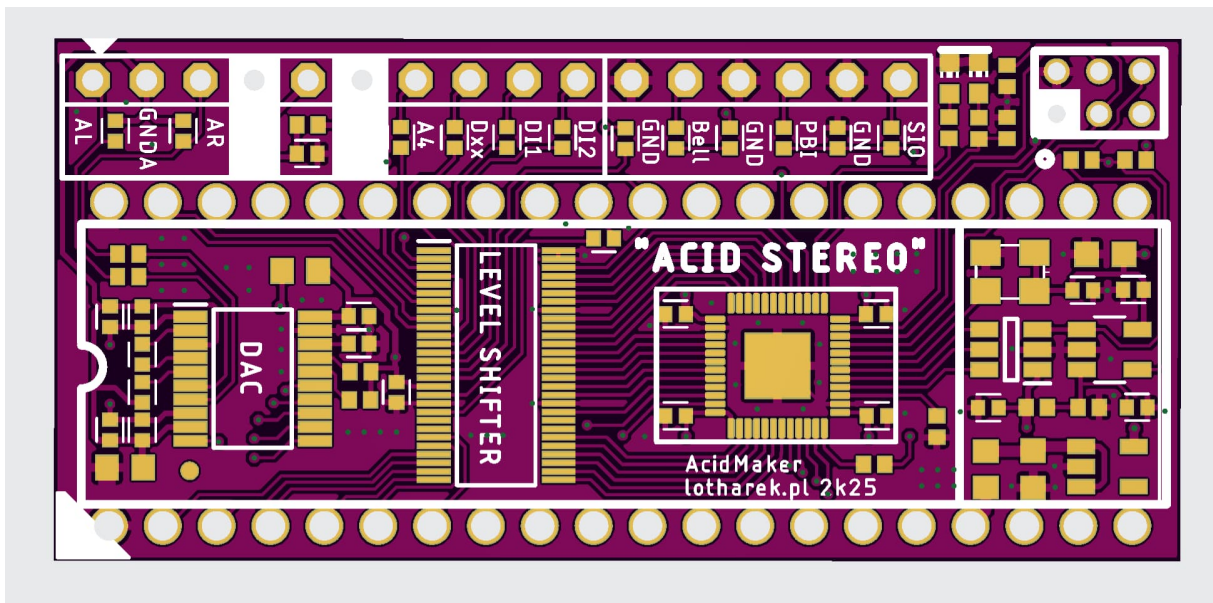




# Acid\_STEREO

## Installation manual for ATARI 8bit

Ver.1.0 – 13.11.2025



[www.lotharek.pl](http://www.lotharek.pl)

## **DISCLAIMER:**

- **Before any soldering inside computer; POWER OFF ATARI**
- **Disconnect all devices**
- **Use professional tools without any risk or possible harm to You**
- **If You are not sure what to do – go to PROF ! Do not solder on Your own.**
- **If You haven`t understood below pinouts – also visit PROF technician !**

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## **HISTORY:**

- 14.11.2025 - 1.0 – initial release

## Dear ACID\_STEREO user ☺

Thank You very much for buying ACID\_STEREO upgrade. You have just supported many people involved in almost 2 years long project development. ACID\_STEREO project was started in 2023 by Acid Maker and me, and first public announcement was made in March of 2025. Since that time, ACID\_STEREO project has been improved many times to reach present state.

