Product Features

- Three kinds of excitation light sources, namely 410nm, 470nm and 560nm, are respectively used for excitation of reference, green fluorescence and red fluorescence;
- Support up to 9 channels, suitable for simultaneous experiment of multiple animals or multiple brain locations;
- Dual highly sensitive detectors enabling independent and sequential detection to avoid interference of fluorescence excitation and detection, acquiring more accurate signal;
- Professional acquisition and analysis softwares are flexible and easy to operate with data processing functions available. No matlab programming is required;
- Supports multiple acquisition modes including continuous acquisition, interval acquisition, acquisition upon trigger, delayed acquisition and timing acquisition;
- Live display of DeltaF/F acquisition to check scale of signal changes during acquisition;
- Customized adjustment of output signal parameter, easily trigger and control external excitation equipment to achieve closed-cycle control of excitation and recording;
- Compatible with optogenetics for recording and stimulation at thesame site.

Product Parameters

Wavelength of excitation light	R811: 410/470nm; R812: 410/560nm; R821: 410/470/560nm
Power	Min 0µW, Max≥100µW, adjustable with an accuracy of 0.1µW
Number of channels	9
Frame rate of fluorescent sampling	Max 250fps
Digital signal interface	4 Input 4 Output
Signal output	Output frequency 0-500Hz, adjustable output pulse width and duration
Marking	Manual marking (10), automatic marking (4), ROI marking (9)
Behavior camera	1920*1080(30fps) 1280*720(60fps) Switchable among multiple frame rates of resolution

Standard Configuration

Fiber Photometry Main Device	1	Includes: Host, power cord, 3 USB cables, USB expansion interface, software U disk
Computer	1	Includes pre-installed software, I5-10500H/16G/500G/WIN11(1920*1080)
Optical fiber	1	Low Autofluorescence Fiber-optic Patch Cords 200um/0.37NA/2m, Φ1.25mm or Φ2.5mm
Fiber Cannula sleeves	1	Black Ceramic Sleeves, Φ1.25mm or Φ2.5mm
Behavior Camera	1	Record video of animal behavior and identify animal tracks, USB 3.0, 3M
Behavior Camera bracket	1	Adjustable height range 0.8-1.5 m, Rotation Angle 360°
Photobleaching device	1	FC/PC Patch Cord photobleaching machine

- Optional Accessories：Fiber Optic Cannulae, Multi-branches Optical Fiber, Laser power meter and Ceramic Ferrule Holder etc.

Client list

RWD

Multichannel Fiber Photometry System

Compatible optogenetics   R811/R812/R821
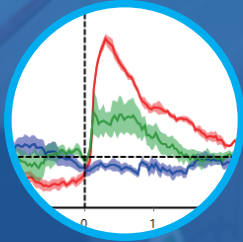
Introduction

The fiber photometry system records changes in the fluorescence intensity of neurons in a specific brain area to reflect neuronal population activity. In the study of neural circuits, the fiber photometry system can perform long-term stable monitoring of the neurons of freely moving animals, and explore the correlation between neural activity and animal behavior.

The RWD Multichannel Fiber Photometry System has different wavelengths of excitation light (410nm, 470nm, and 560nm), among which 410nm is used to acquire reference signals and eliminate noise. The system can record signals from green fluorescent indicators and neurotransmitter probes (e.g., GCaMP and dLight) as well as red fluorescent indicators and neurotransmitter probes (e.g., RCaMP and jrGECO1a). Additionally, the system supports optogenetic stimulation and signal recording at the same site.


Software functions

Professional acquisition and analysis softwares
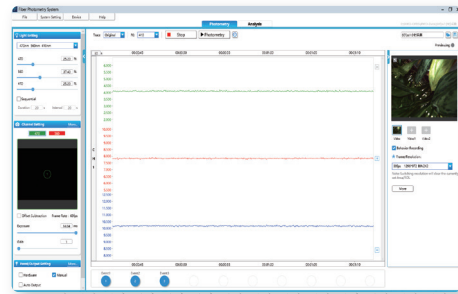
Ⓡ Professional acquisition and analysis software enable stable data acquisition and easy processing. Data analysis includes data clip, smoothing, baseline correction, motion correction, event heat map, peak statistics, area under curve, behavior trajectory heat map and fluorescence-place heat map.

