

Oticon Opn Play &  
Oticon Xceed Play

# Product Guide

2019

**oticon**  
PEDIATRICS

# Oticon Opn Play™ and Oticon Xceed Play

Oticon Opn Play redefines child-friendly hearing care by introducing the open sound experience for children. With Oticon Opn Play, we break with conventional omni-directional and directional technologies that can either overload or limit young minds. Powered by the new revolutionary Velox S™ platform and OpenSound Navigator™, Oticon Opn Play gives children full access to a rich and balanced 360° soundscape, to improve speech understanding in noise and maximize incidental learning by allowing access to multiple speakers.

With the groundbreaking OpenSound Optimizer™ – a proactive feedback prevention system – Oticon Opn Play provides up to 6 dB more gain to give children up to 25% more speech cues.

Oticon Opn Play comes in four styles, all available at two price points and offers a broad range of connectivity options for enhanced learning and communication.

## **Introducing the open sound experience for pediatric power users**

Oticon Xceed Play truly sets a new standard among pediatric power hearing aids. Thanks to the two proven features, OpenSound Navigator and OpenSound Optimizer, Oticon's new power hearing aid gives children with severe-to-profound hearing loss 360° access to clear speech for the very first time. Oticon Xceed Play helps pediatric power users of all ages hear more and provides better conditions for speech understanding and language development.

The Oticon Xceed Play BTE SP and BTE UP completes our comprehensive family of power hearing aids, all offering the open sound experience and wide range of connectivity accessories.



### **BTE UP:**

#### **Ultra powerful and modern**

With an industry leading output and gain of 146 dB SPL and 87 dB full-on gain. Features tamper-resistant battery drawer and LED indicator showing the hearing aid status. The fully featured solution includes Speech Guard™ LX, Speech Rescue™ LX, DSL, telecoil, options for FM systems, and TwinLink for 2.4 GHz wireless technology and a Made for iPhone® hearing aid.

*Page 34*



**BTE SP:**

**Super powerful and modern**

With an output of 143 dB SPL and 83 dB full-on gain. Features tamper-resistant battery drawer and LED indicator showing the hearing aid status. The fully featured solution includes Speech Guard LX, Speech Rescue LX, DSL, telecoil, options for FM systems, and TwinLink™ for 2.4 GHz wireless technology and a Made for iPhone® hearing aid.

Page 34



# Contents

- INTRODUCTION 2
- TECHNOLOGY & FEATURES 4
- INSTRUMENTS 18
- CONNECTIVITY & ACCESSORIES 38
- FITTING 46



**Oticon CROS**

Give children with single-sided deafness (SSD) a revolutionary sound experience in simple and complex environments. Introducing the world's first wireless CROS/BiCROS hearing solution with OpenSound Navigator and TwinLink dual-streaming technology.

Page 36



**Bimodal fitting available in Oticon Genie 2**

Oticon Genie 2 fitting software includes a bimodal fitting tool with an intuitive flowchart and an updated fitting panel with an overall gain trimmer, for quick, easy and accurate bimodal fittings.

Page 49

## Technology & Features



Please note: The effect and availability of features varies with hearing aid style and prescription, see details in Technical Data sheets.



INTRODUCTION	2
TECHNOLOGY & FEATURES	4
INSTRUMENTS	18
CONNECTIVITY & ACCESSORIES	38
FITTING	46



Ultra-fast processing

1,200 MOPS

High resolution

24 bit DSP

11 Cores

High processing power

64

Frequency channels

Analyzing sound environment more than

100 times/second

Acoustic measures

56,000 per second

113 dB SPL

Upper limit input range

## The Velox S™ platform

### The best just got better

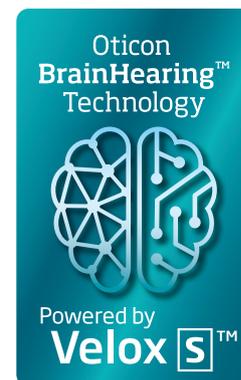
The Velox S, our fastest, most advanced platform ever, brings unprecedented computation capabilities to create a life-changing difference for users.

