

Survey Device



Characteristics

Parameter	Value	Unit
Vcc	3-6v	V ¹
Current with USB	25	mA
Current without USB	17	mA
Current in powerdown mode	80	uA
Startup time	300	mS
Pitch/Roll Accuracy	0.2	deg ²
Pitch/Roll Precision	0.04	deg
Yaw Accuracy	0.5	deg ²
Yaw Precision	0.01	deg
Accelerometer range	+ - 2	G
Magnetometer range	+ - 6	Gauss
Accelerometer output rate	up to 500	hz
Magnetometer output rate	up to 64	hz
Accelerometer bandwidth	10 bits @10 hz	per G
Magnetometer bandwidth	13 bits @10 hz	per gauss
Temperature Accuracy	+ - 5	deg F
Temperature Precision	+ - .3	deg F

1 Can be powered via USB

2 with good calibration

Backlight

Parameter	Value	Unit
White Backlight Current	8	mA
Green Backlight Current	4	mA

Battery

Battery charges from usb with a max of 100mA.

Parameter	Value	Unit
Battery Type	3.6v lipo	
Battery Capacity	250	MAH
Battery Charge Current	100	mA
Charge time	4	hours
Run time	>10 ¹	hours

1 decreases with age and backlight usage

Parts

- 16key keypad
- 132x64 lcd with green and white backlight
- 70 series box with protective case (boxenclosures.com)
- laser pointer

- on/off switch
- usb connector

Electrical components

- at90usb1287
- sca3000-d01
- ad7799
- hmc1052
- hmc1051z
- irf7905 (x2)
- max1811
- fan2503S30

Various capacitors resistors and connectors see schematic for details