

Diagnostic ABR

► Turning On/Off, and charging the device



On/off button on right side

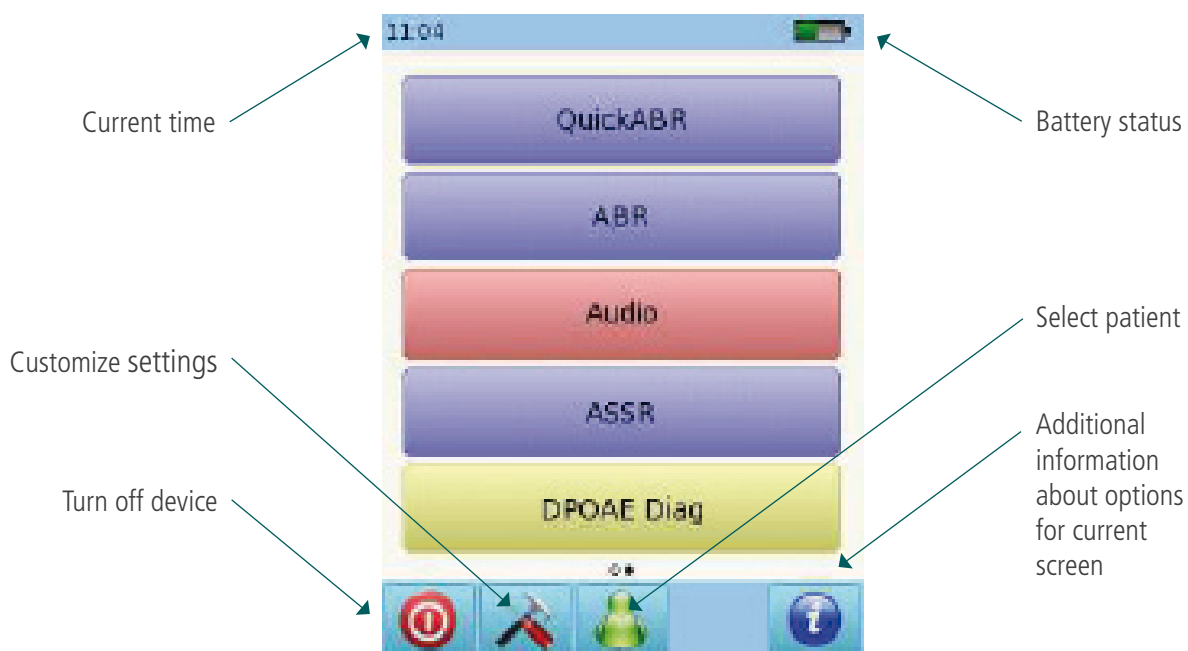
Turn device on/off



Power supply connector

Charging

► Auditory brainstem response (ABR) diagnostic



Connect the electrode cable



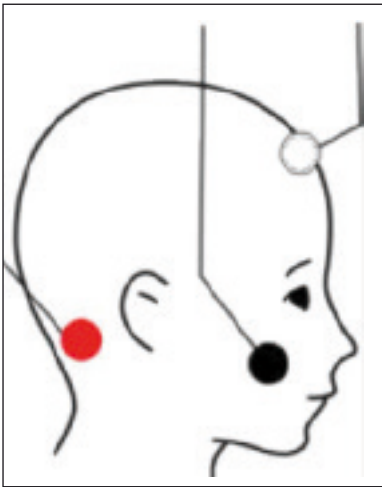
Connect the transducer to the appropriate connector:

Headphones or insert earphones: blue connector Probe: red connector

Second probe for binaural testing: blue connector Bone oscillator: red connector

Clean the patient's skin and place the electrode pads. Connect the clips to the corresponding sites.

Recommended montage is:



