

WATCHPAX 62 USER'S GUIDE



DATATON WATCHPAX 62 – USER’S GUIDE

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This manual refers to the "WATCHOUT USER'S GUIDE." Get the latest version here:

<https://www.dataton.com/support/user-guides>

1. INTRODUCTION

WATCHPAX 62 is a series of dedicated media servers available in four models (S, A, B, C). The server offers four video outputs, dual HDMI inputs (models A, B, C) and a high-performance specification designed solely with WATCHOUT shows in mind. The four DisplayPort outputs support 4K (UHD) playback, making it a powerful and portable alternative in a multi-display setup.

WATCHPAX 62 is a locked-down unit, preconfigured for playback of WATCHOUT shows. Multiple units can be installed together in a rig or with Dataton's other WATCHPAX media servers.

WATCHPAX 62 has a compact, portable 2U form factor designed for tabletop or rack use (rack rails and ears supplied separately).

Each unit weighs approximately 10 kg and has rugged, aluminium housing with superior finish.



WHAT'S WATCHOUT?

Dataton WATCHOUT is the leading multi-display production and playback software. Use WATCHOUT to orchestrate images, video, lighting, 3D and interactivity into a single impressive show. The essential components of a WATCHOUT show are the software, media servers (such as WATCHPAX 62) and display devices (projectors, LED displays, etc), running on a standard network.

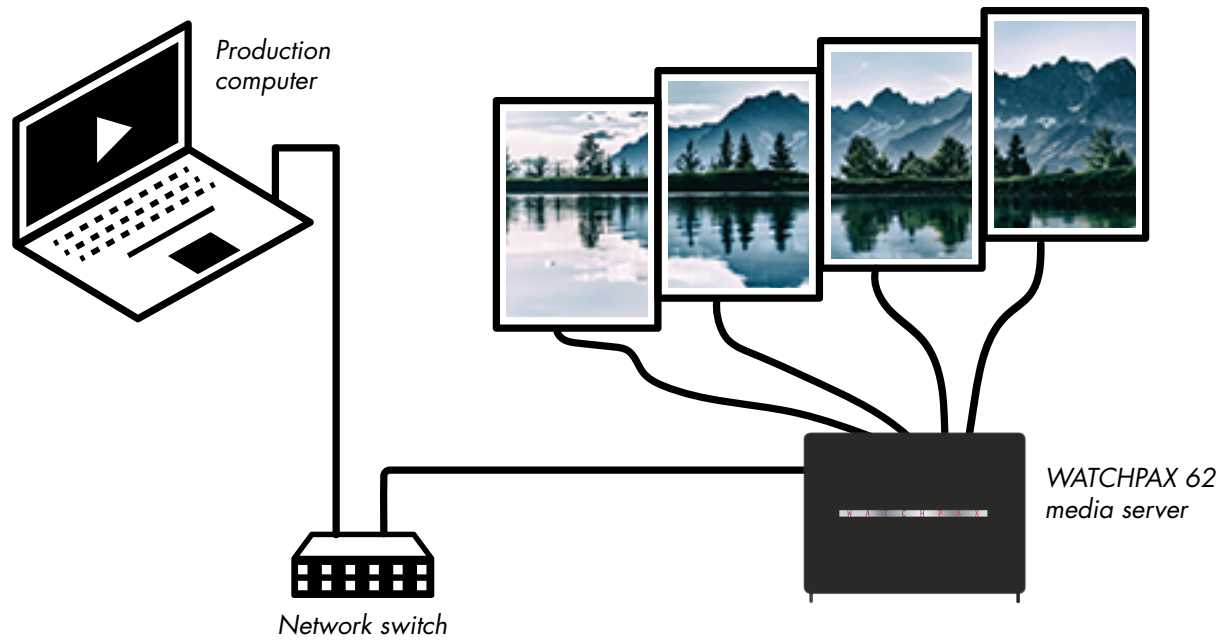
In an operational setup, a WATCHOUT license key is required for the production computer running the show and each media server. All Dataton-branded media servers, including the WATCHPAX 62, have the license key built in.

WATCHOUT shows can be presented with multiple projectors for large, seamless images or used with monitors, LED walls or other creative screen arrangements. WATCHOUT also has a strong set of projection and pixel-mapping features for applying content to complex three-dimensional objects.

Download WATCHOUT for free from the Dataton website: www.dataton.com

SYSTEM OVERVIEW

WATCHPAX 62 is used as part of a WATCHOUT multi-display system.



A small WATCHOUT system with WATCHPAX 62

In the schematic above, there is a laptop (production computer) running WATCHOUT software and equipped with a WATCHOUT license key. This connects to a network switch which, in turn, connects to a Dataton WATCHPAX 62 media server. The WATCHPAX unit connects and manages the display devices. In the example, these consist of four LED screens.

WATCHPAX 62 IN YOUR RIG

The WATCHPAX has four DisplayPort outputs. Used as is, it will manage four display devices in your presentation. Splitters may also be used to increase the number of display devices managed. The system is scalable; as the number of display devices increases, add more media servers to your rig.

To implement the bi-directional SDI in WATCHPAX 62 C model, please read ["9. WATCHPAX 62 MODEL C"](#) and ["4. SYNCHRONIZATION"](#).

As all Dataton-branded media servers have a built-in WATCHOUT license, the only additional license key required is for your production computer. If you are not using a Dataton media server you will need a WATCHOUT license key for each media server/display computer.

DISPLAY DEVICES

The schematic shows four LED screens used as the display devices. WATCHOUT can be used with virtually any display device that can be connected to a computer (projectors, LCD panels, LED walls etc).

START UP SCREEN

This is shown on all display devices connected to the WATCHPAX 62 at start-up, or if WATCHOUT has been re-launched. There are three lines of information:

First line: Computer and cluster name (if this has been set in the WATCHOUT Production software Network window – please see the "Network Window" section in Chapter 3: Windows, "Dataton WATCHOUT User's Guide" for more information), IP address for the media server.

Second line: Version number of the WATCHOUT display software currently installed on the media server.

Third line: Media server model type, serial number, firmware version



WATCHOUT start-up screen

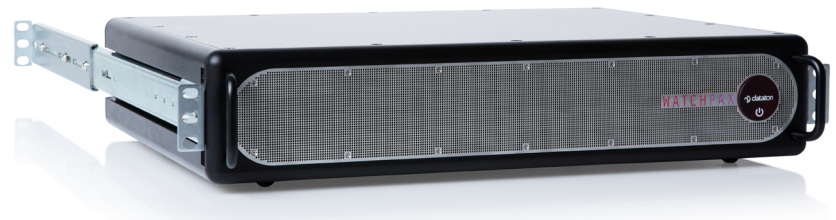
ACCESSORIES

SUPPLIED

- 1 x power cord with IEC 60320 C13 connector
- 4 x Accell DisplayPort 1.4 to HDMI 2.0 adapters (models A, B, C only)
- 1 x audio XLR breakout cable (models A, B, C only)
- 9 x micro BNC to BNC adapters (model C only)
- Rubber feet (for tabletop/standalone use)

AVAILABLE SEPARATELY

- Rack kit for mounting the unit to a 19" rack
- Fan filter as a replaceable spare part
- Micro BNC to BNC adapters (model C)



Unit with rails mounted for rack use

TECHNICAL DATA

POWER

- Input voltage: 100-240V
- Rated frequency: 47 Hz ~ 63 Hz
- Power consumption 500W max

SSD MODELS A, B, C

- Standard: 3.8 TB
- Options: 7.6 TB, 15.3 TB (for additional options, please contact Dataton)

SSD MODEL S

- Standard: 1.9 TB

ENVIRONMENTAL

Temperature range

Optimal ambient temperature range for operation 21 °C to 23 °C

Operating 0 °C to +35 °C

Storage and transportation -20 °C to +40 °C

Relative humidity

Optimal 45% to 50%

Operating 20% to 85 % (non-condensing)

Storage and transportation 10% to 90% (non-condensing)

Altitude

Operating, maximum 2000 meters above sea level

Noise

Approximately 50 dBA during normal operation

Remember that noise levels are perceived differently by different people. Bear this in mind when choosing the installation site for your servers.

MEDIA SERVER OPERATING SYSTEM

The operating system in WATCHPAX 62 has been optimized and licensed for this specific media server configuration.

Do not install or attempt to install any software on the locked-down media server (such as drivers, software updates, security updates, virus protection, etc). Doing so will automatically void the unit's warranty.

For security reasons, media servers should always be installed and operate on a separate network, without access to other networks.

2. INSTALLATION AND OPERATION

BEFORE USING YOUR WATCHPAX 62

Please read the manual thoroughly before operation. Always check that the unit has not been damaged in transit when you take delivery.

IMPORTANT: The WATCHPAX 62 is a plug-and-play unit. Do not open, modify or repair the unit yourself. Opening, modifying (software or hardware) or repairing the unit yourself will invalidate the warranty and presents a risk for the user.

SAFETY FIRST

- Insert the power plug all the way in, so it is not loose.
- Do not place the power cord or product near heat sources.
- Caution: shock hazard if handled carelessly or inaccurately.
- Never install the product in a narrow space with bad ventilation. Do not block the ventilation in any way when operated. Always keep front and back of unit clear, minimum 200 mm.
- Keep the plastic packaging bag for the product in a place that can not be reached by children.
- Do not install the product in a place where it is exposed to dust, moisture, oil or smoke.
- Take care not to drop the product when moving it.
- When installing the product on a shelf, ensure the bottom edge of the product does not protrude to avoid tipping or other potential mishaps.
- For pluggable equipment the socket outlet should be easily accessible.
- Do not install the product on an unstable or vibrating surface.
- Installing the product in an unusual place (a place where the product is exposed to a lot of dust, chemical substances, high temperatures, presence of moisture etc) may seriously affect its performance and lifetime.
- Install the product in a clean, dry area without excessive particles or dust, in the air (preferably in an air-conditioned server room). Do not install the product in a place where it is exposed to high temperature, chemicals, dust, moisture, oil or smoke.
- High voltage runs through the product. Do not attempt to disassemble, repair, or modify the product on your own. To move the product, first disconnect all the cables from it.
- If the product generates a burning smell, or smoke, remove the power cord immediately and contact Dataton.
- If the product falls, or the exterior is damaged, power off the product, remove the power cords and contact Dataton.
- If there is a risk of thunderstorm or lightning strike, turn off the power and disconnect all cables.
- Ensure the front and back side are not blocked in any way. These are necessary for proper ventilation.
- Do not insert a metallic object or inflammable object into any opening of the product.

- Unplug this product from the AC power supply before cleaning. Do not use liquid or aerosol cleaners on the product. Use a microfiber cloth for cleaning.
- After storage in cold conditions, let the product adapt to normal temperature for two hours before powering on.
- This equipment design typically applies to industrial equipment expected to be installed in locations where only adults are normally present. If installed by an ordinary person, the installation instructions must be made available for them.

VENTILATION/AIRFLOW

Airflow is critical for the correct operation of WATCHPAX 62 which means that the front and rear sides must not be blocked. The rear is where the connectors are located.

Air flows from the front of the unit to the rear (where the connectors are located). Always keep both front and rear panels clear of obstruction at all times.

Do not install WATCHPAX 62 in a confined space.

INSTALLATION

CONNECT TO POWER

- This equipment is for professional use expected to be installed in locations where only adults are normally present. Check the “**Safety First**” list before use.
- The WATCHOUT 62 must be connected to a properly grounded wall socket (a socket-outlet with protective earth connection in the building).
- Disconnect all power sources before moving or doing any work on the product.
- Caution: Shock hazard may occur if the product is handled carelessly or inaccurately
- The serial number is located on the base of the unit.

STANDALONE INSTALLATION

Place the unit flat with the base down.

Mount the four self-adhesive rubber feet (supplied) at the points indicated on the base of the unit.

INSTALLATION IN 19-INCH RACK

The WATCHPAX 62 unit may be mounted in a 19-inch rack by using the optional rack kit. Please refer to separate instructions for rack kit assembly.

OPERATION

IMPORTANT: Only use the power cable that is delivered with the WATCHPAX 62 unit.

WATCHPAX 62 has a single IEC 60320 C14 power inlet.

FIRST POWER ON

The first time you power up a WATCHPAX 62 (after delivery or after a reset) the system will finalize installation and reboot several times. This procedure will typically take about 5 minutes to complete.

IMPORTANT: Do not interrupt this procedure. The first power-on updates firmware of critical components. Forcefully powering off the system during the configuration process might result in non-working hardware components (i.e., capture devices will stop working).

POWER ON

The WATCHPAX 62 is turned on by inserting the DC power cord and then pressing the power button on the front of the unit for four seconds. Wake on LAN (WOL) may also be used.

POWER OFF

Powering down should be initiated from within WATCHOUT production software.

When the power-off sequence is complete, the fans will turn off, and the power cord may be removed.

There are three ways to power off from WATCHOUT, as described in the “Manage Display Computer” section in Chapter 3: Windows, in the “Dataton WATCHOUT User’s Guide.”

- Use *Manage Display Computer > Power Down* found in the Stage main menu.
- Use the *Manage Display Computer* context menu when a display is selected on the Stage.
- Use the *Remote Access* to initiate shutdown directly from the media server.

NOTE: If you are unable to shut down via the software, you can force shutdown with the power button as a last resort. Please be aware that this may cause data loss and system corruption. To force shutdown in this way, press and hold the power button (located on the front of the media server) for at least 5 seconds. The light will then turn off and the power is cut.

IMPORTANT: Do not unplug the power cord during power-off as this may cause data loss and system corruption.

RESET WATCHPAX 62

There are occasions when you may want to reset a WATCHPAX 62, for example, if the unit has been corrupted, or if it is a rental unit and user-specific info has to be removed between rentals.

There are two levels of reset:

- Reset and keep user data. This resets the operating system, display, GPU and capture settings but retains user data, such as shows and media.
- Reset to factory settings. This takes the unit all the way back to the original factory settings, you lose all user data.

IMPORTANT: A reset, regardless of level, is an advanced measure. Make sure you are fully aware of what data you lose when you reset!

RESET AND KEEP USER DATA

This option resets the system partitions but keeps all user data such as:

- Shows
- Media
- WATCHOUT settings
- Startup script
 - Network settings
 - Timecode settings

Driver-related settings will be reset to default factory settings such as:

- Display settings
 - Display mode
 - EDID caching
- GPU settings
 - EDID emulation
 - Synchronization
- Capture settings
 - Color domain, etc.

IMPORTANT: EDID settings on the HDMI capture card are not deleted. This data is stored on the card itself and needs to be removed separately.

