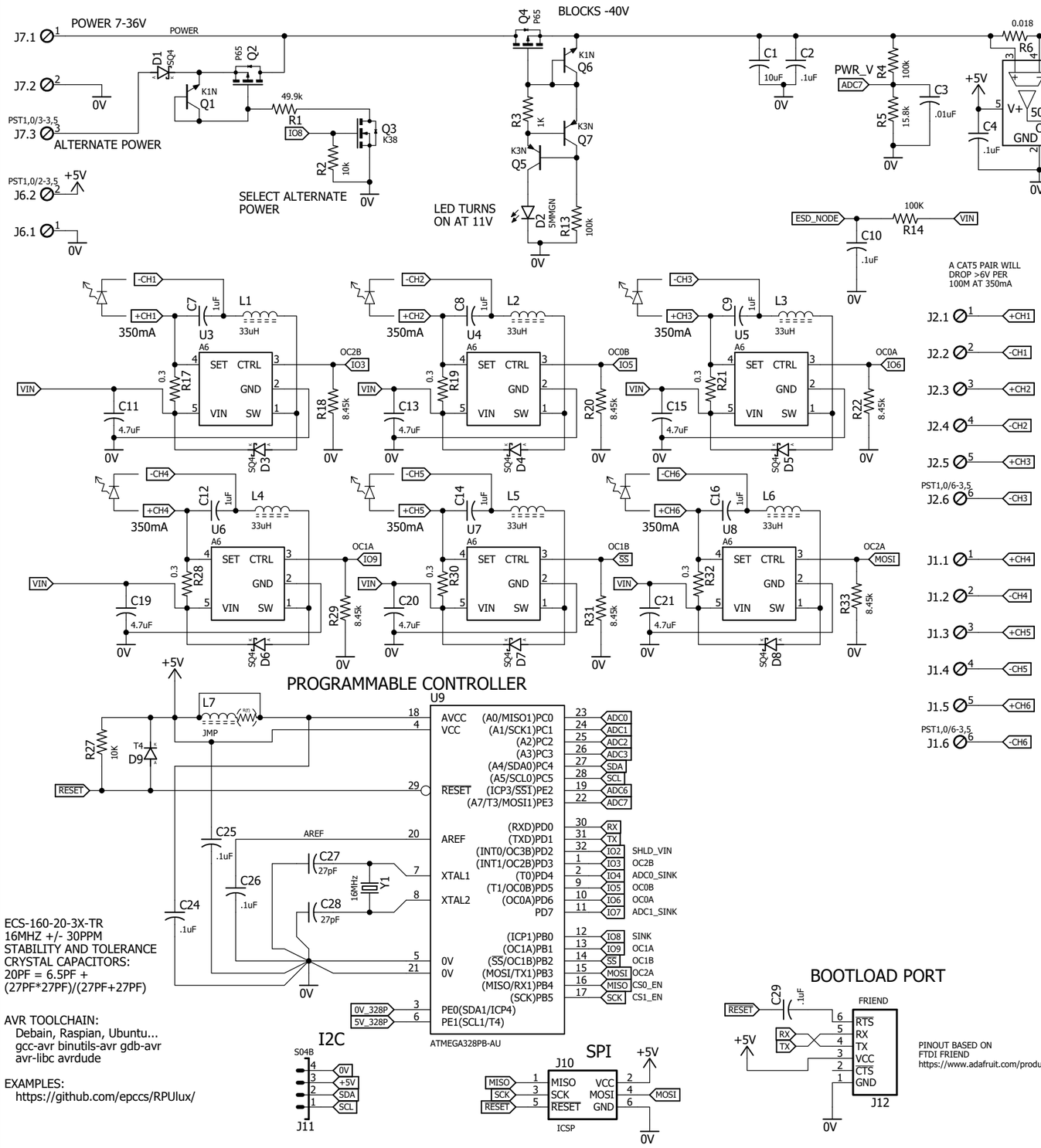
POWER 7-36V
POWER
J7.1
J7.2
J7.3
PST1,0/3-3,5
ALTERNATE POWER
SELECT ALTERNATE POWER
PST1,0/2-3,5
J6.2
J6.1
+5V
0V
D1
SQ4
Q1
K1N
Q2
P65
49.9k
R1
IO8
Q3
K38
R2
10k
BLOCKS -40V
Q4
Q6
Q7
Q5
K3N
R3
1K
LED TURNS ON AT 11V
D2
5MMGN
R13
100k
C1
10uF
C2
.1uF
PWR_V
ADC7
R4
100k
R5
15.8k
C3
.01uF
Rohm 0.018 1/3W
@ 4A Power is .288W
0.018
R6
U1
1087
V+
50V/V
OUT
GND
C4
.1uF
C5
1uF
R7
10k
PWR_I
ADC6
VIN
MURATA PS,OKI-78SR-5.0
SMPS 5V 1500MA SIP3
WITH MP2467 FROM
Monolithic Power Solutions
U2
I50115
VIN VOUT GND
C6
106A
R8
10k
R9
JMP
OPEN
R11
R10
100k
R12
10k
Q8
Q9
SHLD_VIN
ESD_NODE
100K
R14
C10
.1uF
A CAT5 PAIR WILL
DROP >6V PER
100M AT 350mA
J2.1
J2.2
J2.3
J2.4
J2.5
J2.6
+CH1
-CH1
+CH2
-CH2
+CH3
-CH3
PST1,0/6-3,5
J1.1
J1.2
J1.3
J1.4
J1.5
J1.6
+CH4
-CH4
+CH5
-CH5
+CH6
-CH6
350mA
U3
U4
U5
U6
U7
U8
A6
SET CTRL GND VIN SW
L1
L2
L3
L4
L5
L6
33uH
C7
C8
C9
C11
