Hanwha Vision

Network Camera

Online help

WiseBCR

Barcode

You can check the results of scanned barcodes on the preview screen and check the history of scanned barcodes.

Barcode scan history

Barcode scan history

The results of scanned barcodes are displayed in a list. You can check up to 100 results of scanned barcodes, with the most recent barcode information at the top of the list.
Barcode scanning details are displayed in a list as follows:

- **Status**: If the [Trigger] mode is activated and no barcode is scanned within a single trigger signal, a message "No read" will appear. (If the trigger mode is turned off, the scanned barcode's status will be "Read".)
- **Time**: Displays the time when the image containing the barcode was captured. You can change your time zone. If you synchronize the system time with your PC's time or the NTP server, its time display style changes accordingly.
- **Barcode characters**: Displays barcode characters shown after the barcode was decoded.
- **Type**: Displays one of the barcode types among **[Code 128]**, **[Codabar]**, **[Interleaved 2 of 5]**, **[Code 39]**, **[Code 93]**, **[UPC]**, **[EAN]**, **[Data matrix]**, **[MaxiCode]**, **[QR code]**, **[PDF417]** you selected in **[Setup]**> **[Barcode]**.
- **Decoding time (ms)**: Displays the duration of how long it took for the barcode to decode.
- **Trigger index**: Displays the number of triggers received by the camera. Restarting the app will reset all values.
- **PPM**: An abbreviation for Pixel Per Module. Indicates the number of pixels used to process one module of the code (output to two decimal places). You can verify that your camera has enough resolution to read barcodes.

Preview screen

Barcode scanning details are displayed on the preview screen as follows:

- **Type**: Displays one of the barcode types among **[Code 128]**, **[Codabar]**, **[Interleaved 2 of 5]**, **[Code 39]**, **[Code 93]**, **[UPC]**, **[EAN]**, **[Data matrix]**, **[MaxiCode]**, **[QR code]**, **[PDF417]** you selected in **[Setup]**> **[Barcode]**.
- **Barcode characters**: Displays the barcode characters shown after the barcode was decoded.
- **PPM**: Displays the number of pixels used to process one cell or module of the code in two decimal places.

> **Note**
>
> - You can resize the [Barcode characters] rows to view a lengthy barcode.

Barcode setup

You can select which barcode type to scan and set the detailed scanning settings for each barcode type.

Barcode setup

Barcode type

Barcode types are broadly classified into three categories:

- 1D: A barcode where data elements (black bars and spaces) are arranged horizontally. Selecting the checkbox activates all 1D barcodes.
  - 1D barcode types: **[Code 128]**, **[Codabar]**, **[Interleaved 2 of 5]**, **[Code 39]**, **[Code 93]**, **[UPC]**, **[EAN]**
- 2D: A barcode that stores data in both horizontal and vertical dimensions. Selecting the checkbox activates all 2D barcodes
  - 2D barcode types: **[Data matrix]**, **[MaxiCode]**, **[QR code]**
- Stacked: A barcode that consists of multiple linear barcodes stacked vertically. Selecting the checkbox activates a stacked barcode.
  - Stacked barcode type: **[PDF417]**

If you select a barcode type among **[Code 128]**, **[Codabar]**, **[Interleaved 2 of 5]**, **[Code 39]**, **[Code 93]**, **[UPC]**, and **[EAN]**, **[Data matrix]**, **[MaxiCode]**, **[QR code]**, **[PDF417]** (multiple selection is possible), the decoding results of the selected barcode types appear on the preview screen as well as in a barcode-scan-history list.

Properties

Barcode de-duplication

Select the checkbox to remove unnecessary duplicate scanned barcodes, if any. Selecting the checkbox activates all the detailed setting options in **[Decode settings]**.

Short quiet zone

Select the checkbox to decode a barcode whose quiet zones are narrow.

Low height codes

Select the checkbox to decode a barcode whose height is much shorter than the width.

Code 128

Set the detailed settings of Code128 that are configurable only when you select **[Code128]** under **[Barcode type]**.

- **Code size**: Select **[Any size]** to scan a barcode regardless of the number of its characters (between 1 and 80). If you type a value in **[Minimum code size]**, the barcode with the number of characters equal to or greater than the typed value will be decoded and displayed. If you type a value in **[Maximum code size]**, the barcode with the number of characters equal to or less than the typed value will be decoded and displayed.

Codabar

Set the detailed settings of Codabar that are configurable only when you select **[Codabar]** under **[Barcode type]**.

- **Check digit**: Select **[Enable]** to verify the integrity of the last number in Codabar.

