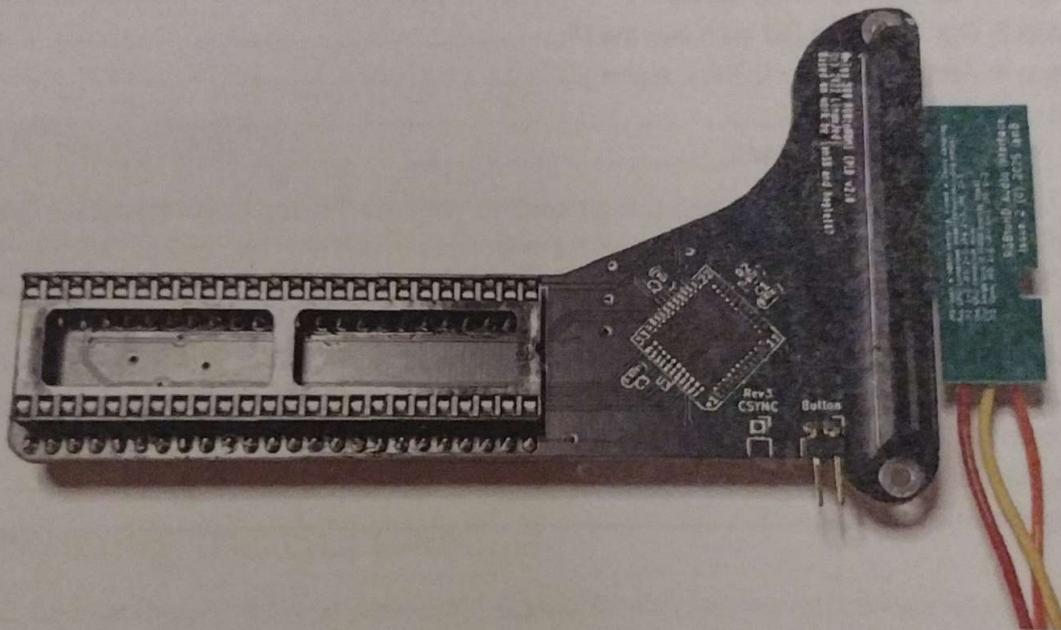# Amiga 500 CPLD RGBtoHDMI Adaptor With Audio Capture

Note: The regular RGBtoHDMI software releases are not compatible with the audio board, not only for audio, but also the picture will not work.

Step 3: Setup single button mode

Edit the file called "Default.txt" in the "Profiles" directory, near the end of this file you will see "cpld_single_button_mode=0", change this to "cpld_single_button_mode=1".

Hardware Installation

Step 1: Remove Denise

Carefully pry Denise out of its socket in your Amiga 500 / 500 Plus. We recommend using a tool such as the Wera 1429 Chip Lifter for this task, but a screwdriver or similar could be used if you carefully pry each end in turn. Please note that brute force may well damage the chip and/or socket.

Step 2: Add Denise to the adaptor

Install the Denise chip into the socket in the adaptor. Make sure the notch in Denise is facing towards the chip on the adaptor. Be very careful when inserting this as if a pin isn't lined up it could bend instead of going into a hole. Also be careful not to damage the pins at the bottom of the adaptor.

Step 3: Put the micro SD card into the Pi

The micro SD card needs to be installed in the SD card socket in the Pi.

Step 4: Add the Pi Zero to the adaptor

The Pi should be inserted into the socket. There is some text on the board which indicates it should be covered by the Pi to help with orientation.

