

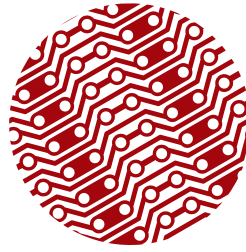
**2019  
WINTER  
PRODUCT  
CATALOG**

BPS was founded to create prototyping boards that make the designer's job easier. Some useful PCB patterns simply weren't available at the time, or they had an unnecessarily high cost. BPS strives to deliver the prototyping products our customers need to build great things.



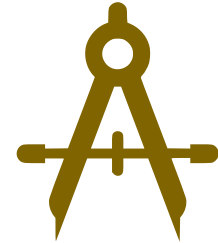
### Great Value, High Quality

BPS delivers high-quality breadboards and PCBs at a reasonable price. You get a great board everytime.



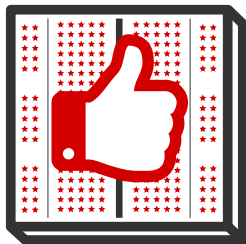
### Unique Patterns

We have many unique patterns not available elsewhere that make many prototyping assembly jobs easier and we introduce new patterns in response to customer demands.



### Precision Focused

BPS boards are precision drilled and precision etched. No more problems with off-center drilling or poorly etched tracks.



### Superior BreadBoards

BPS BreadBoards have precision long-life contacts that work well with thin wires and with big square-post headers.



### Protective Coatings

Our copper PCBs have an anti-tarnish protective coating which provides easy solderability and a long shelf-life.



### Complete Documentation

Products comes with a datasheet that includes product specifications, drawings and dimensions.



### RoHS Compliant

All of our products are lead-free. We offer a wide range of RoHS compliant products ensuring your safety while helping keep the environment free of toxins.



### Flame Retardant

All boards use high-quality FR4 laminate with UL94-VO flame retardant rating.

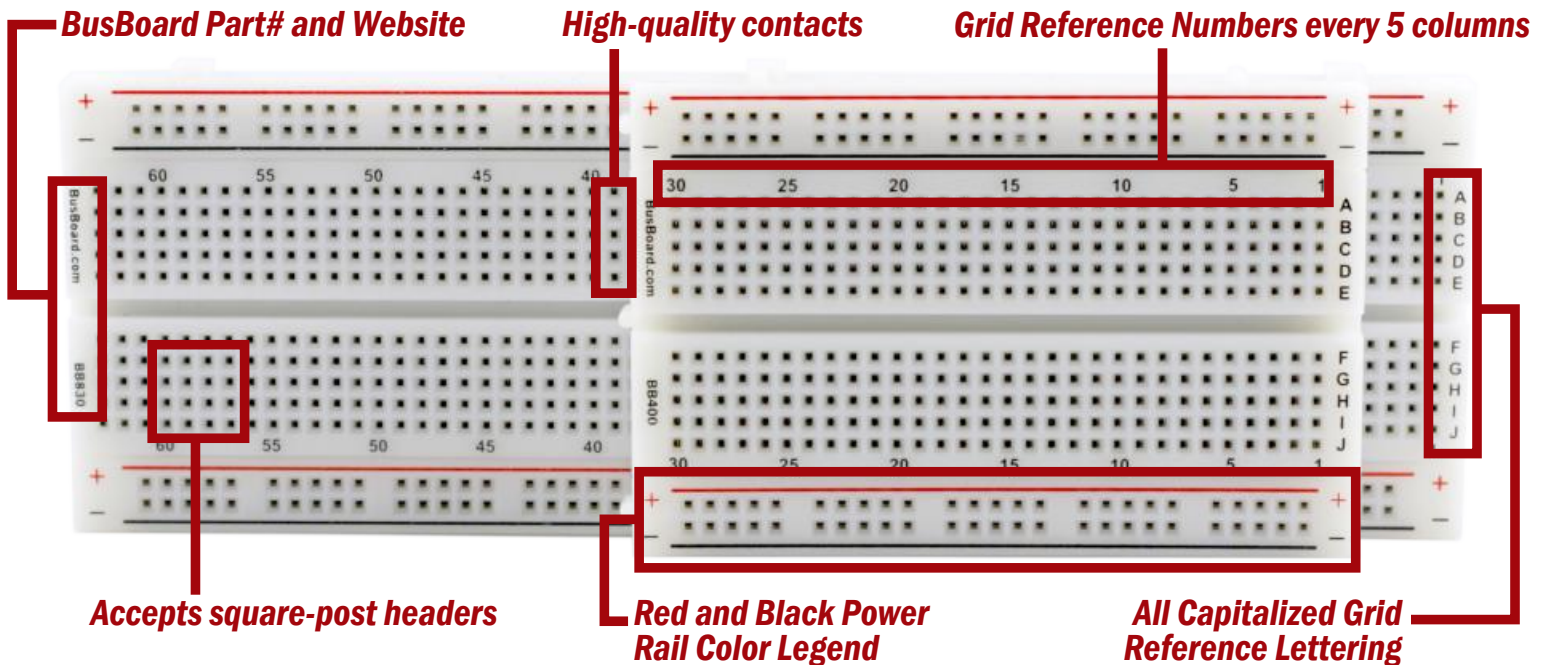


### Online/Retail Sales Friendly

Products are ready for store front and online sales. We provide all the information and graphics needed for promotion. We link to your sales pages to help you sell.

