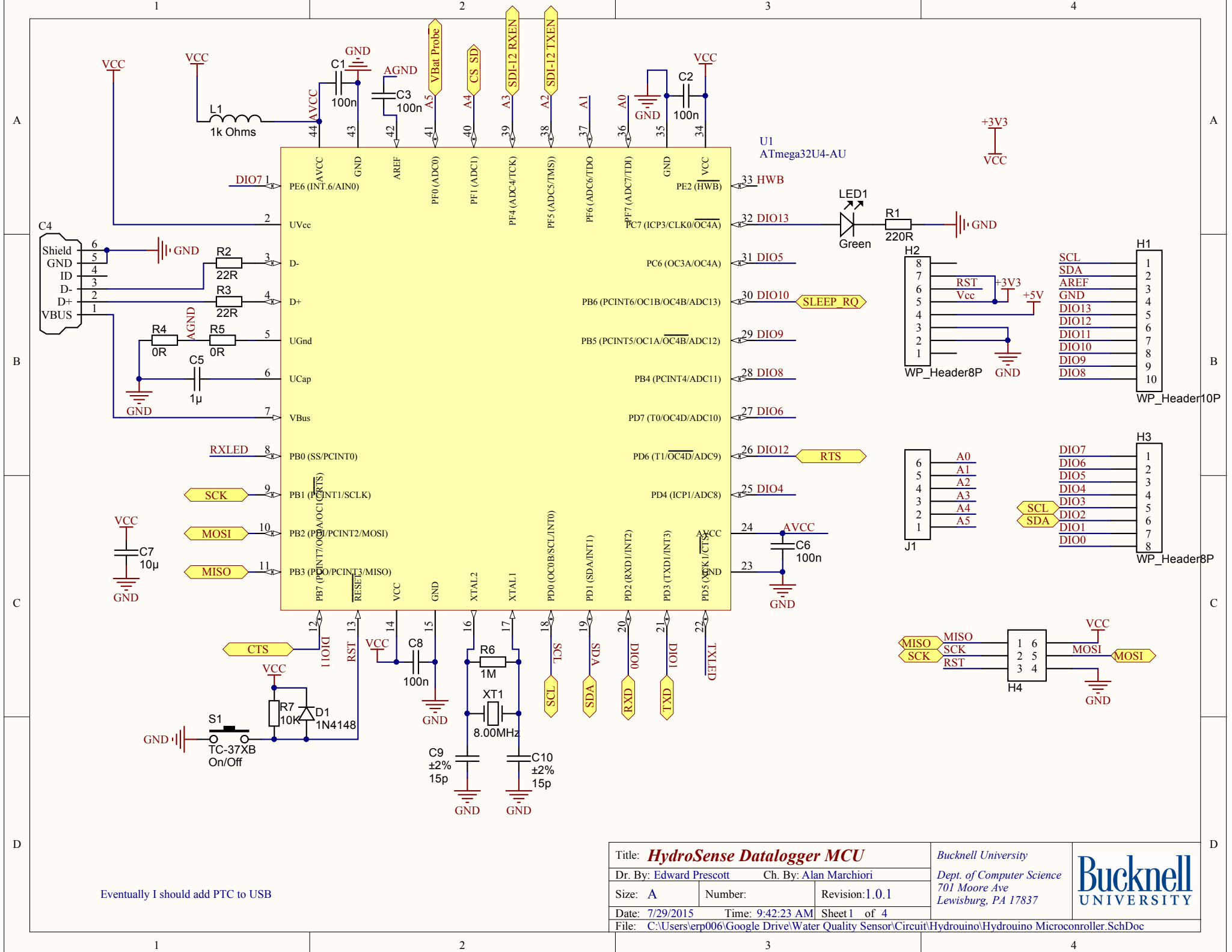




Eventually I should add PTC to USB

Title: HydroSense Datalogger MCU			Bucknell University	
Dr. By: Edward Prescott		Ch. By: Alan Marchiori	Dept. of Computer Science	
Size: A	Number:	Revision: 1.0.1	701 Moore Ave	
Date: 7/29/2015	Time: 9:42:23 AM	Sheet 1 of 4	Lewisburg, PA 17837	
File: C:\Users\erp006\Google Drive\Water Quality Sensor\Circuit\Hydroino\Hydroino Microcontroller.SchDoc				



