

RETI-port/scan21

Made in Germany

ALL IN ONE

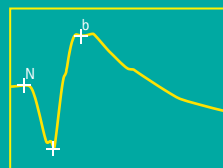
ISCEV and more

ERG, VER, EOG diagnostic for
glaucoma, macula,
retina
and diabetic

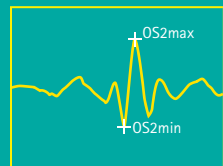
one step forward!



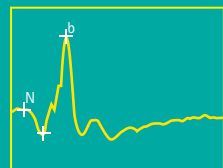
Rod ERG



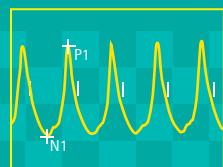
Standard combined ERG



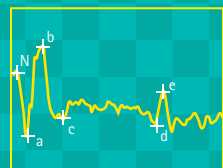
Oscillatory potential



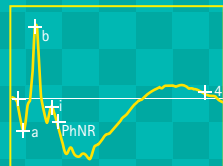
Single-flash cone ERG



30 Hz Flicker ERG



ON-OFF response



PhNR response

Certification:
Quality Management System
EN ISO 9001
EN ISO 13485
TÜV Rheinland CE 0197



**ROLAND
CONSULT**
Electrophysiological diagnostic systems

RETI-port/scan21 product overview

Electrophysiological Test Unit is usable for Pattern VEP + Pattern ERG + Flash VEP, for scotopic and photopic ERG, EOG fast and slow, mf ERG Flash stimulation and mf VEP Pattern stimulation. All ISCEV standards and guidelines are included.

The Roland **RETI-port/scan21S** unit consists of the stimulator units and data recording and analyzing system. The biosignal am-

plifier includes a preamplifier near the patient. All patient data and the results are storage in a database. The biosignal and averaged curves from all channels can display on the monitor. In the analyze mode the system set all markers and computes all defined parameters automatically.

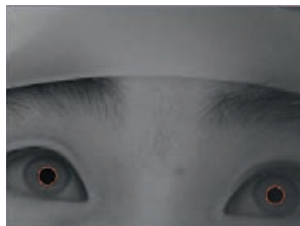
The software includes a lot of advanced features like FFT analyse, OFF-line averaging and PreTrigger.



color-Ganzfeld
Q450SCX flash ERG



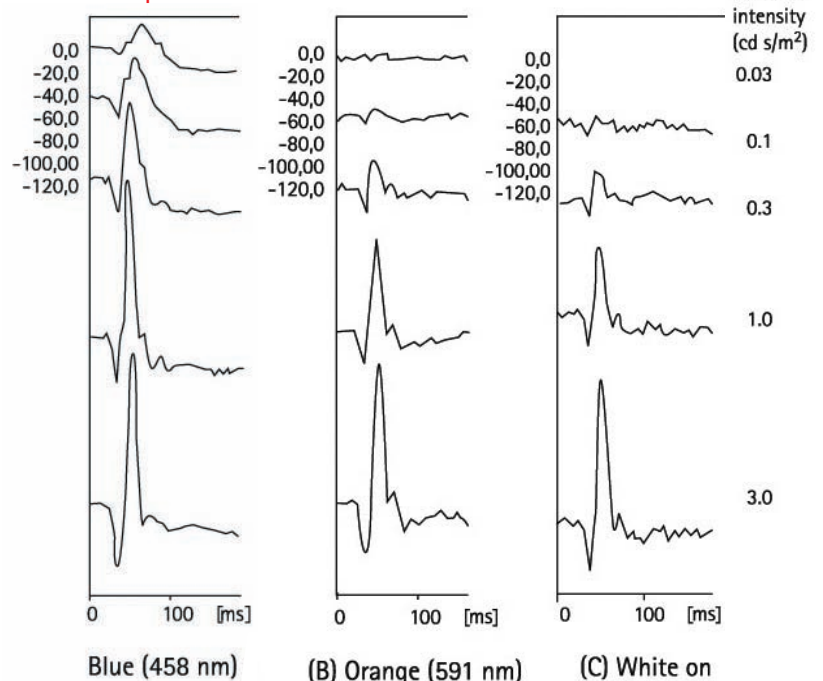
measure pupil size



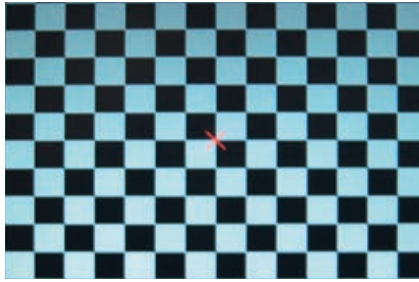
automatic ganzfeld and
monitor calibration
GOSSEN MAVO-MONITOR
via USB



