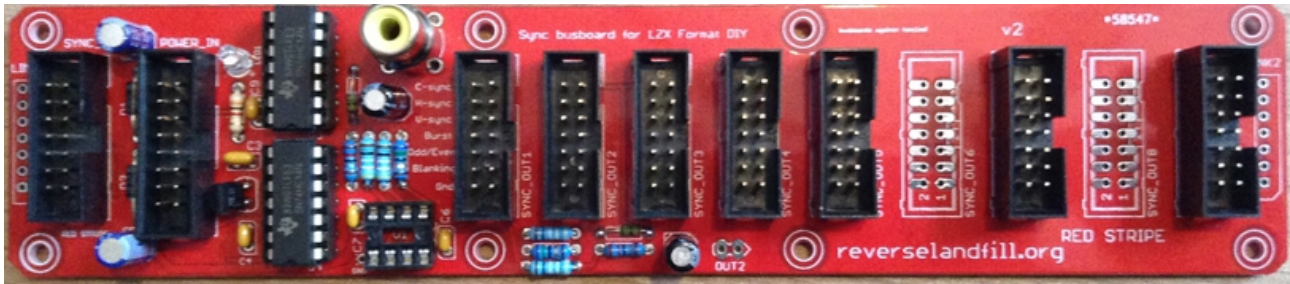


## Buffered video sync busboard for (DIY) LZX or other video synthesizers.

version 2 - 2019



This buffered sync busboard is designed for connecting several Cadet / DIY modules that use the 14 pin sync bus. You need a Cadet Sync generator or Visual Cortex as sync source.

### Features:

There is one 14pin sync input and nine sync outputs.

The busboard has two C-sync outputs for LZX modules that use RCA connections.

One of these RCA outputs has a vertical RCA socket, the other one has solderpads.

This board needs to be powered and has one 16pin power header.

For more custom systems there are also 2 "screw terminal" type connectors.

### Resistors:

Start your build with the resistors.

R1: 3k (this sets the brightness of the LED)

R2, R10: 130k

R3, R11: 18k

R4, R8: 75r

R5, R6, R7, R9: 499r

### Diodes:

These are for the reverse power protection.

D1, D2: 1n4001

LED: a yellow LED. (If you have another color, adjust R1 for brightness. 10K for red)

### IC's & sockets:

U1: 8pin socket + LM6172 (C-sync output buffer)

IC2: 78L05 (the 5v regulator)

U3, U4: 16pin socket + 74HC14N (the buffers for the sync signal)

### Connectors:

Put all the headers in, flip the board and lay the pcb on a flat surface.

Solder 2 pins of each header. Now flip the board and check if all headers are aligned correctly.

Correct by reheating the soldered pads. Now solder all pins.

Sync in & sync out: 14pin shrouded headers

Power in: 16pin shrouded header

### Capacitors:

Start with the smaller ones!

C3: 330nF

C4, C6, C7, C9: 100nF

C1, C10: 10uF

C2, C8: 100uF

**RCA output:**

Solder the vertical RCA socket at the X1 location. Make sure it is aligned correctly!

**Testing:**

The sync busboard needs power.

Plug a 16 pin powercable from your eurorack busboard to the sync busboard "power in" header.

Turn on the power supply. The yellow led should light up.

Turn off the powersupply.

Connect a Sync source module (Cadet Sync generator or a Visual Cortext) to the "Sync in"header.

Connect a module that needs sync (VCO, Ramps, Video input) to the 14pin "sync output" header.

Turn of the power supply and test if the VCO is synced.

The RCA (C-Sync) output can be connected to LZX modules that use this kind of sync method.

note:

If you have a Visual Cortex and a Cadet sync generator , use the Visual Cortex as master.

Original design thread:

[https://community.lzxindustries.net/t/sync-busboard-design-for-cadet-diy-systems/602\\_1](https://community.lzxindustries.net/t/sync-busboard-design-for-cadet-diy-systems/602_1)

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