RESET TO FACTORY SETTINGS

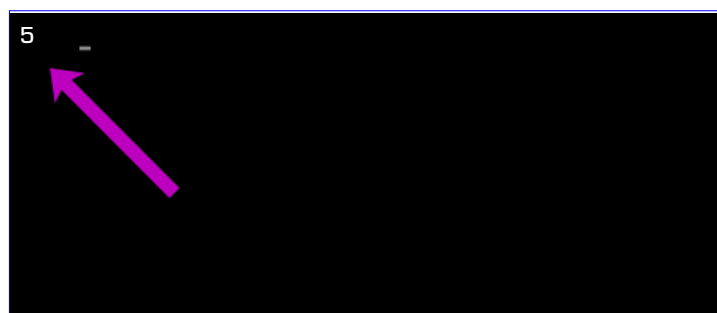
This resets all partitions to factory settings and all user data will be lost. This level of reset is suitable when you want to remove all settings between projects.

IMPORTANT: EDID settings on the HDMI capture card are not deleted. This data is stored on the card itself and needs to be removed separately.

RESET PROCEDURE

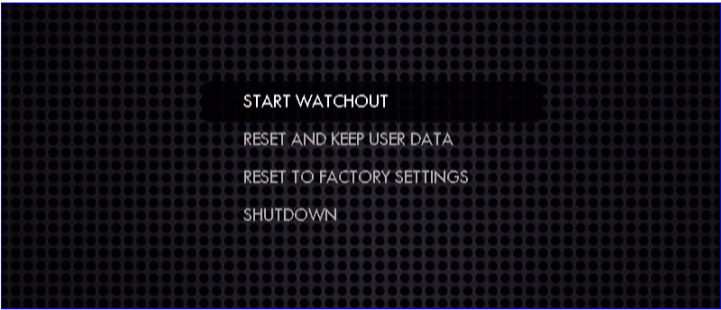
The reset menu is purposely hidden in order to avoid accidental resets or misuse. To reset your WATCHPAX 62 device, follow these 10 steps:

1. Power off the WATCHPAX 62.
2. Disconnect all USB devices.
3. Insert a keyboard into one of the USB ports.
4. Connect at least one display device to a DisplayPort output.
5. Power on the WATCHPAX 62.
6. During startup, you will see a five-second countdown in the top left corner of the display. Press Esc during this countdown.

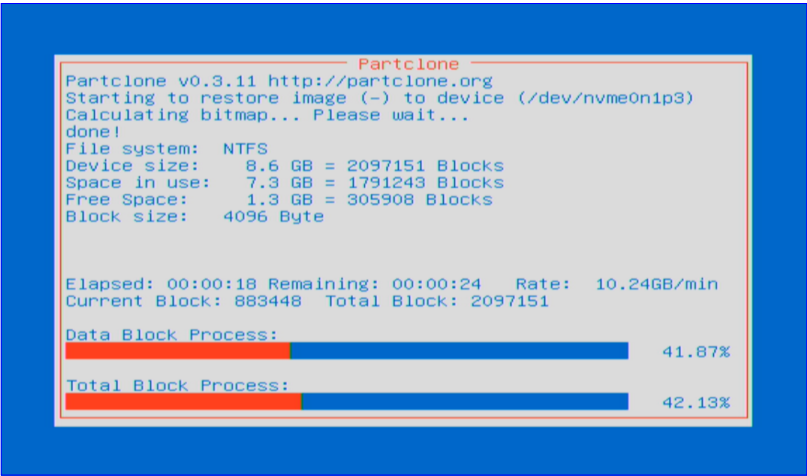


NOTE: If you don't see a counter, it means the display devices are slow to lock to the output using DisplayPort. In this case, press "Esc" five seconds after the startup beep.

7. Select the desired reset option in the menu that appears, and press Enter.



8. IMPORTANT: There will be no confirmation: the reset process starts immediately, providing some visual feedback.



9. The WATCHPAX 62 will restart several times in order to configure the operating system and hardware.



IMPORTANT: Do not power off the device during the configuration process!

10. WATCHOUT will start when the process is complete. The system image version (r#) will be appended after the serial number.



DELETE FILES

To remove unused files from the WATCHPAX unit, open WATCHOUT on the production computer on the network. Go to the Stage menu, as below:

Stage > Manage Display Computer > Delete Other Shows

This deletes files from online display computers for all shows, with the exception of the current (open) show.

REBUILD SHOW CACHE

WATCHOUT usually manages the cached data associated with the current (open) show automatically. This ensures that the files stored on your WATCHPAX 62 reflect the latest version of the show.

If the files on the WATCHPAX 62 have been corrupted in some way, you may want to force the show cache to rebuild.

Open WATCHOUT on the production computer on the network. Go to the Stage menu, as below:

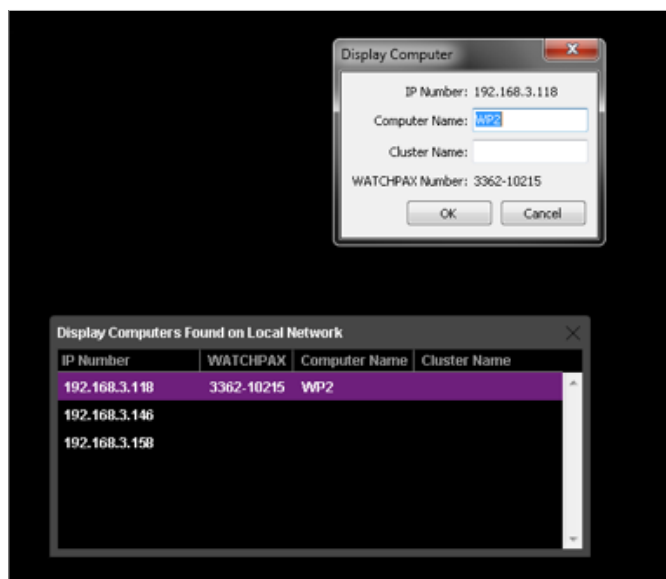
Stage > Manage Display Computer > Re-build Show Cache

This removes and rebuilds all cached data associated with the current show.

3. QUICKSTART GUIDE

THE BASICS

- Connect displays to the WATCHPAX 62.
- Connect the network to the WATCHPAX 62 using the Ethernet 1 port. The Ethernet 2 port is currently disabled and reserved for future use.
- Power up the WATCHPAX 62 (see “Power On”).
- Start WATCHOUT software on the production computer which is on the same network.
Important: Make sure you are using WATCHOUT version 6.7.2 or higher. Lower versions do not support WATCHPAX 62 usage.
- The WATCHPAX and any WATCHOUT display computers on the local network will be listed in *Window > Network*. Assign display and cluster names (if required) by double-clicking an item in the list, see screenshot.



WATCHPAX and display computers on the network

MANAGE NETWORK SETTINGS

WATCHPAX automatically retrieves an IP address via a DHCP server. If no DHCP server is available, the WATCHPAX will get a self-assigned IP address in the range 169.254.x.y

If you are using a control system, you may want to use a fixed IP address for WATCHPAX. Still in WATCHOUT, assign a fixed IP through the WATCHOUT protocol command “setIP” in the Startup Script as shown below:

```
authenticate 2  
setIP 192.168.0.32
```

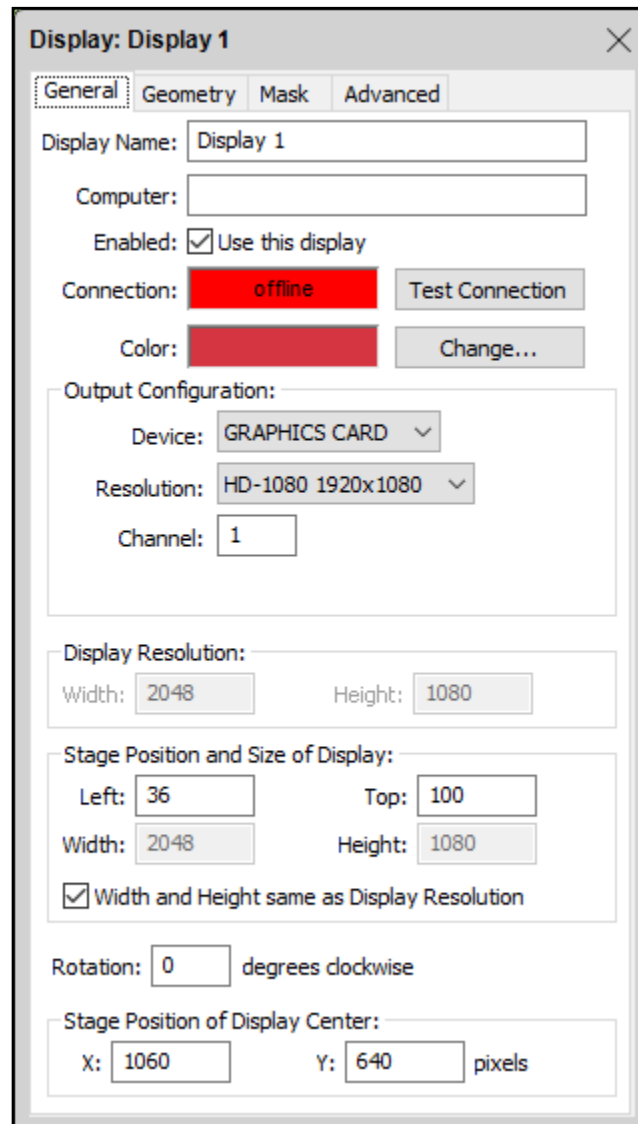
Make sure you choose an IP address in the correct subnet range. To remove the fixed IP number, use the same command but with an empty string parameter, as below:

```
authenticate 2  
setIP
```

The WATCHPAX 62 may also be addressed by name and/or cluster. Please see the “Network Window” section in Chapter 3: Windows, “WATCHOUT User’s Guide” for more information about this feature.

SET NATIVE RESOLUTION

Double-click the display in the Stage window and set the native resolution of your screen or projector, see screenshot.



Display: Display 1

General Geometry Mask Advanced

Display Name: Display 1

Computer:

Enabled: ☒ Use this display

Connection: offline Test Connection

Color: Change...

Output Configuration:

Device: GRAPHICS CARD

Resolution: HD-1080 1920x1080

Channel: 1

Display Resolution:

Width: 2048 Height: 1080

Stage Position and Size of Display:

Left: 36 Top: 100

Width: 2048 Height: 1080

☒ Width and Height same as Display Resolution

Rotation: 0 degrees clockwise

Stage Position of Display Center:

X: 1060 Y: 640 pixels

AUTO START

A WATCHOUT production computer has to be connected when you compose or create your show. When you have composed your show, you can replace the production computer with an external control system, or auto-start the WATCHPAX by using the built-in Startup Script.

NOTE: Use Edit Startup Script in WATCHOUT to define initial WATCHPAX settings. This lets you load shows and perform other WATCHOUT protocol commands. For more information, please see the section on “Display Software,” Command Line Options, “WATCHOUT User’s Guide”.

4. SYNCHRONIZATION

WATCHPAX 62 offers three kinds of synchronization:

- Models S, A, B, C: Standard, WATCHOUT network-based synchronization. This will keep all media servers in the WATCHOUT cluster synchronized. The sync signal comes from either the production computer or the WATCHPAX 62 acting as the cluster conductor.
- Models S, A, B, C: External timecode. The WATCHOUT system can be slaved to an external linear timecode source (LTC). The LTC signal can be fed to the production computer or to the display cluster master, (see [“External Timecode”](#)).
- Models B, C: Hardware-locked synchronization between display clusters. This can be achieved in two ways: using the built-in synchronization card, (see [“GPU Synchronization – Models B, C”](#)), using an external sync connected to the sync input on the SDI card, (see [“SDI Synchronization – Model C Only”](#)).

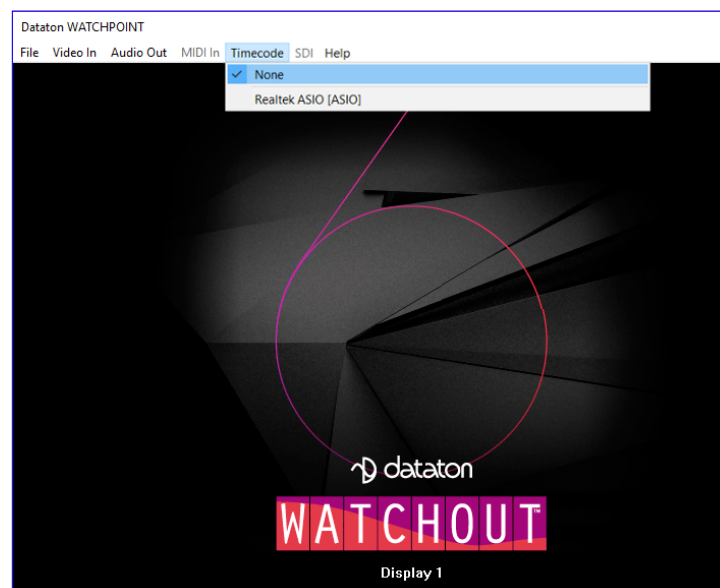
To configure and setup synchronization, access each media server locally. Do this either by a *Remote Access* (from the WATCHOUT production computer) or connect a USB keyboard/mouse and screen to your WATCHPAX 62.

Connecting by Remote Access will automatically bring up the WATCHOUT Display window (WATCHPOINT). If you are using a local keyboard/mouse and screen, enter Ctrl-W to bring up this window. You’ll find more on this in the “Dataton WATCHOUT User’s Guide” in the section on “Display Devices” (Chapter 2: Installation) and “Remote Access” (Chapter 4: Commands).

EXTERNAL TIMECODE

For this to work, timecode must be enabled in the startup script. Read how to do this in the section on “List of Commands/timecodeMode” (Appendix C: Control Protocol) in the “Dataton WATCHOUT User’s Guide.”

Open the WATCHOUT Display menu (WATCHPOINT, Ctrl-W) and select the interface you want to use under “Timecode”.



Models A, B, C: Connect the external timecode source to the audio input using the *Left In 1* connector on the XLR break-out cable. See [“Analog Audio Output Formats \(A, B, C\)”](#).