- **Transmit check digit**: Select **[Enable]** to send a calculated value used to verify the integrity of the check digit.
- **Transmit start and stop character**: Select **[Enable]** to send the start and stop character of Codabar, which consists of one of A, B, C, and D.
- **Code size**: Select **[Any size]** to scan a barcode regardless of the number of its characters (between 1 and 80). If you type a value in **[Minimum code size]**, the barcode with the number of characters equal to or greater than the typed value will be decoded and displayed. If you type a value in **[Maximum code size]**, the barcode with the number of characters equal to or less than the typed value will be decoded and displayed.

Interleaved 2 of 5

Set the detailed settings of Interleaved 2 of 5 that are configurable only when you select **[Interleaved 2 of 5]** under **[Barcode type]**.

- **Check digit**: Select **[Enable]** to verify the integrity of the last number in Interleaved 2 of 5.
- **Transmit check digit**: Select **[Enable]** to send a calculated value used to verify the integrity of the check digit.
- **Code size**: Select **[Any size]** to scan a barcode regardless of the number of its characters (between 1 and 80). If you type a value in **[Minimum code size]**, the barcode with the number of characters equal to or greater than the typed value will be decoded and displayed. If you type a value in **[Maximum code size]**, the barcode with the number of characters equal to or less than the typed value will be decoded and displayed.

Code 39

Set the detailed settings of Code 39 that are configurable only when you select **[Code 39]** under **[Barcode type]**.

- **Check digit**: Select **[Enable]** to verify the integrity of the last number in Interleaved 2 of 5.
- **Transmit check digit**: Select **[Enable]** to send a calculated value used to verify the integrity of the check digit.
- **Extended mode**: By default, Code 39 can encode numbers (0-9), uppercase (A-Z), and a few special characters (-, ., $, /, +, %, and space). Select **[Enable]** in **[Extended mode]** to increase the basic Code 39's capability to encode a total of 128 ASCII characters. To this end, two basic Code-39 character are employed to represent one extended character (for example, the lowercase "a" will be displayed as a combination of "+" and "A".).
- **Code size**: Select **[Any size]** to scan a barcode regardless of the number of its characters (between 1 and 80). If you type a value in **[Minimum code size]**, the barcode with the number of characters equal to or greater than the typed value will be decoded and displayed. If you type a value in **[Maximum code size]**, the barcode with the number of characters equal to or less than the typed value will be decoded and displayed.

Code 93

Set the detailed settings of Code 93 that are configurable only when you select **[Code 93]** under **[Barcode type]**.

- **Code size**: Select **[Any size]** to scan a barcode regardless of the number of its characters (between 1 and 80). If you type a value in **[Minimum code size]**, the barcode with the number of characters equal to or greater than the typed value will be decoded and displayed. If you type a value in **[Maximum code size]**, the barcode with the number of characters equal to or less than the typed value will be decoded and displayed.

UPC

Set the detailed settings of UPC that are configurable only when you select **[UPC]** under **[Barcode type]**.

- **UPC-A**: Select **[Enable]** to use the UPC-A barcode. If you select **[Delete leading zero]**, the leading zero will be removed. A "leading zero" refers to the zero at the beginning of the 12 digits of a UPC-A barcode, which represents a specific system number.
- **UPC-E**: Select **[Enable]** to use the UPC-E barcode. UPC-E is a shorter form of the UPC-A numeric barcode, which appears as 8 digits. If you select **[Extended mode]**, UPC-E also can be displayed as 12 or 13 digits, much like UPC-A.

- **Add-on**: Select **[Enable]** to add an extra code to the basic barcode, which is used to convey more information.
  - **All**: Additionally outputs both 2-digit and 5-digit codes.
  - **2 digit**: Outputs additional 2-digit codes. Consider a magazine; you may add 2 digits to the barcode to output the magazine's issue number, i.e., the basic barcode is "012345678905", and with the 2-digit add-on, the barcode number will be output as "012345678905 01"
  - **5 digit**: Outputs additional 5-digit codes.

EAN

Set the detailed settings of EAN that are configurable only when you select **[EAN]** under **[Barcode type]**.

- **EAN-8**: Select **[Enable]** to use the EAN-8 barcode.
- **EAN-13**: Select **[Enable]** to the EAN-13 barcode.
- **Add-on**: Select **[Enable]** to add an extra code to the basic barcode, which is used to convey more information.
  - **All**: Additionally outputs both 2-digit and 5-digit codes.
  - **2 digit**: Outputs additional 2-digit codes.
  - **5 digit**: Outputs additional 5-digit codes.

