User's Manual

Video Wall Integration for Qognify

Table of Contents

About This Document

The purpose of this document is to provide a system overview of the integration between the EIZO IP Decoding products (hereby referred to as "The IP Decoder" or "the decoder") and Qognify Video Management System (hereby referred to as "Qognify" or "the system"), as well as steps on how to enable and operate the resulting video walls.

This document assumes the user has experience installing and working with Qognify servers and services. It also assumes that the user is familiar with setting up and using video walls in Qognify.

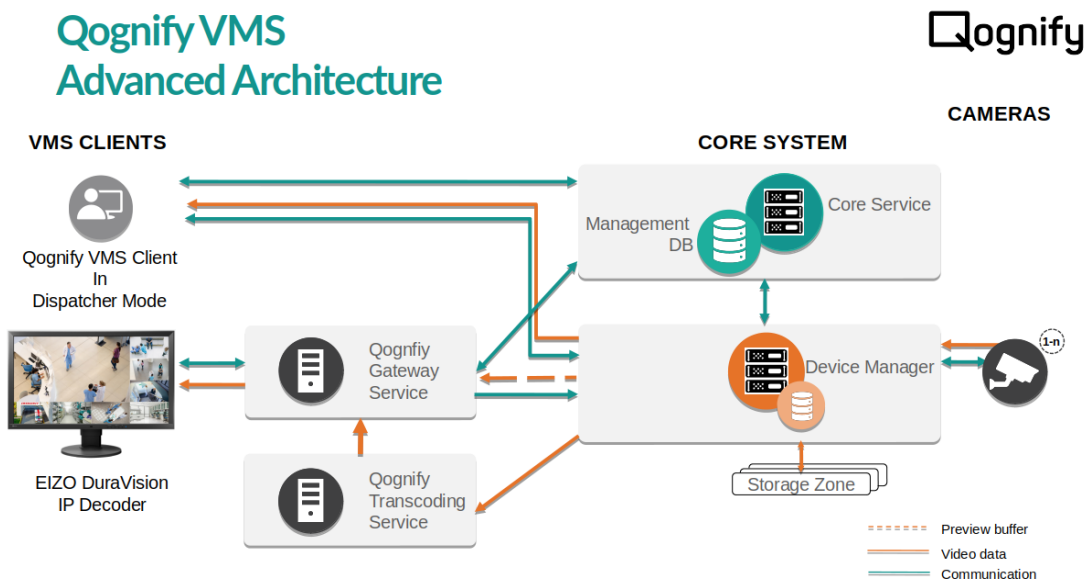
The following keywords are used throughout the document to describe how the integration functions. Please refer to the Qognify Manual where necessary.

Qognify VMS Keywords

Qognify Keywords	Purpose for Integration
Qognify Gateway Service or SGS	Used for interacting with the Qognify system
Transcoding Module	Used for receiving RTSP streams
Display Agent	Used to receive video wall layout updates
Dispatcher	The Qognify VMS feature used for controlling video walls

System Overview

The integration with the Qognify VMS serves to extend its video wall capabilities to utilize DuraVision IP decoders as configurable monitors without the need for PC controllers or additional software.



Basic Information

The integration will consist of 2 additions to the DuraVision IP Decoder firmware.

1. A Qognify camera protocol for Manual Camera Registration
2. A Qognify Video Wall Control Mode

Qognify Camera Protocol Overview

Similar to the other available camera protocols, a new Qognify Protocol has been added to the Manual Camera Registration page.

This allows for:

- Manually registering cameras from a Qognify system to the IP Decoder
- Receiving and displaying camera feeds from devices registered in Qognify

Qognify Video Wall Control Mode Overview

A new `Qognify` tab has been added to the `Settings` → `System` settings page.

While enabled the decoder will be linked to a Qognify display agent in order to:

- Receive camera registration and layout information from Qognify.
- Automatically update the decoder layout when an associated video wall has been changed.

Integration Dependencies

EIZO IP Products

- Version is v6.1000 or greater
- A valid Enterprise license has been activated on the decoder
- A valid Qognify Extension license has been activated on the decoder

Qognify VMS

- Qognify VMS Version 7.2 or greater
- For operating system and PC specifications please refer to the `Qognify VMS System Requirements` document

Qognify User Permissions

A Qognify VMS user with at least the following permissions must be created:

Permission	Use
View Live Video	Required to view camera streams
Map	Required for obtaining display agent and video wall data.

Streaming

A Qognify Gateway Server and Transcoder Module are required for RTSP streaming.