## "High quality is now easy to see"

Many breadboards look the same on the outside. The BusBoard name is now marked on our BB830 and BB400 breadboards to make it easy to identify our high quality breadboards. BPS breadboards have been chosen by leading companies and designers because of their superior performance and long-lasting electrical contact quality.



- The BB830 and BB400 part names and the BusBoard name are now silkscreened on. These names are trademarked so that they are used only on genuine BPS BreadBoards.

- The power rail colors are now the standard red and black for positive and negative.

- Square post connectors can be inserted and removed reliably (unlike low-grade breadboards).

- The phosphor bronze contacts are specially designed for maximum springiness, allowing both thin 26 AWG wire and large square post headers to be reliably used.

- The contacts are machine tested for 50,000 insertions to confirm manufacturing quality (human insertions may vary).

- Clear and easy to read hole legends.

The BusBoard name is not marked on other BPS BreadBoards yet. Please buy from our authorized distributors listed on the BusBoard.com product web pages to ensure you get BPS quality breadboards. All genuine BPS BreadBoards contain the same high-quality electrical contacts.

## Know you are buying genuine BusBoard BreadBoards

**Plug-in BreadBoards- Build & Test...**



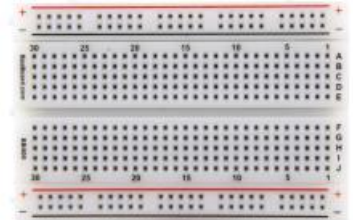
**BB170™**

170-point breadboard  
without power rails  
BB170™ - White  
BB170C - Various Colors



**BB300™**

300-point breadboard  
without power rails  
BB300™ - White



**BB400™**

400-point breadboard with  
four power rails  
BB400™ - White  
BB400T™ - Transparent

**NEW**



**BB100R™**

100-point breadboard power rail  
BB100R™ - White

**NEW**



**BB630™**

630-point breadboard with  
no power rails  
BB630™ - White



**BB830™**

830-point breadboard with  
four power rails  
BB830™ - White  
BB830T™ - Transparent

**NEW**



**BB1460™**

1460-point breadboard with  
four power rails  
BB1460™ - White



**BB1660™**

1660-point breadboard with  
eight power rails  
BB1660™ - White  
BB1660T™ - Transparent

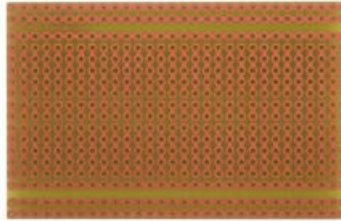


**Solderable PCB BreadBoards- ...Solder & Keep**



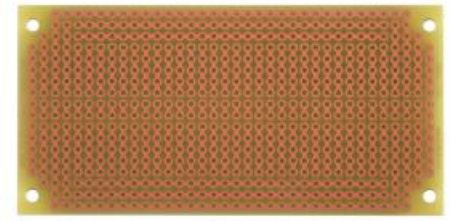
**SB300™**

360-point solderable breadboard with two centerline power rails. Same pattern as BB300.



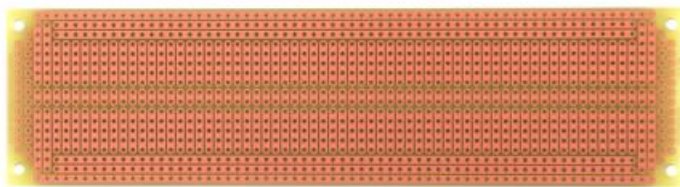
**SB400™**

540-point solderable breadboard with four power rails plus two bonus power rails and centerline pads. Same pattern as BB400.



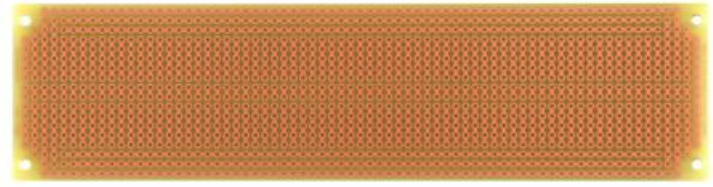
**SB404™**

628-point solderable breadboard with four power rails plus two bonus power rails, pads, mounting holes. Same pattern as BB400.



**BR1™**

1226-point solderable breadboard with four power rails plus two bonus power rails, pads, mounting holes. Same pattern as BB830.

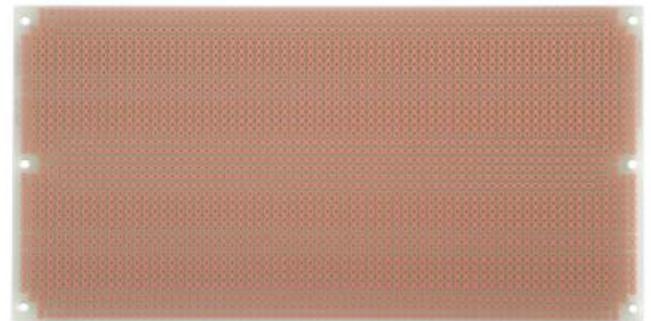


**SB830™**

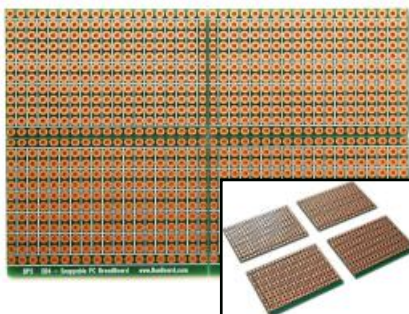
1258-point solderable breadboard with four power rails plus two bonus power rails, pads, mounting holes. Same pattern as BB830.

