enabled symbologies that the reader recognizes.
- **Decoder ROI:** The Region of Interest (ROI) the decoder operates on.
- **AI Enhancer:** Enable or disable the use of AI enhancer.
- **Image Acquisition:** The exposure, focus, gain, and HRD settings. Configure which light bank of the reader is on by clicking on the reader image and selecting a light bank.

Use the **MultiCode Settings** pane to configure how to read multiple codes in one image. Determine the overall number of codes to be read, and the expected number of codes for each symbology. If you enable the **Partial results are good reads** toggle, the reader returns a successful read result when the image contains fewer codes than specified with **Number of Codes**. The **Sort Order** list allows you to determine how the reader reports multiple results:

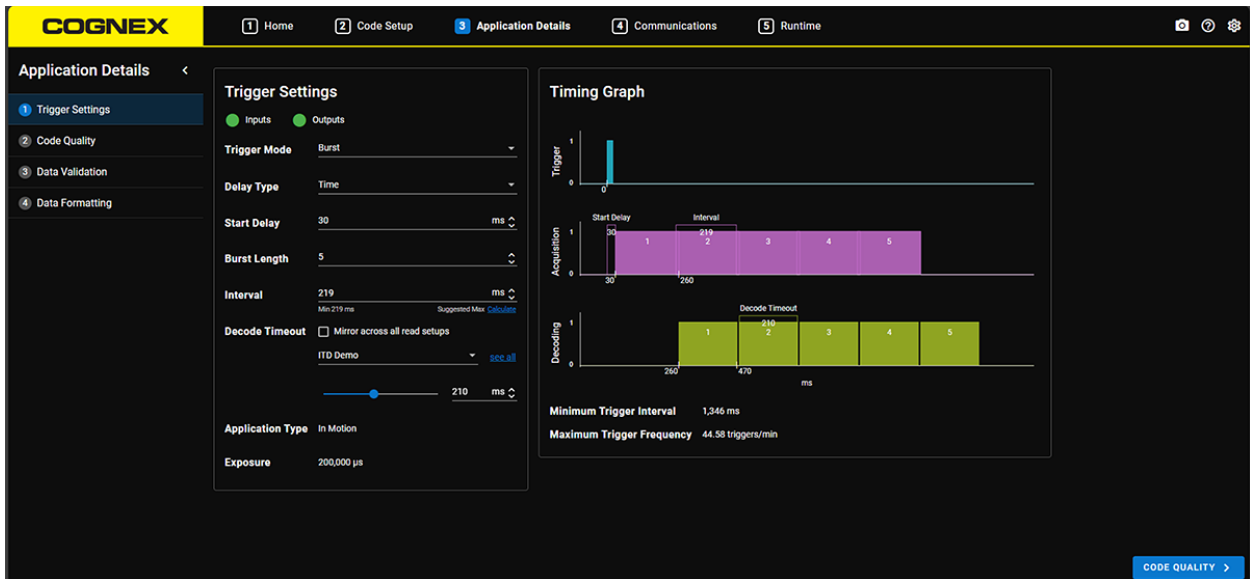
- Use the handles to change the priority order.
- The **Position (top to bottom)** and **Position (left to right)** options refer to the center of the symbols.
- Use **Image order** for Burst or Continuous trigger modes, where symbols that are decoded in earlier images are reported before symbols decoded in later images.

Application Details

The **Application Details** step allows you to configure the details of your application. Follow the substeps in the menu on the left side to configure your application.

Trigger Settings

The **Trigger Settings** substep allows you to configure your runtime processing and decoder timeout settings. This substep features a timing graph that reflects the trigger settings to give feedback on the current application setup.



Triggers that initiate a decode attempt either come from a source external to the reader or are generated by a timing mechanism internal to the reader itself.

When the reader is configured to respond to an external trigger, any of the following events signal the reader to perform a decode attempt:

- Pushing the physical button on the reader
- Sending the DataMan Control Command (DMCC) **trigger** when connected to the reader over a serial or Ethernet connection
- Receiving a digital input signal over the trigger lines of the I/O cable
- Clicking the **Manual Trigger** in WebUI

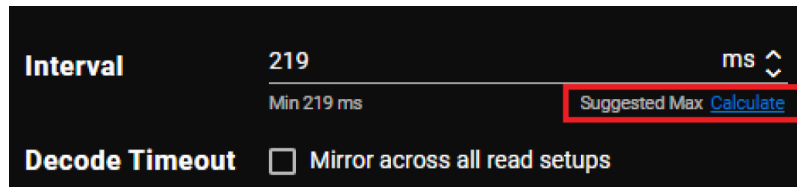
The following trigger types are available:

- **Self** trigger mode continuously acquires images at a configurable interval, and attempts to decode symbols found.
- **Single** trigger mode acquires a single image and attempts to decode any symbols found.
- **Burst** trigger mode acquires a set number of images and decodes until the expected codes are found. You can configure the number of images within each burst and the interval between each image acquisition. This trigger mode supports a read timeout. This timeout is the maximum amount of time spent on each image in the burst, and not on the burst as a whole.

- **Continuous** trigger mode acquires images as long as the trigger signal remains active, where the reader acquires images at a specific interval and attempts to scan any symbols each successive image contains. If the desired number of codes is decoded, the reader ends the trigger and sends out results. Until the desired number of codes is decoded, image acquisition continues as long as the trigger signal remains active. If the trigger signal ends and the desired number of codes is not decoded, the reader returns a NoRead result.

For **Burst** and **Continuous** trigger modes, you can use the **Max Interval Calculator** to calculate the recommended maximum interval:

1. Click **Calculate** to open the **Max Interval Calculator** dialog.



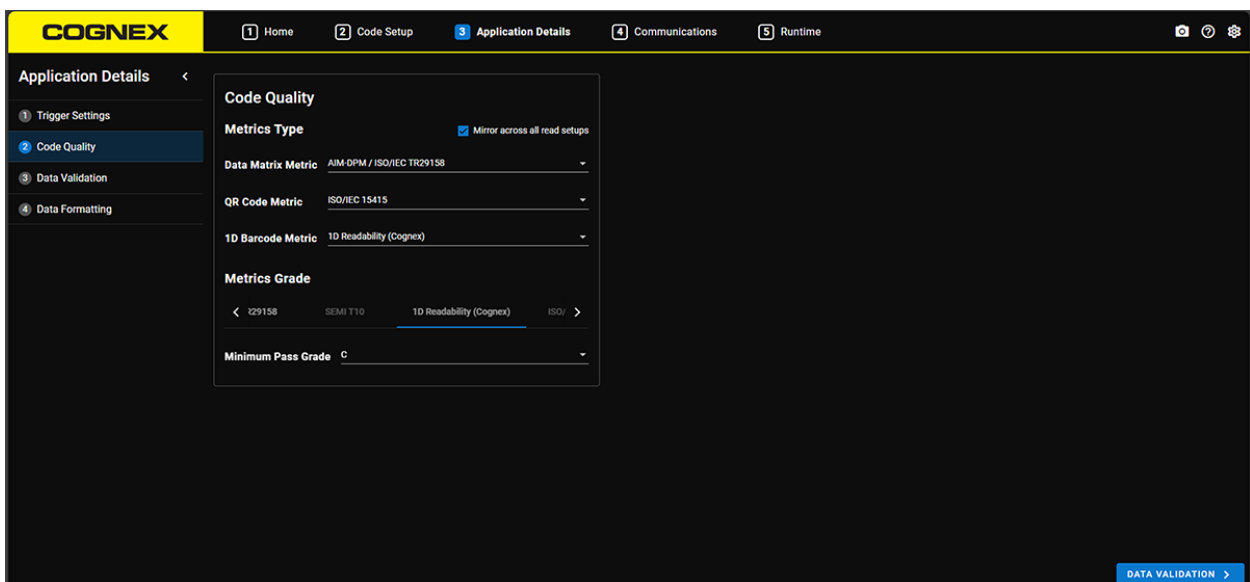
2. Choose your **Application Type** to display different options for calculating the necessary data:
 - Select **Field of View Size** to calculate the longest possible interval time by measuring the physical **Field of View Size** and giving the **Maximum Line Speed** and the size of the **Longest Code**.
 - Select **Lens Distance to Code** if you want to give the distance of the code from the lens. Give the **Lens Distance** and select the **Motion Direction** in which the code is traveling. Here you also need to give the **Max Line Speed** and the size of the **Longest Code**.
 - Select **Code Element Size** to calculate with the size of the most narrow code element. Press the **Trigger** button to read your code and obtain the **Code PPM** value. You also need to give the **Motion Direction** in which your code is traveling in, the **Max Line Speed** and the size of the **Longest Code**.

