Features

Fully engineered 3D printed housing for maximum rigidity with built in 5mm metal thread mounting provisions.

7 independent buttons on the PSB7s and PSB7c while the PSB3e includes 3 encoders and a single common button.

Real Structural 3K Carbon Fiber (or) Black G10 plates. (*lc*)

These units DO NOT come with the ethernet connection cable as we do not know how long you may need.

Options

3 meter CAT6 *(PSW_CAT6)* or Shielded CAT7 *(PSW_CAT7)* ethernet cable for connection.

Free & Additional charge Customizations are available though our customization program.

SimuBOX
(PSB7s, PSB7c, PSB3e & lc variants)

This line of button boxes are designed to be a build as you need system allowing you to choose the types of controls added which can offer greater flexibility in the overall design of your system. (graphite PSB units shown)

Design and Use:

The SimuBOX units were originally designed for direct connection with the Granite Devices SimuCUBE SC1 direct drive wheel controller. Sim-li.city has extended the functionality of their Direct Drive units with the SM012 adaptor which is compatible with the SimuSERIES units as well. In addition we created the PSUSB_28x USB interface box to allow connection of up to (4) SimuSERIES units to ANY wheel system which allows for custom or standard steering wheels to be attached.

Notes:

The SimuBOX units do not come with a connection cable due to differing length requirements needed from user to user. Any standard non-crossover RJ45 ethernet cable can be used.
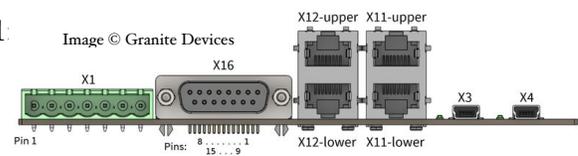
SimuBOX 7s & 7c *(PSW7s, PSW7c, PSW7slc, PSW7clc)*
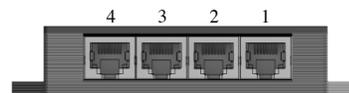
Connection and Installation…

Connecting the SimuBOX 7s or 7c to the SimuCUBE sc1:

- Plug the RJ45 connector into RJ45 port
  X12 upper or X12 lower.

Image © Granite Devices

Connecting the SimuBOX 7s or 7c to the PSUSB_28:

- Plug the RJ45 connector into any RJ45 port.

Mounting your SimuBOX 7s or 7c:

The SimuBOX 7s and 7c can be mounted in many different ways from using double sided tape or through hard mounting using the provided metal threaded 5mm mounting provisions integrated into the rear of each box. The dimensions for these mounts are are provided on the Mounting Schematics Page.

Notes:

Connection - The SimuBOX 7s & 7c do not come with ethernet connection cables as every user has their own requirements for cable length to be able to mount the box where they choose on their set-up. Any non-crossover RJ45 ethernet cable can be used for this purpose. It is best to choose a cable that is as close to the length needed for your mounting SimuBOX mounting location. We offer 3 meter CAT6 (*PSW_CAT6*) and Shielded CAT7 (*PSW_CAT7*) cables as options for these boxes.

Software - The SimuCUBE sc1 Firmware (v 0.11.0 and beyond) allows for the configuration of the X12 Inputs via the *"X12 Input Mode Configuration"* on the *Hardware Set-up Tab* to allow the use of a "shift" button. When enabled, pressing this button concurrently with another button it allows for a second independent button to be registered (including aux/shifter and buttons/encoders connected to the second X12 port). On the SimuBOX7s layout the Yellow button is used for this feature, on the SimuBOX7c the upper left white button is used for the "Shift" feature.
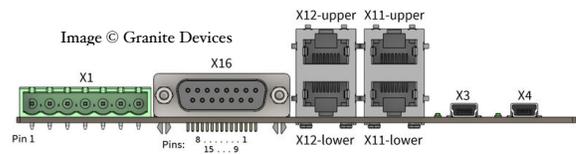

SimuBOX 3e *(PSW3e, PSW3elc)*
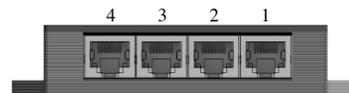## *Connection and Installation…*

Connecting the SimuBOX 3e to the SimuCUBE SC1:

- Plug the RJ45 connector into RJ45 port
  X12 upper or X12 lower.

