

# Product Information



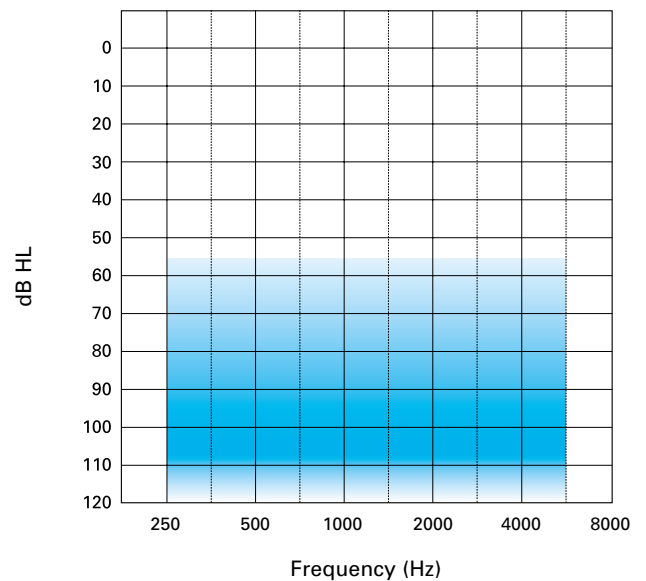
XTREME Super Power hearing instruments take gain and output to the limit. A balanced combination of pure power and flexibility is required to compensate for severe to profound hearing losses. Independent gain and MPO shaping put power where it's needed to maximize residual auditory capabilities. XTREME offers a Flexible VC and independent programming of Telecoil and DAI/FM responses. XTREME is compatible with popular FM systems and offers a wide range of user options, making it an excellent choice for those with maximum hearing loss.

## **XTREME 120 Features:**

- 5 Channel Digital Signal Processing
- MPO: 144 dB SPL / Peak Gain: 85 dB (Earsim.)
- Adaptive Feedback Canceller
- Adaptive Noise Reduction
- Soft Noise Management
- Independent MPO shaping – 1 dB steps
- Variable Time Constants
- Fully programmable Telecoil
- Fully programmable DAI
- Flexible Volume Control with rotary operation and OFF-function
- Status Light
- 3 Program switch
- Compatible with external inputs (FM, DAI, etc.)

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### **XTREME 120**

A slim Super Power instrument with a rotary volume control and programmable Status Light for severe to profound hearing losses.



### **XTREME 121**

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# XTREME Information

XTREME BTE						
		120 BTE		121 BTE		
		IEC 60118-7 (2cc)	IEC 60118-0 (Ears.)	IEC 60118-7 (2cc)	IEC 60118-0 (Ears.)	
<sup>1)</sup> Output	OSPL 90, Peak	dB SPL	140	144	140	144
	OSPL 90, 1600 Hz	dB SPL	129	137	129	137
	HFA OSPL 90, ANSI	dB SPL	132	—	132	—
Gain	Full-On Gain, Peak	dB	82	85	82	85
	Full-On Gain, 1600 Hz	dB	71	78	71	78
	HFA Full-On Gain, ANSI	dB	73	—	73	—
	Reference Test Gain, IEC	dB	53	61	53	61
	Reference Test Gain, ANSI	dB	55	—	55	—
<sup>2)</sup> Current	Quiescent Current	mA	1.5	1.5	1.5	1.5
	Operating Current, IEC	mA	1.6	1.7	1.6	1.7
	Operating Current, ANSI	mA	2.6	—	2.6	—
	Battery type		675		675	
Distortion	500/800/1600 Hz typ., IEC	%	2 / 1 / 1	2 / 2 / 1	2 / 1 / 1	2 / 2 / 1
	500/800/1600 Hz typ., ANSI	%	2 / 1 / 1	—	2 / 1 / 1	—
General Information	Frequency Range, ANSI	Hz	100-4000		100-4000	
	Equiv. Input Noise, IEC/ANSI	dB	27	24	27	24
	Telecoil 1 mA/m 1600 Hz, IEC	dB SPL	104	112	104	112
	Telecoil HFA SPLITS, ANSI	dB SPL	114	—	114	—
Additional Information	Status Light		yes		—	
	Earhooks		0 dB (std.), 5 dB (opt.)		0 dB (std.), 5 dB (opt.)	
	Childrens Earhooks		0 dB (std.), 5 dB (opt.)		0 dB (std.), 5 dB (opt.)	
	Programmable Telecoil		yes		yes	
	Programmable DAI / FM		yes		yes	
	Volume Control with off-function		yes		yes	
	Adaptive Noise Reduction		yes (on/off)		—	
	Soft Noise Management		yes (on/off)		—	
	Variable Time constants		yes (3 levels)		—	
	FM communication		yes		yes	
	DAI		optional		optional	
	Bone Conductor		optional		optional	
Cros / Bi-Cros		optional		optional		