Velox S provides extremely fast processing capabilities, with an 11-core processor, 8 cores for sound processing and 3 cores to manage wireless communication. The high-speed Network on Chip (NoC) architecture features fine engraving (65 nM) in 9 layers to deliver impressive performance with the capacity to execute 500 million instructions per second (MIPS) and 1,200 million operations per second (MOPS). With the high-speed platform, a tiny hearing aid powered by either Zinc Air or lithium-ion batteries can deliver 50 times more processing power than the Inium Sense platform.

The digital signal processing uses 24-bit block-floating point representation across 64 frequency channels for higher signal and frequency resolution, fundamental to providing superior sound fidelity.

The Velox S platform offers extended linear processing of sounds levels to an upper input limit of 113 dB SPL thanks to 24-bit A/D converters on each microphone and the auxiliary input. New detectors monitor changes in the acoustic environment with 56,000 measurements per second, enabling the OpenSound Optimizer.

Fully programmable with updatable firmware, the Velox S platform is ready for the future.



# TwinLink™

## **Wireless connectivity and binaural processing in a small, energy-efficient solution**

TwinLink technology uses two dedicated radio systems to meet distinct communication needs.

TwinLink technology supports seamless, energy-efficient communication between two hearing aids and streamer-free connectivity with external electronic and digital devices.

Near-Field Magnetic Induction (NFMI) enables a continuous exchange of data and audio between two hearing aids to provide advanced binaural processing. This communication is done at minimal power consumption.

With NFMI, data and audio information is exchanged 21 times per second between the two hearing aids, 4 times more compared to previous generations without TwinLink.

Oticon hearing aids with stereo Bluetooth® low energy 2.4 GHz connect to smartphones and other digital devices for easy, seamless wireless connectivity. This technology also allows for true wireless fitting.



### **DID YOU KNOW?**

NFMI travels easily around the human body and the head, while 2.4 GHz travels well through air and holds its strength over longer distances.

On Velox S, wireless connectivity is fully integrated into the chip for lower power consumption, smaller size and better performance.

## “ TELL PARENTS OR CAREGIVERS

Gives your child 360° access to the world and helps your child differentiate between meaningful sound and irrelevant disturbing sound, and preserves environmental sounds important to incidental learning and safety.

### DID YOU KNOW?

Conventional technology switches slowly between a few fixed directionality modes. OpenSound Navigator operates fluidly and extremely fast between an infinite number of states which makes it suitable for all acoustical environments.

Rapid, continuous updates ensure that noise is even reduced between words.

# OpenSound Navigator™



## Analyzes, balances and attenuates noise for better speech understanding

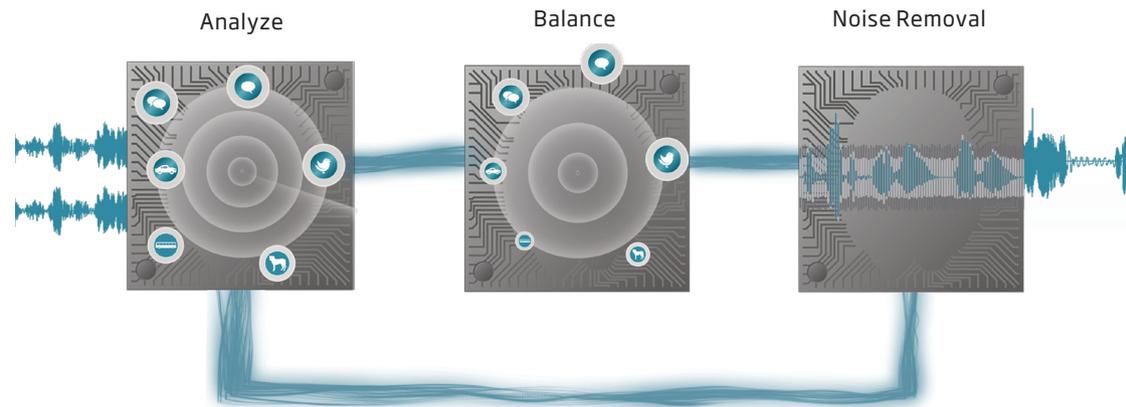
OpenSound Navigator is sound processing that reduces noise while preserving distinct speech from all directions. This is enabled by the revolutionary Multiple Speaker Access Technology (MSAT) that ensures access to multiple speakers in a dynamic environment.