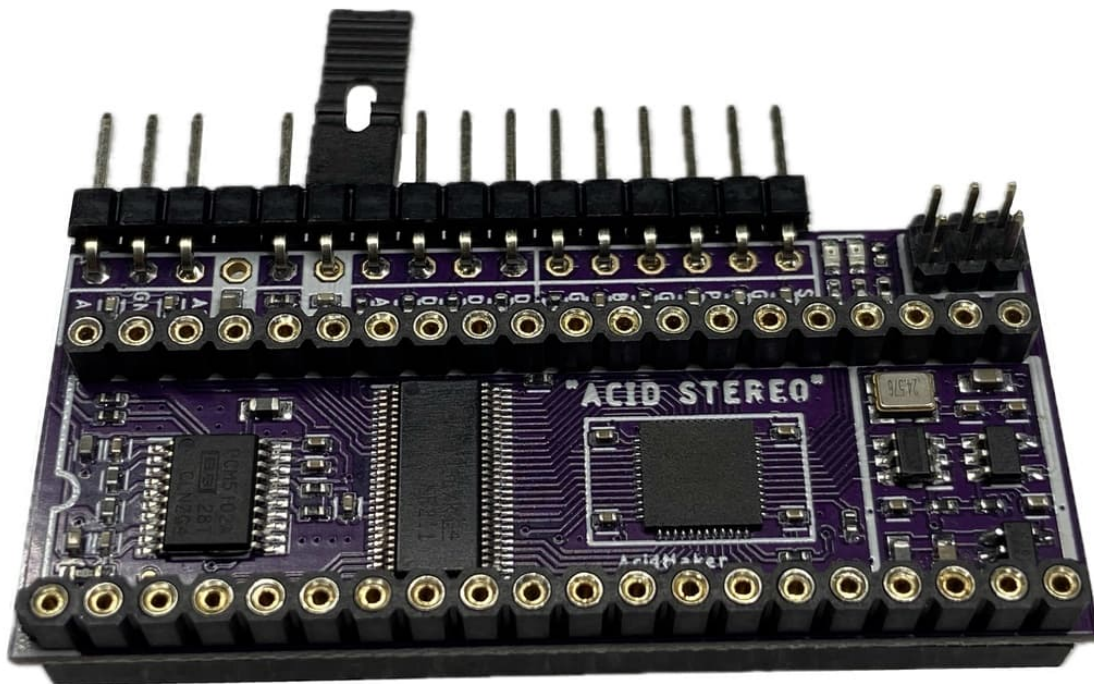
### Device info:

- Acid Stereo uses the original POKEY chip for SIO routines, POTs, and keyboard functions
- Integrates extra 2 POKEYs / 4 COVOX inside the FPGA
- Acid Stereo is equipped with dedicated 32-bit, 384 kHz DAC for superior sound output
- Acid Stereo can do proper audio source mixing:
  - PBI and SIO audio are converted from analog to digital via two ADCs
  - Mixed digitally inside the FPGA
  - Output sent to the DAC for crystal-clear sound
- 2-layer PCB, slightly larger than the original POKEY
- Mono productions are played in stereo with channel interpolation (2 selectable modes)
- Stereo productions sound exactly as intended — but with one major improvement:  
→ No humming in the speakers from your Atari!
- Auto Stereo (self-switching)
- Covox Master Sound

### Hardware in action videos:

- <https://youtu.be/MxX2CcokqQM>
- <https://youtu.be/Bo9QkutS3Zc>
- <https://youtu.be/PtKGwD9VoTM>
- <https://youtu.be/XpqfDCpjml4>
- <https://youtu.be/7Dl2a6eKM2c>

Here we can learn how to connect Your brand-new Acid Stereo upgrade inside ATARI. Before You start, unplug ATARI from power supply or any external devices. It is very easy process and as long You have some soldering skills, we shouldn't expect any troubles.



## Installation manual:

You have received Your Acid Stereo purple pcb with jumper between A4 pin and GND 😊. This is very good start.

### • Preparing the space / initial steps

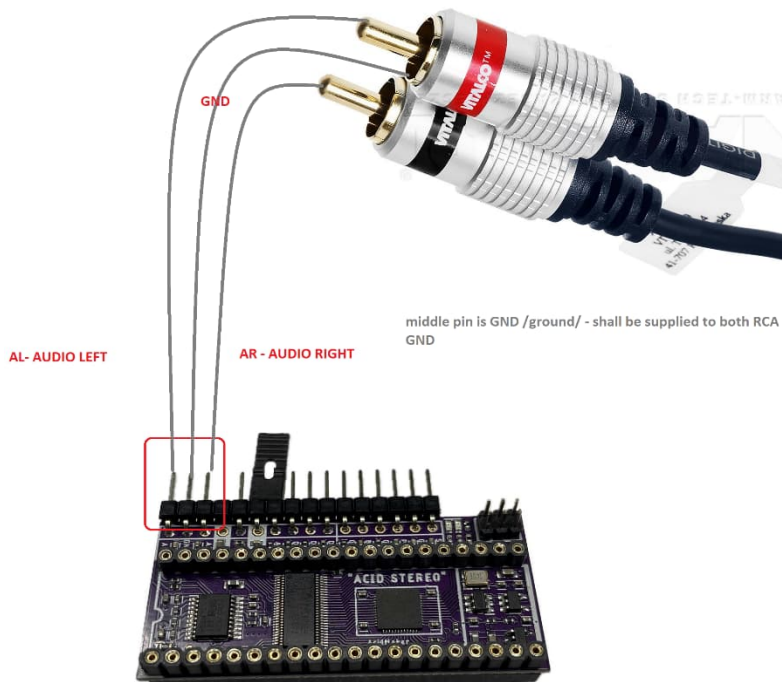
- If Your POKEY CHIP is soldered into ATARI PCB, desolder it and solder back whole Acid Stereo into PCB
- If Your POKEY CHIP is socketed – GENTLY remove bottom socket of Acid Stereo and insert module into ATARI's POKEY socket
- Insert back POKEY CHIP into Acid Stereo module
- **WARNING:** make sure pin 31 does not contact ATARI pcb socket – especially ATARI400 users

