Espion E³ Electroretinography System

The Espion E³ is a full featured, modular electrophysiology system capable of generating visual stimuli for any stimulator. Together with Diagnosys’ industry-leading stimulators, it is capable of performing not only all ISCEV standard ERG tests, but any visual electrophysiology tests, even those previously possible only with custom lab-built equipment.

Design Features

- Sleek, modern design
- Hardened, machined aluminum case
- Multiple PC configurations including: Touchscreen, Laptop, Rugged Laptop, Tablet and Desktop PC

Features

- Advanced real-time DSP based acquisition system with integrated power isolation
- 5 integral computer-controlled fully-isolated differential amplifiers with industry-first 32-bit ADCs, all digital low, high and band pass filters, DC input, (not AC coupled) and new, light-guided impedance measurement system
- 2 TTL compatible isolated trigger input and output BNCs
- Power on and status indicator LEDs
- USB communication
- Direct pattern generator connection
- Isolated auxiliary line outlets

Espion Software

- Includes ISCEV standard test protocols and the ability to create new protocols for custom testing
- Specialized animal testing protocols available
- Industry standard SQL database using an advanced interface for comprehensive data storage and retrieval
- SQL based Patient Management System
- Microsoft Office™ integration for intuitive, drag and drop report generation
Data Acquisition
The data acquisition system is based around a fast DSP microprocessor that controls and synchronizes data acquisition and stimulator timing independently from the PC. The system is comprised of 5 differential DC coupled amplifiers (prevent AC amplifier lockup) with the following specification:

- *Industry-first 32 bit resolution* (<1nV LSB)
- Fully isolated
- Input range +/- 2.5V max; +/-625 mV default
- Automated internal calibration
- Integral anti-alias filter
- Differential channel input gain matching better than 0.01%
- Ultra low noise <1uV RMS
- Input impedance greater than 10⁹ ohms
- CMRR greater than 110dB at 50/60Hz
- 4kHz internal sample frequency
- Automatic impedance measurement measures each input *including ground*, not just each channel
- All filtering is performed digitally

Control Computer Option
- Touchscreen panel PC, Rugged Laptop, Laptop, or Desktop PC configured to current highest hardware standard available at time of purchase
- USB optical mouse and keyboard included

Power Isolation
The Espion Profile System incorporates transformers required to isolate ancillary equipment such as a monitor or printer so they will meet medical leakage current standards. No cumbersome external transformers are needed.

Unique lead testing system uses illuminated receptacles to guide lead insertion and indicate electrode contact quality.