Tie™

TRANSDUCERS IN THE EAR

TIE MODULAR

NEW TREND IN HEARING

World First Modular Hearing System

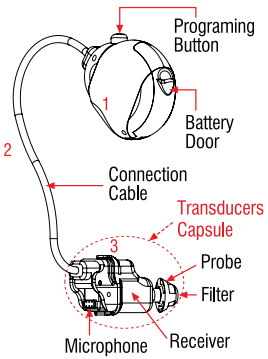
Helix hearing
"Good hearing connects you to life"

NEW TREND IN HEARING

The signal transmission of the Tie is based on the adaptation of the ear's natural working systems. Tie is as meticulous as possible to use all the functions of the auricle.

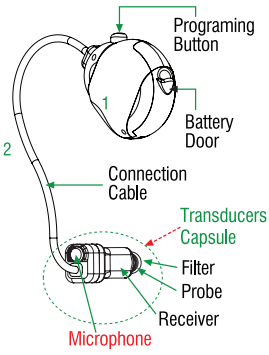
In the conventional behind-the-ear hearing aids, the Pinna functions are neglected. Different software is used for reducing signal comprehension problems, whereas no software can simulate Pinna functions.

TIE Modular



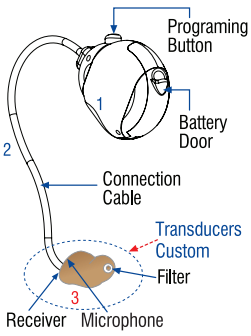
1- Amplifier and Battery Module
2- Connection Cable
3- Transducers Capsule

TIE Semi-Modular



1- Amplifier and Battery Module
2- Connection Cable &
Transducers Capsule

TIE Custom Modular



Model: FP-S / FP-M / FP-P

1- Amplifier and Battery Module
2- Connection Cable
3- Transducers Custom

World First Modular Hearing System

PINNA EFFECT

The benefits of Pinna;

1- It detects the natural direction of sound, especially between 2 kHz and 8 kHz.

2- The sound coming from behind is suppressed between 3 dB and 5 dB, so that the front sound can be perceived easily (especially between 2-5 kHz).

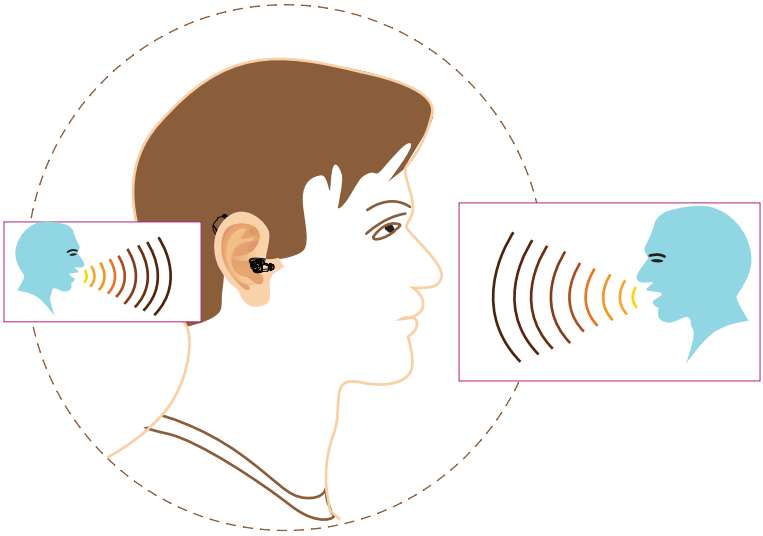
3- Contributes to the perception of consonants.

4- Allows transmission of high frequencies.

5- Suppresses noise.

6- Allows natural hearing.

7- Contributes to the natural perception.



People who naturally hear, look at the world differently!

APPLICATION METHODS OF CURRENT *BTE* DEVICES

BTE Devices

- The receiver and microphone are behind the ear.
- The position of the microphone and receiver is acoustically incorrect.

RIC Devices

- The microphone is behind the ear.
- The position of the microphone is acoustically incorrect.

Common disadvantages of BTE and RIC hearing aids

The hearing aid user experiences the following problems;

- Due to incorrect placement of the microphone, natural directionality is lost and the direction cannot be determined precisely.
- Highly affected by loud noises.
- High frequencies that are important for understanding are not heard completely.
- Problems in the naturalness of sounds.
- Even a slight wind disturbs the conversation.