The Transcoding module of the Qognify VMS must have enough open channels for streaming. Default: 20

The integration will keep the stream settings from the Qognify VMS. The following must be configured in Qognify before cameras are registered to the decoder.

- Codec
- Resolution
- Framerate
- Bitrate

Supported Codecs:

- H.264
- H.265

Qognify Camera Protocol

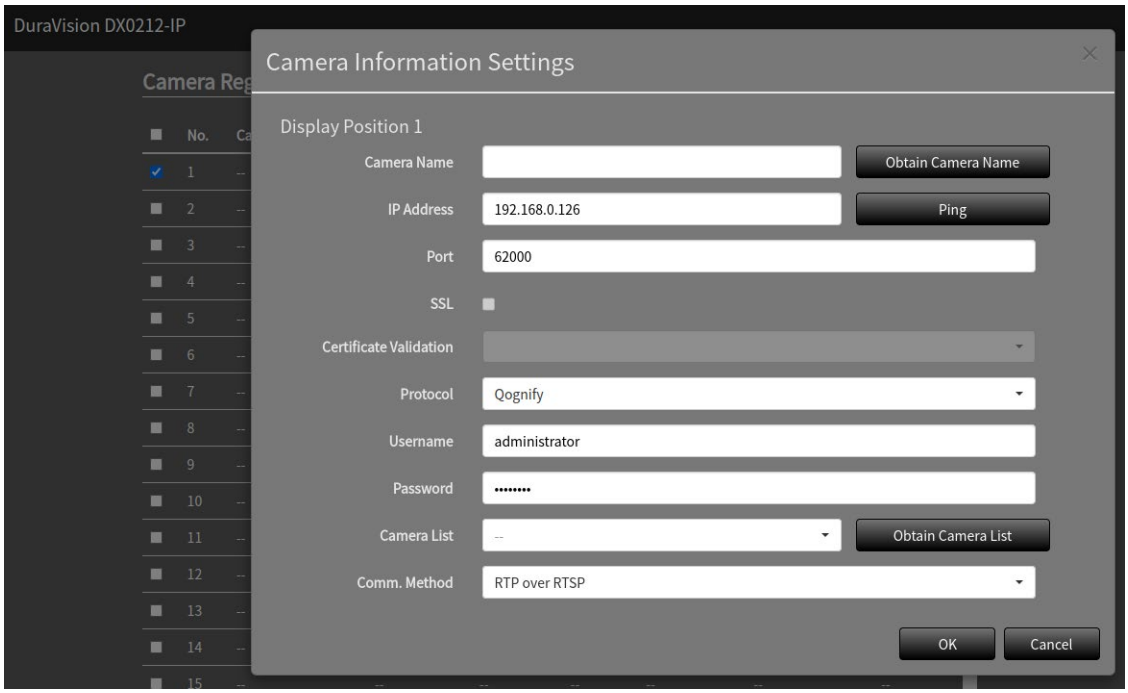
Qognify Camera Protocol Basics

A new Qognify Protocol has been added to the Manual Camera Registration page.

Users who select Qognify as the protocol during manual registration have the ability to input a Qognify system's information to obtain and choose from a list of cameras in the VMS.

Cameras which have been registered using the Qognify protocol will act as individual cameras like any other protocol.

PTZ operations not supported



Qognify Camera Registration Prerequisites

The following are required in order for the IP Decoder to receive camera streams from Qognify.

- A Qognify Gateway Server has been setup in Qognify system. (refer to `Qognify Manual: Adding A Gateway Service module`)
- A Transcoding Module has been setup in Qognify system. (refer to `Qognify Manual: Adding A Transcoding engine module`)
- Cameras have been registered to the Qognify system without persisting errors or warnings.
- A Username and Password that contains **only** ASCII characters has been created in Qognify VMS.

Manual Registration Procedure

1. Navigate to the Camera Registration page.
2. Check the desired camera position and press the `Manual Registration` button.
3. Select `Qognify` under protocol and enter the following information.

Setting	Details
IP Address	IP Address of the Qognify Gateway Server host machine
Port	SOAP/REST Port of the Qognify Gateway Server (default 62000)
Username	Qognify user name with access to live camera streams
Password	Password to the corresponding Qognify user

   - The communication method is limited to RTP over RTSP.
   - Usernames and Passwords must contain **only** ASCII characters.

4. After the server information has been input press the `Obtain Camera List` button to get a list of currently available cameras from Qognify.

