

r140

PORTABLE OAE
 HEARING SCREENER



PRODUCT SPECIFICATIONS



For additional information contact
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GENERAL SPECIFICATIONS

DIMENSIONS AND WEIGHT

- L x W x H: 7.1" x 5.3" x 1.6"
- Net weight: 1 lb.
- Case: ABS

DISPLAY

- 7" TFT resistive touch screen display
- 800 x 480 resolution @ 133 pixels per inch (ppi)
- 262k colors

PC INTERFACE

- Bluetooth® 2.1

USB PORT

- No. 1 USB slave
- No. 1 USB host
(pen drive connection for software upgrading)

POWER

POWER SUPPLY

- Built-in 3.6V / 3.1 Ah rechargeable lithium-ion battery
- External medical power supply/charger:
 Input 100-240 V AC / 0.3 A - 50/60Hz;
 Output +5 V DC / 2A

BATTERY LIFE (RECHARGEABLE BATTERY)

- Up to 3 hours of continuous testing
- Charge time with external medical power supply: 80% in 2 hours. Charging cradle provided as a standard.

ENVIRONMENTAL CONDITIONS

OPERATING ENVIRONMENT

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

COMPLIANCE/REGULATORY STANDARDS

Certifying body: IMQ S.p.A. Istituto Italiano Del Marchio Del Qualita
 EN 60645-6
 Safety: EN 60601-1
 EMC: EN 60601-1-2

TEOAE

SAMPLE RATE

- 24 bit 44, 1Ksps

STIMULUS LEVEL

- 70-90 dB pe SPL

STIMULUS RATE

- 66 Hz

WINDOW OF ANALYSIS

- 512 samples (3-15 ms)

TEST TIME

- 500 to 1250 stimuli (from 30 to 75 s)

STIMULATION PROTOCOL

- non-linear click

TEOAE PROTOCOLS

Type	No. of frequencies	Frequencies	Averaging Time (s)	Pass SNR (dB)	No. of passing freq. for Test Pass
Screening	N.A.	From 750 Hz to 5 KHz	30 - 75	N.A.	N.A.
	N.A.	From 750 Hz to 5 KHz	30 - 75	N.A.	N.A.
Diagnostic	5	1, 1.5, 2, 3, 4 kHz	30 - 75	3, 6 or 9	2 - 5
	5	1, 1.5, 2, 3, 4 kHz	30 - 75	3, 6 or 9	2 - 5

3 configurable protocols
 Frequency bands: 0.7 to 5 KHz
 Stim. Intensity: 70 - 90 dB pe SPL
 Customizable fields are indicated in GRAY

ACQUISITION BANDWIDTH

- From 750 Hz to 5 KHz

ARTIFACT LEVEL

- from 20 to 60 dB SPL

TEOAE SCREENING

RESPONSE DETECTION

- Statistical analysis of signal polarity

PROTOCOLS

- 3 user definable

TEOAE DIAGNOSTIC

RESPONSE DETECTION

- User-defined stop criterion SNR 3, 6 or 9 dB, in minimum 2 and maximum 5 of the available frequency bands

FREQUENCY BANDS

- 1, 1.5, 2, 3, 4 KHz

PROTOCOLS

- 3 user definable

Average time (max test time): 30, 45, 60 or 75s
 Pass SNR: 3, 6 or 9 dB
 Passing freq. for Test Pass: selectable from 2 to 5

DPOAE

FREQUENCY RATIO F2/F1

- 1.22

F2 FREQUENCIES

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

L2 STIMULUS LEVEL

- 30 - 70 dB SPL

L1 STIMULUS LEVEL

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

ARTIFACT LEVEL

- 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

DPOAE PROTOCOLS

Type	No. of frequencies	F2 Frequencies	L1/L2 (dB SPL)	Averaging Time (s)	Pass SNR (dB)	No. of passing freq. 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

3 configurable protocols
 Frequency bands: 1.5 to 12 KHz
 Customizable fields are indicated in GRAY:
 L1/L2: 30 to 70 dB SPL
 Average time (per frequency): 2, 4, 8 or 16 s
 Pass SNR: 3, 6, or 9 dB
 Passing Freq. for Test Pass: 2 to 15

MEASUREMENT TYPES

Screening and Diagnostic Testing

TEOAE

- 0.7 to 5 kHz, Stimulus 70-90 dB pe SPL

DPOAE

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

PROBE

- Connector: LEMO push-pull, circular
- Description: – Integrated microphone and receivers in probe head
 – Calibration data stored in the probe
- Cable length: 51.18"
- Weight: .18 oz.
- Ear tips: Disposable multi-size Resonance ear tips

CRADLE

For battery charging and desktop use

DATA

Over 1,000 tests in the unit

Internal database: Available and with possibility of reviewing test results

Transfer to PC: via Bluetooth® 2.1

STANDARD ACCESSORIES

- OAE probe
- Medical power supply
- MDS software suite
- Disposable ear tips starter kit
- Calibration cavity
- User manual
- Durable luggage-grade fabric carrying case
- Pen drive
- Touch screen pen
- Bluetooth® adapter

OPTIONALS

- Wi-Fi printer
- External keyboard
- USB video otoscope
- Wallmount kit

R140 CONFIGURATION OVERVIEW

The R140 is available in 4 different configurations. The available protocols for each configuration are summarized below:

	R140 Screener	R140 Screener	R140 Advanced Screener	R140 Advanced Screener/Diagnostic
TEOAE SCREENING	●		●	●
TEOAE DIAGNOSTIC			●	●
DPOAE DIAGNOSTIC		●		●

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