Step 5: Audio clips

The audio capture clips should be clipped onto the motherboard. There are a couple of places you can use. You are welcome to solder your own wires instead of using the included clipst.
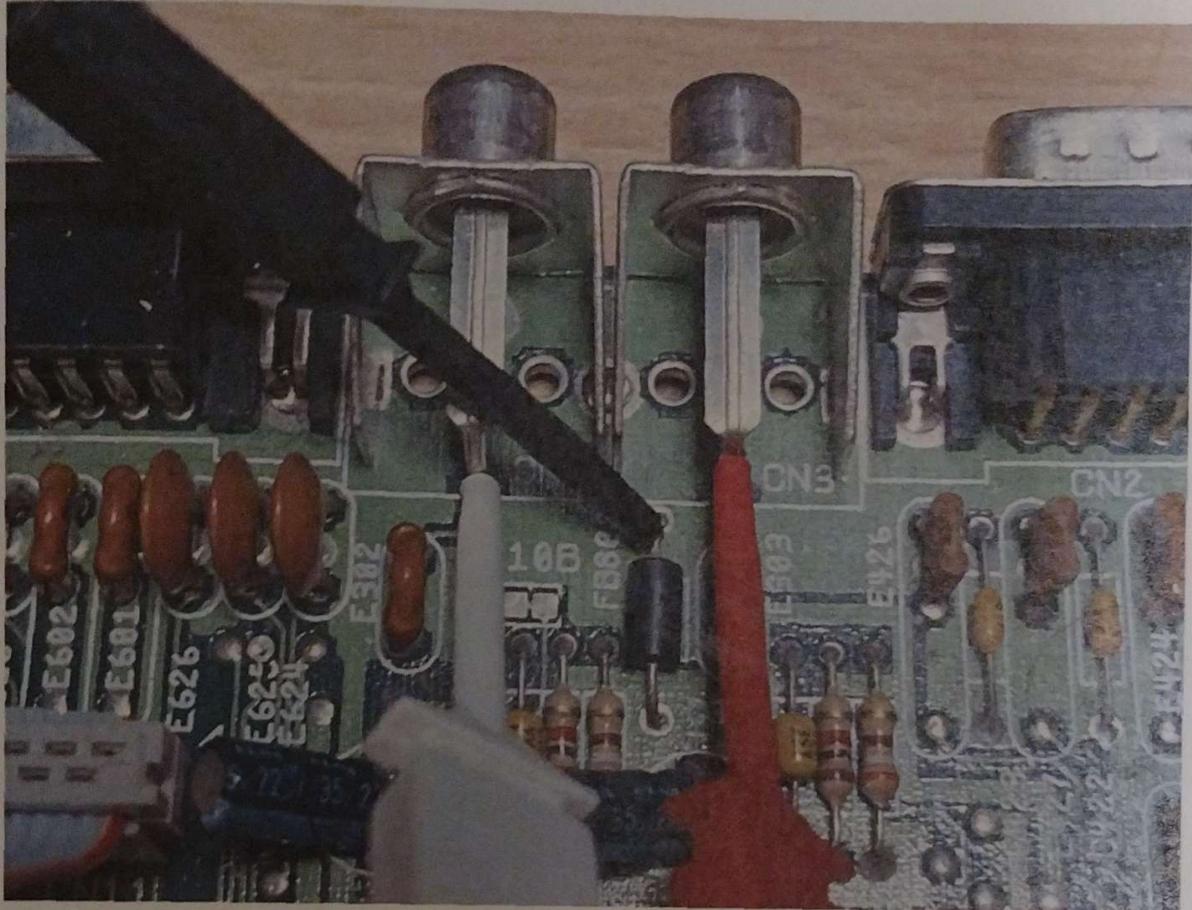
In both cases the black wire should be clamped onto the north side of FB802.

