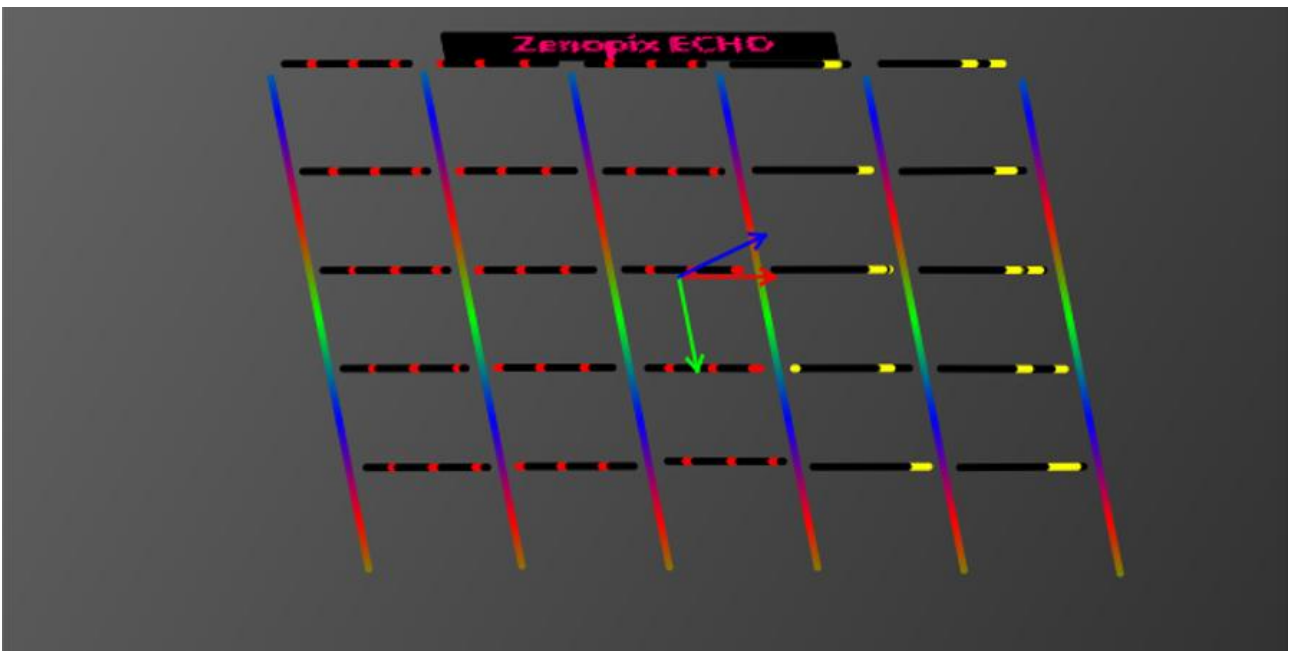




Zenopix ECHO

User Manual

Virtual Art-Net node · 2D / 3D monitor · recorder and player



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Zenopix Technology Industry and Trade Ltd. Company · zenopix.com

Contents

1	Introduction	4
1.1	What is Zenopix ECHO?	4
1.2	What you can do with it	4
1.3	Requirements	4
1.4	Terms used in this manual	4
2	Installation and updates	6
2.1	Installing ECHO	6
2.2	The first start	6
2.3	Updates	7
2.4	Release notes	7
2.5	Where ECHO keeps its files	7
3	Quick start	8
4	The main window	9
4.1	Overview	9
5	Loading a patch	10
5.1	Supported patch formats	10
5.2	Loading the patch	10
5.3	The Patch tab	11
5.4	The Groups tab	12
5.5	When the importer finds something new	12
6	The monitor	13
6.1	2D view	13
6.2	3D view	14
6.3	Inspecting a single LED	15
6.4	White channels	15
6.5	Snapshots	16
7	Playing back recordings	17
7.1	Standard Art-Net	17
7.2	The DMX tab	18
7.3	GPS Solus sets	18
8	Receiving live Art-Net	20
8.1	Setting up the node	20
8.2	Listening	20
8.3	Diagnostics	22

8.4 Recording the incoming stream	22
8.5 Sending from Zenopix NEO, MADRIX 5 and ENTTEC ELM	23
8.6 Other broadcast commands	23
9 The network log	24
9.1 The window.....	24
9.2 Display filters.....	24
9.3 Log every data packet	26
9.4 Capturing a whole adapter (Npcap)	26
9.5 Saving and opening logs.....	26
10 Customising the interface.....	27
10.1 Themes.....	27
10.2 Language.....	28
10.3 Keyboard shortcuts	29
11 Menu reference.....	30
11.1 File.....	30
11.2 Edit.....	30
11.3 View.....	30
11.4 Playback.....	31
11.5 Broadcast.....	31
11.6 Help.....	31
12 Troubleshooting.....	33
13 Example: checking a Zenopix NEO show.....	34
Appendix A Keyboard shortcuts.....	35
Appendix B About and support.....	36

1 Introduction

1.1 What is Zenopix ECHO?

Zenopix ECHO is a virtual Art-Net device for Windows. It joins your lighting network as a real Art-Net node, answers the controllers that are looking for devices, and shows exactly what reaches it: on a 2D or 3D model of the installation, as raw DMX values, and packet by packet in a network log.

Load the patch of the software that is sending - **Zenopix NEO**, **MADRIX 5** or **ENTTEC ELM** - and every channel lands on the pixel it was meant for. ECHO can also record what it receives and play recordings back, so a show can be checked without the controller, the fixtures or the venue.

1.2 What you can do with it

- **Check a show before going on site.** Send it from the controller to ECHO and watch it on the 3D model of the installation.
- **Verify the patch of a controller.** A wrong universe, a wrong start channel or a missing fixture shows up immediately on the monitor and in the DMX view.
- **Diagnose network problems.** See whether a controller is polling, how many packets arrive per second, sequence errors, and every single packet in the network log.
- **Record a show as it is sent** and replay it later, frame by frame, in ECHO or in Zenopix NEO.
- **Review Zenopix NEO recordings** (.zpx) and GPS-Sync sets without the devices.

1.3 Requirements

Item	Requirement
Operating system	Windows 10 or Windows 11, 64-bit.
Network	An Ethernet or Wi-Fi adapter on the same network as the controller. For software running on the same computer, the loopback address 127.0.0.1 is enough.
Patch	The patch of the sending software: Zenopix NEO (.zpatch), MADRIX 5 (.mpz) or ENTTEC ELM (.elm). Without a patch ECHO still receives and records, but the monitor stays dark.
Internet	Only for the update check and the release notes at start-up. Everything else works offline.
Optional	Npcap - only needed to capture the complete traffic of a network adapter in the network log.

1.4 Terms used in this manual

Term	Meaning
Art-Net	The protocol lighting controllers use to send DMX over Ethernet (UDP port 6454).
Node	A device that receives Art-Net. ECHO behaves like one.
Universe / Port-Address	A block of 512 DMX channels. Art-Net addresses it with a 15-bit Port-Address made of Net (0-127), Sub-Net (0-15) and Universe (0-15). ECHO shows Port-Addresses in hexadecimal: 0x0002 is Net 0, Sub-Net 0, Universe 2.
ArtPoll / ArtPollReply	Discovery messages. A controller sends ArtPoll; every node answers with an ArtPollReply that describes its ports.
ArtDmx	The packet that carries the DMX values of one universe.
Patch	The file that says which DMX channel drives which pixel, and where that pixel is.
Group / Zenoverse	Zenopix NEO patch terms. A group is a set of devices; a zenoverse is one output (port)

Term	Meaning
	of a device with the fixtures connected to it.
Recording (.zpx)	The Zenopix recording format: every DMX packet of a show, frame by frame. Written by Zenopix NEO and by ECHO.
GPS-Sync set	A Zenopix NEO recording made of one .zpx file per group, all played in step.

2 Installation and updates

2.1 Installing ECHO

1. Run **ZenopixECHOSetupV1.0.0rv002.exe**. The installer is digitally signed by Zenopix; Windows shows the publisher in its security prompt.
2. Choose the language of the installer: English, Türkçe, Deutsch, Français, Español, Italiano, Русский or 日本語.
3. Keep the suggested folder C:\Program Files\Zenopix ECHO or choose another one. Tick **Create a desktop shortcut** if you want one.
4. Finish the installer with **Launch Zenopix ECHO** ticked.

ECHO appears in the Start menu as **Zenopix ECHO**. It is removed like any other program, from **Windows Settings > Apps**.

2.2 The first start

On its first start the window is empty: no patch is loaded and the monitor is dark. The status bar at the bottom says what to do next - load a patch.

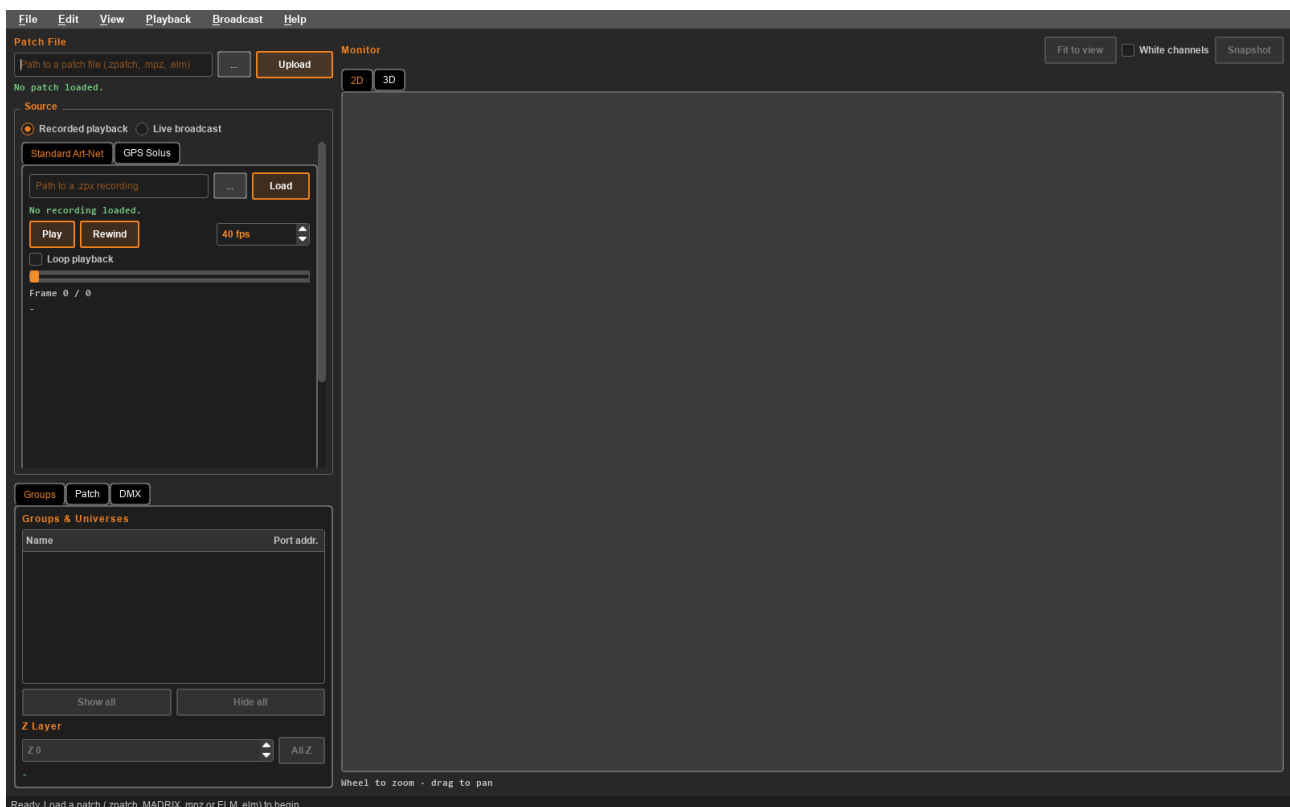


Figure 1. Zenopix ECHO on its first start, before a patch is loaded.

