alternative, pin-compatible MPUs, min 64k flash, 44-IO:
STM32G031C8Tx/Ux
STM32G041C8Tx/Ux
STM32G051C8Tx/Ux
STM32G061C8Tx/Ux
STM32G071C8Tx/Ux
STM32G071CBTx/Ux (128K)
STM32G081CBTx/Ux (128K)
STM32G0B1CBTx/Ux (128K)
STM32G0B1CCTx/Ux (256K)
STM32G0B1CETx/Ux (512K)

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

ESD Protection:
NXP IP4220CZ6
AOZ8000CIL
ST USBLC6-4SC6

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

Seiko MS621FE-FL11E
supercapacitor ϕ10mm max

for Segger J-Link mini
use pins 3-12

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*

reverse current protection

any P-CH SOT-223-3 Mosfet with Vgs(th)max<2V, Vds>30V, Id>5A, low Rds(on)
-ZXMP4A16GTA

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

use 3.9V Zener diode with low IR @3.3V

fixed terminal blocks:
CUI TB002-500-02BE
TE 1776244-2, 1776266-2, 1776504-2, 1776269-2
Degson DG301-5.0

Rohm:PTZTFTE253.9B

EEPROM

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

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

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

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

3V, 1.5V, max 20mA

ref voltage source

DAC buffers

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)

optoisolators: MAX12931, MAX22246, Si8422/26, ADuM1281/86, ISO7021, ISO6720?, ISO7720, ILE612-3E
ADuM1201AR

any P-CH SOT-223-3 Mosfet with Vgs(th)max<2V, Vds>30V, Id>5A, low Rds(on)
-ZXMP4A16GTA

any N-CH Mosfet with Vgs(th)max<2V

IR=30÷40nA @3.3V

Vref buffer

reverse current protection

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

any P-CH Mosfet with Vgs(th)max<2V, low Rds(on)
-PMV100EPAR
-NXV90EPR
-SI2343CDS-T1-GE3
-SI2307CDS-T1-E3
-CPH3351-TL-W

22-53Ω (21-450°C)

for WSP80 use socket Amphenol T 3437 000

Wheatstone Bridge Amplifier
R1-R10 high grade 0.1% resistors

-32.51/+37.67mV
gain=1+(100k/Rg)=30.41

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

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