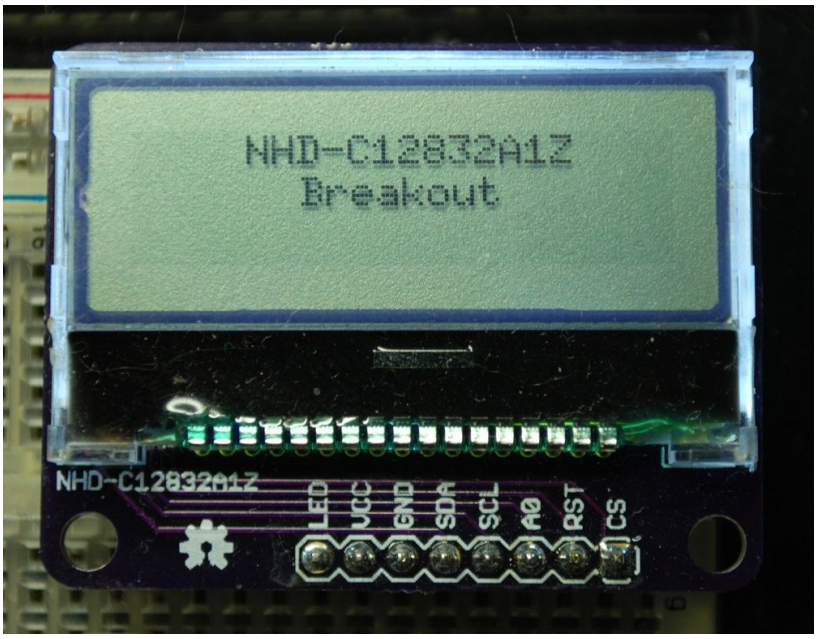
NHD-C12832A1Z Breakout

A breakout board for Newhaven Display's [NHD-C12832A1Z series]



-[http://alexanderhiam.com/projects/nhd-bob/]

-[https://github.com/alexanderhiam/NHD-C12832A1Z_Breakout]

Description

The NHD-C12832A1Z Breakout includes a TPS79530 fixed 3V 500mA low-dropout linear regulator to generate the supply voltage for the LCD. The TPS79530 has a rated maximum dropout voltage of 170mV and a maximum input voltage of 5.5V, so the board can be powered by either a 3.3V or 5V supply (or really anything in the range of 3.17V-5.5V). The supply should be able to source up to at least 450mA, as this is the rated maximum current draw for the LCD.

Also included on the board is a CD4050 buffer, which is used to shift the SPI signals from the input level of 3.3V or 5V to the LCD's 3V level.

The board includes all external components required by the display, including a 10KΩ pull-up resistor on the reset line, and a 330Ω current limiting resistor in series with the backlight LEDs.