QR code

Set the detailed settings of QR code among scannable barcode types. You can encode both numbers and English letters, as well as binary characters and Chinese ideograms.
These settings can be configured only when you select **[QR code]** under **[Barcode type]**.

- **QR code**: Select **[Enable]** to use the QR code. The QR code is a square-shaped structure composed of multiple black modules (squares). These modules are arranged on a white background and can vary in size depending on the amount of data.
- **Micro QR code**: Select **[Enable]** to use the Micro QR code. The Micro QR code is a square-shaped structure composed of smaller modules than the standard QR code.
- **rMQR code**: Select **[Enable]** to use the rMQR code. The rMQR code is a rectangular variant of the Micro QR code. It has the same data storage capacity and functionality as a QR code but is designed in a rectangular shape.

Data matrix

Set the detailed settings of data matrix among scannable barcode types. Data Matrix is a type of 2D barcode that can store various data. This code comes in 2 types: square and rectangular, and is composed of multiple black and white cell blocks.
These settings can be configured only when you select **[Data matrix]** under **[Barcode type]**.

- **Standard**: Select **[Enable]** to use square and rectangular types of data matrix barcodes.
- **DMRE**: Select **[Enable]** to use the extended version of data matrix barcodes.

> **Note**
>
> You can only type a number between 1 and 80 for the minimum and maximum code size for each barcode type. For the barcode to be scanned and decoded, the number of barcode characters should fall between 1 and 80.
> If you type a value less than "1", "1" will be typed automatically; if you type a value greater than "80", "80" will be typed.
> Even if the minimum and maximum values are the same, barcode scanning will function properly. The minimum value, however, must not be greater than the maximum value. If you type a value in **[Minimum code size]** greater than the value in **[Maximum code size]**, the value will be adjusted to the last value you set.

Number of barcodes

Sends the number of barcodes scanned within one frame equal to the specified value. If there are fewer barcodes than the set value, all will be transmitted; if there are more barcodes than the set value, as many barcodes as the set value will be transmitted according to the priority you set in [Sorting priority].

Sorting priority

The settings in **[Barcode setup]** and **[Number of barcodes]** are in sync. If the number of barcodes scanned in one trigger exceeds the number set in **[Maximum number of codes for each trigger]**, the barcodes will be selected and sent according to the selected sorting priority.

Top to bottom: Barcodes at the top of a frame have a higher priority of being selected and sent.
Bottom to top: Barcodes at the bottom of a frame have a higher priority of being selected and sent.
Left to right: Barcodes on the left of a frame are prioritized higher priority of being selected and sent.
Right to left: Barcodes on the right of a frame have a higher priority of being selected and sent.

Decode settings

You can set the **[Decode setting]** options only when you select **[Barcode de-duplication]**. You can remove unnecessary duplicate scanned barcodes.

Don't read the same code twice in a row: Select the checkbox to prevent the same barcode from being read twice in a row.
Don't re-read the last N codes: When reading multiple types of barcodes, N barcodes read from the last are not read again. For example, if you type "2" for N, the different types of barcodes A, B, and C are read by the following operation: A (Read), B (Read), A (Not read), B (Not read), C (Read), A (Read. A is not included in the last two codes "B" and "C" which have been read successfully.)
Delay mode: If you select **[First read]**, a barcode that has already been read will not be read again during the time you set in **[Code re-read delay time]**, but will be read again after the time set in **[Code re-read delay time]** has elapsed. If you select **[Last read]**, a barcode that has already been read will not be read again even after the time set in **[Code re-read delay time]** has elapsed. However, even if you select **[Last read]**, an already-read barcode may be read again if it disappears from the screen for a longer amount of time than the time set in **[Code re-read delay time]** and is then read again.
Code re-read delay time: Type the code re-read delay time (ms) if you select **[First read]** in **[Code re-read delay time]**. The already-read barcode will not be read again until the typed time has elapsed.

Middleware

You can set the data format of the barcode to link to the middleware. When linking to the middleware, you can also set the detailed settings of the server and client, as well as the master and slave cameras.

Standard

You can set the data format of the barcode to be sent to the middleware. Up to two data formats can be set. The data formats you set will be linked to the [Data format] of each [Server] and [Client] under the [Master/Slave] tab.

Send non-printable characters

You can send control characters that you can't type directly from the keyboard, including characters that cannot be displayed on the screen and that have ASCII values ranging from 0 to 31. Select **[Enable]** to internally convert characters entered in [Prefix] and [Suffix] to HEX values and transmit them. If you do not select **[Enable]**, the characters you entered will be sent untransformed.

