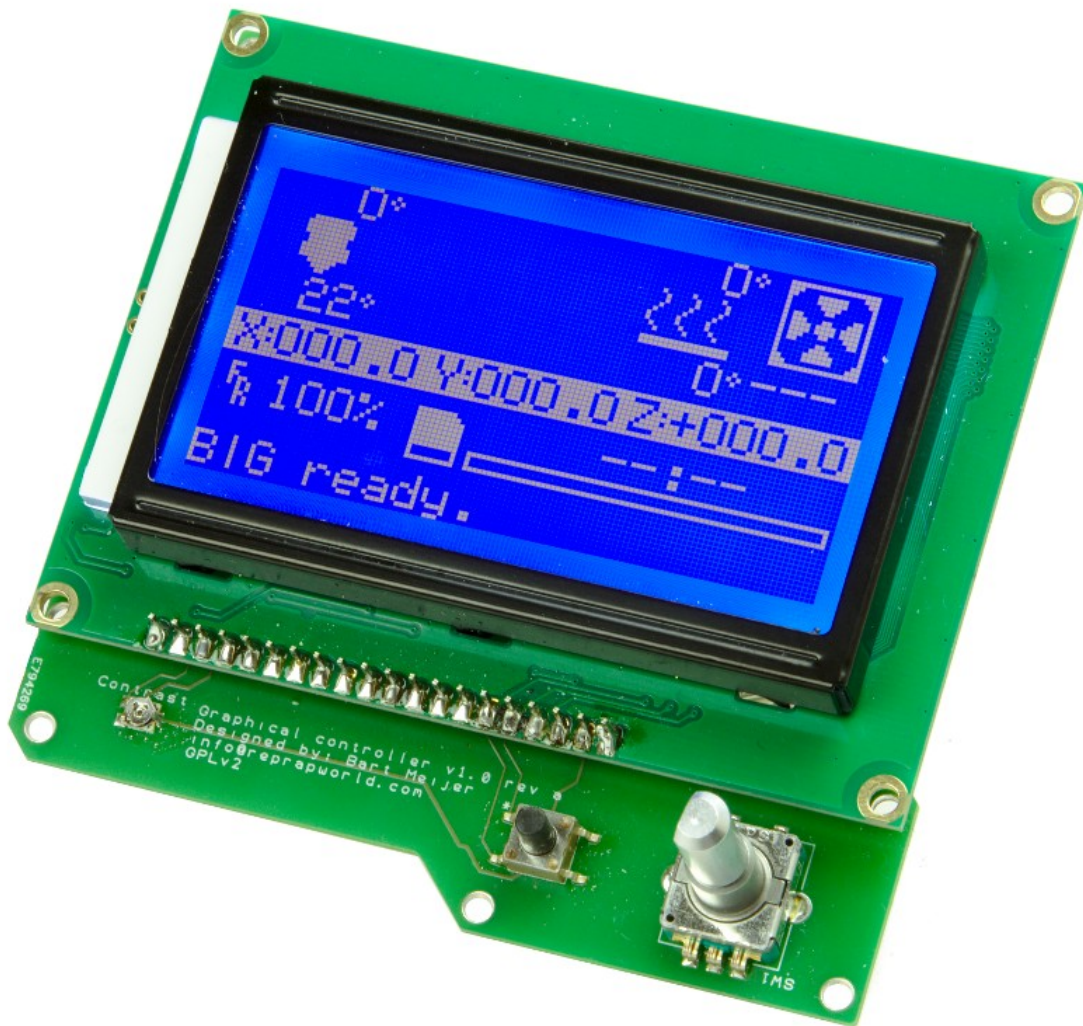


Graphical LCD v1.0



Author Bart Meijer
Date June 16th, 2016
Document version 1.0



ReprapWorld.com

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
--------------------	----------

PRODUCT CHANGE HISTORY

Version 1.0 revision E

- First public release

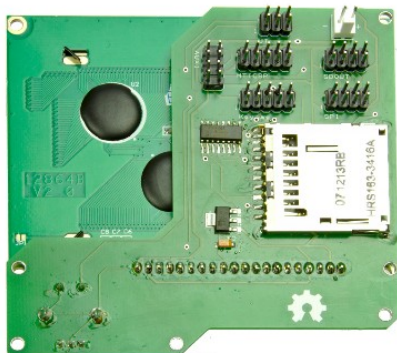
TECHNICAL SPECIFICATION

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

CONNECTORS

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

	<ul style="list-style-type: none"> 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 SDOOUT1 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 SDOOUT 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.