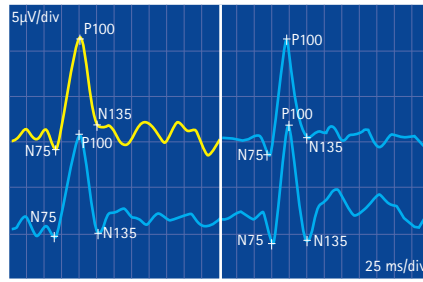
ERG printout results



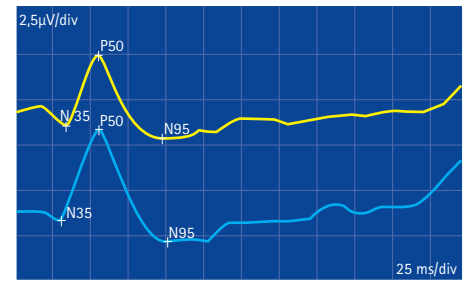
pattern stimulus ERG/VEP



pattern VEP



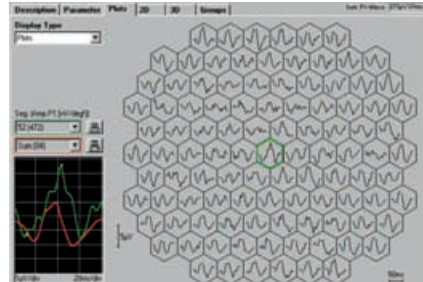
pattern ERG



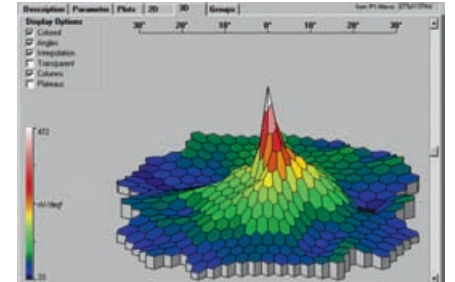
multifocal VEP (mf perimeter)