Connecting the SimuBOX 3e to the PSUSB_28:

- Plug the RJ45 connector into port 4, 3, or 2 depending
  on how many PSB3e encoder boxes are being used.

Mounting your SimuBOX 3e:

The SimuBOX 3e can be mounted in many different ways from using double sided tape or through hard mounting the boxes using the provided metal threaded 5mm mounting provisions integrated into the rear of each box. The dimensions for these mounts are are provided on the Mounting Schematics Page.

Notes:

Connection - The SimuBOX 3e does not come with ethernet connection cables as every user has their own requirements for cable length to be able to mount the box where they choose on their set-up. Any non-crossover RJ45 ethernet cable can be used for this purpose. It is best to choose a cable that is as close to the length needed for your mounting SimuBOX mounting location. We offer 3 meter CAT6 (*PSW_CAT6*) and Shielded CAT7 (*PSW_CAT7*) cables as options for these boxes.

Software - The SimuCUBE SC1 Firmware (v 0.11.1 and beyond) allows for the configuration of the X12 Inputs via the *"X12 Input Mode Configuration"* on the *Hardware Set-up Tab* to allow the use of encoders. When using the PSB3e Encoder box you will want to select the" (1/1 pulse) per detent" selection. If using the "shift" function on the other X12 input encoder and button inputs will be able to be doubled. You cannot enable the "shift" function using the single button the PSB3e do to the wiring required.

PSUSB_28x & PSUSB_28lcx *USB Interface Box*
Connection and Setup…

To connect the PSUSB_28x use the provided cord to connect to any available USB port on your computer. This controller requires no additional software or drivers as it is a standard Windows HID device. The PSUSB_28x initializes upon being powered up so any setup changes will not take effect until the device is power cycled either by unplugging it or by turning off your computer.

> **Notes:**
>
> **First Connection** - Factory first connection of the PSUSB_28x is for all ports to be used with button boxes. Port 1 of the PSUSB_28x cannot be altered from the initial button configuration while ports 2-4 can be used with the PSB3e Encoder box. The Device will show up as Penguin r/c PSUSB_28x in the Windows devices and peripherals.

Opening your PSUSB_28x:

In order to change device set-up for use with the PSB3e or PSB3elc encoder boxes you will need to open the PSUSB_28x to change the programming and ports used for encoders.

1) First make sure the PSUSB_28x is disconnected from your computer.

2) Open the PSUSB_28x by removing the (3) T-8 TORX screws that hold the top plate to the box using either a T-8 driver or if in a pinch a 2mm Hex Key can work.

3) When finished setting up the PSUSB_28x replace the top plate to protect the electronics.

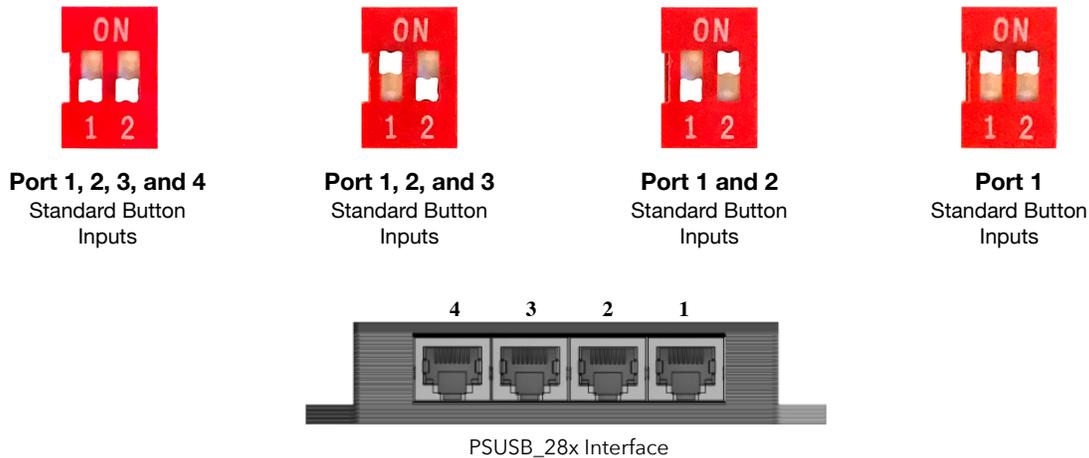## Setting up your PSUSB_28x for encoder and extended use:

In order to use the PSB3e Encoder box correctly with the PSUSB_28x you will need to set the programming for encoders use. In the process you will also set how many and which Ports are converted for encoder use. It is NOT recommended to use the encoder programming with button boxes as some paired inputs could be ignored causing missed button presses. You may also set your PSUSB_28x for extended button usage which increases the controller button count from 28 to 55.

PSUSB_28x & PSUSB_28lcx *USB Interface Box*
Connection and Setup continued…

Setting Encoder Programming and Ports:

Inside the PSUSB28x there is a Red DIP switch which controls what programming is set to which ports. By selecting different combinations on the switches you can control how many of the ports provide decoding for the encoder input from the PSB3e. Below is the table showing which ports are converted with each setting.

Port 1, 2, 3, and 4
Standard Button
Inputs

Port 1, 2, and 3
Standard Button
Inputs

Port 1 and 2
Standard Button
Inputs

Port 1
Standard Button
Inputs

PSUSB_28x Interface

PSUSB_28x Extended Mode:

Inside the PSUSB_28x there is a switch located in on the right side near the USB Port. This switch enables Extended mode (disabled standard). When enabled the button on Pin 7 of Port 1 becomes a "shift" button and when held down with any other button from any Port, the PSUSB_28x will send a second independent game control signal effectively doubling the button and encoder inputs for devices attached. Pin 7 is normally the "yellow" button on SimuSERIES devices.

Mounting your PSUSB_28x:

The PSUSB_28 can be mounted in many different ways from using double sided tape or by hard mounting using the integrated 5mm mounting tabs. The dimensions for these mounts are are provided on the Mounting Schematics Page.
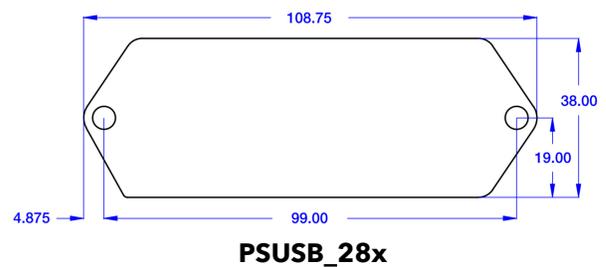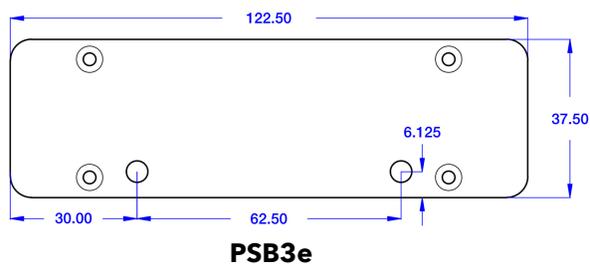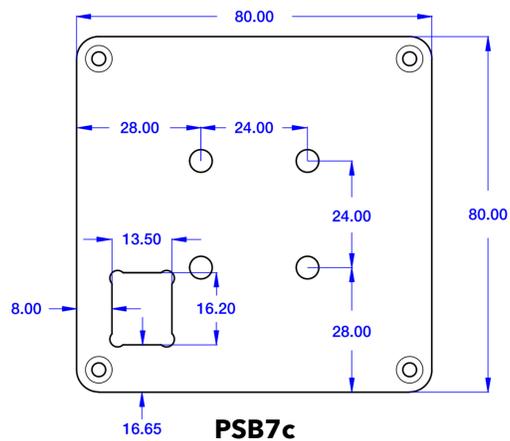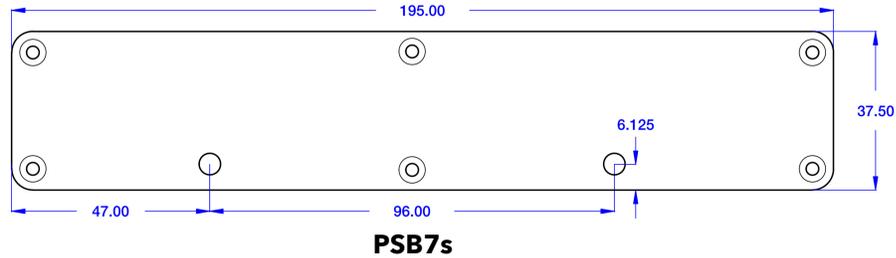

