Handspring, Inc.

Springboard Module
Mechanical Design

handspring

Handspring's Intent

Handspring wants to make it easy for developers to create Springboard™ modules

- Developers can reduce development costs and time to market by leveraging Handspring's existing module designs and tooling
- Mechanical files for existing Springboard module components can be downloaded from Handspring's WWW site
- Mechanical components for existing modules can be purchased in sample and production quantities

Existing Springboard™ Module Plastics

Several different types of Springboard modules have already been created and are available to developers

Modules available as of June 1, 2000 include:

- Standard Module
- Battery Modules (four versions)

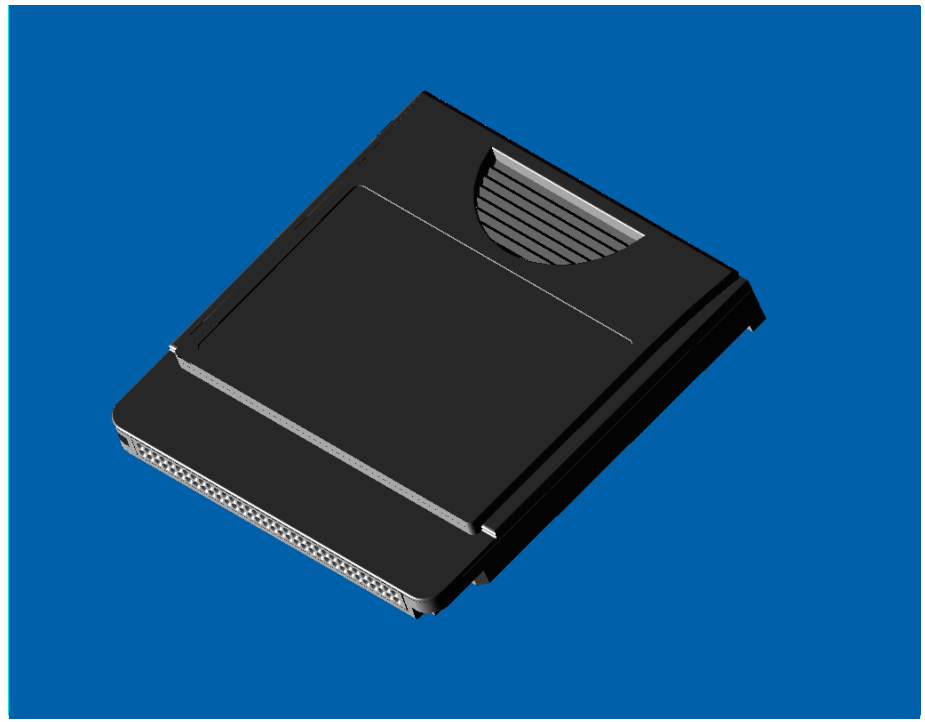
The mechanical files for these modules are available at:

http://www.handspring.com/developers/dev_mechanical.jhtml

Standard Module

- 2 simple case halves
- Thin profile
- With Standard Module inserted, Visor still fits in all existing cases
- Used for content modules or modules which don't have tall components
- Two different configurations for printed circuit board (PCB)