Option 1: audio sockets

Clamp the white clip to the centre pin of the left audio socket, and the red to the centre pin of the right audio socket.
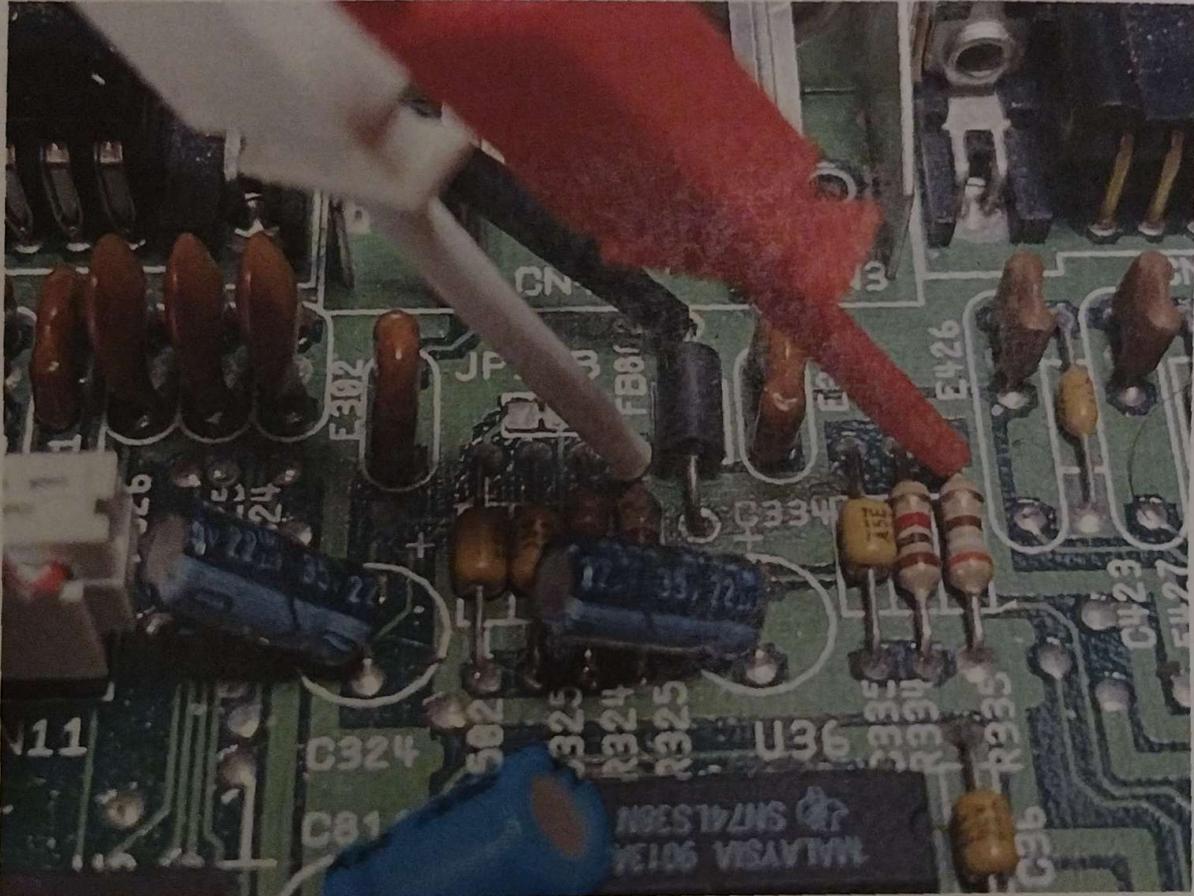
Option 2: Resistors

Clamp the white clip to the north leg of R325 and the red clip to the north leg of R335.

Step 6: Add the button

Included with the board is a push button on a cable. Connect this to the two pin connector on the adapter. The orientation of the connector for the button is not important, it will work either way around.

Step 7: Add a C-Sync clip (Amiga 500 Rev 3 only!)

The revision 3 of the Amiga 500 is missing the C-Sync signal on Denise, there is a pin labelled "CS" on the RGBtoHDMI, this should be used to clip onto pin 9 of U41 on the Amiga.

## Step 8: Plug in the HDMI cable to the Pi

Carefully plug the HDMI cable into the Pi's HDMI socket, which will be located at the top right of the Pi in the photo below.

