Beam™
User Guide

Wireless Transmitter for HeadMouse® Extreme and Swifty™

(Adaptive switch not included with Beam)

Origin Instruments

www.orin.com

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Legal Notices

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Origin Instruments is not responsible for any problems caused by unauthorized modification of Beam and will not be responsible for direct or consequential damages associated with any use of the Beam product.

FCC / CE Notice

Products bearing the CE marking have been tested and are declared by Origin Instruments Corporation of 854 Greenview Drive, Grand Prairie, Texas 75050, USA to be in conformity with the following standards or other normative documents and following the provisions of the Electromagnetic Compatibility Directive, 89/336/EEC:

- EN 55022 Class B Emissions (Radiated Emission)
- EN 61000-4-2, Electrostatic Discharge Immunity
- EN 61000-4-3, Radiated Immunity
- EN 61000-4-4, Fast Transient

Origin Instruments Corporation has tested the Beam and found that it complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

If this product is suspected of causing interference to a radio or television receiver, remove and apply power to the equipment and determine whether it is the cause of the disturbance. If a problem exists, the user is encouraged to try and correct the problem by one of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Reorient the equipment cables.
4. Consult the dealer or Origin Instruments for additional suggestions.

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Application Disclaimer

Beam is designed for use by people who have limited or no motor capability enabling them to operate switch activated devices. However, it should not be used in an application where personal injury or property loss could occur if the Beam failed for some reason. **Origin Instruments products are *not* authorized for use as surgical aids or as part of a system intended to support or sustain life.** The user assumes full responsibility for determining the suitability of Beam for the intended application.

Introduction

Thank you for being a Beam customer!

The battery powered Beam transfers the state of up to three normally-open switches directly to the HeadMouse® Extreme or Swifty™. The Beam is an infrared device, but it doesn't require a clear optical path to the HeadMouse or Swifty. The light can bounce off the ceiling, walls and even the user. However, as the batteries discharge Beam may require a more direct and clear line of sight. Always replace the Alkaline AA-cells as a set. With typical use the batteries should last for several months.

When used with the HeadMouse Extreme, adaptive switches emulate the "LEFT", "RIGHT", and "MIDDLE" buttons of a standard desktop mouse. When used with an Apple Macintosh, the HeadMouse Extreme uses the "LEFT" input for the primary mouse button and the "RIGHT" input to generate a Control-Click.

When used with Swifty the buttons are defined by Swifty or by the software using Swifty.

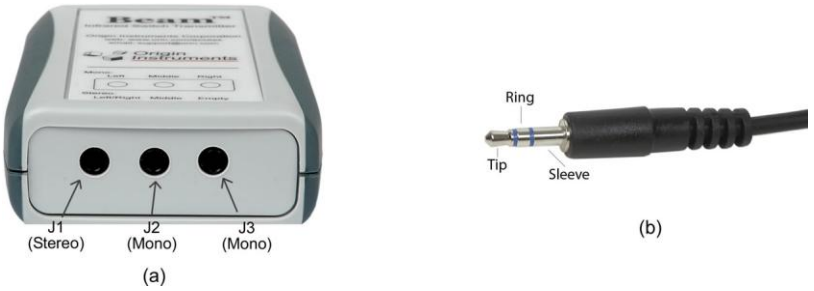

Figure 1

(a) Beam connector panel.

(b) 1/8-inch (3.5-mm) Stereo microphone plug. A Mono plug looks the same except it does not have a Ring contact – Sleeve contact extends to the insulator separating it from the Tip.

Beam has three 1/8-inch (3.5-mm) microphone jacks and accepts commonly available adaptive switches.

A photograph of the Beam rear panel and a stereo microphone plug are shown in the Figure 1. Mono and stereo plugs can be used in any jack; however, only the J1 socket has the capability to monitor the second button of a dual switch. If a dual button switch is plugged into J2 or J3 only one button will be seen, the other will be ignored.

Questions and Answers

Can I use a dual position (stereo) switch with Beam?

Absolutely. Switch combinations such as Sip/Puff or Left/Right can directly connect using a single stereo cable. Simply plug the stereo cable into J1. This greatly reduces the complexity of cabling. Similarly, if you are integrating two switches into an adaptive mount, we recommend the use of stereo cabling for connection to Beam.

Can I use Beam with HeadMouse and Swifty?

Yes. However, in general you cannot use two Beams with different HeadMouse systems or Swiftys in the same room at the same time.

Must I point the Beam directly at the receiver?

In general light from the receiver will bounce off the walls, ceiling and other things in the immediate vacinity of the Beam and make it to the receiver. Certainly if Swifty is plugged into the back of a computer under a desk a more direct path may be necessary. In this situation one should purchase a Swifty Cable Kit and use the USB extender to remote mount Swifty.

How do I get joystick buttons when using Beam with Swifty?

Even though the label indicates Beam sends mouse buttons it actually just tells Swifty that one or more of the buttons have been switched. Swifty in conjunction with its mode setting determines which buttons it will emulate – mouse, joystick, or keyboard.

How long will the batteries last?

With typical use the batteries should last for several months. However, if you notice intermittent behavior or that a more direct line-of-sight is needed between Beam and the receiver a fresh set of batteries may improve the situation.

Configuration

Beam has the capability to determine if a mono or stereo plug is inserted into J1. If a stereo plug is used, see Figure 1(b), both “Left” and “Right” mouse buttons will be derived from this connector. The “Left” button will come from the Tip and the “Right” button will come from the Ring. If a plug is inserted into J3 the Beam will now use the Tip of J3 as the “Right” button. In all cases the “Middle” button will use the Tip of J2. For all jacks switch common is the Sleeve.

