12V input & reverse polarity protection

T1 FDD4243
R3 10k
VBAT
R2 33k
R4 4k7
C8 100nF
R1 33k
T2 FDD4243
D1 BZX384v12

Arduino micro compatible controller

C25 100nF   C28 100nF   C29 100nF
L3 600R/1A
U10
L2 600R/1A
USB J1
C17 100nF
C18
C21 100nF
C16 1uF
C22 1uF
R7 10k
R11 22R
R12 22R
R8 CG0603MLC_05E
R10 CG0603MLC_05E

UVCC
VCC
VCC
AVCC
AREF
AVCC
VBUS
D+
D−
UCAP
UGNG

(SS/PCINT0)PB0   RXLED   R14 1k   D4 yellow
(SCLK/PCINT1)PB1   SCK
(PDI/MOSI/PCINT2)PB2   MOSI
(PDO/MISO/PCINT3)PB3   MISO
(ADC11/PCINT4)PB4   IO8   P7 IO8
(ADC12/OC1A/OC4B/PCINT12)PB5   XBEE_RES
(ADC13/OC1B/OC4B/PCINT13)PB6   IO10   P9 IO10
(OC0A/OC1C/RTS/PCINT7)PB7   IO11   SDATA

(OC3A/OC4A)PC6   D5   P10 D5
(ICP3/CLK0/OC4A)PC7   IO13   SCLK   R17 1k   D6 green
SLATCH
(OC0B/SCL/INT0)PD0   D3/SCL   P11 D3/SCL
(SDA/INT1)PD1   D2/SDA   P12 D2/SDA
(RXD/INT2)PD2   D0/RX
(TXD/INT3)PD3   D1/TX
(ICP2/ADC8)PD4   D4   P13 D4
(XCK1/CTS)PD5   TXLED   R15 1k   D5 green
(T1/OC4D/ADC9)PD6   IO12   SCLK
(T0/OC4D/ADC10)PD7   D6   P14 D6

(HWB)PE2   HWB   R16
(INT6/AIN0)PE6   D7   P15 D7

(ADC0)PF0   A5   VBAT
(ADC1)PF1   A4   P16 A4
(ADC4/TCK)PF4   A3   P17 A3
(ADC5/TMS)PF5   A2   P18 A2
(ADC6/TDO)PF6   A1   P19 A1
(ADC7/TDI)PF7   A0   P20 A0

GND
GND
GND
GND

XTAL1
XTAL2
R13 10k
C19 22pF
C20 22pF
X1 16MHz
R9 1k
D2 blue

SW1 RESET
RESET
D3 1N414BW

MISO   P4
SCK   MOSI
RESET   ISP

ATmega32U4

P21 12V   +12V
P22 5VA   +5VA
P23 5V   +5V
P24 3.3V   +3.3V
P25 GND

XBEE PRO 868 module

U11 XBEE868
C31 1uF
C32 6p2
RTS
R23 4k7
R24 10k
D1/TX   DOUT   D0/RX
DIN/CONFIG
R19 4k7   NRESET
DIO12
R21 10k
XBEE_RES   D8 1N414BW

VCC   AD0/DIO0/ComBut
DOUT   AD1/DIO1
DIN/CONFIG   AD2/DIO2
NRESET   AD3/DIO3
DIO12   RTS/DIO6
PWM0/RSSI/DIO10   Ass/DIO5/AD5
PWM/DIO11   VREF
DNC   ON/SLEEP
DTR/SLEEP_RQ/DIO8   CTS/DIO7
GND   AD4/DIO4
R18 1k
D7 red
CTS

USB RS232 bridge (optional)

U12 FT232RL
C34 4u7
C30 4u7
C33 100nF
D−
D+
D1/TX
D0/RX
RTS
CTS
XBEE_RES

VCCIO   TXD
VCC   RXD
RTS
USBD−   CTS
USBD+   DTR
DCR
DCD
RI
RESET   CBUS0
CBUS1
OSCI   CBUS2
OSCO   CBUS3
CBUS4
3V30UT
AGND   GND   GND   GND   TEST

5V voltage regulator (buck)

IC1 TPS54527
C1 10u/25V
C2 10u/25V
C7 100nF
L1 3u3/5A
R5 124k
C11 22uF/10V
C14 22uF/10V
C15 22uF/10V
C3 1uF
C5 8.2nF
R6 22k1
EN   VIN
VFB   VBST
VREG5   SW
SS   GND
PP
+5V

3V voltage regulator (LDO)

U1 NCP1117ST33T33G
C4 22uF/10V
C6 10uF/10V
VI   VO
GND
+5V   +3.3V

4x7 bit shift register & 350mA LED driver

SDATA
SCLK
SLATCH

U2 74HC595
SER   VCC
SRCLK   QA
SRCLR   QB
QC
RCLK   QD
G   QE
QF
QG
QH
GND   QH
C9 100nF   C12 100nF

U4 ULN2003
I7   O7
I6   O6
I5   O5
I4   O4
I3   O3
I2   O2
I1   O1
COM
P2 CONN_8

U3 74HC595
SCLK
SLATCH
SER   VCC
SRCLK   QA
SRCLR   QB
QC
RCLK   QD
G   QE
QF
QG
QH
GND   QH
C10 100nF   C13 100nF

U5 ULN2003
I7   O7
I6   O6
I5   O5
I4   O4
I3   O3
I2   O2
I1   O1
COM
P3 CONN_8

U6 74HC595
SCLK
SLATCH
SER   VCC
SRCLK   QA
SRCLR   QB
QC
RCLK   QD
G   QE
QF
QG
QH
GND   QH
C23 100nF   C26 100nF

U8 ULN2003
I7   O7
I6   O6
I5   O5
I4   O4
I3   O3
I2   O2
I1   O1
COM
P5 CONN_8

U7 74HC595
SCLK
SLATCH
SER   VCC
SRCLK   QA
SRCLR   QB
QC
RCLK   QD
G   QE
QF
QG
QH
GND   QH
C24 100nF   C27 100nF

U9 ULN2003
I7   O7
I6   O6
I5   O5
I4   O4
I3   O3
I2   O2
I1   O1
COM
P6 CONN_8