The WebUI automatically calculates the recommended maximum interval time when you fill in all the required fields.

3. Click **Confirm** to use the calculated value as your maximum **Interval** time.

Code Quality

The **Code Quality** substep allows you to validate that the symbols you use meet the quality guidelines as outlined in one of the code quality standards supported by Cognex. Codes get an overall grade after grading all or selected metrics for a given code quality standard.

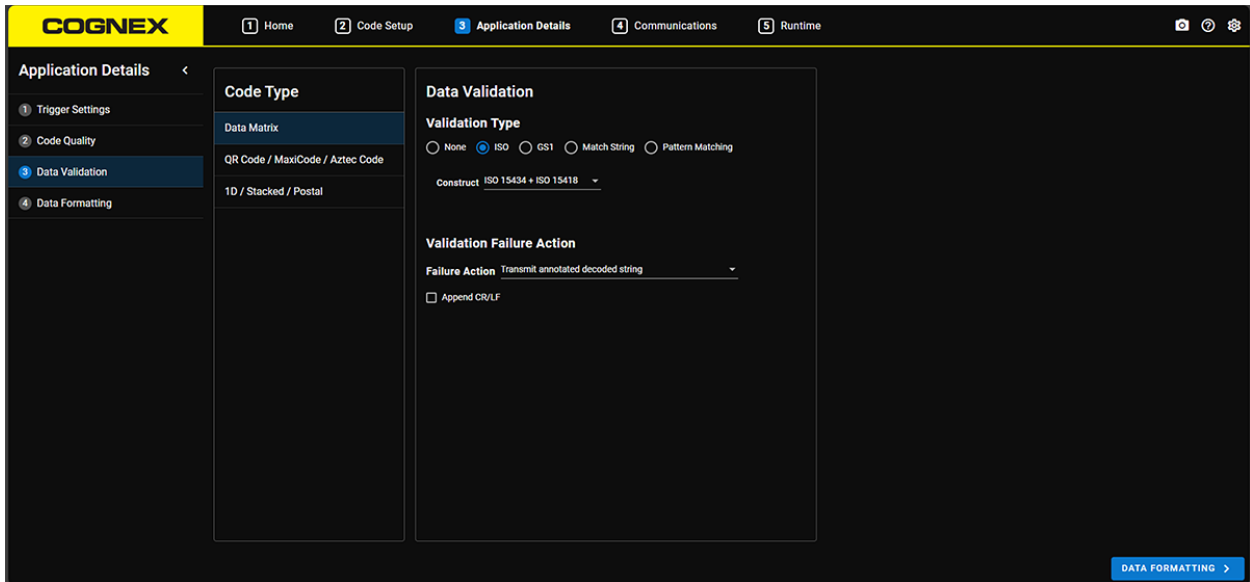


For more detailed information on specific code quality standards and their metrics, see the *DataMan Communications and Programming Guide* or the corresponding ISO standard documentation, which can be found at www.iso.org.

Configure a grade threshold for acceptable code quality with the **Minimum Pass Grade** toggle.

Data Validation

The **Data Validation** substep allows you to confirm that the data encoded by a symbol is in the correct format for a particular company, industry, or international standard. The settings shown on the page depend on the **Validation Type** you choose.



Select the **Code Type** and assign a **Validation Type** to it. Use the **Match String** option to specify an exact string to match against the string encoded by the symbol. Only symbols containing a string that matches the specified string generate a **Pass** result. Use the **Pattern Matching** option to input a regular expression to confirm if the data string includes a specific string of characters.

- Use the **None** option if there is no need for any validation type.
- Use the **ISO** option to specify an ISO standard for the strings.
- Use the **GS1** to specify an application identifier for the strings.
- Use the **Match String** option to specify an exact string to match against the string encoded by the symbol. Only symbols containing a string that matches the specified string generate a **Pass** result.
- Use the **Pattern Matching** option to input a regular expression to confirm if the data string includes a specific string of characters.

Note: The **Match String** function is case sensitive.

If a code fails validation, you can configure the reader to output a specific string in the **Outputs** substep.

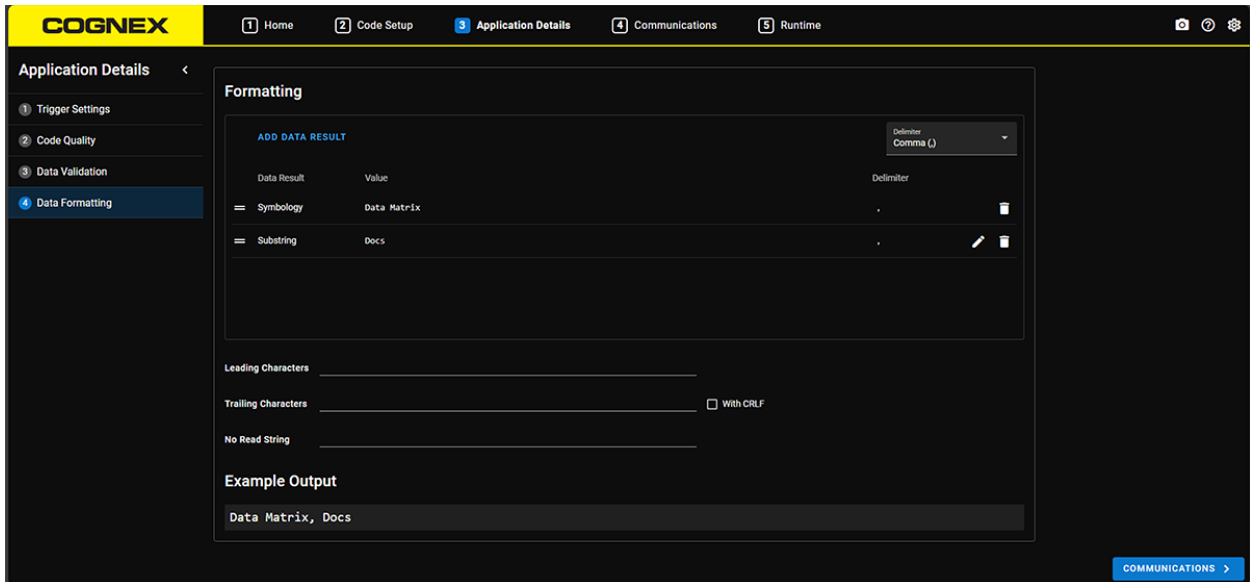
Choose one the following options for the Validation Failure Action:

- **Transmit “Validation Failure”:** The reader outputs the string “*Validation Failure*” after a code fails validation.
- **Transmit “Validation Failure” + decoded string:** The reader outputs the string “*Validation Failure*” followed by the complete decoded string.
- **Transmit “Validation Failure” + quoted decoded string:** The reader outputs the string “*Validation Failure*” followed by the quoted part of the decoded string.

