LKC
TECHNOLOGIES

Diagnostics in Sight

Multifocal ERG/VEP with Long Binary m-Sequences

For those who need an easy to use multifocal electrophysiology system at an affordable price. This system is available in stand-alone form or as an addition to LKC's visual diagnostic systems. Multifocal ERG testing measures the function of areas of the retina, while multifocal VEP testing provides objective assessment of the optic nerve. Testing with long binary m-sequences assures accuracy. LKC's user interface provides simplicity and power in one.

Features

- Multifocal ERG and Multifocal VEP capability
- Uses long (2^{12} to 2^{15}) binary m-sequences
- Easily added to any modern EPIC or UTAS
- Fully ISCEV compliant
- Core stimulus presentation and analysis software were developed at a major university research laboratory
- Fully automated control of amplifier, filters, and stimulus parameters
- Data Storage: Relational database
- Data Export: Graphics and data can be exported to other Windows programs

mfERG
- Stimuli: 19, 61,103 or 241 scaled or equal-sized hexagons
- Record from 1 or 2 eyes simultaneously
- Data Display:
    * Trace array of waveforms
    * 3-D amplitude map
    * Quantitative response data
    * Regional averaged waveform display
    * Ring ratios automatically calculated

mfVEP
- Stimuli: 4, 16, or 60 wedges with pattern reversal or onset presentation
- Multi-channel recording with automatic selection of best channel
- Data Display:
    * Trace array of waveforms
    * Overlapped interocular comparison
    * Regional average waveform display
- Average multiple tracings for improved noise

www.LKC.com

# Multifocal ERG/VEP Specifications

Hardware Configuration

- Works with UTAS-E 3000, UTAS-E 4000, UTAS, and EPIC-4000 systems. (Computer upgrade may be necessary for older UTAS-E 3000 and EPIC-4000 systems.)
- Available as a stand-alone system.
- Uses standard EPIC or UTAS pattern monitor (100 cd/m^2) Optional high-brightness (500 cd/m^2) monitor.
- Chin rest assembly to assure constant patient-to-screen distance.
- Patient monitoring camera with image visible on operator screen.

Research Papers Based on the Stimulus Presentation and Analysis Engine of LKC's Multifocal ERG

- Zhang, X (2001). *Recording Local Spatial Lateral Interaction with M-Sequences*. Paper presented at the First Asian Conference on Vision (2001), Japan.
- Zhang, X (2002). A multifocal VEP paradigm for simultaneously recording flash, pattern reversal, temporal interaction and spatial interaction responses. *Invest Ophthalmol & Vis Sci, 43, U1337*.
- Zhang, X (2003). *Simultaneously recording local luminance responses, spatial and temporal interactions in the visual system with m-sequences. Vision Res*, 43(15), 1689-1698.
- Park, J C, Zhang, X, Ferrera, et al. (2006). *Comparison of Contrast Response Functions from Multifocal Visual Evoked Potentials (mfVEPs) and Functional MRI Signals. Paper presented at the Vision Science Society, Sarasota*.
- Zhang X, Hood DC (2006). *The Cortical Sources of the Multifocal VEP revealed by ICA Analysis: Separating mfVEP Signal From Noise.* Poster presented at ARVO 2006, Ft. Lauderdale.
- Zhang X, Park JC, Salant H, Thomas S, Hirsch H, Hood DC (2008). A multiplicative model for spatial interaction in the human visual cortex. Journal of Vision 8(8):4, 1-9
- Zhang X, Wang M, Park H, Hood DC (2008). A Method for Simultaneously Obtaining Behavioral Thresholds and Multifocal Visual Evoked Potentials (mfVEP). Poster presented at ARVO 2008, Ft. Lauderdale
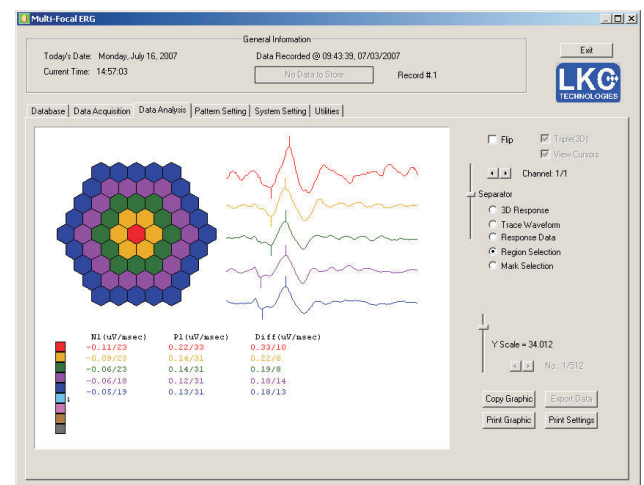
All specifications subject to change.

Trace Array Waveform Display
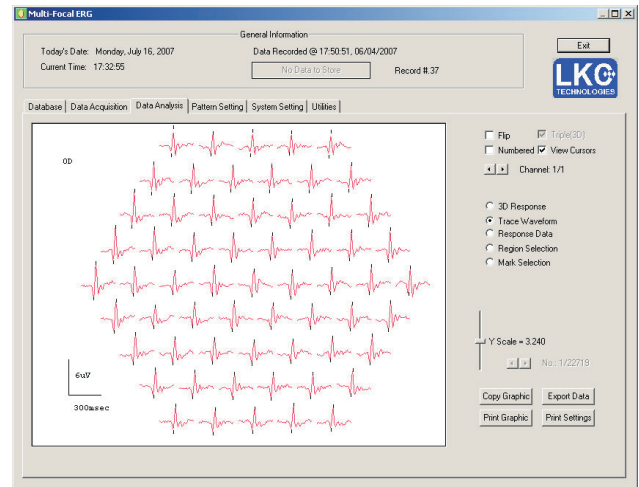
3-D Amplitude Display
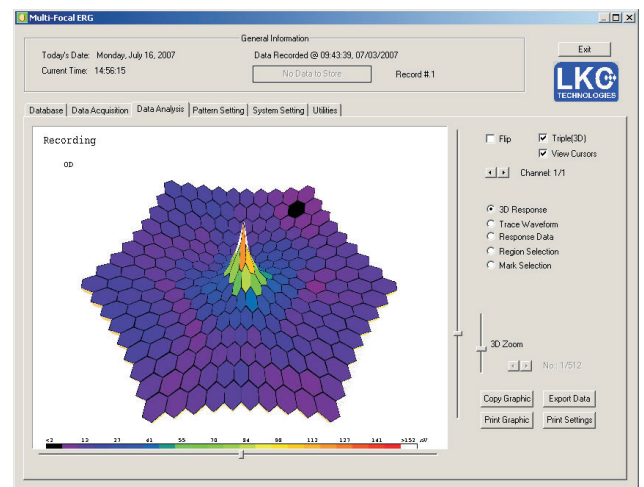
Regional Average Waveform Display

US Office
LKC Technologies, Inc.
2 Professional Drive, Suite 222
Gaithersburg, MD 20879 USA
t: 800.638.7055 (USA)
301.840.1992 (outside USA)
f: 301.330.2237
e: sales@lkc.com

LKC TECHNOLOGIES

LKC Technologies, Inc., established in 1975, is anISO 13485:2003 certified and FDA registered medical device manufacturer with quality products in over forty countries.