U1

Pin	Signal	Signal	Pin
12	PB0 (ICP)	PC0 (ADC0)	23
13	PB1 (OC1A)	PC1 (ADC1)	24
14	PB2 (SS/OC1B)	PC2 (ADC2)	25
15	PB3 (MOSI/OC2)	PC3 (ADC3)	26
16	PB4 (MISO)	PC4 (ADC4/SDA)	27
17	PB5 (SCK)	PC5 (ADC5/SCL)	28
7	PB6 (XTAL1/TOSC1)	ADC6	19
8	PB7 (XTAL2/TOSC2)	ADC7	22
30	PD0 (RXD)	PC6 (RESET)	29
31	PD1 (TXD)		
32	PD2 (INT0)	VCC	6
1	PD3 (INT1)	VCC	18
2	PD4 (XCK/T0)	AVCC	20
9	PD5 (T1)	AREF	21
10	PD6 (AIN0)	GND	5
11	PD7 (AIN1)	GND	3

ENABLE, CS, MOSI, MISO, SCK
IR, INT1, INT2, LED1, PWM, CHG

ATmega8-16AC

V1.8 GND
R1 10k R2 omit
RESET DTR
Reset by short to GND

C3 0.1uF V1.8 GND

P1
1 BAT
2 GND
Header 2

D1
A K
LED1 R3 330 GND
LED_0603

D2
E E GND
C C IR
638-PT1921BL41TR8
638-PT1921BL41TR8

P3 AVR SPI
MISO 1 2 V1.8
SCK 3 4 MOSI
RESET 5 6 GND

GND
C1 C0603 10uF
BAT

U2

Pin	Signal	Signal	Pin
1	VIN	EN	12
2	SW	VSEL1	11
3	GND	VSEL2	10
4	CTRL	VSEL3	9
5	VOUT	VSEL4	8
6	LOAD	PG	7

L2 Inductor 2.2 uH
GND GND
V1.8 C2 C0603 10uF GND
BAT GND GND GND GND
TPS62740

U3

Pin	Signal	Signal	Pin
1	SCL/SPC	INT1	12
2	CS	INT2	11
3	SDO/SA0	VDD_IO	10
4	SDA/SDI	VDD	9
5	NC	GND	8
6	GND	GND	7

SCK, CS, MISO, MOSI
INT1, INT2
GND
LIS2DS12
497-16261-2-ND

C4 100nF V1.8
+C5 10uF GND
C6 100nF V1.8 GND

P2
1 1 HVDD
2 2 PIEZO
HDR_2x1_2mm

BAT L3 Inductor 47 uH A
D3 A K Diode SDM02U30LP3 HVDD
+C7 22uF GND
L1 Inductor 1mH
L4 Inductor x uH PIEZO