- ATL P/N
  - Case Top: 31-0008-00
  - Case Bottom: 31-0009-00

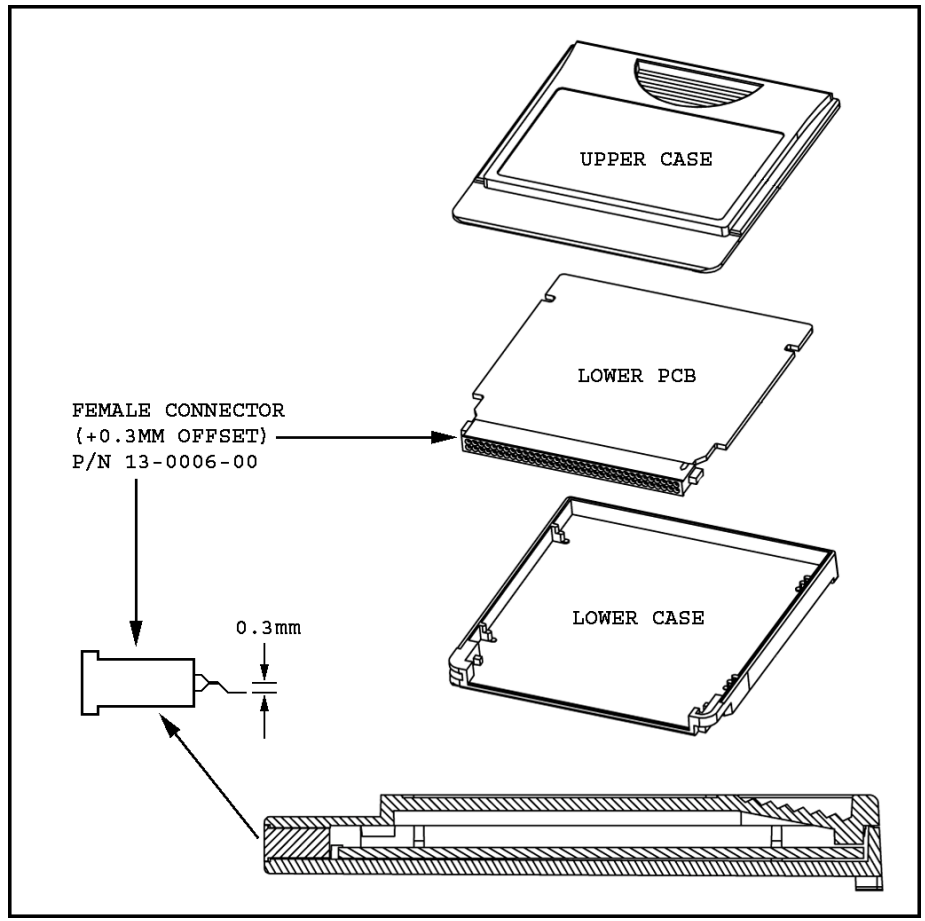


Standard Module

Configuration 1

- Components are placed on one side of the PCB, allowing taller components than Configuration 2

- Visit the URL below and download “StandardModule.exe” for additional information about this configuration