Step 9: Install the adaptor

The adaptor needs to be installed in the same position as the removed Denise chip.
Carefully align the pins at the bottom of the adaptor with the sock and gently push it in.
Please **do not** force it in as you can cause damage to the adaptor and the socket.
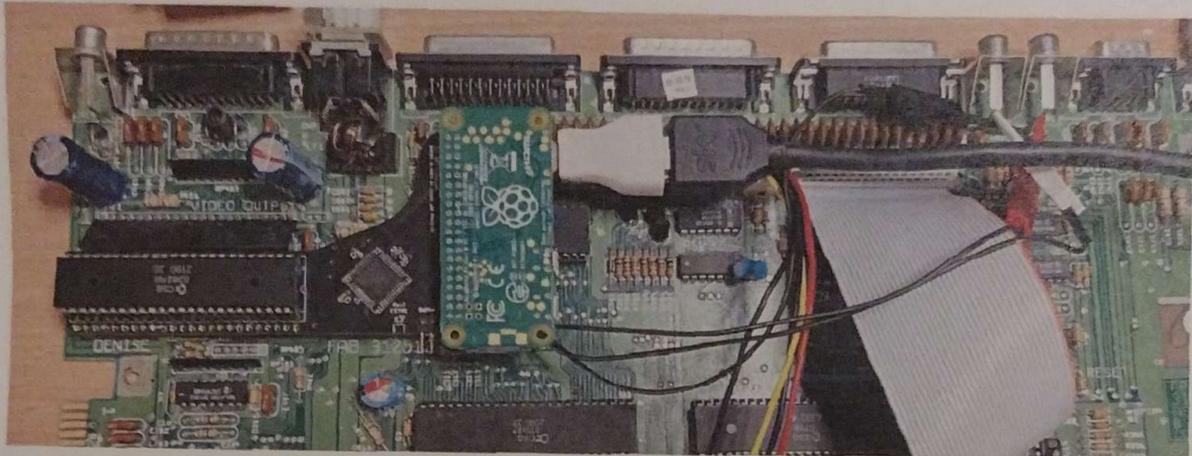
Calibration