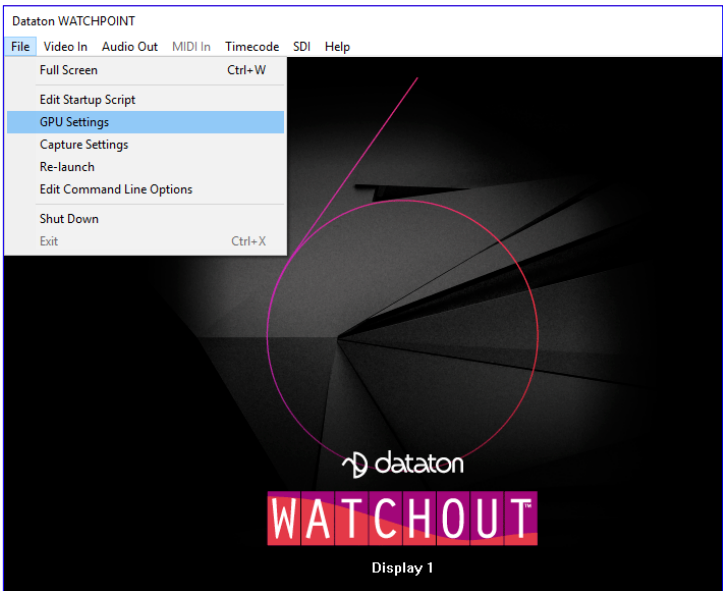
Model S: As this has no audio input, an external USB device is needed to input the timecode signal.

GPU SYNCHRONIZATION – MODELS B, C

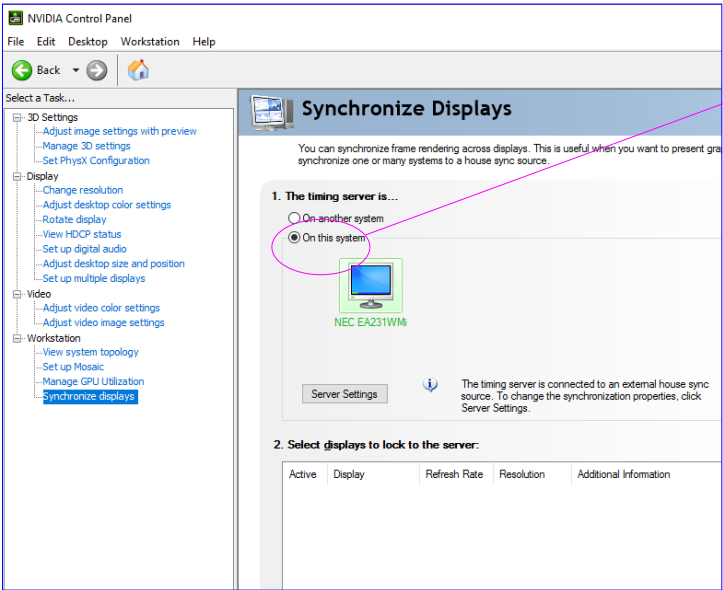
The WATCHPAX 62 is equipped with a synchronization card which makes it possible to achieve frame-lock, synchronization between GPUs and synchronization to an external timing source.

CONFIGURE GPU SYNCHRONIZATION

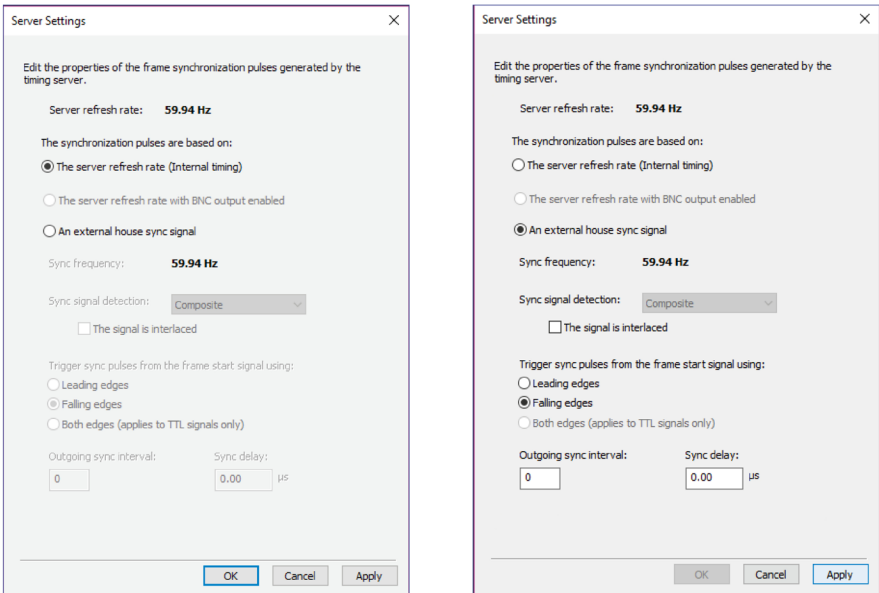
Open the WATCHOUT Display File menu and click GPU settings.



Navigate to Synchronize Displays and set the Timing Server to “On this system”.

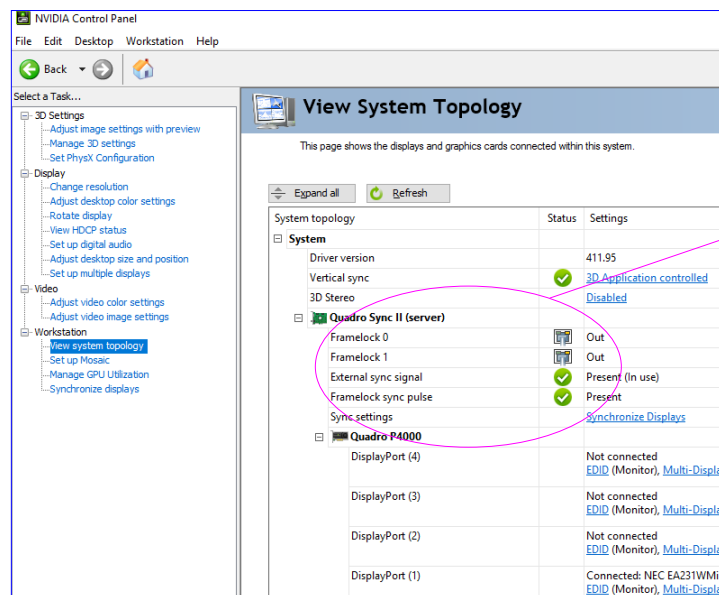


Enter the Server settings.



Here you can either choose the internal timing of this WATCHPAX 62 to be used across your system or, if an external sync generator is connected to your sync card, set it to “An external house sync signal”.

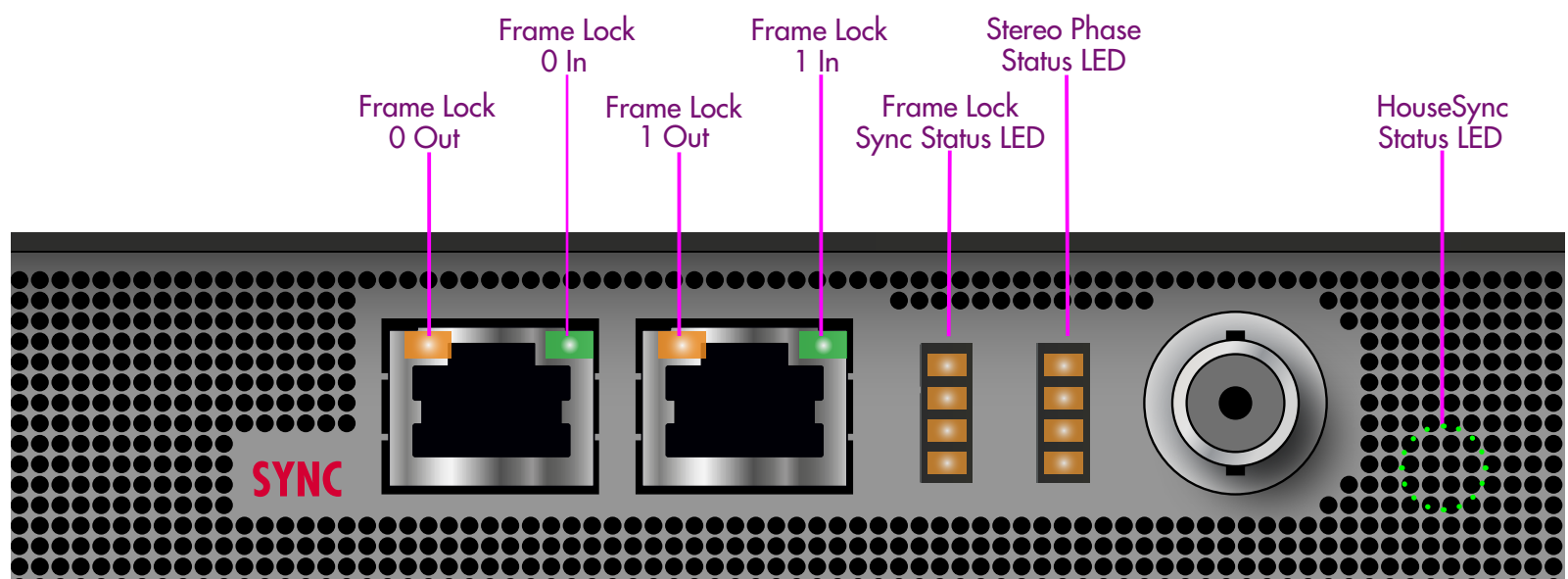
Make sure that synchronization is set up correctly by navigating to “View System Topology”.



Check this info!

INTERPRET STATUS LEDS

- Solid orange: Port is output but no signal is present.
- Solid green: Port is input but no signal is present.
- Flashing orange: Port is output and transmitting. The flashing frequency indicates the refresh rate of the signal.
- Flashing green: Port is input and receiving. The flashing frequency indicates the refresh rate of the signal.



Rear panel, WATCHPAX 62

CONNECT GPU SYNCHRONIZATION

There are two ways to connect GPU synchronization:

- Sync generator into BNC connector.
- Cat 5 cable between the machines to synchronize.

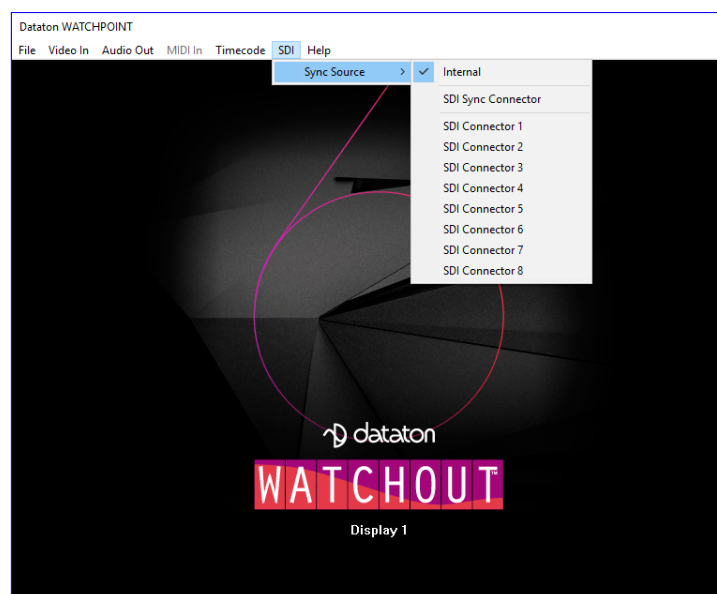
IMPORTANT: Do not connect a network cable between the Sync port on your WATCHPAX 62 and a network interface as this may cause permanent damage to the card inside.

SDI SYNCHRONIZATION – MODEL C ONLY

The SDI outputs on your WATCHPAX 62 can be synchronized in three ways, or modes, as listed below:

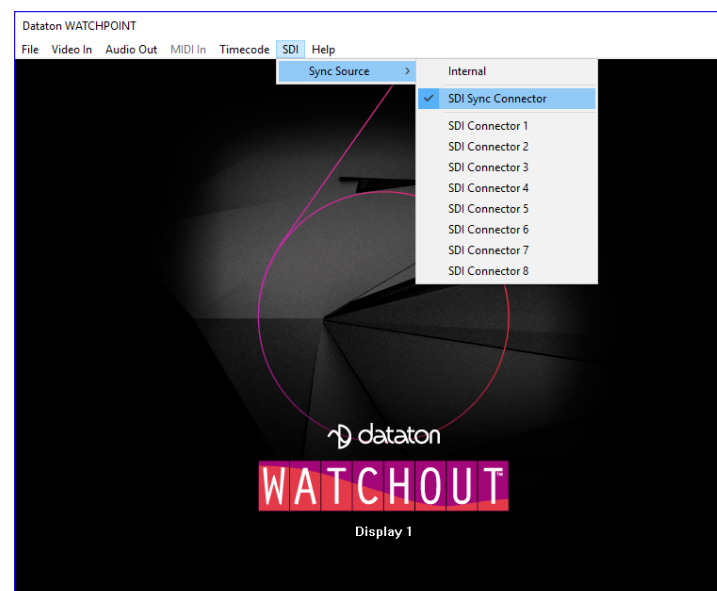
MODE 1: INTERNAL SYNC

This is the default mode. Having this set will ensure synchronization between the different SDI output channels.



MODE 2: SDI SYNC CONNECTOR

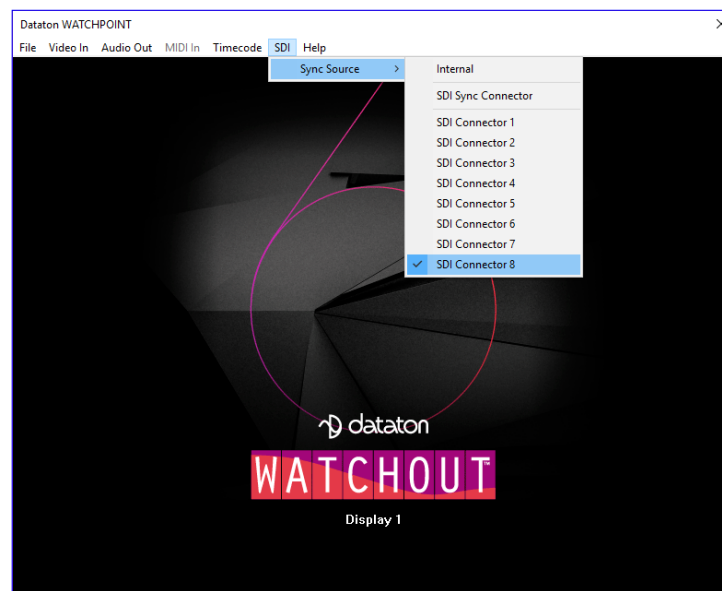
This mode utilizes the dedicated synchronization connector of the SDI board and can be used with a bi- or tri-level synchronization signal.