OpenSound Navigator employs an extremely fast three-step process:

- Scans the full 360° sound environment more than 100 times per second to identify noise and separate it from speech.
- Rapidly reduces the levels of loud noise coming from specific directions, while preserving speech.
- Rapidly attenuates remaining diffuse noise, even between individual words.

OpenSound Navigator gives children access to the full soundscape across simple and complex listening environments, constantly optimizing learning opportunities. It takes a giant step forward in improving speech understanding in complex listening environments and in maximizing incidental learning by allowing access to multiple speakers.

In Oticon ON App, OpenSound Booster activates a new very high setting for OpenSound Navigator that can provide even more help in noisy everyday situations when needed the most.



Illustrates OpenSound Navigator in the hearing aids.

# OpenSound Optimizer™



## Optimal gain with minimal risk of feedback for better language development

The extremely fast OpenSound Optimizer allows Oticon pediatric hearing aids to break the feedback loop by detecting and preventing feedback proactively, even before it occurs. You can now fit children with up to 6 dB more gain to allow more open fittings or more stable gain for closed fittings. This enables Oticon Opn Play to provide the brain with up to 25% and Oticon Xceed Play with up to 20% more speech cues (Speech intelligibility index, ANSI S3.5) - with minimal risk of feedback.

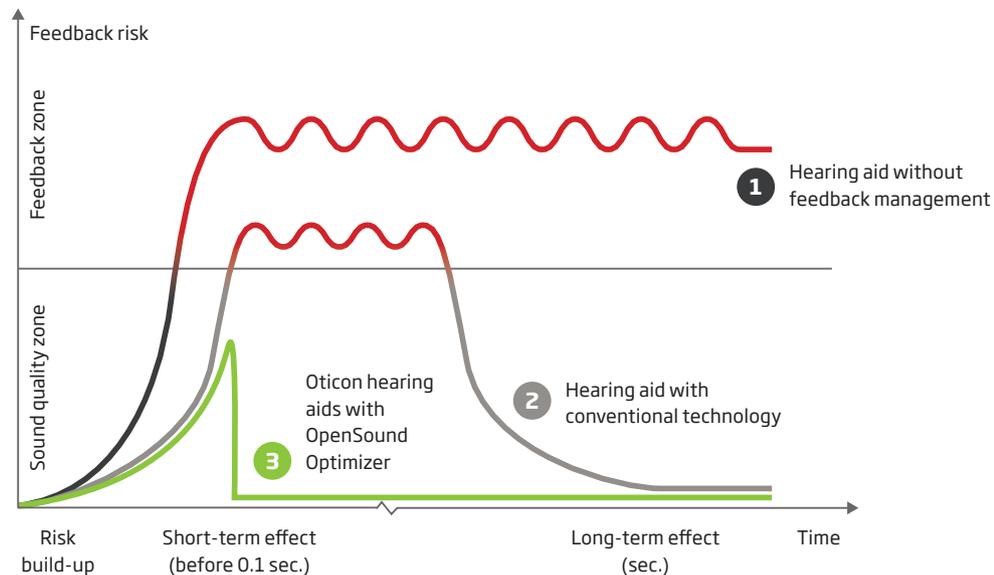
OpenSound Optimizer ensures stable access to speech details to support better language development and allows

children to play, hug, interact and wear hats and helmets with minimal feedback.

OpenSound Optimizer protects the sound quality by using ultra-fast signal processing:

- Predicts acoustic response by performing additional 56,000 measurements per second in 28 independent bands.
- Counters detected acoustic changes immediately using targeted breaker signals in one or more frequency bands.
- Stops breaker signal as soon as the acoustic response is stable again (or as soon as acoustic response is stabilized).

OpenSound Optimizer works with Feedback shield LX to avoid false detections. See section on Feedback shield LX for details.



## “ TELL PARENTS OR CAREGIVERS

The new super-fast technology in the hearing aids allows your child to play, hug, interact and wear hats and helmets with minimal feedback.

## DID YOU KNOW?

Traditional feedback management technology relies on feedback to build up to an audible level before it reacts to reduce the gain and stabilize the system.

OpenSound Optimizer applies preventive signal processing to eliminate the risk before it builds up to audible feedback.

