BONEBRIDGE™
Information for Surgeons (with BCI Lifts)
Information for Surgeons (with BCI Lifts)

The Information for Surgeons describes the Bone Conduction Implant (BCI 601) and the BCI Lifts, their surgical procedure and the perioperative patient management methods. It is a reference for the surgeon implanting the BCI 601 and describes the procedures of how to place the device into the mastoid region. Key points and helpful references are found at the back with illustrations and graphics being shown throughout the brochure.

Note: In this brochure the surgical procedure is described for a right ear, unless otherwise mentioned.

Acknowledgements:
Special thanks to the following surgeons for their contributions to this brochure on the surgical technique of implanting the Bonebridge: Th. Lenarz, B. Schwab, R. Salcher (Hannover, Germany), I. Todt (Berlin, Germany), G. Sprinzl (St. Pölten, Austria), R. Hagen, R. Młynski (Würzburg, Germany).
# Table of contents

Information for Surgeons (with BCI Lifts) ........................................................... 2

I. Introduction ........................................................................................................... 5

II. Surgical Tools and Surgical Accessories ........................................................... 6

   BCI SIZER KIT .................................................................................................. 6
   - Coil-Sizer (C-Sizer) ......................................................................................... 7
   - Flat-Transducer-Sizer (Flat-T-Sizer) ............................................................... 7
   - Depth-Gauge .................................................................................................. 7
   - Depth-Gauge-Handle ..................................................................................... 7

   TOOLS SHIPPED WITH THE BCI OR AS SURGICAL TOOL KIT .................. 8
   - Transducer-Sizer (T-Sizer) ........................................................................... 9
   - Coil-Sizer (C-Sizer) ..................................................................................... 9
   - Drill bit ......................................................................................................... 9
   - Cortical screws ............................................................................................ 9

   THE BCI LIFTS ............................................................................................... 10

   TOOLS AVAILABLE SEPARATELY .............................................................. 11
   - Skin Flap Gauge 7 (non-sterile) .................................................................. 11
   - Torque Wrench Kit (non-sterile) ................................................................. 11

III. Surgery ............................................................................................................... 12

   GENERAL PRECAUTIONS ............................................................................ 12

   OVERVIEW .................................................................................................... 13

   SURGICAL STEPS .......................................................................................... 14
   - Step 1: Preparation .................................................................................... 14
   - Step 2: Incision .......................................................................................... 16
   - Step 3: Creation of bone bed for BC-FMT and periosteal pocket for coil .... 17
   - Step 4: Preparing BCI Fixation .................................................................. 20
   - Step 5: Fixation of the BCI ...................................................................... 21
   - Step 6: Closure ......................................................................................... 23

IV. Key Points ......................................................................................................... 25

---

© 2012 VIBRANT MED-EL Hearing Technology GmbH. Revision 1.0 (October 2013). All rights reserved. The Bonebridge is manufactured in Austria. Bonebridge, BCI and Amadé are trademarks of VIBRANT MED-EL Hearing Technology GmbH (MED-EL is a trademark of MED-EL Elektromedizinische Geräte GmbH).
I. Introduction

The Bonebridge is a bone conduction implant system for people with conductive and mixed hearing losses as well as for those suffering from single sided deafness (SSD).

The Bonebridge includes an external part, the audio processor and an implanted part, the Bone Conduction Implant (BCI). The audio processor is worn on the head and contains two microphones, a digital signal processor and a battery. The BCI consists of a receiver coil, a demodulator and a transducer. Information from the audio processor is sent transcutaneously to the BCI so that the transducer (the Bone Conduction Floating Mass Transducer, BC-FMT) vibrates in a controlled manner, specific to each patient's hearing needs. The BC-FMT is about 10 mm in height (with a drill depth of 8.7 mm), 15.8 mm in diameter and weighs about 10 g (see Fig. 1).

The BCI is implanted in the mastoid and temporal region of the ear. When the implant is in position and is stimulated from the externally worn audio processor, it causes the bone to vibrate and thus stimulates the inner ear.