**SB1660™**

2528-point solderable breadboard with eight power rails plus four bonus power rails, pads, mounting holes. Same pattern as BB1660.

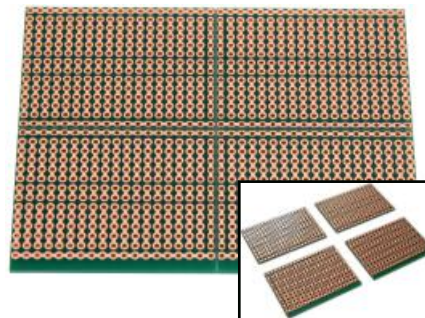


**Snappable Solderable PCB BreadBoards**



**SB4™**

Snaps into 4 smaller boards - two with 4-hole strips and two with 2-hole strips, each with power rails. Double-sided, plated holes, top side silkscreen.



**SB5™**

Snaps into 4 smaller boards with a 5-hole strip breadboard pattern, each with power rails. Double-sided, plated holes, top side silkscreen.

**BreadBoard Kits**



**KIT-BB400+ZW**

BB400 BreadBoard with 10cm Male-to-Male ZipWires™.



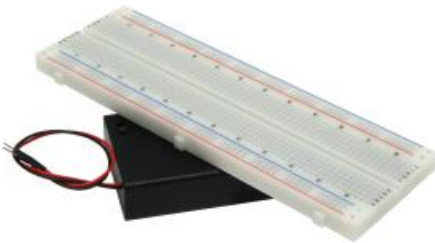
**KIT-BB830+ZW**

BB830 BreadBoard with 10cm Male-to-Male ZipWires™.



**KIT-BB400+PW3**

BB400 BreadBoard with 3AA Battery Box with switch.



**KIT-BB830+PW3**

BB830 BreadBoard with 3AA Battery Box with switch.



**BB400-KIT**

A BB400 BreadBoard, 10cm Male-to-Male ZipWires, 3AA Battery Box with switch, along with an LED and resistor.



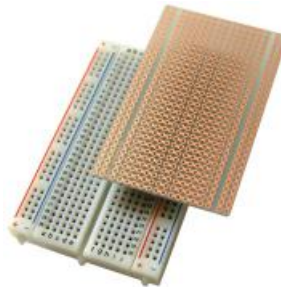
**BB830-KIT**

A BB830 BreadBoard, 10cm Male-to-Male ZipWires, 3AA Battery Box with switch, along with an LED and resistor.



**KIT-BB300+SB300**

BB300 BreadBoard with matching Solderable PCB BreadBoard.



**KIT-BB400+SB400**

BB400 BreadBoard with matching Solderable PCB BreadBoard.



**KIT-BB400+SB404**

BB400 BreadBoard with matching Solderable PCB BreadBoard with mounting holes.



**KIT-BB830+SB830**

BB830 BreadBoard with matching Solderable PCB BreadBoard with mounting holes.

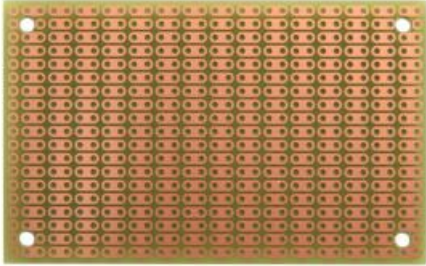
**KIT-BB1660+SB1660**  
BB1660 BreadBoard with matching Solderable PCB BreadBoard with mounting holes.





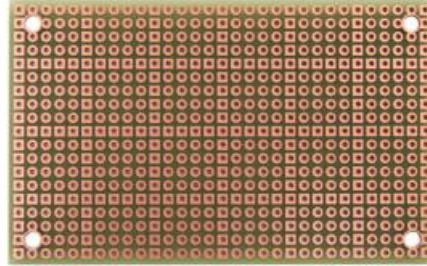


# Thru-hole ProtoBoards



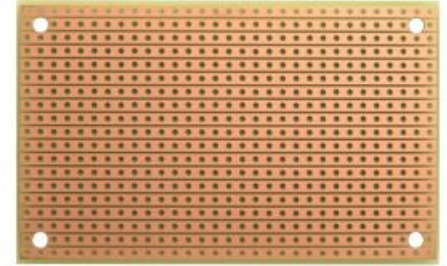
## ProtoBoard

Convenient 2-hole ProtoBoard pattern provides an easy way to connect parts while maximizing useable area.



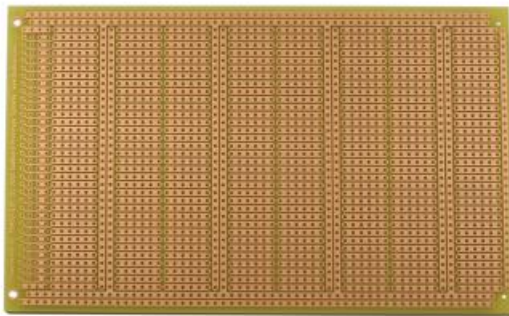
## PadBoard

Pad-per-hole with a square pad every 5th hole for easy alignment. Double-sided, plated holes.



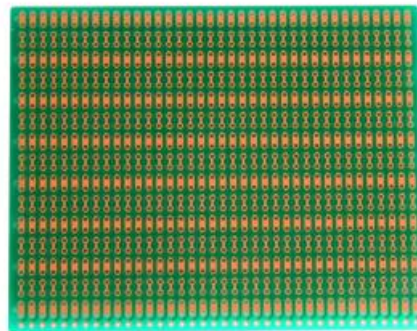
## StripBoard

Standard stripboard pattern running the length of the board.



