

# *The new solution for clinical audiometry*

## **The MA 53 true two channel audiometer**



- True two channels - for presentation of 2 different frequencies
- Air-, bone, speech and freefield with built-in power amplifier
- Tone, pulse, warble, masking and CD/tape/microphone input
- Clinical features such as SISI, DLI, ABLB and Carhart decay testing
- Complex mixing for presentation of test and masking signal to one ear
- RS 232 serial PC interface with Noah software driver
- Optional high tone audiometry for AC and BC up to 16 kHz
- Optional insert phone capabilities



# Clinical audiometry with advanced features and reasonable price with the **MA 53** portable audiometer

## **Truly portable design**

The new, ergonomical **MA 53** has a rugged, integral carrying case with ample storage for all accessories. The soft, comfortable handle and light weight - 5,8 kg/12,8 lb. including accessories - makes transporting the instrument easy. And, it takes less than one minute to open the front cover, connect to power and start to operate. A desktop version without the carrying case is optional.

## **True two channels for clinical use**

The **MA 53**'s advanced technology means the operator can choose different test signals and frequencies for the two channels. Diagnostic tests such as SISI, DLI, ABLB, Carhart decay and Stenger are built in. Complex mixing lets the operator route 2 different signals to the same ear. For example, speech in noise, competing message tests or tone on masking. Special functions like channel swap, tracking and interlock make operating the instrument easy.

## **Easy to operate with ergonomic design**

The **MA 53** is fast and easy to operate. The unique detented intensity level control knob can be operated from the top or side. Locating the interrupt/presentation bars and frequency buttons adjacent to the intensity knob allows one handed control. The two channel keyboard layout with LED's for each function ensure error-free operation. A large backlighted graphical LCD display shows all settings and test results. The optional talk-back microphone and assistant phone makes communication with the patient or the patient assistant easy.

## **Automatic data transfer to PC**

The **MA 53** has a standard RS 232 serial interface to automatically transfer test results to a connected PC. A software driver for the NOAH Audiometry and Hearing Aid Fitting program is available.

## **Options for special measurements:**

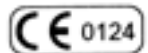
The **MA 53** offers high tone audiometry with AC and BC for advanced diagnostics.



MA 53 with accessories in integral carrying case

## **Technical data**

True two channels	signal generation independent for each channel
Test signals	Pure-, pulsed-, warble-tone; narrow band-, white-, speech-masking noise with two channels
Test frequencies	0,125; 0,25; 0,5; 0,75; 1; 1,5; 2; 3; 4; 6; 8; 12 kHz
Level steps	5 dB (2 dB, 1dB via setup) noise free
Inputs	CD/tape, stereo live speech microphones, external masking, patient microphone, patient response
Outputs	AC, BC, insert phone, freefield, monitor phone, electrical output
Tests	SISI, DLI, ABLB, Langenbeck, Carhart, Stenger test
Functions	Channel swap, tracking, interlock, complex mixing
Standards	IEC 601-1, IEC 645- 1 class 1, IEC 645-2 according to medical directive 93/42/EEC
PC-interface	serial RS 232C, 9-pin connector, MAICO-protocol
Power supply	Mains 90-264 V~, 50/60 Hz, app. 25 VA
Dimensions/weight	W x D x H: 36 x 46 x 15 cm / 4,6 kg, with accessories 5,8 kg
Air-conduction:	
Dynamic range	-10 to max. 120 dB <sub>HL</sub>
Headphones	Telephonics TDH 39 (other types available)
Bone-conduction:	
Dynamic range	-10 to max. 70 dB <sub>HL</sub>
Bone conductor	Radio Ear B 71 (other types available)
Masking signal	narrow band noise, speech masking noise
Freefield:	
Dynamic range	-10 to max 90 dB <sub>HL</sub> at 1m distance, with optional active speakers up to 120 dB <sub>SPL</sub>
Standard accessories	TDH 39, B 71, mains cable, patient response switch, live speech microphone, audiogram paper
Options:	
Optional accessories	Insert phone, Loudspeakers (portable / standard / active), assistant phone, talk back microphone
High tone audiometry up to 16 kHz:	AC with Sennheiser HDA 200 BC with WESTRA KLH 96



Specifications are subject to change without notice



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