Prefix

Enter the characters that will appear before barcode data.

Data

Select the data items to include in the barcode information that will be sent to the middleware. The middleware will arrange the barcode data in the order that you choose. Select data items from the list and click [+] to add them to the text field, or delete an item from the text field by clicking [-].
Each data item is described below:

- **SubString**: Displays a set range of characters from the entire barcode characters. You can specify the range by selecting [SubString] from [Data] items and clicking **[Set sub-string range]**. For example, if you enter "1,4-", the first character and characters 4 to end will be displayed.
- **FullString**: Displays the entire barcode character.
- **DecodeTime**: Displays how long it took to decode in milliseconds (ms).
- **Symbology**: Displays the type of barcode.
- **CRLF**: Inserts a line (text-wrapping) break between each data item and outputs it on a new line.
- **Tab**: Adds a tab.
- **Space**: Uses a space character.
- **CodePosition**: Displays the coordinate information of the decoded barcode.
- **CodeCenterPosition**: Displays the barcode center position information.
- **ResultSource**: Displays the camera information (model name-MAC address) related to barcode information sources.
- **LocalTime**: Displays the local time used in the specific region.
- **UTCTime**: Displays the international standard time.
- **ReceiveData**: Displays data extracted in **[Settings]**>**[Middleware]**>**[Receive data]**.
- **TriggerIndex**: Displays the trigger number received by the camera.
- **Status**: Displays the scanned barcode's status. If the trigger mode is activated, the status will be "No read" in case of no barcodes scanned in a single trigger signal; the status will be "Read" in case of a barcode scanned. If the trigger mode is deactivated, the status of all barcodes will be "Read".

Suffix

Enter the characters that will appear after barcode data.
Click **[Wrap (CR/LF)]** to display prefix+data+suffix, and after inserting a line break to display barcode information.

Delimiter

You can set which delimiter is used between the selected [Data] items.
Select [None] not to use a delimiter. If you select [Space], [Comma], [Tab], the barcode information will be separated by "space" "comma" "tab", respectively. Select [Label] to display the data's title and information; select [XML] to display the barcode information in XML format.

Test results

Click **[Test]** to test the barcode data you entered and view the results.

> **Note**
>
> - When the trigger mode is activated, <ReceiveData>, a type of the [Data] items, transmits data only when the trigger receives a signal. The data is reset whenever each trigger signal stops. When the trigger mode is deactivated, <ReceiveData> continues to transmit data regardless of whether or not a trigger is fired. <ReceiveData> will keep and send the previous data until the next data is transmitted.

Master/Slave

To link to the middleware, set the server and client, as well as the master and slave cameras.
Settings for [Server] and [Client] are designed to send barcode information to the middleware. Settings for [Master] and [Slave] aim for the master camera to collect information from the slave camera, remove duplicates, and send it.

Server

Select **[Enable]** to activate [Client port].

Client port

Set the port number to connect to the client.

Data format

You can select one of the data rules you set in **[Standard]**. The default value is [1], and the value you set in [Data 1] under the **[Standard]** tab will be applied by default when you send barcode data.

Client

Select **[Enable]** to activate [Host IP] and [Host port].

Host IP

Enter the IP address of the server to send barcode information to.

Host port

Enter the port information of the server. The default value is 5000.

Data format

You can select any of the data rules listed under **[Standard]**. The default value is [2], and the value you set in [Data 2] under **[Standard]** will be applied by default when you send barcode data.

Master

Select **[Enable]** to activate [Slave port].

Slave port

Set the port number for the slave camera to connect. The default value is 7000.

Slave

Select **[Enable]** to activate [Master IP] and [Master port].

Master IP

Enter the IP address of the master camera.

Master port

Enter the port number for the master camera to connect. The default value is 7000.

Receive data

You can extract a specific value (data) from data sent from an external device to the WiseBCR app by transforming it.
Then the specific value will be transmitted via ReceiveData, a type of the **[Data]** items, in **[Settings]**>**[Middleware]**>**[Standard]**.

Data

Enter **<ReceiveData>** in place of the specific value you want to receive out of data transmitted from the external device.
You can enter in the entry field by referring to the value you set as a data value to be sent by the external device. For example, if the data sent by the external device is set to ***message=1234***, and you want to receive **1234** via the WiseBCR app, enter ***message=<ReceiveData>*** in the data entry field. In short, enter ***message=** in the entry field, click [+] to automatically add **<ReceiveData>**, and then enter *.