Surgeons and audiologists work together when selecting patients for implantation. Thorough audiologic and medical evaluations are performed and reviewed in conjunction with candidacy information. It is highly recommended to do a pre-operative CT scan which should then be thoroughly analysed. Key points to be analysed are the thickness and consistency of the bone, the sigmoid sinus and the dura. Before surgery, patients are counselled about the risks and benefits of the Bonebridge implantation. Success is most likely when the patient is well selected and has realistic expectations of the Bonebridge’s use.

Surgery lasts between 30 – 60 minutes and is performed either on an outpatient or inpatient basis. Since osseointegration of the screws is not needed, the processor can be activated as soon as the swelling of the skin has reduced. An audiologist programs the audio processor to the patient’s particular hearing needs. The patient typically wears the audio processor for several hours a day, or all day, immediately after activation.
II. Surgical Tools and Surgical Accessories

BCI Lifts are available in different sizes if it is deemed necessary to reduce the drill depth for the BC-FMT. The BCI Sizer Kit helps to determine which BCI Lifts to use. Specific surgical tools needed for the surgical installation of the BCI are also provided in the implant package.

The generic surgical tools, Skin Flap Gauge 7 and the Torque Wrench Kit, need to be requested separately.

BCI Sizer Kit (sterilized)

The BCI Sizer Kit is shipped in a sterile tray. It contains a Coil-Sizer (C-Sizer), a Flat-Transducer-Sizer (Flat-T-Sizer), a Depth-Gauge and a Depth-Gauge-Handle. The BCI Sizer Kit can be used to support the Bonebridge implantation before the implant package is opened.
**Coil-Sizer (C-Sizer)**

The C-Sizer is made of polypropylene and is the same as the one supplied in the BCI Implant Kit. It represents the coil section of the implant.

**Flat-Transducer-Sizer (Flat-T-Sizer)**

The Flat-Transducer-Sizer is made of titanium (the drill bit guide) and tritan (body of the template). It indicates the diameter of the BC-FMT as well as the drilling holes.

**Depth-Gauge**

The Depth-Gauge is made of Tritan with 4 line markings lasered on three sides. It is used to mark the implant position on the skull bone. Later on during the procedure, used in combination with the Flat-T-Sizer (=Depth-Gauge Assembly) it helps determine which BCI Lifts to use if they are needed.

**Depth-Gauge-Handle**

The Depth-Gauge-Handle can be assembled with the Depth-Gauge to provide easier handling of the Depth-Gauge (or the Depth-Gauge Assembly). Press the lower part of the handle together to assemble, making sure the small dots on the handle fit into the two small holes on the Depth-Gauge or press again to disassemble the Depth-Gauge-Handle.
Tools shipped with the BCI (sterilized)

The BCI is shipped in a sterile tray, which also contains two single-use templates (the C-Sizer and the T-Sizer), two regular cortical bone fixation screws, one emergency screw and one single-use drill bit.
**Transducer-Sizer (T-Sizer)**
The T-Sizer is made of titanium (the drill bit guide) and polypropylene (the body of the template). It represents the BC-FMT section of the BCI.

**Coil-Sizer (C-Sizer)**
The C-Sizer is made of polypropylene and represents the coil section of the BCI.

**Drill Bit**
The supplied drill bit shall be used to drill the fixation points. Its diameter is 1.5 mm and it also has a PTFE-sleeve that ensures the correct distance and depth of the fixation holes, when used together with the T-Sizer for drilling (3.9 mm).

**Cortical screws**
All cortical screws supplied have a length of 6 mm and are self-tapping. The two regular cortical screws have an outer diameter of 2 mm and a golden surface finish. The emergency screw has an outer diameter of 2.4 mm and a blue surface finish.

Note: In case BCI Lifts are used, longer screws might be necessary. They are supplied with the respective BCI Lifts.
The BCI Lifts

The BCI Lifts can be used if the surgeon decides to elevate the BCI in order to avoid exposing the dura or the sigmoid sinus. There are 4 different sizes of BCI Lifts: 1 mm, 2 mm, 3 mm and 4 mm.

