

Battery Boss - CFP

Power System for Portable Instruments

Index Designs

Features

- Intelligent Charger / Discharge Monitor prolongs battery life and improves charge retention. Eliminates cells reversal and destructive cell overcharge. EMI Filters on both input and outputs.
- Built in Watch Dog Timer, Battery / Line Switch, On Off Control Logic, Gas Gauge Monitor and RS-232 link. Simplify system design, reduces system cost and improves reliability. Automatic clearing of hardware and software faults.



Available Documents

- User Manual
- Sample "C" Source Code

- Connection Board Schematic
- Custom Battery Support
- OEM Configuration Services

General Description

The Battery Boss is a complete modular power control system for bench top and portable systems. Integrated into a self contained potted module are a high efficiency switching regulator, battery charger, micro processor, an analog to digital converter and real time clock. Various sensors are used to maximize battery capacity and life through temperature compensation of charging and monitoring of discharge cycles. A Watch Dog Timer is coupled with DC converter circuits and logic. Target failures result in removal of power providing complete resets of target software and clearing of hardware faults.

High Efficiency Regulator

An efficient switching converter accepts input voltages between 8.2 and 20 volts and provides regulated output voltages of +5, +3.3, +13 and -13 volts. Internal logic eliminates false starts and intermittent power application. Hardware current limits make the outputs short circuit tolerant and protect both regulator and target during temporary fault conditions. Jumper pins provide for direct regulation of either the +5 or +3.3 volt outputs while flyback operation regulates the other 3 outputs. Transformer construction techniques maintain a high degree of regulation of flyback outputs, less than 5% variation between 10% and 100% load. External offset adjustments support the precise setting of output voltage.

Smart Functions and Controls

Smart functions provided by an internal micro processor and software include Gas Gauge, Charge Control,

Discharge Limits, On/Off cycle control, Battery Conditioning and a Watch Dog Timer. During periods of lost input power the processor drops into a low power idle mode reducing battery drain to < 500 micro amperes. When both input power and battery power are lost the Real Time Clock is maintained using an internal 10 year lithium battery. Date, Time and operating status are available through a built in RS-232 link.

Specifications:

Input Voltage Range	8.2 - 20 Volts with 10 Volts min for Start
Output Power	10 Watts (Note Maximum Currents)
Max. Output Current	+5 and +3.3 Outputs @ 1 Amp +13 and -13 Outputs @ 100milliamp
Size (Potted Module)	2.2 x 4.5 x 0.8 Inches 55 x 115 x 19 mm
No Load Full Operation	< 50ma
Idle Load	< 500ua
Full Load at 8.2 Volts	Approx. 2 Amps
Line Regulation	< 2%
Load Regulation	< 2% on Primary Output < 5% on Flyback Outputs
Connector	25 Pin Male D Connector

Low cost versions less EMI filter and processor are available. See Web listings or call for information.