

GlitchCRT



Tymkrs presents GlitchCRT, a 6hp Eurorack module capable of mixing and glitching at least 3 user-controlled visual inputs to the beat of user-chosen unbalanced audio input with intensity control!

Examples of Video Inputs:

- Composite Video Sources – Old-School VCR/Video Game Console/Vintage Computer
- HDMI Sources – Laptop/Desktop/Camera/Streaming Devices

Examples of Audio Inputs:

- Line Level
- Headphone Level
- Eurorack Synthesizer

Eurorack Dimensions + Customizable Look:

- Width - 6hp
- Height - 3u
- Depth - 1.5 cm

The **reversible** faceplate gives you two options - Either white background/black lettering or white background with silver lettering! The module will come to you as the default white background/black lettering. If you'd like to change it to the white background/silver lettering, just unscrew the nuts on the front, flip the panel, and re-screw the nuts!

How do I connect my video sources to GlitchCRT?

The GlitchCRT has three 1/8" inputs labeled Composite Input A, Composite Input B, and Composite Input C. Depending on the type of video source, you may want to consider a Tymkrs H2A Eurorack module to convert HDMI to Composite Video.

Source	Recommended Additional Hardware	Cables needed to connect to GlitchCRT	Examples
Composite Video	N/A	RCA to 1/8" TS cable	VCR, Video Camera, Vintage Computers (C64, Amiga), Video Game Consoles (NES, SNES, N64), Eurorack Modules (Tymkrs Pixytron), AV Receiver
HDMI	Tymkrs H2A Eurorack module (HDMI to 1/8" Converter)	RCA to 1/8" TS 1/8" patch cable	Laptop, Desktop Computer (Youtube, WinampAVS, Studio Software)

How do I connect my GlitchCRT video output to a CRT display? What about a modern monitor?

The GlitchCRT has a 1/8" output labeled Composite Output to connect to your desired display.

Video Display Type	Recommended Additional Hardware	Cables needed to connect to target display	Examples
Composite Video	N/A	1/8" TS to RCA cable	CRT Monitor Projector w/RCA connections
HDMI	Tymkrs A2H Eurorack module (1/8" to HDMI Converter)	1/8" patch cable HDMI cable	HDMI Monitor HDMI Capture Device Projector w/HDMI Streaming device

How do I connect my audio source to GlitchCRT?

The GlitchCRT has a 1/8" input labeled Audio Input for the audio you would like to glitch (modulate) the video.

Source	Cables needed to connect to GlitchCRT	Examples
Line Level Audio Source	1/8" patch cable or 1/8" to 1/4" cable or 1/8" to RCA cable	Audio interface output, audio mixer, composite audio sources, HDMI audio via the use of a Tymkrs H2A Eurorack module.
Headphone Level Audio Source	1/8" patch cable or 1/8" to 1/4" cable	Cassette tape player, Laptop, Audio mixer, Smartphone
Eurorack Audio Source	1/8" patch cable or 1/8" to 1/4" cable	Attenuated Eurorack audio or control voltages

What's GlitchCRT actually doing to the video?

Technically, if you only have one video source, GlitchCRT works as a pass-through. Adjusting the dial will attenuate that video source which dims it until its signal is not loud enough to be recognized as a valid video source by the display. If you have two or even three video sources, the sources will glitch each other because one video source's clock is out of sync with the other video source's clock. The display syncs with the loudest clock to decide which picture remains locked in position on the screen causing the quieter clock's picture to roll. In a not-glitching video mixer, the mixer would time-base correct all of the video signals, selectively delaying such that they are all in sync.

What is the audio input actually doing to the video?

The audio is a modulation source for the video inputs. Valid composite video is not *supposed* to be modulated by an audio source and doing so results in weird, sometimes unexpected video glitching!

What if I want to use balanced audio?

GlitchCRT will only monitor the TS lines of the input. But you can always separate the audio and using two GlitchCRTs, monitor both sides.

What if I want to use PAL instead of NTSC?

Consider 2 signals. If they are both NTSC, the signals are running at the same clock speed but are out of sync. If one signal is NTSC and the other signal is PAL, the signals are running at different clock speeds AND are out of sync. When crossing two NTSC signals, the glitch occurs as horizontal lines. When crossing an NTSC with PAL signal, the glitch *tilts*.

There's no power plug?

GlitchCRT is passive and doesn't need to be plugged in! It's magic!