White: high forehead

Black: cheek

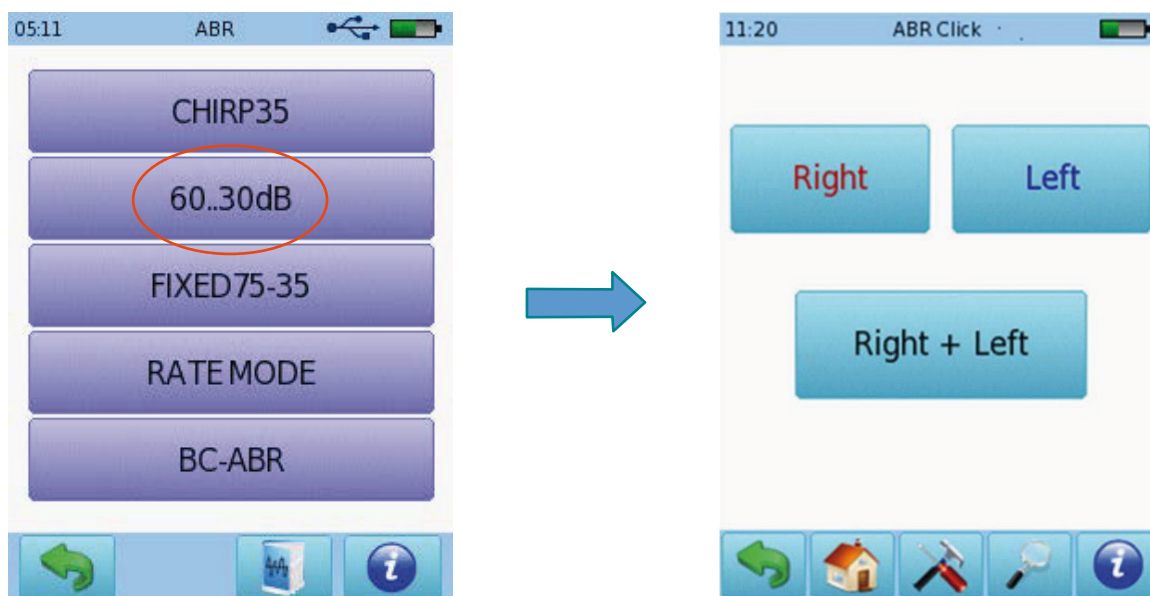
Red: mastoid

For binaural testing, place red electrode on the nape.

If you are using an ear probe or insert earphones, select the appropriate ear tip size and place it on the probe tip. Insert the probe in the ear making sure that the ear tip fits tightly into the ear canal.

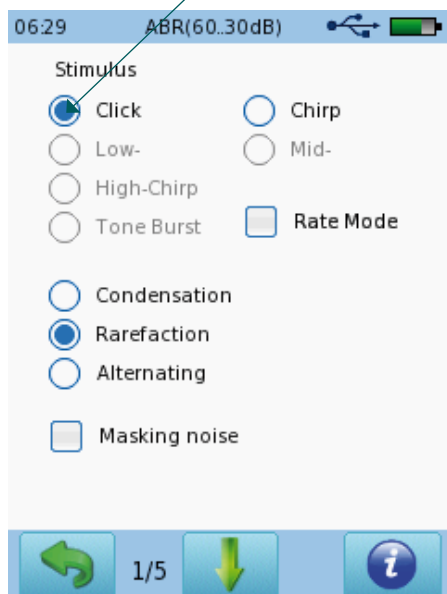
If you are using headphones, place them over the ears. Select ABR.

Select the protocol you would like to use. To change the parameters, select one of the presets and then the tools button at the bottom of the page:



► Configurable test parameters

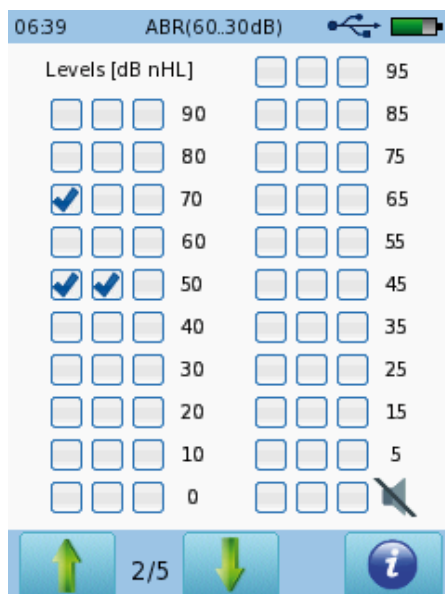
Click will provide better overall morphology. Chirp will provide better wave V amplitude. Select tone burst for frequency specific testing



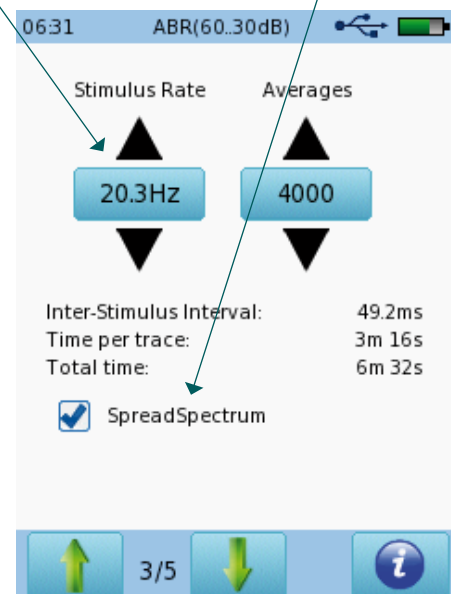
Select type of stimulus and polarity. Masking noise is available only for mon-audal testing.