The first start after an installation or an update also downloads and shows the release notes of the installed version (see 2.4).

2.3 Updates

Each time ECHO starts it asks the Zenopix update server whether a newer version exists. If there is one, it asks:

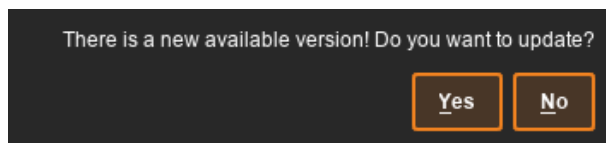


Figure 2. The update question at start-up.

- **Yes** - ECHO downloads its updater and closes. The updater downloads and installs the new version and starts ECHO again.
- **No** - ECHO starts normally and asks again at the next start.
- Without an internet connection the check is skipped and ECHO starts normally.

Note: When ECHO is installed under Program Files, Windows asks once for administrator confirmation during the update. This is only for copying the new files - ECHO itself never needs administrator rights.

2.4 Release notes

The release notes of a version open by themselves on its first start - after an update as well as after an installation - and only once. **Help > Release Notes** opens them again at any time.

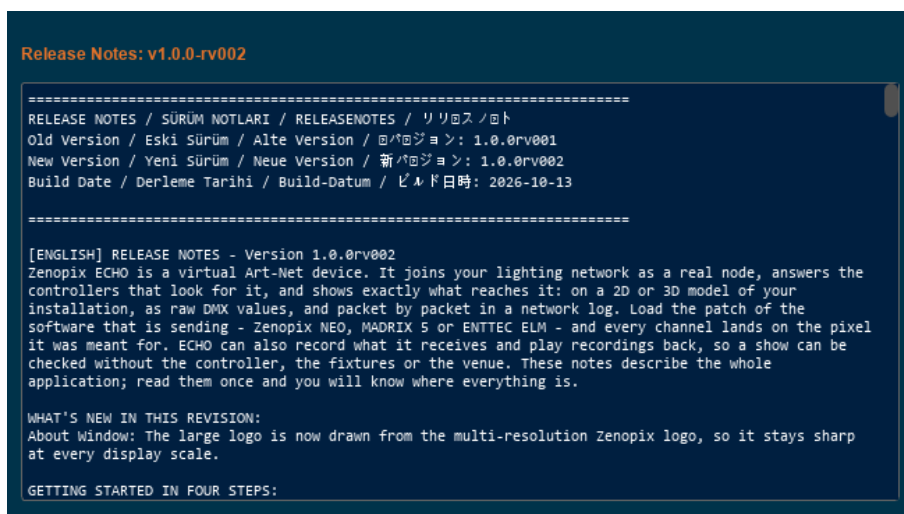


Figure 3. The release notes window (Help > Release Notes).

2.5 Where ECHO keeps its files

What	Where
Settings (last patch and recording, window layout, theme, language, live-broadcast fields, recent files)	Windows registry, current user: HKEY_CURRENT_USER\Software\Zenopix\ArtNetTester
Release notes and update downloads	Documents\ZenopixECHO
Import logs (see 5.5)	A logs folder next to the program. When that folder cannot be written - for example under Program Files - %LOCALAPPDATA%\Zenopix\Art-Net Tester\logs. Help > Open Logs Folder always opens the right one.
Recordings, snapshots, network logs	Wherever you choose when you save them.

3 Quick start

Four steps take you from an empty window to a lit monitor:

1. **Load the patch.** Click ... in the Patch File bar at the top left, choose the patch and press **Upload** - or use **File > Open Patch** (Ctrl+O). The monitor draws every LED of the patch.
2. **Choose the source** in the Source box: **Live broadcast** to receive Art-Net from a controller, or **Recorded playback** to play a .zpx recording. You can switch between them at any time.
3. **Live:** choose the network adapter under **Listen on**, keep the port at 6454 and press **Start listening**. Send from the controller to this computer - the monitor lights up as soon as data arrives.
4. **Recorded:** load a .zpx recording with ... and **Load** (or **File > Open Recording**, Ctrl+Shift+O) and press **Play**.

Tip: No controller at hand? A recording made by Zenopix NEO - or by ECHO itself - plays exactly like a live stream.

4 The main window

4.1 Overview

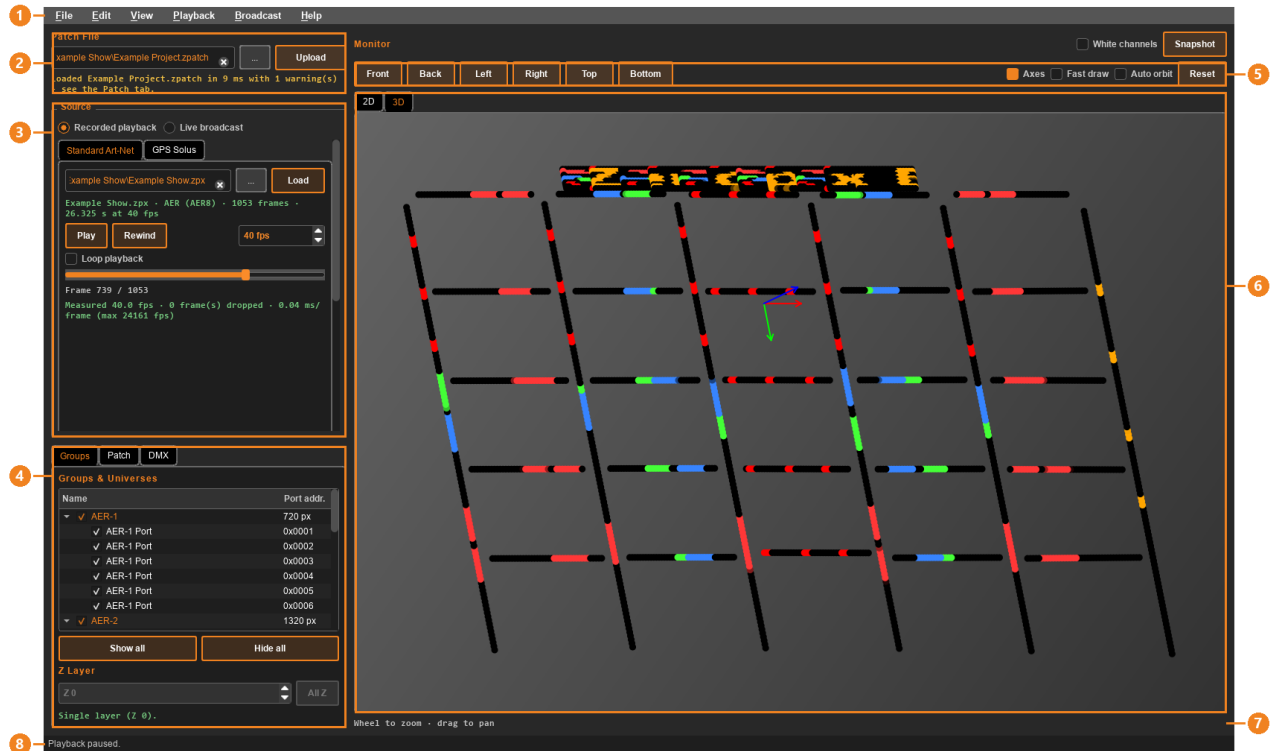


Figure 4. The main window with a patch and a recording loaded (3D view).

#	Area	What it is for
1	Menu bar	Every command of the application, with its keyboard shortcut (chapter 11).
2	Patch File	The path of the patch, the browse button (...), the clear button and Upload . The line underneath reports what was loaded, how long it took and whether there are warnings.
3	Source	Recorded playback or Live broadcast , with the controls of the selected source (chapters 7 and 8).
4	Groups / Patch / DMX	The loaded patch as a tree, its summary, and the raw DMX values of one universe (chapter 5 and 7.2).
5	Monitor toolbar	In 3D: the camera buttons, Axes, Fast draw, Auto orbit and Reset. In 2D: Fit to view. White channels and Snapshot are always here.
6	Monitor	The 2D and 3D views of the installation (chapter 6).
7	Information line	Mouse hints, or the details of the LED under the mouse in the 2D view.
8	Status bar	What has just happened - a patch loaded, playback paused, a recording saved - and why something was refused.

The window can be resized and maximised; the monitor takes the extra space. **View > Full Screen** (F11) hides the Windows title bar and task bar. ECHO remembers its size and position.

5 Loading a patch

The patch tells ECHO which DMX channel drives which pixel and where that pixel sits. ECHO recognises the format from the content of the file, not from its extension.

5.1 Supported patch formats

Software	File	What ECHO reads
Zenopix NEO	.zpatch	Groups, zenoverse (device ports) with their target IP, fixtures and their layouts, white channels and kinetic channels.
MADRIX 5	.mpz	The fixtures of the patch with their position, universe, start channel and colour channels (R, G, B, W); multi-pixel fixtures are supported. Channels MADRIX holds at a fixed value (dimmer, shutter, strobe) are ignored, as MADRIX does. DVI fixtures carry no DMX and are skipped. Fixture groups are not imported yet: everything is placed in one group named MADRIX.
ENTTEC ELM	.elm	All 35 pixel types; strips drawn the way ELM draws them - lines, arches, circles, polygons and curves; custom LED address offsets; free-layout fixtures. sACN and KiNet strips are skipped, because ECHO receives Art-Net only.

5.2 Loading the patch

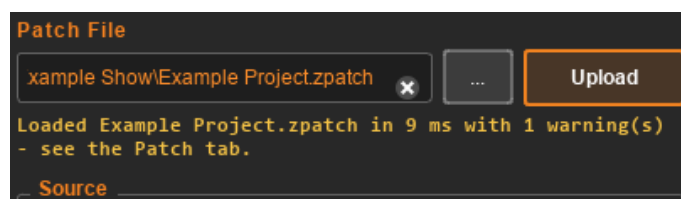


Figure 5. The Patch File bar after loading the example project.