ADVANTAGES OF Tie™ TRANSDUCERS IN THE EAR NEW GENERATION

HEARING AIDS

- It uses advantages of natural working system of Pinna
- Easy to determine the direction
- The effect of noise is lower
- All consonants that are important for perception are more understandable
- Wind effect is low since microphone is behind Tragus (canal)
- Offers excellent high performance while listening to music
- Offers great therapy with T-FIS while microphone and receiver in the ear
- Establishes the most natural transmission line
- Mini and unique design offers excellent aesthetic appearance

Pediatrics Tie™ Modular

TRANSDUCERS IN THE EAR

- Introduces the mini size hearing aids to infants and children
- It offers high comfort
- Mini device placed behind the ear, increases the possibility of use especially for babies
- It makes application easier with different connector sizes
- It can be given to all ages
- Open or closed application is available
- It can be applied to different hearing losses by changing transducers

Area of application: Mild to severe hearing loss

Tie™
TRANSDUCERS IN THE EAR

Happy Babies

Reshaping the Pediatrics

A NEW CATEGORY IN THE HEARING INDUSTRY

BTE, RIC, Tie™ TRANSDUCERS IN THE EAR *, ITE, ITC*

Natural transmission line of the ear is used

Comfortable usage

Imitates the ear

Comfortable phone conversation

High performance in noisy environments

Delivers happiness in listening to music

Protects from wind effects

– T-FIS Therapy –

Natural directionality

High wearing comfort

The ear continues its natural functions

High sound quality

User's own voice gives more natural feeling

Difference of TIE Modular Technology

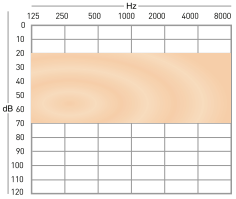
	Classic BTE	RIC/RITE	Classic ITE	TIE
Sound distortion in the transmission line	Yes	Yes	Depends on the mold	No
Natural pinna effect	Weak	Weak	Strong	Strong
High frequency loss	Yes	Yes	No	No
Frequency range	Narrow	Narrow	Wide	Wide
Wind effect	Yes	Yes	Depends on the ear mold	No
Direction deviation	Yes	Yes	Depends on the ear mold	No
Mold requirement	Yes	No	Yes	No
Risk of early breakdown	Yes	Yes	Yes	No
Repair cost	High	Normal	High	Low
Device lifetime	Long	Long	Normal	Long
Perception	Normal	Normal	Very Good	Very Good
Usage comfort	Low	Very Good	Very Good	Very Good
Aesthetic	Low	Very Good	Very Good	Very Good
Ease of repair	Difficult	Normal	Difficult	Easy
Modular system	No	No	No	Yes
Transition to upper segment	Difficult	Easy	Difficult	Easy
Occlusion effect	Yes	No	Depends on the ear mold	No
Filtered signal processing	Weak	Weak	Strong	Strong
Need for second microphone	Yes	Yes	No	No
Suitability for all ages	Easy	Difficult	Difficult	Easy

TECHNICAL SPECIFICATIONS

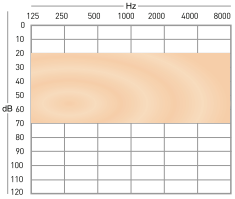
TIE A1 / TIE B1 / TIE C1		EN 60118-0 Ear Simulator				EN 60118-7:2005 2ccm-coupler			
		Mod.S	FP-S	FP-M	FP-P	Mod.S	FP-S	FP-M	FP-P
Max Output (OSPL90)	dB SPL	118	118	125	130	110	110	117	122
HFA Avg (1000,1600,2500 Hz)	dB SPL	114	114	122	125	106	106	114	117
Max Gain (FOG50)	dB	50	50	64	68	42	42	54	58
HFA Avg (1000,1600,2500 Hz)	dB	40	40	60	62	33	33	49	53
Reference Test Gain (Input 60 dB SPL)	dB	37	37	45	48	30	30	37	40
EQ Input Noise	dB SPL	23	23	21	23	23	23	22	24
Frequency Response (RESP60)	Hz	<100-7500	<100-7500	<100-5900	<100-5600	<100-7200	<100-7200	<100-5700	<100-5400
Total Harmonic Distortion (500/800/160 Hz)	%	0.7/0.9/0.9	0.7/0.9/0.9	0.5/0.8/0.5	0.8/0.6/0.3	0.7/0.9/0.9	0.7/0.9/0.9	0.9/0.9/0.5	0.9/0.5/0.3
Telecoil Sensitivity (MASL)	dB SPL	46	46	54	75	38	38	46	70
Battery Current	mA	0.75	0.75	0.8	0.84	0.75	0.75	0.8	0.84
Battery Life (Average)	Hour	120	120	115	105	120	120	115	105
Battery Type		10							
Operating Voltage		1.3							
Number of Programs		TIE A1:**6** / B1:**6** / C1:**4**							
Number of Frequency Channel		TIE A1:**16** / B1:**12** / C1:**8**							
Microphone		Omni							
Telecoil		+							
Volume Control		+							
		NOTE: The Acoustic Technical Specifications of TIE Modular (S), TIE Semi-Modular (S) and TIE Custom Modular (S) Devices are the same.							

* Technical datas are given in according to EN 60118-0 Ear Simulator (NZ coupler) / EN 60118-7:2005 2ccm-coupler values.

