Fitting the BONEBRIDGE:
An Active Transcutaneous Bone Conduction Device

Disclosures

Financial - employee of MED-EL Canada

Non-financial - member of College of Audiologists and Speech Pathologists of Ontario
Learning Outcomes

- The learner will be able to distinguish the different parts of the BONEBRIDGE system.
- The learner will be able to describe a VIBROGRAM and explain its importance in the fitting procedure.
- The learner will be able describe the steps needed to connect the SAMBA audio processor to the software and complete a fitting.

Content

1. Overview of the BONEBRIDGE System
2. Equipment needed to program the BONEBRIDGE Samba
3. What is a Vibrogram?
4. What to expect at the 1st fitting
5. What to expect at follow-up fittings
6. Connectivity with BONEBRIDGE
Overview of the BONEBRIDGE System

What is the BONEBRIDGE?
How does the BONEBRIDGE system work?

The Implant: BCI 601

Implanted in the temporal region of the mastoid bone

Pre-operative CT scan recommended

Surgery lasts between .5 to 1 hour
Overview of the BONEBRIDGE System

Landmarks, dimensions and flexibility

Overview of the BONEBRIDGE System

BCI 601 Landmarks
Overview of the BONEBRIDGE System

**BCI 601 Dimensions**

- 28.6mm
- 23.8mm
- 69mm
- 8.7mm
- 4.5mm
- 15.8mm

Overview of the BONEBRIDGE System

**BCI 601 Flexibility**

- +90°
- -90°
- -30°
Overview of the BONEBRIDGE System

BCI 601 Designed for variable anatomies

Overview of the BONEBRIDGE System

MRI compatibility

—MRI conditional up to 1.5 Tesla
—Force neutral holding magnet that does not need to be removed

Note: Image artifact in the area around the implant (15 cm from the coil)
Overview of the BONEBRIDGE System

MRI compatibility

Not approved for MRI

Why is osseointegration not required for activation of the SAMBA audio processor?
Overview of the BONEBRIDGE System

SAMBA audio processor

Interchangeable cover
Microphone openings
Attachment eyelet for hair clip
Battery compartment

CE mark
IEC 60601-1 standard
BONEBRIDGE device
Serial number
IP rating
Side of head
Changing the cover
Using the hair clip

- Notch for the eyelet
- Attachment
- Attachment eyelet
Changing the magnet
Remote Control

1. DISPLAY
2. KEY LOCK SWITCH
3. CONTROL BUTTONS
4. PROGRAM BUTTON
5. VOLUME UP/DOWN BUTTON

Remote Control

1. Indicated change in volume
2. Indicates change in program
3. Alarm clock is activated
4. Batteries in remote are low
5. Function of control buttons
Power save mode

If the remote control is not used for some time, the display automatically turns black.

The remote control is then in its power save mode.

Press the program change button to activate the display again.

Control buttons

You can quickly access two functions with the control buttons on the right hand side of the remote control.

Basic functions:

- ![Home icon] Reset to default volume and hearing program
- ![Mic icon] Turn hearing instrument’s microphone on or off.
Key Lock switch

To prevent any accidental operation while the remote control is in pockets or bags, move the key lock switch to lock position (red color visible).

When the key lock is active, all buttons on the remote control are disabled. The following icon is displayed:

Checking the status of the batteries

When the batteries of the remote control are low, this is indicated in the status bar.
Checking the status of the batteries

Press the volume up button and the volume down button simultaneously.

battery empty  battery full

To return to the standard display, press the program change button.

Daily use of the Remote control

Adjusting the volume

If you are wearing two Samba audio processors, the volume will be adjusted on both instruments at the same time.

Press the volume up button or the volume down button to adjust the volume by one step.
Daily use of the Remote control

Changing the hearing program

If you are wearing two SAMBAs, the hearing program will be changed on both instruments.

Press the program change button to switch to the next hearing program.

Daily use of the Remote control

Turning on and of microphones (mute)

.
Daily use of the Remote control

Changing the batteries in the Remote Control
Wireless compatibility between SAMBA and Remote Control

• Hold the remote control as close as possible to your body and on the body side where you wear your Samba.

• Turn the remote control a little so that the display and the buttons are not facing straight upwards but that they are facing slightly to the left or to the right until the wireless connection is established.

