

r15c_T

PORTABLE SCREENING COMBO
AUDIOMETER/TYMPANOMETER/OAE

PRODUCT SPECIFICATIONS



GENERAL SPECIFICATIONS

DIMENSIONS AND WEIGHT

- L x W x H: 7.09" x 5.31" x 1.61"
- Net weight: 1.26 lb.
- Body material: self-extinguishing ABS UL 94 V0

TEST TYPES

- Pure tone audiometry (AC BC)
- Auto-threshold
- Resonance® Play Audiometry, optional
- Speech test (performed with on-board recorded speech material)
- Free field speaker, optional
- Tympanometry
- Reflexes
- Nr. 1 Quick Test with editable protocols
- Decay with non-acoustic monitor,
- ETF for intact membrane and patulous ET
- High-Frequency Tympanometry
- DPOAE
- Advance screening TEOAE, optional

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 and 4.0

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

MICROPROCESSOR

- 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 - 240 Vac / 0.3 A - 50/60 Hz
Output +5 Vdc / 2 A

BATTERY LIFE (RECHARGEABLE BATTERY)

- Up to 3 hours of continuous testing
- Charge time with external medical power supply: 80% in 2 hours

ENVIRONMENTAL

OPERATING ENVIRONMENT

- Storage: -4°F up to 122° F
- Operating: 59°F up to 95°F
- Humidity: up to 90% (non-condensing)
- Ambient pressure: from 700 hPa up to 1060 hPa

TYMPANOMETRY OPERATING SPECIFICATIONS

PROBE TONE

- 226 Hz, 85 dB SPL
- 1000 Hz, 75 dB SPL for Admittance (Y) curve with added Susceptance (B) and Conductance (G) curves
- The probe is supplied in handheld mode

INTENSITY

- 226 Hz: 85 dB SPL ± 2 dB
- 1000 Hz: 75 dB SPL ± 2 dB
- Frequency Accuracy: ± 0.5%
- Harmonic Distortion (THD): Less than 1%

ADMITTANCE MEASUREMENTS

- Compliance range at 226 Hz: 0.05 up to 7 ml
- Sensitivity scale: Auto scales to appropriate range, available scale at 226 Hz 1, 2, 5 and 7 ml
- 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: ±10 daPa or ±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

- Ipsilateral 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 (dB HL) from 50 to 100
- Frequency: 500, 1000, 2000, 4000 Hz
- Accuracy: ±1%
- Harmonic distortion (THD): less than 3%

Contralateral:

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

AUDIOMETRY OPERATING SPECIFICATIONS

FREQUENCY RANGE

- AC: 125 - 8000 Hz
- BC: 250 - 6000 Hz

ACCURACY

- Frequency < 0.5%
- Distortion < 1%
- Crosstalk > 70dB
- Range stimuli level AC: -10 up to 105 dB HL
- Range stimuli level BC: -10 up to 70 dB HL

TYPE OF SIGNALS

- Pure tone: sine wave 125 to 8 KHz signal; steady and pulsed
- Warble: +/- 5% frequency sine wave modulated
- Narrow band noise: 24 dB/oct filtered noise
- Speech noise: 1 Khz 12 dB/oct filtered noise
- White noise
- Speech material recorded on SD card

Exclusive U.S. Distributor:

EAR TECHNOLOGY CORPORATION

P.O. Box 1516

Johnson City, TN 37605 USA

1-800-327-8547 or email: resonance@earth.com
resonance-earth.com

r15c_T

PORTABLE SCREENING COMBO
AUDIOMETER/TYMPANOMETER/OAE

PRODUCT SPECIFICATIONS



OUTPUT TRANSDUCERS

- ACR, ACL: DD45 matched pair earphone
- BC: B71W RadioEar

QUALITY SYSTEM

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

COMPLIANCE/REGULATORY STANDARDS

- Designed, tested and manufactured to meet the following European and International Standards:
EN 60645-6 Safety: EN 60601-1
- EMC: EN 60601-1-2

STANDARD ACCESSORIES

- Autothreshold and patient response push button
- Probe HF
- Probe cleaning tool kit
- IP30 insert earphones for Contra
- Kit of assorted ear tips; size 6mm up to 15mm

- Calibration cavity
- DD45 Headphones
- Built-in talk over microphone for patient communication
- Resonance® MDS Software
- Medical Power supply (100 Vac – 240 Vac)
- Durable luggage-grade padded carrying case
- Charging Cradle
- Pen Drive (with Multilingual Quick user's handbook)
- Touch screen pen
- OAE Probe
- Disposable ear tips starter kit
- B71W Bone Conduction

OPTIONAL ACCESSORIES

- Headband with DD45 for Contra
- IP30 Inserts for audiometry
- Re-Play audiometry for children
- VTMR audiometry test for adults
- TEOAE
- Free field amplifier and loudspeakers
- External USB keyboard
- USB Videoscope
- Wi-Fi thermal printer
- Wall mount kit

DPOAE SPECS

FREQUENCY RATIO F2/F1

- 1.22

F2 FREQUENCIES

- 1.5 - 12 kHz, user definable from 2 to 15

L2 STIMULUS LEVEL

- 30 - 70dB SPL

L1 STIMULUS LEVEL

- User definable: automatic (L1=0.4*L2+39 dB), L1=L2, L1-L2+10 dB

ARTIFACT LEVEL

- from 0 to 40 dB SPL

FREQUENCY RESPONSE DETECTION

- User defined stop criterion SNR 3, 6 or 9 dB for each frequency

RESPONSE DETECTION

- From 2 to the number of enabled frequencies

FREQUENCY TEST TIME

- Customizable by user from 2 to 16 s

PROTOCOLS

- 2 pre-set (70 dB e 65-55 dB), 3 user definable

MEASUREMENT TYPES

DIAGNOSTIC TESTING

DPOAE

- 1.5 to 12 kHz, 30 to 70 dB SPL

PROBE

- Connector: LEMO push-pull, circular
- Description:
 - Integrated microphone and receivers in probe head
 - Calibration data stored in the probe
- Cable length: 51.2" (130 cm)
- Weight: 0.17 oz. (5 g)
- Ear tips: Disposable multi-size Resonance ear tips



The OAE modules add-on is available in 4 different configurations. The available protocols for each configuration are summarized below.

DPOAE PROTOCOLS

Type	Available frequencies	F2 Frequencies (kHz)	L1/L2 (dB SPL)	Averaging Time (s)	Pass SNR (dB)	Passing frequencies for test pass
Screening	5	2, 3, 4, 5, 6	65/75 70/70	2 - 16	3, 6 or 9	2 - 5
Diagnostic	Up to 15	1.5, 2, 2.5, 3, 3.3, 4, 4.5, 5, 5.6, 6, 6.6, 7, 8, 10, 12 Selectable by the user	65/55	2 - 16	3, 6 or 9	2 - 15

Exclusive U.S. Distributor:

EAR TECHNOLOGY CORPORATION

P.O. Box 1516

Johnson City, TN 37605 USA

1-800-327-8547 or email: resonance@eartech.com

resonance-eartech.com