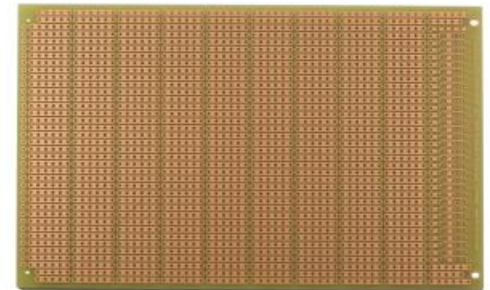
## PowerBoard

6 hole strips with interleaved power and ground rail tracks.



## BusBoard™

Zig-zag pattern to connect DIP IC's and DIL headers pin-to-pin.



## ProtoBoard - 6 hole

Convenient 6-hole ProtoBoard pattern provides an easy way to connect parts to IC's.

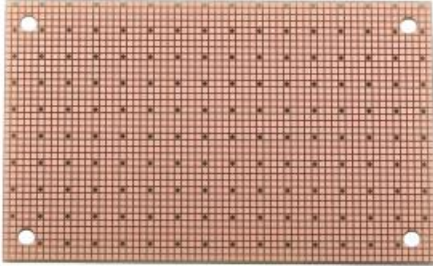


### Overview of Sizes (to scale - not actual size)





## Surface Mount ProtoBoards

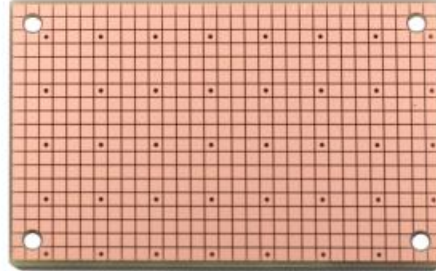


### SMTpads - 50x50mil

Square pads on 0.050" centers.  
Double-sided with unplated holes.  
Ground plane or pads on back.

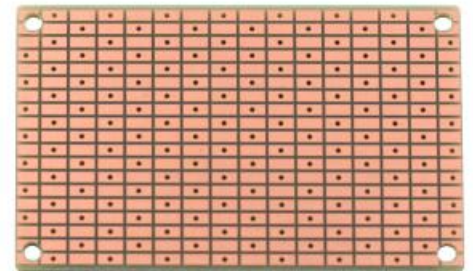


DOUBLE  
SIDED  
1/32 THIN



### SMTpads - 100x100mil

Square pads on 0.100" centers.  
Double-sided with unplated holes.  
Ground plane on back.



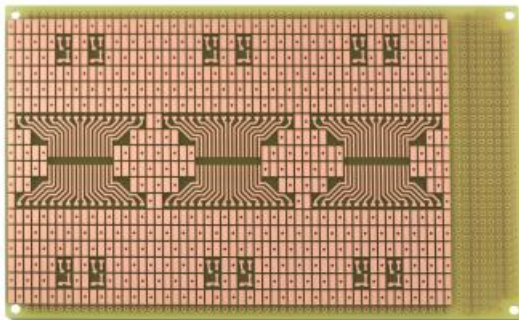
### SMTpads - 200x100mil

Rectangular 0.200 x 0.100" pads.  
Double-sided with unplated holes.  
Ground plane on back.



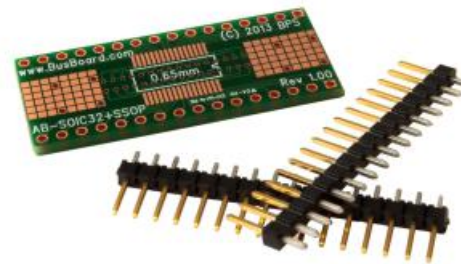
PLATED  
THRU-HOLES

1/32 THIN



### SMTboard

Prototyping circuit board for 0805, 1206,  
SOIC, SOT and other SMT parts. Three  
SOIC-32 footprints. Ground plane on back.



### AB-SOIC32+SSOP

Adapter Board for SOIC and SSOP ICs,  
up to 32 pins, plated holes.  
Bonus SMT pads for discrete parts.  
1.6 x 0.7"



## Adhesive Standoffs

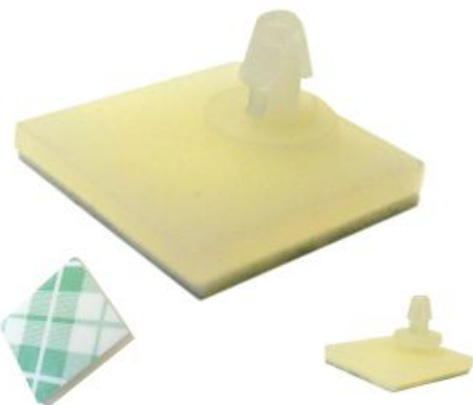
Low profile adhesive standoffs with a 0.120" or 0.180" height for 0.125" diameter PCB holes. Offset, square (0.6 x 0.6") base allows use when holes are close to PCB edge. 3M adhesive tape backing for mounting.