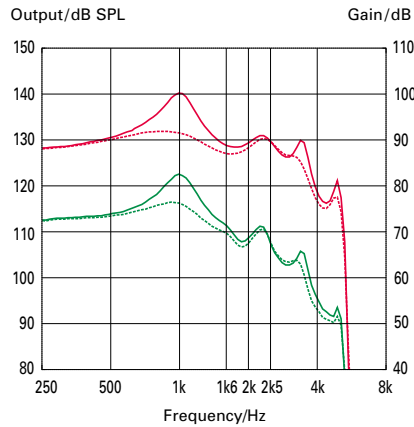
All measurements are made according to IEC 60118 if not otherwise mentioned. ANSI refers to ANSI S3.22-2003. The Full-On Gain setting can be programmed into the instrument from OASIS plus for verification purposes. Special test settings in accordance with IEC and ANSI were generated for data sheet measurements.

<sup>1)</sup> Warning! The maximum output capacity of this hearing instruments may be in excess of 132 dB SPL (IEC 711). Special care must be used in fitting this instrument to avoid the risk of damage to the remaining hearing.

<sup>2)</sup> Current Measurements made with the Status Light switched OFF.

# Frequency responses

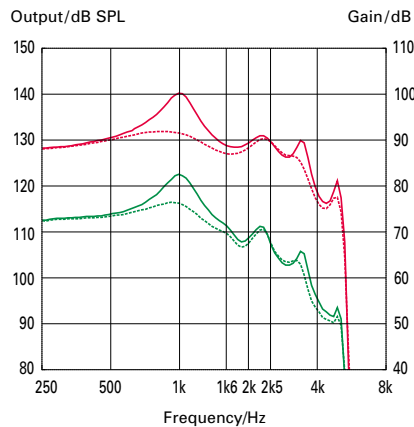
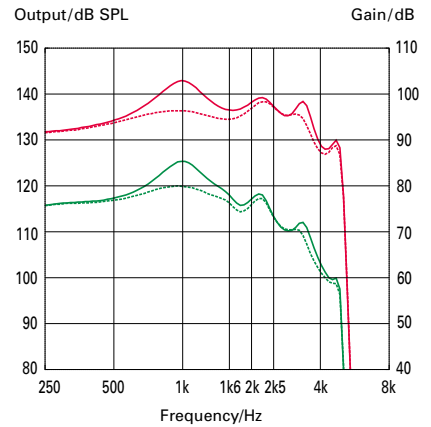
**IEC 60118-7  
2cc Coupler (IEC 60318-5<sup>1</sup>)**



