

# F9 World Controls in Blender

This will get you up and running with controlling F9 screen pos/rot/scale in Blender.

For questions, poke ValueFactory

## Changelog

### May 26 - V5.4

- Added a Jill rig and a rig for Jill's 5 tails.

### May 24 - V5.3

- Added DMX Particles
  - "DMX Particle Rig" contains the base particle channels. You can't move/scale it.
  - The child "Attractor Position" lets you position the attractor by moving around that object.
  - The child "Move Offset" controls the direction in which the particles will move by moving this object. The further the offset object is from the origin, the faster the particles will move in that direction.

### May 23 - V5.2

- Renamed FX Drones 20 -> 19 and 21 -> 20 (it counted 18, 20, 21 accidentally lol)

### May 07 - V5.1

- Organized the blend file better
  - Robots of the same type share the same mesh object.
  - All robots should be easier to duplicate now (you should duplicate linked!)
  - Extra scene geometry can be easily hidden by disabling the "Scene Extra" collection.
- Added a custom "Screen" property to the screen robots for easier interop with Mitsuaky's Resolume 3D positioning tooling
- Added proper sensible default steady states for all robots.
- Adjusted the booth position to match the world.
- Light robots have their rotation constrained now (you can't rotate them in world anyway)
- Adjusted the FX Robot mesh to actually indicate where the laser will point
- Removed the "screen only" blend file.

## April 14 - V5

- Added particle screen.
- Updated FX robot layout.
- Added remaining channels to FX robots (Fx selection, fire, mod etc)

## April 06 - V4

- Fixed the screen rotation and motion controls not being mapped to the right channel.

## April 02 - V3

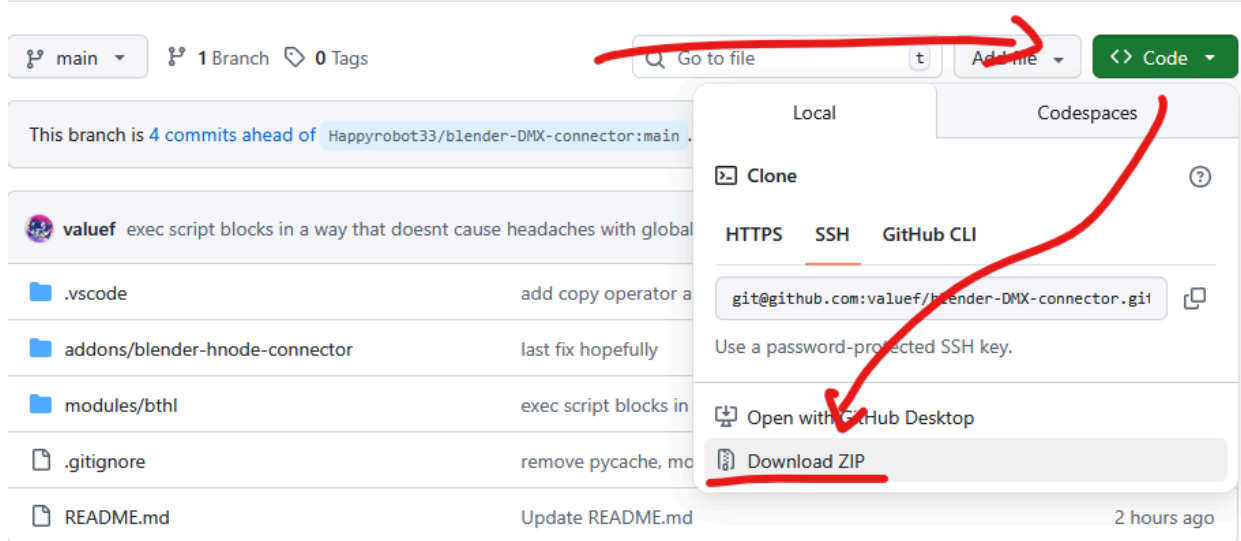
- **New plugin download link (forked the Blender plugin)**
  - Please update if you're using a version before April 2nd! You can update by removing the old script folder and replacing it with the new download link in the guide.
- Hidden objects are no longer synced.
- Included blockout of the club scene and a reference Nargacuga.
- Updated to the new rotation format.