1. Click ... and choose the patch file. The path appears in the field.
2. Press **Upload**. The monitor draws the patch and the line under the bar reports the result, for example *Loaded Example Project.zpatch in 9 ms with 1 warning(s) - see the Patch tab.*

File > Open Patch (Ctrl+O) does both steps at once, and **File > Recent Patches** reopens a recent patch.

ECHO remembers the last path: at the next start it is already in the field - press **Upload** to load it again. The **x** button clears the field.

5.3 The Patch tab

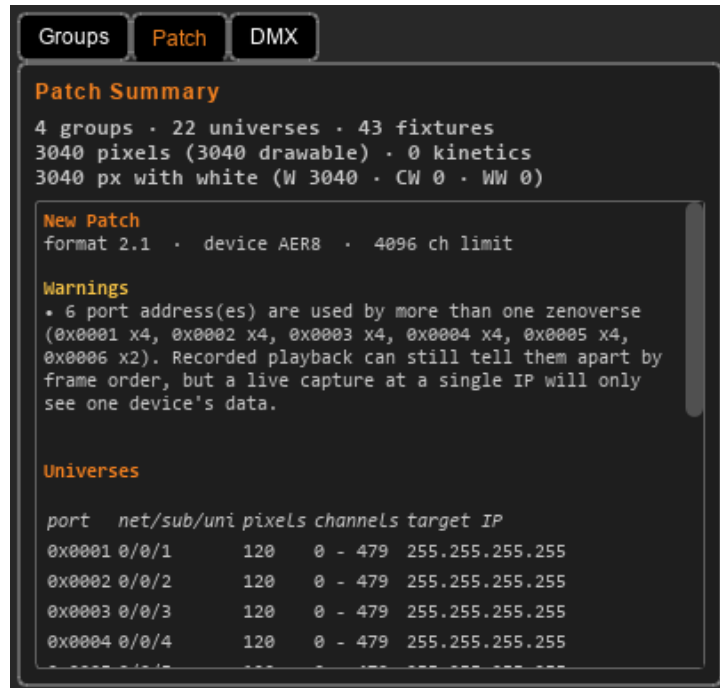


Figure 6. The Patch tab of the example project.

The Patch tab summarises the loaded patch:

- **Counts** - groups, universes and fixtures; pixels (and how many of them can be drawn); kinetic channels; pixels that have white channels, split into W, CW (cool white) and WW (warm white).
- **Patch information** - the name of the patch, its format version, the device type and the channel limit, or the software it was imported from.
- **Warnings** - anything unusual that affects what you will see. The example project shares Port-Addresses 0x0001-0x0006 between several devices: a recording can still tell them apart, but a live capture at a single IP address only sees one device's data.
- **Universes** - one row per universe: Port-Address, Net/Sub/Universe, pixel count, channel range and target IP.

For a MADRIX patch this tab also says which row of the MADRIX Device Manager to assign to which universe (see 8.5).

5.4 The Groups tab

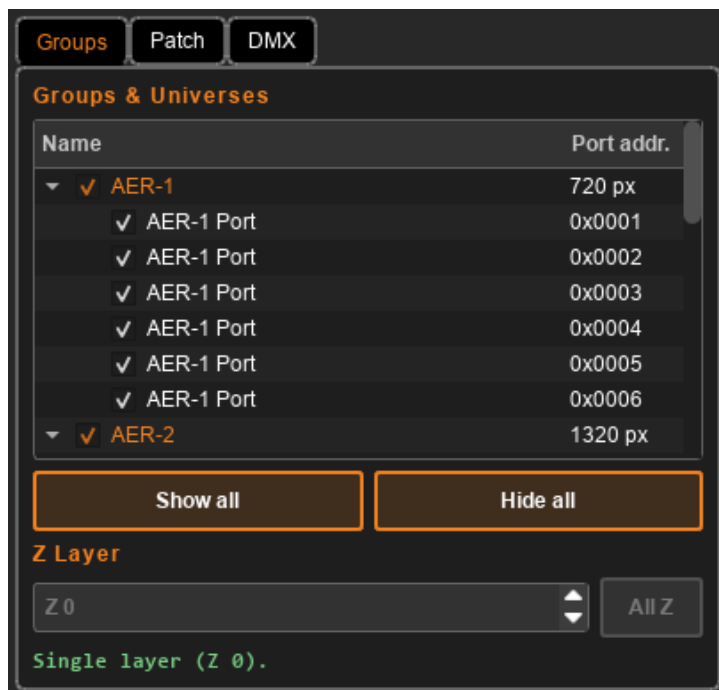


Figure 7. The Groups tab: groups, their ports (zenoverses) and Port-Addresses.

Every group of the patch is listed with its zenoverses (device ports), their Port-Address and pixel count.

- Untick a group or a port to hide it in the monitor; **Show all** and **Hide all** do it for everything. Hiding only affects the display - the data is still received and recorded.
- **Z Layer** - for installations built in layers, choose one layer to see it alone, or press **All Z** to show every layer. The line underneath says what is shown.

5.5 When the importer finds something new

If a patch contains something the importer does not understand yet, ECHO says so in the Patch tab instead of guessing. It also keeps a copy of the file together with the messages in a time-stamped folder (for example logs\2026-10-13_16-05-42). **Help > Open Logs Folder** opens it. Sending that folder to Zenopix support is the fastest way to get the case supported.

6 The monitor

6.1 2D view

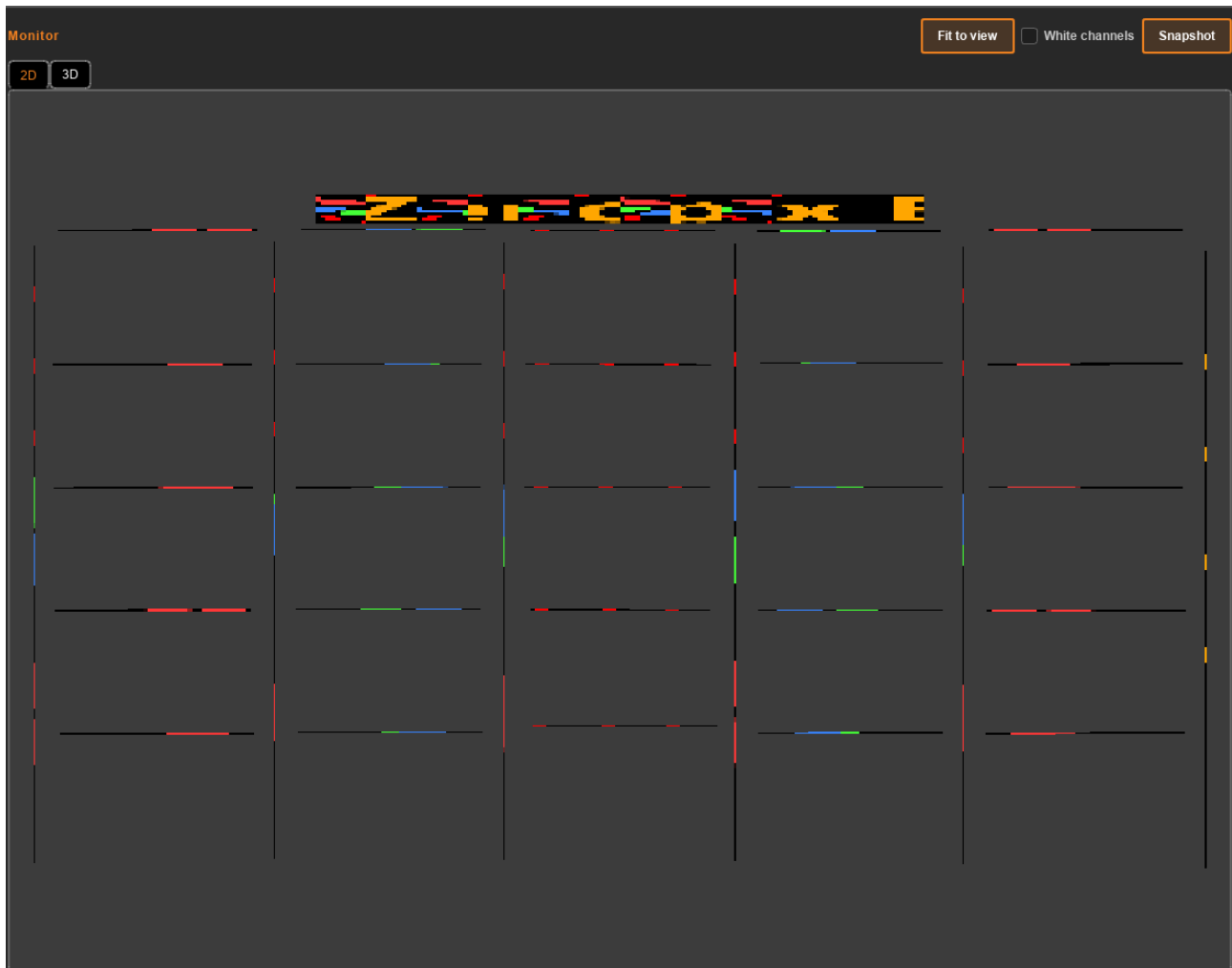


Figure 8. The 2D view of the example project: the flat (X/Y) layout of the patch.

- **Mouse wheel** - zoom.
- **Drag** with the left or middle mouse button - pan.
- **Fit to view** (button, View menu or Ctrl+0) - frame the whole patch.
- **View > 2D Monitor** (Ctrl+1) switches to this view.

6.2 3D view

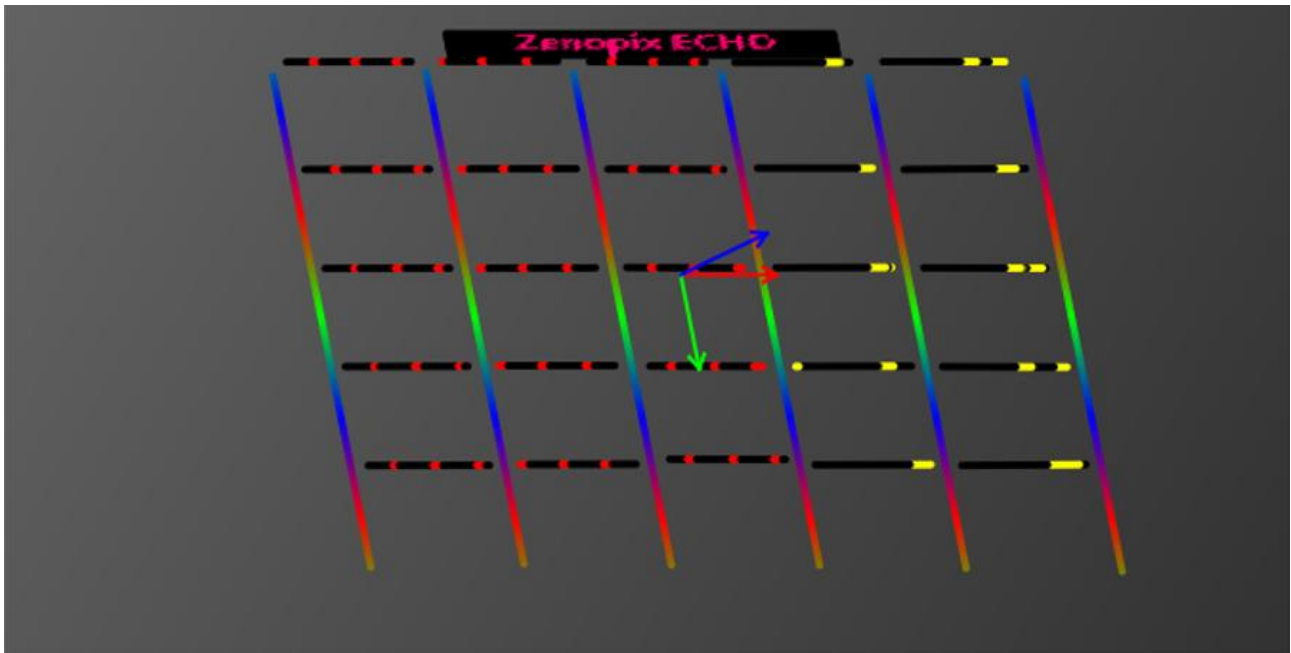


Figure 9. The 3D view (default camera).

