

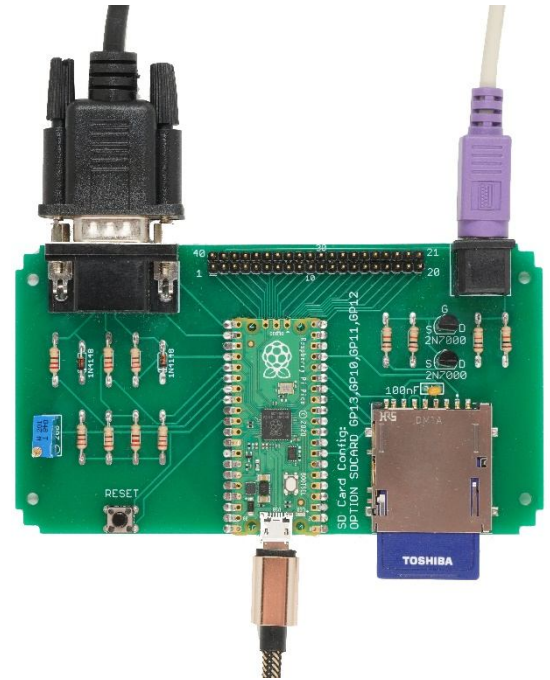
PicoMiteVGA Construction Notes

This is an easy to assemble PCB that implements the VGA output, PS2 keyboard interface and the SD card socket as described in the User Manual. It uses thru-hole components and can be assembled in under an hour.

The board is sized to fit in an Altronics snap-together case 130 x 75 x 28mm (part number [H0376](#)) although this is not necessary.

All 40 pins on the Raspberry Pi Pico are routed to the 40-way connector on the rear of the PCB in the same configuration as that used by the Pico. This makes it easy to connect external devices as you can consult the pin out diagram in the user manual and then select the corresponding pins on the 40-way connector.

Allowing for the I/O pins reserved for the VGA output, keyboard and SD card there are 14 I/O pins available for external circuitry.



Assembly Notes

1. Start with the SD card as you will need plenty of space to get the soldering iron in.
2. All the other components are simple thru hole components and you can follow the silk screen on the board.
3. The Raspberry Pi Pico can be directly soldered to the PCB or it can be mounted using pin headers soldered to the Pico and header sockets soldered to the PCB (see the photos).

Printed Circuit Board

Send the Gerber files in this bundle to a PCB fabrication house to get the board made. The fabrication house should be told that the drill output is "2:5 leading".

Parts List

- 1 PC board 124mm x 69mm
- 1 Raspberry Pi Pico
- 1 SD (Secure Digital) memory card connector Hirose DM1AA-SF-PEJ(72) or DM1AA-SF-PEJ(82) (Mouser: 798-DM1AA-SF-PEJ72 or 798-DM1AA-SF-PEJ82, RS: 828-1872 or 6850779P, Element14: 1764372)
- 1 15 Pin D-Sub Socket AMP 1-1734530-1 or MULTICOMP SPC15430 (Mouser: 571-1-1734530-1, RS: 481-443, Element14 1564252)
- 1 6 Pin Mini DIN Female Socket PCB Mounting (eg, Altronics P1106, Element14: 1200113)
- 1 200Ω Multiturn Trimpot (eg, Altronics R2372A, Element14: 9353569)
- 1 Momentary Tactile Switch PCB Mounting (eg, Altronics S1120, Element14: 4511189)
- 1 Dual Row 40-pin Header
- 2 2N7000 MOSFET (TO92 package)
- 1 100nF Ceramic or MKT
- 7 220Ω (Thru Hole 0.25W 5%)
- 4 10KΩ (Thru Hole 0.25W 5%)

Optional Case

- 1 Snap together case 130x75x28 mm (Altronics H0376 <https://www.altronics.com.au/p/h0376-71x130x30mm-abs-grey-instrument-case/>)
- 4 M3 metal thread screws (or self tappers) 4mm long

Optional for mounting the Raspberry Pi Pico

- 2 20 way Single Row Pin Header (for the Raspberry Pi Pico)
- 2 20 way Single Row Pin Header Socket