Since different lengths of screws are needed for the respective BCI Lifts, they are supplied with the BCI Lifts. The BCI Lifts are available in the following configurations.

**BCI Lifts 1 mm**
Two 1 mm BCI Lifts without screws since the screws from the BCI Implant Kit can be used.

![BCI Lifts 1 mm](image1)

**BCI Lifts 2 mm and 3 mm**
Two 2 mm and two 3 mm BCI Lifts with 2 standard screws and 1 emergency screw all 8 mm in length.

![BCI Lifts 2 mm and 3 mm](image2)

**BCI Lifts 4 mm**
Two 4 mm BCI Lifts with 2 standard screws and 1 emergency screw all 10 mm in length.
Skine Flap gauge 7 (non-sterile)
The Skin Flap Gauge 7, made of stainless surgical steel, is used to estimate the thickness of the skin flap over the BCI to ensure good attachment and signal transmission of the external audio processor.

Torque Wrench Kit (non-sterile)
The Torque Wrench, made of stainless steel and titanium, consists of the body, the drive connection and two exchangeable ratcheting mechanisms. The ratcheting mechanism is interposed between the body and the drive connection. The wrench includes a torque indicator (maximum torque is 32 Ncm) to facilitate precise tightening of the screws. When turning the handle, the current torque is indicated on the scale at the end of the handle. Unlike other torque wrenches, there is no clicking sound to indicate when enough force has been used.

Note: Exceeding the maximum torque of 32 Ncm will permanently impair the accuracy of the torque wrench.

CAUTION
ONCE THE WRENCH HAS BEEN OVERLOADED, IT SHALL NOT BE USED AS A TORQUE WRENCH FOR SURGERY.
III. Surgery

The BCI is the implanted part of the Bonebridge system. It consists of the BC-FMT which is installed into the bone according to the CT scan. The receiver coil of the BCI is installed under the skin in the post auricular area not more than 7 mm below the external surface of the skin. In case BCI Lifts are used they are attached onto the wings of the BC-FMT. With the appropriate screws, the BCI is securely fixated to the bone by the surgeon. The surgery is standard otologic practice for mastoid surgery with the additional step of securing the BCI. Because osseointegration is not needed, the patient can be activated as soon as the swelling of the skin is reduced.

General precautions

The BCI registration card, contained in the BCI Implant Kit should be completed and returned promptly to VIBRANT MED-EL.
After anaesthesia has begun but before the sterile surgical field is prepared, determine the position of the BCI and incision. The position of the BC-FMT mainly depends on the anatomy of the patient and shall be determined according to the preoperative CT scan. Consideration should also be paid to the patient’s use of eyeglasses or headwear when determining the position of the coil section of the BCI.

Overview

The table on page 13 provides a brief overview of the steps necessary to implant a BCI and points out the precautions of each step. For the demodulator and the coil section, no bed needs to be drilled.
<table>
<thead>
<tr>
<th>Surgical steps</th>
<th>Main tasks</th>
<th>Pay attention to...</th>
</tr>
</thead>
</table>
| **I. PREPARATION** | • Shave hair  
• Mark BCI outline C- and (Flat-) T- Sizer  
• Mark incision | • Position of BC-FMT and screws  
(depends on findings of CT scan)  
• Position of coil (consider patient’s use of eyeglasses or headwear; transition of BCI can be bent ±90° in horizontal plane) |
| **II. INCISION** | • Incise and prepare skin flap  
• Place C- and (Flat-)T-Sizer | • Skin flap integrity (incision may impair blood supply of skin flap)  
• Position of incision (not over implant body, further posterior if auricle reconstruction is planned at later stage) |
| **III. CREATION OF BONE BED FOR BC-FMT AND PERIOSTEAL POCKET FOR COIL** | • Mark bone bed clearly  
• Drill bone bed  
• Check with T-Sizer or Depth-Gauge Assembly  
• Elevate periosteum for coil section of implant  
• Estimate skin flap thickness to ≤ 7 mm over coil section of BCI | • Correct position (depends on findings of CT scan)  
• Avoid damaging sigmoid sinus or dura (use diamond burr when drilling close to them)  
• Use BCI Lifts if required |
| **IV. PREPARING BCI FIXATION** | • Drill fixation points with drill bit provided, using T-Sizer or Depth-Gauge Assembly as a guide | • Orientation/distance of fixation points (depends on findings of CT scan)  
• Don’t change position of T-Sizer or Depth-Gauge Assembly between drilling fixation holes 1 and 2 |
| **V. FIXATION OF THE BCI** | • Remove BCI from sterile package  
• Add appropriate BCI Lifts onto wings of BCI-FMT if required  
• Arrange BCI over site  
• Place appropriate screws in anchor holes of BC-FMT  
• Tighten screws with torque wrench | • Only use bipolar electrocautery once the implant is in surgical field  
• The BCI can be damaged by excessive bending  
• Don’t use torque > 32Ncm (otherwise bone can be damaged) |
| **VI. CLOSURE** | • Verify fixation of BC-FMT  
• Verify position of coil  
• Close skin flap in layers  
• Pressure dressing over the wound | • BC-FMT must be installed tightly |
Surgical Steps