- **Drag** with the left mouse button - orbit around the model. **Drag with the middle button** - move it. **Mouse wheel** - zoom.
- **Front, Back, Left, Right, Top, Bottom** - jump to a standard view; **Reset** returns to the default angle and distance. The same commands are in **View > 3D Camera**.
- **Axes** - shows the red / green / blue X-Y-Z arrows at the origin.
- **Fast draw** - draws LEDs as squares without smoothing. Roughly five times faster on large patches; use it when the 3D view cannot keep up with playback.
- **Auto orbit** - swings the model slowly through ± 45 degrees on two axes. Touching the view with the mouse stops it.
- **View > 3D Monitor** (Ctrl+2) switches to this view.

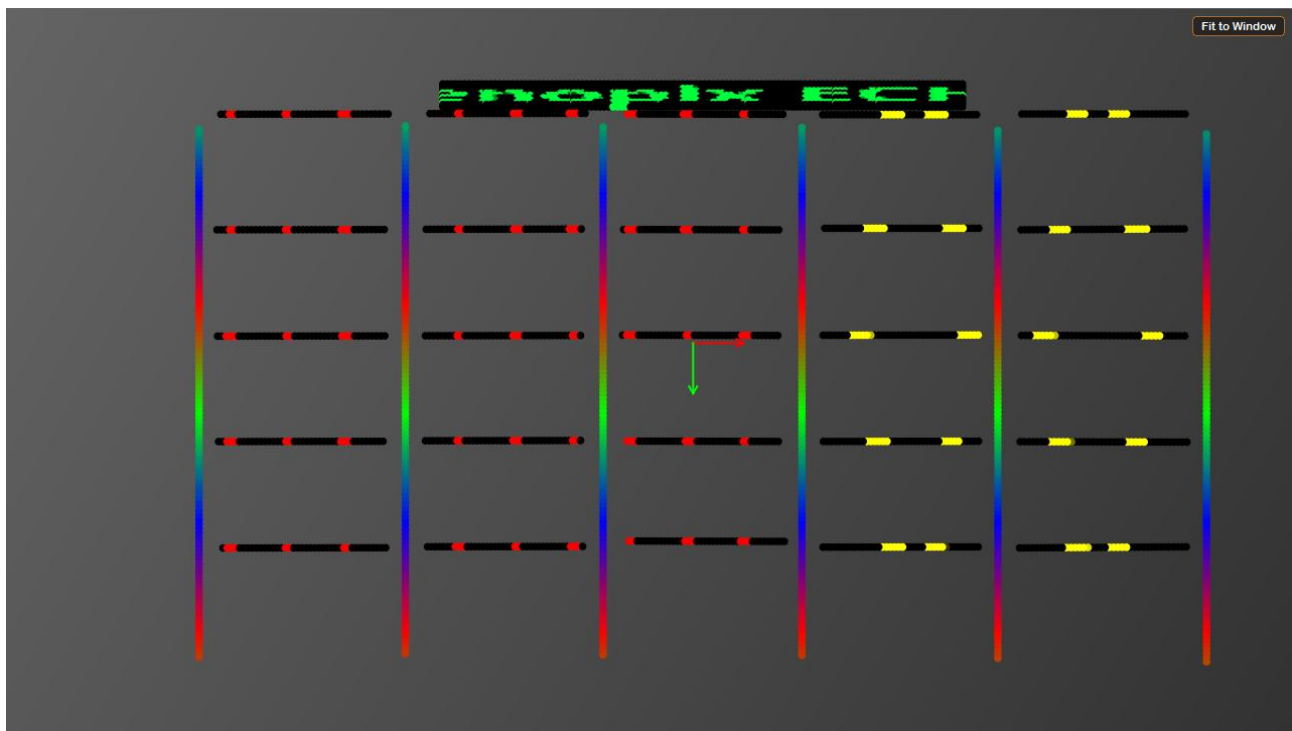


Figure 10. The same frame after pressing Front: the patch seen straight on.

6.3 Inspecting a single LED

In the 2D view, move the mouse over a LED. The information line under the monitor shows its group and port, Port-Address, start channel, Z layer and its current colour; the tooltip adds the fixture name and which DMX channel carries each of its colours (R, G, B, W, CW, WW).

```
AER-2 / AER-1 Port (copy) · port 0x0002 · channel 328 · Z 0 · rgb(255, 0, 0)
```

Figure 11. The information line for the LED under the mouse.

```
A2U1 Fixture (copy)
Group: AER-2
Zenoverse: AER-1 Port (copy)
Port address: 0x0002
Start channel: 328 Z: 0
Slots: R @ 328, G @ 329, B @ 330, W @ 331
```

Figure 12. The tooltip of the same LED.

Tip: If a LED shows the wrong colour, compare the channels in its tooltip with the DMX tab (7.2): it tells you at once whether the patch addressing or the incoming data is wrong.

6.4 White channels

White channels (toolbar or View menu) adds the W, CW and WW values to the displayed colour. It is off by default, because white is usually derived from RGB and there is no single correct way back; without it, white-only fixtures stay black even while they receive data. If nothing changes when you switch it on, the status bar tells you whether the patch has no white channels or the values received are zero.

6.5 Snapshots

Snapshot (toolbar) or **File > Save Monitor Snapshot** saves the current view as a PNG image. **Edit > Copy Monitor Image** (Ctrl+Shift+C) puts it on the clipboard.

7 Playing back recordings

Select **Recorded playback** in the Source box. Two tabs offer two kinds of recordings: **Standard Art-Net** - one file for the whole patch - and **GPS Solus** - one file per group.

7.1 Standard Art-Net

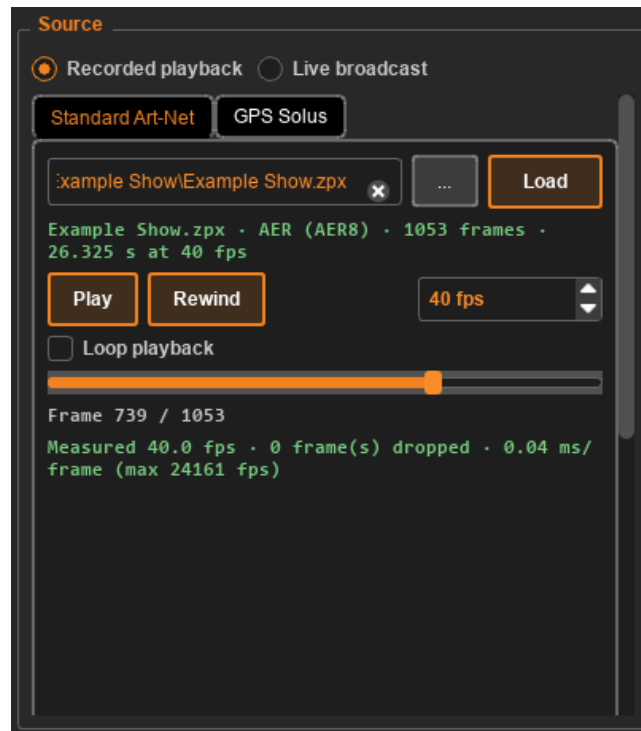


Figure 13. The Standard Art-Net playback panel, paused at frame 739.

1. Click ... and choose a .zpx recording, then press **Load**. **File > Open Recording** (Ctrl+Shift+O) and **File > Recent Recordings** do the same.
2. The line under the path describes the file: name, dialect (Art-Net, or AER with the device type), number of frames and duration at the selected frame rate.
3. Press **Play**. The slider and **Frame n / N** follow the playback; drag the slider to jump.

Control	Function
Play / Pause	Start or pause playback (Space).
Rewind	Stop and return to the first frame (Home).
fps	Frames are presented at exactly this rate.
Loop playback	Play the recording end to end, over and over.
Slider	Jump to any frame. Playback > Previous / Next Frame (Ctrl+Left / Ctrl+Right) step one frame; Go to Frame (Ctrl+G) jumps to a number.
Measured line	The frame rate actually achieved, dropped frames and the time needed to draw one frame.

If the recording does not fit the loaded patch - other universes, or a different number of universes per frame - a yellow line explains why and how it will be played. A recording can also be opened without a patch: the monitor stays dark, but the DMX tab shows every recorded universe. **Play** is refused only when no recording is loaded.

7.2 The DMX tab

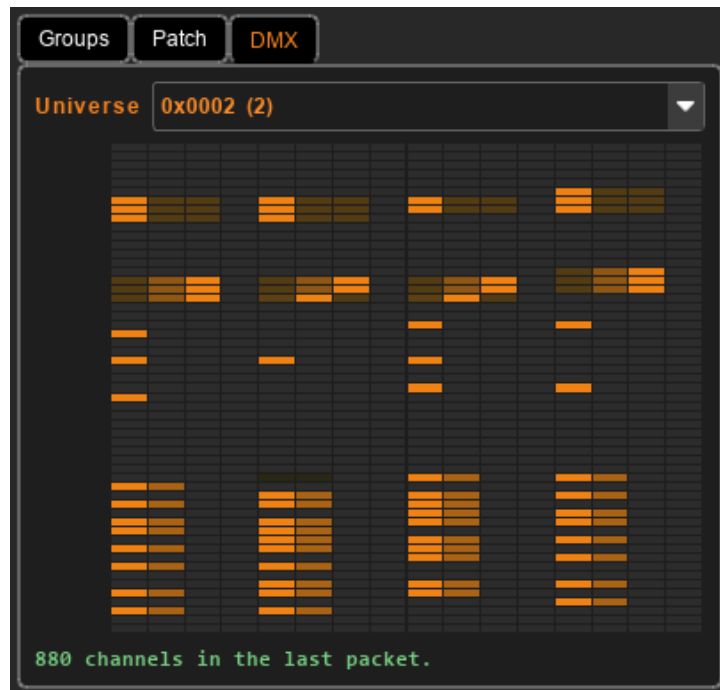


Figure 14. The DMX tab: the raw channel values of universe 0x0002.