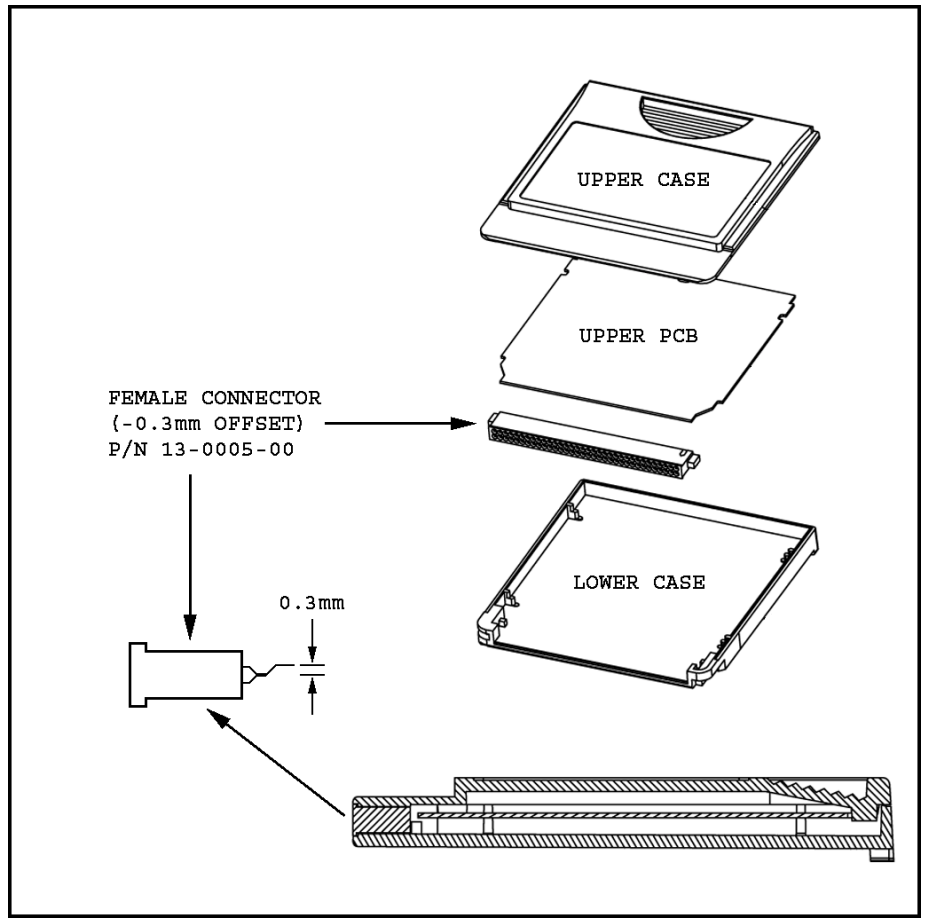


http://www.handspring.com/developers/dev_mechanical.jhtml

Standard Module

Configuration 2

- Components can be mounted on both sides of the PCB, but this limits the maximum component height
- Visit the URL below and download “StandardModule.exe” for additional information about this configuration



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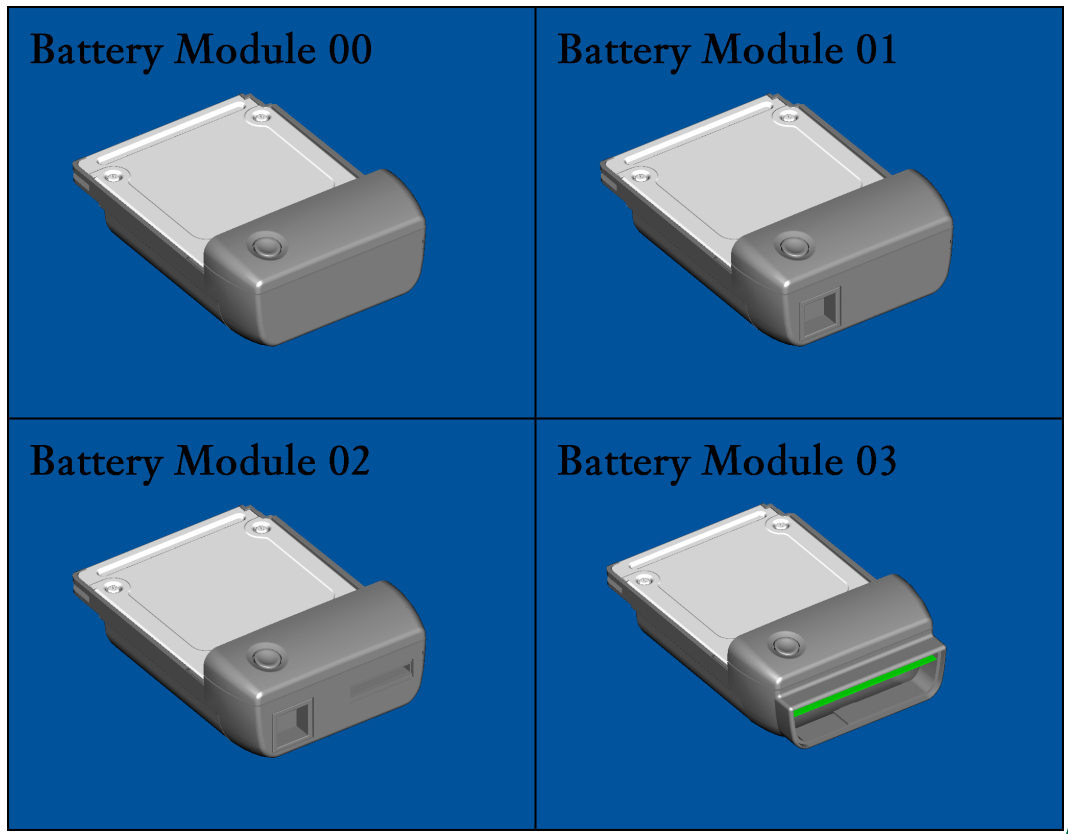
Battery Modules

The plastics created for the Handspring Modem were expanded into a line of Battery Module plastics to provide several alternatives for developers

- BattMod00 (no holes)
- BattMod01 (RJ-11)
- BattMod02 (RJ-11/GSM)
- BattMod03 (open face)