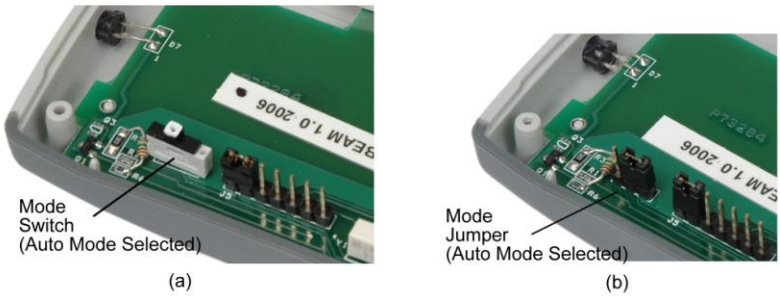

Figure 2

The mode switch or jumper is used to instruct the Beam to automatically determine whether a stereo or mono switch is plugged into J1.

(a) Shows the version of Beam that uses a mode switch.

(b) Shows the version of Beam that uses a mode jumper.

NOTE: In both photos the switch and jumper are shown in Auto mode. Even though the switch appears to be in the opposite position from the jumper, internally the switch connects the pin opposite the actuator.

If the mode jumper is positioned as shown in the Figure 2 (factory default) then Beam will automatically determine if a stereo plug is used. If the jumper is in the opposite position shown Beam will work with stereo plugs, but ignore the J1-Ring contact, illustrated

in Figure 1(b). This jumper is accessed by removing the four enclosure screws In some versions of Beam there is an access hole under the battery door that will allow the mode switch to be changed without opening the enclosure.

Note: By default the Beam automatically determines whether a stereo or mono plug has been inserted in J1. However, there may be times after moving plugs between jacks and changing between mono and stereo plugs that the Beam will temporarily be confused. During these times the Beam may transmit a continuous right button for up to 30-seconds. If this is a problem, the internal jumper may be used to configure J1 as a mono jack.

HeadMouse Extreme

The optional HeadMouse Extreme is a precise and efficient head-controlled access device for computers and augmentative communication devices. It mounts on the computer and tracks head position in order to wirelessly control the mouse pointer. Adaptive switches can be connected to HeadMouse directly or wirelessly using Beam.

HeadMouse Extreme features:

- Built-in receiver for Beam for wireless switch input
- Wireless head-controlled mouse emulation
- Fast and responsive cursor control
- USB mouse interface
- Very low power
- Light weight
- Pocket size

Swifty

Swifty, is a USB adaptive switch interface with an integrated wireless receiver, can be used with Beam. Swifty accepts industry standard 3.5 mm stereo or mono plugs and directly interfaces up to two adaptive switches to a computer. Swifty is powered from the USB host and does not require external power. Swifty uses standard USB Human Interface Device (HID) drivers and works with Windows, Macintosh and Linux computers, and many AAC devices. When used with Beam up to three switches may be wirelessly interfaced to a computer.

Swifty features:

- Built-in receiver for Beam for wireless switch input
- Extremely low latency
- 3.5-mm (1/8-inch) stereo jack
- Mouse button emulation
- Joystick button emulation
- Keyboard emulation
- Full speed USB device
- USB powered
- Weighs ½ – ounce (14 – grams)
- 2– by 0.2– by 0.5–inches (51– by 20– by 13–mm)
- Works with Windows, Mac and Linux

General Care and Maintenance

Beam may be cleaned with a damp cloth, but it should never be soaked with any water or cleaning solution. Do not allow any kind of liquid in our around the Beam connector panel.

Customer Support

Customer support is provided by Origin Instruments during the hours of 8:30 a.m. to 5:30 p.m. Central Standard Time (CST), Monday through Friday.

Please email support@orin.com or call 972.606.8740.

Warranty Information

Origin Instruments warrants that Beam will be free from defects in materials and workmanship for a period of one (1) year from the date of shipment. If the product proves defective during this warranty period, Origin Instruments will, at its option, repair or replace the defective product.

In order to obtain service under the foregoing warranties, the Customer must notify Origin Instruments of the defect prior to the expiration of the warranty period.

The foregoing warranties will not apply to any defect, failure, or damage caused by improper use, or improper or inadequate maintenance and care. Origin Instruments will not be obligated to furnish service under these warranties (a) to repair damage resulting from attempts by unauthorized personnel to install, repair, or service the product; (b) to repair damage resulting from improper use or connection to incompatible equipment; or (c) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

The foregoing warranties are given by Origin Instruments with respect to company products in lieu of any other warranties, expressed or implied. Origin Instruments disclaims any implied warranties of merchantability or fitness for a particular purpose. Origin Instruments' responsibility to repair or replace defective products is the sole and exclusive remedy provided to the customer for breach of any of these warranties. Origin Instruments will not be liable for any indirect, special, incidental or consequential damages irrespective of whether Origin Instruments has advance notice of the possibility of such damage.

Products no longer covered by warranty may be suitable for repair. Contact Origin Instruments for an estimated repair fee.

Before returning product for repair, please send an email to: support@orin.com or call 972.606.8740 to request a Return Materials Authorization (RMA) Number. Once RMA number is assigned, product must be returned postage pre-paid with all components to:

Origin Instruments Corporation
ATTN: Customer Service – RMA (insert your number)
854 Greenview Drive
Grand Prairie, TX 75050-2438 USA

For repairs during warranty period, Origin Instruments will pay for the return of the product to the Customer if the shipment is to a location within the United States. For non-warranty repairs and for warranty repairs outside of the United States, the Customer will be responsible for paying all shipping charges, duties, taxes, and any other charges associated with the return of the product.

Notes:

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