Choose a universe to see its 512 channel values as they arrive or as they are played back; the brighter a cell, the higher the value. The line underneath says how many channels the last packet carried. It works in recorded playback and in live broadcast.

7.3 GPS Solus sets

Zenopix NEO writes a GPS-Sync recording as one file per group, named `<name>_<Group>.zpx`. In the field every device plays its own group's file and the GPS pulse keeps them on the same frame. The GPS Solus tab does the same: one clock drives frame *n* of every file at the same instant. A patch must be loaded, because the list of groups comes from it.

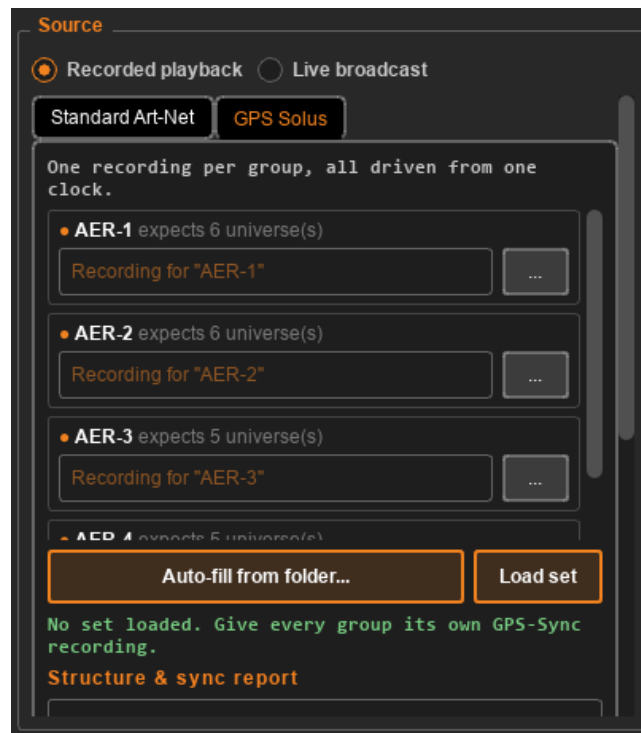


Figure 15. The GPS Solus tab with one row per group of the patch.

1. Press **Auto-fill from folder...** (or **File > Open GPS-Sync Set Folder**) and choose the folder of the recording. Files are matched to groups by name; if the folder holds several sessions, the one that covers the most groups is chosen. You can also pick each file by hand with its ... button.
2. Press **Load set**. ECHO opens every file and writes the **Structure & sync report**: missing or duplicate files, GPS metadata, universe count and order per group, frame sizes, recording lengths and whether the timestamps of all files move in step. Every check is marked **PASS**, **WARN** or **FAIL**.
3. Press **Play**. **Loop the whole set** plays it end to end, over and over; every file wraps on the same frame, so a set that drifts shows it within a few passes.

Note: A set with problems can still be played - seeing what a broken set looks like is often the point of the test.

8 Receiving live Art-Net

8.1 Setting up the node

Select **Live broadcast** in the Source box.

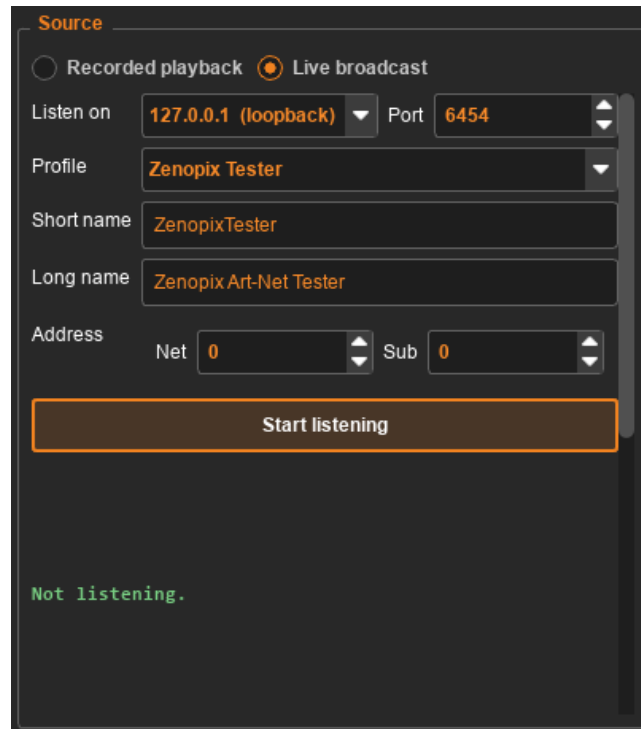


Figure 16. The Live broadcast panel before listening.

Field	Meaning
Listen on	The local address the node uses. Choose the adapter on the same network as the controller. 127.0.0.1 (loopback) is for software on this computer; Any (0.0.0.0) listens on every adapter at once.
Port	Art-Net uses 6454. Change it only if you know why.
Profile	Preset identities: Zenopix Tester, ELEA, FELIX, AER6S, SOLUS and Generic node. Pick one, then edit the fields below if needed.
Short name / Long name	How the node introduces itself to controllers (up to 17 and 63 characters).
Address: Net / Sub	Used only while no patch is loaded, when the node announces a single generic port. With a patch, every port takes its address from the patch.

Tip: Running ECHO next to Zenopix NEO on the same computer? Choose 127.0.0.1 or a specific adapter address, not Any: NEO itself binds to Any, and Windows delivers a packet to the more specific socket.

8.2 Listening

Press **Start listening** (or **Broadcast > Listen for Art-Net**, Ctrl+Shift+L). The panel reports the address and the number of universes announced, for example *Listening on 127.0.0.1:6454, advertising 6 universe(s)*.

With a patch loaded, every universe of the patch is announced as its own port with its own bind index - the way Zenopix VELOX and ELEA do it - so a controller lists each universe separately. ECHO announces itself when it starts listening and regularly afterwards; **Broadcast > Announce Node Now** sends an announcement immediately.

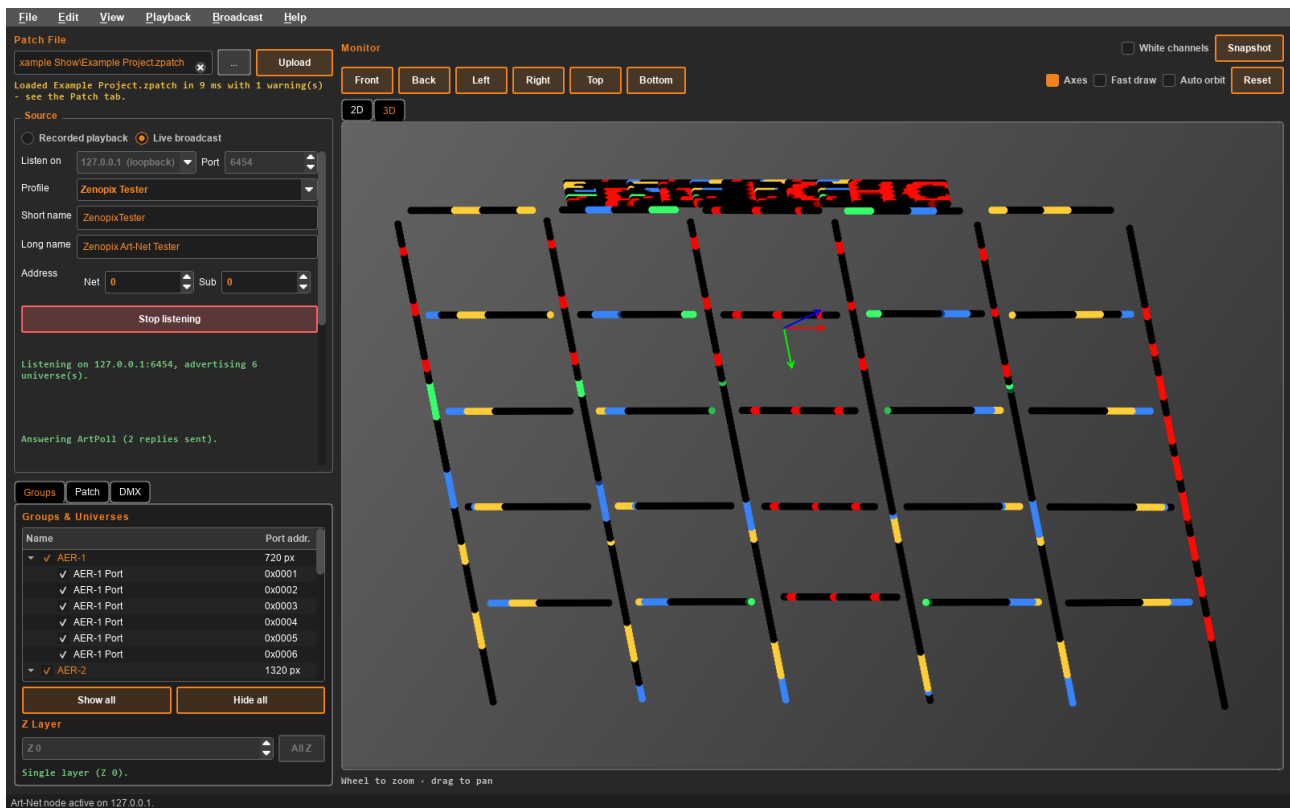


Figure 17. Live broadcast: the example show arriving over Art-Net, drawn on the 3D model.

Important: The first time ECHO listens on a network adapter, Windows may ask whether to allow it through the firewall. Allow it on the network your controller uses - otherwise no packet can arrive.