- If the correct synchronization signal is received (a signal matching your display's refresh rate), the streams will lock after a quick flash of the displays.
- If an incorrect synchronization signal is received, the streams will still be output. However, an error message will be shown saying that no sync signal was found.
- Successfully locking signals will not yield any message in WATCHOUT.
- If synchronization signal is lost, a warning message will be shown in the production interface.
- If synchronization is reconnected it might take up to 10 seconds for it to lock the streams again.
- If WATCHOUT is set to use the SDI Sync Connector but no synchronization signal is present, the streams will not be output.

MODE 3: SDI CONNECTOR

The standard SDI connectors can also be used as sync connectors. In order to synchronize your streams this way, the connector receiving the synchronization signal must be selected in the SDI settings of the WATCHOUT Display (WATCHPOINT) menu.



- Capture source can also be used as a sync signal.
- In case of incorrect synchronization signal or if no signal is present, the streams will be output but not in synchronization.
- If a machine fails to lock to the synchronization signal all streams in the cluster must be restarted, even if, for example, two out of three devices successfully locked to the synchronization.

5. EDID MANAGEMENT

Extended Display Identification Data (EDID) is a standardized data format for a display, such as a projector, screen or monitor, to describe its performance capability to a video source both for playout and capture purposes. The information exchanged in an EDID handshake includes the resolution, refresh rates and timings available in the display.

EDID MANAGEMENT FOR PLAYOUT

This section is a walkthrough on how to manage EDID on a WATCHPAX 62 using NVIDIA's control panel. The following functionality is provided:

- Export EDID from a display to file.
- Load EDID from file in order to emulate EDID on one or multiple outputs. This makes it possible to output a signal whether a display is connected or not.
- Unload the emulated EDID in order to switch to the EDID of a connected display device.

HINT: For fixed installations it's recommended to emulate EDID for a more robust operation. This makes the WATCHPAX independent of the power state of the connected display device(s).

ACCESS EDID MANAGEMENT SETTINGS

To configure and setup EDID, access each media server locally. Do this either by a *Remote Access* (from the WATCHOUT production computer) or connect a USB keyboard/mouse and screen to your WATCHPAX 62.

Connecting by Remote Access will automatically bring up the WATCHOUT Display window (WATCHPOINT). If you are using a local keyboard/mouse and screen, enter Ctrl-W to bring up this window.

You'll find more on this in the "Dataton WATCHOUT User's Guide" in the section on "Display Devices" (Chapter 2: Installation) and "Remote Access" (Chapter 4: Commands).

Follow this procedure to access EDID management settings:

1. In the menu select *File > GPU Settings*.

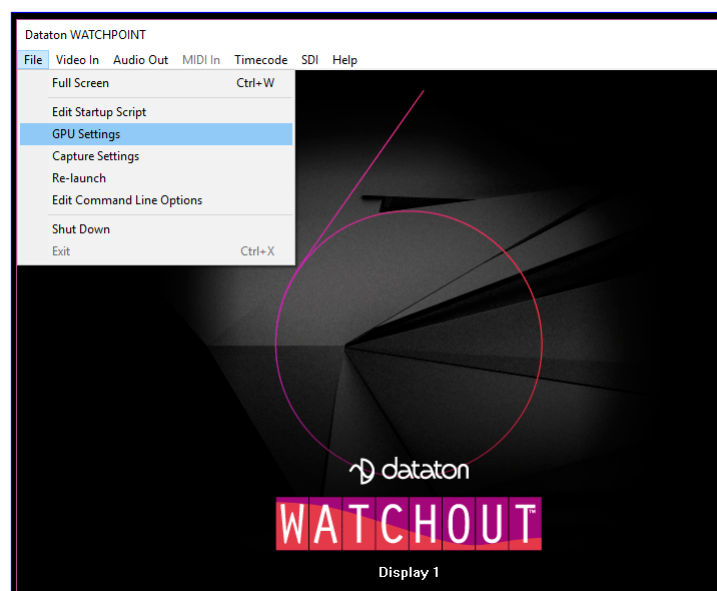


Figure 1

2. Navigate to the *Workstation >View System Topology* (figure 2).

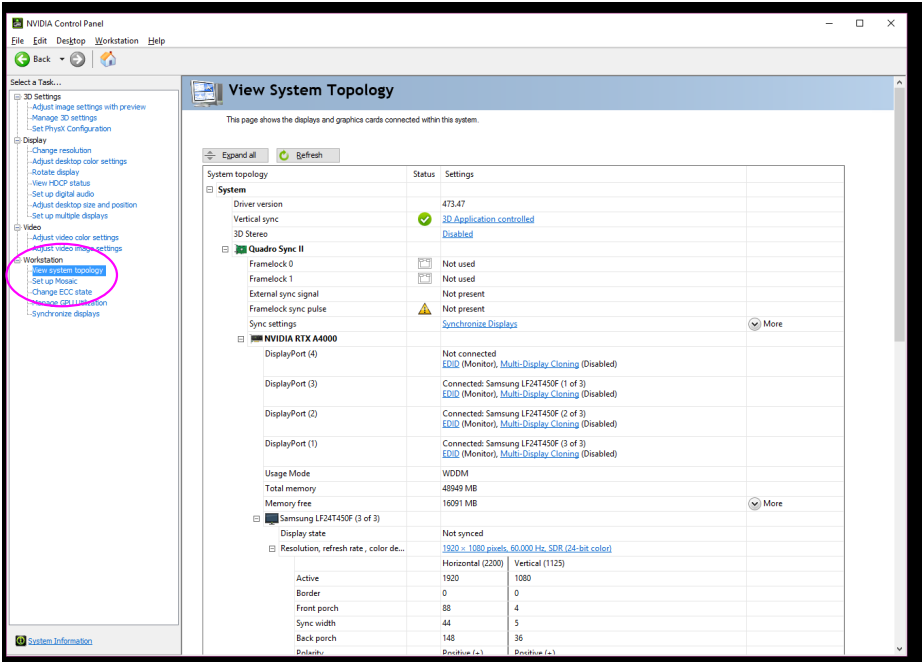


Figure 2

3. All outputs are listed within the A4000 section. Open the “Manage EDID” window by clicking the EDID link (figure 3).

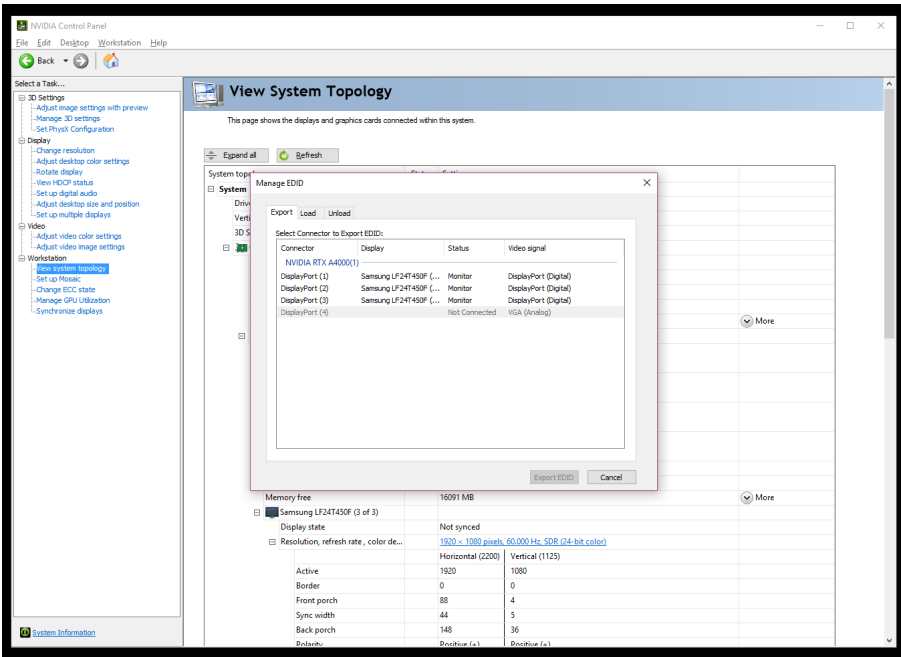


Figure 3

It’s possible to export EDID files to external USB devices or to store them locally on the W:\ drive. Files stored on the system (C:\) will disappear after a reboot.

EXPORT EDID

To export EDID from a display, select an active display and press the Export button.

LOAD EDID

To emulate an EDID on selected display(s) from file (figure 4):

- 1. Select the “Load” tab.
- 2. Check the outputs to override.

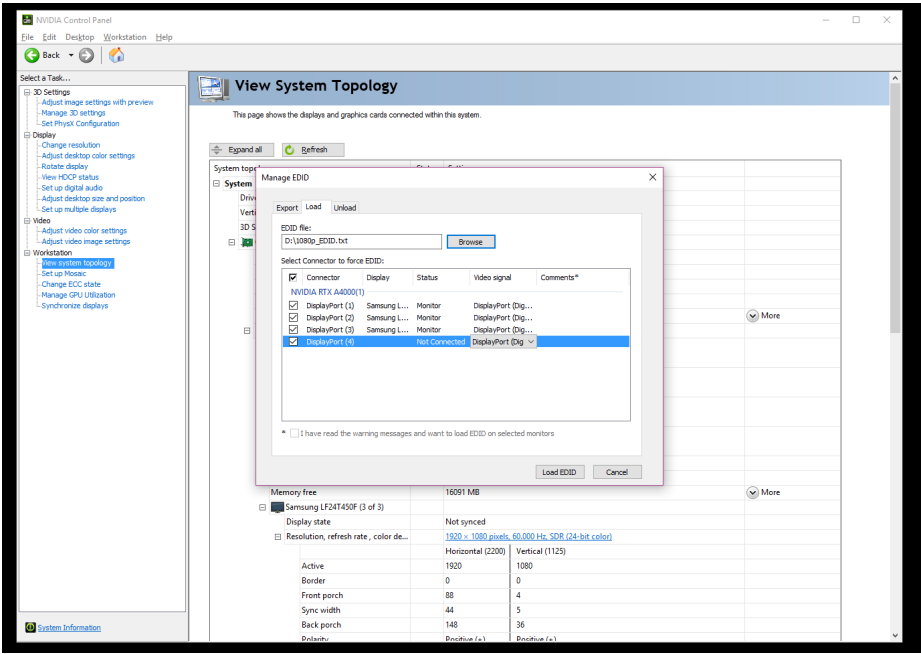


Figure 4

- 3. Press the “Load EDID” button.

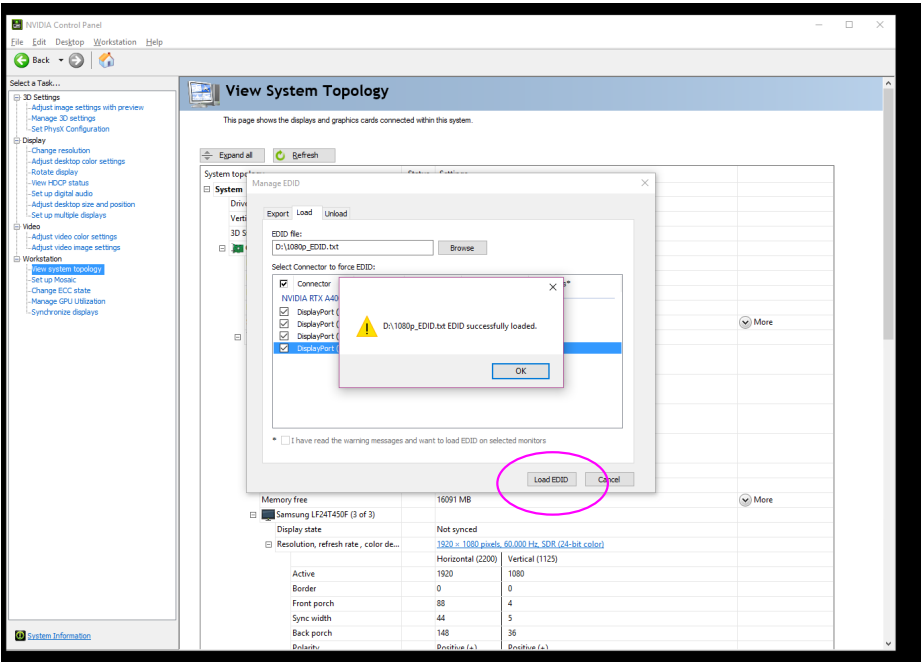


Figure 5

UNLOAD EDID

To remove the EDID emulation on selected displays (figure 6):

1. Select the Unload tab.
2. Check the outputs to unload.

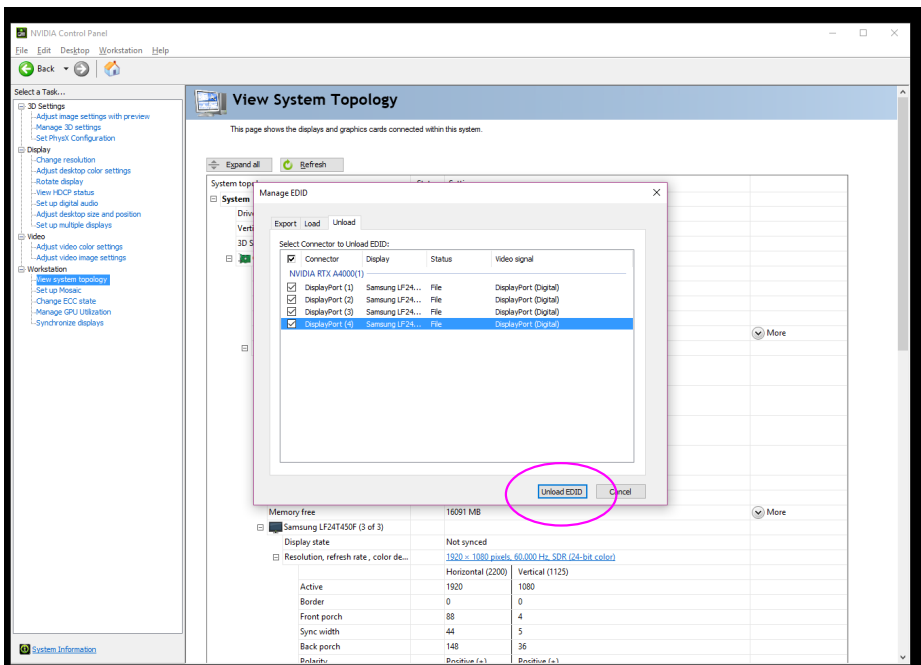


Figure 6

3. Press the Unload EDID button.

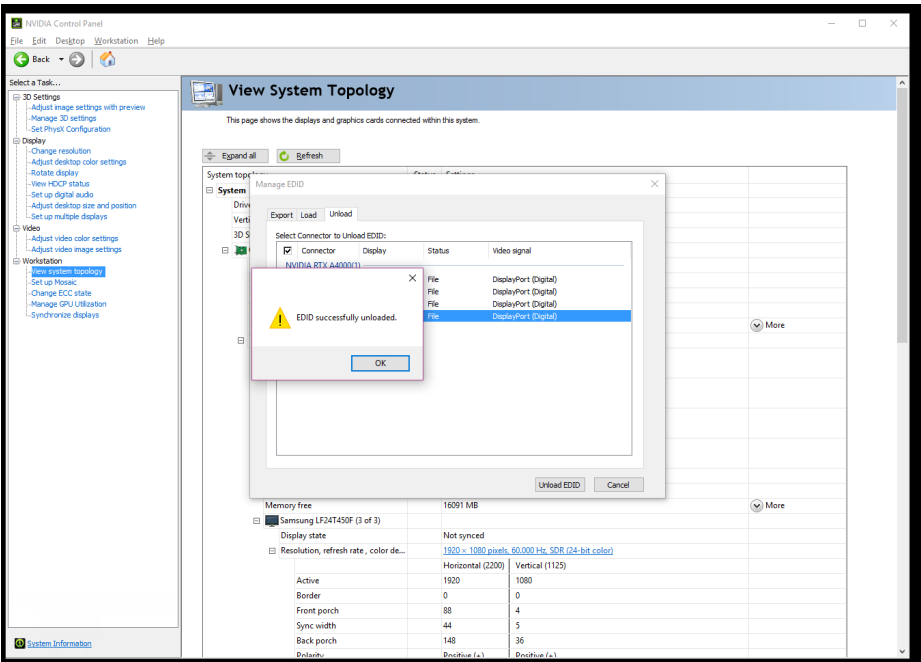


Figure 7

EDID MANAGEMENT FOR HDMI CAPTURE

This section is a walkthrough on how to manage EDID on a WATCHPAX 62 using Deltacast's control panel. The following functionality is provided:

- Export EDID from a capture source to file.
- Load EDID from file in order to emulate EDID on one or multiple capture inputs. This makes it possible to emulate a signal even if a capture source is not connected.
- Unload the emulated EDID in order to switch to the EDID of the connected capture source.

ACCESS CAPTURE SETTINGS

Access each media server locally. Do this either by a *Remote Access* (from the WATCHOUT production computer) or connect a USB keyboard/mouse and screen to your WATCHPAX 62.

Connecting by Remote Access will automatically bring up the WATCHOUT Display window (WATCHPOINT). If you are using a local keyboard/mouse and screen, enter Ctrl-W to bring up this window.

You'll find more on this in the "Dataton WATCHOUT User's Guide" in the section on "Display Devices" (Chapter 2: Installation) and "Remote Access" (Chapter 4: Commands).

Follow this procedure to access capture settings:

1. In the menu select *File > Capture Settings*.

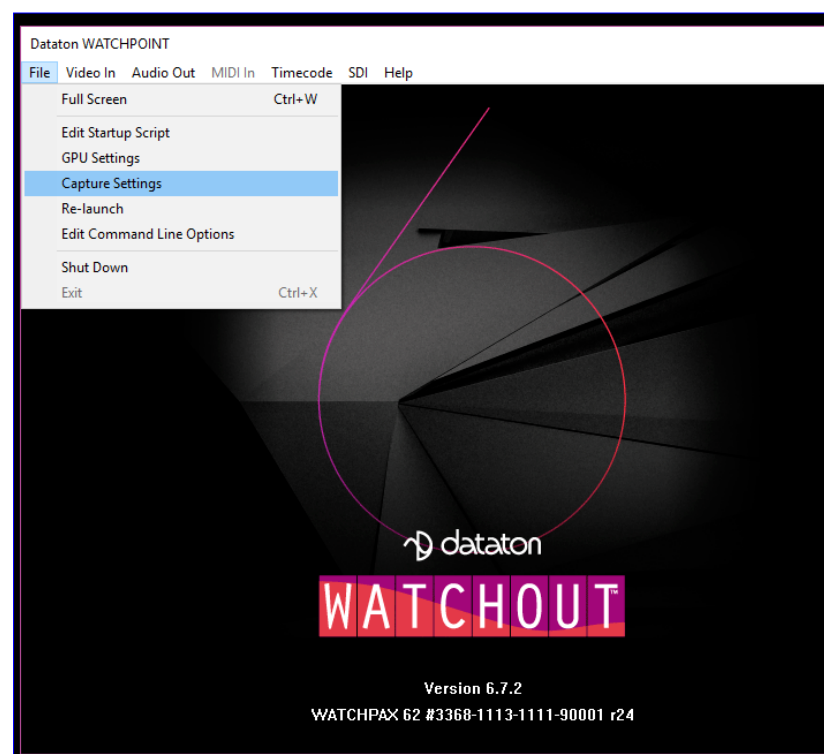


Figure 8

2. The Deltacast control software will start. Go to the *IO control* (figure 9).



Figure 9 a



Figure 9 b

3. Select the HDMI capture card.

Note: Only WATCHPAX 62 model C has more than one capture card.

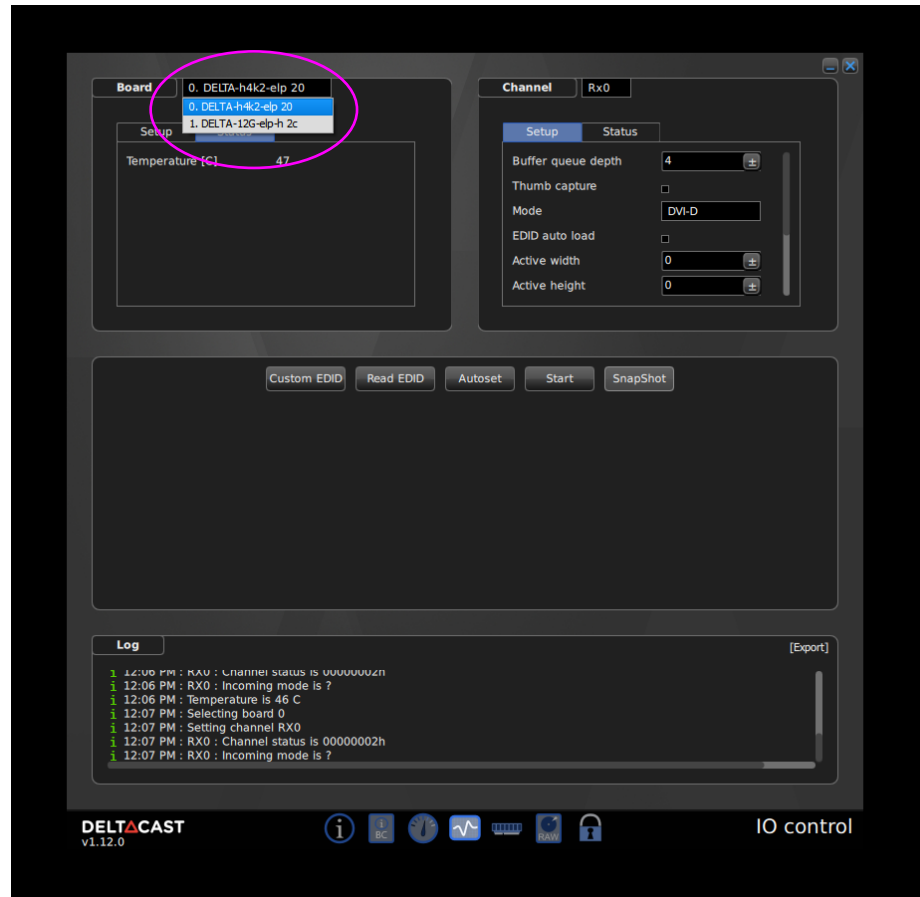


Figure 10

EXPORT EDID

1. To export EDID from a capture source, first select *Read EDID* to read and save the current EDID from the capture source.

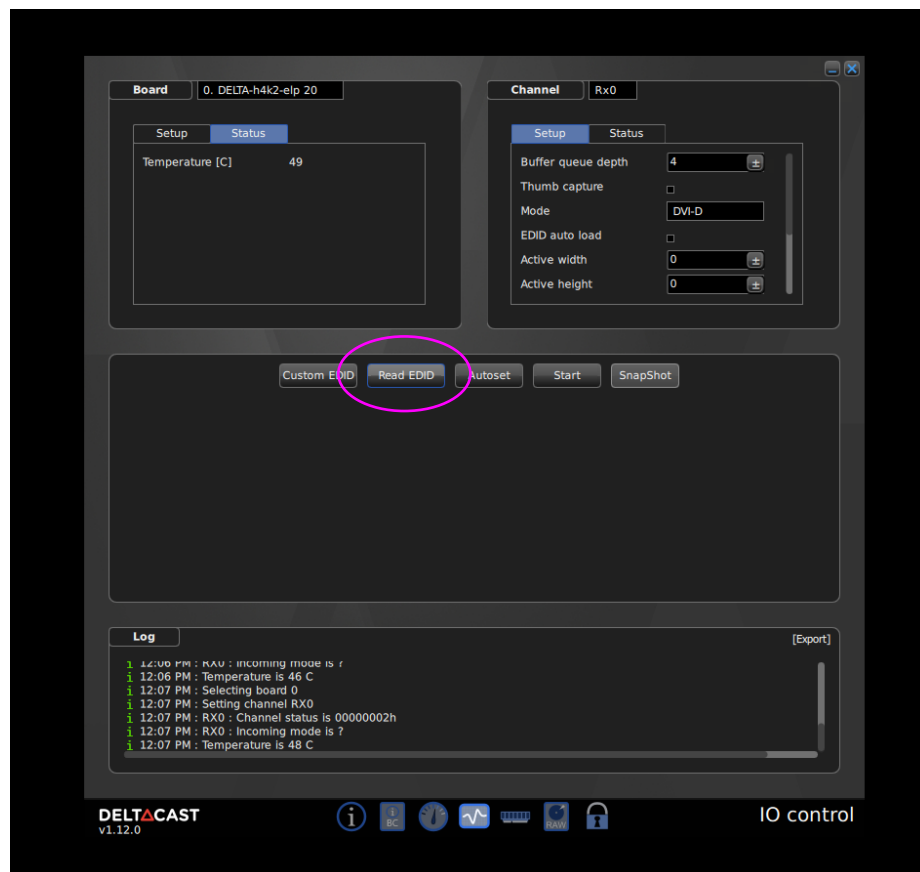


Figure 11

2. Choose the location to save the EDID. You can export to an external USB device or store it on the W:\ drive. Note that a reset to factory settings will delete files on the W:\ drive.

