

# ProtoBox-1593Q Kit (PCB+Box)



*A Hammond 1593Q handheld plastic enclosure with battery compartment, packaged with a matching BPS ProtoBoard 2-hole per strip PCB.*





**BusBoard Prototype Systems** - Built for designers

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BPS-MAR-(KIT-1593Q)-001 Rev 4.00

## Hammond Battery Holders (Sold Separately by Hammond)

Hammond Part #	Battery Holder Kit	Battery Holder Kit Includes
<p><b>BH1AAW</b></p> <p>Single AA Battery</p>		<ul style="list-style-type: none"> <li>• Battery holder for one AA battery</li> <li>• Wire leads</li> <li>• Double sided tape backing</li> <li>• Battery NOT included</li> </ul>
<p><b>BH2AAW</b></p> <p>Double AA Batteries</p>		<ul style="list-style-type: none"> <li>• Battery holder for two AA batteries</li> <li>• Wire leads</li> <li>• Foam with adhesive tape on one side</li> <li>• Divider for 1599 series - NOT included</li> <li>• Battery NOT included</li> </ul>
<p><b>BH1AAAW</b></p> <p>Single AAA Battery</p>		<ul style="list-style-type: none"> <li>• Battery holder for one AAA battery</li> <li>• Wire leads</li> <li>• Double sided tape backing</li> <li>• Battery NOT included</li> </ul>
<p><b>BH2AAAW</b></p> <p>Double AAA Batteries</p>		<ul style="list-style-type: none"> <li>• Battery holder for two AAA batteries</li> <li>• Wire leads</li> <li>• Double sided tape backing</li> <li>• Batteries NOT included</li> </ul>
<p><b>BH3AAAW</b></p> <p>Triple AAA Batteries</p>		<ul style="list-style-type: none"> <li>• Battery holder for three AAA batteries</li> <li>• Wire leads</li> <li>• Double sided tape backing (two strips)</li> <li>• Batteries NOT included</li> </ul>
<p><b>BH4AAAW</b></p> <p>Quad AAA Batteries</p>		<ul style="list-style-type: none"> <li>• Battery holder for four AAA batteries</li> <li>• Wire leads</li> <li>• Foam with adhesive tape on one side</li> <li>• Divider for 1599 series - NOT included</li> <li>• Batteries NOT included</li> </ul>
<p><b>BS61</b></p> <p>Single 9 Volt Battery</p>		<ul style="list-style-type: none"> <li>• Battery holder for one 9V battery</li> <li>• Wire leads</li> <li>• Foam with adhesive tape on one side</li> <li>• Dividers for 1599 series - NOT included</li> <li>• Battery NOT included</li> </ul>

*A prototyping board designed for the Hammond 1593Q handheld enclosure with battery compartment.*

## Features

*ProtoBoard* saves time! The PCB is designed specifically for the Hammond 1593Q box. No cutting is required. The mounting holes are present in the right spots.

The convenient 2-hole ProtoBoard pattern provides an easy way to connect parts while maximizing usable board area.

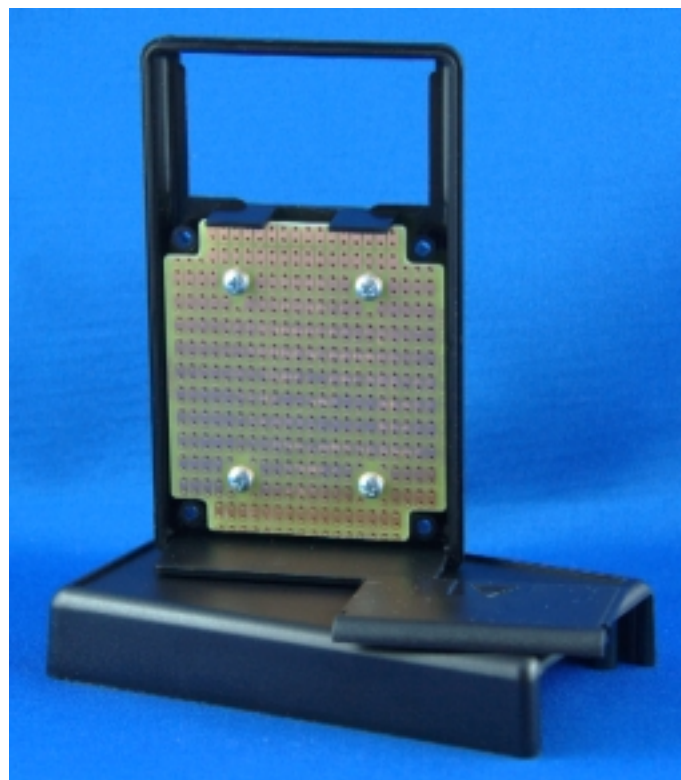
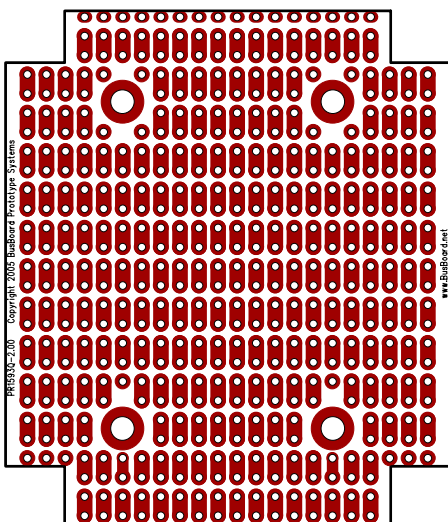
**Lead free** etched copper PCB with an anti-tarnish coating for easy soldering.

