



MB 11

PC based AABR Screening

MB 11 BERAprone® / MB11 Classic

An Auditory Brainstem Response (ABR) test measures the neural activity of a large portion of the auditory pathway. ABR recording can be applied to identify hearing problems which can be related to inner ear or subcortical auditory structures. Electrodes pick up the electrical activity from surface of the skin, including the activity of the brain, muscle activities (myogenic noise) and electromagnetic interferences. Screening ABR devices analyze these activities automatically by looking for specific patterns, which indicate a normal transduction of sounds into electrical activity and its processing by the auditory brainstem. An automated response detection algorithm provides a simple Pass/Refer outcome.

Newborn Hearing Screening

The two methods considered suitable for newborn hearing screening are OAE (otoacoustic emissions) and ABR (automated auditory brainstem response).

AABR testing is acknowledged as the superior technique because of a typically higher specificity, meaning that fewer babies with normal hearing will be referred for further evaluation. It can detect hearing problems caused by conditions in the auditory nervous system whereas OAE only can detect cochlear hearing loss. AABR is particularly recommended for babies with higher risk for hearing loss.

Powerful Automated ABR for Accurate Results

The MB 11 makes use of our unique CE-Chirp® stimulus and a powerful detection algorithm. Together, they achieve accurate pass and refer results within seconds. The patented CE-Chirp® stimulates all regions of the cochlea at the same time and thus generates a much larger response – for faster results than a standard click. This leads to very reliable results under normal nursery conditions.

 **CE-Chirp®** inside

MB 11 BERAprone®



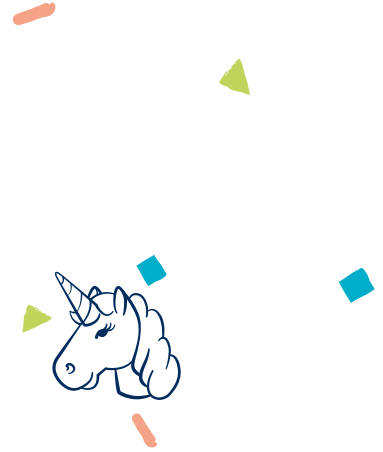
MB 11 Classic

MB 11 Features & Benefits

The MB 11 is a PC based ABR screening device, which can be fully controlled by the dedicated user-friendly MB 11 software. It allows you to control the measurement, view results and manage patient data in one application. You always have the patients test history available and can print results directly.

The MB 11 Features

- Fast and automated ABR screening
- Easy to use PC software
- patented CE-Chirp® stimulus
- Automatic impedance test to ensure good test conditions
- Powerful response detection algorithms for short test duration
- Multiple ABR transducer choices
- Unique eco friendly BERAprone® which eliminates the need for disposables
- Use of MB 11 Classic with EarCup or eartips
- Simple Pass/Refer outcome



**Baby-friendly –
No adhesive disposables,
no pulling, no pain.**



MB 11 Versions

Choose between our Unique MB 11 BERAphone® or MB 11 Classic with Insert Phones

The MB 11 BERAphone® stands for innovation in Newborn Hearing Screening — the unique, patented ABR system offers a fast and automated hearing test for newborns without the use of adhesive disposables. To grant babies the comfort of disposable-free ABR screening, our BERAphone® comes with integrated electrodes and a speaker in a single unit.

Automated ABR tests with the MAICO MB 11 can also be conducted using insert phones with Infant EarCups™ and Snap Electrodes. The Sanibel Infant EarCup™ is a high quality, low cost over-the-ear disposable, ideal for newborn hearing screening of both ears at the same time. The design helps to reduce the effects of ambient noise during testing.



AABR with Reusable Electrodes

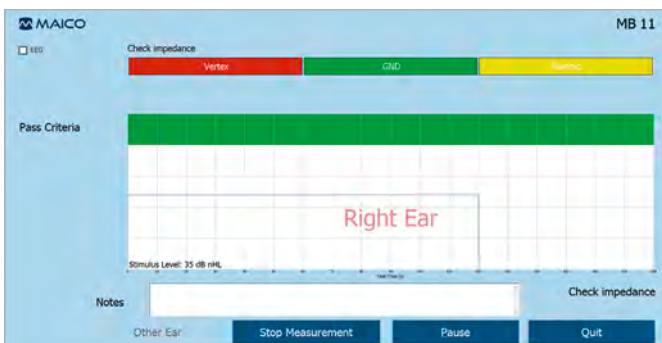
- Integrated electrodes and transducer to save costs for disposables
- Eco friendly
- Comfortable hearing screening for the baby



