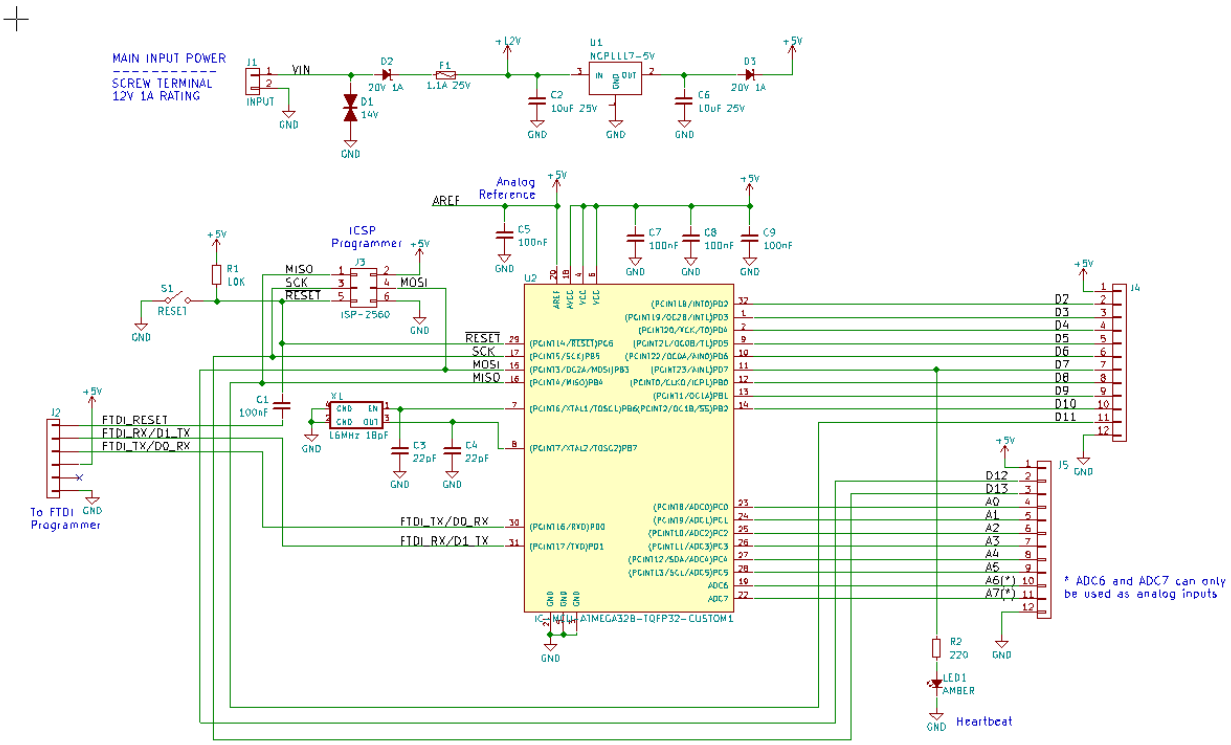
Basic Atmega328 Breakout Board v1.1

This is a breakout board for the Atmega328. It supports input voltage up to 16V, regulating down to 5V for the microcontroller. A bootloader can be loaded over ICSP and then the board can be powered and communicated with over an FTDI cable. All the input/output pins are broken out for prototyping.

The project is released as open hardware under the CERN v1.2 Open Hardware license.

The project uses the Atmega328 template from wickerlib.

