

# Arphi®



## DIGITAL PEDIATRIC FREE FIELD AUDIOMETER MODEL AP - 2

### SALIENT POINTS

- DIGITALLY Controlled tones and attenuation
- Testing of children from the age of three months
- Can also be used for adults for "Quick-Check"
- Free-Free-Field screening audiometry.
- Available with testing levels from 90dB to 30dB or 80dB to 20dB free field
- Warble tone for easy analysis
- Fully calibrated for free-field audiometry
- COR and VRA tests
- Touch-Switches for light and tone
- L.E.D. indication of attention and frequency
- One hand operation
- Automatically switches off if left unused, thus extending battery life
- Uses ordinary standard penlite Batteries replaceable in the field by anyone
- Also works on 220V (OR 110V) Ac Mains with an ordinary Battery eliminator
- Lightweight, Hand-held design
- Tough Vacuum - Formed ABS housing for rough handling
- Drop - Proof
- Heat - Proof

The **AP-2** is the world's first **DIGITAL** Free-Field Pediatric Audiometer for testing hearing from the age of about 3 months. It can be used as a "Quick-Check" Free-Field Audiometer for patients of any age. It is small, lightweight and easy to use. The AP-2 is intended to be USED BY ALL GROUPS OF HEALTH-CARE PEOPLE CONNECTED WITH HEARING - TESTING.

#### ONE HAND OPERATION

When the COR test for children is performed the operator uses two AP-2 one in each hand. The units are not connected together electrically but are completely identical, giving the operator full flexibility. The Operator can change intensity and frequency with one hand and at the same time stimulate arbitrarily with tone and light.

#### TOUCH - SWITCH CONTROL

The two stimuli, light and warble tone, are elicited by means of two touch-switches. The stimuli can be given individually or together by letting one finger touch the controls. This gives full freedom for the operator at COR, VAR & APR tests.

#### AUTOMATIC BATTERY SWITCH

The DIGITAL Pediatric Audiometer AP-2 uses ordinary penlite batteries. The instrument automatically switches off after the test, if left unused for 30 seconds. This ensures long Battery life. Under regular normal use, the batteries last approx. ½ month. The AP-2 also can work from 110 or 220v AC Mains with an ordinary 12 volt battery eliminator.

## DESCRIPTION OF THREE TESTS WITH THE PEDIATRIC AUDIOMETER AP - 2

### COR AUDIOMETRY

The DIGITAL Pediatric Audiometer AP-2 can perform Conditioned Orientation Reflex based on a technique describe by Suzuki and Ogiba (1961).The phenomenon called "Orientation Reflex" is not a learned response, but a natural reflex movement elicited by sound or visual stimulation.

If the sound visual stimulation elicits a reflex, and the reflex is conditioned by a tone, the child will look towards the visual stimulation, e.g. flashing light; as soon as the tone is heard. If the co conditioning is effective the child will look in the direction of the sound source, even before the visual stimulation is presented. The COR method is based on co-operation with the child.

### VRA TEST

The DIGITAL Pediatric Audiometer AP-2 can perform Visual Reinforcement Audiometry (Liden and Kankkunen 1969), Which is extension and modification of COR, where the co-operation with the child is less important. Liden and Kankkunen accept not only the sound localization orientation reflex but also four other reactions; reflex reactions (body and face), search reaction, orientation reactions and spontaneous reactions.

### APR TEST

The DIGITAL Pediatric Audiometer AP-2 can also elicit the Auro Palperal Reflex (APR) which is a contraction of the muscles surrounding the eyes. The preferred stimulation is 4000Hz warble tone. 80 dB HL intensity level is normal sufficient for most sleeping infants (Downs and steritt, 1967)

### INSTRUMENT CONDITIONING

When the child has reached age of two to three years, the so called instrument conditioning in testing children can be used i.e. teaching the child to react in certain way on sound stimuli. For this purpose ARPHI has "Peep-show" toy based on play-audiometry.

## TECHNICAL SPECIFICATIONS

### Digital Selection of Frequency ● Digital Selection of Attenuation

LIGHT stimulation	: 3 LEDs arranged in a triangle, Flash - speed 5Hz
FREQUENCIES	: 500, 1000, 2000, 4000Hz Warble tone
IDENTITIES	: 90, 70, 50 and 30dB Free Field Hearing Loss at 16cms. and 80, 60, 40 and 20 dB Free Field Hearing Loss at 50cms.
WARBLE FREQUENCY	: 5Hz + 5%
SOUND SOURCE	: Built in Loud Speaker
MAINS OPERATION	: Can be operated with an optional 12V Battery eliminator
BATTERY OPERATION	: 8 Standard Penlite Cells.
AUTOMATIC SWITCHES-OFF	: For Battery Conservation and economy
TO NE AND LIGHT STIMULATION	: Silent touch switches

**Arphi<sup>®</sup> ELECTRONICS PVT. LTD.**

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