Notes:

Connection Length - The PSUSB_28x control box inputs are completely diode isolated with pull-up resistance to provide error free button actuation over longer connection lengths. The unit has been fully tested with ethernet cables up to 3 meters and semi-tested with ethernet cables of 10 meters without issue. Environmental conditions could cause shorter or longer wire lengths to be used effectively.

DIY Supported Capability - The PSUSB_28x control box inputs allow for DIY connections through the RJ45 plugs if you are inclined to do so. Pins 1-7 on each RJ45 port correspond to an independent button which can be triggered with any momentary release button you choose. Pin 8 is a common ground. Diode isolation ensures no addition hardware is required.

Encoder programming for 1:1 (full greyscale cycle, 4 pulse per detent) encoders is enabled through the dip switch. When the encoder programming is enabled Pin 1 is a standard button input while Pins 1+2, 3+4, and 5+6 are linked for encoder decoding. Pin 8 remains a common ground when encoder programming is enabled.

Mounting Schematics
Dimension and Shape…

PSB7s

PSB7c

PSB3e

PSUSB_28x

Penguin *r/c*
SIMULATION

About, Contacts, and Custom Projects

Contact Information

Address:
Penguin r/c
1230-P North Jefferson Street
Anaheim CA 92807

Website:
Main - www.penguinrc.com
Simulation Site - click here…

email:
simulation@penguinrc.com

Phone: 714.630.9015
Fax: 714.630.6250

Catalog Notes

Pricing - There are no prices in this catalog. Current pricing can be found on our website along with further information.

Ordering - Throughout this catalog there are "Visit our website…" links that will open up the ordering page for the items in this catalog.

Questions - Feel free to email us at any time.

Warranty - Lifetime, 90 day full coverage. See website for details.

About us…

Penguin r/c was opened in April of 1997 with the intent of creating the best products that could be made for reasonable prices. Originally we started business focusing on aftermarket parts and chassis upgrades for high performance remote control vehicles, pinpointing the areas where existing cars could be made to perform beyond their original design. Penguin r/c made a name for itself by achieving this goal through products where the additional performance gained far outweighed the cost of the parts. Having racked up a couple of championships and a good name in the market place we slowly transitioned into becoming a more involved OEM supplier for other manufactures in the r/c industry and other industries. We still sell and support our r/c products to this day and will continue to do so with every product we produce including our new Simulation Products. In 2010 we started manufacturing parts for a high-end simulation company and found a renewed love for racing in the virtual world. In 2018 we decided that we could bring our expertise in manufacturing and design to the Simulation market and started our newest products. We hope to bring the same values and customer support to the simulation marketplace as we have for years as an OEM manufacturer and part supplier to the r/c industry.

Custom Designs…

Penguin r/c is capable of Custom Manufacturing and Design of prototype and production parts for individuals and companies. Most of our manufacturing is done in-house which allows us significant control over the quality and assembly of parts we manufacture and allows us to make prototypes that have the quality and durability of production pieces. If you have anything that you would like to produce please feel free to contact us about the possible product.