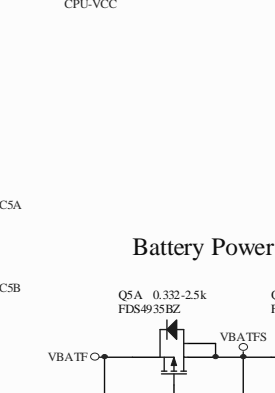
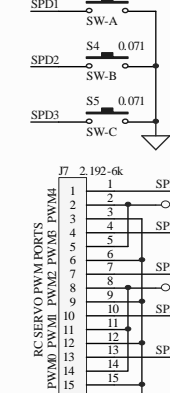
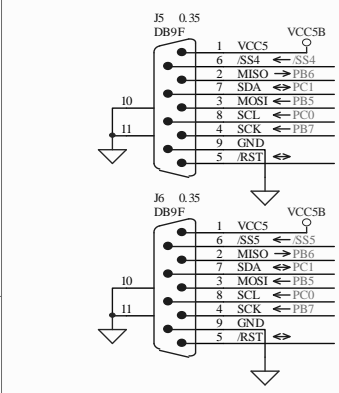
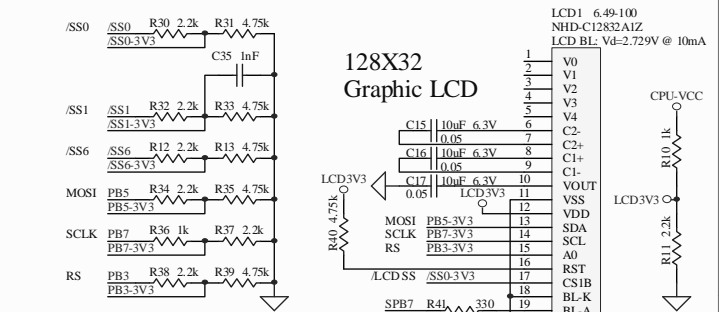
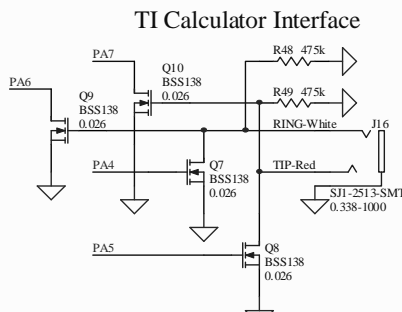
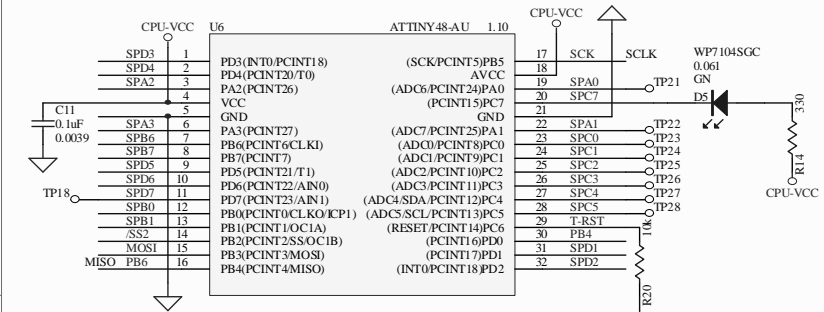
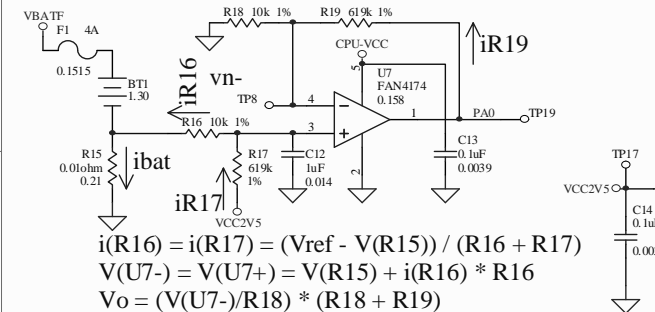