## Requirements

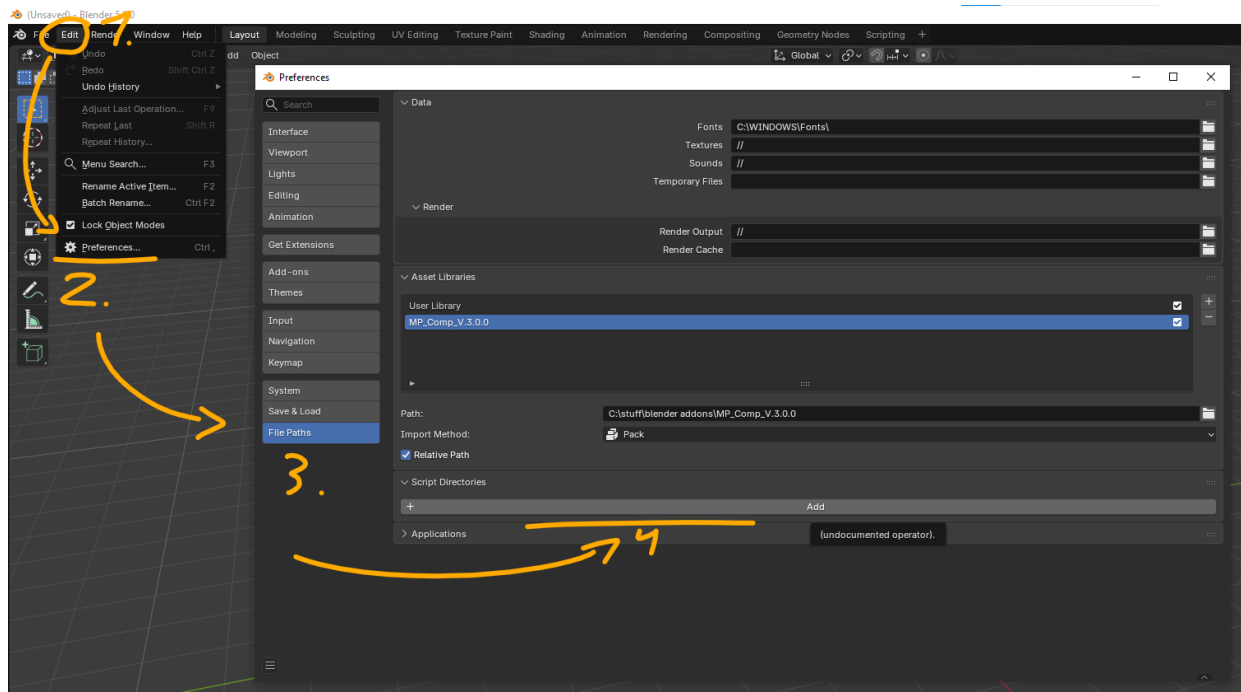
- Blender 5.1 (Blend file uses 5.1, minimum supported by addon is 4.5)
- Furality grid node
- OBS
- MediaMTX
- blender-DMX-connector

## Installing Blender DMX Connector

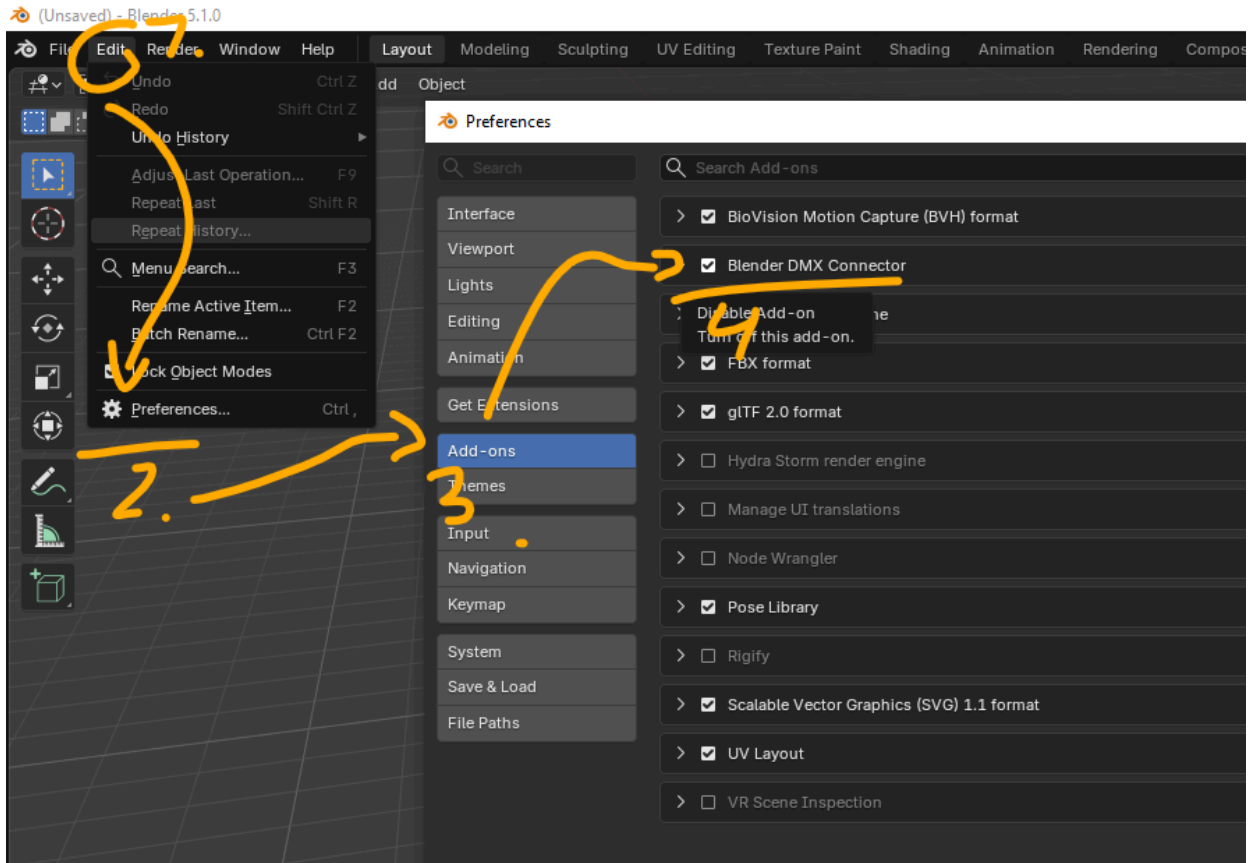
- [Go to this link](#)
- Click on code
- Download ZIP



