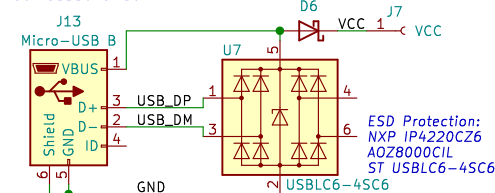


Socket Micro-USB B:
Amphenol 10103594-0001LF
Molex 105017-0001
GCT USB3076-30-A

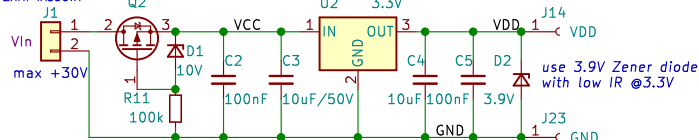


High-voltage (>30V) SOT-223-3 LDO:

-MIC5239-3.3VS
-MIC5233-3.3VS (36V)
-LT1129CST-3.3
-SPX2954M3-1-3-3
-NCV4274AST33T3G (40V)
-NCV4264-2CST33T3G (45V)
-MCP1790-3302E
-MCP1799-3302H (45V)
U2 3.3V

reverse current protection

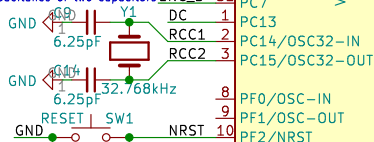
any P-CH SOT-223-3 Mosfet with $V_{gs(th)} \max < 2V$,
 $V_{ds} > 30V$, $I_d = 5A$, low $R_{ds(on)}$
-ZXMP4A16GTA



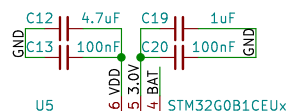
fixed terminal blocks:
CUI TB002-500-02BE
TE 177624-2, 1776266-2, 1776504-2, 1776269-2
Degson DG301-5.0

alternative, pin-compatible MPUs:
STM32G031F8P×/G8Ux
STM32G041F8P×/G8Ux
STM32G051F8P×/G8Ux
STM32G061F8P×/G8Ux
STM32G071G8Ux/G8Ux
STM32G081G8Ux

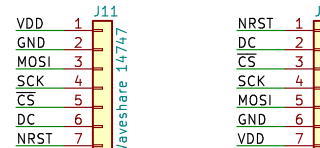
Note: the required crystal capacitance is combined capacitance of two capacitors



MPU requirements: min 64kB Flash and VBAT input → STM32G0/STM32F4 series in 48pin package

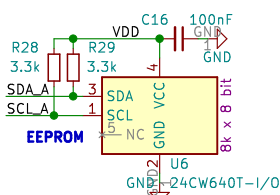


13992 - mono 128x128 1.5" same dimensions as 14747 but 8-pin / 13892 - 1.8" color LCD



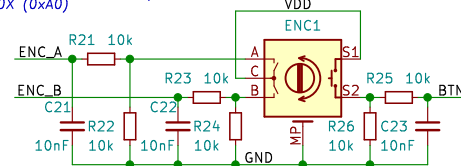
https://www.waveshare.com/SKU:14747*

https://www.waveshare.com/SKU:18179*



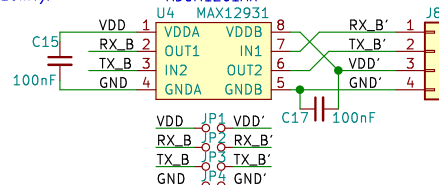
Note: 24CWxx EEPROM comes with preconfigured lower 3 bit address, '0' in p/n indicates address 1010_000X (0xA0)

Bourns PEC12R-4xxxK-Sxxxx
Bourns PEC12R-4xxxK-Sxxxx
Bourns PEC11R-4xxxK-Sxxxx
Bourns PEC11R-4xxxK-Sxxxx
or any popular single-channel Alps EC11E, G, M, N EC12E, EC111 encoder

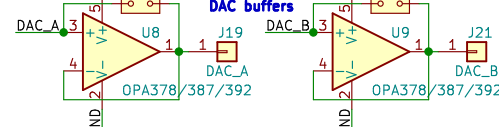
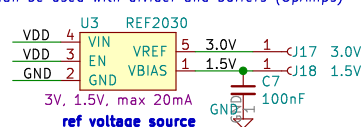


Note: Bourns encoders are preferred. Unlike most ALPS encodes (besides EC12D), Bourns encoders have dent stability position between signal edges.

optoisolators: MAX12931, MAX2246, Si8422/26, ADuM1281/86, ISO7021, ISO6720?, ISO7720, iLE612-3E ADuM1201AR



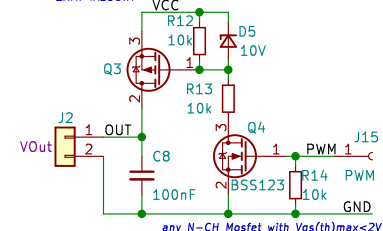
Instead of REF2030 internal MPU 2.5V VREFBUF can be used with divider and buffers (OpAmps)



low-offset (<0.1mV) OpAmp with low output swing headroom to negative supply (<10mV):

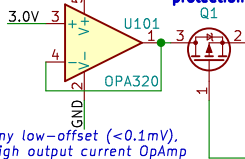
- OPA387 (SOT23-5, VSSOP-8 double, TSOP-14 quad)
- OPA378 (SOT23-5, SC70-5, SOT23-8 double)
- OPA391, 396 (SC70-5 only)
- OPA320
- OPA392 (SOT23-5, SC70-5, higher swing headroom to negative supply (-20mV))

any P-CH SOT-223-3 Mosfet with $V_{gs(th)} \max < 2V$,
 $V_{ds} > 30V$, $I_d = 5A$, low $R_{ds(on)}$
-ZXMP4A16GTA



Vref buffer

reverse current protection



any low-offset (<0.1mV), high output current OpAmp

any P-CH Mosfet with $V_{gs(th)} \max < 2V$, low $R_{ds(on)}$
-PMV100EPAR
-NXV90EPR
-Si2343CDS-T1-GE3
-Si2307CDS-T1-E3
-CPH3351-TL-W

Wheatstone Bridge Amplifier

R1-R10 high grade 0.1% resistors

for WSP80 use socket Amphenol T 3437 000

recommended: INA118, 333, *823* (best option)
optional: INA122, 126 (two op-amp architecture, limited common-mode voltage range)

gain=1+(100k/Rg)=30.07

+32.5/-37.7mV

1.5V Ref



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Size: A4

Date:

Rev: 3

KiCad E.D.A. kicad (5.1.6)-1

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