

Graphical LCD v1.0



Document version 1.0

PRODUCT OVERVIEW

This graphical LCD screen is 128x64 pixels in blue/white. The module has a rotary encoder with push button, a SD card slot and a button. The board is compatible with Minitronics, Megatronics, Ultratronics and RAMPS. The LCD and SD card are controlled using SPI, while the buttons are wired to digital i/o's.

We provide a test firmware for the board to test your setup on the supported electronics.

Wiring is sold separately.

Requirements

You need either a Ultratronics, Megatronics, Minitronics or RAMPS board. See the hardware setup section for the required wiring.

The LCD can be controlled using the U8glib library (<https://github.com/olikraus/u8glib/wiki>) for Arduino. See the documentation of that library for examples.

The SD card can be controlled using the standard SD card library included with Arduino.

DOCUMENT HISTORY

Version 1.0	Creation
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PRODUCT CHANGE HISTORY

Version 1.0 revision E

- First public release

TECHNICAL SPECIFICATION

LCD chip	ST7920
LCD resolution	128x64 pixels
LCD type	12864B v2.0
Operating Voltage	5V

MAJOR FEATURES



- Rotary encoder with switch for menu selection
- General purpose button, function defined by firmware
- You can control the contrast of the LCD screen using the trimpot 'contrast'.



- Support for Megatronics, Minitronics, Ultratronics and RAMPS
- SD card reader on available
- Sdout header to connect to an external SD card
- SD card detection pin

Name	Description
AUX1	Header for connection to Minitronics AUX1 header 1. Encoder A (SCL pin) 2. Encoder Switch (D25) 3. Encoder B (SDA) 4. Tactile button (D26) 5. CS LCD (D19) 6. SD Detect (D30) 7. GND 8. 5V
MTICSP	Header for connection to Minitronics ICSP header 1. N/C (D1) 2. 5V 3. SCK (SCK pin) 4. N/C (D0) 5. N/C (RESET) 6. GND 7. MISO (MISO pin) 8. MOSI (MOSI pin) 9. CS SD (D53) 10. CS LCD (D15)
UT	Header for connection to Ultratronics analog header 1. N/C (+3v3) 2. Encoder A (SDA0) 3. N/C (A8) 4. Encoder B (SCL0) 5. Encoder Switch (A10) 6. Tactile button (A9)
Keypad	Header for connection to Megatronics keypad header, RAMPS aux-2 header 1. 5V 2. GND 3. Encoder A (D45, D59) 4. Encoder Switch (D33, D63) 5. Encoder B (D44, D64) 6. Tactile button (D34, D40) 7. N/C (D43, D44) 8. SD Detect (D35, D42) 9. N/C (D42, D66) 10. N/C (D36, D65)
SPI	Header for connection to Megatronics SDOUT header, Ultratronics SDOUT1 header, RAMPS aux-3 header 1. 5V

	2. CS LCD (A2, A2, D49) 3. MISO (MISO pin) 4. MOSI (MOSI pin) 5. SCK (SCK pin) 6. CS SD (D53) 7. GND 8. SD Detect (N/C, A6, N/C)
SDOUT	Same as SPI, except for pin 2 (CS LCD) which is not connected
IN5V	External 5V input

This section will help you connect the board to your electronics.

Ultratronics

For Ultratronics you need a 6way wire including connectors and a 8way wire including connectors.

Connect the UT header using the 6way wire to the analog header on the Ultratronics board. Make sure pin 1 on the silkscreen matches pin 1 on the Ultratronics board.

Connect the SPI header to the SDOUT1 header using the 8way wire. Make sure pin 1 on the silkscreen matches pin 1 on the Ultratronics board.

Megatronics

For Megatronics you need a 10way wire including connectors and a 8way wire including connectors.

Connect the Keypad header using the 10way wire to the Keypad header on the Megatronics board. Make sure pin 1 on the silkscreen matches pin 1 on the Megatronics board.

Connect the SPI header to the SDOUT header using the 8way wire. Make sure pin 1 on the silkscreen matches pin 1 on the Megatronics board.

RAMPS

For RAMPS you need a 10way wire including connectors and a 8way wire including connectors.

Connect the Keypad header using the 10way wire to the aux-2 header on the RAMPS board. Make sure pin 1 on the silkscreen matches pin 1 on the RAMPS board.

Connect the SPI header to the aux-3 header using the 8way wire. NOTE: The header connector on the RAMPS must be inversed, so connect pin 1 of the board to pin 8 on the aux-3 header.

Minitronics

For Minitronics you need a 10way wire including connectors and a 8way wire including connectors.

Connect the MTICSP header using the 10way wire to the ICSP header on the Minitronics board. Make sure pin 1 on the silkscreen matches pin 1 on the Minitronics board.

Connect the AUX1 header to the AUX1 header using the 8way wire. Make sure pin 1 on the silkscreen matches pin 1 on the Minitronics board.