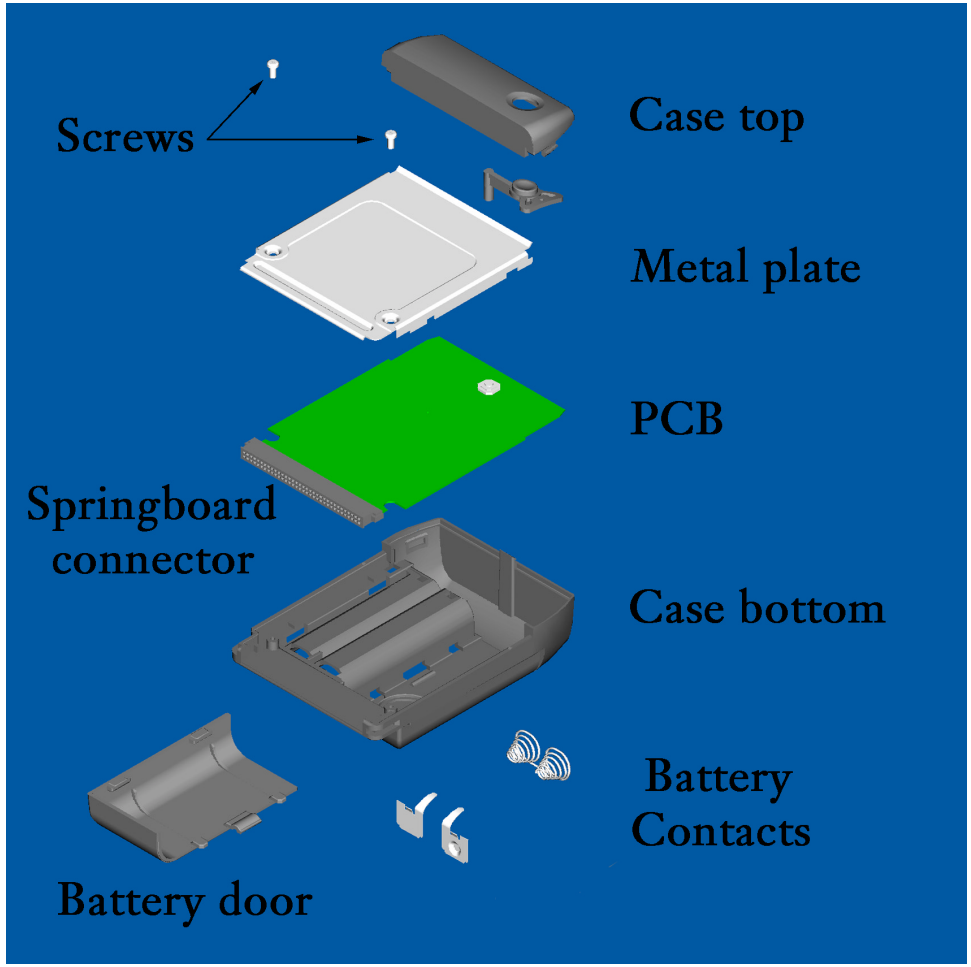
Battery Modules

Module Components

- Case top
- Metal plate
- Case bottom
- Battery door
- Battery contacts
- Screws

Internal Components

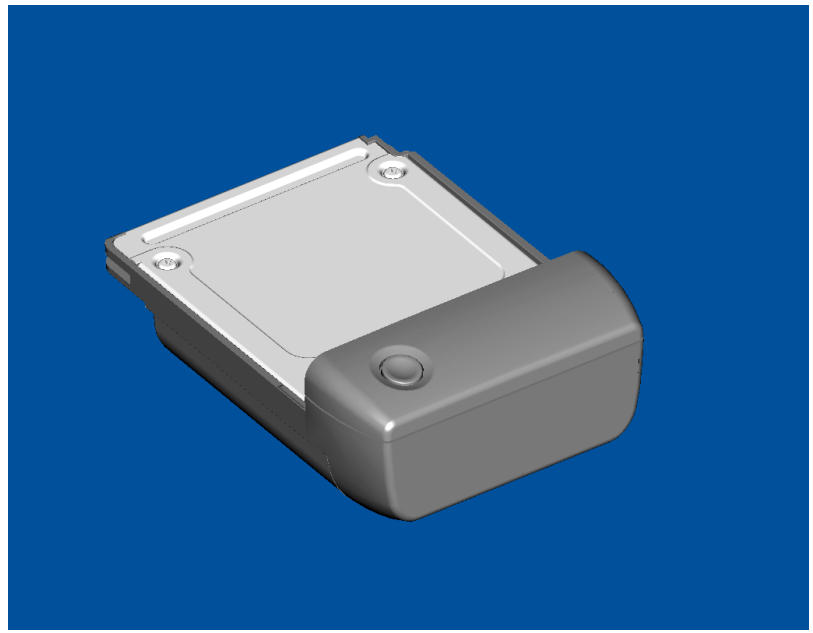
- Springboard connector
- Printed circuit board



