20 VDC max. raw input

U1
NCP1117DT50RKG

RAW_DC

D1
1N4007

VIN   VOUT

GND

VCC

C1
47u

C3
100n

C2
47u

RAW_DC
P1

DGND

DGND   DGND   DGND   DGND

VCC
P2

VCC

DGND   PWR_FLAG

External Vcc input.

VCC

Vcc for external modules.

P3
VCC

P4
VCC

P5
VCC

P6
VCC

DGND

PWR_FLAG

VCC   R1
330R

U3   TSOP34136

VS   OUT   IR

GND

C4
100n

DGND   DGND

INPUTS
P8

VOL_UP_SWITCH
VOL_DN_SWITCH
SOURCE_UP_SWITCH
SOURCE_DN_SWITCH
MUTE_SWITCH
PWR_SWITCH

DGND

Switch connections are optional.
Each switch is a SPST normally open
momentary with one side connected
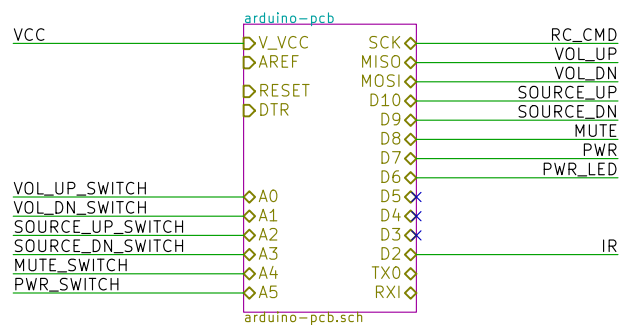to the input and the other to DGND.
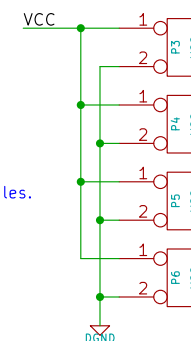
To (optional) indicator LEDs.
Requires current limiting resistors!!!
20mA per pin max.

PWR_LED   1
RC_CMD   2

P9
ULOUT
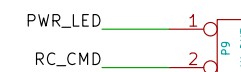
Control signal outputs.
20mA per pin max.

PWR   1
VOL_UP   2
VOL_DN   3
SOURCE_UP   4
SOURCE_DN   5
MUTE   6

P10
CTL_OUT

Collective maximum current output is 150 mA.

arduino-pcb

VCC   V_VCC   SCK   RC_CMD
AREF   MISO   VOL_UP
MOSI   VOL_DN
RESET   D10   SOURCE_UP
DTR   D9   SOURCE_DN
D8   MUTE
D7   PWR
D6   PWR_LED

VOL_UP_SWITCH   A0   D5
VOL_DN_SWITCH   A1   D4
SOURCE_UP_SWITCH   A2   D3
SOURCE_DN_SWITCH   A3   D2   IR
MUTE_SWITCH   A4   TX0
PWR_SWITCH   A5   RXI