### 0.120" Height

- SA120x8 - 8 pack
- SA120x24 - 24 pack
- SA120x100 - 100 pack
- SA120x500 - 500 pack
- SA120x1000 - 1,000 pack

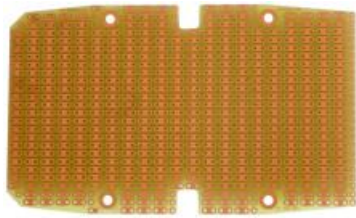
### 0.180" Height

- SA180x8 - 8 pack
- SA180x24 - 24 pack
- SA180x100 - 100 pack
- SA180x500 - 500 pack
- SA180x1000 - 1,000 pack

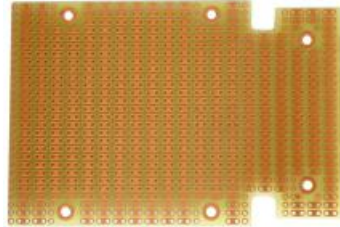




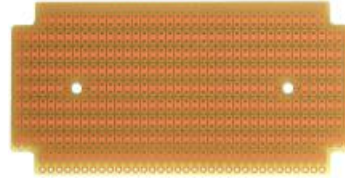
**Thru-hole ProtoBoards for Hammond Enclosures**



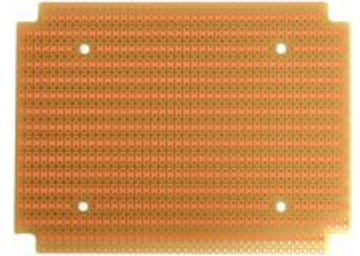
**PR1553B**



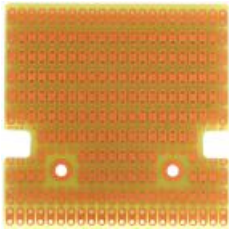
**PR1553DBAT**



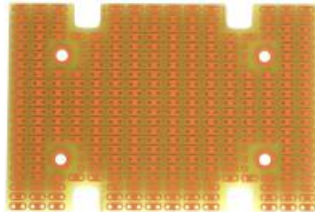
**PR1590B**



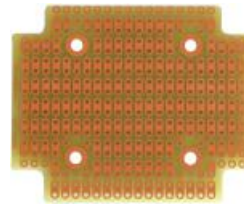
**PR1590BB**



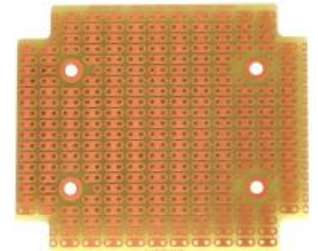
**PR1593K**



**PR1593L**



**PR1593P**



**PR1593Q**

**Plastic & Die-Cast Enclosure Kits**



**KIT-1553B**  
 **KIT-1553B-BK**



**KIT-1553DBAT**  
 **KIT-1553DBAT-BK**



**KIT-1590B**  
 **KIT-1590B-BK**



**KIT-1590BB**  
 **KIT-1590BB-BK**



**KIT-1593K-BK**



**KIT-1593L-BK**



**KIT-1593P-BK**



**KIT-1593Q-BK**

**Aluminum Enclosures** (Available Colors:  Silver  Black)**SIZE 1****BOX1-1455C**

Accepts all Size1 PCBs. 4 card guides.

- 
- BOX1-1455C-SV**
- 
- 
- BOX1-1455C-BK**

**SIZE 2****BOX2-1455L**

Accepts all Size2 PCBs. 5 card guides.

- 
- BOX2-1455L-SV**
- 
- 
- BOX2-1455L-BK**

**SIZE 3****BOX3-1455L**

Accepts all Size3 PCBs. 5 card guides.

- 
- BOX3-1455L-SV**
- 
- 
- BOX3-1455L-BK**

**SIZE 3****BOX3-1455N**

Accepts all Size3 PCBs. 11 card guides.

- 
- BOX3-1455N-SV**
- 
- 
- BOX3-1455N-BK**

Enclosures available in either silver or black anodized extruded aluminum with matching end plates and polycarbonate plastic bezels. Screws and adhesive rubber feet included.

**Aluminum Enclosure Kits** (Available Colors:  Silver  Black)**SIZE 1****KBOX1-AC-PR2H**

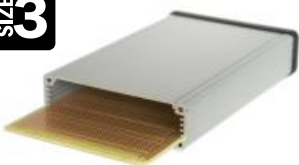
Size1 Aluminum enclosure with the PR2H1 PCB. Enclosure has 4 card guides and accepts all Size1 PCBs.

- 
- KBOX1-AC-SV-PR2H**
- 
- 
- KBOX1-AC-BK-PR2H**

**SIZE 2****KBOX2-AL-PR2H**

Size2 Aluminum enclosure with the PR2H2 PCB. Enclosure has 5 card guides and accepts all Size2 PCBs.

- 
- KBOX2-AL-SV-PR2H**
- 
- 
- KBOX2-AL-BK-PR2H**

**SIZE 3****KBOX3-AL-POW**

Size3 Aluminum enclosure with the POW3U PCB. Enclosure has 5 card guides and accepts all Size3 PCBs.

- 
- KBOX3-AL-SV-POW**
- 
- 
- KBOX3-AL-BK-POW**

**SIZE 3****KBOX3-AN-POW**

Size3 Aluminum enclosure with the POW3U PCB. Enclosure has 11 card guides and accepts all Size3 PCBs.

- 
- KBOX3-AN-SV-POW**
- 
- 
- KBOX3-AN-BK-POW**

Enclosure Kits available in either silver or black anodized extruded aluminum with matching end plates and polycarbonate plastic bezels. Screws and adhesive rubber feet included.