### • First test

- TURN ON ATARI
- It shall start as always

### • AUDIO CONNECTION

- Look at pcb of Acid Stereo: pins (3 pins from left) marked AL, GND, AR



- Those pins are audio outputs from PCM5102 digital DAC and are supposed to be connected to Your audio equipment
- After audio outputs connected, You can test all Your mono sound software /games, demos/ that plays sound in STEREO MODE!!!! **Yes, old software plays STEREO!**

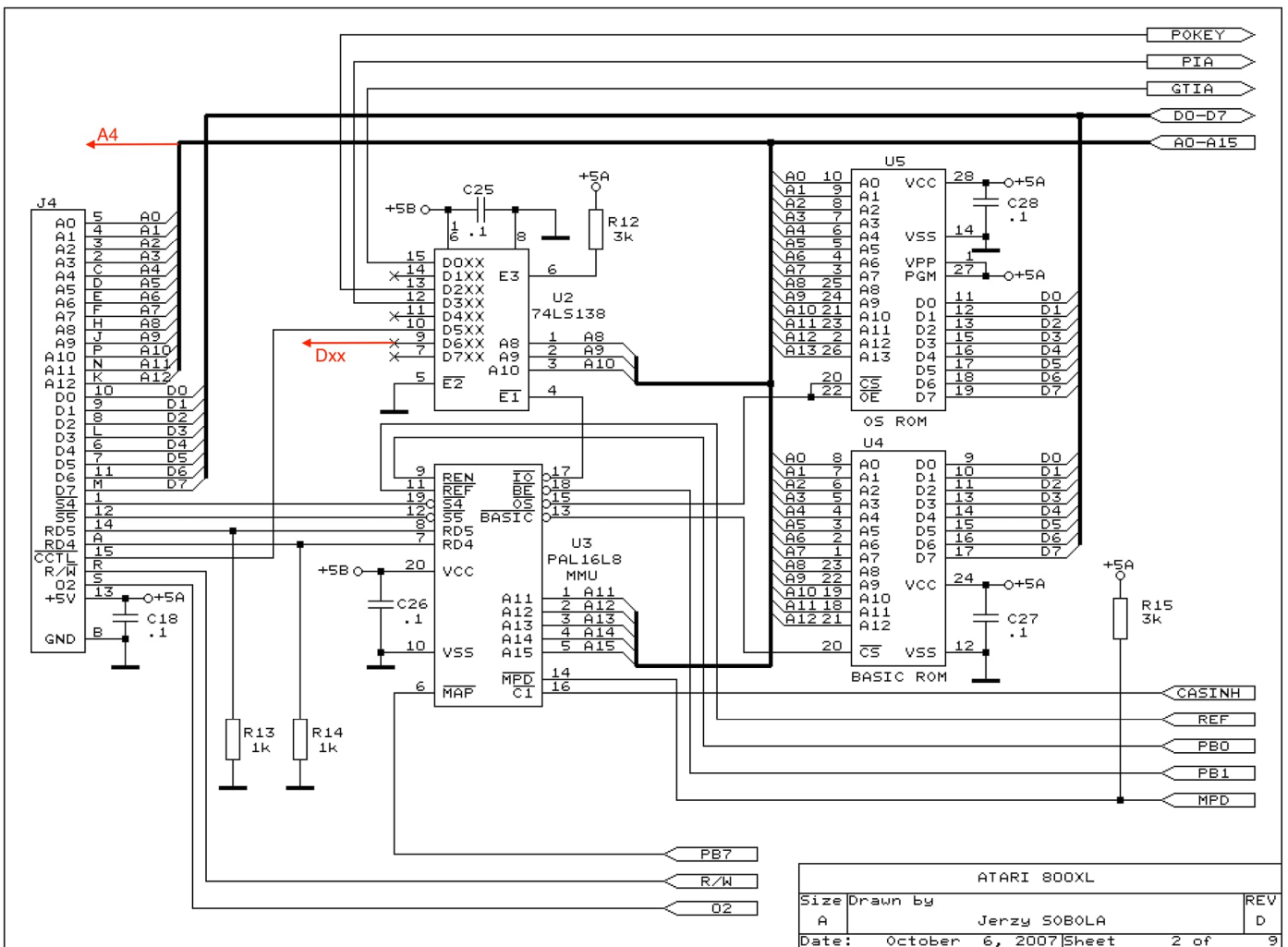
- REAL STEREO / DUAL POKEY MODE**

- o Remove jumper from Acid Stereo PCB
- o Connect A4 signal to A4 pin / A4 signal is present in many places, example: CPU pin 13... Please, refer to ATARI schematics.
- o From now on – STEREO productions will play real ATARI DUAL POKEY sound; mono music will be played in FORCED STEREO MODE.

- COVOX**

- o Connect ACID STEREO Dxx pin to LS138 pin 9 /preferably; for D6xx addressing/ or pin 7 / for D7xx addressing

**EXAMPLE: ATARI 800XL schematic; XE/XEGS machines – the same.**



- **GTIA SOUND**