A lower stimulus rate will provide better wave morphology

Spread Spectrum reduces sensitivity to electrical interference



Select up to 8 testing intensities. Repeat a level to confirm response repeatability.

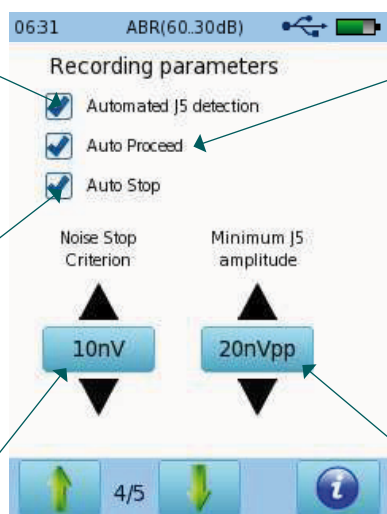


Select stimulus rate, maximum number of averages and spread spectrum.

Statistical evaluation is used to automatically mark wave V. This can be confirmed manually.

Test will be automatically stopped if no response was recorded for two consecutive traces

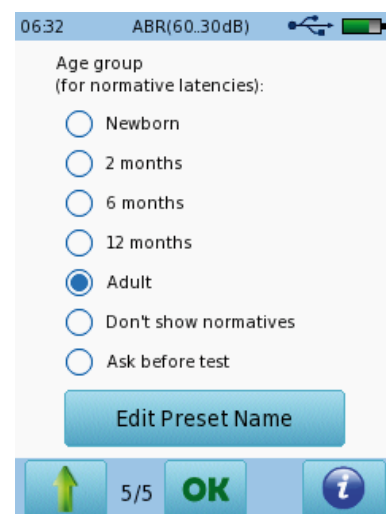
The current trace will be stopped if the residual noise is lower than this value



Select recording parameters

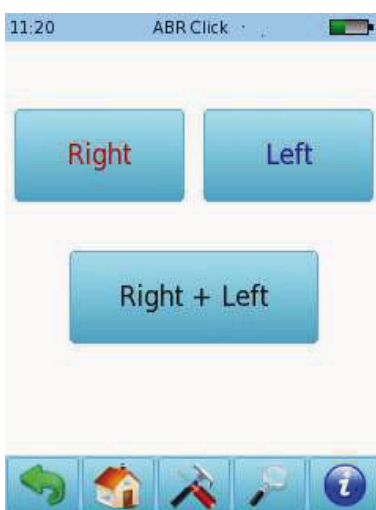
Proceed automatically to the next trace when significance is reached for the current trace

