Supply power through J1, only the +5V rail is used. The board connects at the bottom side of the 8-bit Workbench or extension boards.

The +5V rail can also be used at 3.3V (for LVTTL or LVCMOS experiments).

Top Left
Power In

+5V
GND
+12V
-12V
J1

Top Right
Data Out

D5
D6
D7
D0
D1
D2
D3
D4
J2

Invert Bits (SW9) set to normal: SW1–SW8 down give a logic 0 (GND), up give a logic 1 (+5V).

SW9 in the the ones' complement setting inverts (flips) all bits: SW1–SW8 down give a logic 1 (+5V), up is a logic 0 (GND).

J13 D7 SW8 D7
J12 D6 SW7 D6
J11 D5 SW6 D5
J10 D4 SW5 D4
J9 D3 SW4 D3
J8 D2 SW3 D2
J7 D1 SW2 D1
J6 D0 SW1 D0

SW9A
Invert Bits
ones' complement
normal

JP1
JP2

Attach a logic probe using connector pad J3 and J4. Measure pads J6–J13 to double check the data outputs.

J3
GND
J4
+5V

SW9B
Invert Bits

Cut 1–2 and solder 2–3 of solder bridge JP1 and JP2 when slide switches are used instead of toggle switches (SW1–SW8).

J5
Ones' Complement Active

R1
270

D1
Ones'
Yellow

GND

A yellow LED indicates when the ones' complement is selected using SW9.

A convenient binary keyboard (one byte) that can be used as an extension to the 8-bit Workbench. It is also handy with your own breadboard or Arduino.

Flip the bits in an instance using a switch. This creates the ones' complement of the byte that is set.

8BitFlux.com / Bobby Nijssen

Sheet: /
File: BinaryKeyboardExtension.kicad_sch

Title: Binary Keyboard

Size: A4	Date: 2025-07-10	**Rev: 1**
KiCad E.D.A. eeschema 7.0.5-0		Id: 1/1