

BEDs Preliminary Budgets

Enter values in blue, other values are calculated

ENERGY			
Variable	Value	Units	Notes
Deployment length	4.00	weeks	
Boat visits	2	per week	
Data Recovery Time	2	hours	
Ave Transmit Power	20	Watts	1A ave, 3A peak, @ 21V
Ave Sleep Power	0.0105	Watts	0.5mA @21V
Listening duty cycle	25	%	amount of time the modem is powered
Transmit Baud Rate	1200	bits/sec	
Control Electronics Power	0.05	Watts	
inertial sensor	0.35	Watts	ADIS16405in low power mode (no sleep) + linear regulator
power on intertial	0		
Calculated Values	Value	Units	
Max data transmit per visit	1080000	bytes	
	1080	kbytes	
Transmit Energy per visit	40	WHr	
Deployment Sensor energy	235.20	WHr	
Deployment Control energy	33.60	WHr	
Deployment Sleep energy	1.76	WHr	
Deployment Transmit energy	320.00	WHr	
			ASSUMES DD 80 WHr per cell
Deployment Energy budget	590.56	WHr	for voltage reasons
Number of Alkaline D cells			
Li D cells (36WHr-T-derated)	16	cells	3.9 V open circuit
Alk D cell (12WHr- T derated)	49	cells	1.3V per cell, modem pack
Li DD cells (72 WHr T-derated)	8	cells	3.9V open circuit

for 21V modem pack need 5 Li DD in series, then 2 in parallel = 10 total
for electronics maybe just 4 Li DD in parallel
total pack = 14 Li DD