   Even if they are registered properly, cameras which have errors in Qognify will not display in the decoder camera list.

5. Select the camera to register and press the `OK` button.
6. When you are finished adding cameras complete the manual registration by pressing `Apply`.

The camera should be registered and the stream displayed on the decoder.

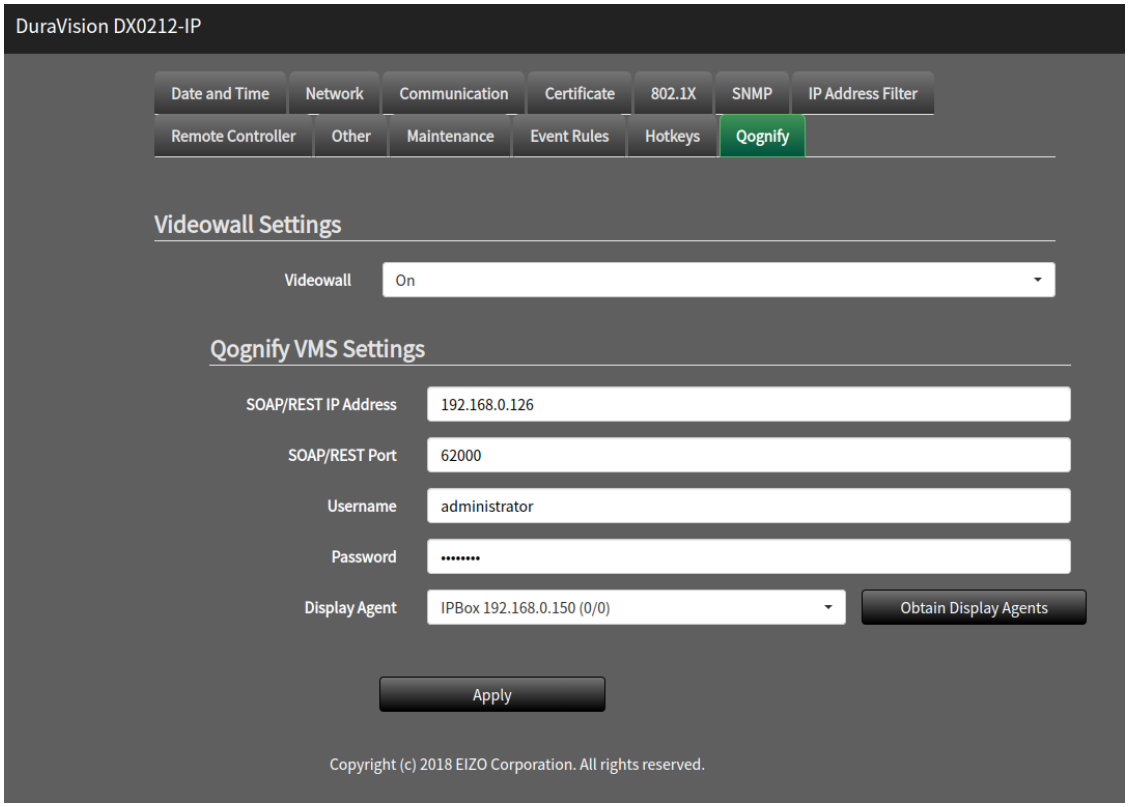
Qognify Video Wall Mode

Qognify Video Wall Mode Basics

A new `Qognify` tab has been added to the `Settings` → `System` settings page.

While in use, the IP decoder will act as a display agent that connects to a given Qognify system. The display agent, which must be assigned to a video wall, will reflect the layouts assigned in Qognify and receive live camera streams from the system. Any updates made to the display agent in Qognify will automatically update on the IP decoder.

An IP decoder may only be linked to one Qognify display agent at a time and will only display the live camera streams registered to it.



The following is not supported

- Displaying maps, images and camera playback feeds.
  - While the layout will be updated properly, positions with these objects will show as Not Registered in the decoder.

Layout Support

DuraVision IP decoder products support a wide range of layout configurations up to 32 cameras per layout.

The default Qognify layouts as well as custom layout settings, not exceeding 32 cameras per layout, are supported in this integration.

- In the event a layout exceeding 32 cameras has been set on a video wall associated with a DuraVision product, the decoder will **not** reflect these changes.

Session Management

While video wall mode is enabled the IP decoder will maintain a session connection to the Qognify VMS with a refresh timer of 20 minutes.

Should the decoder lose connection to the system, the decoder will attempt use the provided username and password to reconnect when the timer expires.