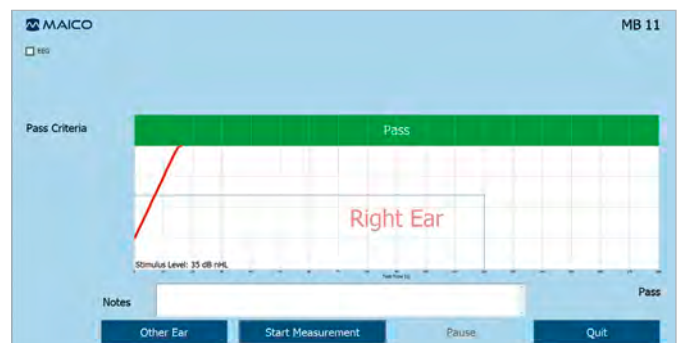
AABR with Insert Phones

- Self-adhesive electrodes
- Binaural ABR screening
- EarCup and eartip option
- High quality Sanibel Infant EarCup™, eartips and electrodes

MB 11 Software



Traffic Light – traffic light display for electrode contact and test quality provides easy to understand feedback to screeners.



PASS Screen – The combination of the advanced response detection algorithm and the patented CE-Chirp stimulus allows fast test times and optimal screening quality.

Standard Components

MB 11 BERAphone®



MB 11 Box



BERAphone® with cradle



Electrode gel

- Carrying case
- Set of replacement electrodes
- PC Software
- USB cable

MB 11 Classic



MB 11 Box



Pre-amplifier



IP30 Insert phone



Electrodes and Infant EarCups™

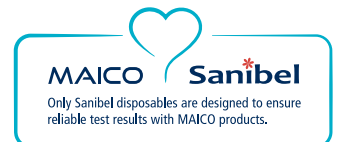
- Electrode cables
- Set of replacement electrodes and Infant EarCups™
- Nuprep® preparation gel
- Carrying case
- PC Software
- USB cable

Optional Component

- Label printer

Sanibel

We highly recommend to use Sanibel disposables in order to guarantee optimal test results.



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Technical Data MB 11

MB 11 Box

Dimensions / Weight	120 mm x 93 mm x 30 mm / 142 g
PC interface	USB
Power supply	USB-Port 5V DC max. 400 mA

ABR

Stimuli	CE-Chirp®
Stimulus rate	~90 /s
Stimulus level	35 dB nHL
Impedance test	Automatic pre-test
Test duration	16 s to 180 s
Artifact rejection level	100 µV



BERAphone®



Test mode	monaural
One Channel	3 reusable stainless-steel electrodes
Gain	69.6 dB
CMR Ratio	>110 dB at 80 Hz
Transducer	Integrated dynamic speaker (8 Ω)
Dimensions / Weight	160 mm x 87 mm x 60 mm / 285 g

Cradle

Dimensions / Weight	119 mm x 160 mm x 74 mm / 270 g
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MB 11 Software

Display	Test result (PASS, REFER or Abort), test diagram with line towards PASS, signal quality or EEG, traffic light for impedance test
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Languages	English, German, Spanish, French, Italian, Dutch (Belgium), Turkish, Hungarian, Russian, Chinese, Japanese
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Standards

IEC 60645-7, type 2, IEC 60601-1 BF, IEC 60601-1-2, according to medical device directive 93/42/EEC



Computer Requirements

Type	2 GHz or more
RAM	Minimum 1 GB
Hard Disk	Minimum 10 GB free disk space
Interface	USB 1.1, 2.0 or 3.0
Display	Min. resolution 1280 x 1024 or higher
Graphic card	Direct X9 with WDDM 1.0 or higher
Operating System	Windows 7 32/64-bit Professional Windows 8 32/64-bit Pro Windows 10 32/64-bit Pro

Classic Preamplifier

Test mode	monaural/binaural
One Channel	3 electrode cables (black, yellow and white)
Gain	69.8 dB
CMR Ratio	>110 dB at 80 Hz
Dimensions / Weight	100 mm x 100 mm x 22 mm / 100 g
Transducer	IP30 with EarCup™ adapter