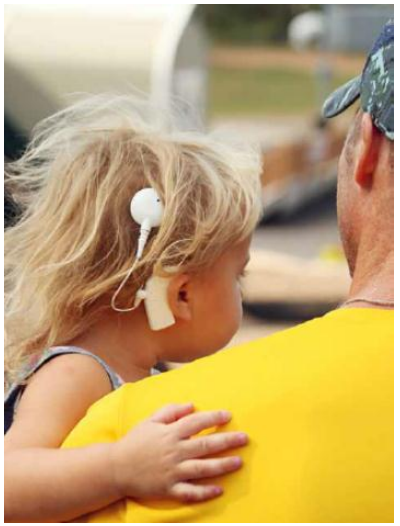
The Naída CI Q Series Overview

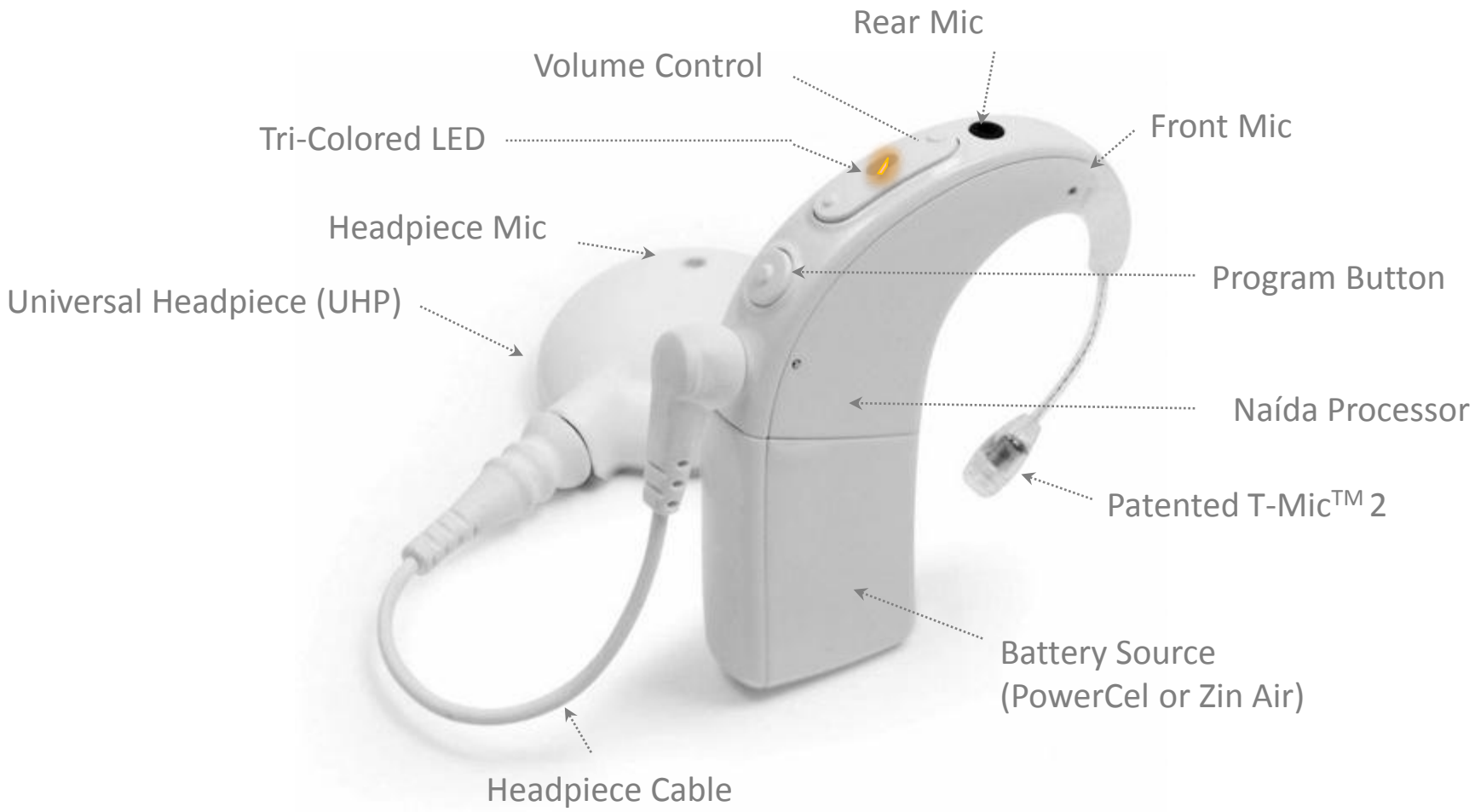
November 2015

What you will learn today

- The Naída CI Q70 and Q90 Processor Basics
- Indicators for System Checks and Troubleshooting
- Connectivity
  - Roger
  - ComPilot
  - Wireless Accessories