Any changes to the username or password in Qognify will cause the session refresh to fail. As a result such changes must also be updated in the decoder and the connection re-established.

It is also possible to manually refresh the server connection by disabling and re-enabling the video wall mode feature on the decoder.

Qognify Video Wall Mode Prerequisites

The following are required in order for the IP Decoder to receive video wall updates from Qognify.

- A display agent with the target decoder name has been registered into Qognify.
- The target display agent has been added to at least one Qognify video wall.
- The Qognify VMS Client is in Dispatcher mode.
- The Transcoding module of the Qognify VMS has enough open channels for streaming.
- A Username and Password that contains **only** ASCII characters has been created in Qognify VMS.

Setup Procedure On The Decoder

1. Enable HTTPS on the IP Decoder.
2. Navigate to the `System` → `Qognify` tab in the settings page.
3. Select the drop down next to `Video wall` and select `On` to enable Video wall Mode.
4. Enter the following information:

Setting	Details
IP Address	IP Address of the Qognify Gateway Server host machine
Port	SOAP/REST Port of the Qognify Gateway Server (default 62000)
Username	Qognify user name with access to live camera streams
Password	Qognify password to the corresponding user

5. After the Qognify server information has been input press the `Get Display Agent` button to connect to the Qognify server and get a list of currently available display agents from Qognify.

   Display agents which are not registered to a video wall will NOT be accessible to the IP decoder.

6. Select the display agent to associate with the decoder.
7. Press `Apply` to finalize the connection.

After setting up the decoder, the Dispatcher may be used as normal to control the video wall in Qognify.

Disable Procedure On The Decoder

1. Navigate to the `System` → `Qognify` tab in the settings page.
2. Select the drop down next to `Video wall` and select `Off` to disable Video wall Mode.
3. Press `Apply` to complete the setting change.

This will disconnect the decoder from Qognify preventing automatic layout updates and camera registrations.

Simply disabling video wall mode will not remove previously registered cameras from the decoder. Cameras must be manually removed to stop streaming.

General Troubleshooting

In general the IP decoder logs all detected errors in the system logs.

Qognify Errors with codes **greater** than 10,000 indicate a server side error, i.e. a problem within Qognify. These errors should be investigated on the Qognify system and are not the target of this guide.

Error from Qognify VMS: (-21601)

16/Sep/2023 00:21:02 [player] <error> [04] Failed to communicate with the camera for initialization.
(QOGNIFY,192.168.0.126:62000,H264,RTSP,ssl=Y(N),0x0,---h--m--s, setup(4 Qognify Error : DeviceManager error. (-21601)))
[0x1002] [E02-02]

Qognify Errors with codes **less** than 100 indicate a problem detected by the decoder. These errors and other similar issues are the targets for this troubleshooting guide.

Internal Decoder Error: (-44)

16/Sep/2023 00:20:29 [player] <error> [08] Failed to communicate with the camera for initialization.
(QOGNIFY,192.168.0.126:62000,H264,RTSP,ssl=Y(N),0x0,---h--m--s, setup(4 Qognify Error : CGI_SEND_FAILED(-44))) [0x1002]
[E02-02]