## PCB Specifications

- High-quality FR4 glass epoxy board.
- Four 0.125" (1/8") mounting holes.
- Four 4-40 PCB mounting screws provided.
- Single sided, 1oz/ft<sup>2</sup> copper PCB
- 0.042" holes drilled on 0.1" centers
- PCB Size 2.4 x 2.7 in. (62 x 69mm)

**Order Part# PR1593Q (for PCB only)**

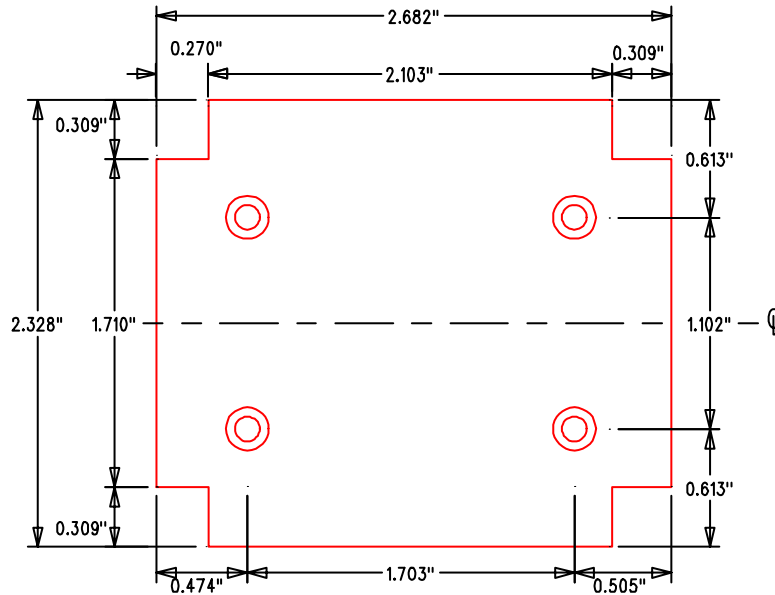
## Board Layout (actual size)



**PR1593Q Prototyping Board shown with the Hammond 1593QBK box (box not included).**

**To purchase the PCB + Box together, order BPS part# KIT-1593Q-BK**

## PCB Mechanical Dimensions



1. PCB is symmetrical along the centerline.
  2. All solder pads are located on a 0.100" grid.
  3. The mounting holes are NOT located on the 0.100" grid.
- PCB Design Copyright 2005 BusBoard Prototype Systems Ltd.

## Hammond 1593Q Hand Held Case Features

Note: The box is **NOT** included with BPS part# PR1593Q.

The box is included with part# KIT-1593Q-BK.

Hand-held electronic instrument enclosure.

Built-in PCB standoffs.

1 removable end panel (included).

Battery compartment for 1xAA, 2xAA, 1 to 4 AAA, or 1x9V battery (battery connector or holder not included). Long life "three snap" battery door.

Recessed top for membrane overlay or keypad.

Lap joint construction provides protection against dust.

Black, gray, or blue general purpose ABS plastic.