A

B

C

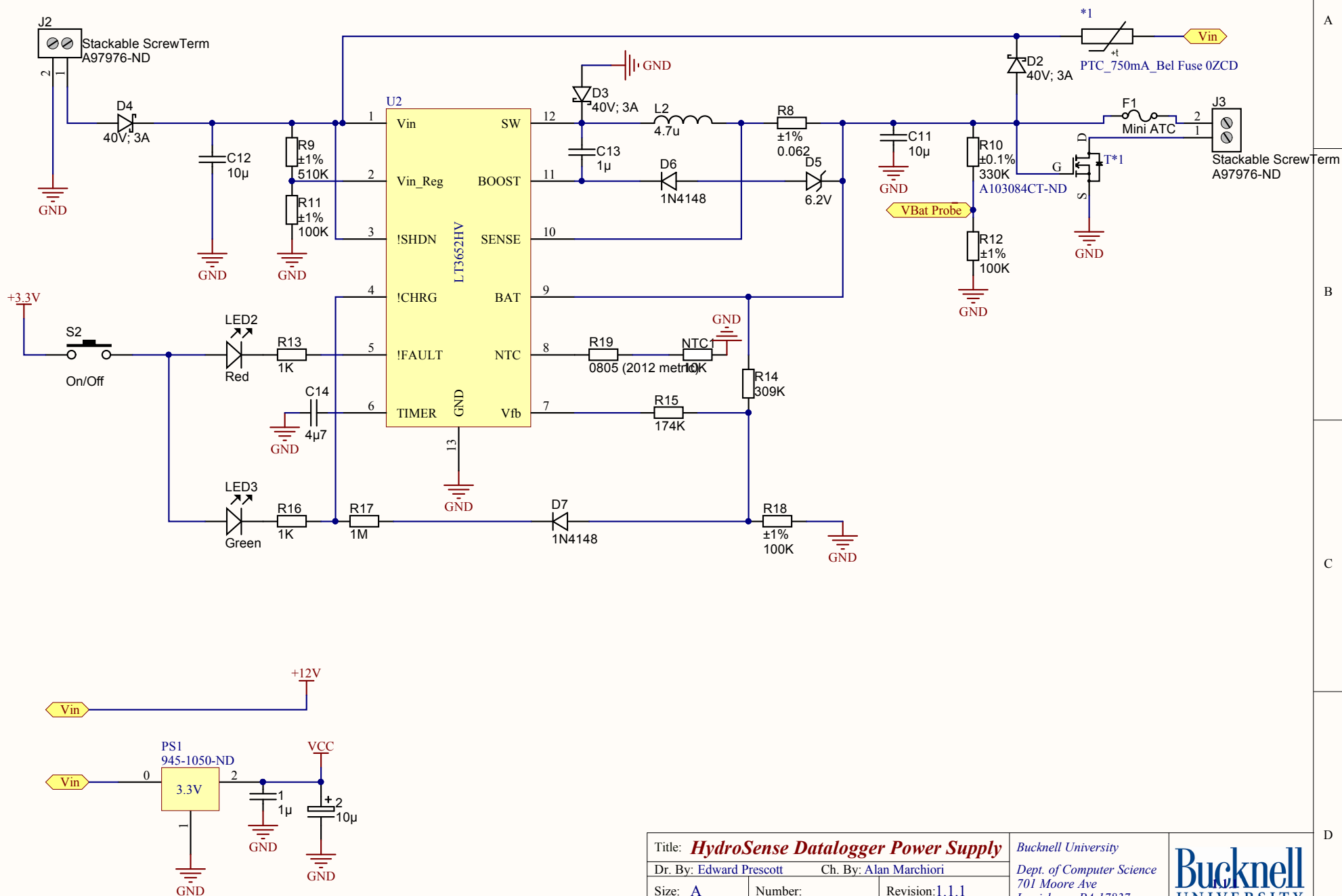
D

A

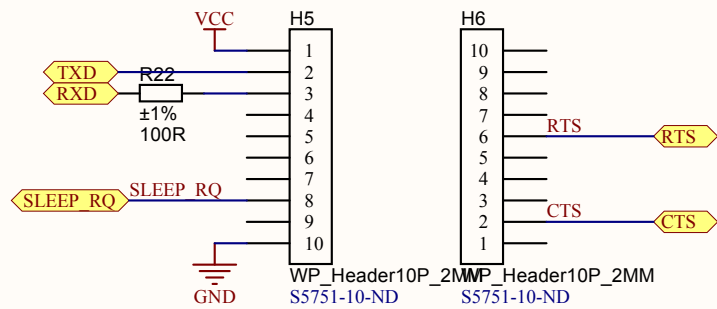
B

C

D



Title: HydroSense Datalogger Power Supply			Bucknell University		
Dr. By: <u>Edward Prescott</u>		Ch. By: <u>Alan Marchiori</u>		Dept. of Computer Science	
Size: A	Number:	Revision: 1.1.1		701 Moore Ave	
Date: 7/29/2015	Time: 9:42:23 AM	Sheet 2 of 4		Lewisburg, PA 17837	
File: C:\Users\erp006\Google Drive\Water Quality Sensor\Circuit\Hydrouino\Hydrouino Power Supply.SchDoc					



Title: HydroSense Datalogger Sensors			Bucknell University		
Dr. By: Edward Prescott		Ch. By: Alan Marchiori		Dept. of Computer Science 701 Moore Ave Lewisburg, PA 17837	
Size: A	Number:	Revision: 1.0.1			
Date: 7/29/2015	Time: 9:42:23 AM	Sheet 3 of 4			
File: C:\Users\erp006\Google Drive\Water Quality Sensor\Circuit\Hydrouino\Hydrouino Sensors and Peripherals 1.SchDoc					