Naída CI Q Series



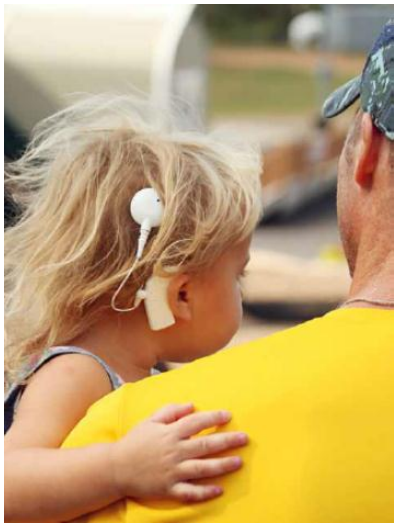
Naída CI Q Series

Child Friendly Features

- Light-emitting diode (LED) indicators
- Tamper proof to protect children from swallowing small parts
- Intellilink
- Ability to disable /limit volume and program settings to avoid accidental changes
- Flexible wearing options
- Waterproof with use of Aqua Case and Aqua Mic

What you will learn today

- **Processor Basics**
- Indicators for System Checks and Troubleshooting
- Care and Maintenance
- Connectivity
- Advanced Technology



Processor Basics

Program Button

- Stores up to five (5) programs
- Push the program button down briefly and then release the button to change programs
- The number of GREEN blinks displayed on the LED indicates which program is in use
- The programs switch in a chronological order; once it reaches the final program, it will return back to the first program
- The program button can be disabled by the child's audiologist

Processor Basics

Did you know??

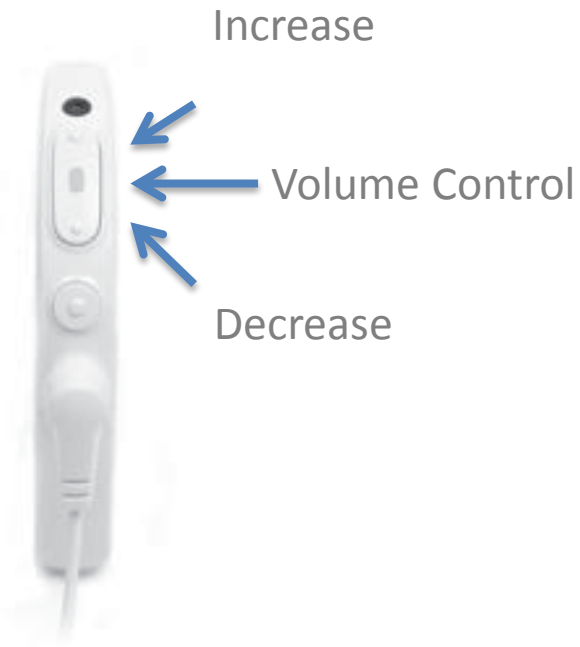
You do not need to change your student's programs for the different listening environments they encounter at school

Autosound OS™ processing **automatically** adapts to the changing listening environments at school, allowing children to hear every sound from whispers in the library to friends talking in the lunch room

Processor Basics

Volume Control

- To increase the volume, briefly tap the top of the volume control. To decrease the volume briefly tap the bottom of the volume control.
- The audiologist has the ability to restrict or disable the volume range



Processor Basics

Did you know??

The Naída CI will always default to program 1 at the child's standard volume setting when it is powered on.

If P1 with standard volume is the child's everyday program no setting changes are necessary to the Naída CI after the battery is attached!

Processor Basics

Microphones

- The Naída CI has four microphones
- The audiologist can set each program to utilize the microphones in different configurations

Check with the child's family or audiologist to determine which microphones are active in each program

Processor Basics- Batteries

PowerCel 110 mini

PowerCel 170 mini

New

PowerCel 170

PowerCel 230

Zinc Air

Processor Basics

Battery Type	Average (hours)
2 Zinc-Air Cartridge	31
110 PowerCel Mini	12
170 PowerCel Mini	18
170 PowerCel with FM	12
170 PowerCel without FM	18
230 PowerCel	25
AAA PowerPak	129

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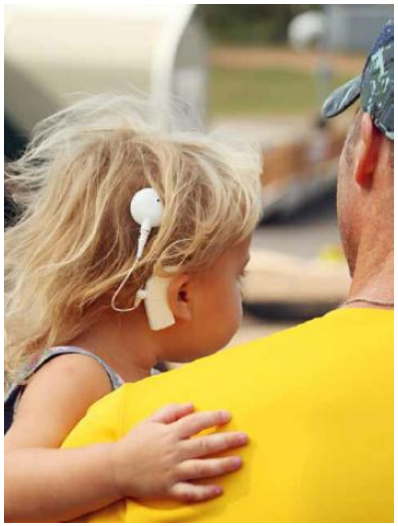


Indicators for System Checks and Troubleshooting

Tri-Color LED

FEATURE	COLOR
Battery Status	Orange
Microphone Status	Green
Program Position	Green
CI Status	Red

Indicators for System Checks and Troubleshooting

ORANGE BEHAVIOR	BATTERY STATUS
Blinks at start up	• 4 quick blinks battery is fully charged • 2-3 indicates that the battery is sufficiently charged to power the Naída CI • 1 quick blink indicates the battery is nearly depleted • No blinking indicates depleted battery
Solid	The battery is almost depleted
Blinks twice every 3 seconds	The battery is almost depleted and cannot support stimulation
Fades Out	The Naída CI is entering Standby Mode

Indicators for System Checks and Troubleshooting

GREEN BEHAVIOR	MICROPHONE/PROGRAM POSITION
Flickers in response to loud input	The sound processor and microphone are responding to sound
Blinks at start-up after battery status and upon program change	• 1 blink indicates program one • 2 blinks indicates program two • 3 blinks indicates program three • 4 blinks indicates program four • 5 blinks indicates program five
Solid	A processor that is not yet programmed
Blinks 4 Times	Response to the AB myPilot request to “Find Paired Devices”. The Left paired device will identify itself with this LED pattern.