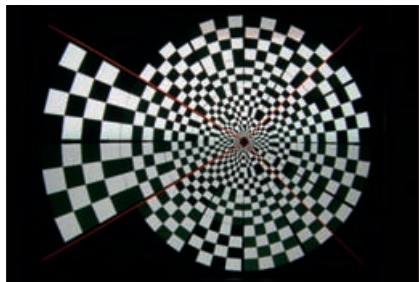
normal ERG plots



3D plot normal patient



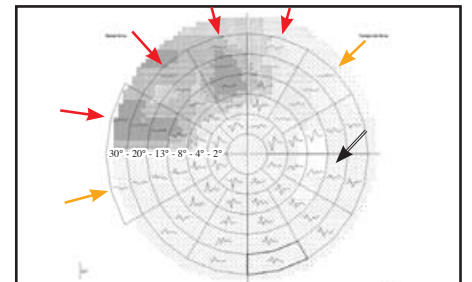
visualfield mfVEP



mf VEP plots



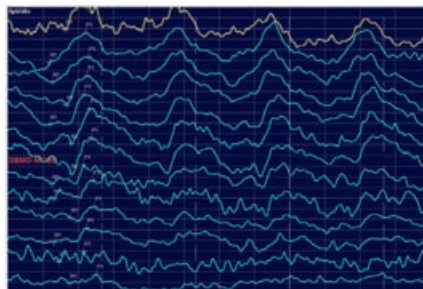
overlapping with visualfield



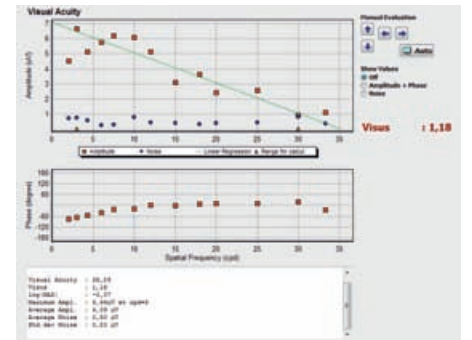
visual acuity



analyse curves



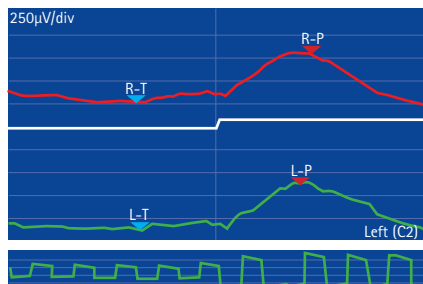
analyse regression curve



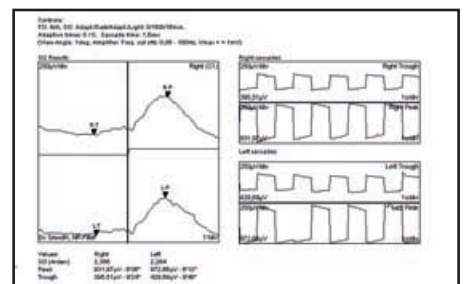
Ganzfeld EOG stimulus



EOG result



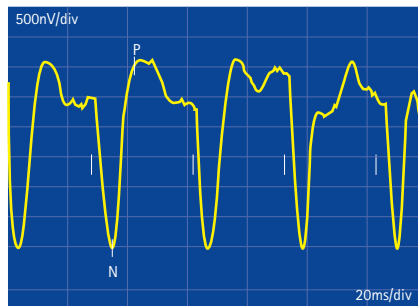
EOG printout normal result



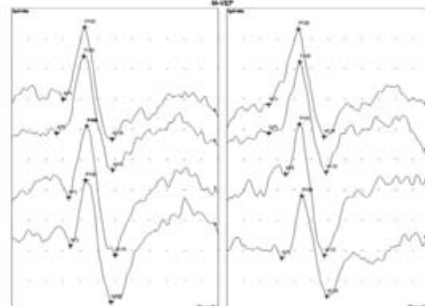
pattern hand held



steady state VEP



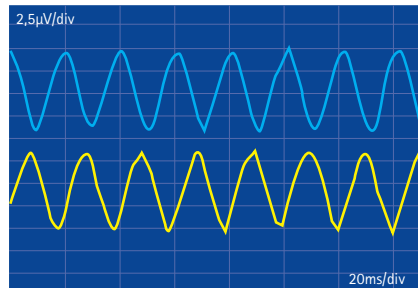
printout transient VEP



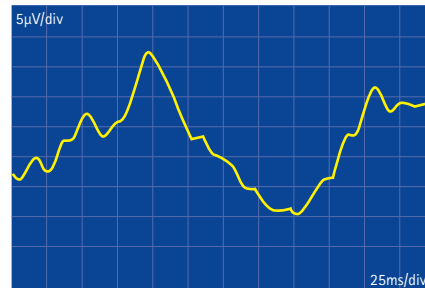
baby-flash ERG/VEP



steady state photopic 30 HzERG (baby)



transient VEP (baby)