1

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4

A

A

B

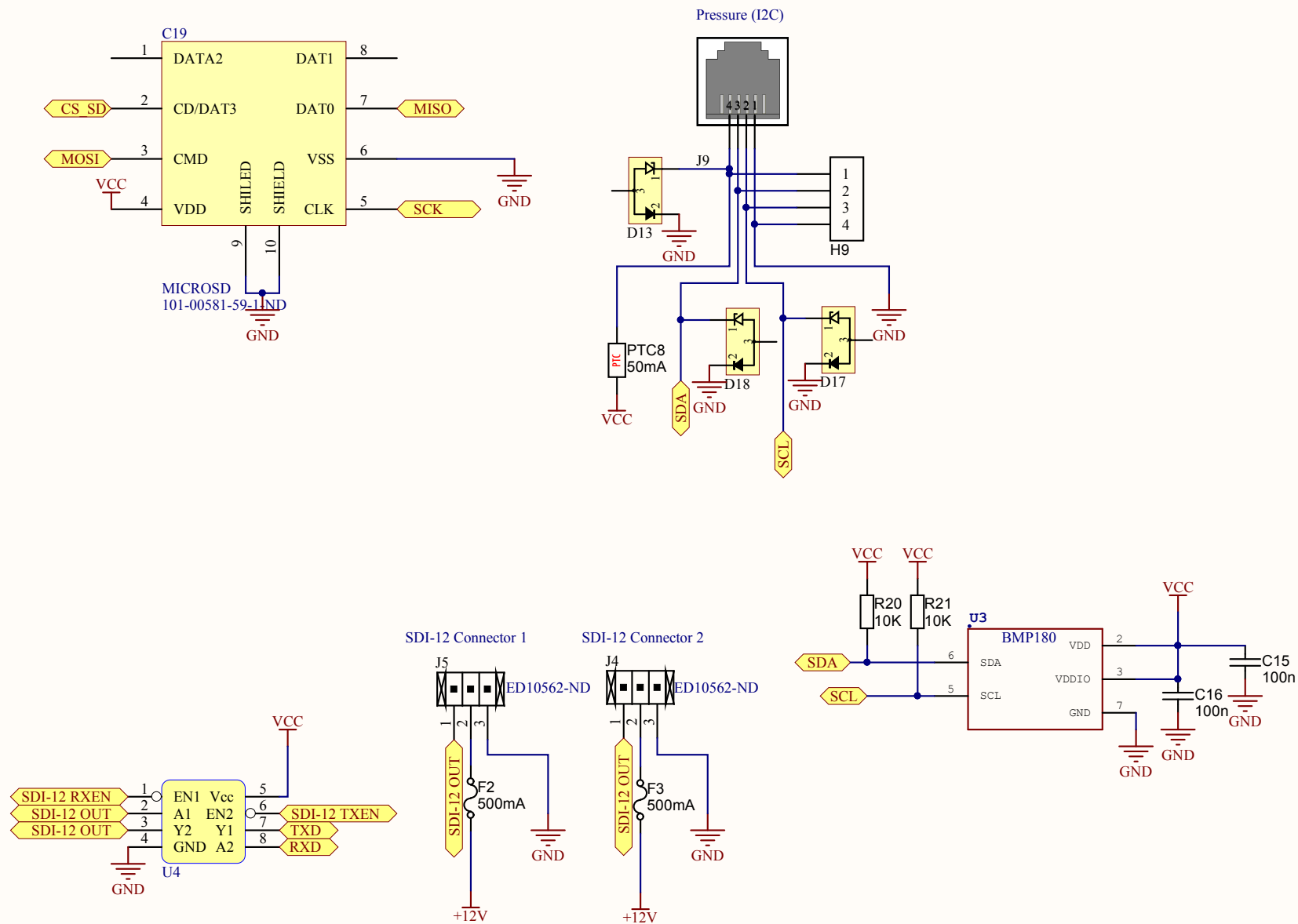
B

C

C

D

D

Title: **HydroSense Datalogger Peripherals**

Bucknell University

Dr. By: Edward Prescott Ch. By: Alan Marchiori

Dept. of Computer Science
701 Moore Ave
Lewisburg, PA 17837

Size: A

Number:

Revision: 1.0.1

Date: 7/29/2015

Time: 9:42:23 AM

Sheet 4 of 4

File: C:\Users\erp006\Google Drive\Water Quality Sensor\Circuit\Hydrouino\Hydrouino Sensors and Peripherals 2.SchDoc

Bucknell
UNIVERSITY

Bill of Materials

Bill of Materials For Project [Hydroينو.PrjPcb] (No PCB Document Selected)

Source Data From:	Hydroينو.PrjPcb
Project:	Hydroينو.PrjPcb
Variant:	None

Creation Date:	7/29/2015	9:42:43 AM
Print Date:	29-Jul-15	9:43:00 AM
Production Quantity:	3	
Currency:	USD	