Pin	MEGA324 Function
PA0	ADC Battery Current
PA1	ADC Battery Voltage
PA2	ADC Charger Voltage
PA3	ADC Spare
PA4	ADC Spare
PA5	ADC Spare
PA6	ADC Spare
PA7	ADC Spare
PB0	Out: Slave Sel Mux A
PB1	Out: Slave Sel Mux B
PB2	Out: Slave Sel Mux C
PB3	Out: LCD A0
PB4	Out: 0=2.7V Low Pwr/1=5V Full Pwr
PB5	MOSI
PB6	MISO
PB7	SCK

Pin	MEGA324 Function
PC0	SCL: J1, J2, J3
PC1	SDA
PC2	Out: Left Motor A
PC3	Out: Left Motor B
PC4	Out: Left Motor C
PC5	Out: Right Motor A
PC6	Out: Right Motor B
PC7	Out: Right Motor C
PD0	In: RXD0
PD1	Out: TXD0
PD2	In: GPS/Aux RXD1
PD3	Out: GPS/Aux TXD1
PD4	Out: Charger PWM OC1B
PD5	Out: LED Red
PD6	Out: LED Green
PD7	Out: Speaker PWM OC2A

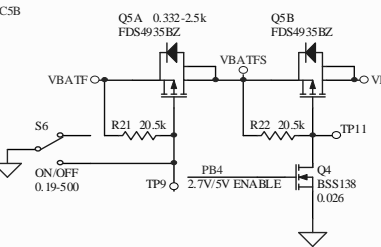


Battery and Current Monitor
 max ideal gain = $5.0V / 80mV = 62.5$, actual = 61.9

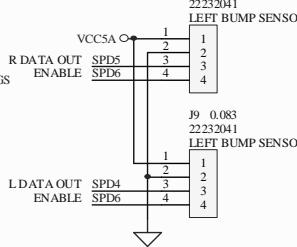


Mode	i(R15)	V(R15)	i(R16)	V(U7+)	V _o
charge	4A	40mV	3.911uA	79.11mV	4.976V
idle	0A	0V	3.975uA	39.75mV	2.500V
discharge	-4A	-40mV	4.038uA	0.381mV	0.024V

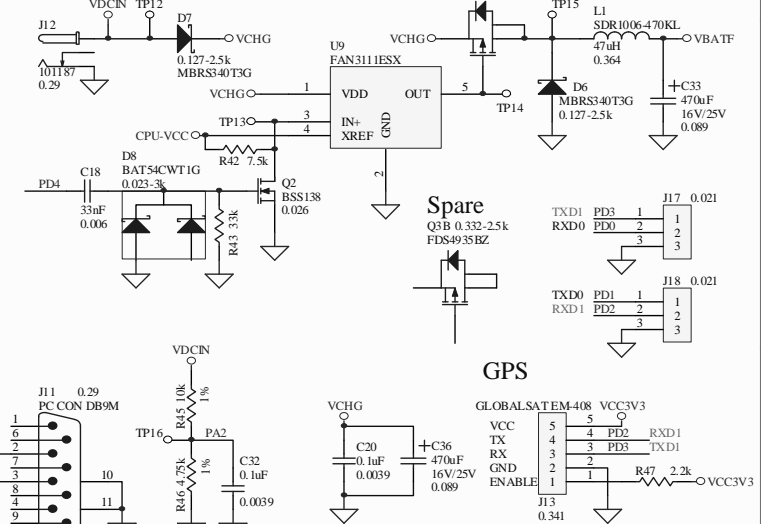
Battery Power Switch



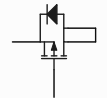
Bump Sensors



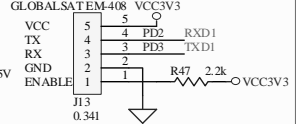
Battery Charger Component Cost (@ 1k qty) \$0.84