Indicators for System Checks and Troubleshooting

RED BEHAVIOR	CI STATUS
Blinks once per second	Loss of lock with the implant.
Blinks rapidly (more than once per second	Intellink™ is enabled and the Naída CI is connected to the wrong implant
Solid	Sound Processor Error Condition. Fully remove and re-insert the battery to reset processor
Blinks 5 Times	Response to AB myPilot request to “Find Paired Devices”. The Right paired device will identify itself with this LED pattern

Indicators for System Checks and Troubleshooting

Internal Alarms

ALARM	INDICATION
Beeps upon program change	1 beep indicates program 1 2 beeps indicates program 2 3 beeps indicates program 3 4 beeps indicates program 4 5 beeps indicates program 5
Short beep upon increase or decrease of volume	Beeps once per press of the volume control either up or down (a double beep will be heard when the following settings are reached: top of volume range; baseline setting; bottom of volume range)
Long beep once every 15 minutes	Low Battery

Intellilink

- Safety Feature
- Ensures the Naída CI only stimulates the correct internal device
- Prevents accidental stimulation from a wrong ear processor for a bilateral user or processor that belongs to another child
- The Naída CI LED will blink RED rapidly (more than once per second) to indicate it is connected to the wrong internal device

Indicators for System Checks and Troubleshooting

Naída CI Listening Check

- Verifies the Naída CI sound sources are working properly when children are unable to provide this feedback themselves
- Any sound source that is programmed for use with the child's Naída CI can be verified
- Sound Sources can include,
  - 4 Naída CI microphones
  - Wireless (via ComPilot)
  - FM/Roger
  - TCoil

Performing a Listening Check of the Processor

Data logging

- Allows the audiologist to see data about how the Naída CI is being used on a daily basis
- The Audiologist can use this information to make programming changes to help the child maximize use of their device
- Can obtain information about
  - What programs and features are being used
  - What volume setting is being used
  - The different listening environments the child encounters throughout the day

AB MAKES IT SIMPLE FOR SCHOOLS!

Did you know??

AB recommends you obtain the following information from the child's audiologist to effectively manage your student's equipment in the classroom:

1. What program should be used for everyday listening?
2. What program should be used for FM/Roger or T-Coil use?

Troubleshooting

Basic Steps

When a child is not responding as expected:

1. Verify the UHP is in place and on the child's head
2. Remove the Naída CI and UHP from the child. Visually inspect the equipment and replace damaged parts
3. Verify the battery is charged
4. Reset the Naída to Program 1
5. Place the Naída CI and UHP back on the child and use the LED's and/or internal alarms to determine what the problem may be
6. Perform a listening check

Troubleshooting

Visually inspect the child's equipment and systematically replace damaged parts

- Check the Naída CI for damage
- Inspect the headpiece cable for any twisting, fraying, or breakage
- Verify the cable clicks or snaps into place when connected to the UHP
- Verify there is no visible damage to the UHP
- Inspect cable ports and jacks for debris. Clean with compressed air if needed
- Inspect the T-Mic 2 for any twisting, fraying, or breakage

Troubleshooting

Verify the battery is charged

- Remove the battery and then reattach it to the processor
- The LED (located in the middle of the volume control) will flash ORANGE to indicate battery status
- 3-4 ORANGE blinks indicates the battery is sufficiently charged to power the processor
- Replace with a fully charged battery if needed

Note: Zinc Air batteries will not provide LED battery status information upon start up. Only Power Cels and the AAA PowerPak will provide LED battery status information.

Troubleshooting

4. Re-set the child's processor to Program 1

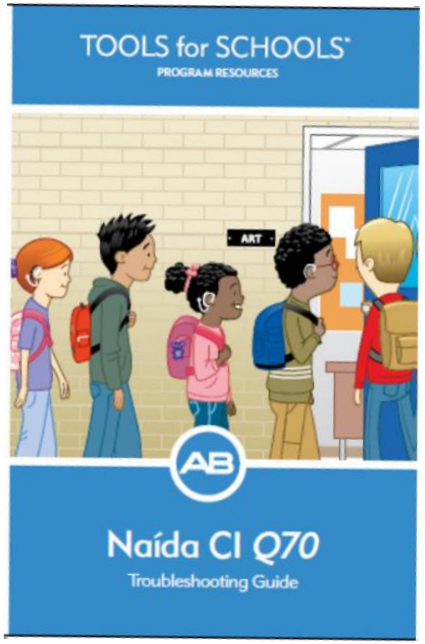
- Remove and reattach the battery
- The Naída CI will always default to Program 1 with the volume set at the child's standard setting when the battery is removed and reattached
- If Program 1 is not the child's standard program, push the Program Button down briefly and then release the button until you reach the child's standard program

Note: If you have removed and reattached the battery as instructed in step 3 then the Naída CI has been re-set to Program 1.