## Microcontroller Development Boards



### AVR1284-3U

For Atmel 40 pin AVR microcontrollers with 16k, 32k, 64k or 128k flash program memory.



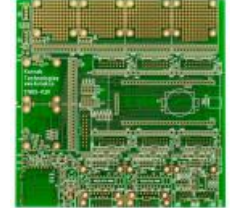
### STM32-F3U

For the STMicro Discovery F3 board with STM32F303 microcontroller. 11 GPIO port headers, four UEXT footprints.



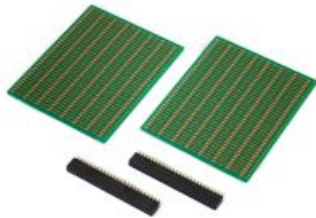
### STM32-F4B1

For the STMicro Discovery F4 board with STM32F407VGT6 microcontroller. 10 GPIO port headers, two USART interfaces.



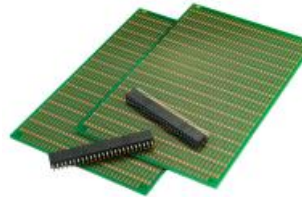
### STM32-VLB1

For the STMicro Discovery VL board with STM32F100RBT6 microcontroller. 6 GPIO port headers, multiple footprints.



### KIT-BB2+F3+F4

BusBoard zig-zag pattern gives access to both odd & even pins of DIL headers for the STMicro STM32-Discovery F3 or F4 modules.

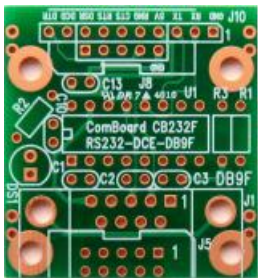


### KIT-BB3+F3+F4

BusBoard zig-zag pattern gives access to both odd & even pins of DIL headers for the STMicro STM32-Discovery F3 or F4 modules.

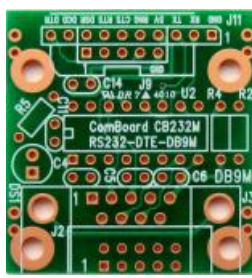


## Peripheral PCB Adapter Boards



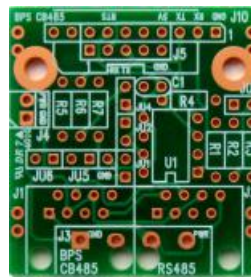
### CB-232F

ComBoard Adapter  
RS-232 DB-9F



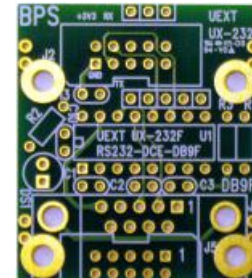
### CB-232M

ComBoard Adapter  
RS-232 DB-9M



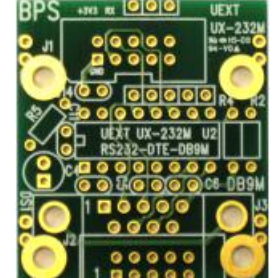
### CB-485

ComBoard Adapter  
RS-485



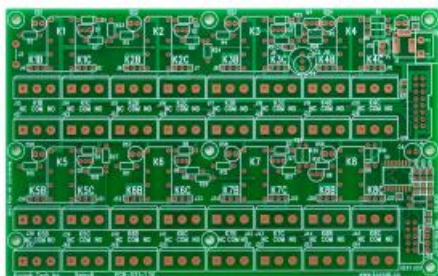
### UX-232F

UEXT Adapter  
RS-232 DB-9F



### UX-232M

UEXT Adapter  
RS-232 DB-9M



### RELAY8

Octal relay board with terminal blocks. Each of the 8 DPDT relays has up to four 3-pin terminal blocks. Can be controlled via an I2C interface or 8 logic lines.





## ZipWires™



**ZW-MM-10**

10cm multi-color ribbon of 40 wires with male-to-male connectors.



**ZW-MF-10**

10cm multi-color ribbon of 40 wires with male-to-female connectors.



**ZW-FF-10**

10cm multi-color ribbon of 40 wires with female-to-female connectors.



**KIT-ZW-10x3**

3 pack of male-to-male, male-to-female, female-to-female 10cm ZipWires.



**ZW-MM-20**

20cm multi-color ribbon of 40 wires with male-to-male connectors.



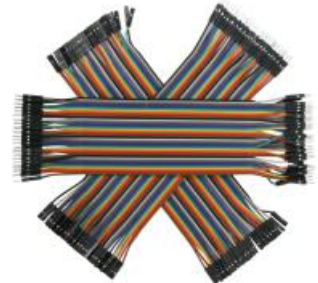
**ZW-MF-20**

20cm multi-color ribbon of 40 wires with male-to-female connectors.



**ZW-FF-20**

20cm multi-color ribbon of 40 wires with female-to-female connectors.



**KIT-ZW-20x3**

3 pack of male-to-male, male-to-female, female-to-female 20cm ZipWires.



**ZW-MM-100**

100cm multi-color ribbon of 40 wires with male-to-male connectors.



**ZW-MF-100**

100cm multi-color ribbon of 40 wires with male-to-female connectors.

## Wires & Clips With Pins For BreadBoards



### Alligator-Clips

CA-M-20 - Male ends

20cm long wires are soldered to the alligator clip. Machined male pins for breadboard use with strain relief heatshrink tubing. 6 colors per pack.