Footprint	LibRef	Designator	Description	Quantity	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Order Qty 1	Supplier Sublot	Manufacturer 1	Manufacturer Part Number 1	
PTC_2920	PTC_750mA_Bel Fuse 02CD	F1		1	Digi-Key	507-1366-1-ND	0.37	3	\$	1.11	Bel Fuse Inc	02CD0075FF2C
CAPC1608X6N	CAPC_1u_0603_X0R_16V_10%	C1, C5, C13	Capacitor SMD Cer 1uF 10% 16V X0R 0603	3	Digi-Key	445-1604-1-ND	0.077	10	\$	0.77	TDK Corporation	C1608X0R1C106K
CAP_ELEC_SIZE_E	CAPE_10u_100V_SMD	2	Capacitor SMD Electrolytic 10uF 20% 100V Radial	1	Digi-Key	PCE3966CT-ND	0.72	3	\$	2.16	Panasonic Electronic Components	EEE-2AA100UP
CAPC1608X6N	CAPC_100n_0603_X0R_50V_10%	C1, C2, C3, C6, C8, C15, C16	Capacitor SMD Cer 100nF 10% 50V X0R 0603	7	Digi-Key	478-9052-1-ND	0.075	21	\$	1.58	AVX Corporation	06035C104KA2A
USB_Mini-B_Molex_SMT	WP - USB_MiniB	C4	CONN RECEPT MINIUSB R/A 9POS SMD	1	Digi-Key	WM5461CT-ND	1.13	3	\$	3.39	Molex Inc	0675031020
CAPC2012X135N	CAPC_10u_0805_10V	C7	Capacitor SMD Cer 10uF 10% 10V XSR 0805	1	Digi-Key	478-9167-1-ND	0.36	3	\$	1.08	AVX Corporation	08052D106KA2A
CAPC1608X6N	CAPC_15p_0603_NP0_50V_2%	C9, C10	Capacitor SMD Cer 15pF 2% 50V NP0 0603	2	Digi-Key	445-7026-1-ND	0.29	6	\$	1.74	TDK Corporation	C1608C0G1H150G080AA
CAPC3225X220N	CAPC_10u_1210_50V	C11, C12	Capacitor SMD Cer 10uF 20% 20V 16V XSR 1210	2	Digi-Key	587-2225-1-ND	0.56	6	\$	3.36	Taiyo Yuden	UMK325B1106MM-T
CAPC2012X135N	CAPC_4u7_0805	C14	Capacitor SMD Cer 4.7uF 10% 16V XSR 0805	1	Digi-Key	587-1294-1-ND	0.24	3	\$	0.72	Taiyo Yuden	EMK212B1475KG-T
Amphenol SD Card	MICROSD	C19		1	Digi-Key	101-00581-99-1-ND	1.84	3	\$	5.52	Amphenol Commercial Products	101-00581-99
SOD523F	DIODE_1N4148_200mA_SOD523F	D1, D6, D7	Diode SMD small signal 0.2A SOD-523F	3	Digi-Key	1N4148WTC-ND	0.17	9	\$	1.53	Fairchild Semiconductor Central	1N4148WT
DO-214AC	DIODE_SCHOTTKY_CMSH3-40MA	D2, D3, D4	Diode Schottky SMD 100V 2A SMA	3	Digi-Key	CMSH3-40MA TR13CT-ND	0.62	9	\$	5.58	ON Semiconductor Corp	CMSH3-40MA TR13
SOT23-3	DIODE_ZENER_6.2V	D5	Description DIODE ZENER 6.2V 225MW SOT23-3	1	Digi-Key	BZX84C6V2LT1GOSCT-ND	0.15	3	\$	0.45	ON Semiconductor	BZX84C6V2LT1G
SOT23-3	TVS DIODE_HIGH SPEED DATA_GL105T	D13, D17, D18	TVS DIODE 5VWM 11VC SOT23	3	Digi-Key	GL05T-E3-08CT-ND	0.311	10	\$	3.11	Vishay Semiconductor Diodes Division	GL05T-E3-08
MINI ATC Fuseholder	FUSE HOLDER_	F1	Fuse 160mA 63VDC 0603 SMD	1	Digi-Key	BK-6008-ND	0.38	3	\$	1.14	Holly Fuse	06T-0160L
