Thotcon 0x04

USB IN

F1 .5 A

P1 USB-M
+5 / D- / D+ / GND

R16 1K
C15 10 uF 16V
C14 .01 uF
D44
EXT_PWR
R17 5V
R18 5V
TP1 USB_D-
TP2 USB_D+

U2 LP2985-33
VIN / ON/OFF / BYPASS / GND / VOUT
DGND   AGND

R15 0
C13 4.7 uF 25V
R14 0
B1 CR_2032
NC

INSERT R14 FOR FOR BATTERY PWR
INSERT R15 FOR EXTERNAL PWR
DO NOT INSERT R14 & R15 SIMULTANEOUSLY!

C12 4.7 uF
C11 22 pF
AGND
C10 4.7 uF 25V
C9 4.7 uF 25V

INSERT R10 FOR PWM (DEFAULT)
INSERT R11 FOR SPI INTERFACE
DO NOT INSERT R10 & R11 SIMULTANEOUSLY!

DO NOT EXCEED 3 VOLTS

R11 120   MOSI
R10 120   PWM_11
AREF

RESET S1
PF1   S2   R19 1K
PF2   S3   R20 1K

R13 10K
D45 S01575
R12 0
C8 .01 uF 16V
AGND
AREF

INSERT R21 FOR SHIELD "EXT_PWR" FEATURE

POWER
R21 0
RST
VIN / GND / GND / VCC / 3.3V / RST
J1

ANALOG
A0 PF0 / A1 PF1 / A2 PF2 / A3 PF3 / A4 PF4 / A5 PF5
J2

DO NOT EXCEED 3 VOLTS

U1 ATMEGA128RFA1

AVDD EVDD DVDD DVDD DEVDD DEVDD DEVDD DEVDD

PB0:SSN:PCINT0   NC
PB1:SCK:PCINT1   PB1
PB2:MOSI:PDI:PCINT2 PB2
PB3:MISO:PDO:PCINT3 PB3
PB4:OC2A:PCINT4   PB4
PB5:OC1A:PCINT5   PWM_11 PB5
PB6:OC1B:PCINT6   PB6
PB7:OC0A:OC1C:PCINT7 PB7

CLKI

AREF

TST
RSTIN
NC RSTON

PD0:SCL:INT0   NC
PD1:SDA:INT1   NC
PD2:RXD1:INT2 NC
PD3:TXD1:INT3 NC
PD4:ICP1   NC
PD5:XCK1
PD6:T1   RXD
PD7:T0   TXD

PG0:DIG3
PG1:DIG1
PG2:AMR   NC
PG3:TOSC2
PG4:TOSC1   NC
PG5:OC0B

Y2 32.768 KHz RTC
C6 12 pF   C5 12 pF

PE0:RXD0:PCINT8 TP3 SER_RXD PE0
PE1:TXD0   PE1
PE2:XCK0:AIN0 PE2
PE3:OC3A:AIN1 PE3
PE4:OC3B:INT4 PE4
PE5:OC3C:INT5 PE5
PE6:T3:INT6   PE6
PE7:ICP3:INT7:CLKO PE7

TP4 SER_TXD
PF0:ADC0   PF0
PF1:ADC1   PF1
PF2:ADC2:DIG2 PF2
PF3:ADC3:DIG4 PF3
PF4:ADC4:TCK PF4
PF5:ADC5:TMS PF5
PF6:ADC6:TDO PF6
PF7:ADC7:TDI PF7

XTAL2
XTAL1
Y1 16.000 MHz CLK
C4 12 pF   C3 12 pF
AGND

AVSS_RFN
RFN
RFP
AVSS_RFP

AVSSASVSS AVSS PADDLE DVSS:DSVSS DVSS DVSS DVSS DVSS
AGND

R8 1K   TxD RxD
R7 1K   D42 D41
R6 10K

R5 120
R4 120
R3 120
R2 120
R1 120

D1 D2 D3 D4 D5
D6 D7 D8 D9 D10
D11 D12 D13 D14 D15
D16 D17 D18 D19 D20
D21 D22 D23 D24 D25
D26 D27 D28 D29 D30
D31 D32 D33 D34 D35
D36 D37 D38 D39 D40

DIGITAL_1
AREF / GND / D13 / D12 / D11 / D10 / D9 / D8
J4

P2 AVR-ISP-6A
MISO / VCC / SCK / MOSI / RST / GND
ICSP
RST

R9 1K
D43
SCK

DIGITAL_0
D0+RX / D1+TX / D2 / D3 / D4 / D5 / D6 / D7
RXD_IN / TXD_IN
J3

DO NOT EXCEED 3 VOLTS

ANTENNA
Z3
C1 22 pF 0402
C2 22 pF 0402

3V SHIELDS ONLY!

NOTES:

1. Capacitor values in pF, 5%, 25V min., unless noted.

2. Resistors 0603 SMD 5% 1/10 W unless noted.

3. Resistors 8 and 9 are mutually exclusive. Default is R8, to provide "PWM" ouput.

4. Unused: C7 Last used C15, D45, F1, J4, J4, P2, R21, S3, TP2, U2, Y2, Z2.

WORKSHOP 88

CC-BY-SA-3.0
Proj. Mgr: R. Ristich
Drawn: P. Reich
Designed: P. Reich
Workshop 88
File: thotcon_badge_dig.sch
Sheet: 1/1
Title: BOARD, PC, THOTCON-0x04
Size: B   Date: 14 feb 2013   Rev: P1
KiCad E.D.A.   Id: 1/1