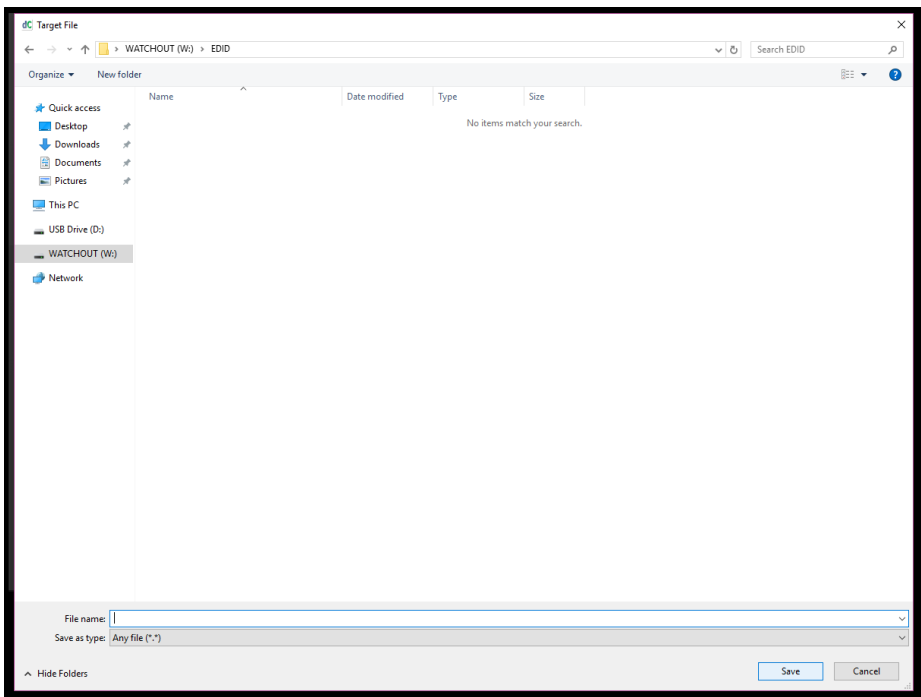


Figure 12 a

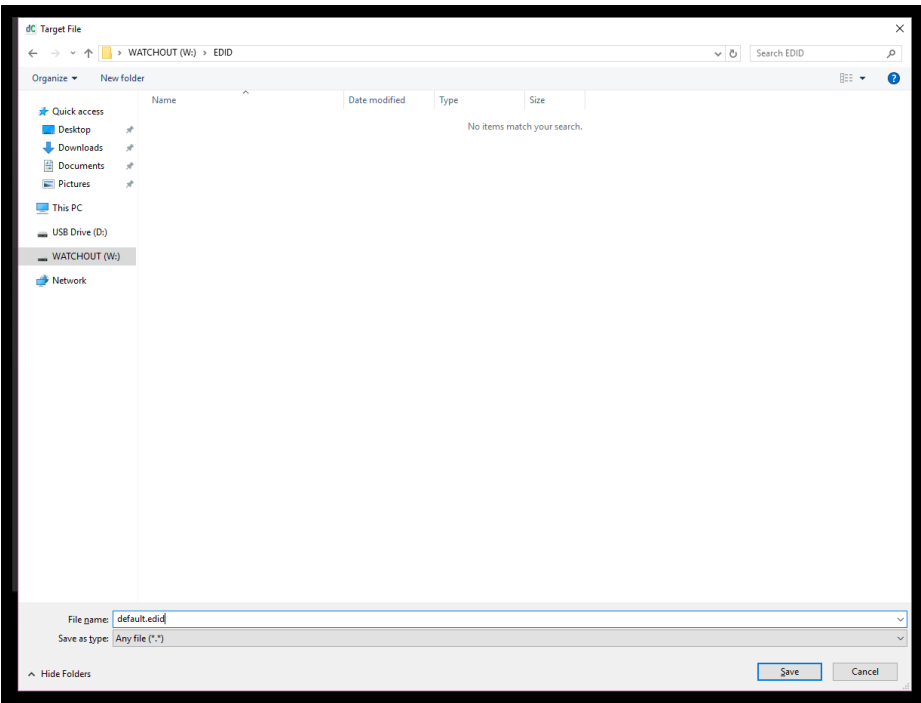


Figure 12 b

LOAD EDID

1. To load the EDID to the capture source, select *Custom EDID*.

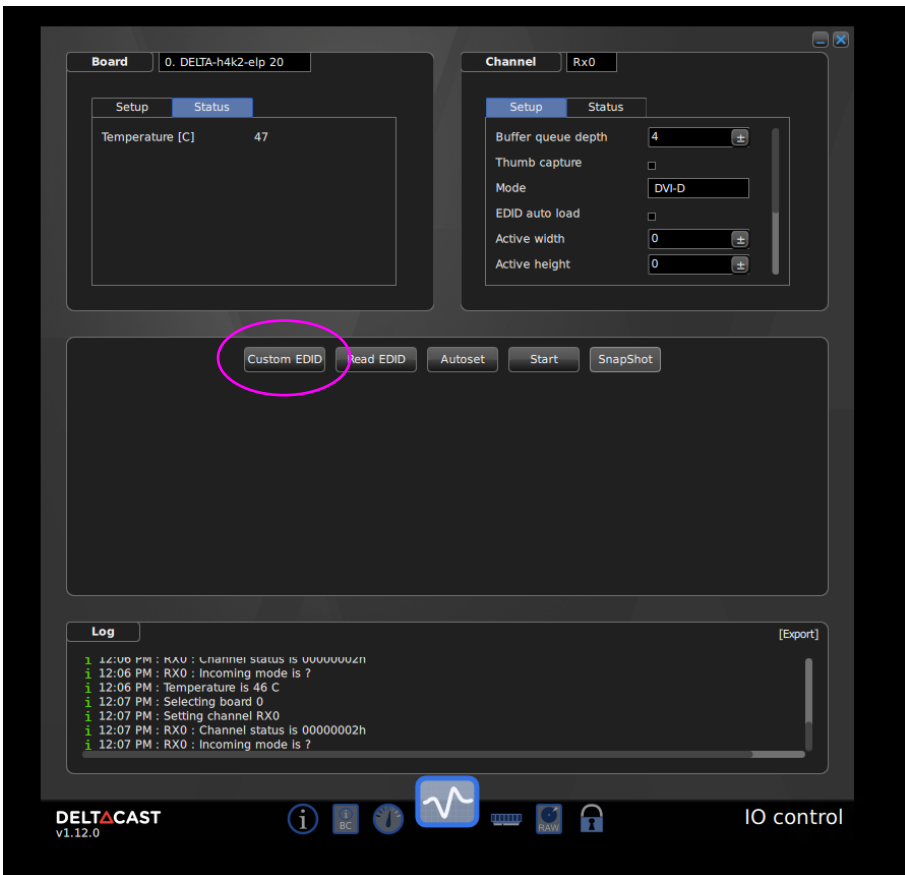


Figure 13

2. Choose the EDID to load on your drive and select *Open* to load the file into the WATCHPAX 62 capture card .

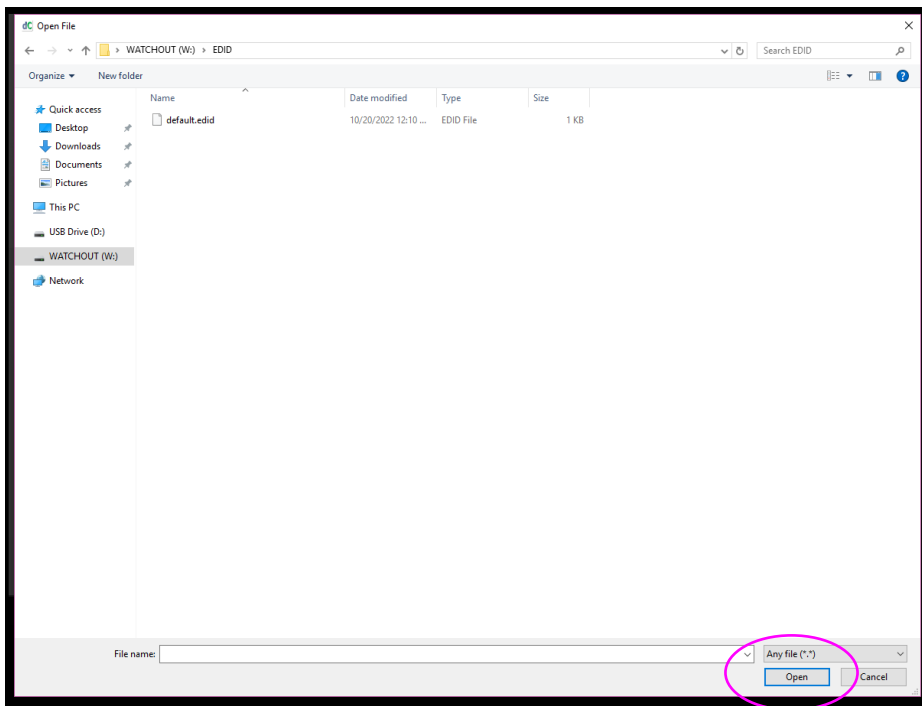


Figure 14

UNLOAD EDID

IMPORTANT: It is not possible to restore the capture input EDID with a regular reset or even a factory reset of the WATCHPAX 62. The only way to reset the capture card input to the factory EDID is to load it from a file saved on the hard drive of the WATCHPAX 62.

1. Choose the EDID to load from the directory W:\EDID\capture.
 - » If your capture card identifies itself as a “Delta_h4k elp 20” in the *Board* field (see Figure 10) choose the file named “delta_h4k_edid.bin”
 - » If your capture card identifies itself as a “Delta_h4k2 elp 20” in the *Board* field, choose the file named “delta_h4k2_edid.bin”
2. Select *Open* to load the file to the WATCHPAX 62 capture card.

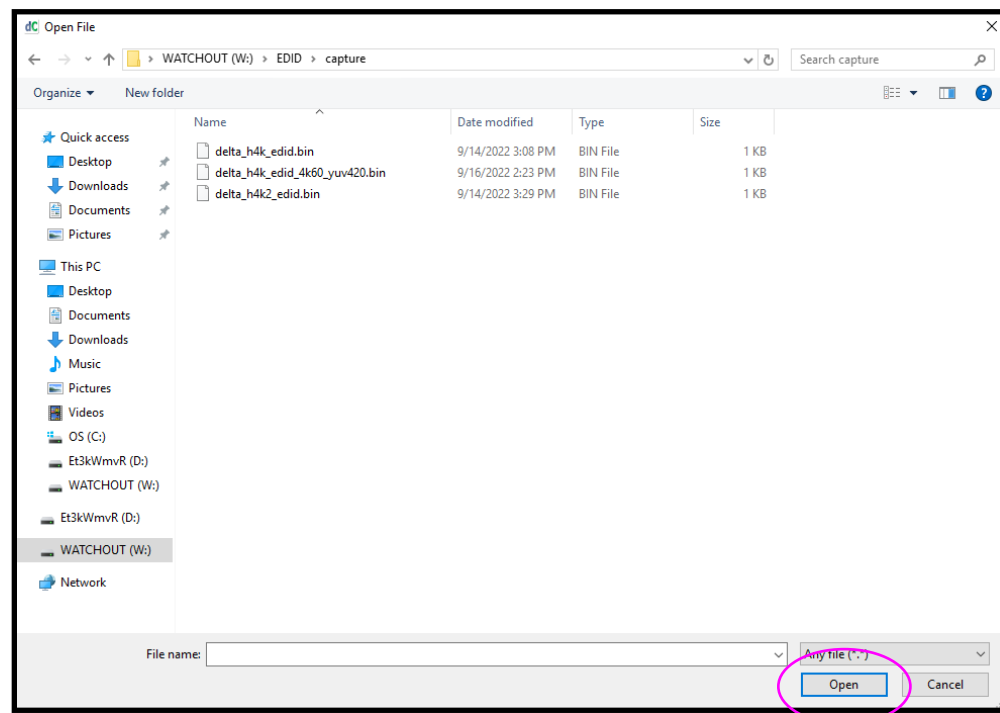


Figure 15

6. WATCHPAX 62 MODEL S

WATCHOUT VERSION

Version 6.7.2 or higher.

DIMENSIONS

| | |
|--------|---------|
| Width | 448 mm |
| Height | 90 mm |
| Depth | 335 mm |
| Weight | 8 300 g |

SHIPPING DIMENSIONS

WATCHPAX 62 is shipped in a sturdy, custom-design, corrugated cardboard box with handle.
Dimensions as below:

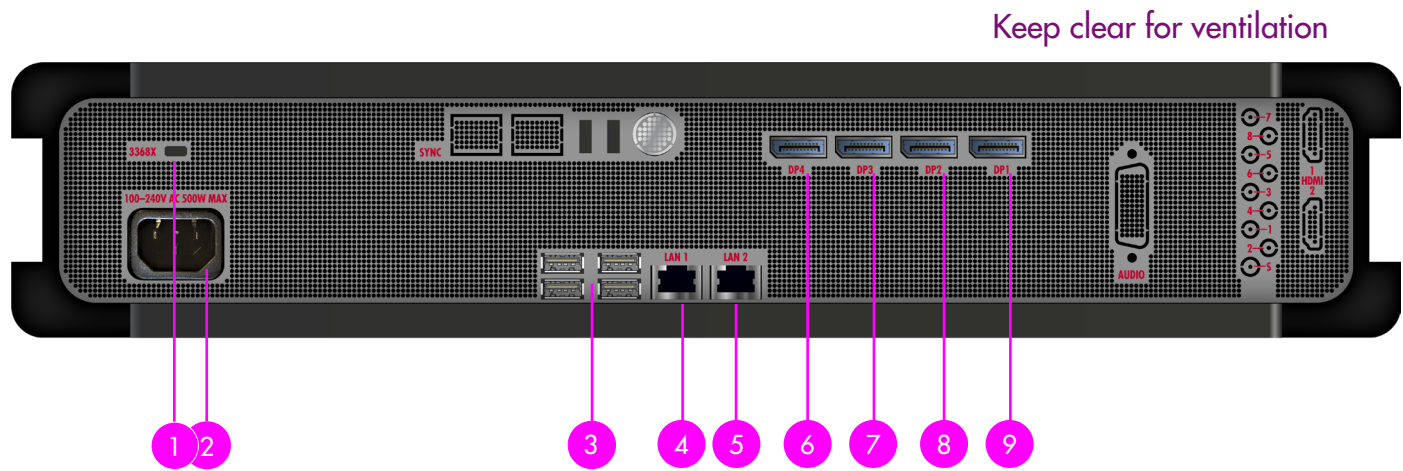
| | |
|--------|--|
| Width | 519 mm |
| Height | 180 mm |
| Depth | 475 mm |
| Weight | 8 300 g + approximately 1 900 g (power cable, box and packaging) |

FRONT VIEW



CONNECTORS

WATCHPAX 62 model S:



| CONNECTOR | DESCRIPTION |
|-----------|---|
| 1 | Kensington lock |
| 2 | Power inlet IEC 60320 C14 |
| 3 | USB 3.0 port 1, 2, 3. 4 |
| 4 | RJ45 10GbE Ethernet 1 |
| 5 | RJ45 10GbE Ethernet 2 Currently disabled; reserved for future use. |
| 6 | DisplayPort v1.4 - 4 |
| 7 | DisplayPort v1.4 - 3 |
| 8 | DisplayPort v1.4 - 2 |
| 9 | DisplayPort v1.4 - 1 |

7. WATCHPAX 62 MODEL A

WATCHOUT VERSION

Version 6.7.2 or higher.

DIMENSIONS

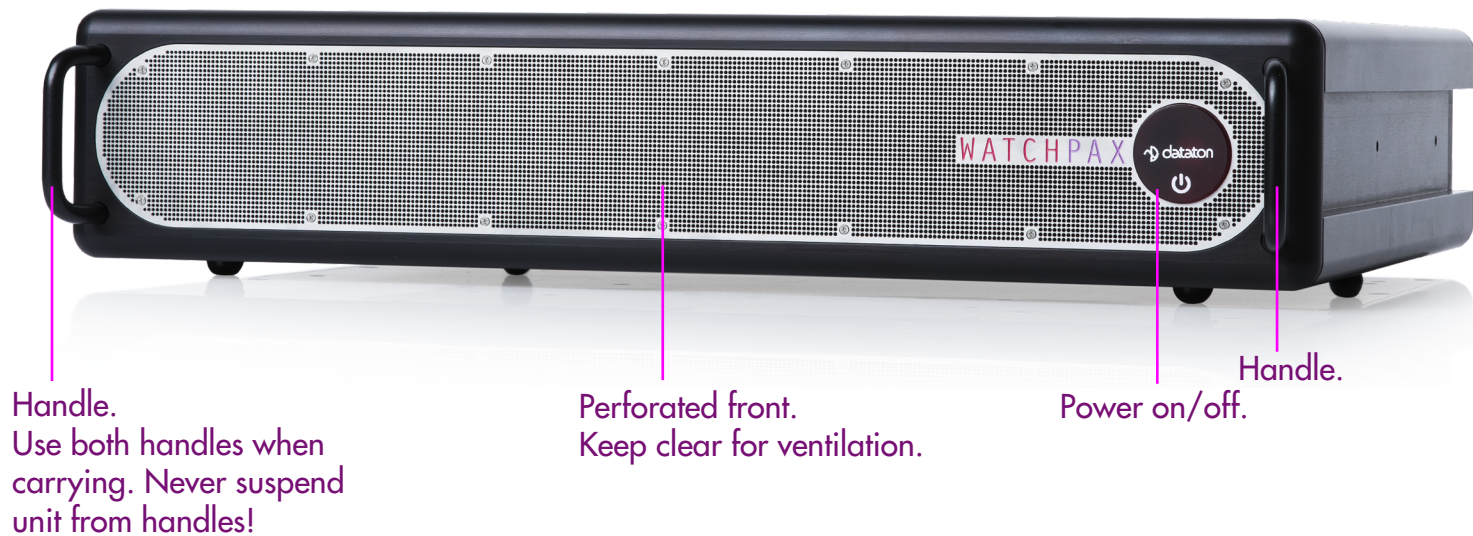
| | |
|--------|---------|
| Width | 448 mm |
| Height | 90 mm |
| Depth | 335 mm |
| Weight | 8 300 g |