Troubleshooting Situations

Instructions for troubleshooting are available in the TFS Troubleshooting Guide

- No Sound and/or Red LED is flashing once per second
- No sound and/or there is a solid RED LED
- Sound has static, is muffled, or distorted
- Debris on battery contacts
- Naída CI does not power up
- Green LED does not flash in response to loud sounds
- No orange blinks or only one orange blink during battery LED sequence



Troubleshooting Situations

No Sound and/or RED LED is flashing once per second

1. Verify the UHP is positioned properly on the head
2. Remove any hats, scarfs, or other items that may be covering the microphone
3. Visually inspect the cable for any damage and verify it is firmly attached to the UHP and Naída CI
4. Remove and reattach the battery
5. Replace the UHP cable
6. Replace the UHP
7. Perform a listening check and replace any malfunctioning equipment

Troubleshooting Situations

No Sound and/or there is a solid RED LED

1. Remove and reattach the battery
2. Verify a charged PowerCel or two fully charged high power cochlear implant plus 675 Zinc-Air batteries are in place
3. Replace the UHP cable
4. Replace the UHP
5. Try a different program

Troubleshooting Situations

Static, Muffled, or Distorted Sounds

1. Remove any hats, scarfs etc. that may be covering the microphone
2. Verify the UHP is positioned properly on the head
3. Remove and reattach the battery
4. Visually inspect the cable for any damage and verify it is firmly attached to the UHP and Naída CI
5. Verify the Naída CI is set to the proper program and volume setting
6. If available, use an AB myPilot do a device status check and confirm program and volume settings
7. Try a different program
8. Visually inspect microphones for signs of debris and wear
9. Perform a listening check
10. Replace the UHP cable
11. Replace the UHP
12. Replace the T-Mic 2
13. Clean the battery contacts with compressed air

Troubleshooting Situations

Debris on Battery Contacts

If the battery contacts have rust or debris

1. Clean the contacts with compressed air
2. Place PowerCel batteries in the Zephyr Dry & Store® overnight
3. PowerCel batteries should be placed in the Zephyr Dry & Store® when not being charged

Troubleshooting Situations

Naída CI Does Not Power Up

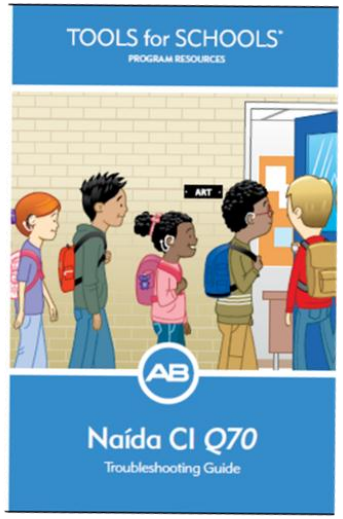
1. Remove and reattach the battery
2. Verify the PowerCel is properly attached or the Zinc-Air batteries are inserted correctly
3. Verify you are using a fully charged PowerCel or two fully charged high power cochlear implant plus 675 Zinc-Air batteries

Note: Zinc-Air batteries will not provide LED battery status information upon startup.

Troubleshooting Situations

Green LED Does Not Flash in Response to Loud Sounds

1. The Naída CI must have LED's enabled by the audiologist
2. Remove and reattach the battery
3. Verify the PowerCel is properly attached or the Zinc-Air batteries are inserted correctly
4. Verify you are using a fully charged PowerCel or two fully charged high power cochlear implant plus 675 Zinc-Air batteries
5. Verify the processor is set to the proper program and volume setting
6. Try a different program
7. Perform a listening check
8. Replace the T-Mic 2
9. Clean the battery contacts with compressed air

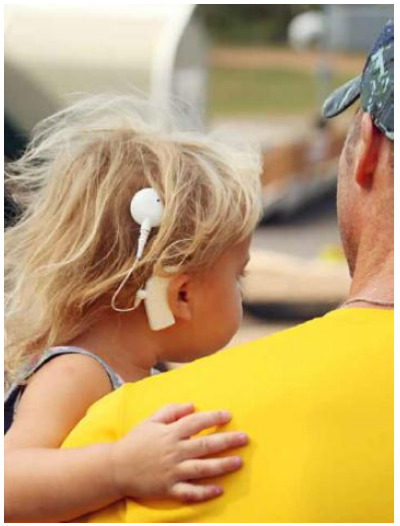


Troubleshooting Situations

No Orange Blinks or Only One Orange Blink is Observed During Battery Status Check

1. Zinc-Air batteries will not provide LED battery status information upon start up. Only PowerCel batteries and the AAA PowerPak will provide LED battery status information
2. Remove and reattach the battery
3. Verify the PowerCel is properly attached to the Naída CI
4. Verify you are using a fully charged PowerCel
5. Clean the battery contacts with compressed air

What you will learn today



- The Naída CI Q70 and Q90 Processor Basics
- Steps for Everyday Use
- Indicators for System Checks and Troubleshooting
- Care and Maintenance
- **Connectivity**
- Advanced Technology