### J-Clips

CJ-M-20 - Male ends

CJ-F-20 - Female ends

20cm long wire soldered to the J-clip. Machined male pins for breadboard use with strain relief heatshrink tubing. 2 colors per pack. Securely grab 0.1" header pins without touching adjacent pins.



## Power - Battery Holders & Clips with BreadBoard Pins



### PW-3AA

3 x AA battery box (4.5 Volts) with switch, 15cm - 26AWG stranded wires. Machined pins provide a reliable and rugged connection to breadboards.



### PW-1AAX

1 x AA battery holder (1.5 Volts), 15cm - 26AWG stranded wires. Machined pins provide a reliable and rugged connection to breadboards.



### PW-9VX

1 x 9V battery clip (9 Volts), 15cm - 26AWG stranded wires. Machined pins provide a reliable and rugged connection to breadboards.

## Motors & Motor Kits



**NEW**

### M1W2

DC Motor with wired power connector and two grippy wheels.



**NEW**

### M1W2-KIT

DC Motor with wire power connector, two grippy wheels, ZipWires and a battery box with switch

## Electronic Parts



**NEW**



### LRDx100

Red 5mm LED Body  
Radial, Thru-hole type  
100 qty

**NEW**



### LGRx100

Green 5mm LED Body  
Radial, Thru-hole type  
100 qty

**NEW**



### LYWx100

Yellow 5mm LED Body  
Radial, Thru-hole type  
100 qty

### KIT-LED200

Case of 200 LEDs in five colors (white, yellow, green, blue, red) and two sizes (5mm, 3mm) each.



**NEW**





## Electronic Parts

**NEW**



**R151x100**

150Ω, 1/4 Watt, Axial,  
Thru-hole type with value stripe.  
100qty

**NEW**



**R331x100**

330Ω, 1/4 Watt, Axial  
Thru-hole type with value stripe.  
100qty

**NEW**



**R102x100**

1kΩ, 1/4 Watt, Axial  
Thru-hole type with value stripes  
100qty

**NEW**



**R223x100**

22kΩ, 1/4 Watt, Axial  
Thru-hole type with value stripes  
100qty

**NEW**



**R473x100**

47kΩ, 1/4 Watt, Axial  
Thru-hole type with value stripes  
100qty

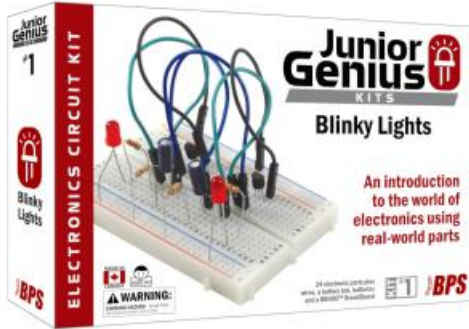
**NEW**



**R104x100**

100kΩ, 1/4 Watt, Axial  
Thru-hole type with value stripes  
100qty

## Junior Genius Kits #1 - Blinky Lights (JRG01-KIT)



***A great introduction to the world of electronics for both students and adults!***

Junior Genius Kits are built for experimentation, learning and fun! Experience the joy of seeing your first LED light up! The Blinky Lights kit leads you through 10 main activities from a simple LED circuit up to more advanced transistor LED blinky light circuits using industry-standard parts on a real-world breadboard.

Learn about voltage and current by using LEDs, resistors, capacitors, and transistors. You'll be able to build circuits using a schematic diagram - and there's plenty of help to get you there. Simple examples make it easy to grasp the basics, and 'What's Happening?' and 'Things To Try' sections encourage you to dig deeper.

***SMART HAS NEVER BEEN SO MUCH FUN!***

### FEATURES:

Includes Full-color illustrated 60-page manual • 10 core Activities plus many additional 'Things To Try' experiments • Online Club Access to additional knowledge, illustrations and activities • 24 parts plus a power box, wires, batteries and BB400 BreadBoard • Industry standard, reusable parts



## Replacement Parts Bag

(JRG01-PARTS)



A complete set of electronic parts for Junior Genius Kits #1 - Blinky Lights. Electronic parts included: 4 LEDs (Red, Green), 4 Transistors (2N3904 NPN), 10 Resistors (150Ω, 330Ω, 1kΩ, 47kΩ, 100kΩ) and 6 Capacitors (10uF, 100nF).

Parts can be used with standard breadboards such as the BB400 and BB830.

## Solder Kit

(JRG01-PCB)



All the parts needed to make the Junior Genius Kits #1 - Blinky Lights circuit on a solderable PCB breadboard. Learn to solder by building the same circuit you built in the breadboard kit.

Includes a circuit layout diagram, a link to the downloadable "Soldering is Easy" comic, and all of the resistors, LEDs, capacitors, transistors and wires needed to build the circuit and connect a PW-3AA battery box (not included) to the SB404 single-sided PCB.

## Expansion #1 - More LEDs (JRG01-EXP1)

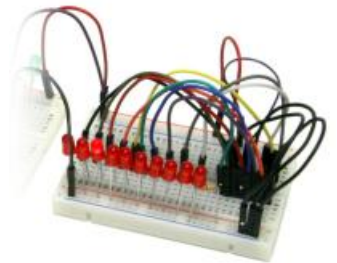


We all love lighting up lots of LEDs, so Expansion Pack #1 provides additional LEDs, resistors, and transistors to light up even more LEDs with your Blinky Lights kit! In addition to the red, green, and yellow LEDs included, bi-color LEDs are also provided to allow experimentation with LEDs that can be either red or green! The Junior Genius Club online content gets you started by showing how to switch multiple LEDs with a transistor so you can flash 5, 10 or more LEDs at a time!