SHIPPING DIMENSIONS

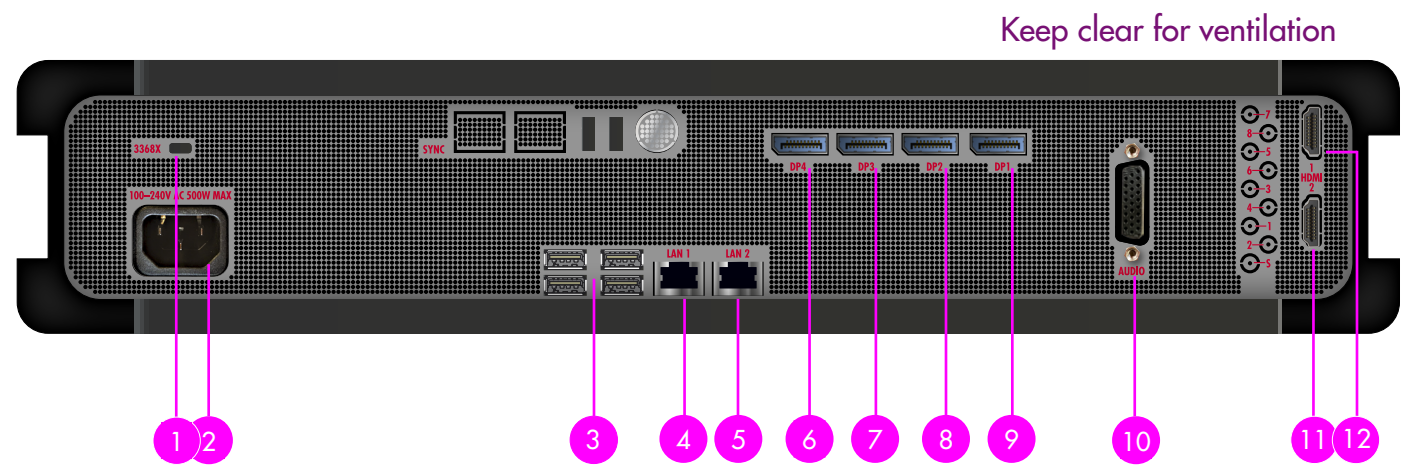
WATCHPAX 62 is shipped in a sturdy, custom-design, corrugated cardboard box with handle. Dimensions as below:

| | |
|--------|--|
| Width | 519 mm |
| Height | 180 mm |
| Depth | 475 mm |
| Weight | 8 300 g + approximately 2.6 kg (cables, box and packaging) |

FRONT VIEW



CONNECTORS
WATCHPAX 62 model A:



| CONNECTOR | DESCRIPTION |
|-----------|---|
| 1 | Kensington lock |
| 2 | Power inlet IEC 60320 C14 |
| 3 | USB 3.0 port 1, 2, 3, 4 |
| 4 | RJ45 10GbE Ethernet - 1 |
| 5 | RJ45 10GbE Ethernet - 2 Currently disabled; reserved for future use. |
| 6 | DisplayPort v1.4 - 4 |
| 7 | DisplayPort v1.4 - 3 |
| 8 | DisplayPort v1.4 - 2 |
| 9 | DisplayPort v1.4 - 1 |
| 10 | Audio input/output. XLR by break-out cable, 2 outputs, 1 input |
| 11 | Capture card HDMI 1.4 - 2 (RX 0) |
| 12 | Capture card HDMI 1.4 - 1 (RX 1) |

8. WATCHPAX 62 MODEL B

WATCHOUT VERSION

Version 6.7.2 or higher.

DIMENSIONS

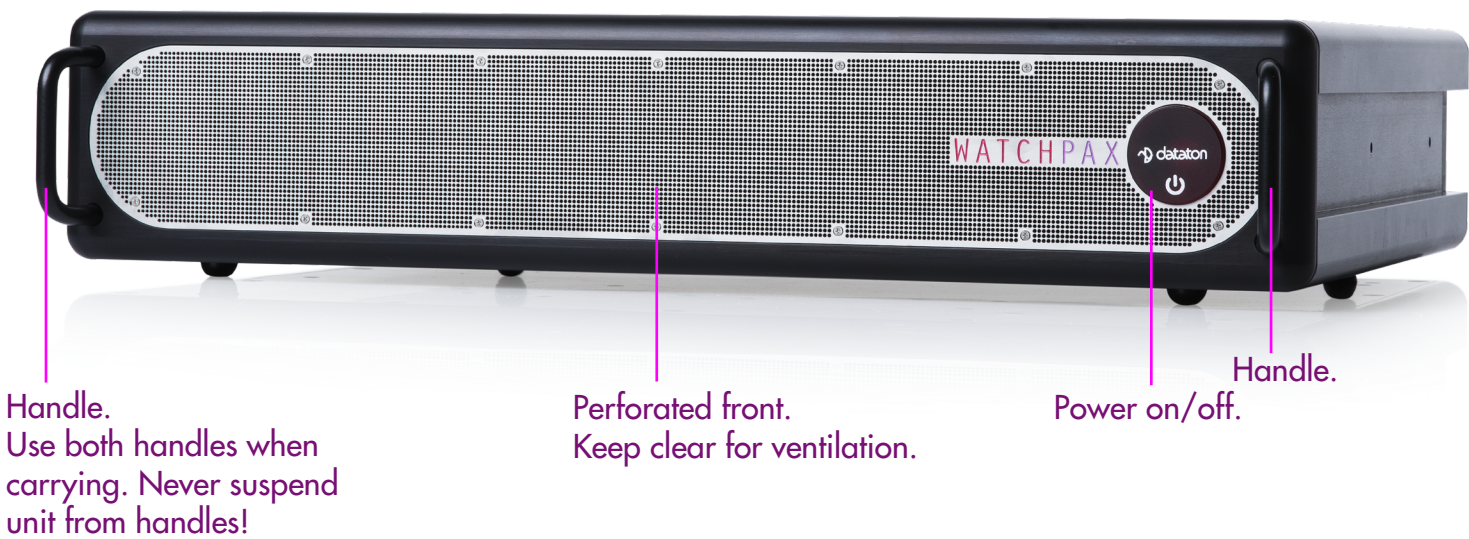
| | |
|--------|---------|
| Width | 448 mm |
| Height | 90 mm |
| Depth | 335 mm |
| Weight | 8 600 g |

SHIPPING DIMENSIONS

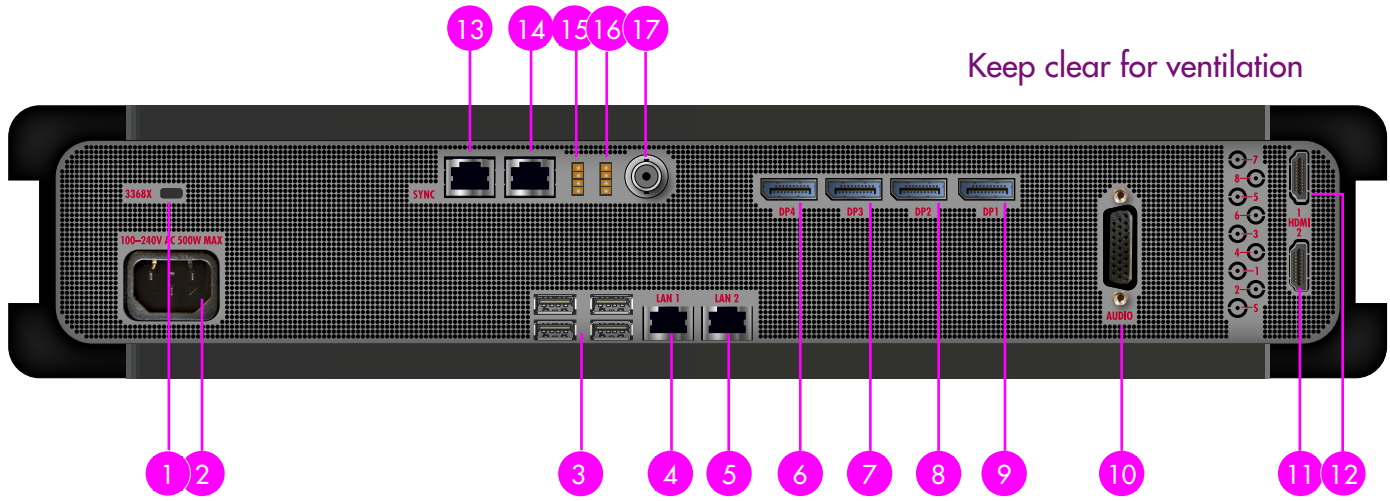
WATCHPAX 62 is shipped in a sturdy, custom-design, corrugated cardboard box with handle.
Dimensions as below:

| | |
|--------|--|
| Width | 519 mm |
| Height | 180 mm |
| Depth | 475 mm |
| Weight | 8 600 g + approximately 2.6 kg (cables, box and packaging) |

FRONT VIEW



CONNECTORS
WATCHPAX 62 model B:



| CONNECTOR | DESCRIPTION |
|-----------|---|
| 1 | Kensington lock |
| 2 | Power inlet IEC 60320 C14 1 |
| 3 | USB 3.0 port 1, 2, 3, 4 |
| 4 | RJ45 10GbE Ethernet 1 |
| 5 | RJ45 10GbE Ethernet 2 Currently disabled; reserved for future use. |
| 6 | DisplayPort v1.4 - 4 |
| 7 | DisplayPort v1.4 - 3 |
| 8 | DisplayPort v1.4 - 2 |
| 9 | DisplayPort v1.4 - 1 |
| 10 | Audio input/output. XLR by break-out cable, 2 outputs, 1 input |
| 11 | Capture card HDMI 1.4 - 2 (RX 0) |
| 12 | Capture card HDMI 1.4 - 1 (RX 1) |
| 13 | Frame-lock connector 1 |
| 14 | Frame-lock connector 2 |
| 15 | Status LED 2 |
| 16 | Status LED 1 |
| 17 | External sync |

9. WATCHPAX 62 MODEL C

WATCHOUT VERSION

Version 6.7.2 or higher.

DIMENSIONS

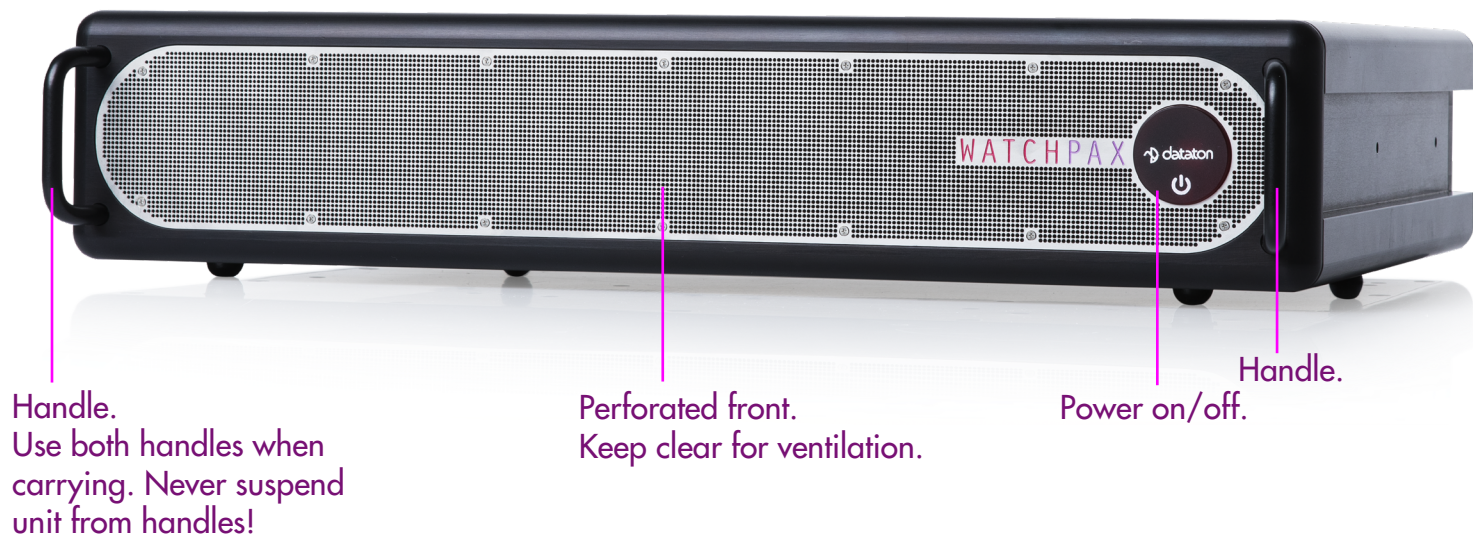
| | |
|--------|---------|
| Width | 448 mm |
| Height | 90 mm |
| Depth | 335 mm |
| Weight | 8 800 g |

SHIPPING DIMENSIONS

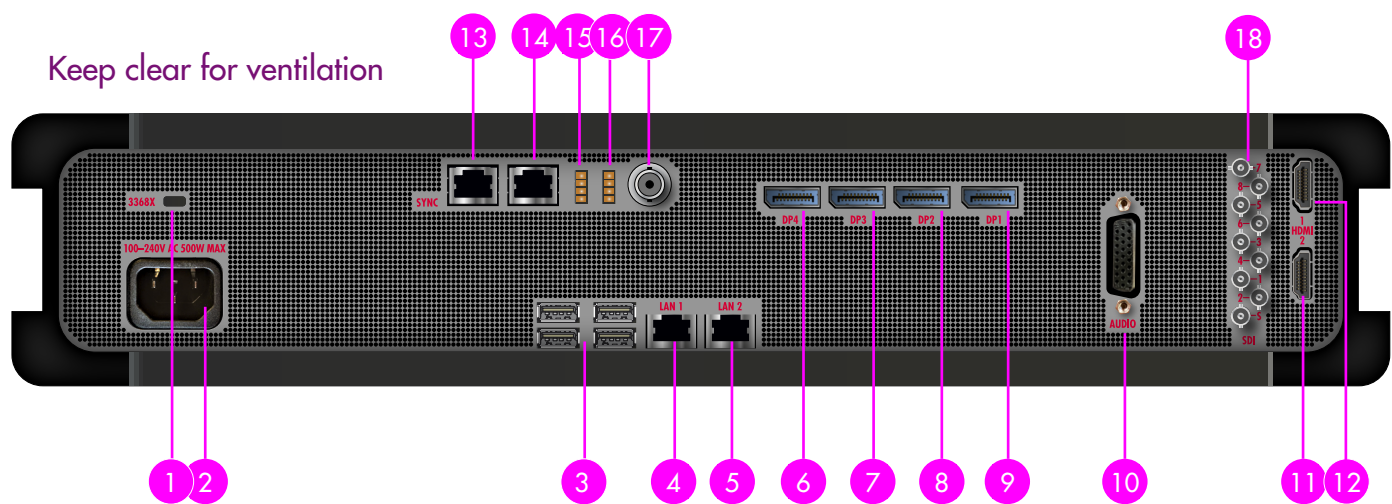
WATCHPAX 62 is shipped in a sturdy, custom-design, corrugated cardboard box with handle. Dimensions as below:

| | |
|--------|--|
| Width | 519 mm |
| Height | 180 mm |
| Depth | 475 mm |
| Weight | 8 800 g + approximately 2.6 kg (cables, box and packaging) |