C13
C15
C19
C20
C21
1uF
4.7uF
R17
R19
R21
R28
R30
R32
0.3
R18
R20
R22
R29
R31
R33
8.45k
OC2B
OC0B
OC0A
OC1A
OC1B
IO3
IO5
IO6
IO9
SS
MOSI
SQ4
D3
D4
D5
D6
D7
D8
PROGRAMMABLE CONTROLLER
U9
ATMEGA328PB-AU
AVCC
VCC
(A0/MISO1)PC0
(A1/SCK1)PC1
(A2)PC2
(A3)PC3
(A4/SDA0)PC4
(A5/SCL0)PC5
RESET (ICP3/SSI)PE2
(A7/T3/MOSI1)PE3
(RXD)PD0
AREF (TXD)PD1
(INT0/OC3B)PD2
(INT1/OC2B)PD3
XTAL1 (T0)PD4
(T1/OC0B)PD5
XTAL2 (OC0A)PD6
PD7
(ICP1)PB0
(OC1A)PB1
0V (SS/OC1B)PB2
0V (MOSI/TX1)PB3
(MISO/RX1)PB4
(SCK)PB5
PE0(SDA1/ICP4)
PE1(SCL1/T4)
ADC0
ADC1
ADC2
ADC3
SDA
SCL
ADC6
ADC7
RX
TX
SHLD_VIN
OC2B
ADC0_SINK
OC0B
OC0A
ADC1_SINK
SINK
OC1A
OC1B
OC2A
CS0_EN
CS1_EN
0V_328P
5V_328P
L7
JMP
R27
10K
T4
D9
C25
.1uF
C26
.1uF
C24
.1uF
C27
27pF
C28
27pF
16MHz
Y1
AREF
ECS-160-20-3X-TR
16MHZ +/- 30PPM
STABILITY AND TOLERANCE
CRYSTAL CAPACITORS:
20PF = 6.5PF +
(27PF*27PF)/(27PF+27PF)
AVR TOOLCHAIN:
Debain, Raspian, Ubuntu...