RESC1608X55N	FUSE_FAST_500mA_0603_WP_Header10P_2MM	F2, F3	Fuse 500mA 32VDC 0603 SMD Header, 7-pin	2	Digi-Key	478-2860-1-ND	0.33	6	\$	1.98	AVX Corporation	F0603C0R50FSTR
2P_PCB_ScrewTerm_90S_3.81MM	2P_ScrewTerm_90S_3.81MM	J2, J3	Terminal Block Screw Type THT 2-Position 3.81mm pitch	2	Digi-Key	A97976-ND	1.18	6	\$	7.08	Tyco Electronics	1778113-2
3P_Screw Terminal_2.54mm Pitch	3P_Screw Term 2.54mm	J4, J5	CONN TERM BLOCK 2.54MM 3POS PCB	2	Digi-Key	ED10562-ND	0.79	6	\$	4.74	On Shore Technology Inc	OSTVN03A150
RU11_Molex	CONN_RU14	J9	CONN MOD JACK 6P4C R/A UNSHLD	1	Digi-Key	WM5430-ND	0.84	3	\$	2.52	Molex Inc	0438600003
CAPC1005X55N	L_BEAD_102_0402	L1	Description FILTER CHIP 1000 OHM 250MA 0402	1	Digi-Key	490-3999-1-ND	0.23	3	\$	0.69	Murata Electronics North America	BLM15H91025N1D
IND_2020	INDC_4.7u_2020_2200mA	L2	Inductor 2.2uH 1.2A 1210 SMD chip	1	Digi-Key	240-2708-1-ND	0.5	3	\$	1.50	Laird-Signal Integrity Products	TY550204R7M-10
LED-0603-GREEN	LED_SMD_Green_0603_570nm	LED1, LED3	LED 0603 SMD Green 570nm 50mcd 20mA	2	Digi-Key	754-1116-1-ND	0.46	6	\$	2.76	Kingbright Company LLC	APT1608C0CK
LED-0603-RED	LED_SMD_Red_0603	LED2	LED 0603 SMD Hyper Red 650nm 22mcd 20mA	1	Digi-Key	516-1420-1-ND	0.55	3	\$	1.65	Avago Technologies US Inc.	HSMH-C190
REST10_0R_AXIAL-0.6	THERMISTOR_NTC_10K	NTC1	THERMISTOR 10K OHM 400MM L NTC	1	Mouser	603-ZOR-25-R-520R	0.14047	3	\$	0.42	Yageo	ZOR-25-R-52-0R
SIP3_RECOM 0603ESDA	RECOM DC DC Converter 3.3V PTC_50mA_0603	PS1	PTC RESTIBLE 0.05A 15V CHIP 0603	1	Digi-Key	945-1050-ND	8.94	3	\$	26.82	Recom Power	R-78B3-3.1-0L
RESC1608X55N	RES_220R_0603_5%	R1	Resistor SMD chip 220 Ohm 0.1W 5% 0603	1	Digi-Key	311-220GRCT-ND	0.011	10	\$	0.11	Yageo	RC0603JR-07220RL
RESC1608X55N	RES_22R_0603_5%	R2, R3	Resistor SMD chip 22 Ohm 0.1W 5% 0603	2	Digi-Key	311-22GRDKR-ND	0.011	10	\$	0.11	Yageo	RC0603JR-0722RL
RESC1608N_ZER0	RES_OR_0603	R4, R5	Resistor SMD chip 0.0 Ohm 0.1W 0603	2	Digi-Key	541-0.0GCT-ND	0.074	10	\$	0.74	Vishay/Dale	CRCW06030000020E
RESC1608X55N	RES_1M_0603	R6, R17	Resistor SMD chip 1M Ohm 0.1W 5% 0603	2	Digi-Key	541-1.0MGCT-ND	0.074	10	\$	0.74	Vishay Dale	CRCW0603100M00JNEA
RESC1608X55N	RES_10K_0603_5%	R7, R20, R21	Resistor SMD chip 10k Ohm 0.1W 5% 0603	3	Digi-Key	311-10KGRCT-ND	0.011	10	\$	0.11	Yageo	RC0603JR-0710KL
RESC1608X55N	RES_62m_0603_1%	R8	RES SMD 0.062 OHM 1% 1/8W 0603	1	Digi-Key	A109559CT-ND	0.46	3	\$	1.38	TE Connectivity AMP Connectors	2178051-3
