

**BAT-NiMh2
BAT-NiMh-RTC
and
BAT-NiMh2-RTC
Manual**

***Battery Backup Module
For
HESC Series Power Supplies***

Manufactured by
TRI-M ENGINEERING
Engineered Solutions for Embedded Applications

Technical Manual

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This manual is for integrators of applications of embedded systems. It contains information on hardware requirements and interconnection to other embedded electronics.

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CHAPTER 1: GENERAL DESCRIPTION

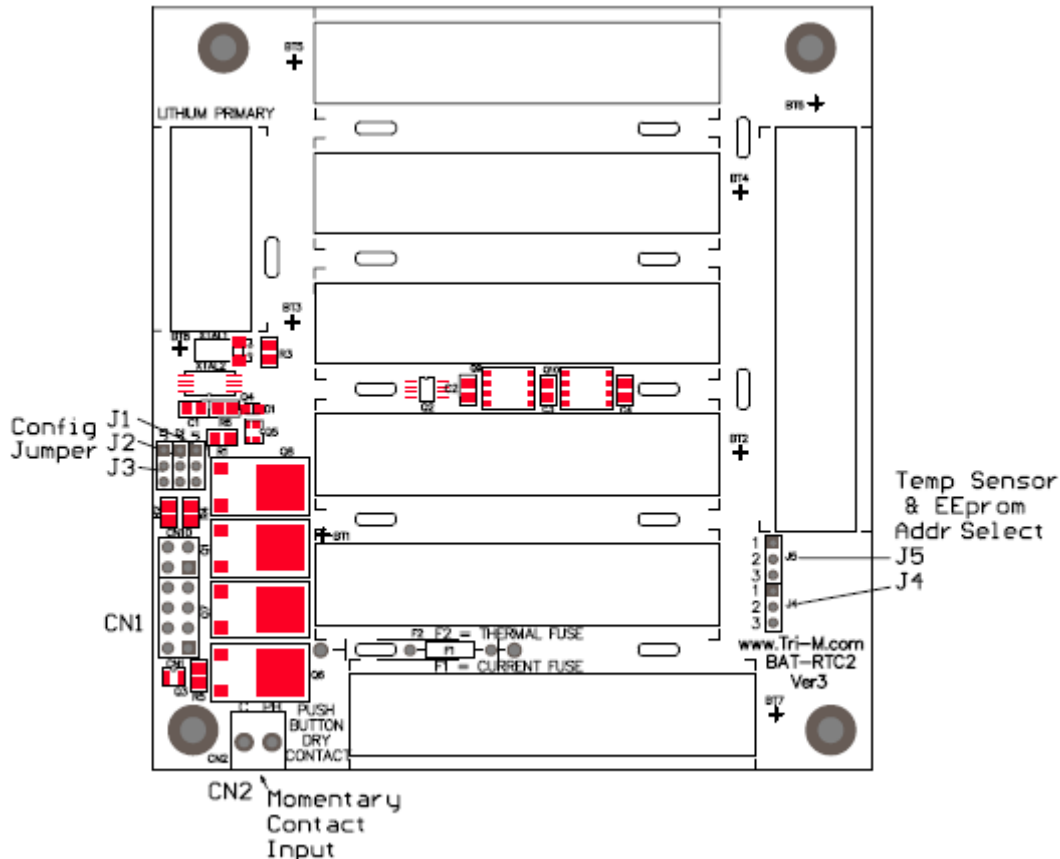
The BAT-NiMh-RTC creates a complete RTC (real time clock) based UPS system when plugged directly into the bottom of an HESC Vehicle Power Supply. The BAT-NiMh-RTC includes seven AA (up to 2500ma-hr each) NiMh batteries for a total of 21 watt-hours of power. Therefore a BAT-NiMh-RTC can supply backup power for up to sixty minutes to a 21 watt load.

The BAT-NiMh2-RTC and a BAT-NiMh2 can be stacked together with an HESC104+ or an HESC-SERD to create a complete RTC (real time clock) based UPS system. The BAT-NiMh2-RTC and BAT-NiMh2 includes seven AA each (up to 2500ma-hr each) NiMh batteries for a total of 42 watt-hours of power. Therefore a BAT-NiMh2-RTC and BAT-NiMh2 combination can supply backup power for up to sixty minutes to a 42 watt load.

The BAT-NiMh(2) series includes Mosfet transistors for preventing deep discharge occurrences during extended power outages. The Mosfet transistors electrically isolate the BAT-NiMh(2) from the HESC whenever the BE output of the HESC is de-asserted (pulled to 5V)

The BAT-NiMh(2) has both a thermal fuse and a current fuse for protection against overcharging, and shorts on the battery output.

A digital I²C temperature sensor provides temperature feedback for charge termination, which can be read by the HESC.



CHAPTER 2: CONFIGURATION AND INSTALLATION

2.1 Installing the BAT-NiMh(2)

The BAT-NiMh-RTC can be mounted directly to the bottom of any HESC product by plugging CN1 into the mating connectors on the bottom of the HESC unit.

The BAT-NiMh2-RTC (when not used with the BAT-NiMh2) mounts directly to the bottom of an HESC104+ and a HESC-SERD product by plugging CN1 and CN10 into the mating connectors on the bottom of the HESC104+ and the HESC-SERD unit.

The BAT-NiMh2, when used with the BAT-NiMh2-RTC, mounts on top of the BAT-NiMh2-RTC and below the HESC104+ or HESC-SERD by plugging directly into CN1 and CN10 of the mating connectors.

2.2 Setting the configuration jumpers, J1 to J3.

Jumpers J1, J2 & J3 set the battery charge and discharge enable lines.

BAT-NiMh(2) model	J1	J2	J3
BAT-NiMh2	2-3	2-3	2-3
BAT-NiMh-RTC	1-2	2-3	1-2
BAT-NiMh2-RTC	1-2	1-2	1-2

2.3 Setting the address select jumpers, J4 to J5.

Jumpers J4 & J5 set the RTC and EEPROM addresses.

BAT-NiMh(2) model	Address Temp	Address EEPROM 1	Address EEPROM 2	J4	J5
BAT-NiMh2	0x96	0xA4	0XA6	1-2	2-3
BAT-NiMh-RTC	0x92	0xA0	0xA2	2-3	2-3
BAT-NiMh2-RTC	0x92	0xA0	0xA2	2-3	2-3