8.3 Diagnostics

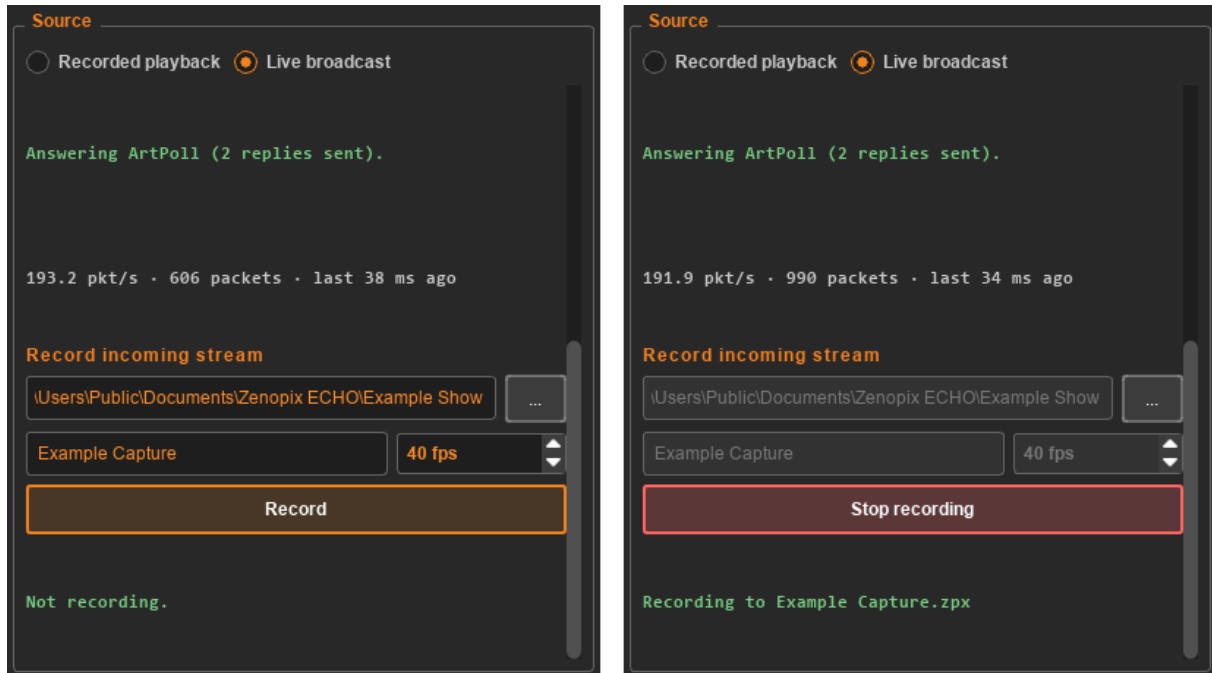


Figure 18. Left: diagnostics while data arrives. Right: recording the incoming stream.

Message	Meaning
No ArtPoll seen yet - no controller is looking for nodes.	No controller on this network is searching for devices. Check the adapter in Listen on and the controller's network settings.
Answering ArtPoll (n replies sent).	A controller is polling and ECHO answers it.
Last ArtPoll n s ago - the controller may have stopped.	Polling has stopped; the controller was closed or disconnected.
x pkt/s · n packets · last n ms ago	DMX packets per second, the total received and the age of the last packet. <i>no DMX yet</i> means nothing has arrived.
n seq errors	Packets arrived out of order or were lost - typical of Wi-Fi, an overloaded network or two senders on the same universe.
n ignored	Packets that were not valid Art-Net DMX.

8.4 Recording the incoming stream

1. While listening, choose the folder with ..., type a file name (.zpx is added) and set the frame rate of the source that is sending.
2. Press **Record** (or **Broadcast > Record Incoming Stream**, Ctrl+Shift+R). The panel and the status bar show the file being written.
3. Press **Stop recording**. Recording also stops when you stop listening. The new file appears in **File > Recent Recordings**.
 - Every incoming Art-Net DMX packet is stored exactly as received, in the format Zenopix NEO writes (including the AER dialect), so the file opens in NEO as well.
 - The frame rate only scales the timestamp written into each record; the DMX data is not changed.
 - Recording into an existing file **appends** to it - that is how several animations end up in one file.
 - No patch is needed to record: without one the monitor stays dark, but every packet is written.

Figure 19. The status bar while recording.

8.5 Sending from Zenopix NEO, MADRIX 5 and ENTTEC ELM

Zenopix NEO

Load the same .zpatch in ECHO. In NEO, set the target IP of the zenoverse to the address ECHO listens on. ECHO appears in NEO's device list like a Zenopix device and decodes the data with the same patch.

MADRIX 5

Load the .mpz in ECHO and start listening. In the MADRIX Device Manager ECHO's ports appear as one row per universe: `<name> BindIdxN Port:0`. MADRIX universe N arrives at ECHO as Port-Address N-1, so set the Universe of the **BindIdxN** row to **N**. The Patch tab repeats this rule for the loaded patch.

Row in the MADRIX Device Manager	Set its Universe to	Arrives at ECHO as
... BindIdx1 Port:0	1	Port-Address 0x0000
... BindIdx2 Port:0	2	Port-Address 0x0001
... BindIdxN Port:0	N	Port-Address N-1

ENTTEC ELM

Load the .elm in ECHO. The universes of an ELM project are Art-Net Port-Addresses and are used as they are; set the Art-Net output of ELM to the address ECHO listens on.

8.6 Other broadcast commands

- **Broadcast > Announce Node Now** - sends an ArtPollReply immediately instead of waiting for the next poll.
- **Broadcast > Refresh Network Interfaces** - re-reads the network adapters, for example after plugging one in. Available while not listening.

9 The network log

Edit > Network Log (Ctrl+L) opens a window that lists every packet the node receives and sends. Capturing continues when the window is closed, so it can stay hidden while you work.

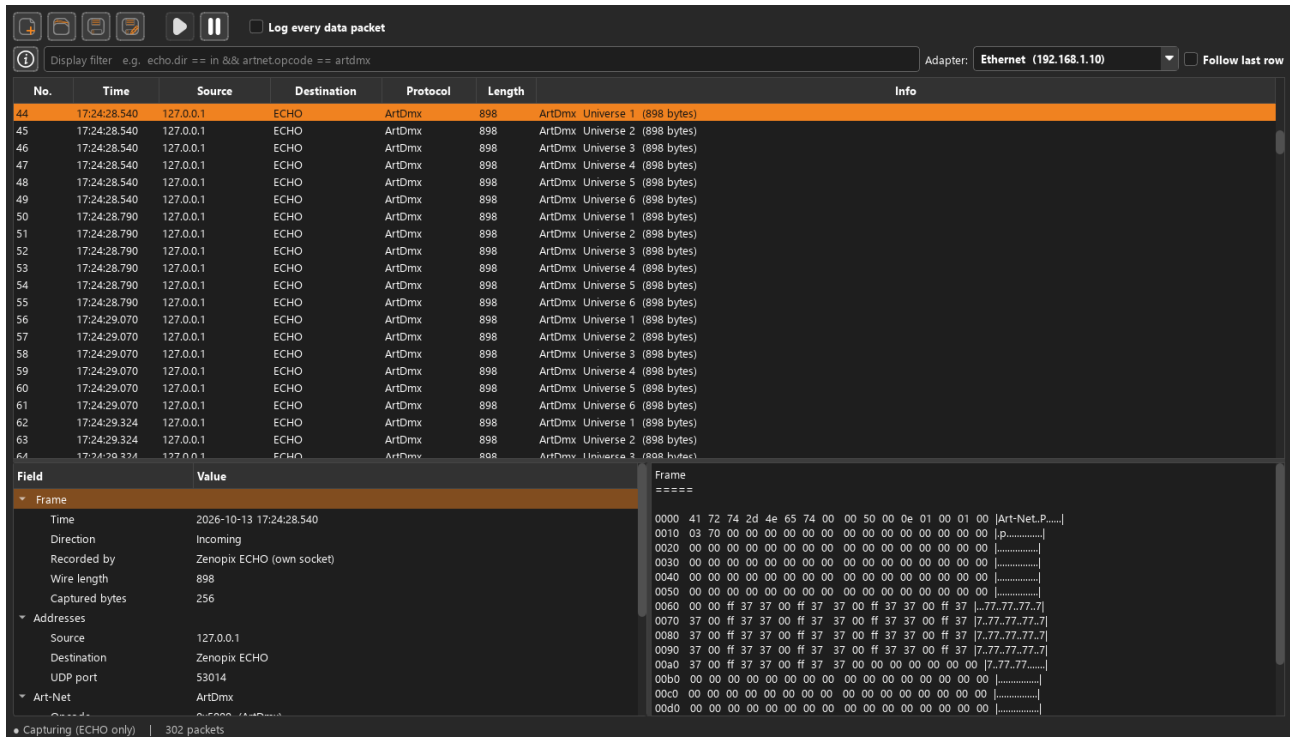


Figure 20. The network log with an ArtDmx packet selected.

9.1 The window

Part	Description
Toolbar	New, Open, Save, Save As, Start capturing and Stop capturing ; Log every data packet .
Display filter	Shows only the packets that match an expression (9.2). The i button explains the syntax.
Adapter / Follow last row	The adapter for Npcap capture (9.4); keep the newest packet in view.
Packet list	No., time, source, destination, protocol, length and a short description of each packet.
Field tree (bottom left)	The decoded fields of the selected packet: frame, addresses, Art-Net header and data.
Bytes (bottom right)	The raw bytes of the selected packet in hexadecimal and ASCII.
Status line	What is being captured (<i>ECHO only</i> or <i>ECHO + adapter</i>) and the number of packets.

9.2 Display filters

Type an expression in the filter box. A word typed without a field name is searched in the Info column. Zenopix NEO's `neo.*` field names work as well.

Field	Example	Notes
ip.src, ip.dst, ip.addr	ip.addr == 192.168.1.50	ip.addr matches source or destination.
udp.port, udp.srcport, udp.dstport	udp.port == 6454	udp.port matches either port.
frame.len	frame.len > 100	Packet length in bytes.

Field	Example	Notes
artnet.opcode	artnet.opcode == artdmx	artdmx, artpoll, artpollreply, aer, or a number such as 0x5000.
artnet.universe	artnet.universe == 0	Port-Address of DMX packets.
echo.outcome	echo.outcome == failed	ok, failed, notsent, partial.
echo.reason	echo.reason == offline	transferclosed, testmode, nosocket, invalidtarget.
echo.error	echo.error == 10055	Windows socket error code of a failed send.
echo.dir	echo.dir == in	in or out.
echo.source	echo.source == echo	echo (ECHO's own socket) or capture (Npcap).

Combine conditions with && / and, || / or, ! / not and parentheses. Operators: ==, !=, >, <, >=, <= and contains. Examples:

```
echo.dir == in && artnet.opcode == artdmx
ip.src == 192.168.1.50 && artnet.universe == 0
!(artnet.opcode == artpoll)
echo.outcome == failed || echo.outcome == notsent
```

The screenshot displays the Wireshark interface with a filter applied: `artnet.opcode == artpoll || artnet.opcode == artpollreply`. The packet list shows 21 packets, mostly ArtPollReply (239 bytes) from 255.255.255.255 to 127.0.0.1. The packet details pane shows the structure of an ArtPollReply packet, including Time, Direction, Recorded by, Wire length, Captured bytes, Addresses (Source: Zenopix ECHO, Destination: 255.255.255.255, UDP port: 6454), and Art-Net (ArtPollReply). The packet bytes pane shows the raw hex and ASCII data of the selected packet.

Figure 21. Filtered to discovery traffic: `artnet.opcode == artpoll || artnet.opcode == artpollreply`.