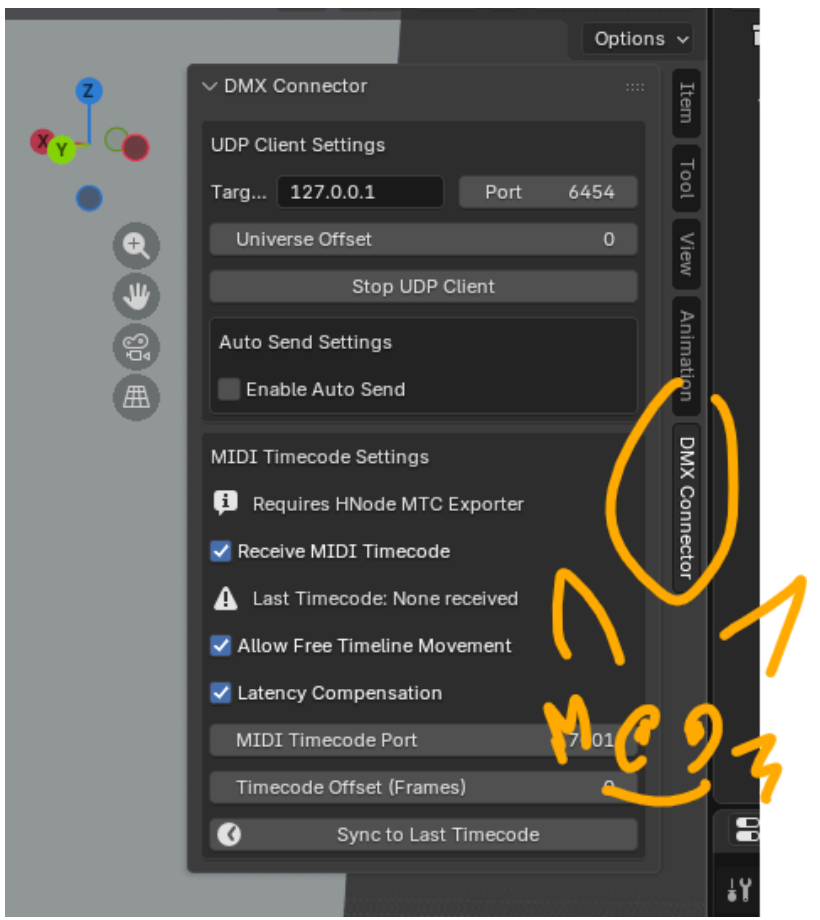
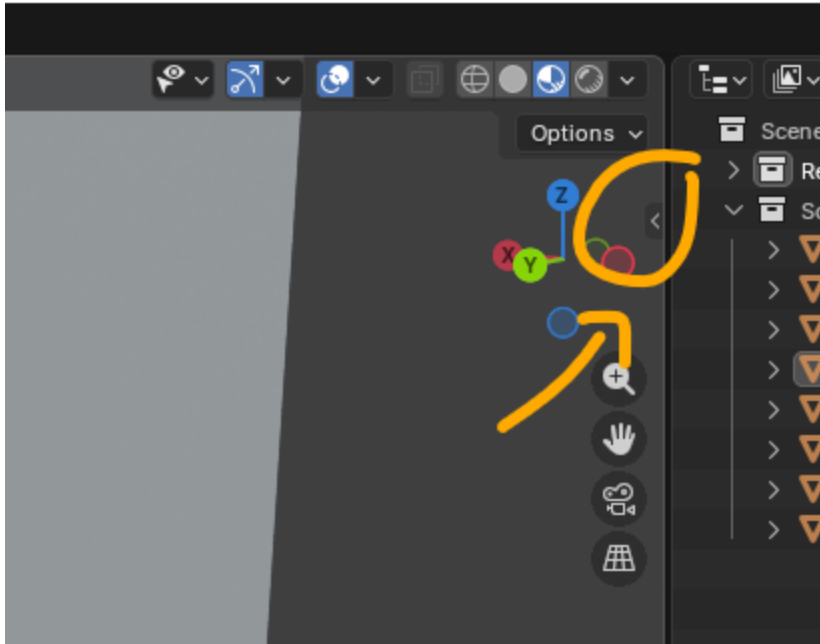
- Extract the zip file and place the contents of it in a safe location you won't remove.
- Open Blender 5.1
- Click on Edit -> Preferences -> File Paths -> Script Directories & click the Add button



