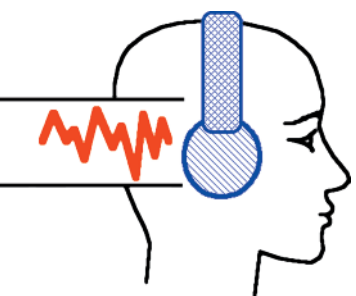
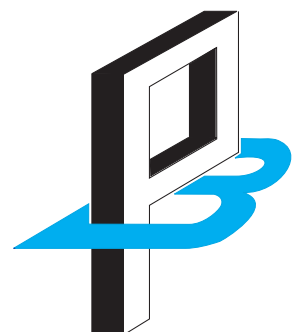


# Configurable Systems for Evoked Response Audiometry



Pilot Blankenfelde GmbH



# Frequency specific measurement of hearing thresholds

The objective determination of frequency specific hearing thresholds gains increasing importance within auditory evoked potentials measurements. It is crucial to know the exact threshold curve for hearing aid fitting purposes as well as for cochlear implantation decisions. Nowadays, different methods are available.

## ■ Chirp-ABR

The Chirp-Stimulus generates an optimized synchronous excitation of neurons in all regions of the basilar membrane. The stimulus structure also allows modifications to excite predefined regions in the Cochlea. The application of the Low-Chirp (100 – 800 Hz) and the High-Chirp (1 kHz – 10 kHz) provides the possibility of an objective assessment of the hearing threshold in the respective frequency range.

## ■ Notched-Noise-ABR

The Notched-Noise-Technology uses specific masking with noise that shows a notch in its spectrum. A tone pulse with the respective frequency is embedded into the notch of the masking noise. The evoked potential is frequency specific since all but the frequency area of the tone pulse are desynchronized on the Cochlea.

## ■ Auditory steady-state response (ASSR)

The acoustic stimulation is performed by an amplitude modulated continuous tone. The amplitude of the carrier frequency varies in a sinusoidal manner with the modulation frequency. This steady tone variation elicits a periodic response signal whose frequency follows the amplitude variation of the stimulus carrier. Specific statistic tests are used to objectively detected the evoked response.





## Corona – free configurable ABR-System

The measurement of Acoustic Brain Responses (ABR) is a basic diagnostic tool in the daily audiologic routine. ABR can be used to detect disorders from the peripheral hearing organ to the neural pathway.

Especially to meet these demanding applications in clinics and private practices the ABR device "Corona" was been developed. One or two channel versions are offered to match different requirements.

Besides standard ABR, middle latency potential (MLP) and late response measurements, methods for the frequency specific threshold determination are available, including Notched-Noise techniques, ASSR and Chirp-ABR.

Furthermore, bone conduction stimulation and VEMP-application are possible as well as other special options.

The devices are easy to use because of a user friendly handling and the availability of all necessary parameters.

Stimulus rate, stimulus polarity, analysis time and other parameters can be selected. Measurement sequences can be stored and re-used for other measurements.

The universal concept allows to grade up the system with additional options at any time.



# Technical Data



## MAX. STIMULUS LEVEL

- Stimulation 100 dBHL
- Masking White Noise max.: 70 dBHL

## FILTERS

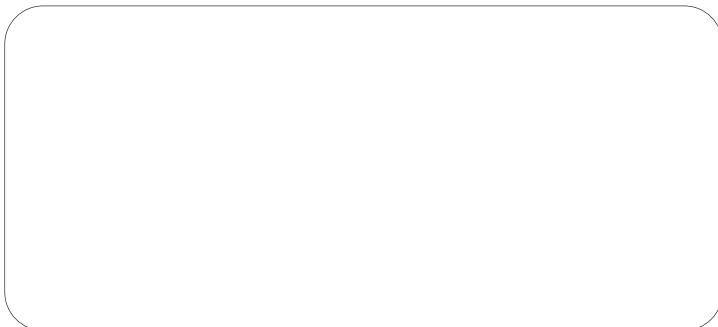
- ABR 30 Hz .. 3000 Hz  
150 Hz .. 3000 Hz
- MLR 30 Hz .. 300 Hz
- VEMP 90 Hz .. 300 Hz
- LLR 0,3 Hz .. 30 Hz

**REPETITION RATE** 0,2 Hz .. 90Hz

## STIMULI

- Click 150  $\mu$ s
- Gauss 2 ms (0,5, 1, 2, 3, 4 kHz)
- Burst 320 ms (0,5, 1, 2, 3, 4 KHz)
- Wave Arbitrary stimulus in wav-file
- ASSR Amplitude-modulated sinewave  
(carrier: 0,5; 1; 2; 4kHz;  
modulation: 80-90Hz)

Distribution



## PREAMPLIFIER SENSITIVITY

300  $\mu$ Vss

## INPUT IMPEDANCE

10 MOhm

## INPUT NOISE LEVEL

< 0,8  $\mu$ V

## ADU-CHANNELS

2

## ADU-RESOLUTION

16 Bit

**ADU-ACQUISITION RATE** 20 kHz

## ANALYSIS TIME

- Screening-ABR 16 ms
- ABR 20 ms
- VEMP/MLR 80 ms
- LLR 800 ms

## System Modules

- BERA
- Notched-Noise-ABR
- Chirp – ABR
- ASSR
- Screening-ABR
- LLR
- VEMP
- MLR
- Bone conduction (Click)
- ECoChG
- MMN
- Wave – arbitrary stimuli
- Trigger IN/OUT
- 2. Channel