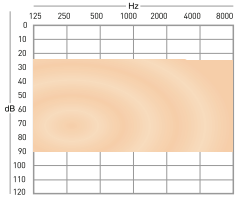
Modular S Fitting Range



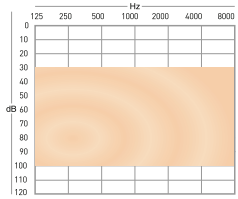
FP-S Fitting Range



FP-M Fitting Range



FP-P Fitting Range



Key Features:

- 64/48/32 Compression Parameters
- 16/12/8 WDRC Independent Channel Applicaiton
- 16/12/8 Channels Fine Tuning Gain Bands
- 16/12/8 Channels MPO
- 8 KHz Bandwidht
- Channel Based Scalar Noise Reduction
- Adjustable 4/6 program
- Input modes;
  - Omni
  - Omni &Tinnitus Thrapy
  - Telecoil
- Push Button (Program + VC)
- In-situ Comfort Test
- Wind Noise Management
- Memory Change and Low Battery Signal with voice or tone
- Autosave for Program Position
- Data Logging
- Treble Sound Clarity
- Preferential Memory Control User can start with the preferred program
- Setting the start time

Specific Features

- Super Adaptive Feedback Canceller
- (T-FIS) Tinnitus Freguency Isolation System
- Internal Noise Blocker
- Base Sound Clarity

Performance Features

- *The devices are resistant to water, sweat and dust for certain models.*
- *Ear-Technic Hearing Aids are reliable, durable and powerful with unique design.*
- *Tested according to the following norms:*
  - *IEC 60068-2-64 - Vibration*
  - *IEC 60068-2-31 - Mechanical shock*
  - *IEC 60068-2-14 - Shock temperature changes*
  - *IP68 (IEC 60529) - Dust and Water*

Programming (4 pin. System)

Cable : CS44 Program Cable
Battery : Without Battery
Progr. Box : Hi-Pro / Hi-Pro2 with USB
Software : CorrectFit2

Programming Cable

Fitting Formulas:

NAL-NL2, DSL Adult, DSL Pediatrics

Choose your favorite color

SILVER

CHAMPAGNE

BLACK

Some of the Main Features of Tie

64/48/32 Compression Parameters

16/12/8 WDRC Channels

8/12/16 independent fitting channels

16/12/8 Channels Fine Tuning Gain Bands

Enables frequency-based gain, sound balance and clarity

16/12/8 Channel MPO

Adjusts the maximum audio output level in 16 channels and provides channel-based safe sound

8 kHz Bandwidth

Covers all the speech frequencies and ensures that music and rare loud sounds in everyday life can be heard easily

Channel Based Scalar Noise Reduction

Channel based noise reducer decreases noise gradually

Memory

Adjustable 6 or 4 Programs. Offers options for different environments from 1 to 6 or 4 programs

Input Mode

It provides different input options such as Omni directional, Inductive and Tinnitus therapy

Physical Button

If the physical button is inserted, it can be used for two purposes:

– Can be used for switching the programs and volume adjustment

– Short press to change program, long press to adjust volume

In-Situ Comfort Test

The sound level performance of each frequency is measured and the fitting confirmation is obtained by the hearing aid, 'Which frequency is heard how much by user' is observed through mold, vent and tube modifications

Low Battery Signal

Gives an audible warning or signal tone to 'change the battery'

Battery Warning

Gives a warning via signal tone

Setting the Start Time

When the device is turned on, it starts to operate automatically with the same program and volume level that were used last after it was turned off

Data Recording

Makes contribution to the compatibility of other programs. Usage preferences are determined

Base Sound Clarity

Extra suppression the low frequency noise, removes the speech dullness and eliminates the noise

Internal Noise Blocker

• Hearing instruments normally produce internal noise as they work with batteries and those who do not have hearing loss at low frequencies are uncomfortable with that

• Internal Noise Blocker offers an excellent usage pleasure because it suppresses the internal sound of the device

Treble Sound Clarity (Eco Stop)

Adjusts the echo and gain at high frequency sounds to provide a comfortable and easily understandable sounds

Preferential Memory Control

User can start with the preferred program

T-FIS (Tinnitus Frequency Isolation System)

Successful frequency isolation system at any frequency for tinnitus rehabilitation

Wind Effect Reduction (Wind Block)

Reduces wind impact on microphone

Impulse Reducer

Suppresses sudden and short-lived disturbing sounds

Super Adaptive Feedback Reducer

Innovative and best feedback cancellation management

NOTE: *The specifications vary by device models.*

Tie™

TRANSDUCERS IN THE EAR

World First Modular Hearing System

Dealer:

ear-teknik, reserves the right to make changes on the information of the brochure.

Helix hearing
"Good hearing connects you to life"

Helix is a trademark of ear-teknik

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