## **XTREME 120 BTE**

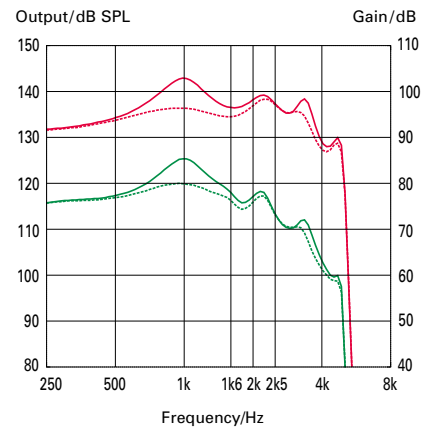
Output OSPL 90  
Full-On Gain

**IEC 60118-0  
Earsimulator (IEC 60711)**



## **XTREME 121 BTE**

Output OSPL 90  
Full-On Gain



— Full lines Undamped Earhook  
- - - Dotted lines Damped Earhook

<sup>1</sup>) Identical to coupler described in withdrawn standard IEC 60126

# Fitting Information

## Getting started

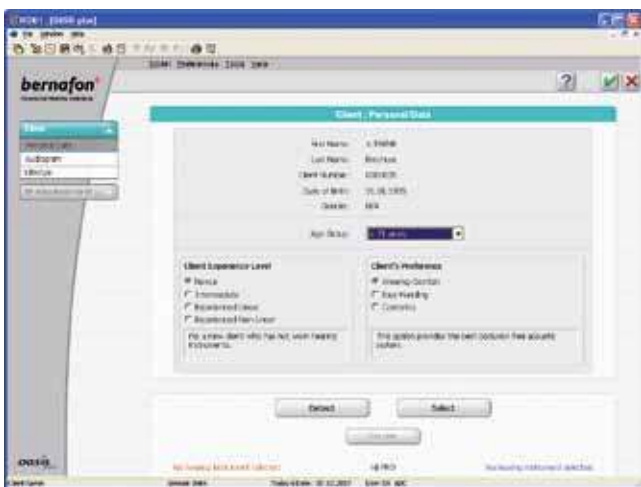
To program XTREME, you need Bernafon's OASIS plus fitting software with the appropriate programming shoes and cables (see page 7 for order information).

Open the battery door on XTREME and slide the programming shoe into the slot on the door as shown. Make sure to use a fresh battery.



Plug the programming cable into the shoe, matching the red dots. The hearing instruments must be switched on during programming. Do this by rotating the VC upwards to position 2.

Start OASIS plus from within NOAH. The first screen is **Client: Personal Data**. Choose the **Client Experience Level** that best describes your client. If you wish to change the fitting rationale, click **Preferences** at the top of the screen, then choose **More Preferences** and **Fitting Rationale**.



Then click the **Detect** button and OASIS plus will detect the instruments and prompt you to check the **Acoustics**. Make changes if necessary to ensure that the displayed acoustics match the actual hearing instruments.



Then choose **Fit** to proceed.

## Real Ear to Coupler Difference (RECD)

Instrument settings are based on the ear canal volume of the average adult. The smaller the canal volume, the louder the signal in the ear. Adult canal volumes differ widely and children have much smaller volumes. Real-Ear-to-Coupler-Difference (RECD) is the main transform that reflects these differences. Accounting for the RECD results in greater fitting accuracy.

OASIS plus uses average RECD data, based on the client age in NOAH. For greater accuracy, Bernafon strongly recommends measuring individual RECD for all patients, especially children. This can be done directly in NOAH if a compatible REM system is connected (i.e. Interacoustics Affinity). OASIS plus will automatically use this data. Alternatively, values measured with other test systems can be entered manually into OASIS plus by clicking on **Tools, REM Data** and then selecting **Manual** before typing in the new values.



For detailed information on measuring RECD for children, see below.\*

\*Bagatto MP, Seewald RC, Scollie SD and Tharpe AM.(2006). Evaluation of a probe-tube insertion technique for measuring the Real-Ear-to-Coupler-Difference (RECD) in young infants. JAAA; 17:573-581. Article can be obtained online at <http://www.audiology.org/publications/jaaa/>

# Fitting Information

## Fitting and Fine-tuning Possibilities

In the **Technical Toolbox**, there are three methods of adjusting the instrument response. The first screen offers a set of controls that allow changes to the overall response or to low, mid and high frequency regions.