You may, on the first boot, need to calibrate the Pi's software to work with your Amiga. The telltale sign of this will be a "wavy" picture similar to below:
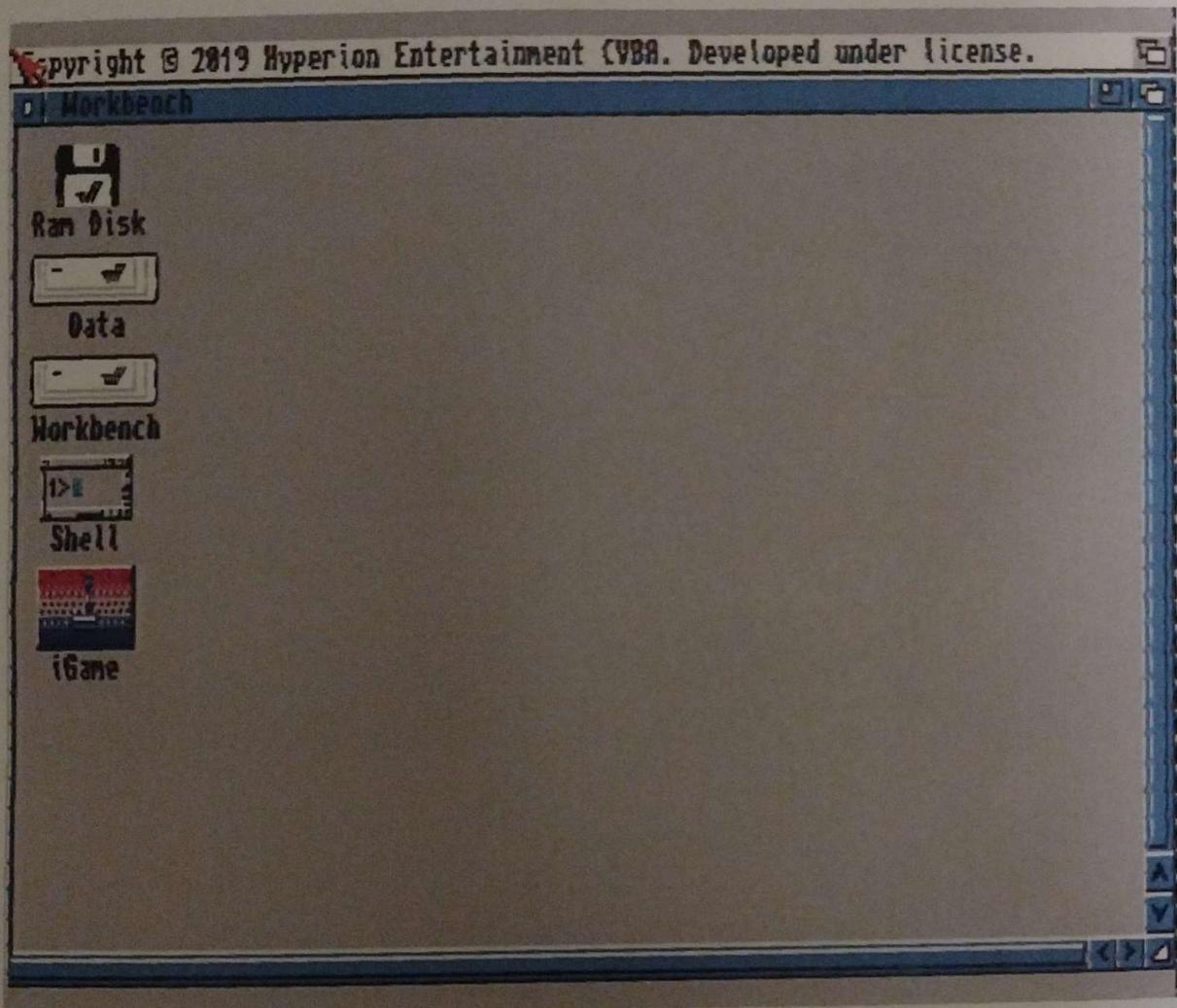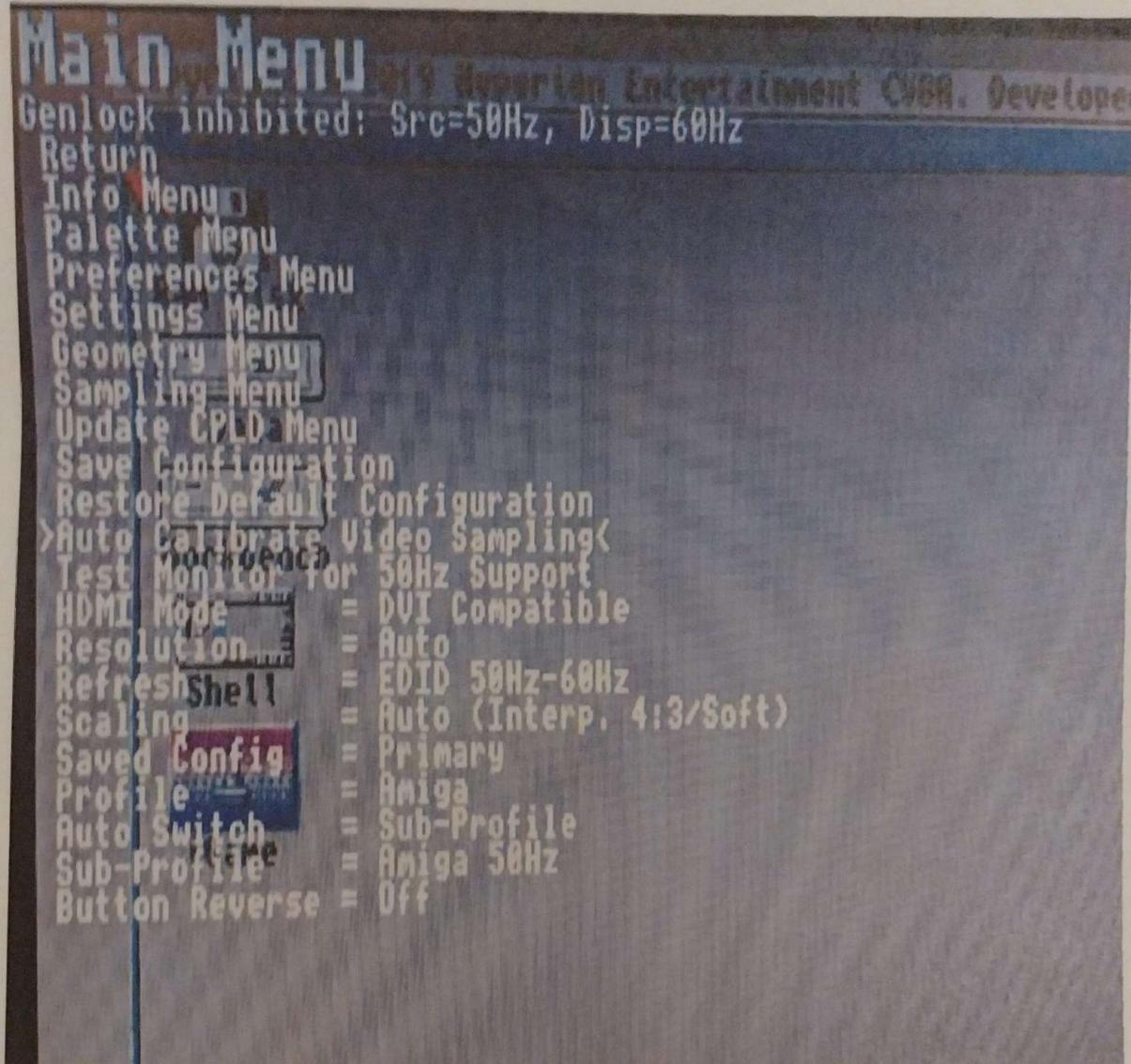