- Restart Blender
- Go BACK to the Preferences window (thanks blender)
- Click on Add-ons and enable the "Blender DMX Connector" add-on

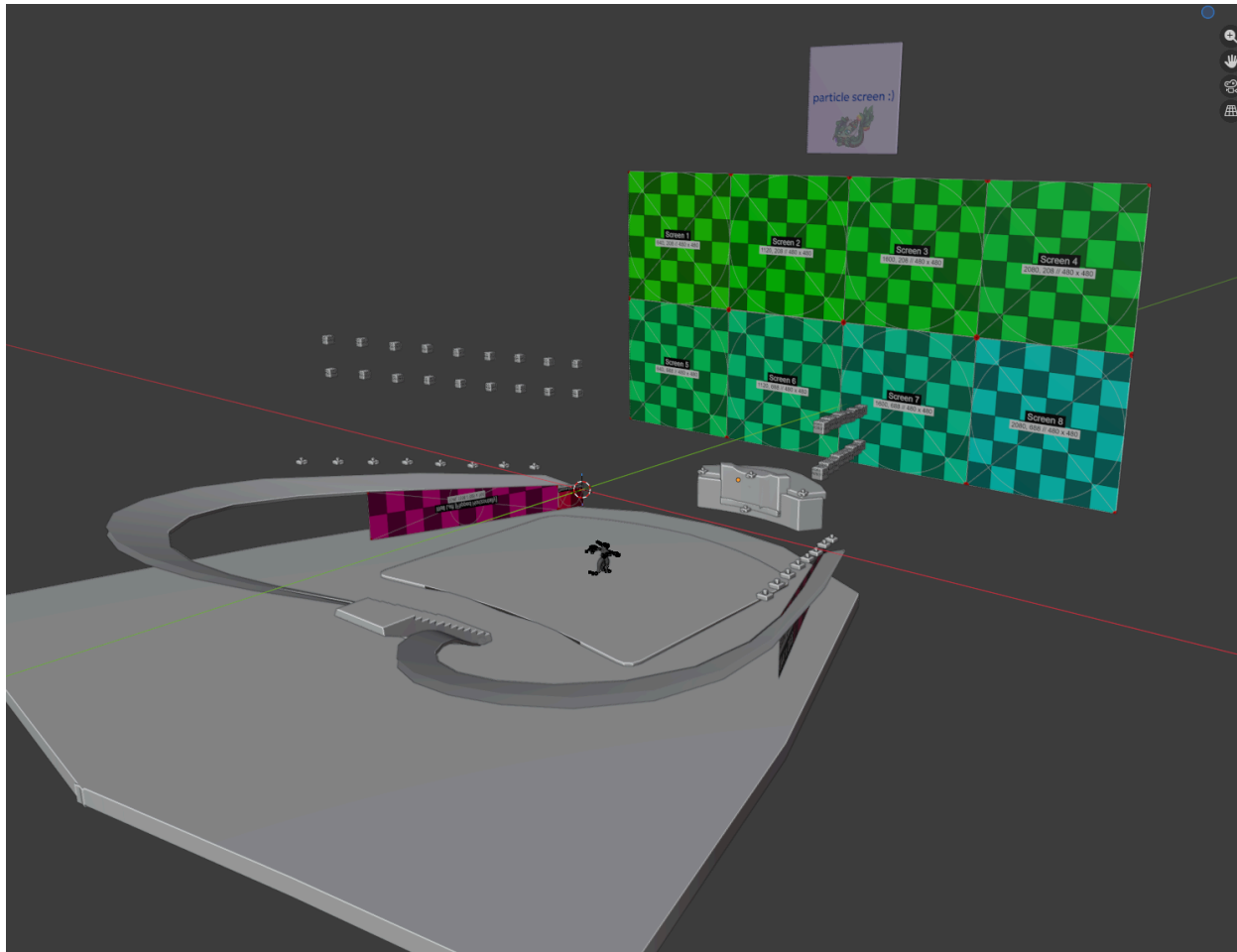


- To make sure the plugin is working, you can drag the nipple (???) on the right side of the viewport out and look for the “DMX Connection” tab. If it’s not there, the pugin isn’t enabled. Call a plant for help.
- Make sure “Enable Auto Send” is enabled!



- Download the latest .blend scene file from the drive.