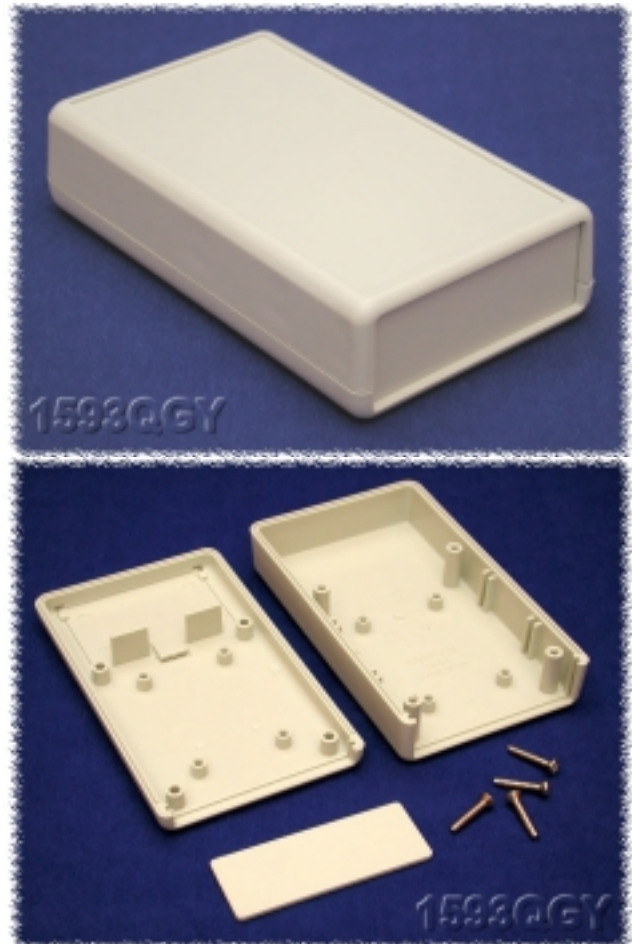
Secured with self tapping screws (included).

Box Size 4.4 x 2.6 x 1.1 inches (122 x 66 x 28 mm)

To order the box by itself order Hammond part# 1593QBK (black), 1593QGY (gray) or 1593QTBU (translucent blue)

See <http://www.hammondmfg.com/dwg8.htm>  
<http://www.hammondmfg.com/dwg8TBU.htm>

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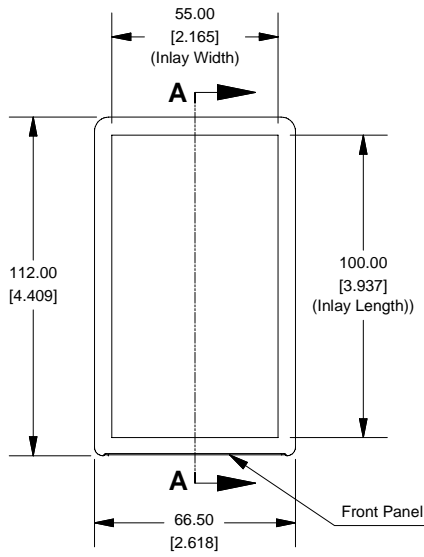


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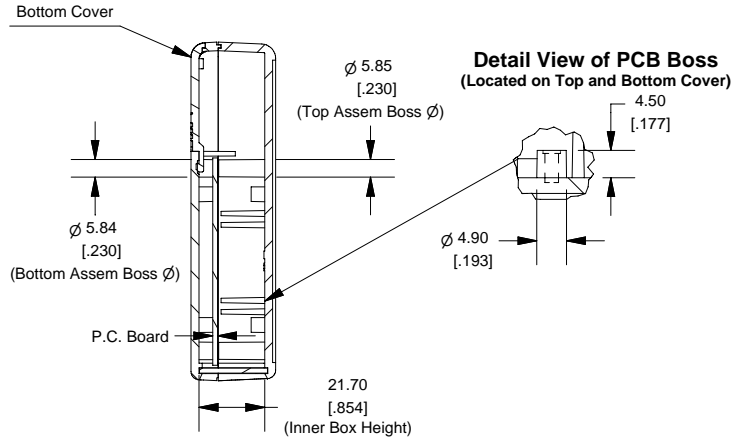
[www.BusBoard.com](http://www.BusBoard.com) sales@busboard.com

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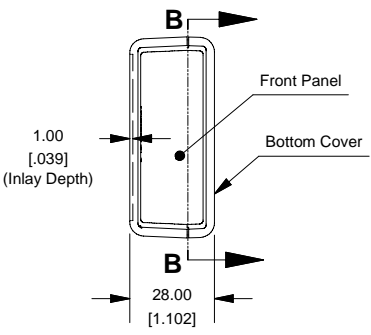
**Top View of Assembly**