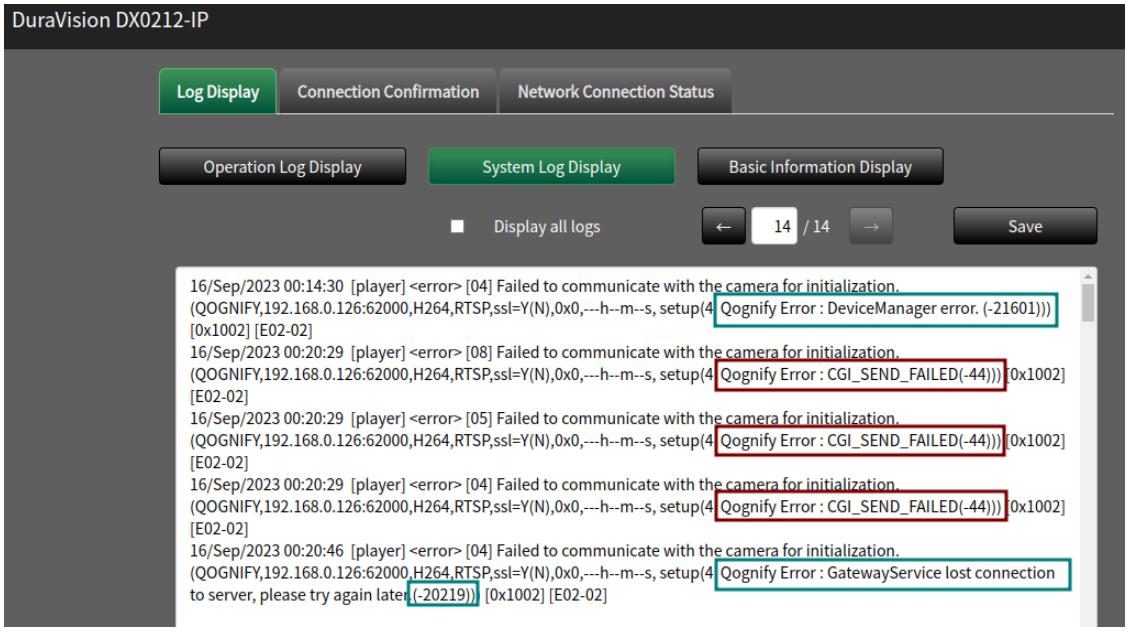
General Error Codes

While following the troubleshooting guide always remember to check the decoder logs under:

`Troubleshooting` → `Log Display` → `System Log Display`

Understanding the difference between error codes (explained above) will help in determining who to contact for additional support should problems persist.

Example Log:



Qognify Error: CGI_SEND_FAILED(-44)

This is an internal decoder error which indicates that there is no network connection to the Qognify system.

Troubleshooting Steps:

1. Check that the decoder is accessible either via a `PING` command or by accessing the web interface.
2. Check that the Qognify system is running and the network settings are working properly.
3. Check the decoder and Qognify VMS connectivity:
    a. Check that the decoder and Qognify system are on the same network.
    b. Check that the IP address and port registered on the decoder is the correct SGS host address and SOAP/REST port respectively.
4. Check that no firewall settings are blocking connections between the decoder and the Qognify system.

Camera Stream Errors

A failure to display camera feeds or any errors codes displayed the the live view screen of the decoder are considered camera stream errors.

Communication Failed (E02-02)

This indicates that the decoder was unable to obtain the RTSP URI for the registered camera.

Potential Causes

- The connection between the camera and Qognify VMS is unstable.
- The connection between the decoder and Qognify VMS is unstable.
  - Qognify user information registered in the decoder could be outdated.
- There aren't enough free channels in the Transcoding module.

Troubleshooting Steps:

1. Check the connection between the camera and Qognify to ensure there are no errors.
   - Any errors between cameras and the Qognify VMS should be investigated according to Qognify's troubleshooting procedures.
2. For cameras registered manually on the decoder, try to re-register with a Qognify user who has `View Live Video` privileges.
3. For cameras registered via the video wall mode, disable and re-enable the video wall mode with a Qognify user has `View Live Video` and `Map` privileges
4. Try to restart the Qognify VMS services using the `VMS Service Manager` application in the Qognify system.
   - Restarting the SGS and Transcoding module might resolve the connection issue.
5. Confirm that the Transcoding module channel settings is enough support the number of cameras you are trying to stream.
   - The IP Decoder can only receive the number of streams less than or equal to the number of channels set in Transcoding module settings.
   - i.e. In order to stream 32 cameras to the decoder, the number of channels set in the Transcoder settings must be increased to at least 32.

Communication Failed (E02-06)

This indicates that an RTSP connection has been established but no stream data has been received from the Qognify VMS.

Potential Causes

- The server containing the SGS and Transcoding module could be having performance issues.

Troubleshooting Steps:

1. If possible try to reduce the number of cameras per layout in the VMS.
2. Try reducing camera resolutions in the VMS.
3. Try reducing the frame rate per camera in the VMS.

Compression Mismatch (E05-00)

This indicates that the connection to Qognify was established but the decoder was unable to decode the stream from the Gateway Service.

Potential Causes

- The camera's video codec set in the Qognify VMS is not supported by the decoder.

Troubleshooting Steps:

1. Ensure that the camera's codec settings in Qognify has been set to either `H.264` or `H.265`.
    - Other codecs, such as `MJPEG`, are not supported in this integration.

Manual Registration Troubleshooting

Problem: Unable To Get A Cameras List From Qognify

Symptoms

On the Manual Registration Page, when the `Obtain Camera List` button is pressed an `Failed to obtain information from the camera` error is displayed.

Potential Causes

- The Qognify server information is incorrect or no connection can be made.
- The user name or password are incorrect.