- **Transmit annotated decoded string:** The reader outputs the decoded string along with information on the error type and error location in the string.
- **Transmit nothing:** The reader outputs no information when data validation fails.

Data Formatting

In the **Data Formatting** step, you can construct a customized output string using pre-defined building blocks. You can also test your output before proceeding to the next step.



The output string starts with the text you enter in the **Leading Character** field. It continues with the **Data Results** you add, in the order you define. Each item is separated by the **Delimiter**. The output string ends with the text in the **Trailing Character** field.

To construct the output string:

1. Click **Add Data Result** to add a new item to the data formatting.
2. Reorder your data by dragging items to their new position.
3. Configure data formatting options that apply to the whole output string.
4. Open the **Delimiter** dropdown and select what string delimiter you want to use.
5. In the **String Options** section, define the leading characters, trailing characters, and No Read string you want to use.
6. Make sure to review your final output in the **Example Output** field before moving on to the next step.

You can configure options that impact that overall output string, such as specifying the **Leading Character** and the **Trailing Character**. The reader transmits the **No Read String** if it cannot read a given code. This can be useful for verifying that the reason you do not see any output is because the reader did not read data.

You have to configure an SNTP server to add timestamps to the output string.

Data items to construct your output string:

Category	Data	Description
----------	------	-------------

Result	Full string	All of the characters encoded in the symbol.
	Sub-string	A sub-string of the characters encoded in the symbol. You must specify a range for the sub-string when using this data. In Simple mode, you have to provide the index of starting and ending characters to construct the sub-string. In Advanced mode, you can provide a range, such as <i>1-3,5,8,10-</i> , for selecting the characters from the full string.
	Symbology	The symbology of the decoded symbol.
Formatting	Space	A space character.
	CR/LF	Carriage Return with Line Feed.
	Tab	A tab character.
Result Details	Symbology Identifier	The symbology identifier as specified by ISO/IEC 15424:2008.
	Symbol Size	The size of the symbol in pixels.
	Module Size	The width or height, in pixels, of each module in the symbol.
	Code Position	The image coordinates of each corner of the decoded symbol.
	Code Center	The image coordinates of the center of the decoded symbol.
	Code Orientation	The orientation of the decoded symbol reported in degrees. Clockwise rotations of the decoded symbol are indicated as positive changes in orientation.
	Contrast	A value, between 0 and 1, to indicate the total amount of contrast within the decoded symbol. A high value indicates the light and dark modules in the symbol have a wide range of grey values, while a low value indicates the light and dark modules consist of similar grey values.
	Unused Error Correction	The amount of available unused error correction in the symbol. Error correction is a method of reconstructing or replacing data that is lost through symbol damage. A value of <i>100</i> is ideal. A 1D symbol always returns <i>-1</i> .
Metadata	Input string	The received serial or Ethernet input string.
	Passed Validations	The number of validation attempts the decoded symbol passed.
	Failed Validations	The number of validation attempts the decoded symbol failed.
	Result source	The name of the reader.
	Code Quality Grade	The grade that the code receives during validation.
Timing	Decode time	The amount of time, in milliseconds, it took the reader to decode the symbol. This period of time does not include image acquisition, pending image processing, communication time and additional processing such as data formatting.
	Trigger time	The amount of time, in milliseconds, that elapses between receiving the trigger and completing the decode operation.
	Filter time	The duration of filtering in milliseconds.

Timestamp	Trigger Creation Local Time	The local time when the reader created the trigger.
	Trigger Creation UTC Time	The UTC time when the reader created the trigger.
	Trigger Execution Local Time	The local time when the reader executed the trigger.
	Trigger Execution UTC Time	The UTC time when the reader executed the trigger.
	Image Acquisition Local Time	The local time when the reader acquired the image of the symbol.
	Image Acquisition UTC Time	The UTC time when the reader acquired the image of the symbol.
	Subresult Creation Local Time	The local time when the reader created the subresult.
	Subresult Creation UTC Time	The UTC time when the reader created the subresult.
	Current Local Time	The current local time.
	Current UTC Time	The current UTC time.

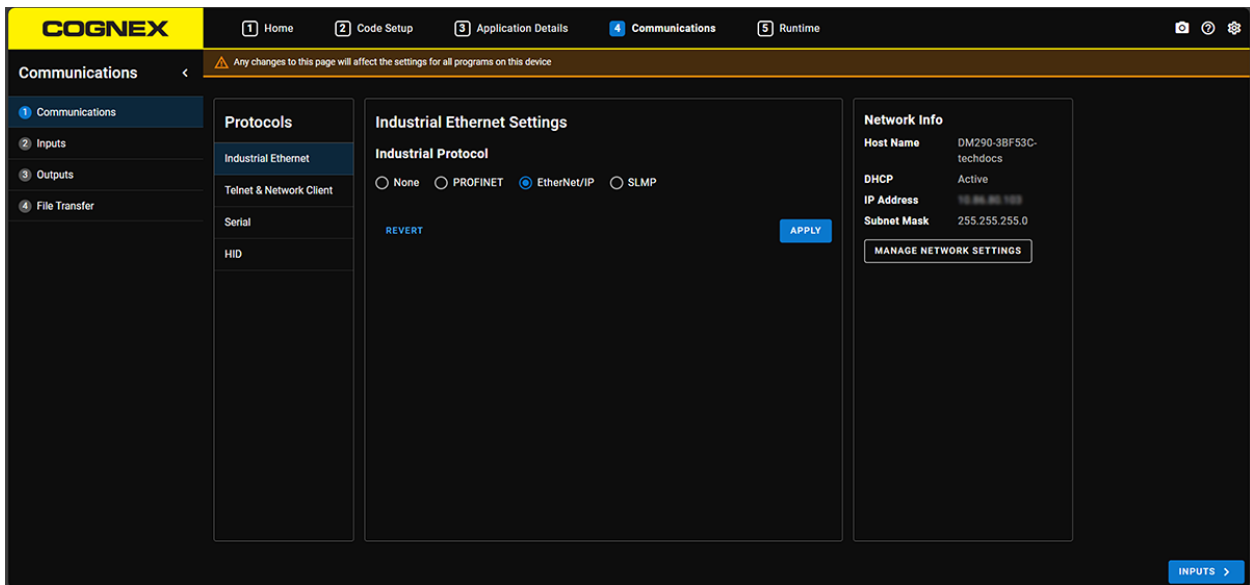
Communications

The **Communications** step allows you to configure the network, I/O, and file transfer settings for your reader. Follow the substeps in the menu on the left side to configure your communications settings.