• In some cases, it could help to decrease the distance between the remote control and your Samba.

• Do not cover the upper part of the remote control with your fingers or hand.
SAMBA Audio Processor

- Sound smoothing
- Speech and noise management
- Intelligent sound adapter

SAMBA Audio Processor

- Automatic/Ambient Sound
- Adaptive Directional Microphone
- Speech Tracking

Intelligent Sound Adapter

- Can distinguish between different hearing situations
- Recognizes the manual adjustments that the user makes regularly
- Can automatically adapts the basic settings to the user’s individual manual adjustments.
Overview of the BONEBRIDGE system

Automatic/Ambient Sound

SOUND ENVIRONMENT

- SPEECH
- MUSIC
- NOISE

MICROPHONE SETTING

- AMBIENT SOUND
- OMNIDIRECTIONAL
- ADAPTIVE DIRECTIONAL

Overview of the BONEBRIDGE system

Adaptive Directional Microphone
Overview of the BONEBRIDGE system

Speech Tracking

<table>
<thead>
<tr>
<th>SPEECH IN QUIET</th>
<th>SPEECH IN NOISE FROM FRONT</th>
<th>SPEECH IN NOISE FROM BACK</th>
</tr>
</thead>
</table>

Directionality patterns of the SAMBA in Speech Tracking Mode

Equipment needed for programming
## Equipment needed

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Siemens Connexx software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software</td>
<td>Siemens Connexx 6.5.5</td>
</tr>
<tr>
<td></td>
<td>MED-EL SYMFIT 7.0.1</td>
</tr>
<tr>
<td>Cables</td>
<td>Programming cable CS64</td>
</tr>
<tr>
<td></td>
<td>Samba Battery pill</td>
</tr>
<tr>
<td>Device</td>
<td>Samba Processor</td>
</tr>
<tr>
<td>Programmer</td>
<td>Hi-Pro</td>
</tr>
<tr>
<td></td>
<td>Noahlink</td>
</tr>
<tr>
<td></td>
<td>Siemens ConnexxLink</td>
</tr>
</tbody>
</table>
What is the Vibrogram?

Vibrogram
What is the Vibrogram?

What to expect at the first fitting
Detecting the SAMBA Audio Processor

What would you like to do as a next step?
- New fitting (go to First Fit Navigator)
- Follow-up fitting (go to Fine Tuning)
- AutoFit (go to real ear measurement)

What to Expect at a First Fitting

There is no testsetting active. Please choose a testsetting by pressing the appropriate button. The testsetting will be activated immediately.
What to Expect at a First Fitting

Test settings - [Right Hearing Instrument]

We recommend reprogramming the previous settings in order to avoid invalid settings in the fittings dialog.

This is mandatory after application of full-on-gain settings in order not to damage the customer's ear.

Would you like to reprogram the previous settings?

[Yes] [No]
What to Expect at a First Fitting

Lower Frequencies

Example: Noah View
What to Expect at a First Fitting

Remote control selection
What to Expect at a First Fitting

Basic Tuning
What to Expect at a First Fitting

Program options

First Fit

Save your settings
Microphone Setting

... specific noisy situations

- Speech Tracking
  Automatic directional focus towards the speech source in noisy situations when speech comes from behind / side / front (e.g. in a car).

- Speech focused microphone
- Only active when room noise exceeds 70 dB
- Intelligent Sound Adapter

What to Expect at a First Fitting
What to Expect at a First Fitting
What to expect at follow-up fittings

What to Expect at Follow-Up Fittings

Detect hearing instruments

Right Hearing Instrument
- VIBRANT MED-EL
- Samba BF audio processor
- Serial Number: 001533

Left Hearing Instrument
- No instrument detected

What would you like to do as a next step?
- New fitting (go to FirstFit Navigator)
- Follow-Up fitting (go to Fine Tuning)
- AutoFit (go to seal ear measurement)

Back  Next  Ok  Cancel
What to Expect at Follow-Up Fittings

Fine Tuning

What to Expect at Follow-Up Fittings

Fitting Assistant
What to Expect at Follow-Up Fittings

Frequency Shaping

Maximum Power Output (MPO)
What to Expect at Follow-Up Fittings

Compression

Eyeglass button

Sound Management

Speech and Noise Management

Broadband

Multichannel

Speech in noise only

Sound Smoothing

Windnoise Reduction

Feedback Stopper

Slow  Med  Fast

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What to Expect at Follow-Up Fittings