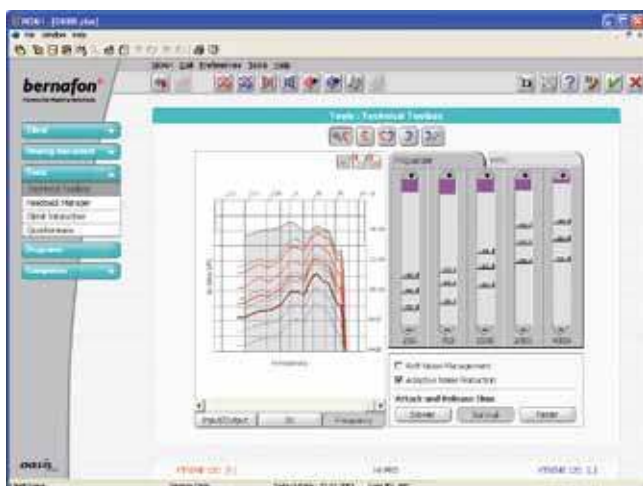


If you prefer a directed approach, the **Client Interactive** tool contains a set of structured questions. As you enter the client's answers, the software will make fitting recommendations (click **Info** to view). Click **Adjust** to apply changes.

Click the **Zoom View** symbol for full access to the adjustment parameters of the instrument. This view is available separately for right or left.



The **TriQualizer** offers independent adjustment of gain for three input levels in each channel. A second tab allows access to **MPO** adjustments.



**Adaptive Noise Reduction and Soft Noise Management** (XTREME 120 only) can be activated or deactivated.

**Time Constants** can also be changed by choosing slower or faster attack and release times relative to the normal values for XTREME (only available in XTREME 120).

## Feedback Manager

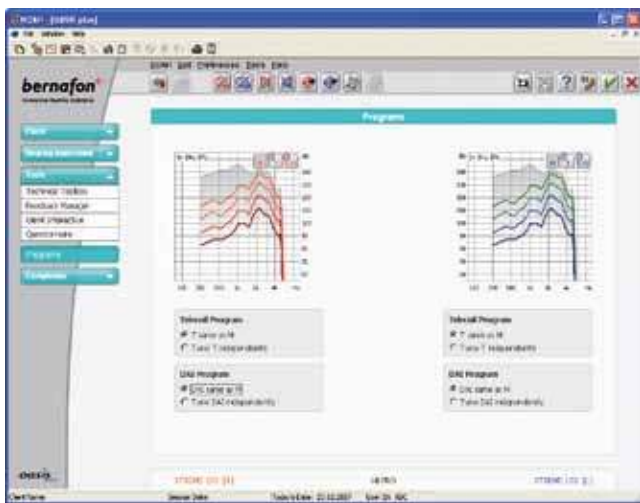
OASIS plus automatically calculates a predicted threshold of feedback which is sufficient to provide a feedback-free performance for many fittings. If feedback is a problem, click **Feedback Manager** and choose **Minimize Feedback**. This will ensure that the instrument response falls below the safe gain limit for feedback. If feedback still occurs then instruct the patient that they will hear a series of loud sounds and click **Measure** to assess the actual threshold of feedback. If more security is needed, increase the **Safety Margin** and subsequently click **Minimize Feedback** until the feedback disappears.



# Fitting Information

## Fully Programmable Telecoil and DAI

XTREME offers fully programmable Telecoil and DAI performance with frequency shaping that can be independent of the Microphone program, if desired. This extra flexibility allows optimization of the response for all listening modes. Select **Programs** to set up Microphone-dependent or individual response shaping for Telecoil and DAI. When mixed modes are used (**T + M** or **DAI + M**) the balance between the Microphone and Telecoil or DAI can be chosen in the **Local Controls** screen. For XTREME 120, program 3 can be configured as either DAI + M or T + M.



## Flexible Volume Control

XTREME has a Flexible Volume Control that can be configured in the fitting software. Click **Local Controls** to find a choice of three gain ranges. Users with a wider dynamic range may benefit from the 30 dB VC range while those users with narrower dynamic ranges may profit from either a 15 dB or 7.5 dB range.