Note: Any changes you make on the **Communications** step are applied to all programs on the reader.

Communications

The **Communications** step allows you to configure the communication protocols of your reader.



Industrial Ethernet

Industrial protocols enable the reader to exchange I/O data, alarms, and diagnostics with a PLC. Configure the industrial protocol you want to use:

Protocol	PLC
PROFINET	Siemens S7
EtherNet/IP	Rockwell ControlLogix
SLMP	Mitsubishi Q, iQ and L series

To select the protocol, click **Apply**. To disable a protocol, click **Revert**. This reverts the settings to the previous state. When changing industrial protocol settings, you have to restart the reader for the changes to take effect.

For more information, see the *Industrial Protocols Manual*.

Telnet & Network Client

Configure the **Telnet Port** to be used for Telnet communication.

The **Network Client** behavior is a means for the reader to actively open an Ethernet connection to another device on the network. The connection has the same basic operational behavior as a Telnet connection: the reader can transmit results to the external device and process DMCC commands received from the external device.

To use the reader as a network client, enable the **Network Client** toggle and provide the **Host Address**.

Serial Settings

Set the values to match the reader serial settings to the device you are connecting to:

- Baud Rate
- Data Bits
- Stop Bits
- Parity
- Handshake

HID Settings

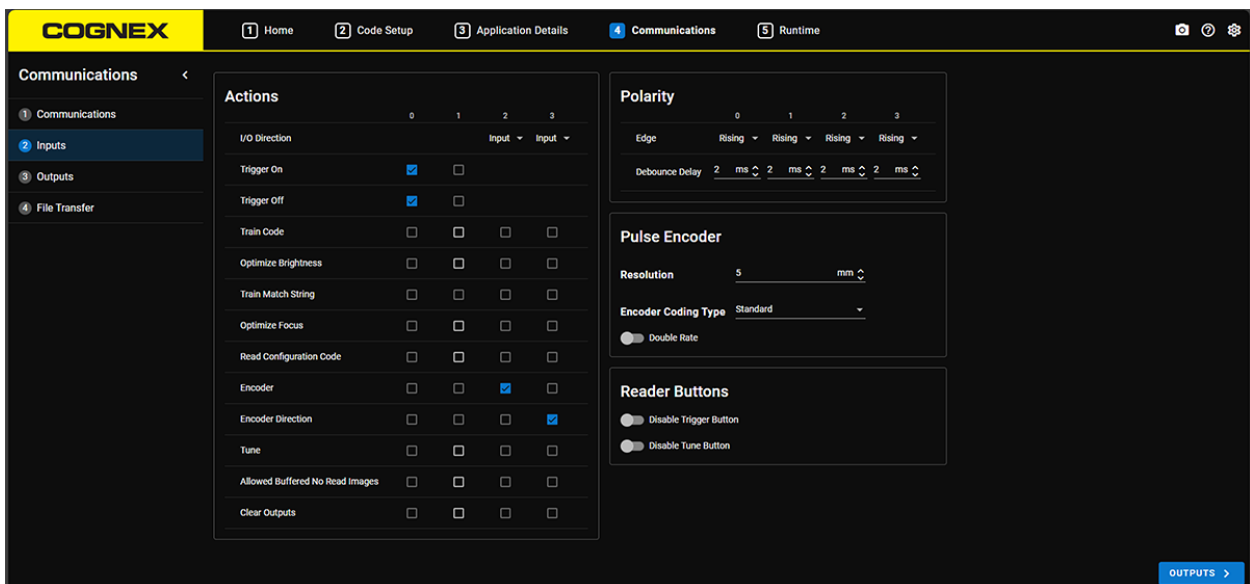
Turn on the **Enable HID interface** toggle.

- **Keyboard language:** Set the language. For Alt Key Codes, you can enter special characters using the **Alt** key and the numeric keypad. The read results are then interpreted as numeric keystrokes.
- **Inter-character delay:** Set the delay time between characters when in HID keyboard mode.
- **Keyboard report interval:** Set the delay between key down and key up HID messages.

Note: Additional communications protocols are available through the DataMan Setup Tool.

Inputs

The **Inputs** substep allows you to configure what action the reader takes when it receives an input signal.



By default, the reader responds to a signal over input line 0. The reader only supports trigger signals on input lines 0 and 1.

You can configure the reader to take any of the following actions:

- **Trigger On** and **Trigger Off** are enabled by default on the same input line 0. **Trigger Off** is automatically the inverse of **Trigger On**. If you put the two signals on separate lines, you can set the polarity independently according to your needs.
- **Train Code:** the reader is trained with the expected symbology, which can decrease the time required to decode subsequent symbols.

- **Optimize Brightness:** the reader finds the best possible light and imager settings to read a code.
- **Train Match String:** the reader uses the decoded code to match and validate subsequent codes against.
- **Optimize Focus:** the reader adjusts to the best possible focus settings to read a code. This option is only available for readers with liquid lens.
- **Read Configuration Code:** the reader reads the code as a configuration command instead of a result that needs to be reported. This read does not increase trigger count and does not produce a NoRead result.
- **Encoder:** connect your encoder to this input line.
- **Encoder Direction**
- **Tune:** the reader finds the best possible settings to read a code. This is the equivalent of rerunning the Tuning substep.
- **Allow Buffered No Read Images:** when this input is active and connected to a sensor that detects a part or package, the reader buffers No Read images if it is configured for no-read image saving. This is useful, for example, when you only want to store No Read images if an actual part or package is in the field of view of the reader.
- **Clear Outputs:** all outputs are reset immediately if the input gets triggered. This option does not reset any output delay settings.

Note: The input line actions Train Code, Optimize Brightness, Train Match String, Read Configuration Code, and Tune are carried out only with the next trigger.

You can also configure the following signal detection options for each input line:

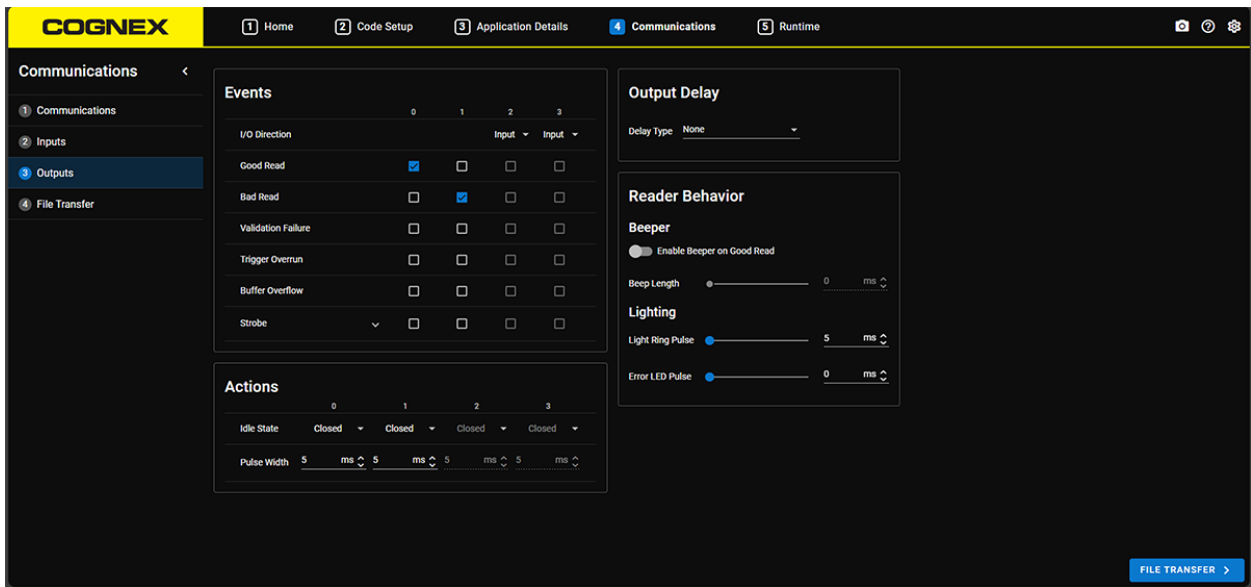
- The **Polarity** option allows you to set the change in the input signal that triggers an image acquisition.
- The **Debounce Delay** text box allows you to define how long the trigger signal must be detected in order to be recognized as valid. Use a shorter value to compensate for ESD line noise, and higher values to compensate for noise in electromechanical relays. Experiment with different **Debounce Delay** values to determine the most appropriate value for your production environment.

You can also configure whether the buttons on the reader are active. Turn on the **Disable Trigger Button** or **Disable Tune Button** toggles to prevent the reader from initiating a read, train, or tune attempt when you press the physical button on the reader.

Outputs

The **Outputs** substep allows you to configure what output signals the reader produces for different events.

You can set up an output delay of either time or distance, and update reader beeper and lighting behavior for different events such as Good Reads or Bad Reads.



I/O Direction

Configure whether I/O lines 2 and 3 behave as an Input or Output. Lines 0 and 1 are fixed output lines.

Good Read and Bad Read

If data validation is activated, the reader only signals a Read event if a code was read and passed validation. With Good Read and No Read events assigned to two outputs, the following logic applies:

- Good read, validation pass: **Good Read** output
- Good read, validation failure: **no** output, or Validation Failure if enabled
- Bad read: **Bad Read** output

Validation Failure

The reader signals the **Validation Failure** event when a code fails data validation, and outputs the error string configured in the **Data Validation** substep.

Trigger Overrun

The reader signals the **Trigger Overrun** event when an image could not be acquired because the reader was busy. Possible reasons include an ongoing burst or a long exposure for a previous trigger.

Buffer Overflow

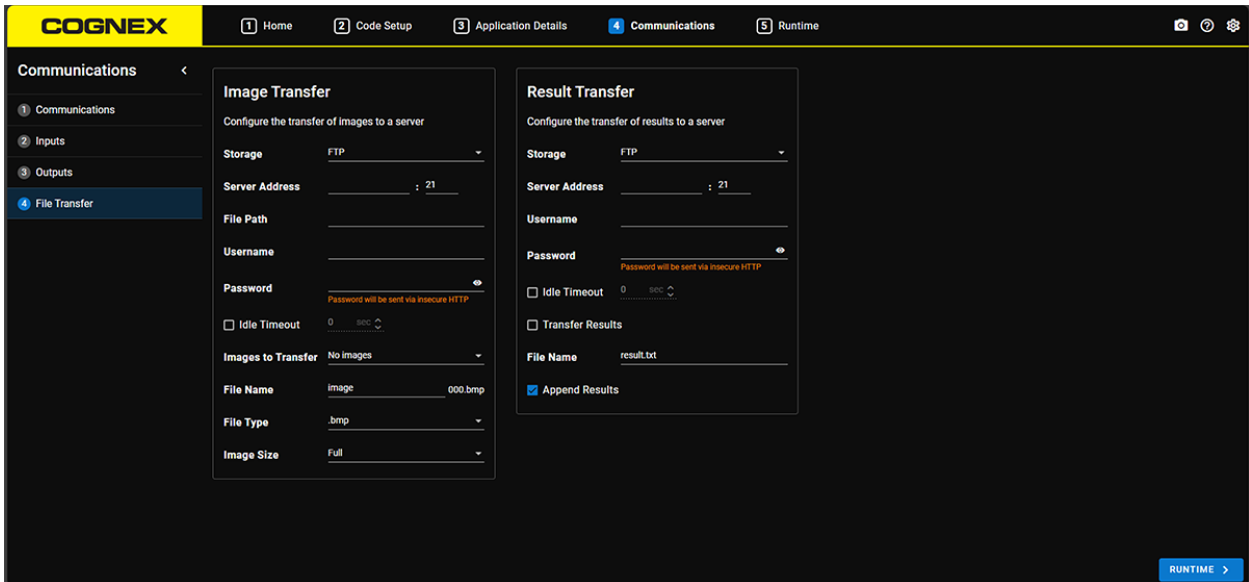
The reader signals the **Buffer Overflow** event when the reader can acquire an image, but does not have any available internal image memory to save it. This happens when images are acquired faster than they can be processed and cleared from the buffer. A possible reason is that the decoding time is longer than the trigger interval.

Strobe

You can strobe an external illumination by checking **Strobe** on one of the output lines.

File Transfer

The **File Transfer** substep allows you to configure the settings for transferring images and results to an FTP server.



The **Image Transfer** tab contains the following settings:

- **Server Address:** the address and port number of the FTP server.
- **Username:** the name of the user that the reader can use to access the FTP server.
- **Password:** the password for the user that the reader can use to access the FTP server.
- **File Path:** allows you to specify a path in relation to the root directory of the FTP, for example, */failed_images/image*. The directory must be available and accessible, as the reader cannot create directories.

Note: The reader cannot guarantee that all images are sent using FTP. This can happen when the reader is operating at a higher frequency and cannot schedule time for transferring images.

The **Result Transfer** tab contains the following settings:

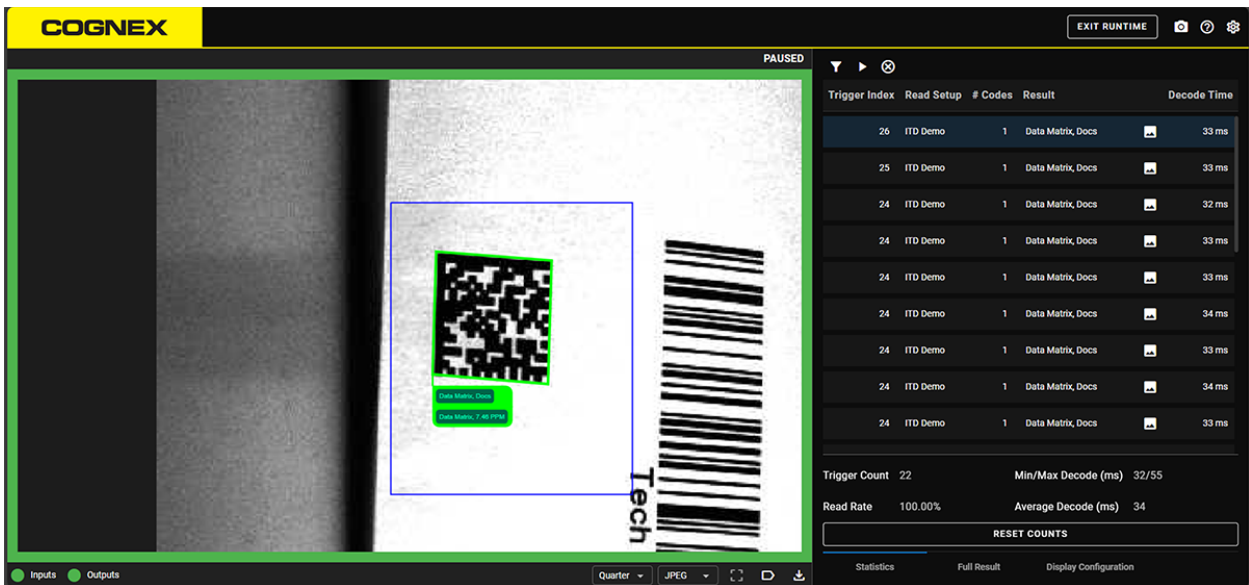
- **Server Address:** the address of the FTP server.
- **Port Number:** the port number of the FTP server.
- **Username:** the name of the user that the reader can use to access the FTP server.
- **Password:** the password for the user that the reader can use to access the FTP server.
- **File Name:** allows you to specify the name of the file that collects the results. If you enable **Append Results**, make sure that the FTP user has Append permissions, which is different from Write permissions.

The **FTP Mitsubishi GOT** option enhances FTP connections on Mitsubishi GOT and other FTP servers by allowing the use of idle timeout through periodic NOOPs, and optional timeout to close an idle control connection. It also provides Mitsubishi GOT write mode support.

Runtime

The **Runtime** step allows you to monitor the read results and performance of the reader in production.

The **Runtime** step provides a summary table showing trigger counts, current read rates, and decode time statistics.








The result table lists the read codes. It can display the **Full Result** string or provide **Statistics** about reader performance. Click **Display Configuration** to customize the data shown for individual reads and overall statistics.

You can filter, pause, or clear the incoming result data.

Click on a result with the image icon to display the image on the screen.

The screen shows the last image of the reader, or the image acquired for the selected read. You can move the image within the screen, and zoom with the mouse wheel.

Enable the **Result Status** option on the **Display Configuration** tab for more detailed status information. The **Status** column appears with the following icons to indicate different read results:

Icon	Meaning
	Good read
	Used AI enhancer (feature key required)
	Validation failure
	Code found but could not be read
	No read

Configure the displayed image with the buttons on the bottom of the screen:

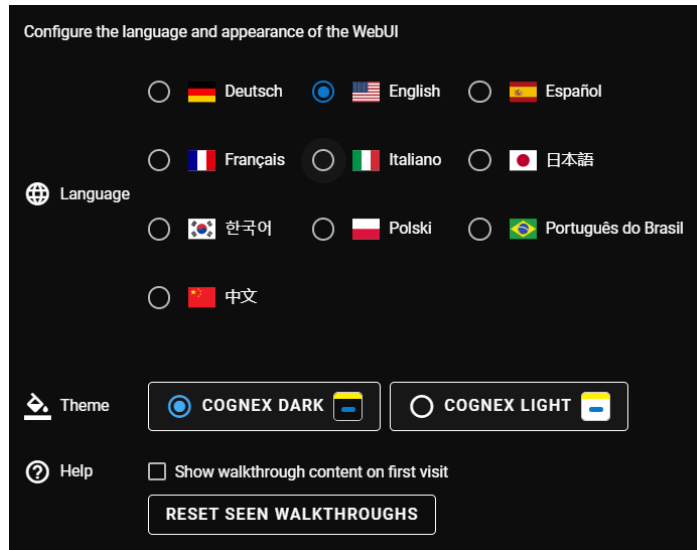
- Choose the image resolution and format.
- Fit the image to the screen.
- Turn labels on or off.
- Download the latest image in full resolution.

 **Note:** You can password protect the UI through the **Settings** menu to make only the **Home** and **Runtime** steps accessible. For more information, see [Password Protection on page 33](#).

Settings

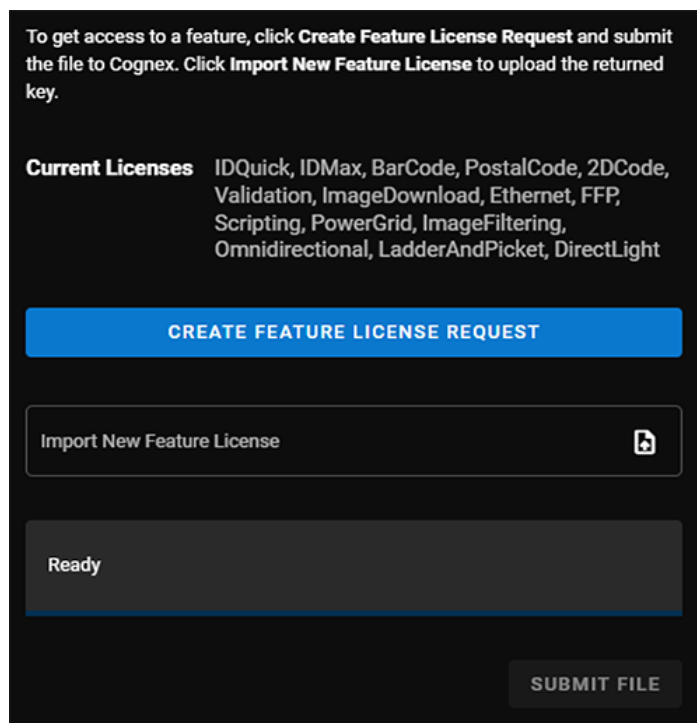
Overview

In the **Overview** tab of **Settings**, you can set up the language and theme of the WebUI. You can also customize the behavior of the in-application help.



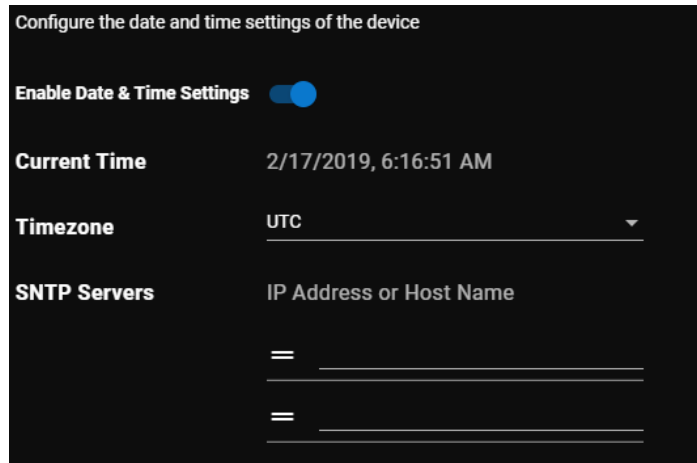
Licenses

In the **Licenses** tab of **Settings**, you can view and manage the Feature Keys of your reader.



Date & Time

In the **Date & Time** tab of **Settings**, you can configure date and time settings for your reader by clicking on **Enable Date & Time Settings**.