Minimum peak to peak amplitude required for wave V to be marked as

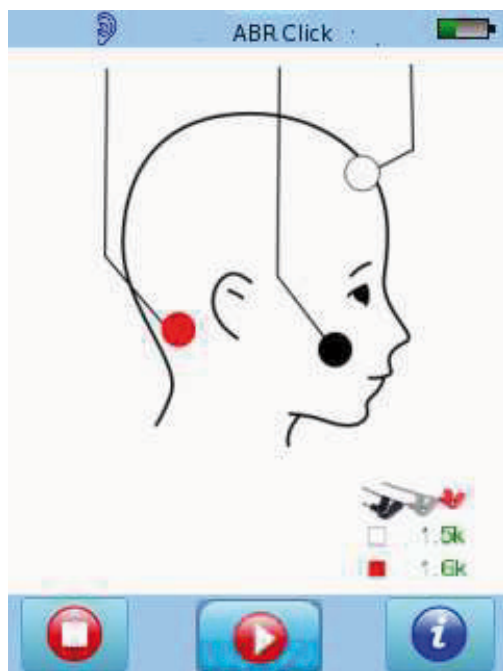


Select latency normative data

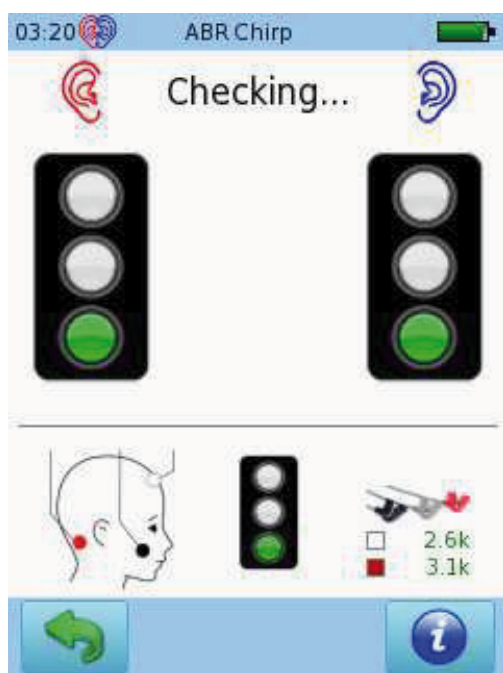
Select the test ear by pressing either the Right or Left button, or Right + Left for binaural testing. Binaural testing is available when headphones, insert phones or two ear probes are connected.



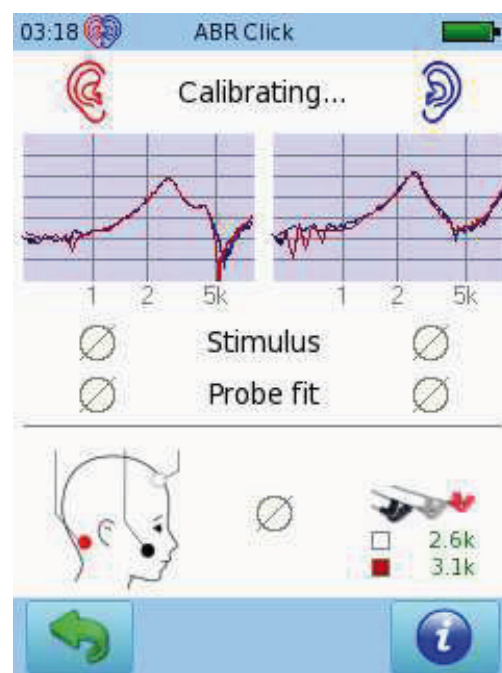
An impedance check will be performed prior to measurement. If impedance is below 6 k ohm, the start button will become available. You can configure the settings for the test to autostart if the impedance is lower than 4 k ohm. If impedance is higher than 6 k ohm but below 12 k ohm, a skip button will become available. An impedance below 6 k ohm is recommended for best test results.



If you are using an ear probe, a calibration will be performed together with the impedance check. You can select the simple calibration or the expert calibration mode in the device set up.

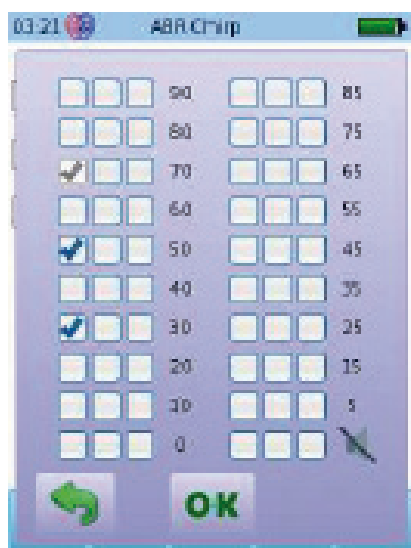
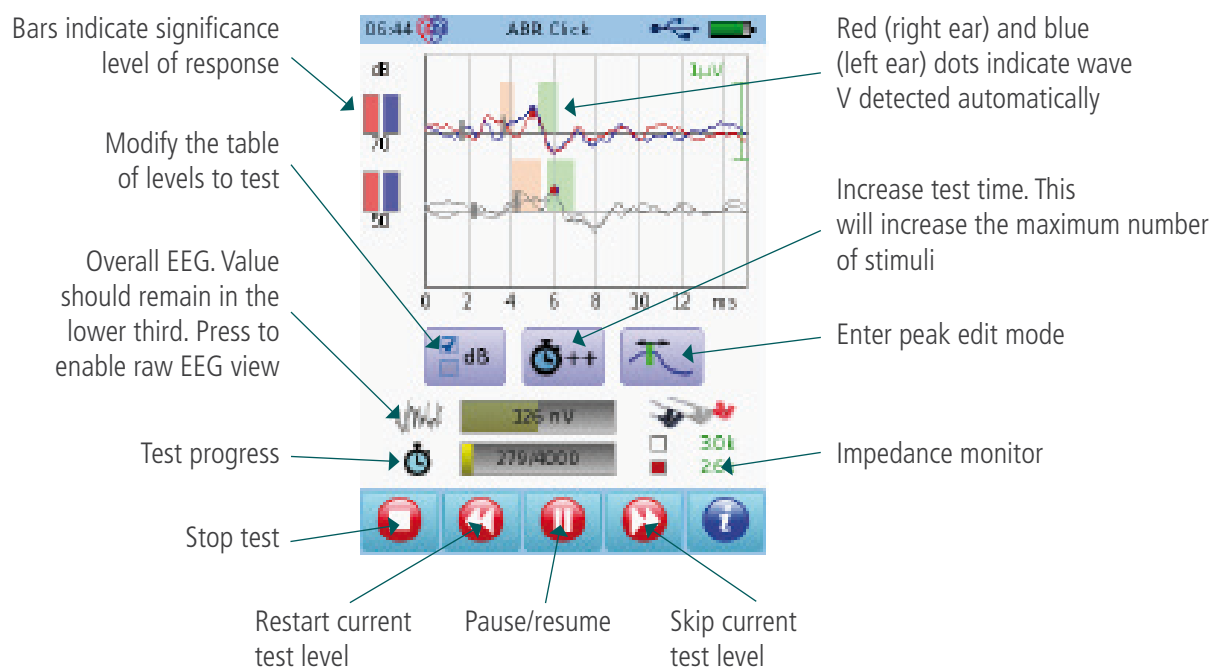