arduino-pcb.sch

CERN Open Hardware Licence v1.2
Copyright (C) 2015 Mithat Konar
Mithat Konar
File: RC5-preamp-board.sch
Sheet: /
Title: RC5 remote control board
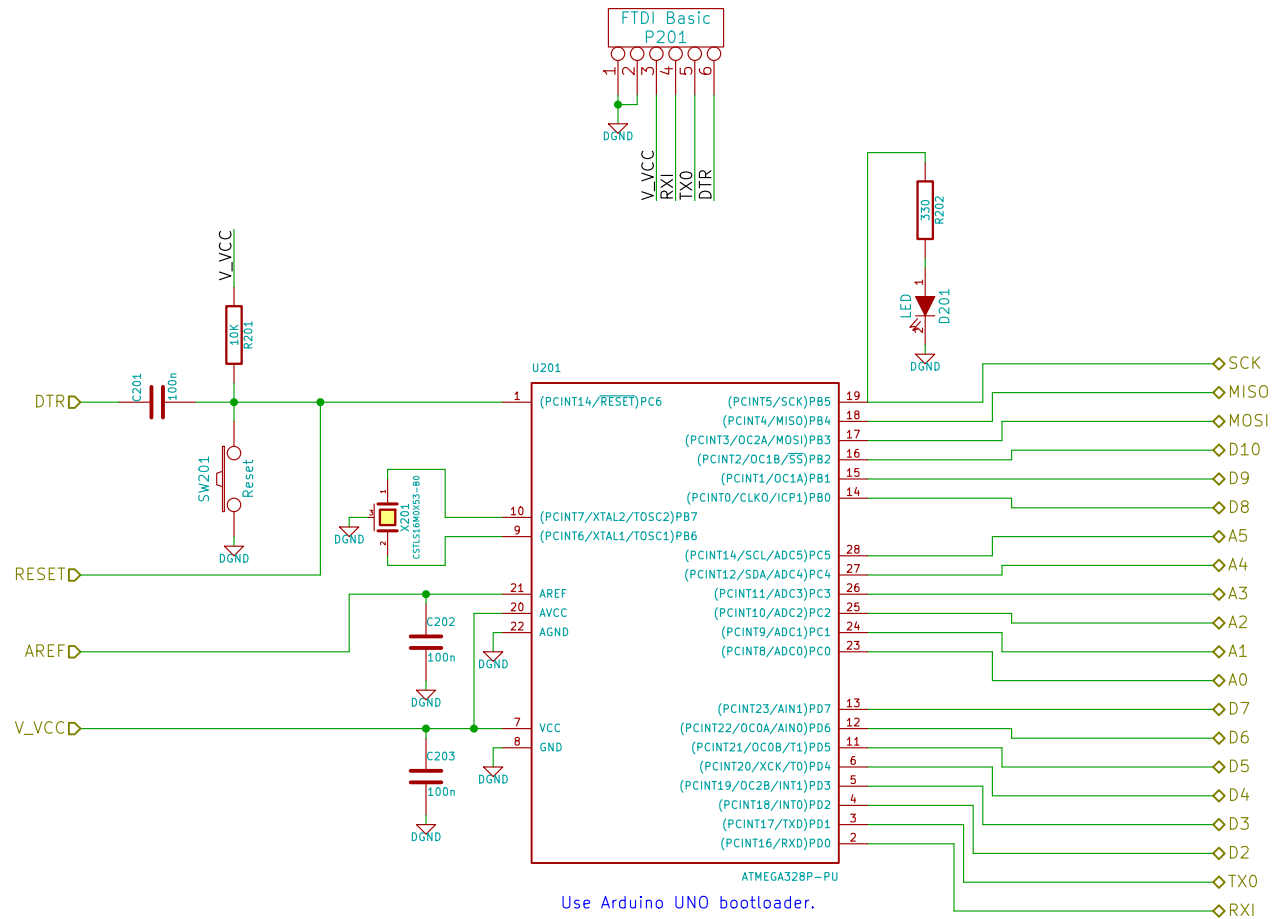Size: A   Date: 24 apr 2015   Rev: 1.0
KiCad E.D.A.   Id: 1/2

open source
hardware

FTDI Basic
P201

DGND

V_VCC
RXI
TXO
DTR

330
R202

LED
D201

DGND

V_VCC

10K
R201

DTR

C201
100n

SW201
Reset

DGND

DGND

X201
CSTLS16M0X53-B0

RESET

AREF

V_VCC

C202
100n

DGND

C203
100n

DGND

U201

1   (PCINT14/RESET)PC6

10   (PCINT7/XTAL2/TOSC2)PB7
9   (PCINT6/XTAL1/TOSC1)PB6

21   AREF
20   AVCC
22   AGND

7   VCC
8   GND

(PCINT5/SCK)PB5   19
(PCINT4/MISO)PB4   18
(PCINT3/OC2A/MOSI)PB3 17
(PCINT2/OC1B/SS)PB2   16
(PCINT1/OC1A)PB1   15
(PCINT0/CLKO/ICP1)PB0 14

(PCINT14/SCL/ADC5)PC5 28
(PCINT12/SDA/ADC4)PC4 27
(PCINT11/ADC3)PC3   26
(PCINT10/ADC2)PC2   25
(PCINT9/ADC1)PC1   24
(PCINTB/ADC0)PC0   23

(PCINT23/AIN1)PD7   13
(PCINT22/OC0A/AIN0)PD6 12
(PCINT21/OC0B/T1)PD5 11
(PCINT20/XCK/T0)PD4   6
(PCINT19/OC2B/INT1)PD3 5
(PCINT18/INT0)PD2   4
(PCINT17/TXD)PD1   3
(PCINT16/RXD)PD0   2

ATMEGA328-PU

Use Arduino UNO bootloader.

SCK
MISO
MOSI
D10
D9
D8

A5
A4
A3
A2
A1
A0

D7
D6
D5
D4
D3
D2
TXO
RXI

Mithat Konar
File: arduino-pcb.sch
Sheet: /arduino-pcb/
Title: Arduino ATMEGA328-PU subcircuit
Size: A   Date: 24 apr 2015   Rev:
KiCad E.D.A.   Id: 2/2