Using the NHD-C12832A1Z Breakout

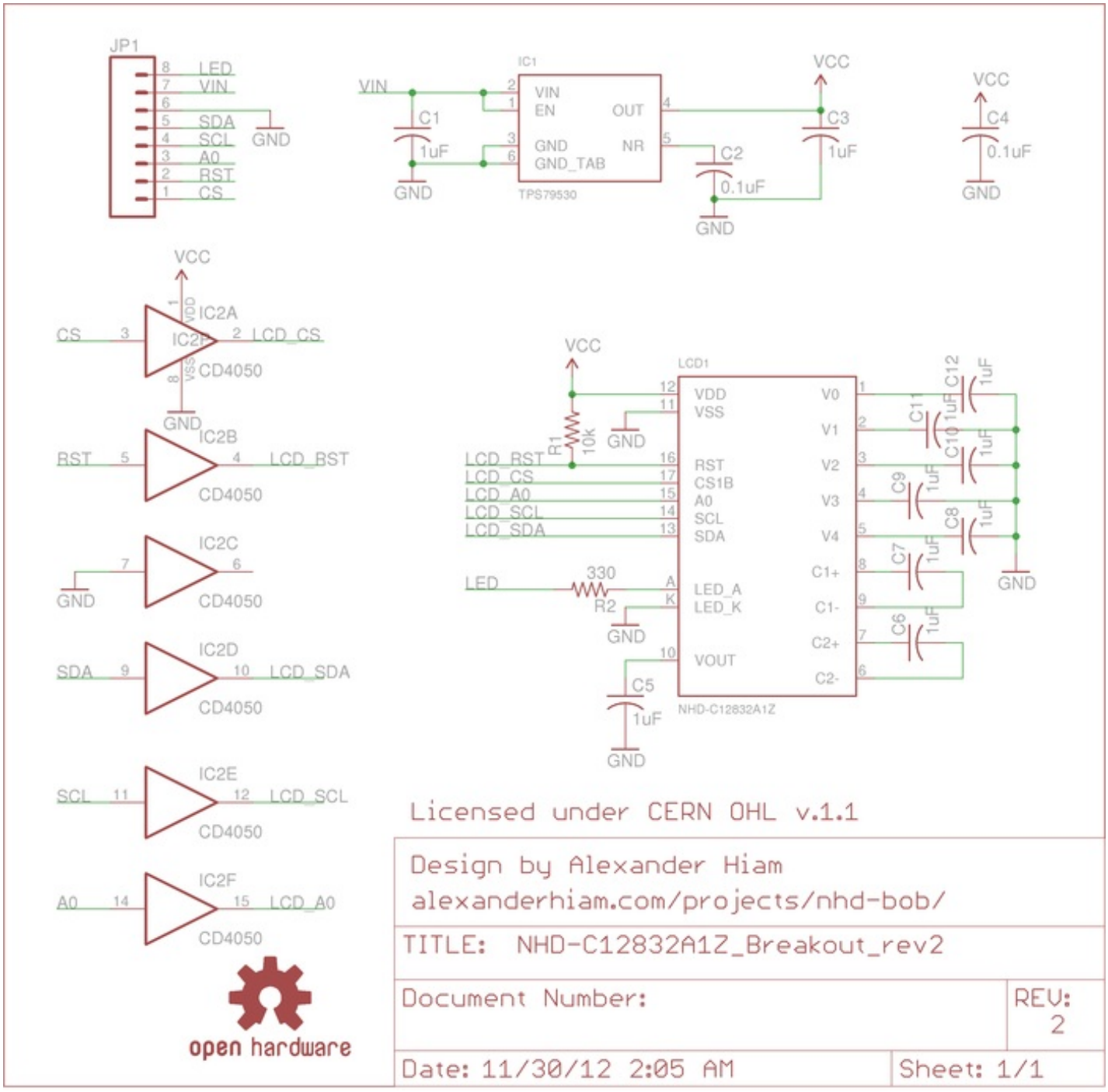
The NHD-C12832A1Z series displays use a ST7565R controller. While not official supported, it can be controlled using the dogm128 library, which can be used with Arduino as well as an assortment of other AVR microcontrollers. To use the dogm library, follow the installation instructions and set the display driver to DOGM132 in step 5. Then in your Arduino sketch, set the display contrast to around 8-10, e.g.:

```
#include <Dogm.h>

Dogm dogm(a0_pin);

void setup() {
  dogm.setContrast(0x8);
  ...
```

The dogm128 library has been rewritten and renamed to u8glib, but the NHD-C12832A1Z no longer works, as the setContrast() method is disabled for the DOGM132 driver.

NHD-C12832A1Z Breakout will be available for purchase on Tindie soon.

Schematic


JP1
LED
VIN
SDA
SCL
A0
RST
CS
GND
IC1
VIN
EN
OUT
GND
NR
GND_TAB
TPS79530
C1
1uF
C2
0.1uF
C3
1uF
C4
0.1uF
VCC
IC2A
IC2B
IC2C
IC2D
IC2E
IC2F
CD4050
CS
LCD_CS
RST
LCD_RST
SDA
LCD_SDA
SCL
LCD_SCL
A0
LCD_A0
LCD1
NHD-C12832A1Z
VDD
VSS
RST
CS1B
A0
SCL
SDA
LED_A
LED_K
VOUT
V0
V1
V2
V3
V4
C1+
C1-
C2+
C2-
R1
10k
R2
330
LCD_RST
LCD_CS
LCD_A0
LCD_SCL
LCD_SDA
LED
C5
C6
C7
C8
C9
C10
C11
C12
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