CHG 1 Q2 PMZ390UN,315 GND
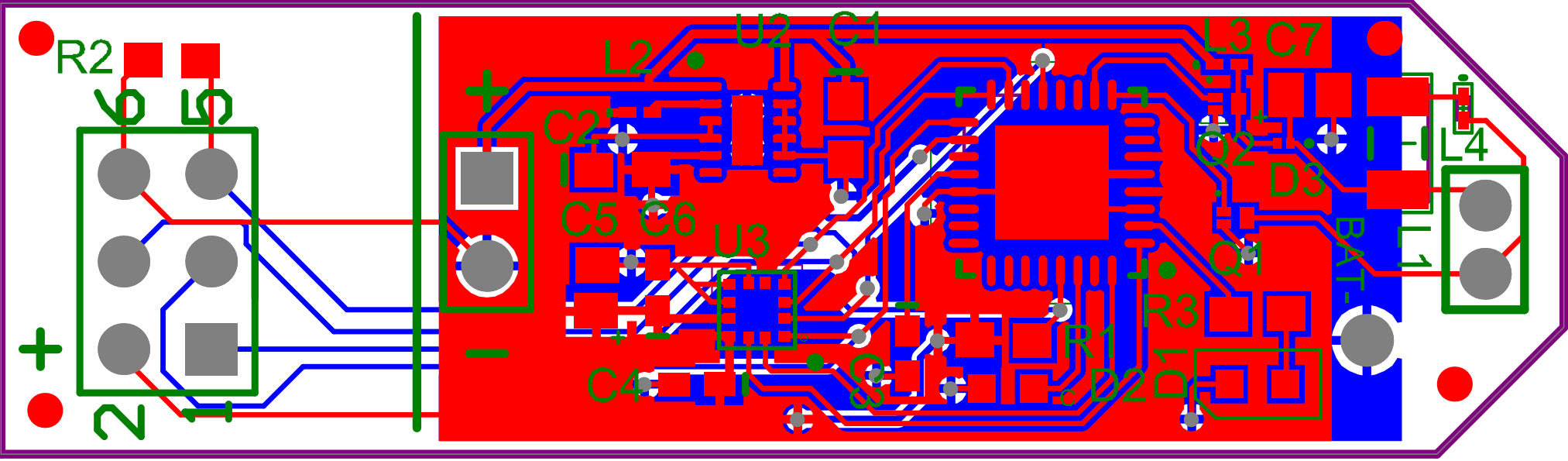PWM 1 Q1 PMZ390UN,315 GND

Title: OTP2: OpenTag Ping
Size: Letter
Number: Loggerhead Instruments
Revision: 1.0
Date: 4/23/2019
Sheet 1of 1
File: C:\w\OTP\Altium\OTP2\OTP2.SchDoc
Drawn By: D. Mann

Comment	Description	Designator	Footprint	LibRef	Quantity
C0603	Ceramic Chip Capacitor - Standard	C1, C2	0603	C0603	2
0.1uF	Ceramic Chip Capacitor - Standard	C3	0402	C0402	1
100nF	Ceramic Chip Capacitor - Standard	C4, C6	0402	C0402	2
10uF		C5	Tant0805	Tant0805	1
22uF		C7	Tant0805	Tant0805	1
LED_0603		D1	Diode0603	LED_0603	1
638-PT1921BL41TR8	Phototransistor	D2	Phototransistor	Phototransistor	1
Diode SDM02U30LP3	SDM02U30LP3	D3	Diode SDM02U30LP3-7B	Diode SDM02U30LP3	1
Inductor	Inductor	L1	INDC3216	Inductor	1
Inductor	Inductor	L2, L3, L4	0603	Inductor	3
Header 2	Header, 2-Pin	P1	HDR1X2	Header 2	1
HDR_2x1_2mm		P2	HDR_2x1_2mm	HDR_2x1_2mm	1
AVR SPI	Header, 3-Pin, Dual row	P3	HDR2X3	Header 3X2	1
PMZ390UN,315	N-Channel TrenchMOS Standard Level FET, 30 V, 1.78 A, 3-Pin SOT883, Tape and Reel	Q1, Q2	NXP-SOT883_N	PMZ390UN,315	2
10k	Precision Thick Film Chip Resistor, 10 Ohm to 1M Ohm Range, 1% and 0.5% Tolerance, 0603 Size, 0.063 W	R1	3-0603	ERJ3RK	1
omit	Precision Thick Film Chip Resistor, 10 Ohm to 1M Ohm Range, 1% and 0.5% Tolerance, 0603 Size, 0.063 W	R2	3-0603	ERJ3RK	1
330	Precision Thick Film Chip Resistor, 10 Ohm to 1M Ohm Range, 1% and 0.5% Tolerance, 0603 Size, 0.063 W	R3	3-0603	ERJ3RK	1
ATmega8-16AC	8-Bit AVR Microcontroller with 8K Bytes of In-System Programmable Flash Memory	U1	32M1-A_M	ATmega8-16AC	1
TPS62740		U2	TPS6274x	TPS6274x	1
LIS2DS12		U3	LGA-12	LIS2DS12	1