Connectivity

Connectivity Options

- T-Mic 2
- ComPilot
- FM/Roger
- T-Coil
- DECT Phone
- Easy Call

Connectivity

Natural Connectivity with the T-Mic 2

- Natural placement for headset, ear buds, or cell phones
- Access to commercially available audio devices

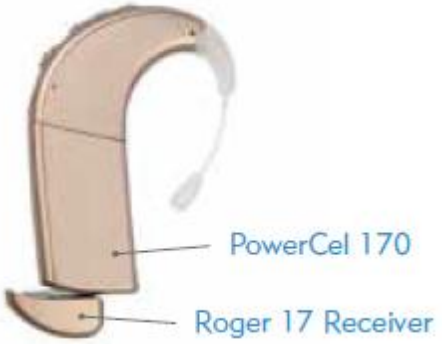
Connectivity

Wireless FM/Roger

Phonak ComPilot

Can be used with Phonak's MLxi or Roger X receivers

170 mAH battery



Can be used with Phonak's Roger 17 receiver

ComPilot

- High quality audio streaming
  - Uses Phonak HIBAN proprietary technology
  - No t-coil antenna
- Wireless connectivity
  - MP3 players
  - TVs
  - Bluetooth Devices such as cell phones, laptop computers, automobiles
  - FM systems
- Remote Control functionality

What can ComPilot do?

Stream Audio

Remote Control

Stream Roger/FM *

Stream Bluetooth Cell Phone or Landline Phone

* Compatible with Phonak MLxi

ComPilot for Bimodal Streaming

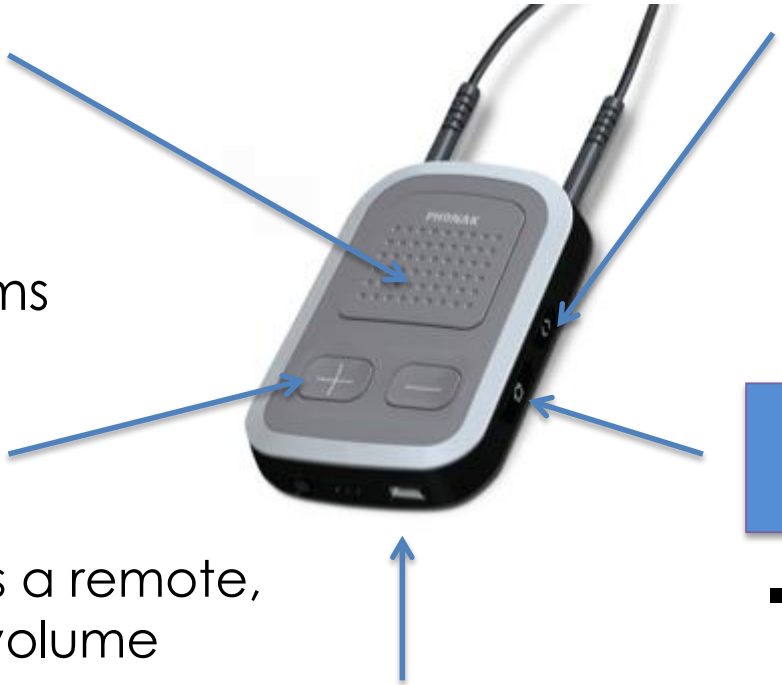
Logical Button Arrangement

MAIN

- Start/ Pause Streaming
- Switch programs

CONNECT

- Used with + button, holding for 2 seconds to begin Bluetooth pairing



VOLUME

- If programmed as a remote, it controls the CI volume only.
- If not programmed as a remote, it controls the streaming volume only.

Home Orientation

- Short press toggles through programs
- Long press returns to program 1 with default volume settings

- Europort to connect MLXi

What is Roger?

Roger is the new digital standard that bridges the understanding gap, in noise and over distance, by wirelessly transmitting the speaker's voice directly to the listener.

How does Roger work?

- Hearing Assistive Technology
  - Superior to traditional and Dynamic FM
  - For hearing aids, cochlear implants and/or soundfield amplification systems
- Adaptive Digital Wireless Technology*
  - Utilizes digitized audio "packets"
    - Sent on different channels (2.4000-2.44835 GHz)
    - Hop between channels
    - Only use free channels
  - Two-way communication between the microphone and receiver to ensure privacy for the user

Benefits?

- No interference
- No noticeable transmission delay (below 25 ms)
- No limit to the number of systems which can be used in one building
- No need to select specific channels for each classroom

Research on Roger and CIs

- Jace Wolfe, Hearts for Hearing
- 37 participants
- 16 AB recipients using Harmony
- Roger systems in combination with CIs resulted in significant improvements in speech recognition at high noise levels (70, 80 dB) over traditional and Dynamic FM technologies

Field Study News

roger

Roger and cochlear implants

Significant speech understanding in high noise levels

A recent study by Dr. Jace Wolfe of Hearts for Hearing Foundation, Oklahoma City, revealed that the usage of Roger systems in combination with cochlear implants resulted in significant improvements in speech recognition at high noise levels (70, 80 dB (A)) over traditional and Dynamic FM technologies.

Objective

The purpose of the study was to compare the performance of Roger wireless microphone systems against that of no FM, traditional FM and Dynamic FM via objective measures of speech recognition in quiet and at different noise levels.