RESC1608X55N	RES_510K_0603_1/4W_1%	R9	Resistor SMD chip 510 Ohm 0.1W 1% 0603	1	Digi-Key	P510KBYCT-ND	0.16	3	\$	0.48	Panasonic Electronic Components	ERJ-PA3F5103V
RESC1608X55N	RES_330K_0603_0.1%	R10	Resistor SMD chip 330k Ohm 0.1W 0.1% 0603	1	Digi-Key	P330KDBCT-ND	0.63	3	\$	1.89	Panasonic - ECG	ERA-3AEB334V
RESC1608X55N	RES_100K_0603_1%	R11, R12	Resistor SMD chip 100k Ohm 0.1W 1% 0603	2	Digi-Key	541-1788-1-ND	0.1	6	\$	0.60	Vishay Dale	RC0603100KFKEA
RESC1608X55N	RES_1K_0603_5%	R13, R16	Resistor SMD chip 1k Ohm 0.1W 5% 0603	2	Digi-Key	311-1.0KGRCT-ND	0.011	10	\$	0.11	Yageo	RC0603JR-071KL
RESC1608X55N	RES_309K_0603	R14	RES SMD 309K OHM 0.5% 1/16W 0616	1	Digi-Key	RR08P309KDCT-ND	0.11	3	\$	0.33	Susumu	RR0816P-3093-D-480
RESC1608X55N	RES_174K_0603	R15	RES SMD 174K OHM 0.5% 1/10W 0603	1	Digi-Key	P174KBLCT-ND	0.25	3	\$	0.75	Panasonic Electronic Components	ERA-3AED1743V
RESC2012X70N	RES_100K_0805_1%	R18	Resistor SMD chip 100k Ohm 0.125W 1% 0805	1	Digi-Key	541-100KCCT-ND	0.089	10	\$	0.89	Vishay/Dale	CRCW0805100KFKEA
RESC2012X70N	RES_EMPTY_0805	R19	Resistor, 0805 SMD, Empty footprint	1								
RESC1608X55N	RES_100R_0603_1%	R22	Resistor SMD chip 100 Ohm 0.1W 1% 0603	1	Digi-Key	311-100HRCT-ND	0.014	10	\$	0.14	Yageo	RC0603FR-07100RL
TACT-SWITCH-TC-379B	SW_THT_PB_5.0mm	S1	Switch, tact, 5.0mm stem	1							Wealth Metal	TC-379B
SWITCH_TACT-EVQPQB55	SW_EVQ-PQBH55	S2	Low-profile captive tact switch	1	Digi-Key	P8909SCT-ND	0.47	3	\$	1.41	Panasonic - ECG	EVQ-PQBH55
SOC12P7600X1759M	MOSFET_N_Si4162DY9M	T1		1	Digi-Key	Si4162DY-T1-GE3DKR-ND	0.94	3	\$	2.82	Vishay Siliconix	Si4162DY-T1-GE3
44ML_L	ATmega32U4-AU	U1	8-bit AVR Microcontroller, 2.7-5.5V, 16MHz, 32KB Flash, 1KB EEPROM, 2.9KB SRAM, USB Controller, 44-pin TQFP, Industrial Grade (-40°C to 85°C), Ext Osc	1	Digi-Key	ATMEGA32U4-AU-ND	6.32	3	\$	18.96	Atmel	ATMEGA32U4-AU
MSOP-Exposed Die	IC_Battery Charge_LT3652HV	U2	Power Tracking 2A Battery Charger for Solar Panel	1	Digi-Key	LT3652HVEMSE#PBF-ND	7.26	3	\$	21.78	Linear Technology	LT3652HVEMSE#PBF
BMP180	BMP180	U3		1	Mouser	262-BMP180	4.01033	3	\$	12.03	Bosch Sensortec	BMP180
SSOP8	IC_DUAL BUFFER_S7N74VC2G125	U4	IC BUS BUFF TRI-ST DL SM8, 5.5V TOLERANT	1	Digi-Key	296-12164-1-ND	0.57	3	\$	1.71	Texas Instruments	S7N74VC2G125DCTR
Kyocera Crystal	WP_Crystal_8MHz_12pF	X1	Resonator Ceramic 6.00 MHz 30ppm	1	Digi-Key	1253-1373-1-ND	0.76	3	\$	2.28	AVX Corp/Kyocera Corp	CX5032GB08000HHPQZ1

Approved	Notes	79	\$ 160.57
	Revision 1.0.1		
	Prepared by E. Prescott eprescott@bucknell.edu		