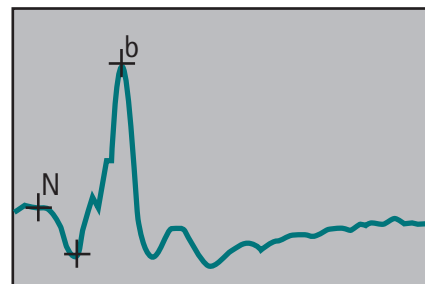
child with flash goggle



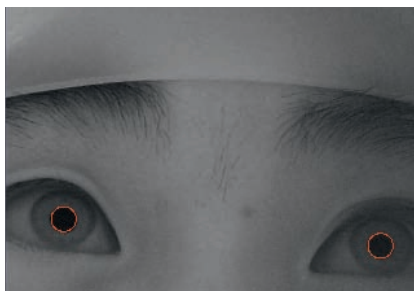
miniganzfeld for flash ERG/VEP



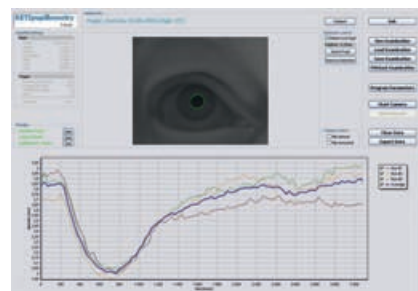
Single-flash cone ERG



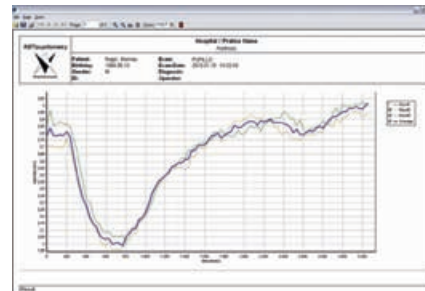
pupillometry



pupillometry measurement



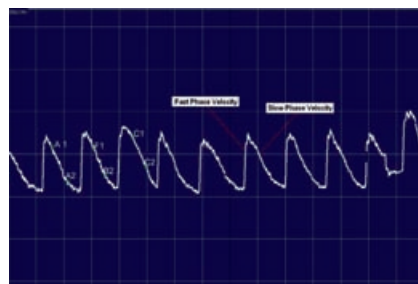
pupillometry result



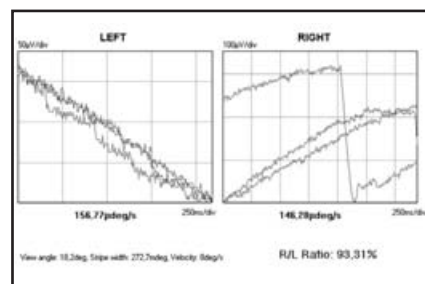
nystagmography stimulus



nystagmography measurement left



nystagmography results



RETI-port/scan21 - Standard and Options

Programs	RETI-port gamma	RETI-port gamma plus	RETI-port gamma plus ²	RETI-scan	RETI-scan science
Pattern-VEP	●	●	●	○	○
Pattern-ERG	●	●	●	○	○
Flash-VEP	●	●	●		
Flash-ERG	●	●	●		
EOG	●	●	●		
Multifocal Science		●	●	●	●
Multifocal ERG		●	●	●	●
Multifocal VEP			●		●
Visual Acuity	○	○	○	○	○
Glaucoma Screening	○	○	○	○	○
Contrast Sensitivity	○	○	○	○	○
Nystagmography	○	○	○	○	○
EMG		○	○	○	○
Pupillometry	○	○	○		

Stimulators

Monitor	●	●	●	●	●
Ganzfeld Q450C	●			○	○
Ganzfeld Q450SC	○	●	●	○	○
Ganzfeld Q450SCX	○	○	○	○	○
Miniganzfeld	○	○	○	○	○
BABYflash	○	○	○	○	○
Flash Goggle	○	○	○	○	○
Pattern Handheld	○	○	○	○	○

Examinations

ISCEV Standard	●	●	●		●
ISCEV and more	○	●	●		●
Scientific tool		●	●	●	●

Bio Signals

2 Channels	●			●	
4 Channels	○	●	●	○	●
6 Channels		○	○	○	○
8 Channels		○	○	○	○

● Standard ○ Option

Summary of Indications for Specific Tests

Provisional Diagnosis	EOG	ERG	Bright Flash ERG	Pattern ERG	Flash VEP	Pattern VEP	Special VEP	mf VEP
Inherited retinal dystrophies	+	+		+		+		
Vascular diseases including diabetes		+		+		+		
Opaque media or trauma		+	+		+			
Retrobulbar neuritis				+	+	+		
Unexplained visual loss		+		+	+	+		
Infant with questionable vision		+		+	+	+	+	
Albinism		+					+	
Toxic and nutritional eye disease	+	+		+	+	+		
Glaucoma				+				+
Suspected intracranial lesion				+		+	+	

