

GENERAL DESCRIPTION OF MODEL SYN-LI-416AH

TECHNICAL NOTE

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1.0 PURPOSE

This document describes the electrical and mechanical interfaces of the battery pack model SYN-LI-416AH and its associated AC charger model SYN-FR-416AH. The battery pack is a product of NAL Research designed and manufactured to work with any of the A3LA-I and A3LA-D series modems. It comprises of a Lithium Ion (LiIon) battery with a capacity ranging from 4A-Hr to 16A-Hr allowing a modem to stay connected continuously with the Iridium network up to 16 hours using the 16A-Hr battery. It also has an internal DC-DC converter boosting DC input voltage of a LiIon battery, which can range from 2.7VDC to 4.2VDC depending on charged level and temperature, to a constant 4.6VDC.

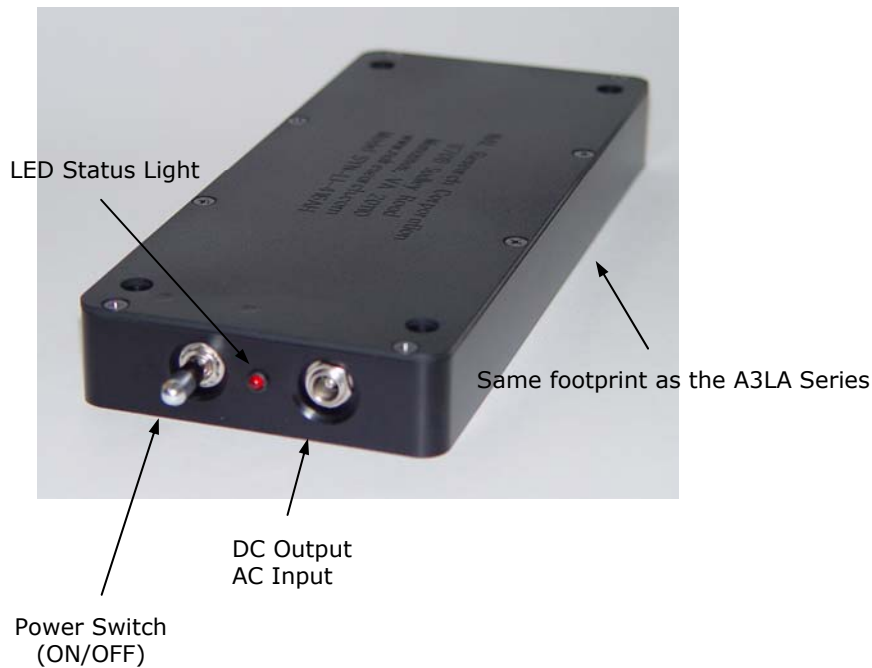


Figure 1. Battery pack model SYN-LI-416AH.

2.0 SPECIFICATIONS

General Specifications

| | |
|------------------------------|---|
| Dimensions: | 7.73" L x 3.25" W x 0.9" D |
| Weight: | ~2.0 pounds with 16 A-Hr batteries |
| Battery Type: | Lithium Ion |
| Battery Capacity: | Available capacity ranging from 4A-Hr to 16A-Hr |
| Charger Type: | AC |
| Operating Temperature Range: | -30°C to +60°C |
| Storage Temperature Range: | -40°C to +85°C |

Power Output Specifications

| | |
|------------------|----------------|
| Output Voltage: | +4.6VDC |
| Maximum Current: | ~3.0A @ 4.6VDC |

Physical Connectors

| | |
|-------------|--|
| Switch: | ON/OFF/CHARGE |
| LEDs: | ON/OFF/CHARGE Status Lights |
| Phono-Jack: | 4.6V DC output and AC input for charging |

3.0 INSTALLATION AND OPERATING INSTRUCTIONS

1. Use the four (x4) screws provided to mount the battery pack to the base of the modem as shown in Figure 2. Make sure the four mounting holes on the modem base are tapped. Self-tapped screws can also be used.
2. Make sure the Power Switch on the battery pack is at the OFF position (red LED Status Light should be OFF and Power Switch is locked at the middle position).
3. Plug the HRC-24-8 DB25 Data Kit (purchase separately) to the modem.
4. Plug the power cable to the battery pack and the DB25 Data Kit as shown in Figure 2. The end with the Mouser connector with locking tab should go onto the DB25 Data Kit and the phono-jack connector should go onto the battery pack.
5. Turn the Power Switch to ON position to operate the modem by pulling the Power Switch out and locking to the left position (with the battery pack's label facing upward). The red LED Status Light should be ON indicating the battery is working properly.