> **Note**
>
> - You can enter uppercase (A-Z), lowercase (a-z), numbers (0-9), and special characters (`!@#$%^&*()-_+={}[]|,:;"'<>./?~₩ and space) in the [Data] entry field. You can enter up to 255 letters including <ReceiveData>.

Trigger

When a product passes a certain point, the sensor detects it and generates a trigger, which scans the barcode, allowing you to efficiently gather and manage data.

Trigger

Trigger

Select **[Enable]** to activate the [Trigger] feature.

Trigger type

- **Continuous**: Captures an image at the framerate set in **[Video & audio]** > **[Camera setup]** > **[Sensor]** and transmits the results of the barcode scanned in the image while the value of the trigger signal remains High, i.e., 1.
- **Single**: Captures a single image after receiving the trigger signal and transmits the results of the barcode scanned in the image.
- **Burst**: Captures the number of images equal to the burst length after receiving the trigger signal, and transmits the results of the barcode scanned in the image.

Trigger polarity

- **Rising edge**: Captures an image depending on the rising edge of the trigger signal.
- **Falling edge**: Captures an image depending on the falling edge of the trigger signal.

Start delay time

Delays depending on the start time of the trigger signal received by the BCR camera.

End delay time

Delays depending on the end time of the trigger signal received by the BCR camera.
This option is activated only when you select **[Trigger type]** > **[Continuous]**.

Time out

Set the decoding time. Barcodes will be decoded at the start of the trigger signal. For example, if you set it to '500 milliseconds (ms)', the barcode will be scanned (decoded) within 0.5 seconds after the trigger starts.
This option is activated only when you select **[Trigger type]** > **[Single]** or **[Burst]**.

Burst length

Set the number of images to be captured after a trigger signal is received in burst mode.
This option is activated only when you select **[Trigger type]** > **[Burst]**.

Maximum number of codes for each trigger

Set the maximum number of barcodes that can be scanned per one trigger.
This option is sync with the **[Allow partial results]** option.

- When **[Allow partial results]** is disabled: Transmits as much barcode information as the value set according to the priority only when the number of barcodes scanned within one trigger signal is equal to or greater than the value set in **[Maximum number of codes for each trigger]**.
- When **[Allow partial results]** is enabled: Transmits barcode information even when the number of barcodes scanned within one trigger signal is fewer than the value set in **[Maximum number of codes for each trigger]**.

Allow partial results

Select **[Enable]** to transmit all barcodes even when the number of the decoding results in a single trigger is fewer than the number set in **[Maximum number of codes for each trigger]**. If you do not select **[Enable]**, all barcodes will be sent only when the number of the decoding results is equal to or greater than the number set in **[Maximum number of codes for each trigger]**.

Allow identical barcode

Select **[Enable]** to allow an identical barcode within a single frame.

Sorting priority

The settings in **[Barcode setup]** and **[Number of barcodes]** are in sync. If the number of barcodes scanned in one trigger exceeds the number set in **[Maximum number of codes for each trigger]**, the barcodes will be selected and sent according to the selected sorting priority.

- **Top to bottom**: Barcodes at the top of a frame have a higher priority of being selected and sent.
- **Bottom to top**: Barcodes at the bottom of a frame have a higher priority of being selected and sent.
- **Left to right**: Barcodes on the left of a frame are prioritized higher priority of being selected and sent.
- **Right to left**: Barcodes on the right of a frame have a higher priority of being selected and sent.

Backup/Restore

You can save the current settings of the system as a file on your PC and restore the system to the state when the backup file was stored.

Backup/Restore

Backup/Restore

You can back up the settings of the BCR application or restore it to the state when the settings were saved.
Click **[Backup]** to create a backup file of the current settings of the BCR application.
Click **[Restore]** and select a backup file to restore the application to the settings to the state when the file was saved.

Factory default

Click **[Reset]** to return the application to its factory settings.

Version information

The version information shows you the information on BCR application and AI information. Depending on the camera model, the AI learning models may or may not be displayed.

Open source license

We provide open source licenses used by this product.**Click the [View]**button to see the information of the open source licenses used by this product and full license texts.

Log

The important event logs are recorded while the camera is in operation. You can view the accumulated log history.

System log

You can view the dates, times, and details about changes to system settings and to the operation of the features of the system.

Log type

You can view the dates, times, and details of system changes. Select **[All]** to view the date, time, and details of all the events that occurred on the selected system.

Backup

You can back up the selected log and export the backup log to a text file. To back up the system logs, click **[Backup]**.


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