- Open the .blend file in the blender version you're using (I have like 100 blenders installed so just drag the .blend file into blender and it'll load)
- As of 2026-05-07 the scene should look like this



- The plugin sends out Artnet, so FGrid can capture it and convert it into a grid node for recording/streaming.
- Make sure you have 1440p mode enabled in FGrid.

With an FGrid -> OBS -> MediaMTX -> World setup, you should be able to move the screens in blender and have them move in world now!

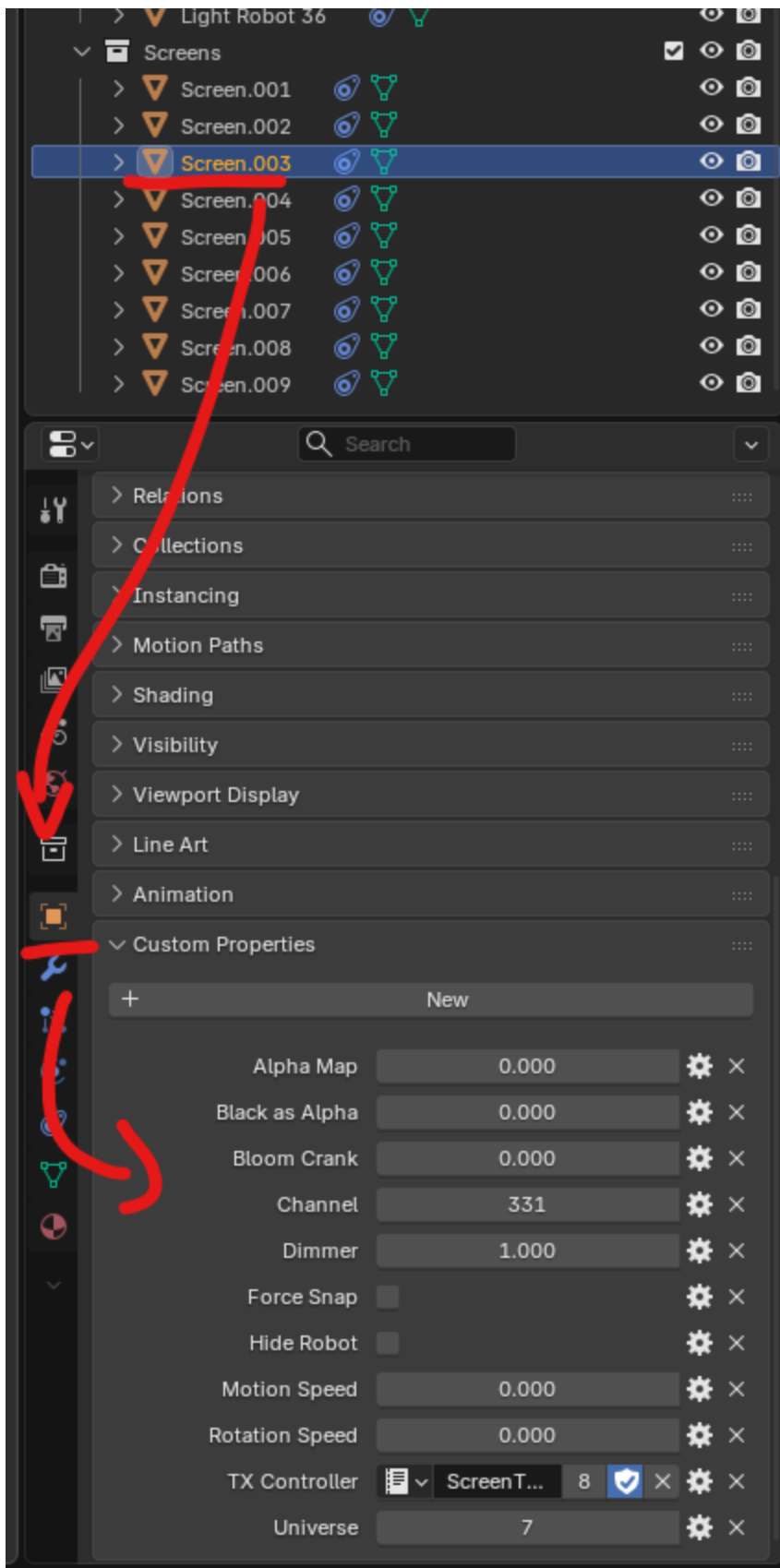
## Important things to know

- **Workflow**

- You can create multiple “scenes” or “layouts” by taking a collection of robots, right-clicking and pressing “Duplicate Linked”. This will create a duplicate collection that you can modify to make a new scene. You can hide the old one.
- **Hidden/invisible objects will not be synced.** You can hide collections and objects you don't care about.
- **TEST YOUR LAYOUTS IN VR!** Desktop does not reflect how it'll feel in VR, so please test your layouts in VR.
  
