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SCREENING PORTABLE
COMBINED MIDDLE EAR ANALYZER

PRODUCT SPECIFICATIONS



Please contact Resonance should you have any questions:
support@resonance-audiology.com

GENERAL SPECIFICATIONS

DIMENSIONS AND WEIGHT

- L x W x H: 180x135x41 mm
- Net weight: 570 g.
- Body material: self-extinguishing ABS UL 94 V0

TEST TYPES

- Tympanometry, Reflexes, Decay with non acoustic monitor, nr.1 Quick Test with editable protocols, ETF for intact membrane and patulous ET, High Frequency Tympanometry
- Pure tone Audiometry

DISPLAY

- 7" TFT Resistive touch screen display
- 800 by 480 resolution at 133 pixels per inch (ppi) 262K colors

USER INTERFACE

- Intuitive icon system
- Internal patient database

REPORTS

- Data transfer to PC with Resonance Management Data Suite installed
- Dedicated report template

DATA TRANSFER TO PC

- Bluetooth 2.1

USB PORT

- Nr.1 USB host type A (pen drive connection for software upgrade)
- Nr.1 mini USB slave

WINDOWS® COMPATIBLE SOFTWARE

- Resonance MDS Management Data Suite

MAIN SYSTEM COMPONENTS

- Operative system: Microsoft® Windows® Embedded Compact
- CPU: TEGRA® 2 dual core @ 1Ghz

POWER

POWER SUPPLY

- Built-in 3,6V/3,1 Ah rechargeable lithium-ion battery
- External Medical power supply/charger: Input 100-240Vac / 0,3A - 50/60Hz; Output +5Vdc / 2A

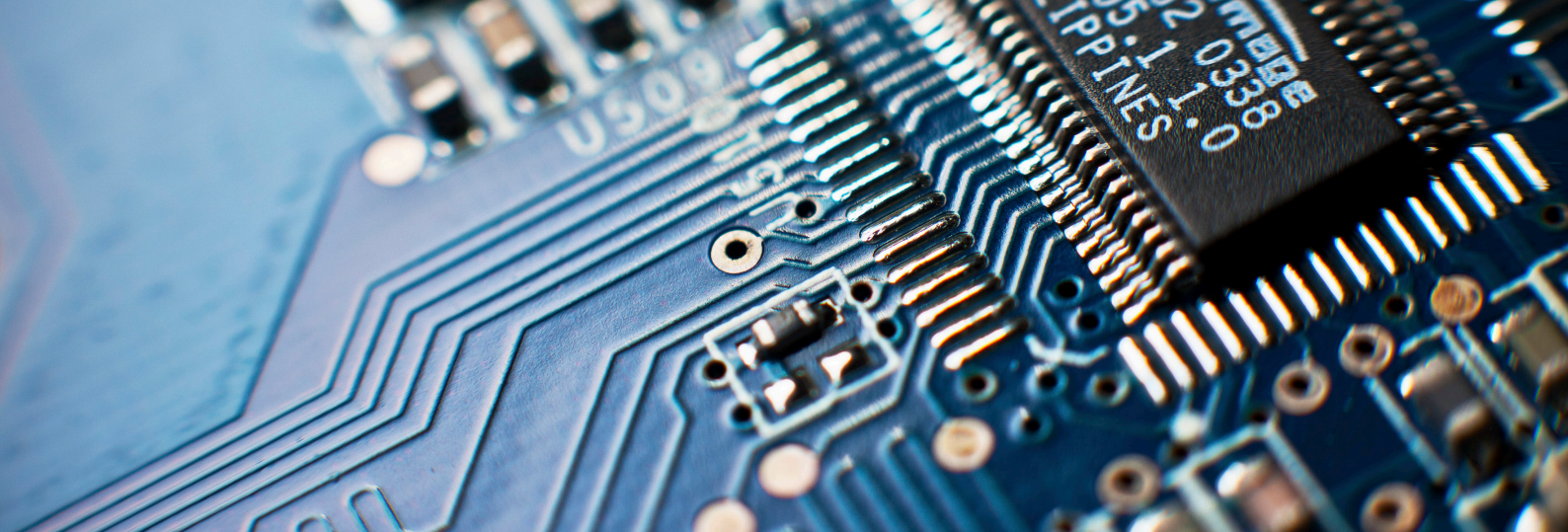
CONSUMPTION (WITH RECHARGEABLE BATTERY)

- Up to 2 hours of continuous testing.
- Charge time with external medical power supply: up to 80% in 2 hours

ENVIRONMENTAL

OPERATING ENVIRONMENT

- Storage: -20° C up to +50° C
- Operating: +15° C up to +35° C
- Humidity: up to 90%, (non condensing)
- Ambient pressure: from 700hPa up to 1060hPa