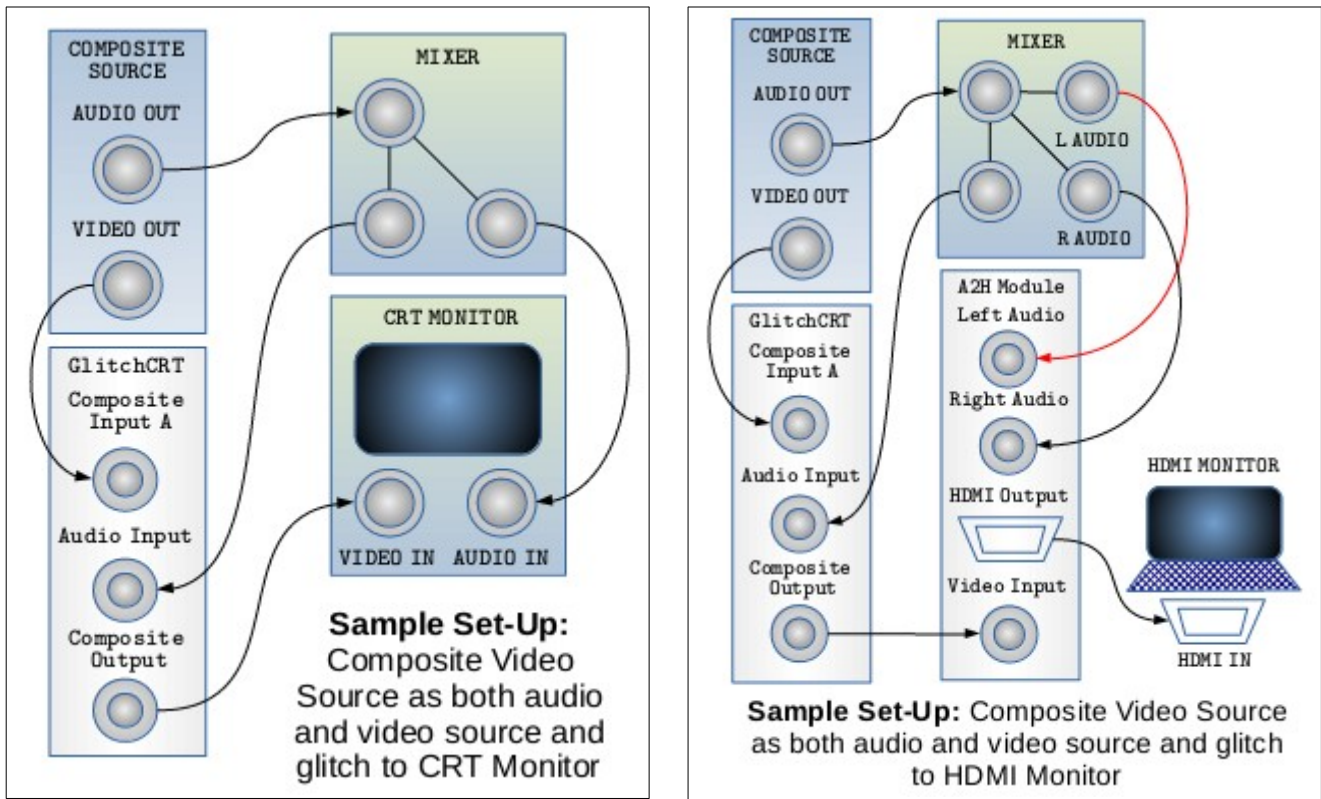
Pictures!



Sample Set-ups:

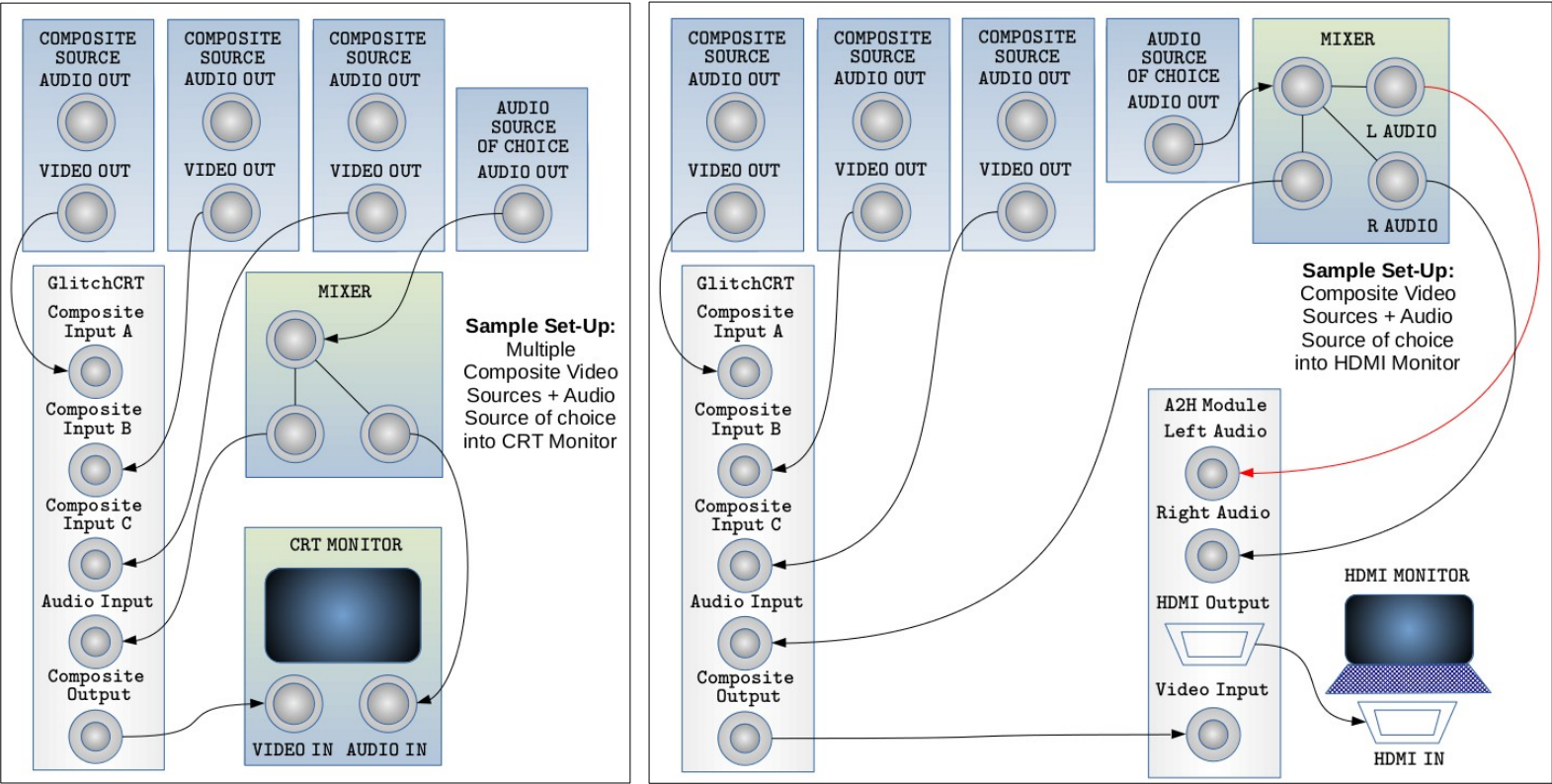
The illustrated set-ups below are a mere subset of the possibilities you have in how you can mix and match your video sources and audio sources!

The following examples look at how to use a single composite source as the video to be glitched, the audio to do the glitching, and the audio to also accompany the resulting glitched video. The two illustrated set-ups also show the difference between displaying to a CRT monitor vs an HDMI display.