You may also choose the VC position that corresponds to the programmed gain level on the software screens. This Neutral Position can either be 2 or 3 on the VC-Wheel. The instrument user should be informed about which VC level they should choose when they first turn their hearing instruments on.

If VC position 2 is chosen as the Neutral VC Position, then approximately one-third of the range will be above position 2 and two-thirds will be below (depending on how much actual positive gain is available). For example, a 30 dB total VC range programmed for position 2 will result in 10 dB positive VC range and 20 dB negative VC range.

When the user needs an easy-to-find VC position, or should never exceed the programmed gain, then VC position 3 can be programmed. In this case, there is only a negative VC range available, regardless of the total VC range chosen.

## Indicators

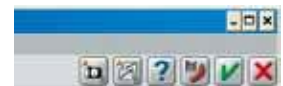
Click **Indicators** to activate and configure the audible beeps for low battery and program changes. The Status Light (XTREME 120 only) can also be activated here and set to shine continuously or to flash only during program changes.



## Completing the Fitting

When you are satisfied with the fitting, you may click **Completion** and **Overview** to view a report of the instrument settings. The report can be printed directly from the viewing screen.

To end the session, click the green arrow to save the data to the hearing instrument and save the session in NOAH.





# Adapters and cables

XTREME is programmed with OASIS plus, Version 8.0 or higher – a NOAH compatible, MS-Windows based PC-Fitting software. NOAH 3.0 with a Hi-Pro or a NOAHlink™ is required.



## Programming cables

Nr. 2, NEW STANDARD (HiPro)  
 Blue, left **REF. 384-20-033-00**  
 Red, right **REF. 384-20-032-00**



## Programming adapter

Programming adapter **REF. 390-01-320-04**

# DAI / FM Adapters



## Universal DAI Adapter (AP 700)

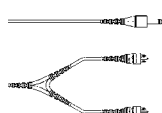
Adjustment trimmers for impedance and level

**REF. 399-50-820-00**

## FM Adapter (FM7)

Adapter for FM Receivers

**REF. 399-50-810-00**



## Monaural DAI cable

**REF. 383-58-940-09**

## Binaural DAI cable

**REF. 383-58-941-00**

# Accessories



## CROS-BICROS

CROS Unit MIC 24

**REF. 119-01-500-00**

CROS cable MIC 24, 203mm

**REF. 383-58-930-07**

CROS cable MIC 24, 240mm

**REF. 383-58-931-08**

CROS cable MIC 24, 305mm

**REF. 383-58-932-09**

Shell for CROS/BICROS and Bone Conductor connection

**REF. 549-95-880-00**

Socket for CROS/BICROS and Bone Conductor connection

**REF. 671-02-029-09**



## Bone Conductor

Bone Conductor

**REF. 462-03-271-00**

Bone cable

**REF. 383-06-030-09**

Bone headband, brown

**REF. 583-01-011-00**

Bone headband, grey

**REF. 583-01-013-02**

Support for amplifier (Receiver lid)

**REF. 543-10-822-06**

## Tamper Resistant Battery Drawer

Beige  
 Dark brown  
 Dark grey  
 White  
 Blue  
 Lilac

**REF. 538-07-920-09**  
**REF. 538-07-921-00**  
**REF. 538-07-923-02**  
**REF. 538-13-110-00**  
**REF. 538-13-111-00**  
**REF. 538-13-112-00**

## Hooks

Undamped (standard)  
 Damped 5 dB  
 For child, undamped  
 For child, damped 5 dB

**REF. 571-01-770-04**  
**REF. 571-05-290-02**  
**REF. 571-01-780-06**  
**REF. 571-05-270-08**

# Colors

## XTREME 120



## XTREME 121



# YoungStar kit

A YoungStar kit is available to assist children, parents and teachers in the daily use and care of the hearing instruments. The kit includes a hearing aid stethoscope for monitoring the sound output of the instruments, a dry-aid kit to protect against moisture build-up, a squeeze bulb for drying earmolds and tubing after cleaning, a battery tester, and much more.



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Your hearing · Our passion

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