gcc-avr binutils-avr gdb-avr
avr-libc avrdude
EXAMPLES:
https://github.com/epccs/RPUlux/
I2C
S04B
J11
SPI
J10
MISO
SCK
RESET
VCC
MOSI
GND
ICSP
BOOTLOAD PORT
FRIEND
J12
RTS
RX
TX
VCC
CTS
GND
C29
PINOUT BASED ON
FTDI FRIEND
https://www.adafruit.com/product/284
CURRENT SOURCE FOR LOOPS
LEVEL GUARDED ANALOG INPUT
WITH PULL DOWN
CURR SOURCE FOLDS
BACK DUE TO SELF HEATING
MAY FAIL IF DROP > TBD
24V IS MY GUESS FOR NOW
22MA_A0
22MA_A1
LOOP SENSOR
J3.1
J3.2
J3.3
J3.4
J3.5
J3.6
30V MAX
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
Q20
Q22
Q23
Q24
K1N
K3N
K38
34N
R15
49.9k
R16
27
R23
127
R24
R25
R26
R35
100K
R36
R37
R38
R34
15.8K
C17
C18
C22
C23
.01uF
ADC0
ADC1
ADC2
ADC3
CS0_EN
CS1_EN
MISO
SCK
IO12
IO13
IO4
IO7
R39
R40
10k
NOTE: THE TOOLCHAIN DOES NOT
YET SUPPORT 328PB
(iom328pb.h will show up with avr-libc when it does)
WARNING: SDA1 AND SCL1 ARE
0V AND 5V WHEN ATMEGA328P IS USED
J8
PORT BIT 328P;328PB
0V_328P
5V_328P
RX
TX
IO2
IO3
IO4
IO5
IO6
IO7
0V; SDA1/ICP4 E0 (*) * 2568 TX3
+5V; SCL1/T4 E1
RX0 D0;D0
TX0 D1;D1
INT0 D2; INT0/OC3B D2
OC2B/INT1 D3; OC2B/INT1 D3
T0 D4;TO D4
T1/OC0B D5; T1/OC0B D5
OC0A D6;OC0A D6
D7;D7
PPPC101LFBN
J9
J4
ICP1 B0; ICP1 B0
OC1A B1;OC1A B1
SS/OC1B B2;SS/OC1B B2
MOSI/OC2A B3;MOSI/OC2A/TX1 B3
MISO B4; MISO/RX1 B4
SCK B5; SCK B5
GND
AREF
ADC4/SDA C4; ADC4/SDA0 C4
ADC5/SCL C5; ADC5/SCL0 C5
IO8
IO9
SS
MOSI
MISO
SCK
0V
NC
SDA
SCL
ADC0 C0;ADC0/MISO1 C0
ADC1 C1;ADC1/SCK1 C1
ADC2 C2;ADC2 C2
ADC3 C3;ADC3 C3
ADC4/SDA C4; ADC4/SDA0 C4
ADC5/SCL C5; ADC5/SCL0 C5
ADC6; ADC6/ICP3/SSI E2
ADC7; ADC7/T3/MOSI1 E3
0V
NC (**)
** 2568 ADC8
PPPC101LFBN
J5
SHLD_VIN
VIN
GND
+5V
+3V3
RESET
IOREF
NC
PPPC081LFBN
Reference Designators:
B Battery
C Capacitor
D Diode
F Fuse/Breaker
H Hardware & Outline
J Connector/Link
K Relay
L Inductor
M Motor (and Related)
P Power supply
Q Transistor
R Resistor
S Switch
T Transformer
TP Test point
U Integrated circuit/module
Y Crystal or oscillator
HW2
USA10-4,6
DIN MNT
HW1
USA10-4,6
DIN MNT
ARDUINO UNO R3
PIN-COMPATIBLE
RPU BUS
RPUBUS.ORG
GITHUB.COM/EPCCS
BK black GN green
BN brown BU blue
RD red VT violet
OG orange GY gray
YE yellow WH white
Symbols = RD
Names = BU
Values = GY
Label/Info = VT
Busses = Dark BU
Net/Wire = GN
Guide = YE
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SIZE
B
DATE:
NAME:
Edit
1/22/18
RON S
Chk
ADDR: 1627 W INVERNESS DR
TEMPE AZ 85282
E-MAIL: ronald.sutherland
@gmail.com
PHONE: (480) 967-2851
TO:
FROM:
DESCRIPTION:
PC, 6 CC LED DVR
MODEL:
RPULUX
DRAWING:
17323
not saved!
^1
PULL-DOWN 3..13, 100k Q1
RM A2 SINK, LED CC NOISE
1/22/18
^0
INIT
12/15/17
REV
BUGZILLA ISSUE #
JDATE
1/1