Step 1: PREPARATION

The CT scan needs to be evaluated to determine where to place the BC-FMT and the screws. In a normal anatomy, the BC-FMT should lie in the sinodural angle, in such a way that the interference with the sigmoid sinus and the dura is kept to a minimum.

If the mastoid is already drilled out or if there is little space in the sinodural angle, the BC-FMT can be placed either behind the sinus or above the temporal line.

For the position of the screws, a plane area on the bone should be chosen, taking into consideration the thickness and consistency of the bone, along with the position of the sigmoid sinus and the dura.

Shave the hair approximately 2 cm beyond the intended incision, removing the least amount of hair possible. Remove the C- and (Flat-) T-Sizers from the sterile package, bring them into the surgical field.

Place the connected C- and (Flat-) T-Sizer on the skin, with the (Flat-) T-Sizer so it lies according to the best position found during the CT analysis. The coil section of the implant should not lie under the auricle. Use a marker pen to trace the outer perimeter of the template on the scalp.

Mark the incision line at least 5 mm from the edge of the template to minimize the risk of device extrusion and postoperative infection. The incision only needs to

Figure 2a: C-Sizer and T-Sizer combination.  
Figure 2b: C-Sizer and Flat-T-Sizer combination.
The BCi is able to be bent to optimally accommodate each patient’s anatomy.

Note: BENDING OF THE BCI TRANSITION
The transition of the BCI may be bent ±90° in the horizontal plane and -30° in the vertical plane. Greater angles may cause a failure of the BCI due to the wire being broken.

be large enough to drill the seat for the BC-FMT of the BCI. Prepare the surgical field using standard procedures.

Figure 3a: Position of BC-FMT is in sinodural angle. Exact position depends on findings of CT scan.

Figure 3b: Position of BC-FMT behind the sigmoid sinus. Exact position depends on findings of CT scan.
Step 2: INCISION

First infuse the incision site with a vasoconstriction agent and then make the incision.

If using a postauricular incision, incise the skin to the level of the temporalis fascia. Next, make an anteriorly-based pericranial fascia incision. The portion of the pericranial flap overlying the receiving coil and magnet may be excised, but the anterior portion of the flap must be preserved to provide a continuous tissue layer over the anterior portion of the demodulator and the BC-FMT. If using a small incision, a fascia incision approximately 1 cm anterior to the skin incision can be made.

In atresia cases, where a pinna reconstruction is planned at a later stage, the incision should be made further posteriorly, in such a way that the skin remains healthy in the area where the pinna is to be reconstructed later.

Haemostasis is achieved with monopolar or bipolar electrocautery. Note that only bipolar electrocautery should be used once the BCI is in the surgical field, or if the patient already has an implant on the other side.