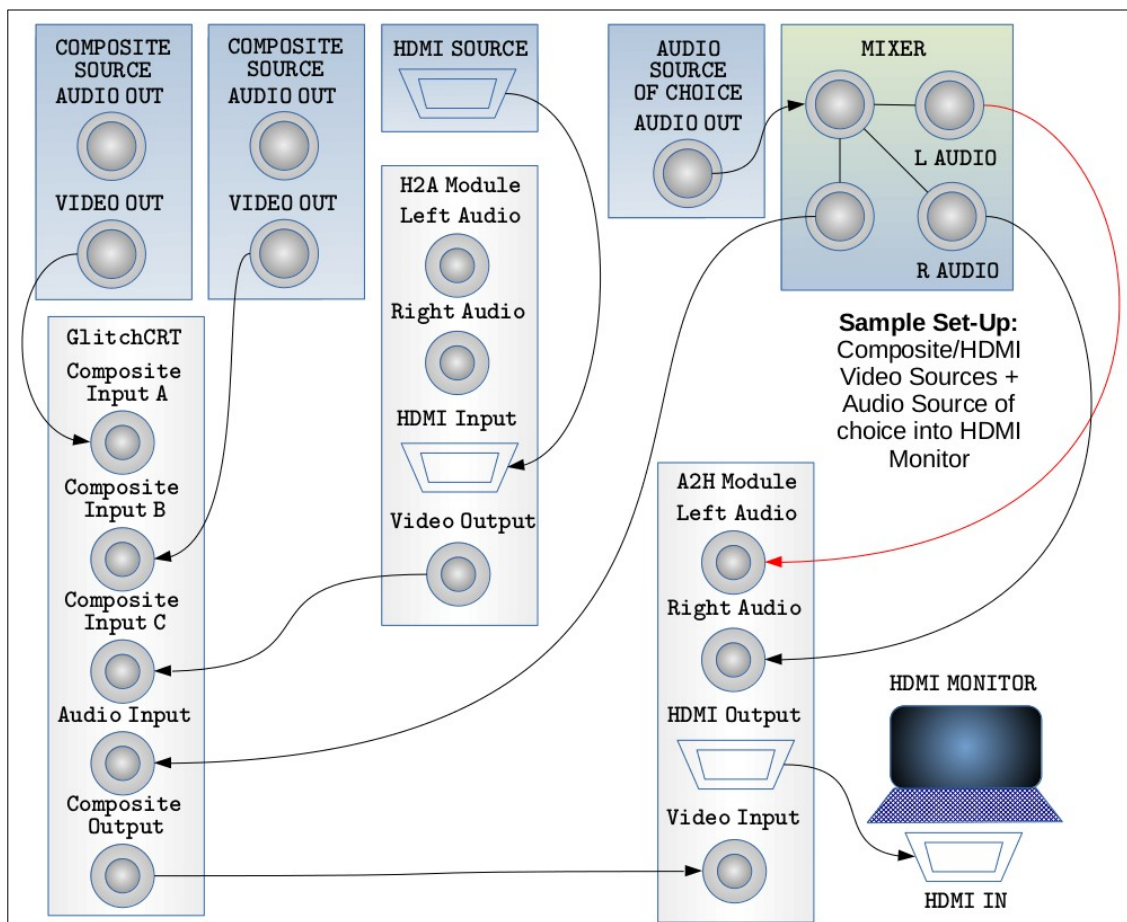
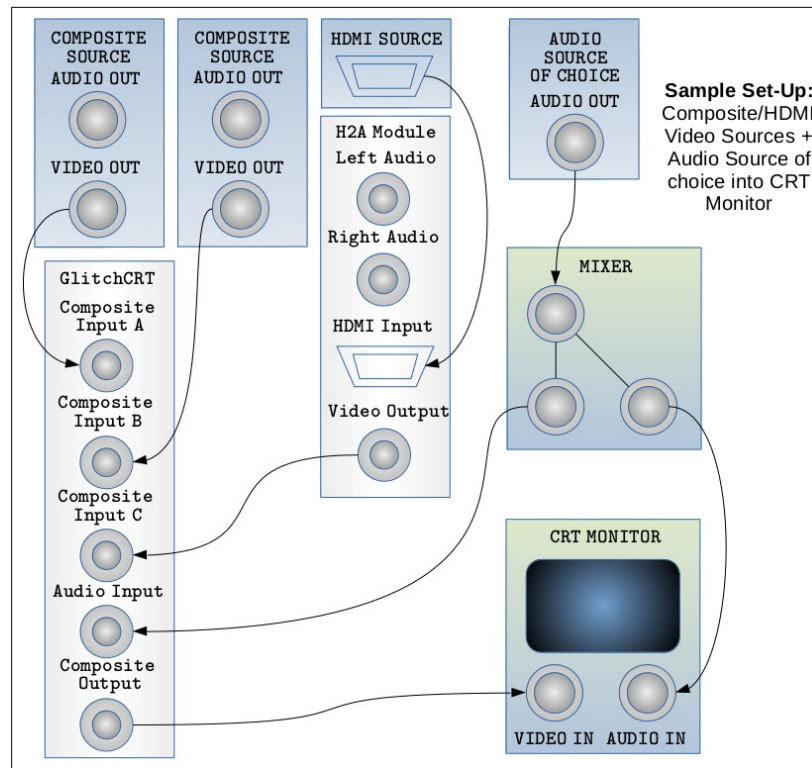
Single composite video source as the source of both audio and video			
From Source	Connect to...	Cable(s) Needed	Notes
Composite Video Source Video Out	GlitchCRT Composite Input A/B/C	RCA to 1/8" cable	
Composite Video Source Audio Out	GlitchCRT Audio Input	RCA to 1/8" cable	Use a mixer to split the audio so that it can go to both the GlitchCRT Audio Input and the display for accompanying the glitched result.
GlitchCRT Composite Video Out	CRT Display Video In	1/8" to RCA cable	
GlitchCRT Composite Video Out	HDMI Display	1/8" to 1/8" cable HDMI cable	Use a Tymkrs A2H Eurorack module to convert the composite video out to HDMI. The HDMI can then be connected to the desired display or HDMI capture device.