Configure the date and time settings of the device

Enable Date & Time Settings

Current Time 2/17/2019, 6:16:51 AM

Timezone UTC

SNTP Servers IP Address or Host Name

= _____

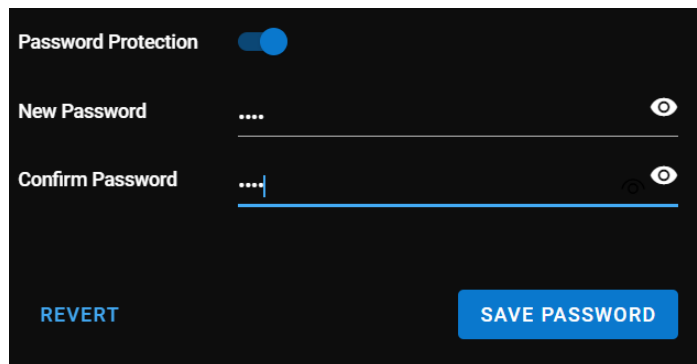
= _____

If you choose **SNTP Service**, you can configure clock time sources between your servers. Choose **Timezone** and enter the IP Addresses or Host Names of the servers.

Note: You have to configure an SNTP server to add timestamps to the output string. For more information on the output string, see [Data Formatting on page 21](#).

Password Protection

In the **Password Protection** tab of **Settings**, you can set up a password for the reader. When you enable password protection and lock the WebUI, users cannot modify the reader configuration without a password. Use this feature to protect your settings from unwanted changes.



Turning on Password Protection

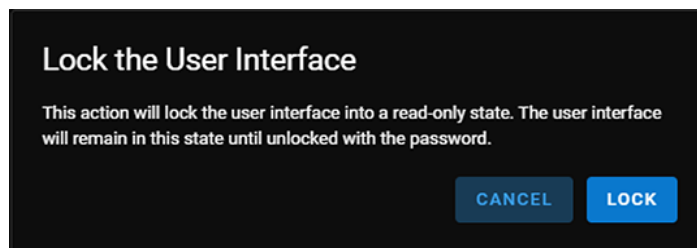
1. Enable the **Password Protection** toggle.
2. Enter the new password in the **New Password** and **Confirm Password** fields.
3. Click **Save Password**.

Application Lock

To lock the application:

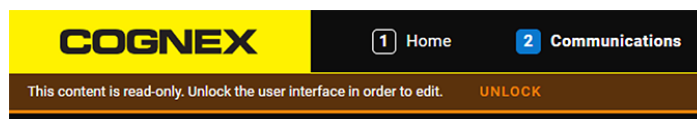
1. Turn on password protection.
2. Click on the lock icon at the top right of the screen.

The **Lock the User Interface** dialog appears.



3. Click **Lock**.

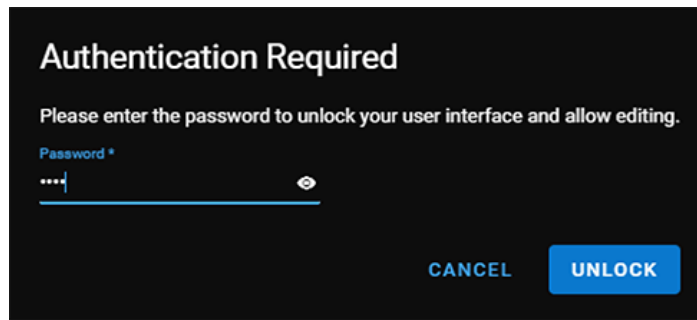
The application is locked and you cannot modify any settings:



To unlock the application:

1. Click **Unlock**.

The **Authentication Required** dialog appears:



2. Fill in the **Password** field and click **Unlock**.

Note: The WebUI locks you out after a few minutes of inactivity.

Forgotten Password

Reset your DataMan reader to factory settings. For more information, see [Factory Reset on page 38](#).

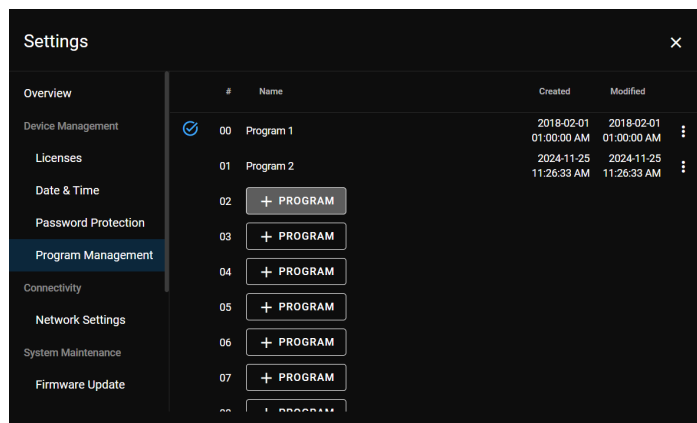
Removing the Password

Disable the **Password Protection** toggle, then click **Turn off** on the pop-up.

Program Management

The **Program Management** tab of **Settings** allows you to see information about and perform actions relating to your programs. A blue checkmark appears next to the current active program.

A program is a collection of device-level configuration settings, including one or more read setups, application details, and communication setup.



The following actions are available by clicking on the **three dots** next to each program:

- Set as active
- Rename
- Clone
- Swap slots

- Export
- Delete

When cloning a program, the program name is kept by default, and you can change the name in the cloning window. Multiple programs can have the same name.

You can see the slot number, example images, and creation and modification dates of your previously created programs. The programs are sorted by slot number in ascending order by default, but you can click on any column to sort the programs by that value. The arrow next to # (slot number), **Name**, **Created**, or **Modified** signifies what metric the programs are sorted by and whether it is in ascending or descending order.

Add New Program

You can create a new program by clicking **+ Program** and choosing an **Add New Program** option:

The following options are available when adding a new program:

- **Create a new blank program:** the new program has all the default settings and no program name. You can change the default name by typing in the **Program Name** field.
- **Import a program file:** choose and import a previously exported program file. The new program copies all settings, including program name and the creation date of the exported program.

Click **Add New Program** to create the program.

Program Management with DMCC

You can also set the active program with the PROGRAM.ENABLE command, using the following syntax:

Name	Type	Range	Meaning
slot	int	[0-19]	program slot

For example, use the following command to update the current program to program slot 1:

```
SET PROGRAM.ENABLE 1
```

Network Settings

In the **Network Settings** tab of **Settings**, you can configure network settings for your reader. To save network settings, click on **Apply**.