Troubleshooting Steps:

1. Check that the server information matches the Qognify system.
    - The IP Address and Port must refer to the SGS's IP Address and `SOAP/Rest Port`
2. Check that the input user name and password match a Qognify user with `View Live Video` privileges.
3. Finally, refer to the `General Troubleshooting` section above for any system log errors.

Problem: Camera List Missing Cameras

Symptoms

On the Manual Registration Page, when the `Obtain Camera List` button is pressed the resulting list has missing cameras.

Potential Causes

- The camera registered to Qognify has some warning or errors.

Troubleshooting Steps:

1. Confirm that the desired cameras are registered to the Qognify system and show no errors.
    - Cameras with unstable connections or periodical warning messages might not be sent to the decoder.
    - For this case wait until the error is resolved by Qognify and try again.

Video Wall Troubleshooting

Problem: Unable to Get Qognify Display Agents

Symptoms

When the `Get Display Agents` button is pressed an `Unable to get display agents` error is displayed.

Potential Causes

- The Qognify server information is incorrect or no connection can be made.
- The user name or password are incorrect.

Troubleshooting Steps:

1. Confirm that the server information matches the Qognify system.
   - The IP Address and Port must refer to the SGS's IP Address and `SOAP/Rest Port`
2. Check that the input user name and password match a Qognify user with `View Live Video` and `Map` privileges.
3. Finally, refer to the `General Troubleshooting` section above for any system log errors.

Problem: Missing Display Agents in List

Symptoms

When the `Get Display Agents` button is pressed the list of display agents is empty or has missing agents.

Potential Causes

- The target display agent has not yet been assigned to a video wall.

Troubleshooting Steps:

1. Check that the display agent is created and is assigned to a video wall.
   - Display agents which are not assigned to at least 1 video wall will not be accessible to the decoder.

Problem: Decoder Not Updating After Video Wall Change

Symptoms

After enabling the Video Wall mode and registering a display agent, when a change has been made on a video wall in Qognify, the change is not reflected on the decoder.

Potential Causes

- HTTPS has not been enabled on the decoder.
- There is no connection to the Qognify Server.
- The display agent registered to the decoder is not the intended agent.
- The session has been deleted from Qognify.
- A firewall is blocking outbound connections.
- The intended layout is unsupported by the decoder.

Troubleshooting Steps:

1. Ensure that HTTPS has been enabled on the decoder.
    - HTTPS is required to receive video wall change events from Qognify
2. Check that the server information matches the Qognify system and that there is a connect between the decoder and Qognify.
    - The IP Address and Port must refer to the SGS's IP Address and `SOAP/Rest Port`
3. Confirm that the display agent registered in the decoder's settings is the intended agent and that this agent has been registered to the correct video wall in Qognify.
4. Try re-connecting the decoder to Qognify by obtaining the display agents and applying the video wall settings again.
    - If the Qognify system has restarted recently previously active sessions could have been deleted.
    - After a system restart the decoder must be re-registered as a display agent.
        - Or the decoder will automatically reconnect after 20 minutes.
5. Double check the firewall outbound connections settings to ensure messages from Qognify can reach the decoder.
6. Confirm that the layout is supported by the decoder.
    - IP decoder products may only display up to 32 cameras per layout. Any layouts exceeding 32 cameras will be not be set on the decoder.

Trademark

Microsoft, Windows, Internet Explorer, Microsoft Edge and .NET Framework are registered trademarks of Microsoft Corporation in the United States and other countries.

EIZO, the EIZO Logo, ColorEdge, CuratOR, DuraVision, FlexScan, FORIS, RadiCS, RadiForce, RadiNET, Raptor and ScreenManager are registered trademarks of EIZO Corporation in Japan and other countries.

ColorEdge Tablet Controller, ColorNavigator, EcoView NET, EIZO EasyPIX, EIZO Monitor Configurator, EIZO ScreenSlicer, G-Ignition, i・Sound, Quick Color Match, RadiLight, Re/Vue, SafeGuard, Screen Administrator, Screen InStyle, SwitchLink and UniColor Pro are trademarks of EIZO Corporation.

Qognify and the Qognify Logo are trademarks and/or registered trademarks of Hexagon AB or its subsidiaries/affiliates in the U.S. and/or other countries.

All other company names, product names, and logos are trademarks or registered trademarks of their respective owners.

EIZO Corporation
www.eizoglobal.com

00N0N447AZ
UM-VIDEOWALL_QO

1st Edition - September, 2023