



# 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.



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 BERAprone®



MB 11 Box



BERAprone® with cradle



Electrode gel

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

## MB 11 Classic



MB 11 Box



Preamplifier



IP30 Insert phone



Electrodes and Infant EarCups™

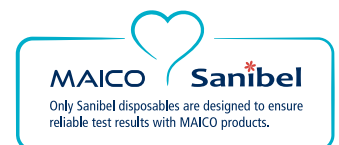
- Electrode cables
- Set of replacement electrodes and Infant EarCups™
- Nuprep® preparation gel
- Carrying case
- PC Software
- USB cable

## 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

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

## ABR

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



## BERAphone®



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

## Cradle

<b>Dimensions / Weight</b>	119 mm x 160 mm x 74 mm / 270 g
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## MB 11 Software

<b>Display</b>	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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<b>Languages</b>	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

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

## Classic Preamplifier

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