BattMod00 (no holes)

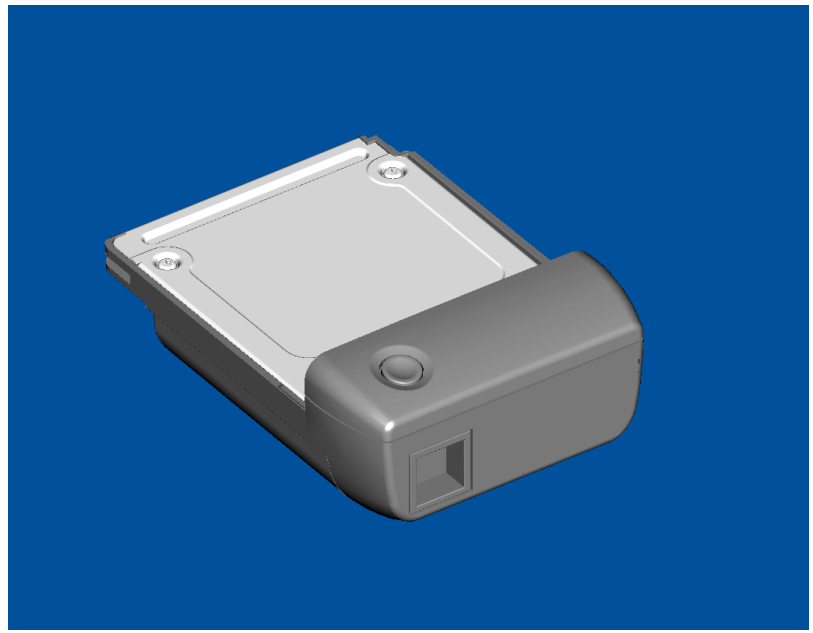
- Accepts 2 AAA batteries
- Useful for modules which need additional component space, but don't have additional connectors (e.g. RF modules)
- Compatible with a variety of Battery Module Case Tops

- ATL P/N: 500752



BattMod01 (RJ-11)

- Accepts 2 AAA batteries
- Useful for modules which utilize an RJ-11 jack
- Compatible with a variety of Battery Module Case Tops



- ATL P/N: 500753

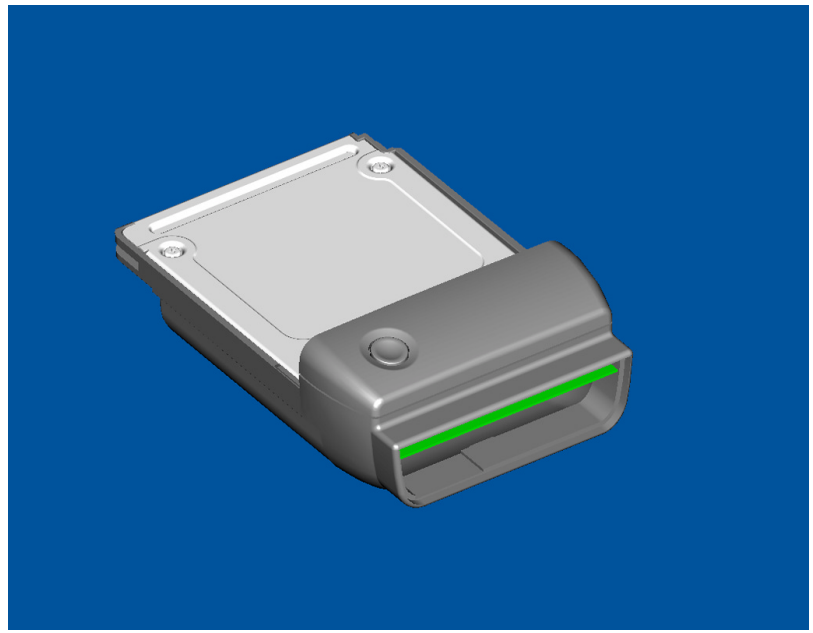
BattMod02 (RJ-11 & GSM)