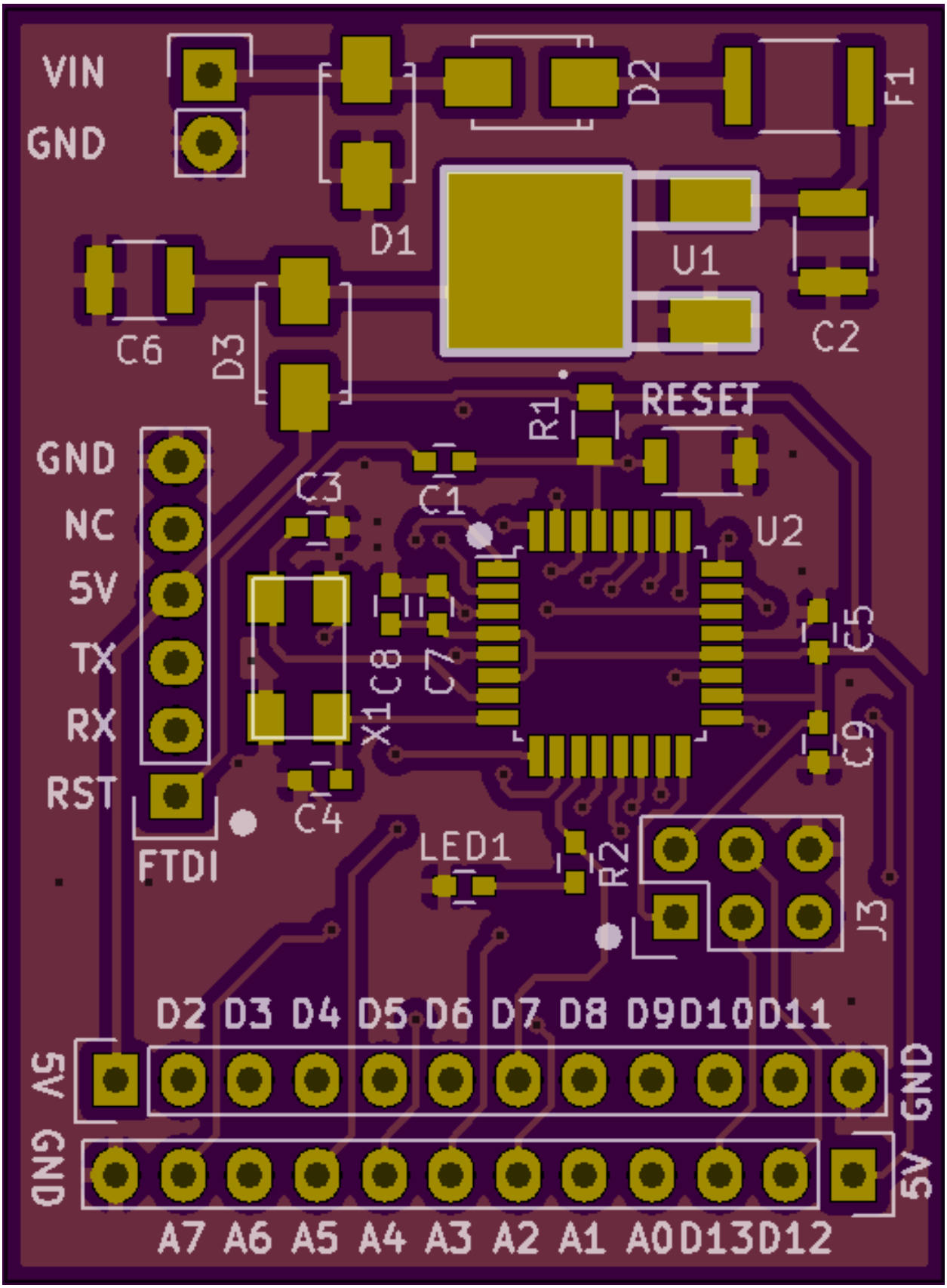
You can order a set of three bare boards for $13.35 from OSH Park here.



Bill of Materials

Ref	Qty	Description	Digikey PN
X1	1	16MHz 30ppm Crystal 18pF 40 Ohm 4SMD NOLEAD	CTX1206CT-ND
C2;C6	2	CAP CER 10UF 25V X7R 1210	587-2599-1-ND
C3;C4	2	CAP CER 22pF 100V C0G NP0 0603	399-11145-1-ND
R1	1	RES SMD 10K OHM 5% 1/8W 0805	311-10KARCT-ND
D1	1	TVS DIODE 14VWM 23.2VC SMAJ14A-13-F SMA	SMAJ14A-FDICT-ND
F1	1	RESETTABLE FUSE 1.1A 25V MF-MSMF	MF-MSMF110/24X-2CT-ND
J1	1	CONN TERM SCREW GREEN 2.54MM 2POS TH	ED10561-ND
D2;D3	2	DIODE SCHOTTKY 20V 1A SMA	SS12-E3/61TGICT-ND
C7;C8;C9;C1;C5	5	CAP CER 0.1UF 100V X7R 0603	490-3285-1-ND
S1	1	SWITCH TACTILE SPST-NO 0.05A 12V	SW1020CT-ND

Ref	Qty	Description	Digikey PN
J3	1	HEADER MALE 6POS 2x3 0.1”	952-1921-ND
U1	1	IC REG LDO 5V 1.1A NCP1117 DPAK	NCP1117DT50GOS-ND
J2	1	HEADER MALE 6POS TH 1x06 0.1”	952-1902-ND
LED1	1	LED AMBER DIFFUSED 0603 SMD	475-2712-1-ND
R2	1	RES SMD 220 OHM 5% 1/10W 0603	311-22GRCT-ND
J4;J5	2	HEADER FEMALE 12POS TH 1x12 0.1”	952-1905-ND
U2	1	IC MCU 8BIT 32KB FLASH 32TQFP	ATMEGA328P-AU-ND