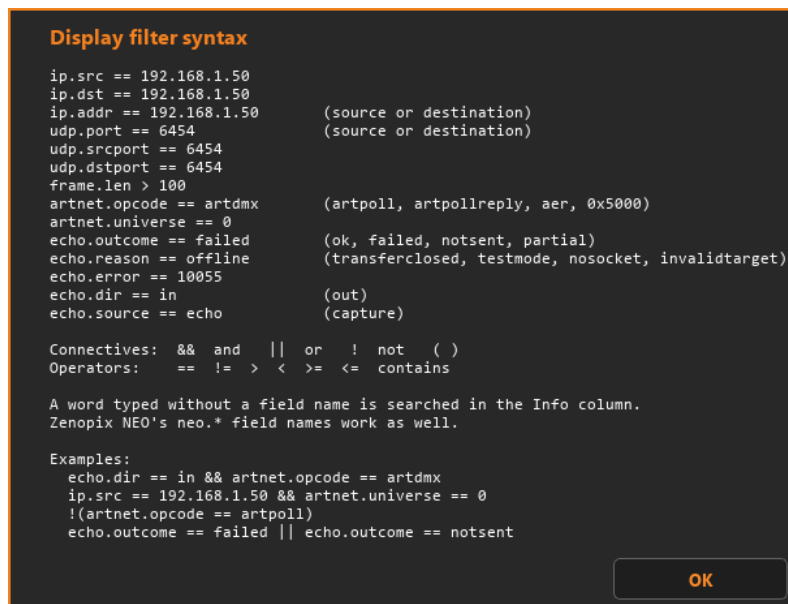


Figure 22. The filter syntax help (the *i* button).

9.3 Log every data packet

Off (default): control packets and every failure are kept, while repeated successful ArtDmx packets are collapsed to a few rows per second - the log stays readable during a show. On: every packet gets its own row.

9.4 Capturing a whole adapter (Npcap)

With Npcap installed, choose an adapter in the **Adapter** list to log the complete traffic of that adapter, not only ECHO's own packets; the status line then reads *ECHO + adapter*. Npcap may require administrator rights - ECHO offers to restart itself with them when needed. Without Npcap the list is disabled and the reason is shown; ECHO's own log keeps working.

9.5 Saving and opening logs

Format	Use
.zlog	Zenopix Network Log - the same format as Zenopix NEO; a log can be opened in either application.
.pcapng	Wireshark capture.
.csv	Comma separated values, for spreadsheets.
.txt	Plain text.

File > Open Network Log, Save Network Log (Ctrl+S) and **Save Network Log As** (Ctrl+Shift+S) do the same from the main window. Logs are opened from .zlog files.

10 Customising the interface

10.1 Themes

Edit > Interface Theme... offers five themes. The preview shows the selected theme before you press **Save**. The monitor stays dark in every theme, so LED colours read correctly.

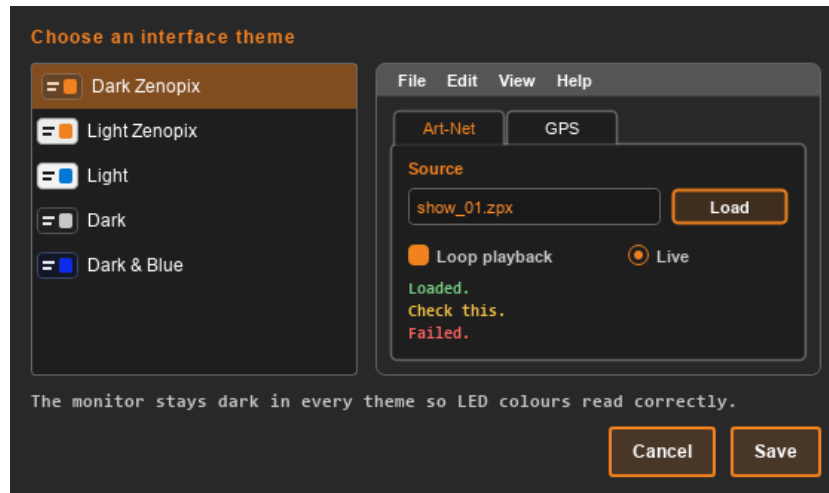


Figure 23. The theme dialog.

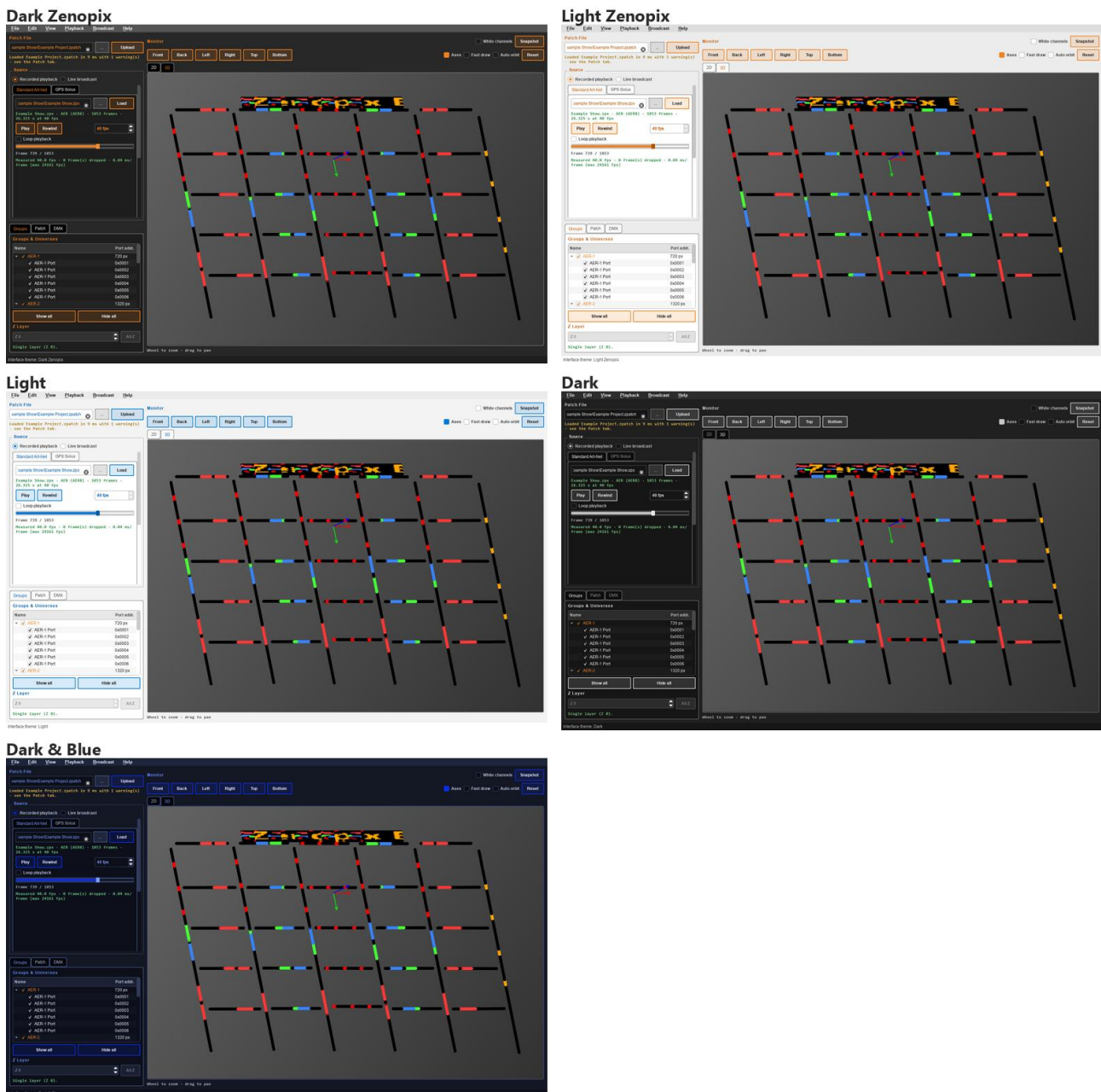


Figure 24. The five themes: Dark Zenopix (default), Light Zenopix, Light, Dark and Dark & Blue.

10.2 Language

Help > Language... switches the interface between English, Deutsch, Français, Español, Italiano, Türkçe, Русский, 简体中文 and 日本語. The change takes effect as soon as you press **Save** - no restart is needed.

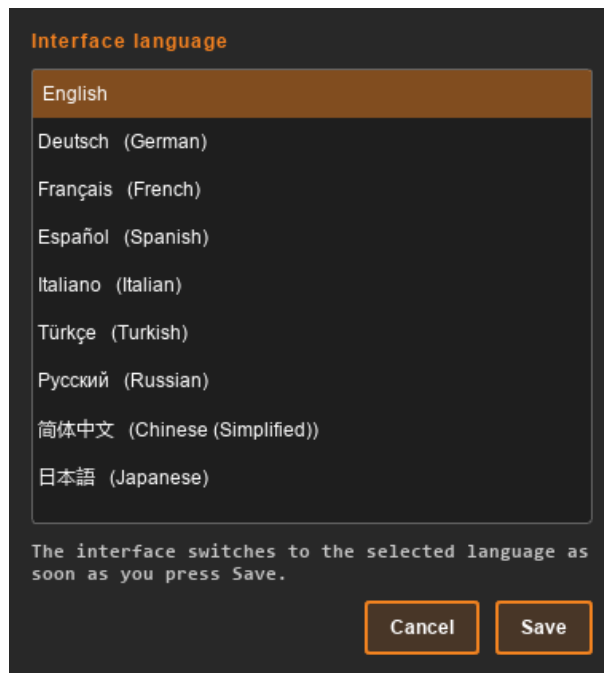


Figure 25. The language dialog.

10.3 Keyboard shortcuts

Help > Keyboard Shortcuts (F1) lists every shortcut; the list is built from the menus, so it is always complete. Appendix A lists them as well.

Action	Shortcut
Open Patch...	Ctrl+O
Open Recording...	Ctrl+Shift+O
Save Network Log	Ctrl+S
Save Network Log As...	Ctrl+Shift+S
Exit	Ctrl+Q
Network Log...	Ctrl+L
Copy Monitor Image	Ctrl+Shift+C
2D Monitor	Ctrl+1
3D Monitor	Ctrl+2
Fit to View	Ctrl+0
Full Screen	F11
Play / Pause	Space
Rewind	Home
Previous Frame	Ctrl+Left
Next Frame	Ctrl+Right
Go to Frame...	Ctrl+G
Listen for Art-Net	Ctrl+Shift+L
Record Incoming Stream	Ctrl+Shift+R
Keyboard Shortcuts	F1

Figure 26. The keyboard shortcuts window.

11 Menu reference

Greyed items are planned for a future version.

