D/A converter

for music synthesizers.

PREVIEW

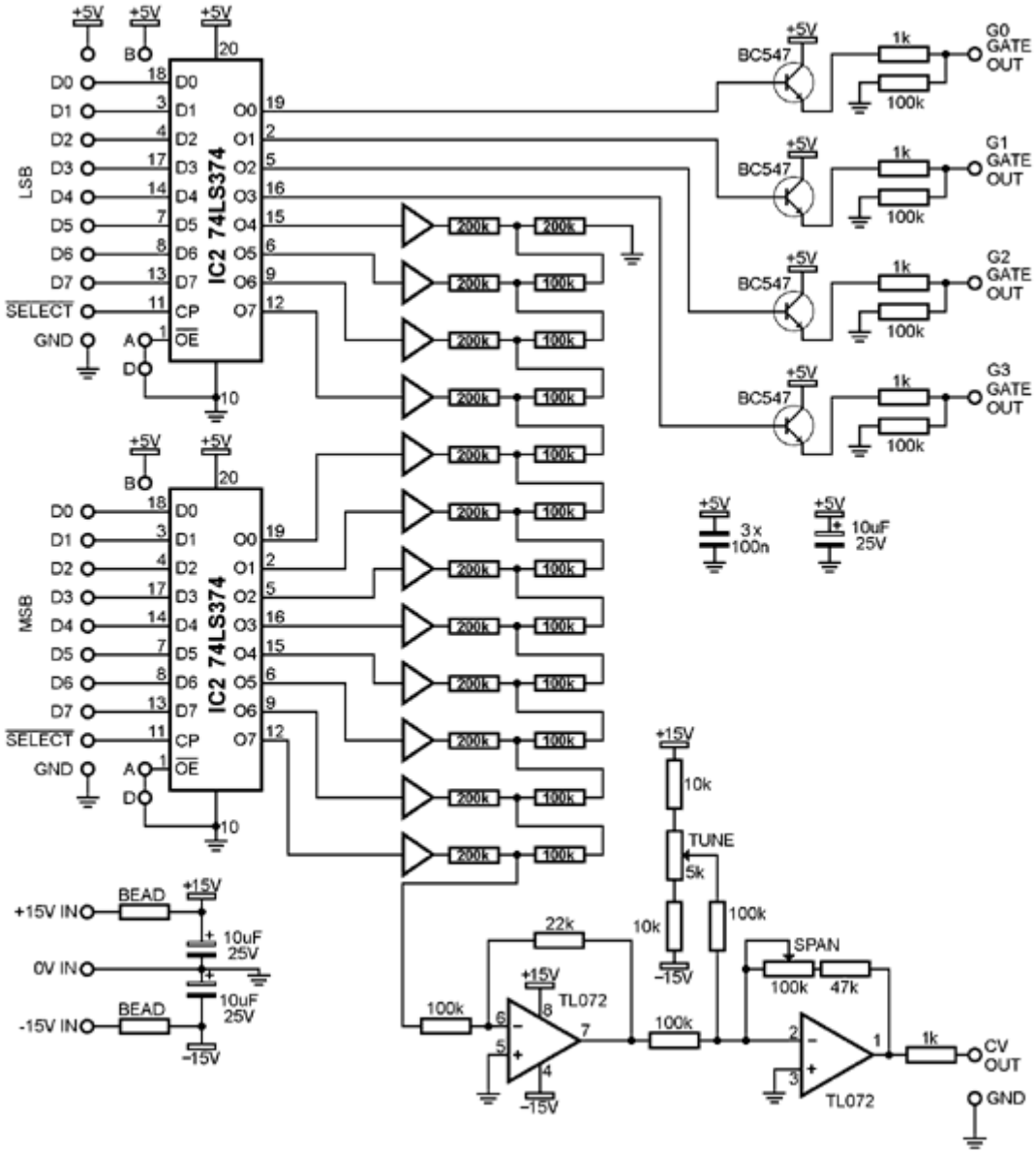
This board was really developed for my own use, to allow my 486 based sequencer to connect to various VCOs etc. It has twelve bit resolution, and four "gate" outputs, though these only output around 4.5 volts maximum.

How to use this module:

This module is designed to connected to either a 16 or 8 bit bus, and contains two latches that can be latches independently. For a backplane/bus common Veroboard or strip board may be used, along with 0.1 pitch 90° headers. It can be used with the parallel port adapter, which is how I use mine. Software is up to the individual.

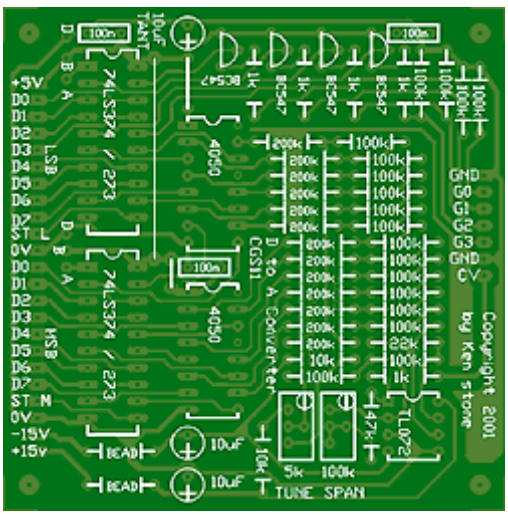
A little on how it works:

I have avoided using commercial D/A converters for a few reasons, including stability, and availability.



The schematic of the D/A converter.

Construction



Before you start assembly, check the board for etching faults. Look for any shorts between tracks, or open circuits due to over etching. Take this opportunity to sand the edges of the board if needed, removing any splinters or rough edges.

When you are happy with the printed circuit board, construction can proceed as normal, starting with the diodes and resistors first, followed by the IC sockets if used, then moving onto the taller components.

Take particular care with the orientation of the polarized components, electrolytics, transistors and ICs.

When inserting the ICs in their sockets, if used, take care not to accidentally bend any of the pins under the chip. Also, make sure the notch on the chip is aligned with

the notch marked on the PCB overlay. Please note that the CMOS chips are static sensitive devices, so make sure you handle them correctly.

Notes:

- Fast 74xxxx CMOS latches with the same pin configuration can be used in the circuit.
- Different latch chips with the same pin configuration can be used in the circuit. The obsolete 74LS273 can be used if **A** is linked to **B** instead of **D**. Check your data books.
- While untested, the analog portion of the module should work on 12 volts. The digital portion requires 5 volts.
- 10 to 22 ohm resistors can be used instead of the ferrite beads. If you don't care about power-rail noise, just use a link instead.
- **This board has not yet been tested, though I may be prepared to sell a couple to people with sufficient skill to do their own trouble shooting, if they wish to evaluate it. Demand will determine how many are produced in the future. Despite what the listing on the PCBs for sale page says, I DO have some in stock.**
- Please email me if you find any errors.

Parts list

This is a guide only. Parts needed will vary with individual constructor's needs.

Please check the PCBs for Sale page to see if I have any in stock.

Can't find the parts? See the parts FAQ to see if I've already answered the question.

Part	Quantity
Capacitors	
100n	3
10uF 25V Tant	3
Resistors	
1k	5
10k	2
22k	1
47k	1
100k 1%	19
200k 1%	13
Semi's	
4050	2
TL072	1
BC547	4
74LS374	2
Misc	
Ferrite Bead (or 10R resistor)	2
CGS11 PCB	1

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