Figure 4: The incision line should be at least 5 mm from the edge of the template to minimize the risk of device extrusion and postoperative infection.
Step 3: CREATION OF BONE BED FOR BC-FMT AND PERIOSTEAL POCKET FOR COIL

The position of the bone bed for the BC-FMT as well as the position of the fixation holes depends on the findings of the CT scan. If the BC-FMT is placed in the sinodural angle, the reference points are the spine of Henley, the temporal line and the tip of the mastoid. It is usually made as close as possible to the EAC and with one of the BC-FMT wings sitting on the temporal line. If the BC-FMT is placed behind the sinus, the attachment of the digastric muscle and the mastoid tip are to be used as reference points. Use either the T-Sizer or the Depth-Gauge Assembly with the Depth-Gauge-Handle to mark the position of the BC-FMT on the bone.

Figure 5: Depth-Gauge-Handle attached to Depth-Gauge.

Figure 6: Mark the position of BC-FMT with the Depth-Gauge and Depth-Gauge-Handle on the bone.
Use a standard otologic drill bit to create a bone bed. If no BCI Lifts are used, the implant needs to be recessed by 8.7 mm. Special care should be taken when drilling close to the sigmoid sinus or the dura. When coming close to one of these structures, only a diamond burr shall be used to remove more bone.

BCI Lifts may be used if a bed of 8.7 mm cannot be drilled. The decision as to which BCI Lifts are appropriate depends on the depth of the bone bed which is determined using the Depth-Gauge in combination with the Flat-Transducer-Sizer (referred to as Depth-Gauge Assembly). If the Depth-Gauge Assembly is sitting in the drilled out bone bed and 4 lines can be seen, the 4 mm BCI Lifts should be used. If 3 lines are seen, the 3 mm BCI Lifts should be used, etc. If no line can be seen, no BCI Lifts are required.

Prepare a periosteal pocket to accommodate the coil and demodulator of the BCI, using the C-Sizer in combination with the (Flat) T-Sizer.

---

Figure 8: Verify the depth for the BC-FMT with the Depth-Gauge Assembly. In the example shown 2 mm BCI Lifts should be used.

Figure 7: Shows variations of the Depth-Gauge Assembly. The corresponding number of lines visible indicate which BCI Lifts are to be used.

Figure 9: Check the size and position of the coil section by using the C-Sizer in combination with the T-Sizer.
Evaluate the thickness of the portion of the flap over the magnet and receiving coil using the Skin Flap Gauge 7. Recall that the portion of the pericranial flap over the magnet and the receiving coil may be excised.

If the skin flap does not fit in the gauge loosely, carefully thin out the flap until it does. It is important to avoid thinning the flap too much as wound complications may occur.

To ensure proper transmission of the signal from the audio processor and proper attraction of the magnet, the total tissue thickness must not exceed 7 mm over the receiving coil.
Step 4: PREPARING BCI FIXATION

As previously mentioned, the position of the fixation holes also depends on the findings of the CT scan. Drill the fixation points using the supplied drill bit and stopper and either the T-Sizer or the Depth-Gauge Assembly as a guide. By using the tools provided, it ensures that the correct distance of the fixation points is achieved. In addition they prevent a drilling depth of more than 3.9 mm. The diameter of the drill bit holes is 1.5 mm.

**CAUTION**

**DO NOT MOVE THE T-SIZER OR DEPTH-GAUGE ASSEMBLY BEFORE BOTH FIXATION HOLES ARE DRILLED.**

Figure 11: Drilling the fixation holes; using the drill bit and the T-Sizer prevents a drilling depth deeper than 3.9 mm.

Figure 12: Using the Depth-Gauge Assembly when drilling the fixation holes prevents a drilling depth deeper than 3.9 mm.

Figure 13: Drilled out bed for BC-FMT and fixation holes
Step 5: FIXATION OF THE BCI

Remove the BCI from its sterile package and bring it into the surgical field. VIBRANT MED-EL recommends that only the surgeon handles the device. Care should be taken when handling the BCI. Do not allow any portion of the BCI to make contact with surgical drapes, sponges, or towels. Keep in mind that the BCI contains magnets and may be attracted to other magnetic devices in the operating room.