Configure network settings for the device

Host Name

DHCP

IP Address

Subnet Mask

Default Gateway

DNS Server

Domain Name

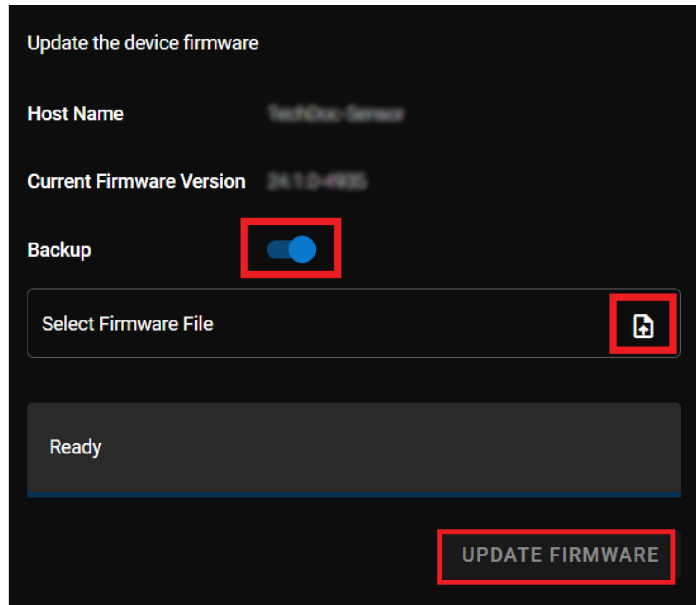
Ready

[REVERT](#) [APPLY NETWORK SETTINGS](#)

Firmware Update

In the **Firmware Update** tab of **Settings**, you can update the firmware of your reader by uploading the firmware file from your PC and then clicking on **Update Firmware**.

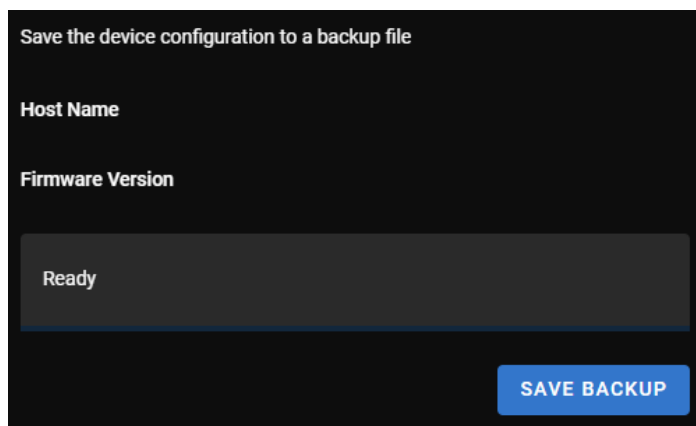
Turn on the **Backup** toggle to save a backup file before the update.



Backup Device

In the **Backup** tab of **Settings**, you can save the reader configuration to a backup file by clicking on **Save Backup**. The backup file includes all programs and global communication settings.

Note: Secure Connection settings are not included.



Restore Device

In the **Restore Device** tab of **Settings**, you can restore the reader from a backup file by selecting your backup file and clicking on **Restore**.

Switching on the **Restore Network Settings** is optional. Switch the toggle on if you want to override the current network settings of the device with the network settings of the backup file.

Note:

- If you enable the **Restore Network Settings**, the [Secure Connection on page 40](#) settings are copied from the backup file to the target reader.
- The Secure Connection files are only restored if the **Restore Network Settings** toggle is enabled.

Restore the device from a backup file

Host Name

Firmware Version

IP Address

Restore Network Settings

Select Backup File

Ready

RESTORE FROM BACKUP



Note: If restoring your reader changes the IP address of the reader, your connection to the reader is lost when the restore process finishes. You can find the new IP address of the reader using device discovery in Station Manager.

Factory Reset

In the **Factory Reset** tab of **Settings**, you can reset the reader to factory settings by clicking **Factory Reset**.

Reset the device to factory defaults

Host Name

Firmware Version

Ready

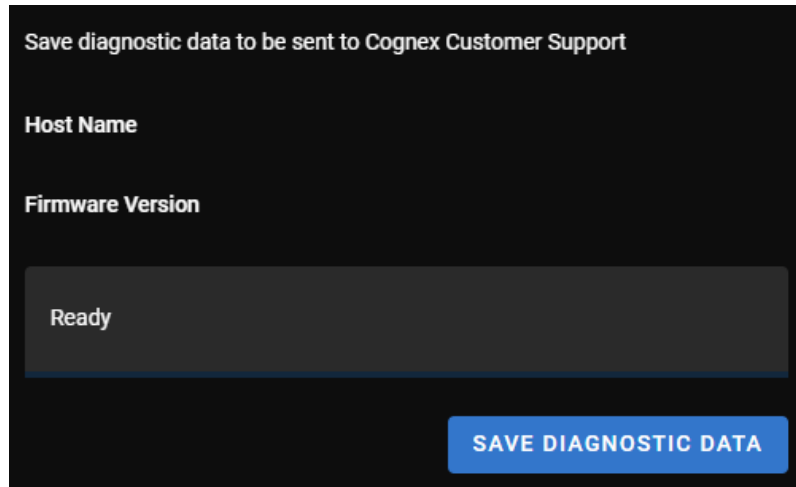
FACTORY RESET



Note: If resetting your reader changes the IP address of the reader, your connection to the reader is lost when the reset process finishes. You can find the new IP address of the reader using device discovery in Station Manager.

Field Diagnostics

In the **Field Diagnostics** tab of **Settings**, you can save diagnostics data by clicking on **Save Diagnostic Data**. If necessary, you can send this data to Cognex Customer Support.



Save diagnostic data to be sent to Cognex Customer Support

Host Name

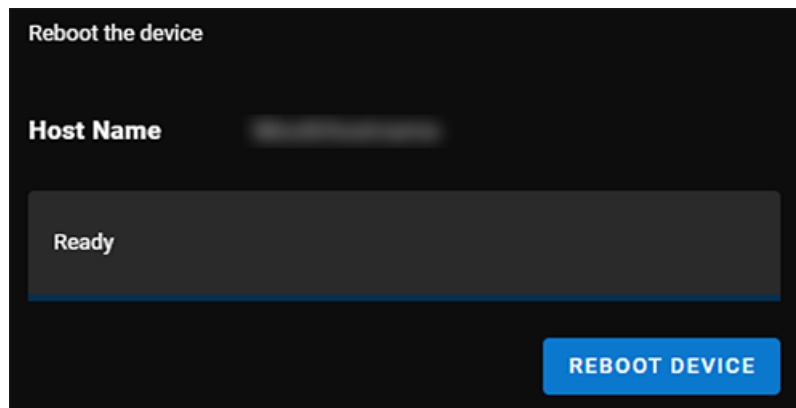
Firmware Version

Ready

SAVE DIAGNOSTIC DATA

Reboot

In the **Reboot** tab of **Settings**, you can reboot the device.



Reboot the device

Host Name

Ready

REBOOT DEVICE

After clicking **Reboot Device**, the screen confirms that the reader initiated the reboot. Rebooting takes a few seconds to finish.

Secure Connection

In the **Secure Connection** of **Settings**, you can set up a secure communication channel between the reader and the browser by uploading and using an SSL certificate.

Configure a secure connection between the device and the browser

Applied SSL Certificate

None Applied

Upload SSL Certificate

Server Certificate

Intermediate Certificate
(optional)

Certificate Key

Status

UPLOAD CERTIFICATE

The **Applied SSL Certificate** shows you which SSL certificate you are currently using.

To upload an SSL certificate, click on the **Upload** button and select the following files from your computer:

- **Server Certificate**
- **Intermediate Certificate (optional)**
- **Certificate Key**

The **Status** shows the statuses of the uploaded files.

Click on **Upload Certificate** to upload the chosen files.

Note: If you delete your certificate, your connection is no longer secure. In this case, you need to manually remove the "s" from the protocol in the URL to reconnect to the reader.