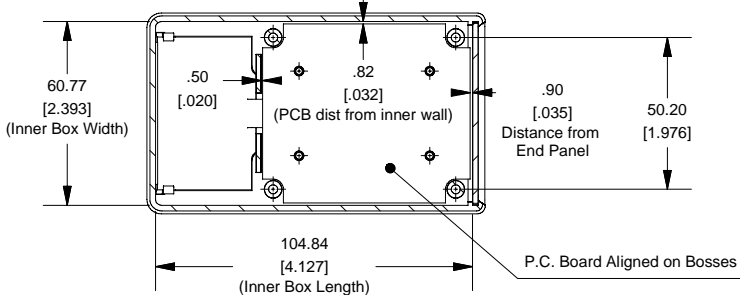
**SECTION A-A  
(Side View Inside Assembly)**



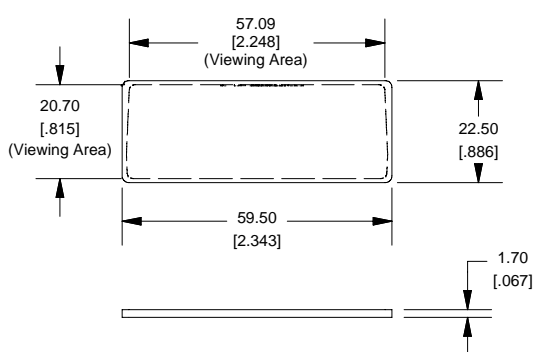
**End View of Assembly**



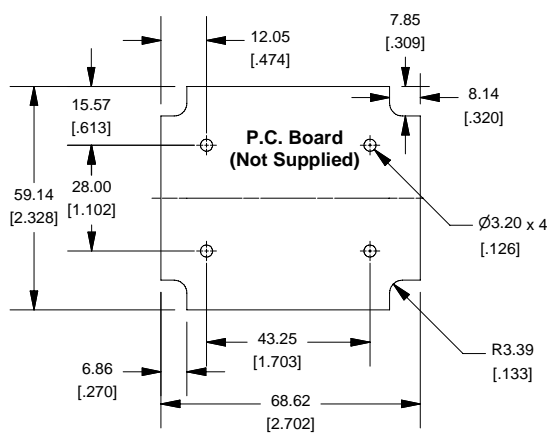
**SECTION B-B  
(Inside of Bottom Cover)**



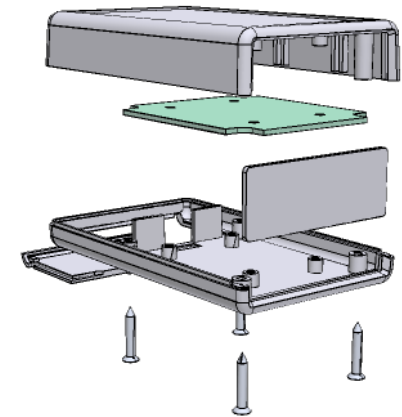
**Front/Rear Panel  
(Dashed Line Indicates Viewing Area)**



**Maximum P.C. Board Size**



**Hand Held Instrument (1593Q)**



Enclosures can be Factory Modified ( Milling, Drilling, Printing etc. )  
Solid models of this enclosure available in STEP or IGES.  
Contact Factory [mjm@hammondmfg.com](mailto:mjm@hammondmfg.com)

NOTE	
Enclosure molded from GP ABS (UL94-HB) plastic.	
Purchased assembly includes top and bottom cover, front panel (plastic), battery door and 4 cover screws.	

PART NUMBERS	
<b>1593Q Enclosure</b>	
Black Enclosure	1593QBK
Grey Enclosure	1593QGY
<b>ACCESSORIES</b>	
Cover Screws (Pkg 100)	1593QS100 (Silver)
#4 x 3/4" self-tapping oval head (19.1mm)	1593QS100BK (Black)
P.C. Board Screws	1593ATS50 (Pkg 50)
#4 x 1/4" self-tapping (6.4mm)	1593ATS100 (Pkg 100)
Belt or Pocket Clip	1599CLIP (Black)
	1599CLIPGY (Grey)
Infrared Panels (Pkg 10)	1593DIR10

**HAMMOND  
MANUFACTURING™**

**1593Q**

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