There are two possible ways of doing this. Both are quite simple, and this only needs to be done once.

Option 1: Automatic Calibration

To use the automatic calibration, you need a static image without any movement. This could be the Kickstart 1.3 boot screen or Workbench without any mouse movement. See the "Using the Button" section further in this manual for information about how to use the menus.

In the main menu you will file the option "Auto Calibrate Video Sample". Select this option and select it again to confirm. This will take several seconds and should calibrate correctly.

```
Main Menu
Genlock inhibited: Src=50Hz, Disp=60Hz
  Return
  Info Menu
  Palette Menu
  Preferences Menu
  Settings Menu
  Geometry Menu
  Sampling Menu
  Update CPLD Menu
  Save Configuration
  Restore Default Configuration
 >Auto Calibrate Video Sampling<
  Test Monitor for 50Hz Support
  HDMI Mode        = DVI Compatible
  Resolution       = Auto
  Refresh          = EDID 50Hz-60Hz
  Scaling          = Auto (Interp. 4:3/Soft)
  Saved Config     = Primary
  Profile          = Amiga
  Auto Switch      = Sub-Profile
  Sub-Profile      = Amiga 50Hz
  Button Reverse   = Off
```

Once this is done, hold down the button to save the configuration.

Option 2: Manual Calibration

To use manual calibration, use the Sampling Menu in the main menu. See "Using the Button" section further in this manual for information on how to use the menus.

In the Sampling Menu go down to "Sampling Phase" and change this number until the image is normal. It is likely 0, 3 and 5 are the best options but whatever looks best for you should be used as each Amiga is slightly unique. You can also alter the "Pixel H Offset" to correct the horizontal position of the image.