Design

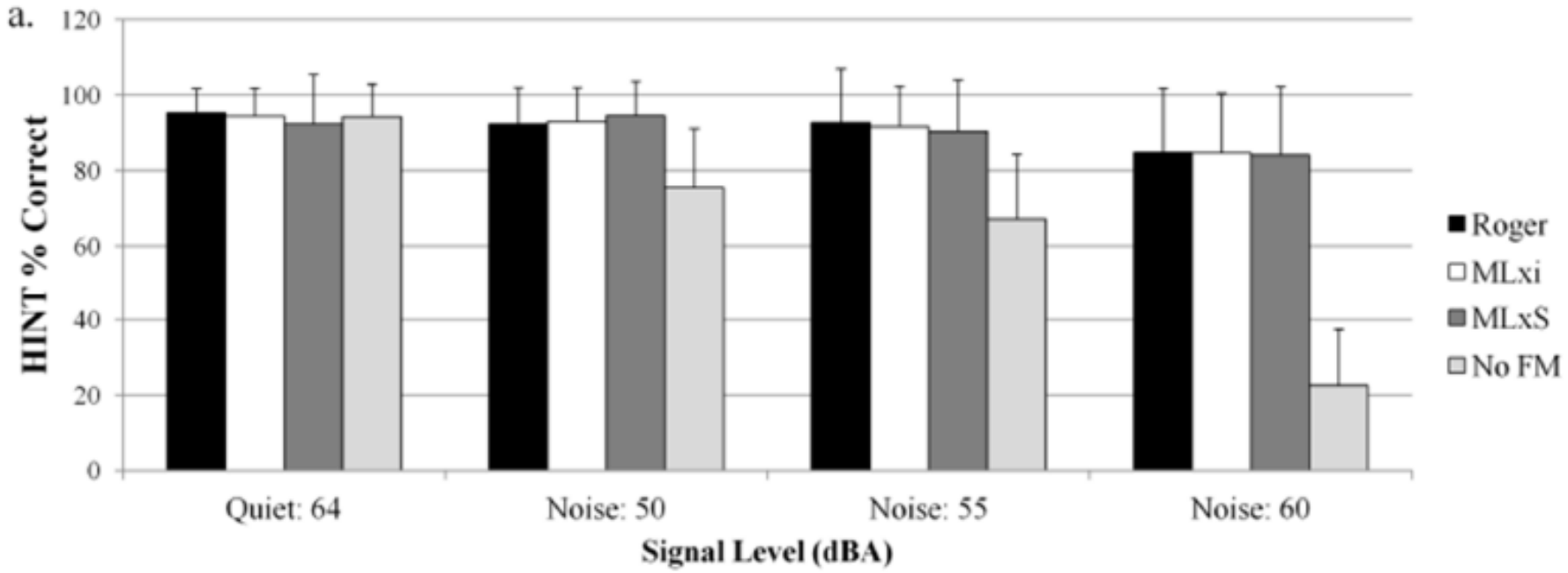
Measurements took place in a classroom setting. Sentence recognition in quiet and in noise was evaluated using three types of wireless microphone systems and without FM. Noise levels and technology type were randomized. Participants and examiners were blinded to the technology type throughout the experiment. For full details of the test set-up see Figure 1.

Sample

37 CI users participated in the study, using a mix of Advanced Bionics (AB) and Cochlear CI solutions. The average age of subjects was 46.4 years with ages ranging from 8 to 81 years. All participants had implanted their CIs for at least three months, and both unilateral and bilateral CI users were included in the study. If unilateral CI recipients used a hearing instrument on the contralateral ear, this hearing instrument was switched off but left inserted in the ear during testing (in order to prevent the contribution from the hearing instrument ear from confounding the primary objective of evaluating different wireless technologies with CIs). All participants achieved open-set speech recognition in quiet of at least 50% correct on monosyllabic words. AB recipients (N=16) used Harmony sound processors; Cochlear Nucleus recipients (N=21) used the Nucleus 5 (CP810) sound processor. The radio receivers were coupled to the iConnect FM earhook of the AB sound processor and to the EasyAdapter of the Nucleus sound processor. The audio-mixing ratio of the sound processors was set at 50/50 and 1:1 for the AB and Cochlear subjects, respectively. Previous research has indicated that these mixing ratios are most appropriate for listeners using CIs, because access to environmental sounds is not compromised when the processor microphone is not attenuated.