- Accepts 2 AAA batteries
- Useful for modules which utilize RJ-11 and GSM jacks
- Compatible with a variety of Battery Module Case Tops

- ATL P/N: 500754

BattMod03 (open face)

- Accepts 2 AAA batteries
- Modifiable bezel can be used with a variety of connectors.
- Compatible with a variety of Battery Module Case Tops



- ATL P/N: 500755

Module Tops

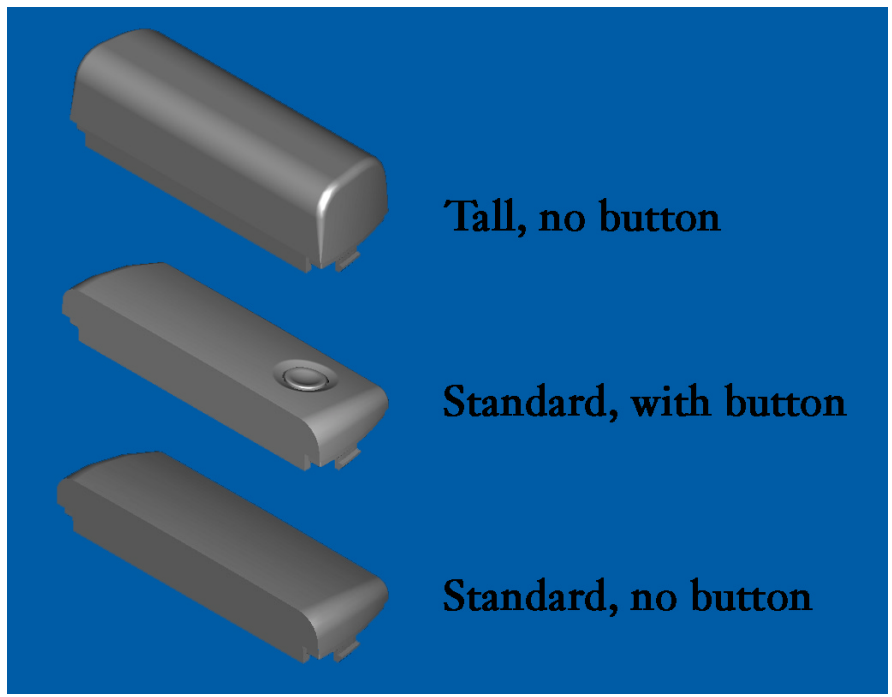
- Based on developers' needs, 3 variations of the Battery Module Case Top are currently available
- Any one of these Battery Module Case Tops can be used with the current variations of the Battery Module

3 types of Case Tops:

- Tall, no button
- Standard, with button
- Standard, no button

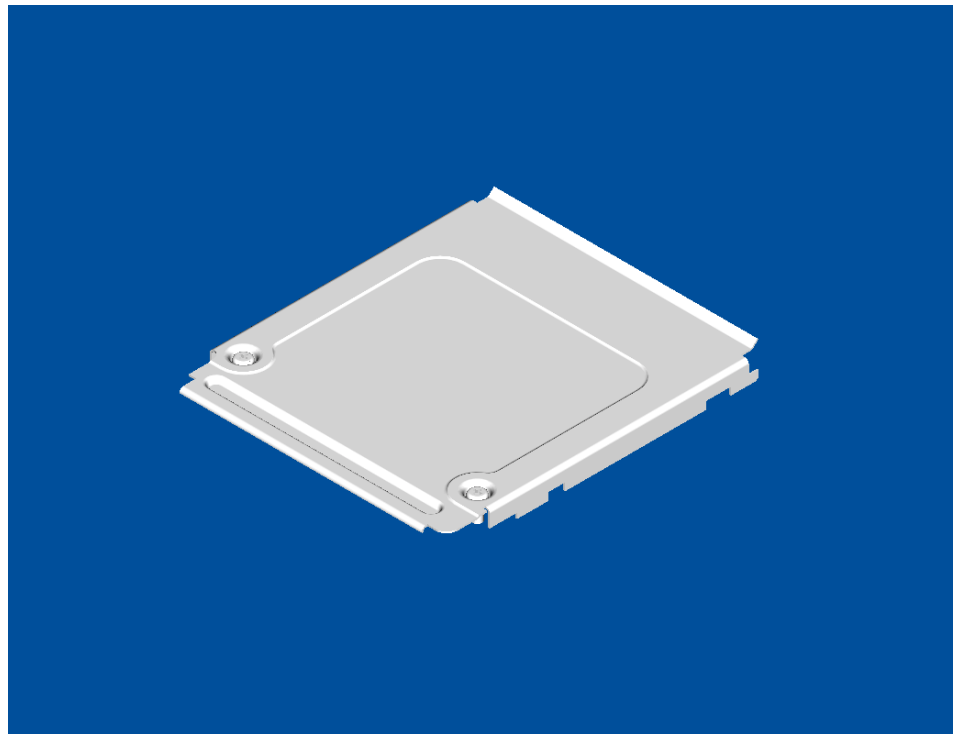
Can be used with:

- Battery Modules



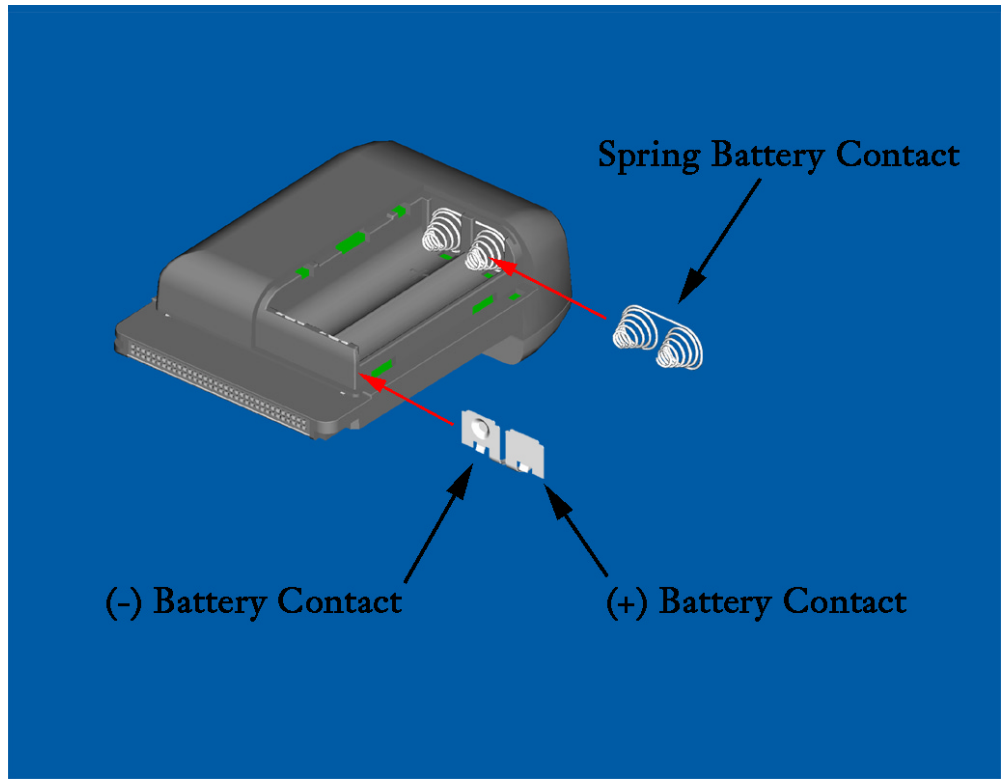
Metal Plate & Screws

- The metal plate is designed to be used with the variations of the Battery Module plastics
- The metal plate has an area suitable for a product label
- It is held in place with two screws



