CoreSam3x

An Arduino(tm) Due compatible SAM3X core board.

Design goals

— Board is 2 layer 50x50mm max dimension to take advantage of cheap PCB service.
— Components are DIY friendly 0603 or larger
— Self contained board, so can be programmed and run with just USB cable
— Compatible with "Due" board target in Arduino IDE, no extra support required
— Programmed via USB, JTAG pins or 6 pin serial programming header
— 0.1" pitch pin spacing

Features:
— all Due pins
— some extra GPIO extra pins
— Ethernet pins
— Battery backup pins
— JTAG pins
— EBI pins
— on board USB (OTG, ie. device or host)
— can be powered from USB device or external 5V
— on board 3.3V regulator
— buttons for Reset, Erase
— LEDs for 3.3V power, D13
— RTC crystal
— two mounting lugs for M2.5
— dimensions : 2" by 1.6" (51x41mm) excluding mounting lugs
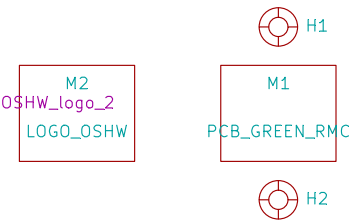
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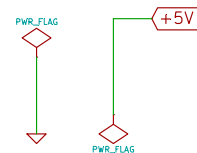
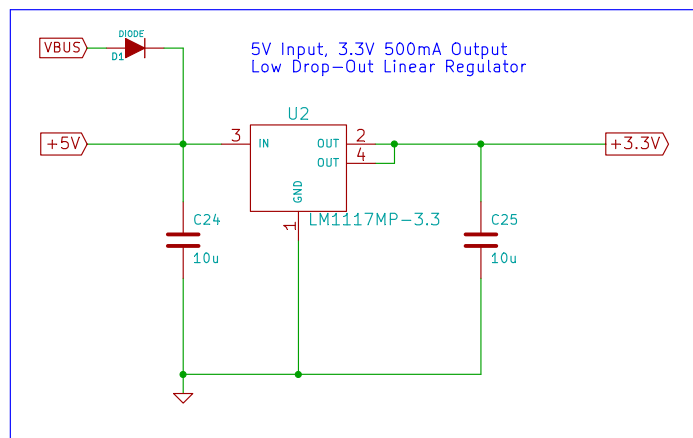Sheet: Power
File: Power.sch

Sheet: Processor
File: Processor.sch

H1

M2
OSHW_logo_2
LOGO_OSHW

M1
PCB_GREEN_RMC

H2

Some schematics and library symbols derived from Duet project
https://github.com/T3P3/Duet licensed under the CERN OHW Licence v1.2

Analog VREF: fit R12 or R13 to select AREF
R13 selects VDDIO (default)
R12 selects External AREF

EXTVREF — R12 0R — ADVREF
R13 0R

U1
ATSAM3XBE
LQFP144

CRYSTAL_4PIN
12MHz
X1

Note: connected pins

SPI(0)

I2C(1)

Note: connected pins

Has built-in pullup
of approx 15K

NF: Possible addition

ERASE
S1

RESET
S2

Programming

SP2525A
U4

BSS123
Q1

VBUS

DIODE
D1

5V Input, 3.3V 500mA Output
Low Drop-Out Linear Regulator

U2

+5V

3 IN

OUT 2
OUT 4

+3.3V

GND

1

C24
10u

LM1117MP-3.3

C25
10u

PWR_FLAG

+5V

PWR_FLAG

File: Power.sch
Sheet: /Power/
Title: CoreSam3x
Size: A4   Date: 1 nov 2014   **Rev: 1**
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