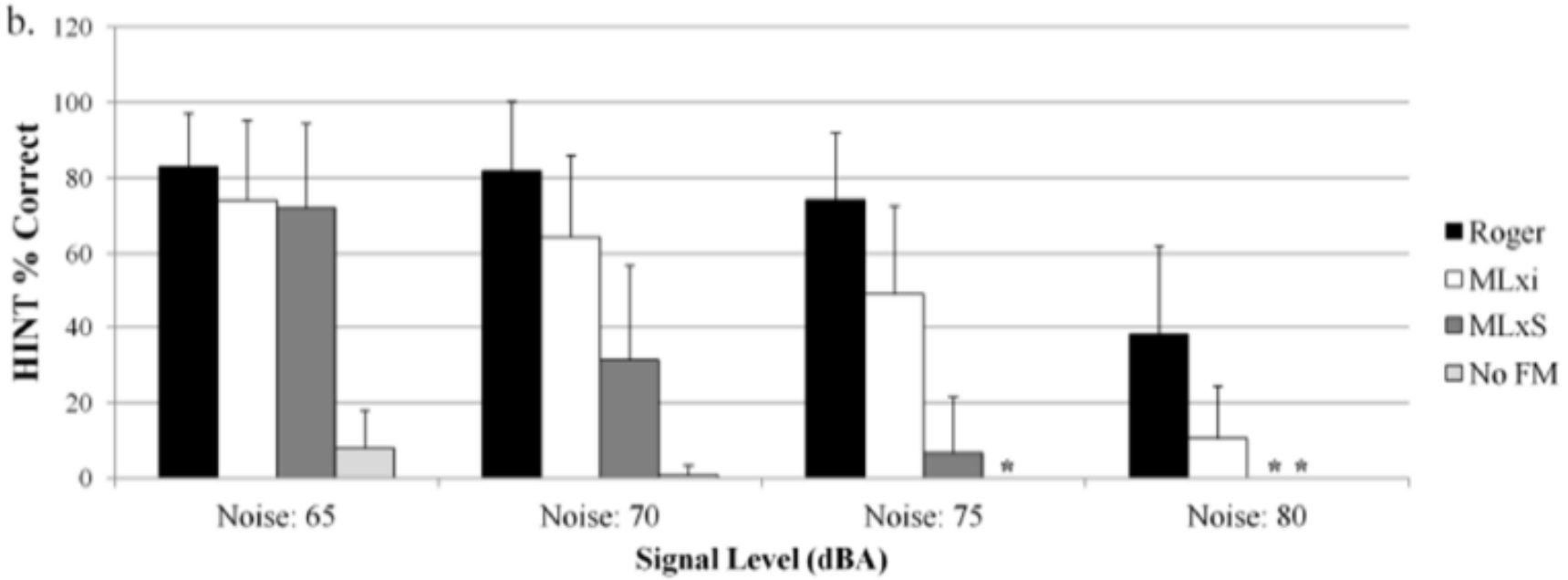
PHONAK life is on

Research on Roger and CIs



- No significant difference in quiet
- No significant difference between Roger, MLxi, or MLxS in low level noise

Research on Roger and CIs*



- At higher noise levels (70, 75, and 80 dB) Roger provided significantly better speech recognition in noise when compared to traditional FM
- Roger provided better performance than Dynamic FM

Roger Receivers for Naída CI

Roger myLink

Roger 17

Roger X*

* Roger X is compatible with Naída CI via Phonak ComPilot

Roger 17

- Design integrated for Naída CI Q70
- Connects to the bottom of the 170 PowerCel
- 1 gram light, 8 mm short

170 PowerCel

Roger 17 (02 & 03)

Compatibility between microphones and receivers

Educational microphones

Roger Pen
Roger Clip-On Mic

DigiMaster and FM receivers

Roger Receiver (02)

Roger Receiver (03)

Roger Pen

- Adaptive wireless transmission
  - Automatic microphone mode selection
- Bluetooth for cell phone use
- TV connectivity
- Audio input for listening to multimedia
- Used with Roger Clip-On Mics and Roger Pens in a microphone network

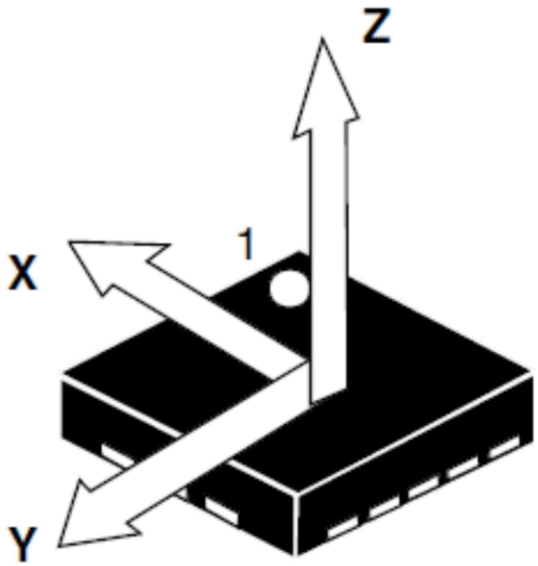
Roger Pen


Indicator light
Microphones
On / Off and Mute
Decline
Connect
Accept
Mic mode change
Charging and Audio input (micro-USB)
roger
PHONAK

Roger Pen

The Roger Pen features an accelerometer

- An accelerometer measures accelerations in three dimensions (X, Y and Z).
- The accelerometer informs the Roger Pen continuously about its orientation with respect to the direction of gravity.
- It also tells the Roger Pen when it is accidentally dropped.