Spare



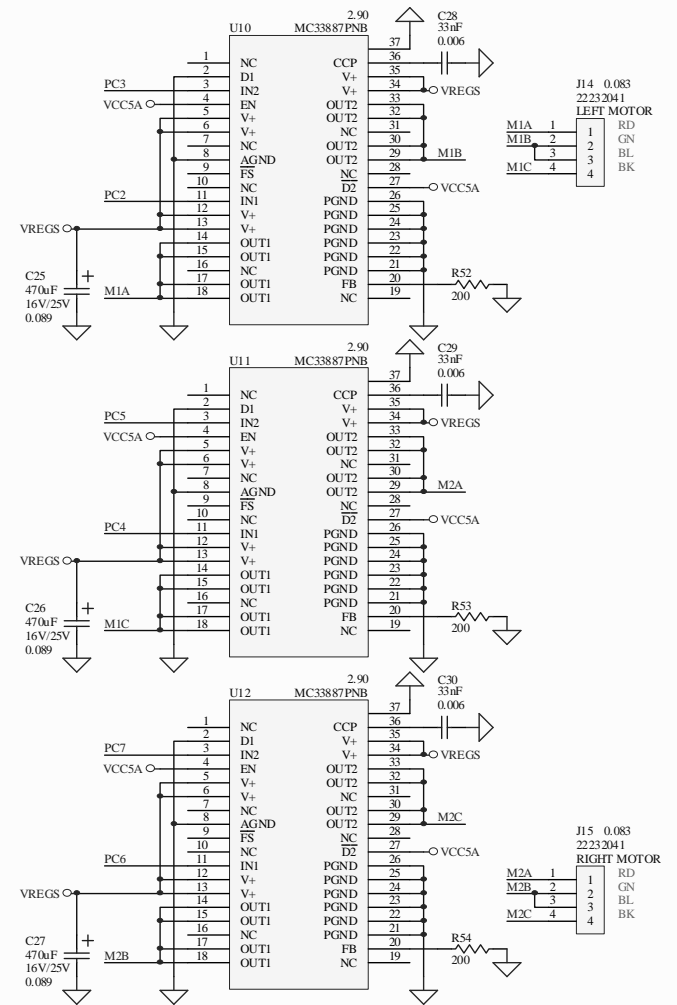
GPS



Title www.team-critter.com 324V.2.23		
Size B	Number	Revision PCB2.23
Date: 12/9/2010	Sheet 3 of 4	
File: C:\DB-ccenbot-infront\324IOP1.SchDoc	Drawn By: David Gilson	

Pin	TINY48 Function
PA0	ADC Spare
PA1	ADC Spare
PA2	Out: RC Servo PWM0
PA3	Out: RC Servo PWM1
PA4	N/A
PA5	N/A
PA6	N/A
PA7	N/A
PB0	Out: RC Servo PWM3
PB1	Out: RC Servo PWM4
PB2	In: Slave Sel Active Low
PB3	In: MOSI
PB4	Out: MISO
PB5	In: SCLK
PB6	Out: RC Servo PWM2
PB7	LCD Backlight (1=On, 0=Off)

Pin	TINY48 Function
PC0	ADC Spare
PC1	ADC Spare
PC2	ADC Spare
PC3	ADC Spare
PC4	ADC Spare
PC5	ADC Spare
PC6	In: Reset
PC7	Out: LED Green
PD0	In: ATmega324 PB4 0=2.7V, 1=5V
PD1	In: SW-A (0=Pressed)
PD2	In: SW-B (0=Pressed)
PD3	In: SW-C (0=Pressed)
PD4	In: Right Bump Sensor (0=Blocked)
PD5	In: Left Bump Sensor (0=Blocked)
PD6	Out: Bump PowerEnable (1=Enabled)
PD7	Spare



Title www.team-critter.com 324V2.23		
Size B	Number	Revision PCB2.23
Date: 12/9/2010	Sheet 4 of 4	
File: C:\DB-ccenbot-infront\324IOP2.SchDoc	Drawn By: David Gilson	