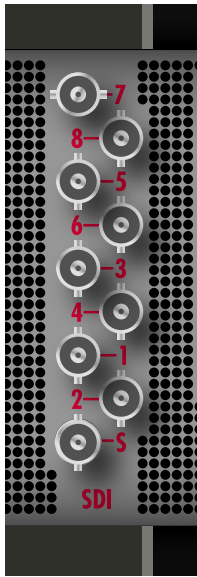
FRONT VIEW



CONNECTORS
WATCHPAX 62 model C:



| CONNECTOR | DESCRIPTION |
|-----------|---|
| 1 | Kensington lock |
| 2 | Power inlet IEC 60320 C14 1 |
| 3 | USB 3.0 port 1, 2, 3, 4 |
| 4 | RJ45 10GbE Ethernet 1 |
| 5 | RJ45 10GbE Ethernet 2 Currently disabled; reserved for future use. |
| 6 | DisplayPort v1.4 - 4 |
| 7 | DisplayPort v1.4 - 3 |
| 8 | DisplayPort v1.4 - 2 |
| 9 | DisplayPort v1.4 - 1 |
| 10 | Audio input/output. XLR by break-out cable, 2 outputs, 1 input |
| 11 | Capture card HDMI 2 - 2 (RX 0) |
| 12 | Capture card HDMI 2 - 1 (RX 1) |
| 13 | Frame-lock connector 1 |
| 14 | Frame-lock connector 2 |
| 15 | Status LED 2 |
| 16 | Status LED 1 |
| 17 | External sync |
| 18 | Capture and playout HD-BNC |



18
Capture and playout HD-BNC.
3G SDI:
Eight independent channels
that can be used either as inputs
or as outputs.
12G SDI/6G SDI:
Supported by two channels
(connectors 1 and 5).

10. WARRANTY, CONFORMITY AND DISPOSAL

LIMITED WARRANTY

DATATON AB ("Dataton") warrants this hardware product against defects in materials and workmanship for a period of seven hundred and thirty (730) days from the date of original retail purchase.

If you discover a defect, Dataton will, at its option, repair, replace, or refund the purchase price of this product at no charge to you, provided you return it during the warranty period, transportation charges prepaid, to the authorized Dataton vendor from whom you purchased it, any other authorized Dataton sales point in the country of the original retail purchase or to Dataton itself. More information is available from Dataton AB, see address.

When returning an item please attach your name, address, email address, a description of the problem and a copy of the bill of sale or packing list bearing the appropriate Dataton serial numbers (where applicable) as proof of the date of original retail purchase. You are also advised to first contact the vendor or Dataton.

This warranty applies only to hardware products manufactured by or for Dataton AB and labeled with the Dataton logo. This warranty does not apply if the product has been damaged by accident, abuse, misuse or misapplication, nor if the product has been opened or modified without the written permission of Dataton, nor if any serial number has been removed or defaced.

All implied warranties, including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to seven hundred and thirty (730) days from the date of original retail purchase of this product. The warranty and remedies set forth above are exclusive and in lieu of all others, oral, written, express or implied.

No Dataton dealer, agent or employee is authorized to make any modification, extension or addition to this warranty.*

Dataton is not responsible for special, incidental or consequential damages resulting from any breach of warranty, or under any legal theory, including lost profits, downtime, goodwill, damage to or replacement of equipment and property, and any costs of recovering, reprogramming or reproducing any program or data stored in or used with Dataton products.

*If extended warranty terms have been agreed with Dataton at purchase, proof shall be presented.

Dataton AB
Teknikringen 22
SE 583 30 LINKÖPING
Sweden

Email: warranty@dataton.se

FCC NOTICE

Model: WATCHPAX 62, product number 3368

This device complies with Title 47 Chapter 1, Part 15, Subpart B of the Federal Communication Commission rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

DECLARATION OF CONFORMITY

Model: WATCHPAX

Model number: 3368

Description: Media server

Responsible manufacturer: Dataton AB

Address: Teknikringen 22, SE-583 30 Linköping, Sweden



Dataton AB hereby declares that the product listed above, to which this Declaration of Conformity relates, complies with the standards and regulations below:

FCC

Regulations Title 47 Chapter 1, part 15, subpart B, Class A:

§15.107: Conducted Emission, AC power line

§15.109: Radiated Emission

CE

EMC Directive 2014/30/EU

Emission according to EN 55032:2015, class A, +A11:2020

Electromagnetic compatibility of multimedia equipment

Emission according to EN 61000-3-2:2014

Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

Emission according to EN 61000-3-3:2013

Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems

Immunity according to EN 55035:2017

Edition 2 Immunity characteristics – Information technology equipment

Low Voltage Directive 2014/35/EU

EN 62368-1:2014

Audio/video, information and communication technology equipment - Part 1: Safety requirements

RoHS 2011/65/EU

EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

WEEE

Directive 2012/19/EU Waste from electrical and electronic equipment

Conformity testing has been done by a third-party testing body.

Linköping, October 2022



Björn Sandlund
Founder and owner

DISPOSAL

Only for European Union and EEA (Norway, Iceland and Liechtenstein)

This symbol indicates that this product is not to be disposed of with your household waste, according to the WEEE Directive (2012/19/EU), the Battery Directive (2006/66/EC) and/or national legislation implementing those Directives.



■ This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (WEEE) and batteries and accumulators. Improper handling of this type of waste could have a possible impact on the environment and human health due to potentially hazardous substances that are generally associated with WEEE. Your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.

For more information about the recycling of this product, please contact your local city office, waste authority, approved scheme or your household waste disposal.

11. SUPPORTED FORMATS

VIDEO CAPTURE FORMATS

HDMI INPUT (MODELS A, B, C)

The HDMI input can capture signals within the HDMI 1.4 bandwidth specification with a maximum rate of 297 Mpixels/s. The maximum capture resolution is 4096 x 2160p at 30 Hz. HDMI audio capture is not supported by WATCHOUT.

SDI INPUT CAPTURE FORMATS (MODEL C)

WATCHOUT can capture both interlaced and progressive formats. SDI audio capture is not supported by WATCHOUT.

| RESOLUTION | FRAMES PER SECOND | | | | | | | SINGLE LINK | |
|------------|-------------------|----|----|------|----|----|----|-------------|----|
| PAL | – | – | – | – | – | – | 50 | – | – |
| NTSC | – | – | – | – | – | – | – | 59.94 | – |
| 720p | 23.98 | 24 | 25 | 29.7 | 30 | – | 50 | 59.94 | 60 |
| 1080i | – | – | – | – | – | – | 50 | 59.94 | 60 |
| 1080p | 23.98 | 24 | 25 | 29.7 | 30 | – | 50 | 59.94 | 60 |
| DCI 2K | 23.98 | 24 | 25 | 29.7 | 30 | 48 | 50 | 59.94 | 60 |
| 2160i | – | – | – | – | – | – | 50 | 59.94 | 60 |
| 2160p | 23.98 | 24 | 25 | 29.7 | 30 | – | 50 | 59.94 | 60 |
| DCI 4K | 23.98 | 24 | 25 | 29.7 | 30 | 48 | 50 | 59.94 | 60 |

The following SDI interfaces are supported (Model C):

| VIDEO INTERFACE | SDI COMPLIANCE |
|-------------------|-------------------------|
| SD-SDI | SMPTE 259M |
| HD-SDI | SMPTE 292M |
| 3G-SDI Level A | SMPTE 424M, SMPTE 425-1 |
| 3G-SDI Level B-DS | SMPTE 424M, SMPTE 425-1 |
| 6G-SDI | SMPTE 2081-10 |
| 12G-SDI | SMPTE 2082-10 |

VIDEO PLAYOUT FORMATS

SDI OUTPUT FORMATS (MODEL C)

NOTE: Quad-Link Quadrant mode divides a UHD image into four HD quadrants or a DCI 4K image into four DCI 2K Quadrants. This will create four independent HD-SDI or 3G-SDI Level A streams depending on framerate.

| RESOLUTION | FRAMES PER SECOND | | | | | | | | SINGLE LINK | |
|------------|-------------------|----|----|------|----|----|----|-------|-------------|--|
| 720p | 23.98 | 24 | 25 | 29.7 | 30 | – | 50 | 59.94 | 60 | |
| 1080p | 23.98 | 24 | 25 | 29.7 | 30 | – | 50 | 59.94 | 60 | |
| DCI 2K | 23.98 | 24 | 25 | 29.7 | 30 | 48 | 50 | 59.94 | 60 | |
| 2160p | 23.98 | 24 | 25 | 29.7 | 30 | – | 50 | 59.94 | 60 | |
| DCI 4K | 23.98 | 24 | 25 | 29.7 | 30 | 48 | 50 | 59.94 | 60 | |

| RESOLUTION | FRAMES PER SECOND | | | | | | | | DUAL LINK | |
|------------|-------------------|----|----|------|----|----|----|-------|-----------|--|
| 1080p | – | – | – | – | – | – | 50 | 59.94 | 60 | |
| DCI 2K | – | – | – | – | – | 48 | 50 | 59.94 | 60 | |
| 2160p | 23.98 | 24 | 25 | 29.7 | 30 | – | – | – | – | |
| DCI 4K | 23.98 | 24 | 25 | 29.7 | 30 | – | – | – | – | |

| RESOLUTION | FRAMES PER SECOND | | | | | | | | QUAD LINK QUADRANT | |
|------------|-------------------|----|----|------|----|----|----|-------|--------------------|--|
| 2160p | 23.98 | 24 | 25 | 29.7 | 30 | – | 50 | 59.94 | 60 | |
| DCI 4K | 23.98 | 24 | 25 | 29.7 | 30 | 48 | 50 | 59.94 | 60 | |

| RESOLUTION | FRAMES PER SECOND | | | | | | | | QUAD LINK INTERLEAVED | |
|------------|-------------------|---|---|---|---|----|----|-------|-----------------------|--|
| 2160p | – | – | – | – | – | – | 50 | 59.94 | 60 | |
| DCI 4K | – | – | – | – | – | 48 | 50 | 59.94 | 60 | |

The following SDI interfaces are supported:

| VIDEO INTERFACE | SDI COMPLIANCE |
|------------------------------|-------------------------|
| HD-SDI | SMPTE 292M |
| Dual-Link HD-SDI | SMPTE 372M |
| Quad-Link HD-SDI Quadrant | SMPTE 292M |
| 3G-SDI Level A | SMPTE 424M, SMPTE 425-1 |
| Dual-Link 3G-SDI | SMPTE 425-3 |
| Quad-Link 3G-SDI Interleaved | SMPTE 425-5 |
| Quad-Link 3G-SDI Quadrant | SMPTE 424M |
| 6G-SDI | SMPTE 2081-10 |
| 12G-SDI | SMPTE 2082-10 |

TIMECODE INPUT FORMATS

| FORMAT | TYPE |
|--------|------------|
| Film | 24 fps |
| EBU | 25 fps |
| SMPTE | 29.97 DF |
| SMPTE | 30 ("B&W") |
| SMPTE | 29.97 NDF |

ANALOG AUDIO OUTPUT FORMATS (A, B, C)

WATCHPAX 62 can output two channels of balanced analog audio through an DB-26 HD to XLR breakout cable.

| ANALOG AUDIO OUPUT RATES |
|--------------------------|
| 44.1 kHz |
| 48 kHz |
| 88.2 kHz |
| 96 kHz |

The XLR connectors on the breakout cable are mapped in WATCHOUT according to the table below.

| BREAKOUT CABLE LABELS | WATCHOUT |
|-----------------------|------------------------------|
| Left In | Timecode input |
| Right In | N/A, reserved for future use |
| Left Out | Output Channel 1 |
| Right Out | Output Channel 2 |

DIGITAL AUDIO OUTPUT FORMATS

WATCHPAX 62 can output multi-channel (7.1) LPCM audio embedded with DisplayPort and HDMI.

| DIGITAL AUDIO OUPUT RATES |
|---------------------------|
| 44.1 kHz |
| 48 kHz |
| 88.2 kHz |
| 96 kHz |
| 176.4 kHz |
| 192 kHz |

DISPLAYPORT OUTPUT FORMATS

WATCHPAX 62 complies with DisplayPort version 1.4 and each connector can output a resolution up to 4096×2160 at 120 Hz or 5120×2880 at 60 Hz.

ADAPTERS

The DisplayPort 1.4 to HDMI 2.0 active adapters shipped with WATCHPAX 62 models A, B, C support resolutions up to 4096×2160 at 60 Hz.

NOTE: If your device uses HDMI 2.1 or higher you will need different adapters.

NOTE: The usage of passive adapters is not recommended as it may result in a lower maximum resolution.

NOTE: Adapters are not shipped with WATCHPAX 62 model S.

HDCP

High-bandwidth digital content protection (HDCP) is not supported by WATCHOUT.

PLAYBACK FORMATS

| SUPPORTED PLAYBACK FORMATS |
|----------------------------|
| MPEG-2/H.262 |
| AVC/H.264 |
| HAP |
| HAP Q |
| HAP Alpha |
| Prores 422 Proxy |
| Prores 422 LT |
| Prores 422 |
| Prores 422 HQ |
| TGA |
| TGA + Alpha |
| TIFF |
| TIFF + Alpha |

HARDWARE ACCELERATED VIDEO FORMATS

WATCHPAX 62 supports GPU-accelerated video decoding. Hardware acceleration is enabled by default in WATCHOUT and this property can be changed by the user per media item. The codecs supported are listed below.

| CODEC | MAX COLOR | MAX RESOLUTION | MAX LEVEL | MAX PROFILE | FORMAT |
|--------------|-----------|----------------|-----------|-------------|--------|
| AVC/H.264 | 8-bit | 4096×4096 | 5.2 | High | 4:2:0 |
| MPEG-2/H.262 | 8-bit | 4080×4080 | n/a | n/a | 4:2:0 |