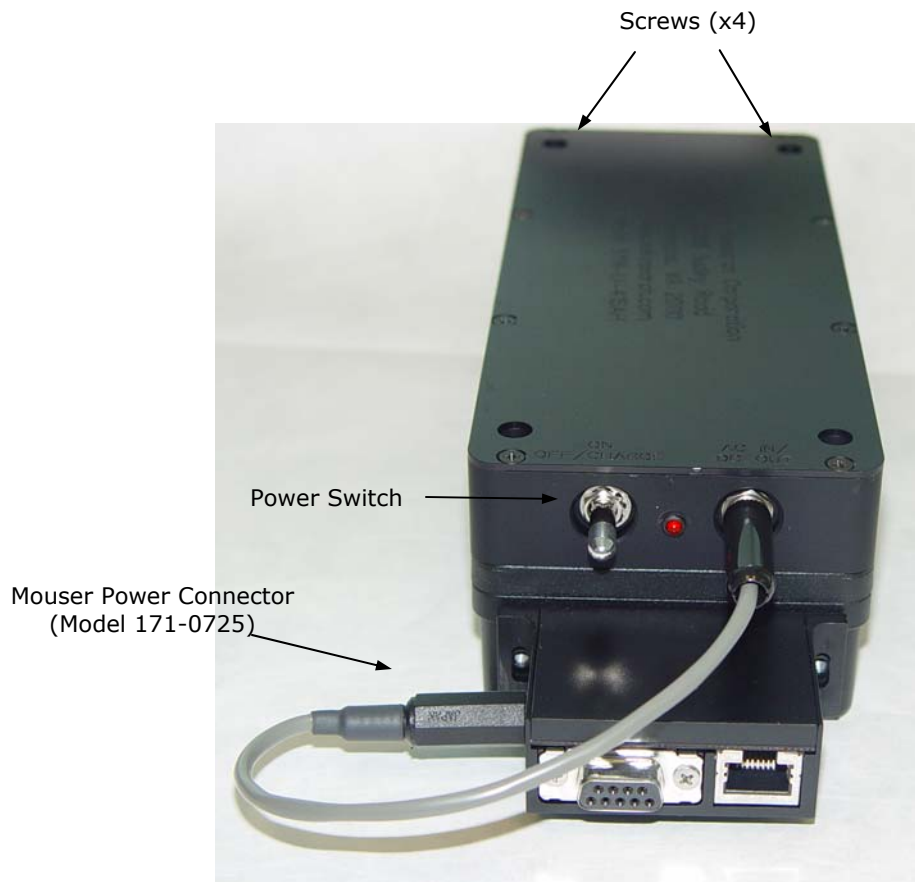


Figure 2. Battery pack mounted to the base of the A3LA-D modem.

4.0 CHARGING INSTRUCTIONS

General Specifications of the AC Charger

Input Voltage: 100–240VAC, 50–60Hz, 1.8A

Output Voltage: 0–6.0VDC, 3A

Charging Instructions

Follow steps below to charge the battery pack:

1. Turn the Power Switch on the battery pack to the OFF position (lock the power switch to the middle position). The red LED Status Light on the battery pack should be OFF.
2. Plug the female phono-jack on the AC charger into the male phono-jack on the battery pack (Figure 3). Then plug the AC charger to the wall outlet.
3. Turn the Power Switch to the CHARGE position (lock the Power Switch to the right position). The AC LED Status Light should start blinking and the internal battery is being charged.
4. The AC LED Status Light on the AC charger should illuminate to indicate the status of the battery:
 - Green Flash: Charging
 - Green Solid: Fully Charged
 - Yellow Solid: Standby
 - Red Flash: Error (RETURN BATTERY AND CHARGER FOR REPAIR)



Figure 3. Battery pack being charged by the AC adapter.