- **Screens**
  - Scale is limited to [0;5.8] units.
  - If a screen is at scale 0 or has a negative scale, it'll default to a scale of 0.
  - A scale of 0 will make the screen size reset back to default of 0.7. This is implemented in the world.
  
- **Robots**
  - Rotation is unbounded, rotate all you want!
  - Position is limited to a range of [-50;50] units in all directions.
  - You can turn on the 'Force Snapping' channel on each screen to make the pos/rot/scale snap instead of moving smoothly.
  
- Particle screen scale is uniform, so you can't squish or stretch it. The x scale is sent over artnet, y and z are ignored.

# Channels

You can control the channels of the fixtures in the “Object” tab on the selected fixture:



They can be keyframed for animations!

Of course, don't change the channel and universe unless you know what you're doing!

## Next Steps

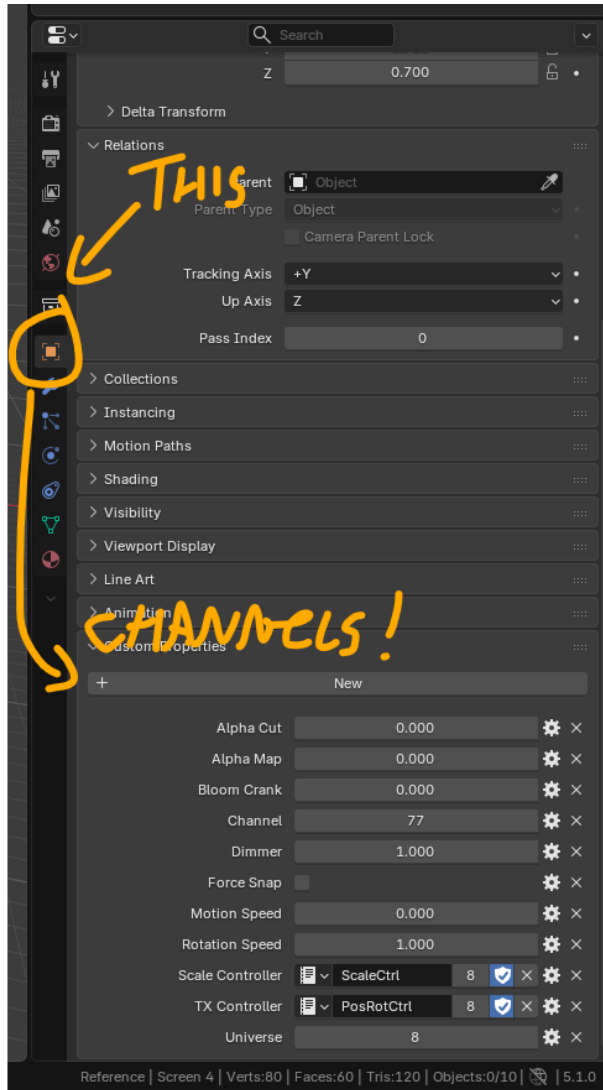
From here you can take screenshots of the FGrid blade, record the Artnet packets, make animations in blender and record the FGrid blade etc. It's up to you on how you want to do it!

Potential workflows:

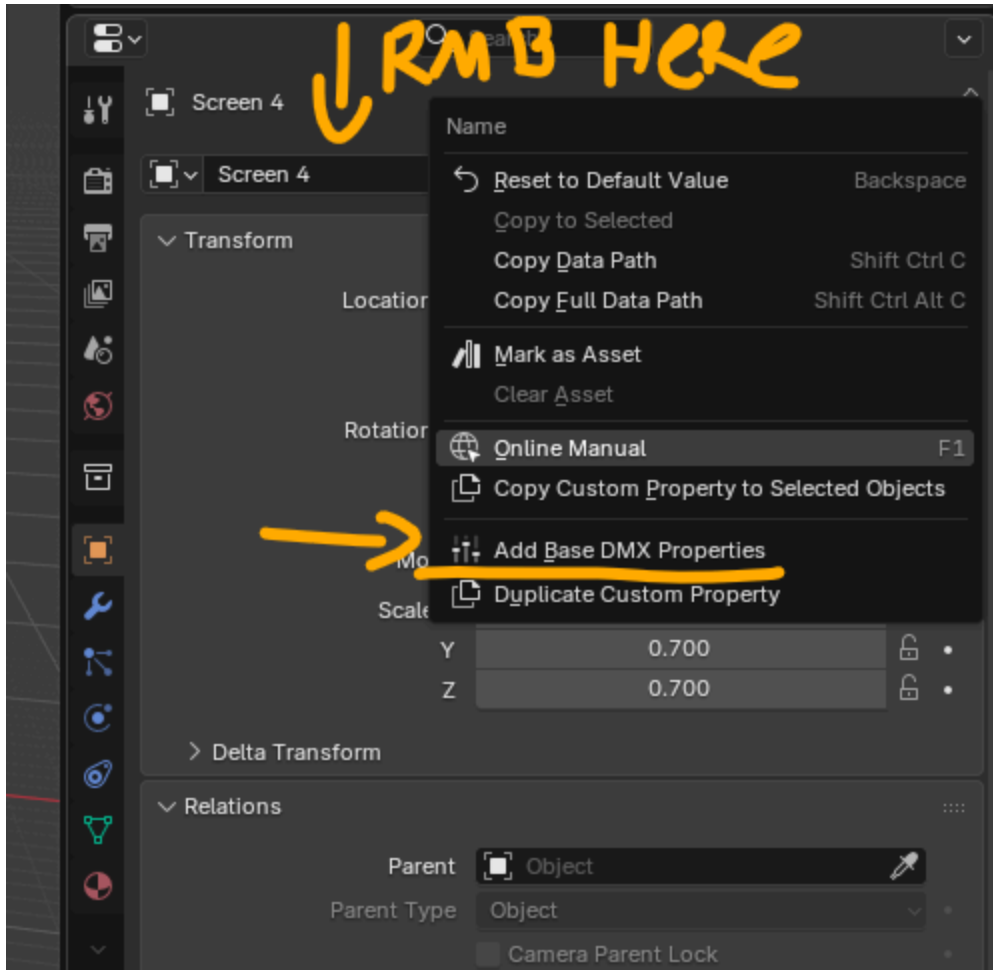
- Setting up a pose, then taking a screenshot of the FGrid blade (fgrid has a button for this!) and using that screenshot in a video editor is a rather simple way of timecoding positions.
- If you want to animate motion in blender to music, you can load a music clip into a channel in the Video Editor tab, then use Blender's animation tools to do your animation and record the resulting FGrid node.