- Connect ACID STEREO BELL pin to GTIA (pin 15);
- keyboard click will be mixed into ACID STEREO DAC and MONO OUT

**Warning:** following instructions assume 100% org POKEY audio output replacement. Original POKEY may be “NUMB”, but still must be present for KEYBOARD/POT/SIO ATARI routine. Before any further actions, please:

- refer to Your Atari schematics
- please, study carefully example diagrams at next pages

- **Removing elements**

- We need to remove 3 elements from original audio circuit:
  1. Capacitor of PBI AUDIO (800XL – C22, 65XE- C17)
  2. Capacitor of SIO AUDIO (800XL, 65XE- C19)
  3. Resistor just before DIN5 (800XL, 65XE- R8)

- **SIO AUDIO**

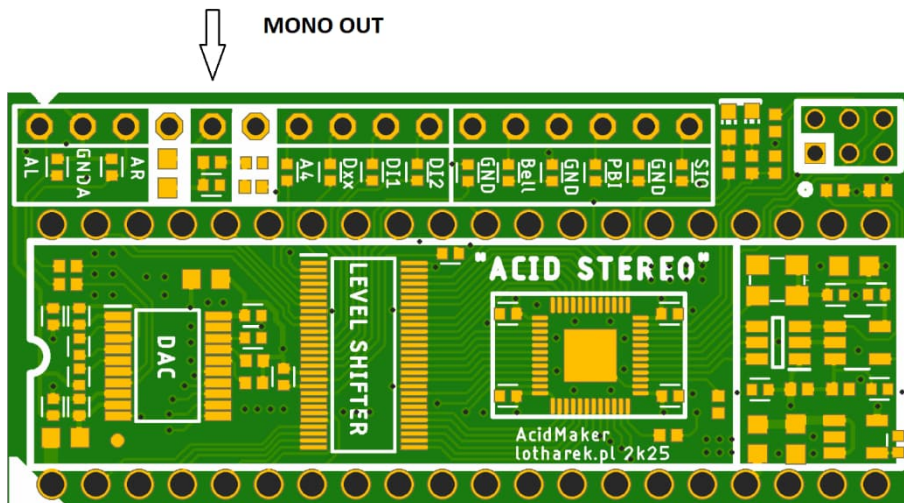
- Connect ACID STEREO **SIO** pin to “input” pad of previously removed capacitor
- Please, use shielded cable to eliminate all noises! SHIELD must be connected at both ends to GND
- Sio audio signal will be mixed into ACID STEREO DAC and MONO OUT