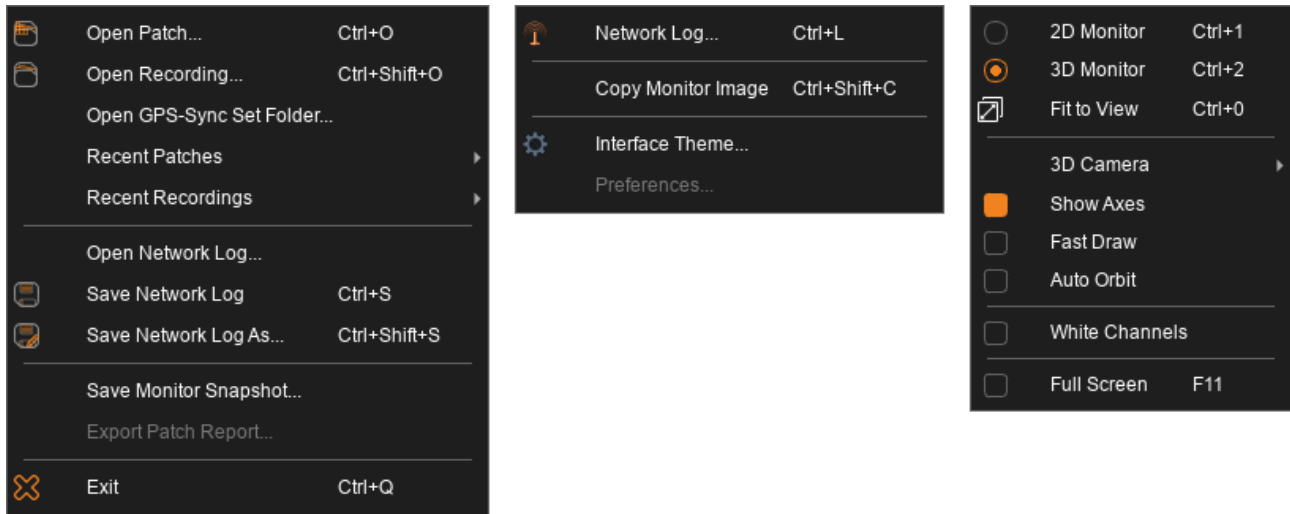


Figure 27. The File, Edit and View menus.

11.1 File

Command	Shortcut	Function
Open Patch...	Ctrl+O	Load a patch (.zpatch, .mpz, .elm).
Open Recording...	Ctrl+Shift+O	Load a .zpx recording for Standard Art-Net playback.
Open GPS-Sync Set Folder...		Fill the GPS Solus tab from a folder of <name>_<Group>.zpx files.
Recent Patches / Recent Recordings		Reopen a recently used file.
Open Network Log...		Open a saved .zlog in the network log.
Save Network Log	Ctrl+S	Save the current network log.
Save Network Log As...	Ctrl+Shift+S	Save it under a new name or as .pcapng, .csv or .txt.
Save Monitor Snapshot...		Save the monitor as a PNG image.
Export Patch Report...		Planned.
Exit	Ctrl+Q	Close ECHO.

11.2 Edit

Command	Shortcut	Function
Network Log...	Ctrl+L	See every packet this node receives and sends.
Copy Monitor Image	Ctrl+Shift+C	Copy the monitor to the clipboard.
Interface Theme...		Choose one of the five themes.
Preferences...		Planned.

11.3 View

Command	Shortcut	Function
---------	----------	----------

Command	Shortcut	Function
2D Monitor / 3D Monitor	Ctrl+1 / Ctrl+2	Switch the monitor view.
Fit to View	Ctrl+0	Frame the whole patch in the 2D view.
3D Camera		Front, Back, Left, Right, Top, Bottom and Reset Camera.
Show Axes / Fast Draw / Auto Orbit		The 3D options of 6.2.
White Channels		Add W, CW and WW to the displayed colour (6.4).
Full Screen	F11	Hide the title bar and task bar.

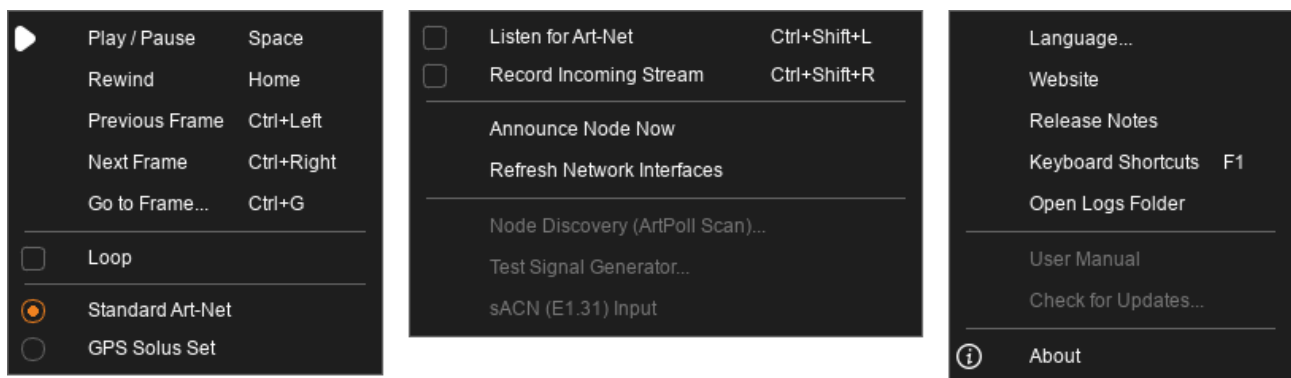


Figure 28. The Playback, Broadcast and Help menus.

11.4 Playback

Command	Shortcut	Function
Play / Pause	Space	Start or pause playback.
Rewind	Home	Stop and return to the first frame.
Previous Frame / Next Frame	Ctrl+Left / Ctrl+Right	Step one frame.
Go to Frame...	Ctrl+G	Jump to a frame number.
Loop		Loop the recording or the GPS set.
Standard Art-Net / GPS Solus Set		Select the playback tab.

11.5 Broadcast

Command	Shortcut	Function
Listen for Art-Net	Ctrl+Shift+L	Start or stop the node.
Record Incoming Stream	Ctrl+Shift+R	Start or stop recording.
Announce Node Now		Send an ArtPollReply immediately.
Refresh Network Interfaces		Re-read the network adapters (while not listening).
Node Discovery, Test Signal Generator, sACN (E1.31) Input		Planned.

11.6 Help

Command	Shortcut	Function
Language...		Choose the interface language.
Website		Open zenopix.com.

Command	Shortcut	Function
Release Notes		Show the release notes of the installed version.
Keyboard Shortcuts	F1	List every shortcut.
Open Logs Folder		Open the folder with the import logs (5.5).
User Manual, Check for Updates...		Planned. Updates are checked automatically at every start.
About		Version, company addresses and support contact.

12 Troubleshooting

Symptom	What to check
The controller does not list ECHO; the panel says <i>No ArtPoll seen yet</i> .	Is ECHO listening? Is the adapter in Listen on on the controller's network? Did Windows Firewall block ECHO? Allow Zenopix ECHO for that network in Windows Defender Firewall.
Packets arrive (pkt/s above zero) but the monitor stays dark.	Is a patch loaded, and is it the patch the controller uses? Compare the universes in the Patch tab with the DMX tab. Are groups or the Z layer hidden in the Groups tab?
Colours are wrong or pixels are shifted.	Hover over a LED (6.3) and compare its channels with the DMX tab: wrong start channel, colour order or universe in the controller.
White-only fixtures stay black.	Switch on White channels (6.4).
With MADRIX every universe is off by one.	Set the Universe of each BindIdxN row to N (8.5).
NEO runs on the same computer and nothing arrives.	Choose 127.0.0.1 or a specific address in Listen on , not Any, and send to that address.
<i>seq errors</i> keep increasing.	Packets are lost or reordered: prefer a wired network, check for two senders on the same universe.
Live data of several devices mixes on the monitor.	The Patch tab warns that a Port-Address is used by more than one device. At a single IP address ECHO cannot tell them apart; check those devices with a recording instead.
Playback stutters on a large patch.	Switch on Fast draw (3D) and watch the <i>Measured</i> line of the playback panel.
An import ends with a warning.	Open Help > Open Logs Folder and send the newest folder to Zenopix support.
The adapter list of the network log is disabled.	Install Npcap; accept the administrator restart when ECHO offers it.

13 Example: checking a Zenopix NEO show

The screenshots in this manual come from one example: a Zenopix NEO project with four AER device groups and 3040 pixels, running a sliding-text animation. This chapter follows it from the sender to ECHO.



Figure 29. The sender: the show in Zenopix NEO.

1. Load the project's patch in ECHO (**File > Open Patch**). The Patch tab shows 4 groups, 22 universes, 43 fixtures and 3040 pixels.
2. Select **Live broadcast**, choose the adapter that reaches NEO (or 127.0.0.1 when NEO runs on the same computer) and press **Start listening**.
3. In NEO, send the zenoveruses to ECHO's address and play the show. ECHO's diagnostics show the polls being answered and the packets arriving, and the 3D monitor shows the animation (Figure 17).
4. Press **Record** to keep the show. Back in the office, load the recording under **Recorded playback** and step through it frame by frame, or open it in Zenopix NEO.
5. Something looks wrong? Pause, hover over the LED and compare its channels with the DMX tab; then check the packets of that universe in the network log with `artnet.universe == 2`.

Appendix A Keyboard shortcuts

Action	Shortcut
Open Patch	Ctrl+O
Open Recording	Ctrl+Shift+O
Save Network Log	Ctrl+S
Save Network Log As	Ctrl+Shift+S
Exit	Ctrl+Q
Network Log	Ctrl+L
Copy Monitor Image	Ctrl+Shift+C
2D Monitor	Ctrl+1
3D Monitor	Ctrl+2
Fit to View	Ctrl+0
Full Screen	F11
Play / Pause	Space
Rewind	Home
Previous Frame	Ctrl+Left
Next Frame	Ctrl+Right
Go to Frame	Ctrl+G
Listen for Art-Net	Ctrl+Shift+L
Record Incoming Stream	Ctrl+Shift+R
Keyboard Shortcuts	F1

Appendix B About and support

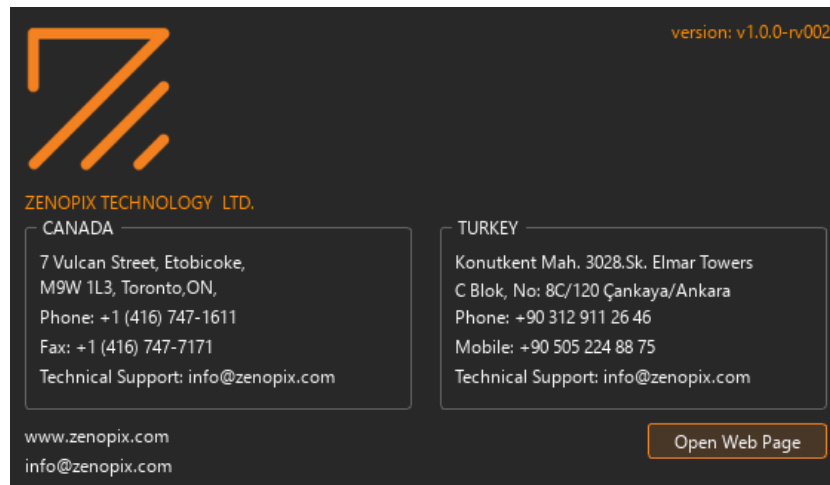


Figure 30. Help > About: the installed version and the Zenopix contact details.

The version shown in the About window (here *version: v1.0.0-rv002*) is the one to quote when you contact Zenopix support at **info@zenopix.com**. For import problems, include the folder from **Help > Open Logs Folder**.