**CAUTION**

ONCE THE BCI IS IN THE SURGICAL FIELD, MONOPOLAR ELECTROCAUTERY SHOULD NEVER BE USED.

In case BCI Lifts are used, attach the appropriate size and push them onto the wings of the BC-FMT, as shown in Figure 15.

Then arrange the BCI over the surgical site so that the magnet protrusion is towards the skull, with the triangle shape on the magnet facing towards the skin. Bend the transition of the implant according to the final position required.

Place the implant coil and the demodulator under the periosteum so that it resides under the desired external position of the audio processor (previously marked) and the BC-FMT into the bed that has been prepared.

Carefully remove the appropriate screw from the package by firmly attaching it to the screwdriver. Place one regular cortical screw in each anchor hole of the BC-FMT and secure tightly. The regular screws have a diameter of 2 mm, and a golden surface finish.

Assemble the torque wrench. The handle of the wrench will click into its final position. Use the wrench to firmly secure the screws into the mastoid by rotating the wrench clockwise until a secure fixation has been achieved.

![Figure 14: The BCI is placed with the triangle facing upwards.](image)

![Figure 15: Pushing the BCI Lifts onto the wings of the BC-FMT](image)
Only use the emergency screw (blue surface finish, diameter of 2.4 mm) if insufficient fixation occurs with one of the regular screws.

There is no clicking sound to indicate when enough force has been used. For tightening the screws of the BCI a force of about 10 Ncm is sufficient.

**CAUTION**

**DO NOT EXCEED 32 Ncm TORQUE WHEN TIGHTENING THE SCREWS.**

In case the screws are not adequate, alternative screw lengths can be used. The demodulator of the implant does not need to be sutured down. The fixation of the implant via the 2 screws is enough to hold the implant in place.
Step 6: CLOSURE

Inspect the BC-FMT under the microscope. Palpate the main body of the BC-FMT to make certain it is secure. The BC-FMT should be installed solidly and free from any minor slackness when palpated. Ensure that the receiver coil is in the desired position.

Close the scalp wound in layers, then suture the skin flap with a double layer closure, taking care not to make contact with the installed BCI during the closure process. Clean the incision area and apply a pressure dressing to the wound. When closure is achieved, the patient should be transferred to the recovery area and treated with standard recovery procedures.

**CAUTION**

MONOPOLAR ELECTROCAUTERY MUST NOT BE USED. TO ACHIEVE HEMOSTASIS, ONLY USE BIPOLAR ELECTRO-SURGICAL INSTRUMENTS AND ENSURE THAT THEY NEVER COME INTO CONTACT WITH THE BCI.

To smoothen the transition of the wings to the bone, add bone pate around the wings of the BCI. Take care not to place bone pate over the screwheads, otherwise it might be difficult to unloosen the screws, if at all required.
IV. Key Points

POSITION OF BCI
- Connect the C- and (Flat-)T-Sizer. Place the (Flat-)T-Sizer in the required position according to the CT scan. In the sinodural angle, the C-Sizer should be angled approximately 45 degrees posterosuperiorly. With other approaches, an appropriate position for the coil should be found.

DRILL BONE BED FOR BC-FMT
- Drill the bone bed for the BC-FMT in the position according to the pre-operative CT scan. As per normal clinical practice, irrigation is recommended when drilling the bone bed. Take special care not to damage the sigmoid sinus or dura. Use the T-Sizer or the Depth-Gauge Assembly to check the depth and size of the bed.

USE OF BCI LIFTS
- In case there is not enough bone to drill the bed without touching the sigmoid sinus and/or the dura, the BCI Lifts can be used.

DRILL FIXATION HHOLES
- Drill the fixation holes with the drill bit supplied in the BCI Implant Kit, and use the drill bit in combination with the T-Sizer or the Depth-Gauge Assembly. Thus the drilling depth is limited to 3.9 mm.
- Do not move the T-Sizer or Depth-Gauge Assembly between drilling the two fixation holes.