This next example looks at how to connect multiple composite sources to either a CRT or HDMI monitor. You'll note that I've separated the audio input of the GlitchCRT but this is to demonstrate that the audio source could be from one of the composite sources, or it could be something completely external to the composite sources!



Multiple Composite Video Sources + Audio Source of choice			
From Source	Connect to...	Cables Needed	Notes
Composite Video Source Video Outs	GlitchCRT Composite Input A/B/C	RCA to 1/8" cable	To increase the number of sources beyond the 3 on a single GlitchCRT, use an AV receiver to switch between any additional sources you'd like. You could even use multiple GlitchCRTs to increase the number of video sources!
GlitchCRT Composite Video Out	CRT/Composite Video Display Video In	1/8" to RCA cable	
GlitchCRT Composite Video Out	HDMI Display	1/8" to 1/8" cable	Use a Tymkrs A2H Eurorack module to convert the composite video out to HDMI. The HDMI can then be connected to the desired HDMI capture device.

Of course, Glitch CRT doesn't limit you to only using Composite Video Sources as it supports HDMI sources as well. This example shows how to connect a mixture of Composite and HDMI sources using the Tymkrs H2A Eurorack module as an intermediary. This will also differentiate between connecting this set-up to a CRT versus an HDMI capture device.



Multiple Mixed (Composite/HDMI) Video Sources + Audio Source of Choice			
From Source	Connect to...	Cables Needed	Notes
Composite Video Source Video Outs	GlitchCRT Composite Input A/B/C	RCA to 1/8" cable	To increase the number of sources beyond the 3 on a single GlitchCRT, use an AV receiver to switch between any additional sources you'd like. You could even use multiple GlitchCRTs to increase the number of video sources!
HDMI Video Source Video Outs	Tymkrs H2A Eurorack module >> GlitchCRT Composite Input A/B/C	HDMI cable 1/8" patch cable	To convert HDMI to composite video, use the H2A module. The video can then be connected to the GlitchCRT module.
GlitchCRT Composite Video Out	CRT/Composite Video Display Video In	1/8" to RCA cable	
GlitchCRT Composite Video Out	HDMI Display	1/8" to 1/8" cable	Use a Tymkrs A2H Eurorack module to convert the composite video out to HDMI. The HDMI can then be connected to the desired HDMI capture device.

Audio Sources			
From Source	Connect to...	Type of cable	Notes
HDMI	Tymkrs H2A Eurorack module – use Left Audio or Right Audio to connect to GlitchCRT Audio Input	HDMI cable 1/8" patch cable	The Tymkrs H2A Eurorack module splits out left audio, right audio, and the video signal.
Composite Video Audio Out	GlitchCRT Audio Input	RCA to 1/8" cable	
Line Level Audio Source	GlitchCRT Audio Input	Source connector to 1/8" cable	
Headphone Level Audio Source	GlitchCRT Audio Input	Source connector to 1/8" cable	Headphone level will glitch the hardest
Eurorack Level Audio Source	GlitchCRT Audio Input	1/8" patch cable	

Alright, this sounds amazing but are there any risks?

For full disclosure, if you are putting the GlitchCRT's composite output to an HDMI capture device via the Tymkrs A2H Eurorack module, if you overdrive the signal, the HDMI capture device may display a "Lose Signal" because the display may think it has lost its clock source. This is easily remedied by adjusting the balance of the signals on the GlitchCRT Composite Inputs. This error won't happen on analog monitors.

What other things can you use the GlitchCRT for?

Instead of patching in video sources into Composite Inputs A/B/C, patch *audio* into the Composite Inputs A/B/C. In this configuration, the GlitchCRT can work as a quick and dirty passive audio mixer! Note that the “Audio Input” will modulate the three “video” inputs. The possibilities are endless!

For any additional support, please contact feedback@tymkrs.com!