Simple calibration mode

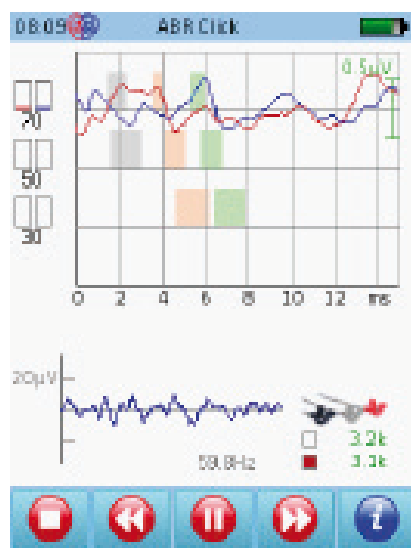


Expert calibration mode

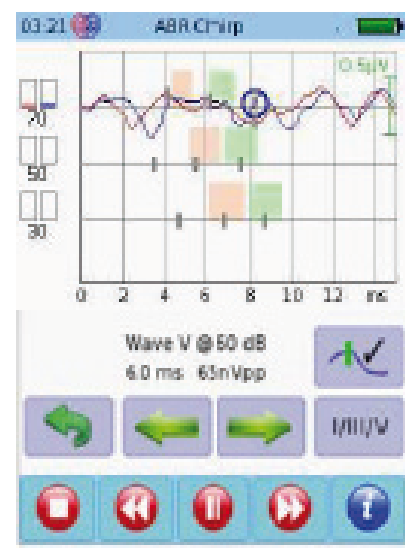
ABR diagnostic test screen



Modify intensity levels during test



View raw EEG during test



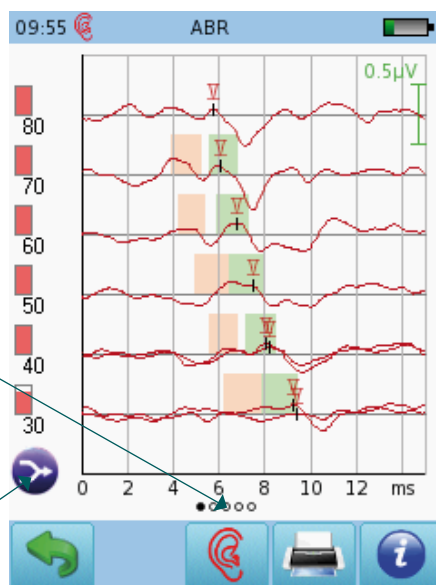
Mark waves during test

Parameters changes available during test

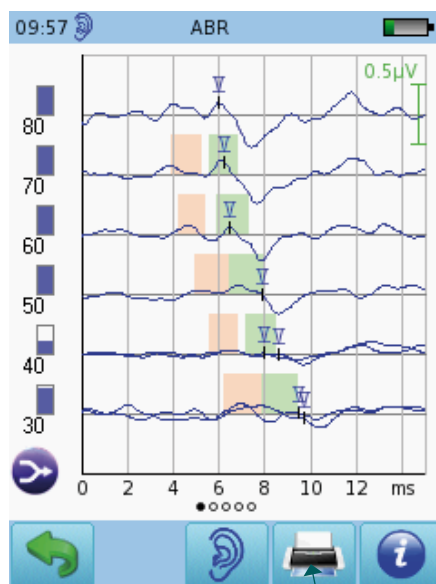
▶ ABR diagnostic test results

Bar graphs indicate the significance of the response. A full bar indicates valid response.

