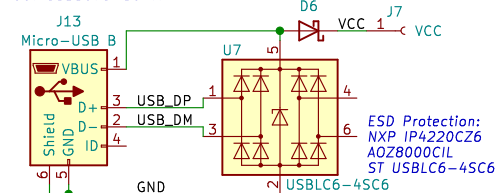


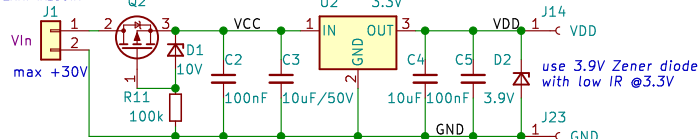
Socket Micro-USB B:
Amphenol 10103594-0001LF
Molex 105017-0001
GCT USB3076-30-A



High-voltage (>30V) SOT-223-3 LDO:
-MIC5239-3.3YS
-MIC5233-3.3YS (36V)
-LT1129CST-3.3
-LT1121CST-3.3
-SPX2954M3-1-3-3
-NCV4274AST33T3G (40V)
-NCV4264-2CST33T3G (45V)
-MCP1790-3302E
-MCP1799-3302H (45V)
U2 3.3V

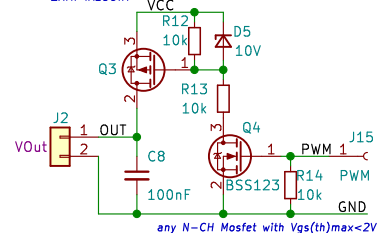
reverse current protection

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 1776244-2, 1776266-2, 1776504-2, 1776269-2
Degson DG301-5.0

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



reverse current protection

any low-offset (<0.1mV),
high output current OpAmp
"high Cload drive"
OPA388, NCS2005 (light capacitive load)
OPA350EA (up to 1μF, MSOP-8 pkg)
LM8261 (unlimited capacitive load use, lower precision)

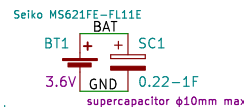
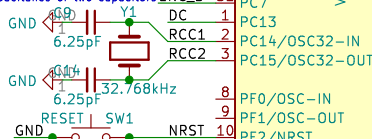
any P-CH Mosfet with
 $V_{GS(th)} \max < 2V$, low $R_{DS(on)}$
-PMV100EPAR
-NXV90EPR
-SI2343CDS-T1-GE3
-SI2307CDS-T1-E3
-CPH3351-TL-W

for WSP80 use socket: Amphenol T 3437 000

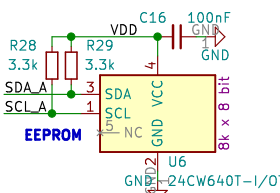
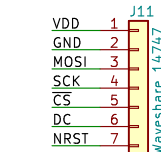
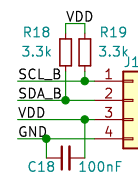
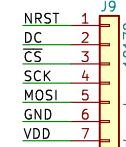
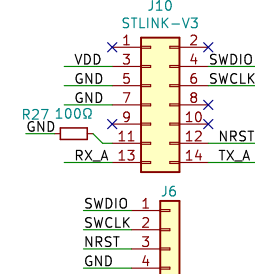
alternative, pin-compatible MPUs, min 64k flash, 44-10:

STM32G031C8Tx/Ux
STM32G041C8Tx/Ux
STM32G051C8Tx/Ux
STM32G061C8Tx/Ux
STM32G071C8Tx/Ux
STM32G071C8Tx/Ux (128k)
STM32G081C8Tx/Ux (128k)
STM32G081C8Tx/Ux (128k)
STM32G081C8Tx/Ux (128k)
STM32G081C8Tx/Ux (256k)
STM32G081C8Tx/Ux (512k)

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

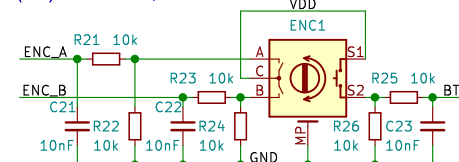


for Segger J-Link mini
use pins 3-12



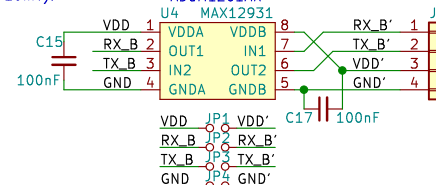
Note: 24CWxx EEPROM comes with
preconfigured lower 3 bit address.
'0' in p/n indicates address 1010_000X (0xA0)

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

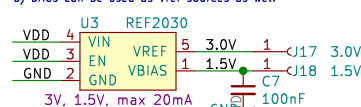


Note: Bourns encoders are preferred.
Unlike most ALPS encodes (besides EC120).
Bourns encoders have dent stability position
between signal edges.

optoisolators: MAX12931, MAX22246,
Si8422/26, ADuM1281/86, ISO7021,
ISO6720?, ISO7720, iLE612-3E
ADuM1201AR



instead of REF2030 a) internal MPU 2.5V VREFBUF
can be used with divider and buffers (OpAmps),
b) DACs can be used as Vref sources as well



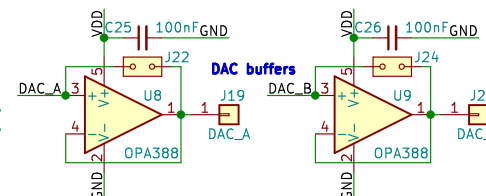
ref voltage source

consider driving EN from MPU

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

- OPA387 (SOT23-5, VSSOP-8 double, TSSOP-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))

To drive light capacitive load use OPA388, NCS2005,
OPA350EA/OPA2350EA (up to 1μF, MSOP-8 pkg)
LM8261 (unlimited capacitive load, lower precision)



recommended: INA118, 317, 333, 823
optional: INA122, 126 (two op-amp architecture
→ limited common-mode voltage range)

Wheatstone Bridge Amplifier

R1+R10 high grade 0.1% resistors

gain=1+(100k/Rg)=30.41



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