## Technical Details

The plugin sends out Artnet data whenever there's a change to a visible object. It figures out the structure of the Artnet packet, universe and channel using the custom properties on the object tab.



So any object that wants to send out artnet packets needs to have a “Universe” and “Channel” custom property, which can be added by right-clicking on the object selection dropdown thing in the object panel.

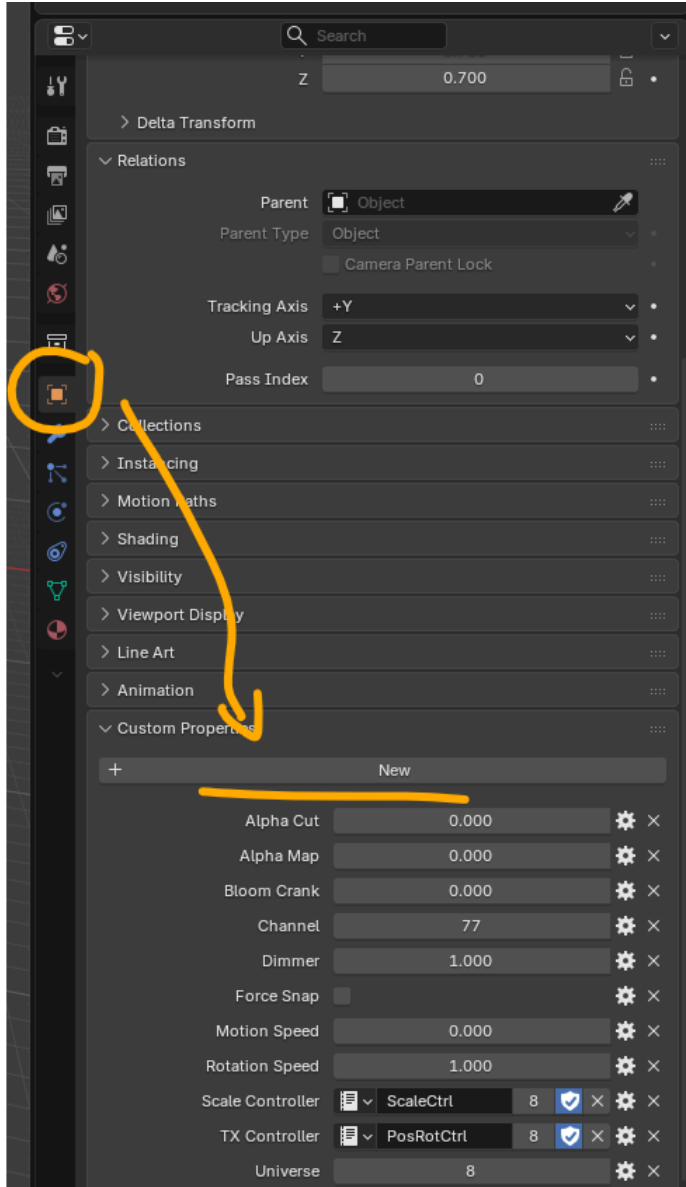


That'll add those 2 channels.

From there, you can set the U:C of the fixture.

## Channels

You can add channels to the fixture by adding a new custom property in the object tab (make sure it's the object tab and not any other tab!)