Rapid generation of heat map
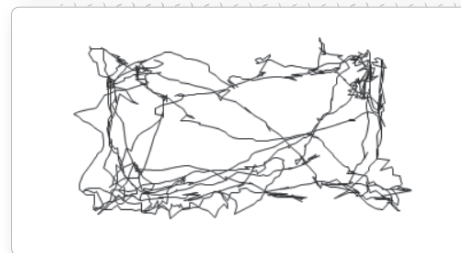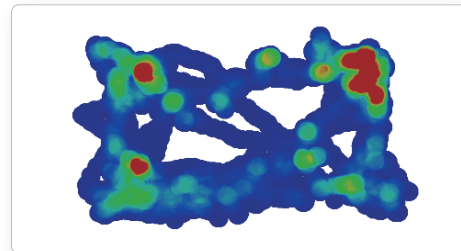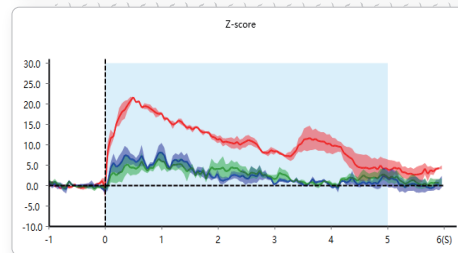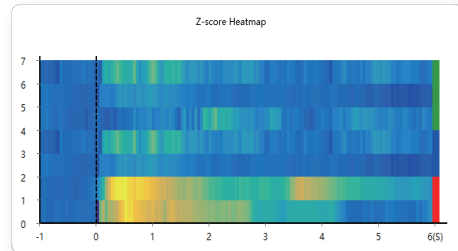
Ⓡ Generation of Peri-event heat map with one click. Supports comparison of data groups. Freely choose and handle events of interest, and flexibly add or remove events. The results can be easily saved and exported to DetaF/F, Z-score, Peri-event, peak statistics and AUC. Information in the image can be freely edited by saving the image as editable SVG format.

Appearance

Ⓡ Lightweight, and optical fiber focusing interface supports optical fibers of different sizes

Ⓡ 4 Input / 4 Output ports, electrophysiological grounding port and optogenetics-compatible port

Hardware functions

Ⓡ Supports up to 9 channels enabling high throughput acquisition and simultaneous detection of multiple downstream and upstream brain locations; optical fiber of low fluorescence can effectively reduce interference by background fluorescence
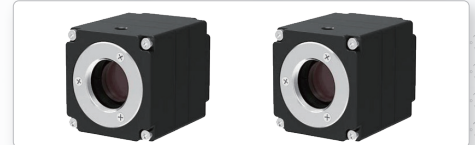
Ⓡ Dual highly sensitive detectors with green fluorescence and red fluorescence entering corresponding detector; independent and sequential detection to avoid interference of fluorescence excitation, acquiring more accurate signal

410nm LED | 470nm LED | 560nm LED

Optogenetics
USB 3.0
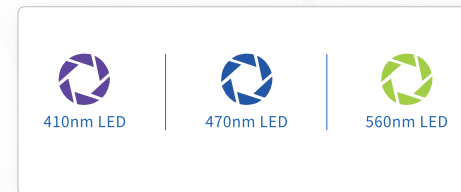
Ⓡ Stable LED light source and 3 types of excitation light sources to enable free combination of modes and support excitation of reference signal, green fluorescence and red fluorescence
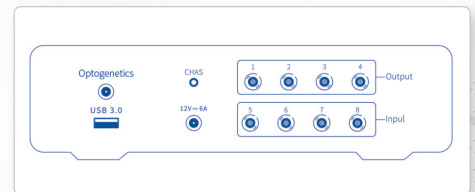
Ⓡ 4 Input ports, support a variety of external TTL signal trigger and marking; 4 Output ports, support outputting TTL signals to trigger external equipment; customize output parameters to meet the need of closed-cycle control