- **PBI AUDIO**

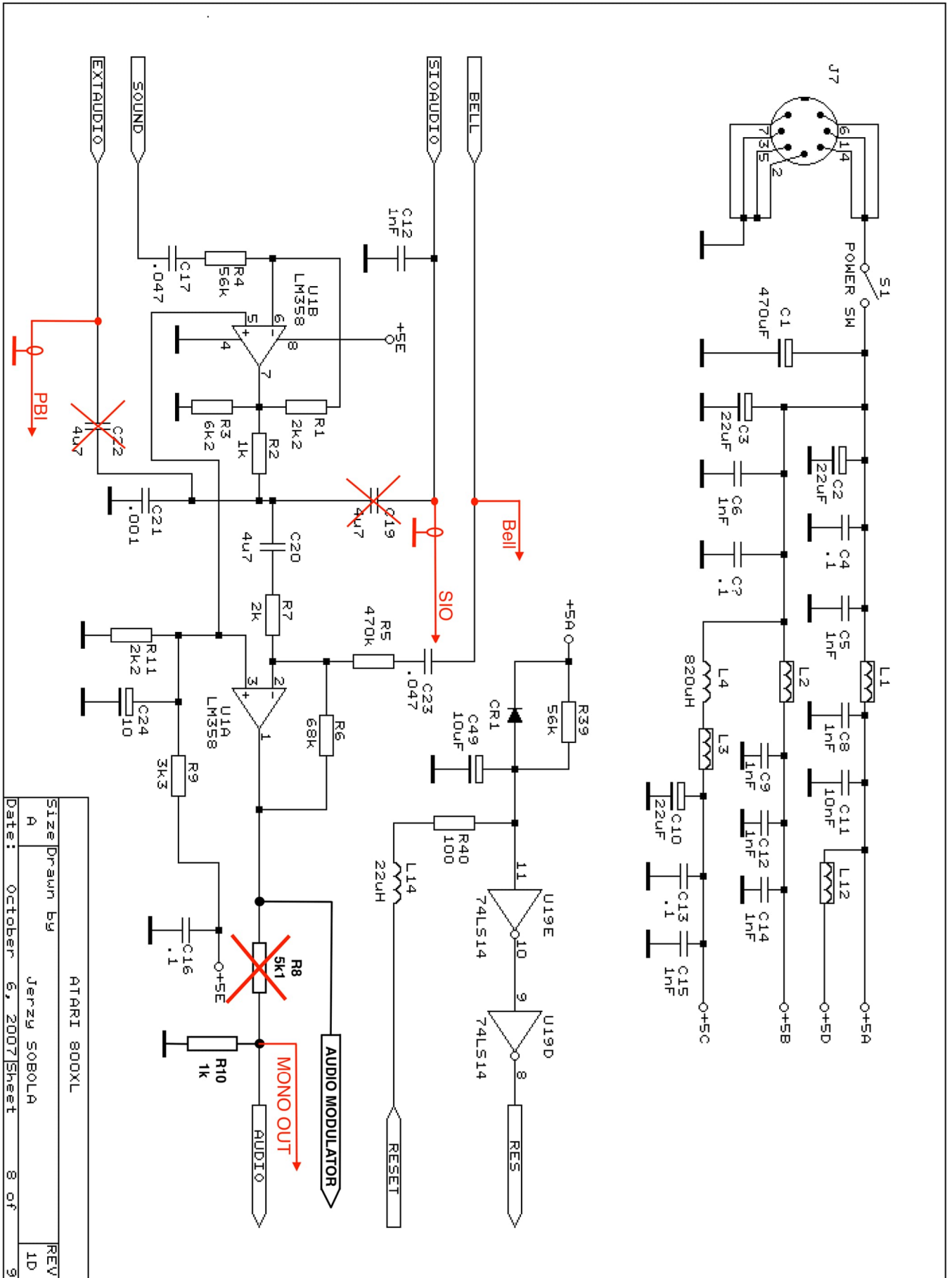
- This step is very “optional”. I have no idea if there is any device that outputs real audio via pbi
- Let me know if You have one 😊
- Connect ACID STEREO **PBI** pin to “input” pad of previously removed capacitor
- Please, use shielded cable to eliminate all noises! SHIELD must be connected at both ends to GND
- PBI audio signal will be mixed into ACID STEREO DAC and MONO OUT

- **MONO OUT**

- This step is necessary if You decided to remove resistor R8.
- Connect ACID STEREO **MONO OUT** pin to DIN5 audio pin
- BOTH pads next to **MONO OUT** PADS are GND.
- Please, use shielded cable