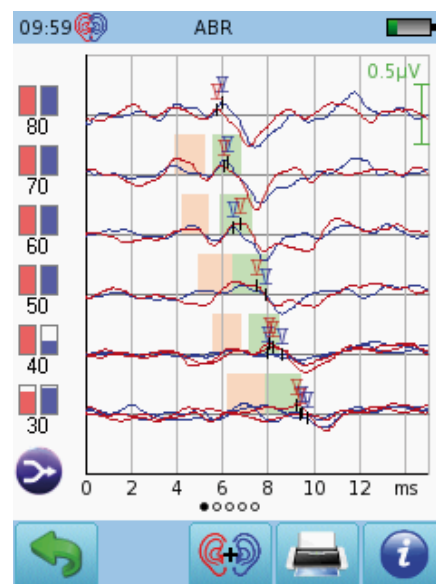
Note: These circles indicate that other screens are available to view. Swipe your finger right or left to get other views.



- Press for additional options:
- Show traces in test order
 - Show traces sorted by level
 - Overlay traces of same levels
 - Show summed traces for same levels



Binaural view



Binaural view

Print results to a label or to a pdf file

► Interactive options available after test

10:15 ABR

Wave V @ 80 dB
5.8 ms 350 nVpp

Select trace

Move wave marker

Mark waves after test is finished

Swipe up or down inside the graph area to modify the scale

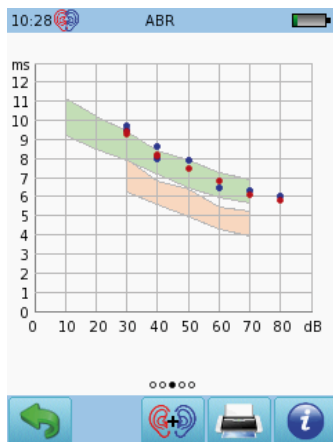
Confirm marker position. Marker symbol changes to the corresponding Roman numeral.

Switch between wave markers

10:22 ABR

Wave V @ 80 dB
5.8 ms 350 nVpp

Zoom in or out



15:18



ABR



Latencies [ms]

	I	III	V	IPL	I-III	I-V	III-V	nVpp
70	2.0	4.2	6.4	2.2	4.4	2.2	346	
60	2.9	5.0	6.9	2.1	4.0	1.9	214	
50	3.6	5.8	7.6	2.2	4.0	1.8	252	
40	4.1	6.3	8.2	2.2	4.1	1.9	245	
30	5.3	7.4	9.4	2.1	4.1	2.0	212	

Impedance

70	1.9k	1.9k
60	1.9k	1.9k
50	1.9k	1.9k
40	1.9k	1.9k
30	1.9k	1.9k

Averages

9010
11979
14995
9795
8078

Noise

35 nV
23 nV
18 nV
21 nV
18 nV

○○○○○



OK







10:31 ABR

Interaural latency difference L-R [ms]						
	I	III	V	I-III	I-V	III-V
80	-	-	0.2	-	-	-
70	-	-	0.2	-	-	-
60	-	-	-0.3	-	-	-
50	-	-	0.4	-	-	-
40	-	-	0.4	-	-	-
40	-	-	-0.1	-	-	-
30	-	-	0.2	-	-	-
30	-	-	0.3	-	-	-

Interaural difference in binaural testing

10:33 ABR

Transducer	Insert
Averages	6000
Stimulus Rate	40 Hz
Stimulus	Chirp, Alternating
Options	Auto Proceed
Age group (for normative latencies)	Adult
Total time	15:02

Test conditions

Quick Guide Information

Release date: 2017-01-12

Revision: 01

Valid from: Firmware Rev. 2.1, Bio-link PC Software Rev. 2.0

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Errors and omissions excepted.

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Legal manufacturer of the Bio-logic devices:

PATH medical GmbH

Landsberger Straße 65

82110 Germering

Germany

Tel: +49 89 800 76 502

Fax: +49 89 800 76 503

Internet: www.pathme.de



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