VIN
GND
D1
D2
F1
U1
C2
C6
D3
R1
RESET
GND
NC
5V
TX
RX
RST
FTDI
C3
C1
U2
C8
C7
X1
C5
C9
C4
LED1
R2
J3
D2 D3 D4 D5 D6 D7 D8 D9D10D11
5V
GND
GND
5V
A7 A6 A5 A4 A3 A2 A1 A0D13D12

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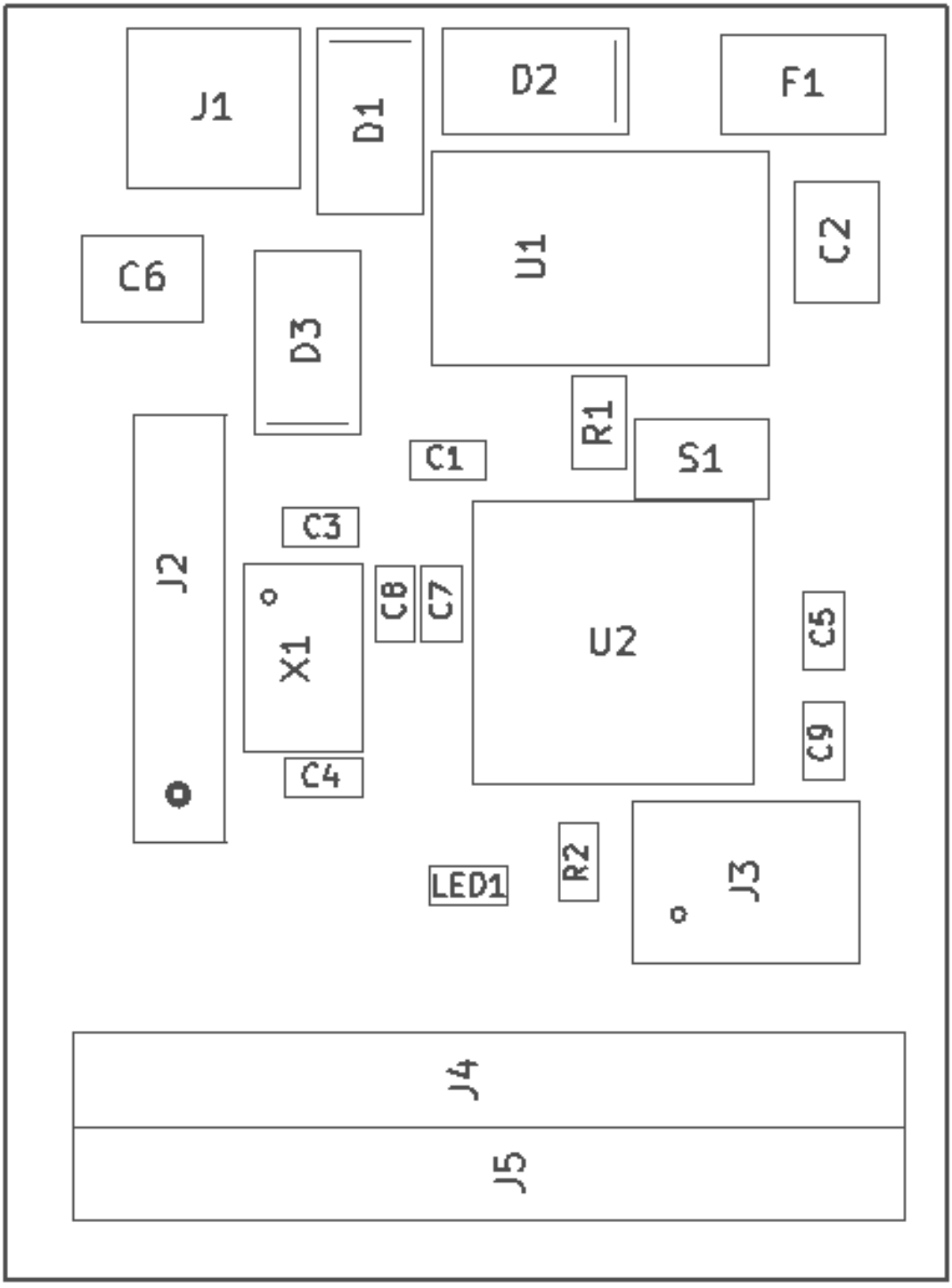

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