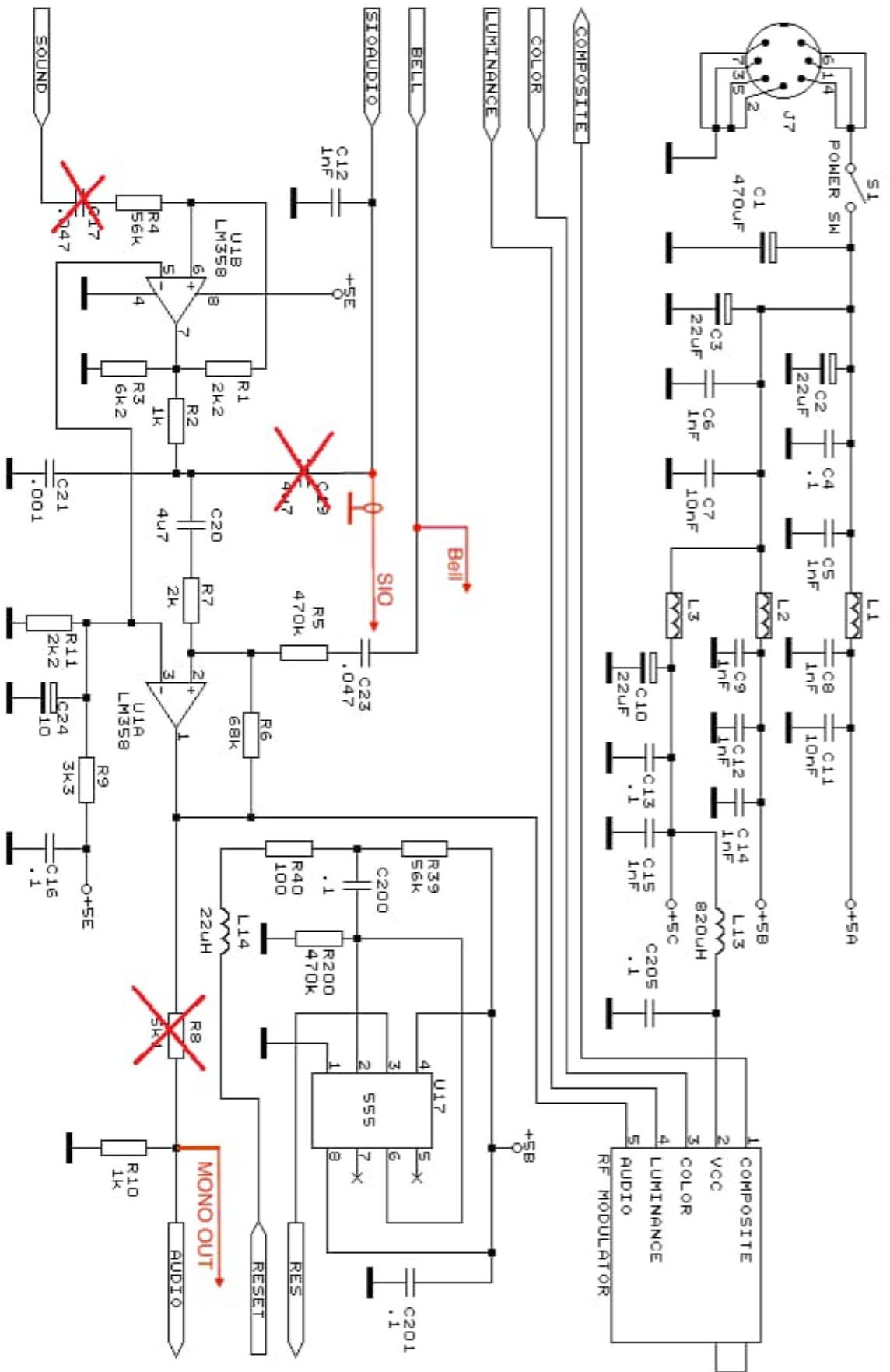


800XL MODS:



ATARI 800XL	
Size Drawn By	Jerzy SOBOLA
A	
Date:	October 6, 2007 Sheet 8 of 9
REV	1D

XE MODS:



ATARI 65XE  
 Size Drawn by Jency SOBOLA  
 Date: September 23, 2003 Sheet 8 of 9

REV 1