Roger Docking Station

Listening to multimedia via docking station

- Automatic detection of an audio signal (even when OFF)
  - Powers down if no audio signal for 45 seconds
  - No power down even during soft music

Clip-On Mic for Roger (02 & 03)

- Continuous analysis of surrounding speech and noise
- Automatic configuration for beamforming, noise suppression and gain settings automatically
- No Bluetooth connectivity
- Audio cable to connect to TV and other audio devices
- Allows for multiple microphone use to create a MultiTalker Network

Clip-On Mic for Roger (02 & 03)

Indicator light

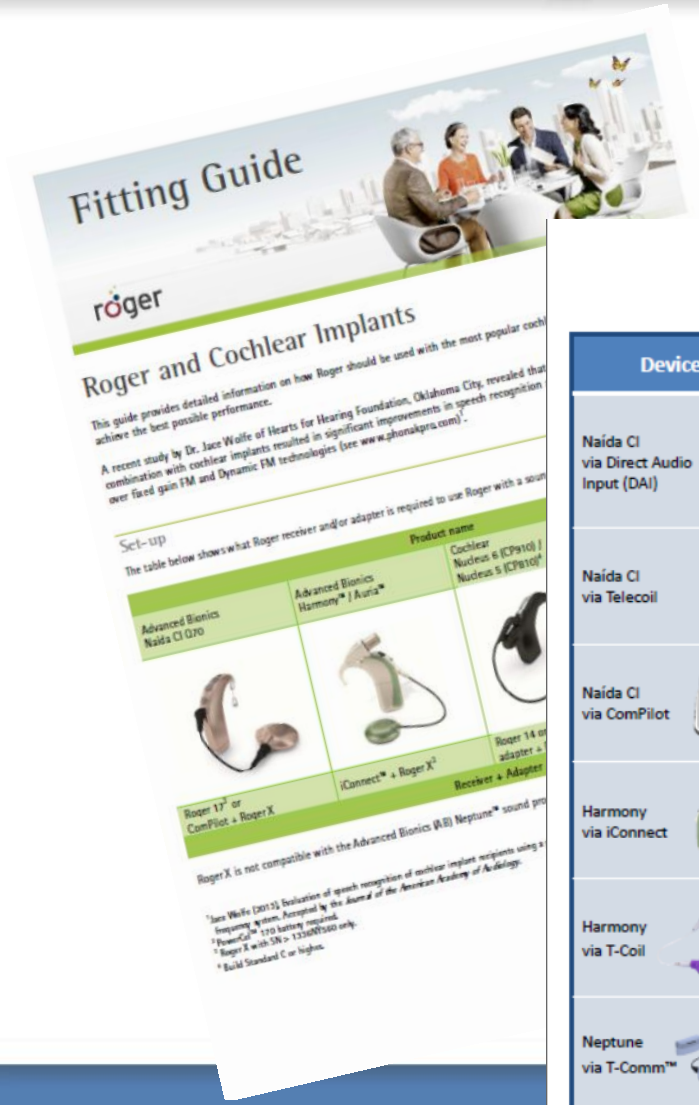
On / Off and Mute

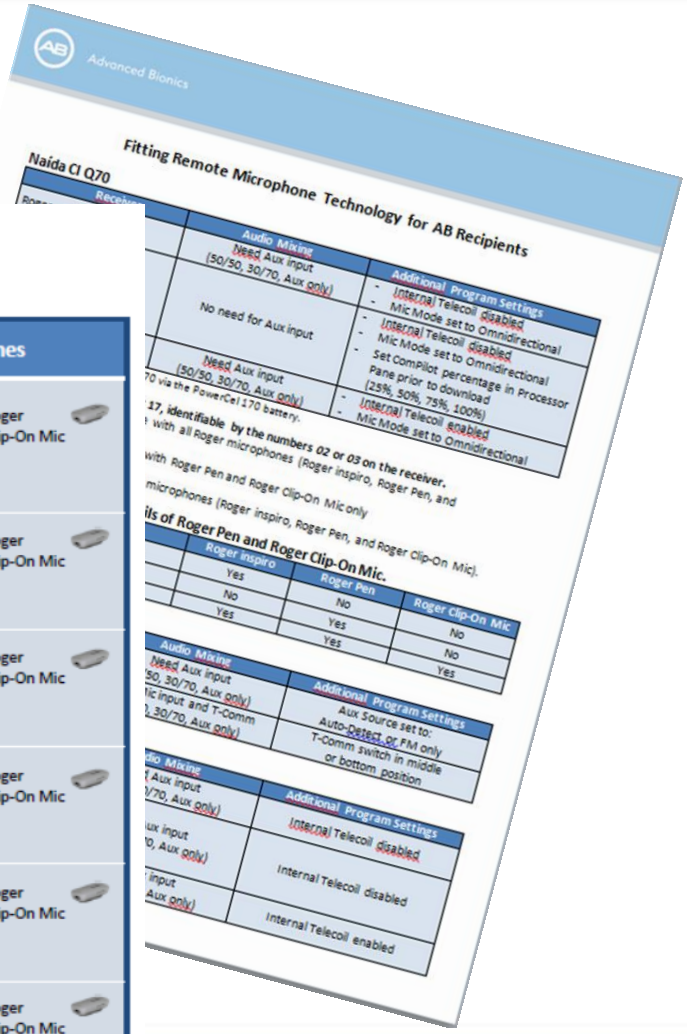
Connect

Microphones

Charging and Audio input (micro-USB)

Roger Resources





TOOLS for SCHOOLS™

The POWER of TWO

The Power of Two

Working Together as One