ENSURE PROPER SKIN FLAP THICKNESS
- The skin flap, including the temporalis fascia, must be measured with the Skin Flap Gauge 7.
- The total tissue thickness over the internal receiver must not exceed 7 mm. If the total thickness is greater than 7 mm, then the flap must be carefully thinned.

FIXATION OF THE BCI
- Carefully remove the screw from the implant package by firmly attaching it to the screwdriver. Place one regular cortical screw (golden surface finish) in each anchor hole of the BC-FMT.
- Use the emergency screw (blue surface finish) only if insufficient fixation occurs with one of the regular screws.
- Use the torque wrench to firmly secure the screws into the mastoid by rotating the wrench clockwise until secure fixation has been achieved.

REGISTRATION CARD
- The registration card, contained in the BCI Implant Kit, should be completed and returned promptly to VIBRANT MED-EL.

INITIAL ACTIVATION
- Since osseointegration of the screws is not needed, the audio processor can be activated as soon as the swelling of the skin has reduced.
MED-EL Contacts

<table>
<thead>
<tr>
<th>Company</th>
<th>Office Address</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>MED-EL GmbH Niederlassung Wien</td>
<td><a href="mailto:office@at.medel.com">office@at.medel.com</a></td>
<td>MED-EL UK London Office</td>
</tr>
<tr>
<td>MED-EL Deutschland GmbH</td>
<td><a href="mailto:office@medel.de">office@medel.de</a></td>
<td>MED-EL Corporation, USA</td>
</tr>
<tr>
<td>MED-EL Deutschland GmbH Büro Berlin</td>
<td><a href="mailto:office-berlin@medel.de">office-berlin@medel.de</a></td>
<td>MED-EL Latino America S.R.L.</td>
</tr>
<tr>
<td>MED-EL Deutschland GmbH Office Helsinki</td>
<td><a href="mailto:office@fi.medel.com">office@fi.medel.com</a></td>
<td>MED-EL Colombia S.A.S.</td>
</tr>
<tr>
<td>MED-EL Unità Locale Italiana</td>
<td><a href="mailto:ufficio.italia@medel.com">ufficio.italia@medel.com</a></td>
<td>MED-EL Mexico</td>
</tr>
<tr>
<td>VIBRANT MED-EL France</td>
<td><a href="mailto:office@fr.medel.com">office@fr.medel.com</a></td>
<td>MED-EL Middle East FZE</td>
</tr>
<tr>
<td>MED-EL BE</td>
<td><a href="mailto:office@be.medel.com">office@be.medel.com</a></td>
<td>MED-EL India Private Ltd</td>
</tr>
<tr>
<td>MED-EL GmbH Sucursal España</td>
<td><a href="mailto:office@es.medel.com">office@es.medel.com</a></td>
<td>MED-EL Hong Kong</td>
</tr>
<tr>
<td>MED-EL GmbH Sucursal em Portugal</td>
<td><a href="mailto:office@pt.medel.com">office@pt.medel.com</a></td>
<td>MED-EL Philippines HQ</td>
</tr>
<tr>
<td>MED-EL UK Ltd</td>
<td><a href="mailto:office@medel.co.uk">office@medel.co.uk</a></td>
<td>MED-EL China Office</td>
</tr>
<tr>
<td>MED-EL Deutschland gmbh</td>
<td></td>
<td>MED-EL Thailand</td>
</tr>
<tr>
<td>MED-EL malaysi</td>
<td></td>
<td>MED-EL Malaysia</td>
</tr>
<tr>
<td>MED-EL Singapore</td>
<td></td>
<td>MED-EL Indonesia</td>
</tr>
<tr>
<td>MED-EL China Office</td>
<td></td>
<td>MED-EL Korea</td>
</tr>
<tr>
<td>MED-EL Vietnam</td>
<td></td>
<td>MED-EL Japan Co., Ltd</td>
</tr>
<tr>
<td>MED-EL Liaison Office Australasia</td>
<td></td>
<td>MED-EL Liaison Office Australasia</td>
</tr>
</tbody>
</table>