



RETI-MINER

Miner for retina



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OPHTHALMOLOGY / ENT



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Components



GIMamp — DC Amplifier for Visual Electrophysiology

24bit high resolution A/D.

Optical isolated USB connection, powered by li-ion battery, totally isolated from AC power system, provide excellent anti-interference performance; Automatically switched to USB power, when low battery;

Real time full digital filter, cut frequency & order for band pass, low pass, band stop, high pass, and comb filter can be independently set for each channel through software; Provide flexibility for your clinical handling and scientific research than ever; 2 channels by default, optional: 5 / 8 channels.



LightBurst® — Flash Stimulator

Small size, big energy; Less than 3 Kg, test seated patient by default; Stimulator can also be taken down to test lying patient or infants; Test for dog, monkey, pig, mouse, rat, rabbit is also been supported conveniently;

18 groups of background, stimuli light source: white, red, blue, green and yellow; Optional: infra-red and ultra-violet for research purpose; Small size leads to more efficient use of light energy, able to provide 100 cd-s/m² white broad band stimuli in < 4ms, 10X ISCEV standard.



LCD Pattern Stimulator

Best configurability: checkerboard, horizontal/vertical stripes, rectangle stimuli; Reversal, on/off stimuli;

Fixation target and stimuli field can be adjusted;

Low-vision fixation target is available.

Features

RetiMINER TM – VEP, ERG & EOG

Include all standard ISCEV programs:

PVEP, FVEP, PERG, FERG, EOG

And special programs beyond ISCEV.

Flexible configuration – User defined program

Administrator (login with password) can define your own test programs like those special procedures designed for animal test;

At the same time, other routine programs for human clinical use remains unchanged.

Offline Averaging & DSP

You can manually remove those sweep signals that are not reliable after test, this is valuable for infants test and medico legal claims;

System provide full band-width raw signal, you can design own digital filter to process & averaging it; Facilitate by user-defined digital filter and spectrum analysis, your scientific research will becomes more easy.

Utility

Dark/light adaption timer makes test process more automatic;

Dark red illumination provide by LightBurst® or LCDPattern® makes electrode setup easy;

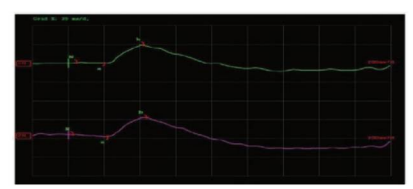
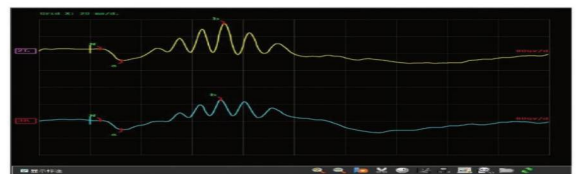
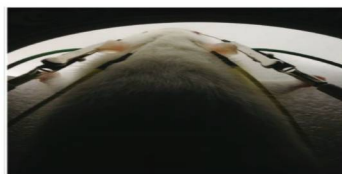
Specially designed dark red screen mode avoid devastation of dark-adaption.

RetiMINER TM - Animal Test (OPTIONAL)

Support animal test

Animal electrode set - gold/silver thread cornea electrode, needle, ear clip, disc electrode;

Infra-red camera - state of animal and electrode setup is continuously monitoring.





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Accessories



Movable Compact Design

Computer, LightBurst, LCDPattern, amplifier are all placed on one movable motorized table; This make bed-side test becomes possible.



Dedicated VEP electrode set

Composed by: one bridge as active electrode, one ear clip as ground electrode, one disc as reference. The VEP electrode dramatically simplify the test.



Animal Platform(Optional)

Suitable for mouse, rat, rabbit and other small animals; Equipped with rotating electrode clip, it can fix the electrode through any angle.



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Specification

Amplifier	
Input Impedience	$\geq 1000 \text{ M}\Omega$
CMRR	$\geq 115\text{dB}$
Input Noise	$\leq 4\mu\text{Vpp}$
Filter	Full real time digital filter, band-pass, band-stop, high-pass, low-pass, comb filter apply to every channel independently
A/D Resolution	24 bit
Port	Optical isolated USB 2.0
Power Supply	Li-ion battery, switch to USB power automatically when low battery
Flash Stimulator	
Light Source Color	White, Red, Green, Blue, Yellow and any of their combination
Flash Luminance	Can produce $100\text{cd}\cdot\text{s}/\text{m}^2$ broad-band white flash in $< 4\text{ms}$
Flash Luminance Range	$0\text{-}1000 \text{ cd}\cdot\text{s}/\text{m}^2$
Stimuli Mode	Single, Double, String, On/Off, On duration can be adjusted
Background Illumination	$0\text{-}3000 \text{ cd}/\text{m}^2$
Stimuli Frequency	$0.01\text{-}200\text{Hz}$
Fixation & EOG	11 Fixation/EOG indicator, 64 adjustable intensity; -25° - $+25^\circ$ EOG saccade range
Monitor	Infra-red camera
Pattern Stimulator	
Luminance	$0\text{-}200 \text{ cd}/\text{m}^2$
Contrast	$> 98\%$
Pattern Shape	Checkerboard, Horizontal/vertical stripes, rectangle, adjustable element angle
Stimuli Mode	Reversal, On/Off, String
Stimuli Field	Full field, left/right/upper/lower half, up-down/left-right margin; $\frac{1}{4}$ left-top/right-top/left-bottom/right-bottom; horizontal/vertical center, $\frac{1}{8}$ center; Center circle with any angle; Field outside center circle with any angle.



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