

SOP

DBIC Standard Operating Procedures for Current Designs 932 Interface

For training on how to use the Current Designs 932 Interface and for technical support, contact Terry Sackett or Andy Connolly.

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Introduction

The Current Designs 932 interface receives and transmits human responses from fMRI-safe fiberoptic human input devices (HIDs) such as button boxes, keypads, joysticks, rollerballs, and other devices compatible with the 932 system. It also transmits the scanner trigger pulses. It provides plug-and-play functionality, featuring an auto-configuration mode that automatically detects any connected HIDs and a USB connection to your presentation laptop. The 932 is the **standard default interface** for all new DBIC studies—please don't use the Cedrus Lumina Box for new studies.

QUICK START

In most cases, using the 932 is super easy. Ensure the 932 Interface's mode is set to "autoconfig", plug the USB cable labeled "fMRI Trigger" into your presentation computer, and you should be able to capture trigger pulses and button presses (or other HID response data) as standard input. In other words, your presentation computer should receive data from the 932 the same way as it receives button presses from an external keyboard attached to its USB port.

The 932 interface plays nicely with all types of experiment-building software like Psychopy, PsychToolbox for Matlab, E-Prime, etc. **IMPORTANT:** Always test your experimental code *before* booking scan time for a live participant. For all new experiments, you will need to book scan time for testing your code to ensure that scanner triggers and subject responses are detected and recorded properly by your code.

CAUTION: All fiberoptic cables are delicate and very expensive, including the cables that attach the HID's to the 932 Interface. Please always use care when setting up HID's (e.g. button boxes) to ensure that cables never get kinked or caught by the edge of the sliding bed. ***Never step on any cables.***

Resources

The 932 Interface provides many different modes of operation to accommodate all kinds of setups and needs. For more information, technical details, and information about different HID options see the CurrentDesigns website and product pages:

<https://www.curdes.com/mainforp/interfaces/fiu-932b.html>

Trouble Shooting Tips

Contributed by Daniel Stehr:

Problem: Button presses from the participant were not being detected or recorded by our experiment code which is written in **Matlab** using PsychToolbox.

Solution: The button box receiver had been set to mode “HID **Key** 12345” the whole time. Setting the receiver to mode “HID **NAR** 12345” got it working perfectly. The “NAR” stands for “no auto release”. It seems that based on the way Matlab/PTB polls the keyboard, keypresses were being missed when auto-release was turned on (i.e. “key” mode). It seems this isn’t an issue for people using PsychoPy for stimulus presentation, though. I owe this valuable insight to my mentor Kendrick Kay from CMRR.