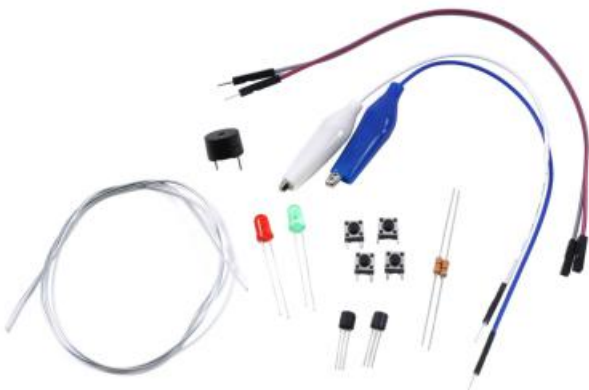
## Expansion #2 - I.C. Chaser (JRG01-EXP2)



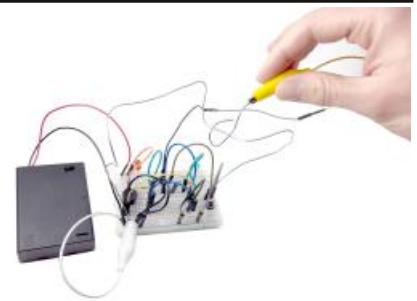
Take your circuits to a whole new level with Integrated Circuits! Learn how Integrated Circuits and diodes work with advanced LED chaser and flasher circuits in Expansion #2! Build three new types of circuits: 10 LED Chaser, 5 LED Back-and-Forth, and a 3 LED Traffic Light. An additional BB400 BreadBoard is included to give you more room to build circuits with the included LEDs, resistors, diodes, and male-to-male ZipWires. Basic instructions are included to get you started, with full instructions available online in the Junior Genius Club.



## Expansion #3 - Buzzer & Buttons (JRG01-EXP3) **NEW**



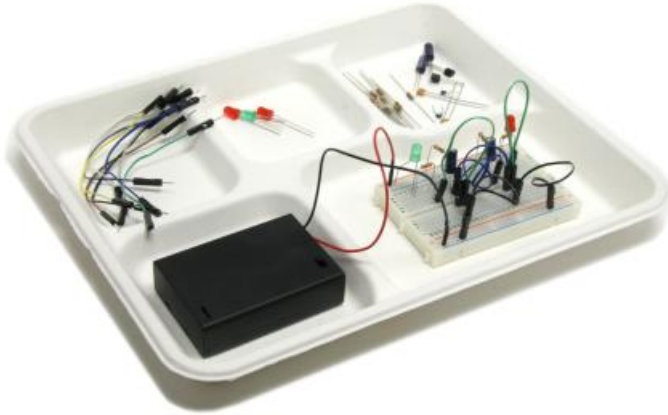
Take the knowledge you've learned from Blinky Lights see how practical electronic circuits can be used for everyday situations! This kit expands your Blinky Lights Kit by adding a sound-making buzzer, push-button switches, alligator clips, a new type of transistor, long extension ZipWires, and more.



Learn to build nine new circuits including a Morse code transmitter, flood alarm, burglar alarm, and the Skill Tester game.



## Blinky Lights Classroom Packs



We provide the retail kit in a classroom pack for 5, 20 or 30 students that includes all the same contents: 60 page instruction guide, BB400 BreadBoard, battery box, wires, and electronic parts. But it forgoes the flashy box for a helpful parts tray. This allows students to lay out all the parts without them falling off the desk. Peel-apart ZipWires help the students easily make connections without the need to cut and strip wires. Batteries are included!

An additional instruction guide is included for the educator along with a parts bag (JRG01-PARTS).

**JRG01-EDU5 - 5-student classroom pack**

**JRG01-EDU12 - 12-student classroom pack**

**JRG01-EDU20 - 20-student classroom pack**

**JRG01-EDU30 - 30-student classroom pack**

## Teacher Resources

We know you love teaching, and our cost-effective Teacher Resources help you cut down lesson prep time so that you can be a prepared and engaged teacher. A Teacher Resources Access Card is included for free in the 20 and 30 classroom kit packs giving a school-wide license to use the downloadable content. A license can be purchased separately for small classroom kit pack purchases.



### PowerPoint Files

Each core activity has a pre-made PowerPoint presentation that steps through the construction of the circuit and ends with the circuit's schematic diagram.



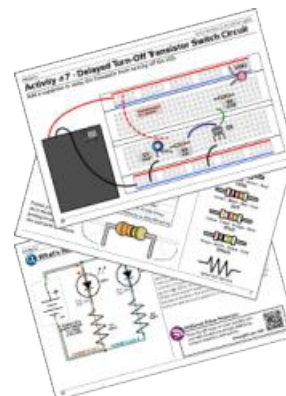
### Activity Sheets

Activity sheets to use for classroom exercises including wordsearch and crossword puzzles, spot the difference, draw the wires, and more.



### Printable Diagrams

We provide ready-to-print PDFs with circuit diagrams, schematic diagrams and more. Great for having at a student's desk, activity station, or as a PowerPoint replacement.



### Graphic Files

Graphics of electronic components, circuits, and diagrams used in the instruction guide are provided to aid in the creation of custom materials for your classroom. Make circuits, PowerPoint presentations or handouts with ease.



## **Contact Info**

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**[www.BusBoard.com](http://www.BusBoard.com)**