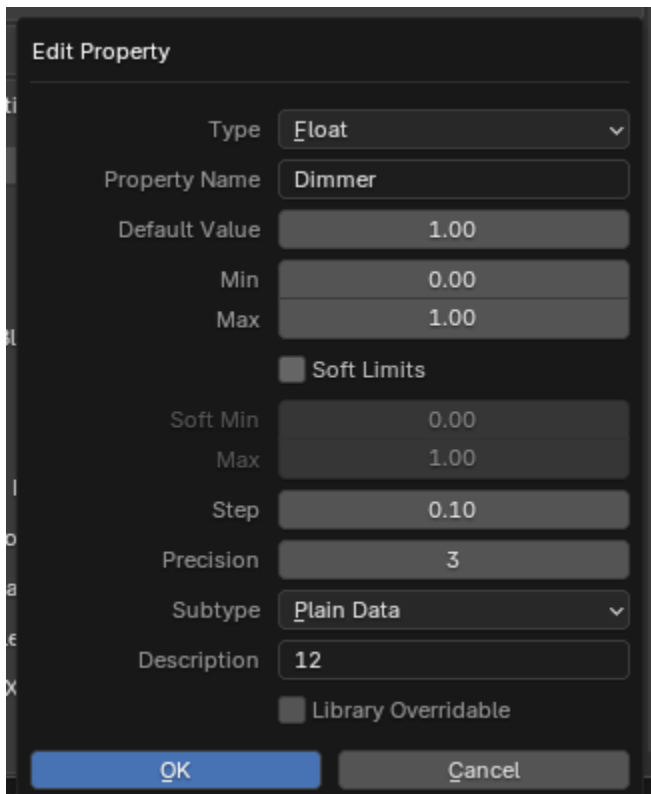
The description of the custom property will be the “properties” of that channel (e.g if it’s a fine/coarse 16bit channel. Not something I fully understand right now but you can read the source for it [here](#))

The simplest description is just the 0-based channel relative to the U:C of the fixture. In other words, it’s the channel column in the patch sheet, minus one.

So if I want to add the dimmer channel to the “Screen Robot” fixture:

- I’d add a new property
- set it to float
- Set the min/max to 0/1

- Set description to be 12 (because dimmer relative channel is 13, but the patch is 1-based where this is 0-based, so subtract 1)



The image shows a dark-themed 'Edit Property' dialog box. The title bar reads 'Edit Property'. The dialog contains several fields and controls:

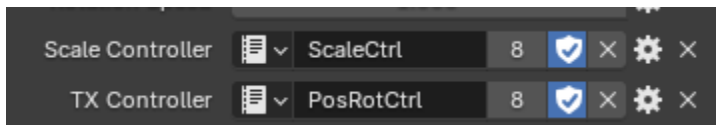
- Type:** A dropdown menu set to 'Float'.
- Property Name:** A text field containing 'Dimmer'.
- Default Value:** A text field containing '1.00'.
- Min:** A text field containing '0.00'.
- Max:** A text field containing '1.00'.
- Soft Limits:** A checkbox that is currently unchecked.
- Soft Min:** A text field containing '0.00'.
- Soft Max:** A text field containing '1.00'.
- Step:** A text field containing '0.10'.
- Precision:** A text field containing '3'.
- Subtype:** A dropdown menu set to 'Plain Data'.
- Description:** A text field containing '12'.
- Library Overridable:** A checkbox that is currently unchecked.

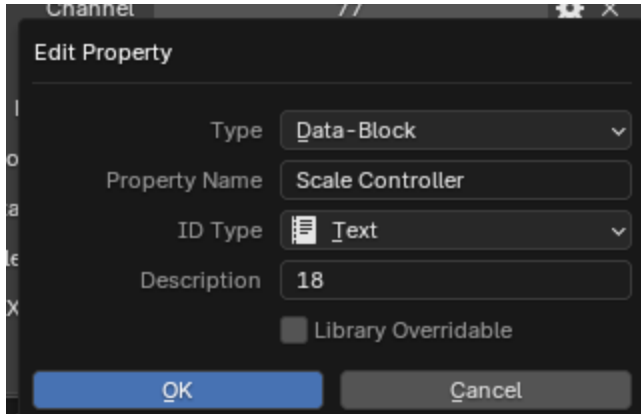
At the bottom of the dialog are two buttons: 'OK' (highlighted in blue) and 'Cancel'.

And that should be it for that.

## Complex Channels

For more complex channels such as pos/rot/scale, you can actually add your own custom code that the arnet encoder will run to write data into the packet. That's how we send out the pos/rot/scale, they're just scripts!





The description determines the starting channel (again 0-based) that will be passed into the script as the `finalChannel` variable. You can take a look at the `PosRotCtrl` and `ScaleCtrl` scripts in the .blend file to get an idea of how these work. View them in the Scripting tab