TYMPANOMETRY OPERATING SPECIFICATIONS

PROBE TONE

- 226 and 1000 Hz
- Measured components: Admittance (Y), Susceptance (B) and Conductance (G)
- The probe is supplied in handheld mode

INTENSITY

- 226 Hz: 85dB SPL \pm 2dB
- 1000 Hz: 75dB SPL \pm 2dB
- Frequency Accuracy: \pm 0,5%
- Harmonic Distortion (THD): Less than 1%

ADMITTANCE MEASUREMENTS

- Compliance range at 226Hz: 0,05 up to 7ml
- Sensitivity scale: Auto Scales to appropriate range, available scale at 226Hz 1, 2, 5 and 7ml
- 1000 Hz: 0 to +25 mmho
- Sensitivity scale: Auto Scales to appropriate range, available scales 5, 10, 15, 20, 25 mmho

AIR PRESSURE

- Control: Automatic
- Range: two selections available: +100/-200 daPa or +200/-400 daPa
- Pressure accuracy: \pm 10 daPa or \pm 10%
- Sweep rate: automatic adaptive speed control or fast (200 daPa/sec)
- Indicator: Measured value is displayed
- Safety limitations: -750 up to +550 daPa

EUSTACHIAN TUBE FUNCTION

- ETF test for use with intact eardrums and patulous ET

ACOUSTIC REFLEX TESTS

- Reflex test method: Threshold and Fixed level
- Stimulus duration: 0,5 or 1 sec.
- User selectable protocols for all test methods
- Ipsi or Contralateral stimulation for all reflex test
- Automated peak search functions available for Quick Test
- Reflex Decay: Manual
- Stimulus duration: 10 or 20 sec.

FREQUENCIES AND INTENSITY RANGES

- Ipsilateral:
 - Pure tone level range (dBHL) from 50 to 100
- Frequency: 500, 1000, 2000, 4000 Hz
- Accuracy: \pm 1%
- Harmonic distortion (THD): less than 3%

- Contralateral:
 - Pure tone level range (dBHL) from 50 to 115
- Frequency: 500, 1000, 2000, 4000
- Accuracy: \pm 1%
- Calibration accuracy \pm 3 dB
- Level steps: 5 or 10 dB
- On/Off ratio: 70 dB minimum

AUDIOMETRY OPERATING SPECIFICATIONS

RANGE

- Frequency range (AC): 125 - 8000 Hz

ACCURACY

- Frequency < 0,5%
- Distortion < 1%
- Crosstalk >70dB
- Attenuator linearity 1dB per 5dB step, max 3dB whole range
- Range stimuli level -10 up to 105 dB HL

TYPE OF SIGNALS

- Pure tone: sine wave 125 to 8Khz signal
- Warble: +/- 5% frequency sine wave modulated, modulation: sine wave 5 Hz
- Narrow band noise: 24dB/oct filtered noise
- On/Off rise - fall time: 40msec

OUTPUT TRANSDUCERS

- AC, ACL: 10 ohm DD45 matched pair earphone

STIMULUS PRESENTATION MODALITY

- Presentation: Normal
- Modality: Steady, Pulsed (rate 2 Hz)
- dB step variation: 1dB, 2dB, 5dB.

QUALITY SYSTEM

Manufactured, designed, developed and marketed under an ISO 13485, ISO 9001 certified quality system. Medical CE marks.

COMPLIANCE/REGULATORY STANDARDS

Designed, tested and manufactured to meet the European and International Standards:

- MDD 93/42/EEC and update 2007/47/CEE: Class IIa (as referred to in Annex IX, rule 10 of said MDD 93/42 EEC)
- Safety: IEC 60601-1, 3rd edition, Class II Type BF
- EMC: IEC 60601-1-2
- Impedance: IEC 60645-5 and ANSI S 3.39 Type 2
- Audiometry: IEC 60645-1 and ANSI S 3.6 Type 4

STANDARD ACCESSORIES

- Probe HF
- Insert for Contra
- Kit of assorted ear tips; size from 6 mm up to 15 mm
- Calibration cavity
- DD45 Headphones
- Build in talk over microphone for patient communication
- Resonance® MDS Software
- Medical Power supply (100Vac - 240Vac)
- Carrying bag
- Charging Cradle
- Pen Drive (with Multilingual Quick user's handbook)
- Touch screen pen

OPTIONALS

- Headband with DD45 for Contra
- EAR3-/5A, IP30 insert earphones for AC use
- Re-Play audiometry for children
- VTMR audiometry test for adults
- Insert earphones for Contra use
- External USB Keyboard
- USB Videoscope
- Wallmount kit

The information, pictures and specifications found in this datasheet are intended as a general guideline for customers seeking information about supplies for Resonance equipment. Resonance makes no warranty, nor assumes any legal liability or responsibility for the accuracy, typing errors or mistakes, correctness or completeness of any information in this datasheet. The information in this datasheet was correct to the best of our knowledge at the time of printing.