Battery Contacts

- One spring contact
- Two metal tab contacts
- Metal tabs contact PCB when Battery Module is assembled



Part Number Summary

Standard Module

- Top Half: 31-0008-00
- Bottom Half: 31-0009-00

Battery Modules Kits

- BattMod00: 500752
- BattMod01: 500753
- BattMod02: 500754
- BattMod03: 500755

Connectors

- +0.3mm offset: 13-0006-00
- -0.3mm offset: 13-0005-00
- 0.0mm offset: 500767
- +0.6mm offset: 500716

Custom Modules

Developers are welcome to create their own completely custom modules

- Developer creates a module to meet their exact needs
- Developer has complete control over tooling, plastics, etc.
- Significant design time may be required by developer
- Substantial cost to develop custom module

Semi-custom Modules

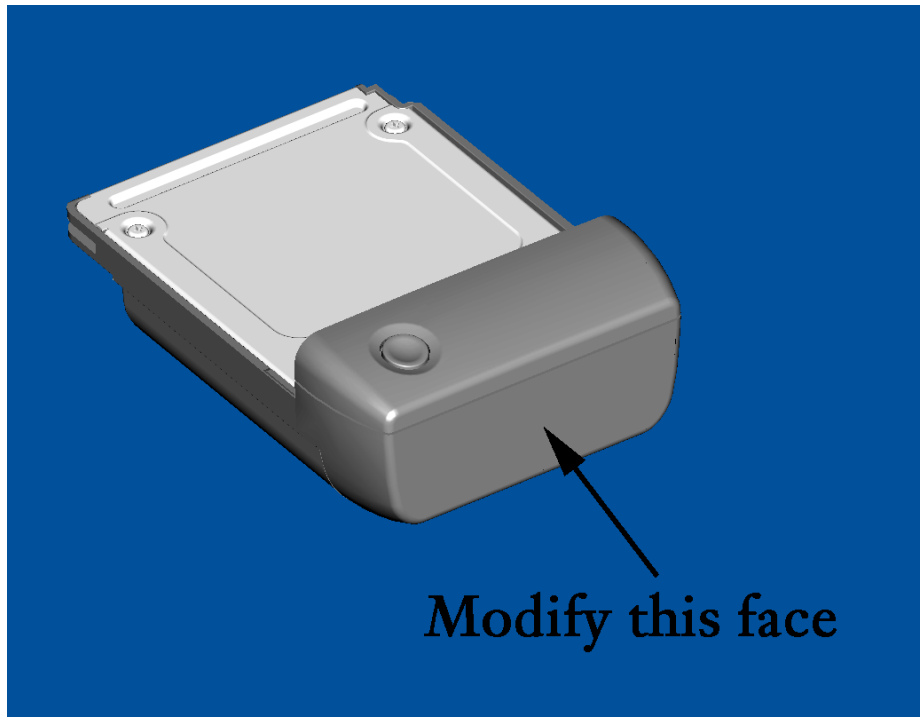
Developers may create their own “semi-custom” module by leveraging existing Handspring module designs

- Potentially reduces mechanical design time
- Lower cost by leveraging existing tooling
- Developer can leverage relationships with established vendors

Semi-custom Module Design

Example:

- The face of a Battery Module can be modified fairly easily
- Development costs would be significantly lower than a completely custom module



Semi-custom Module Design

If the developer utilizes any element of Handspring's existing module plastic tooling:

- A Handspring-approved design house must perform all mechanical design
- Developer is responsible for costs including (but not limited to):
  - Design fees for new tool elements ($2000 and up)
  - Fabrication of new tool elements ($2500 and up)
  - Setup charge (approximately $800)
- Design house will receive first article parts, to be approved by developer
- After approving first article, developer buys plastics directly from ATL
- 4-8 week lead time for production plastics
- The plastics may be made available to other developers
- Plastics must not be engraved, embossed, etc. (so that they can be used by other developers)

Vendors & Other Resources

For additional information about vendors and other resources to support the design of your Springboard module, please visit the "Springboard Development Resources" section of Handspring's WWW site

http://www.handspring.com/developers/sboardpdesign.jhtml

Summary

- Developers can use existing modules
- Developers can customize elements of existing modules
- Developers can create completely custom modules

www.handspring.com/developers