Microphone/Bluetooth

Instrument Settings

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Connectivity

Connectivity with SAMBA

**WHY CONNECTIVITY?**
- For better speech understanding at school/in meetings
- Making phone calls
- Streaming music
- Listening at public events

**USER GROUPS**
- Pupils
- Bilateral hearing impaired candidates who can't rely on a normal hearing ear
  - especially for phone calls
miniTek Kit Contents

- miniTek
- Attachment clip
- Lanyard
- Tek Transmitter
- TV cables
- Audio cable
- Charger

! Not included: programming cable USB Mini-B

Connectivity

Siemens miniTEK

Possible Connections

1. Direct audio input
2. Bluetooth enable devices
3. FM systems
4. Telecoils
5. Other sources (TEK transmitter)
Connectivity

Don’t forget!

Bluetooth Phone program may only be in program slot #2
**Program example**

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1:</td>
<td>Universal Program – no connectivity</td>
</tr>
<tr>
<td>P2:</td>
<td>Bluetooth/Phone – Phone via Bluetooth</td>
</tr>
<tr>
<td>P3:</td>
<td>miniTek FM – FM Transmitter via receiver</td>
</tr>
<tr>
<td>P4:</td>
<td>Tek/miniTek – VoiceLink / Tek Transmitter / other dev. using Audio cable / Bluetooth</td>
</tr>
<tr>
<td>P5:</td>
<td>miniTek Telecoil – Built-in miniTek</td>
</tr>
</tbody>
</table>
How to wear the miniTEK

Stable streaming

Telephone

Battery Life

<table>
<thead>
<tr>
<th>Operation time</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio Transmission A2DP</td>
<td>4.5</td>
</tr>
<tr>
<td>(MP3 Player, SpeechLink), HSP</td>
<td></td>
</tr>
<tr>
<td>(Telephone)</td>
<td></td>
</tr>
<tr>
<td>Audio transmission (Telecoil,</td>
<td>5.75</td>
</tr>
<tr>
<td>MLX, Line-In)</td>
<td></td>
</tr>
<tr>
<td>Standby</td>
<td>270</td>
</tr>
<tr>
<td>Turned off</td>
<td>1 year</td>
</tr>
</tbody>
</table>

Battery life of the SAMBA

- Gentele with WinTeq
- Gentele with external audio source
Connecting the miniTEK

Connecting to Bluetooth phones
Connect to other audio sources

4 Tek/miniTek
Microphone
Telecoil
Tek/miniTek
Bluetooth Phone
miniTek FM
miniTek Telecoil
Direct Audio Input (FM)
## Changing the Audio Source

<table>
<thead>
<tr>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM transmitter (DAI)</td>
</tr>
<tr>
<td>Line-in (2.5) stereo socket</td>
</tr>
<tr>
<td>First transmitter</td>
</tr>
<tr>
<td>Second transmitter (optional)</td>
</tr>
<tr>
<td>T-coil</td>
</tr>
</tbody>
</table>

## The miniTEK transmitter

![miniTEK transmitter image]

- LED
- On/Off switch
- Sound level
- 2.5mm stereo socket
- USB- socket for power plug
Connecting to other audio sources

Selecting the audio input mode

Press \(\text{a}\) to change the external audio source

Each time you press \(\text{a}\), miniTEK switches from the next available external source

Press \(\text{b}\) to stop listening to the external audio source and switch back to the hearing program.
Connecting via DAI

Audio cable with 3.5mm stereo plug & 2.5 stereo plug (into miniTEK) included in package.

Dedicated TEK/miniTEK program is needed.
Connecting to a television

Connecting to a FM system
Connecting to a telecoil

Case Scenarios
Case Scenarios
MiniTEK app

- miniTek still has to be in streaming distance to the SAMBA
- Only available for Android phones
  (from Google Play Store)

Instructional video available:
https://www.youtube.com/watch?v=oZcdmEtrUGY
Other miniTEK streamer resources

AudiologyOnline
Regional trainings
Software Fitting Guide
Local MED-EL Representative

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1-888-633-3524       www.medel.com