The RETI-port/scan21

Features:

- Delivered with standard ISCEV programs and more
- User can customize programs
- Biosignal and average result can displayed on the screen
- Automatic artifact rejection
- All amplifier parameters are software-controlled
- Automated electrode impedance test can be started any time
- Offline averaging of single responses
- Multifocal analyze each signal with N1, P1 marker, 2D, 3D groups and user groups
- Many special mathematical features to calculate many different parameters
- FFT-Fast Fourier Transformation to analyze steady state results
- DSP-Digital Signal Processing Filter
- Database with backup on DVD RW
- All data can be exported to EXCEL for statistic analyze
- Allow to analyze in local area network
- Different eye fixation cameras
- Motorized operator table

Operating unit:

- Intel Core i5-2500 CPU (3.3 GHz), 2 GB RAM, HDD: 500 GB
- 24" TFT Control Monitor
- Analog-digital-converter KPCI 12bit
- Keyboard, Mouse
- Color printer (optional)
- Software: MS Windows, Nero, Antivirus, Team-Viewer

Biosignal amplifier:

- 2, 4, 6 or 8 channel
- Type BF check voltage 1,5 kV
- Impedance $2 \times 100 \text{ M}\Omega$, Noise $< 4 \mu\text{V(SS)}$
- Common mode rejection $> 120 \text{ dB}$
- Gain up to 150.000
- Sensitivity $10 \mu\text{V/Div}$ to 2 mV/Div
- High pass: 20 Hz to 10 kHz
- Low pass : 0,02 Hz to 1 kHz

Monitor Stimulator unit:

- High Quality Brand industrial PC-System
- 19" color-monitor, luminance 120 cd/m^2 ; high contrast
- Pattern or stripes positions: full, half or quarter
- automatically calculated check size by input the angle in degrees and minutes
- Software controlled contrast settings (3 % - 99 %)

- black and white or different color settings
- Pattern reversal, appearance/disappearance
- Different fixation options: dot, cross, lines and text
- special fixation pictures for children

Ganzfeld Q450SC:

- super color Ganzfeld with white, royal blue, blue, green, amber and red LEDs for advanced flash and backlight
- Full field globe 400 mm
- Integrated eye fixation camera
- All parameters are software controlled via USB connection
- White LED: Flash and Backlight
 - Standard flash: $3,0 \text{ cds/m}^2$; range: $0,0003 \text{ cds/m}^2$ (-40 dB) to $9,5 \text{ cds/m}^2$ (+5 dB)
 - Flash Frequency: 0,005 Hz to 100 Hz
 - Background luminance: fix settings: 30 cd/m^2 , 100 cd/m^2 , 450 cd/m^2 range: from 1 cd/m^2 to 1000 cd/m^2
 - ON-OFF Response: 100 ms - 500 ms
- Color LEDs Flash and Backlight
 - Standard flash for all colors: $3,0 \text{ cds/m}^2$ Blue, green, amber and red range: $0,000095 \text{ cds/m}^2$ (-45 dB) to $3,0 \text{ cds/m}^2$ (0 dB) royal blue range: $0,00003 \text{ cds/m}^2$ (-50 dB) to $0,95 \text{ cds/m}^2$ (-5 dB)
 - Background luminance: fix settings: 10 cd/m^2 , 15 cd/m^2 , 20 cd/m^2 , 30 cd/m^2 , 50 cd/m^2 individual: from 1 to 200 cd/m^2 blue, green, amber and red from 1 to 50 cd/m^2 royal blue
 - ON-OFF Response: 100 ms - 500 ms
- Option Flimmer Check according to Prof. Kremers:
 - For each color: Selectable waveform type: sine wave, rectangular wave, triangular wave, ramp up or ramp down
 - Phase shift: 0° - 359° in steps of 1°
 - Contrast: 0,1% - 100 % in steps of 0,1%
 - Stimulation frequency: 1 Hz - 150 Hz
- Option Xenon: Ganzfeld Q450 SCX
 - Xenon tube for white High Flash (option)
 - Intensities: $9,5 \text{ cds/m}^2$ (5 dB), 30 cds/m^2 (10 dB) and 95 cds/m^2 (15 dB)

Distributor:



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