## “ TELL PARENTS OR CAREGIVERS

Supports your child's safety by providing a richer, more realistic sound picture to help your child more easily perceive the location and direction of sounds.

### DID YOU KNOW?

Interaural level differences (ILD) are acoustic cues that make speech and noise appear distinctly and separately (and not muddled together) and help improve speech understanding in noise.

Four estimators enable precise, frequency-specific ILDs that remain intact across the frequency spectrum. This is important because the head shadow effect is greater at high frequencies.

# Spatial Sound™ LX



## Locate, follow and shift focus to the speakers you want to hear

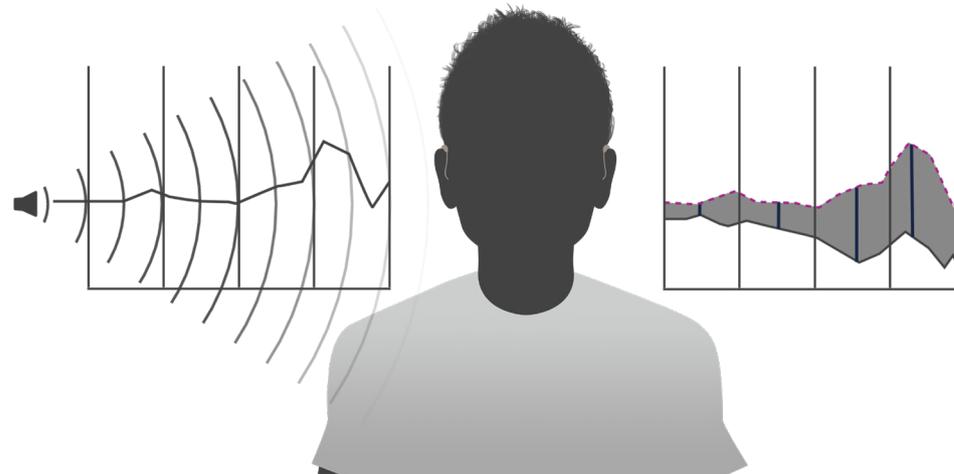
Spatial Sound LX combines a number of advanced technologies to provide a more precise spatial awareness to help children identify where sound is coming from.

Using the energy efficient and fast binaural communication offered by NFMI, Spatial Sound LX preserves interaural level differences in four frequency bands. This maintains the sense of location and direction naturally provided by the head shadow effect.

The multi-band analysis prevents low frequencies from masking higher frequencies to preserve interaural differences across the entire frequency spectrum.

In asymmetrical noise situations, Spatial Noise Management, a part of Spatial Sound LX, emphasizes sound on the better ear.

Head shadow effect



# Speech Guard™ LX



## Improves speech understanding in noisy environments\*

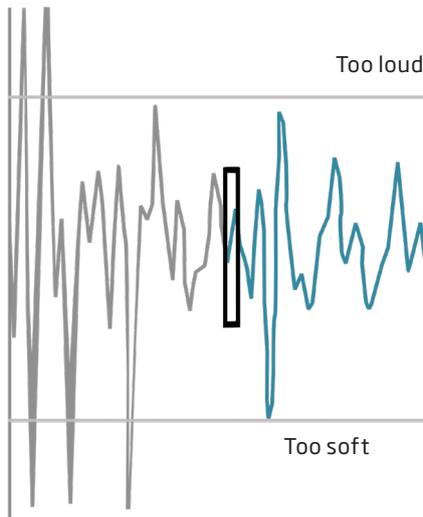
Speech Guard LX preserves clear, transparent sound quality and speech details for better speech understanding even in complex environments compared to fast and slow compression.\*\*

Speech Guard LX uses adaptive compression and is the only amplification technology that combines the benefit of linear amplification and fast compression. Linear amplification is applied

in a 12 dB dynamic range window to preserve amplitude modulation cues in speech signals.

When large changes in level occur, Speech Guard LX quickly adapts gain to maintain audibility and fits all sound in the reduced dynamic range, specific to the hearing loss, as illustrated below.

Speech Guard LX takes advantage of the new extended dynamic input range provided by Clear Dynamics to preserve the clear, transparent quality of loud sounds.



\*Benefits may vary depending on hearing loss

\*\*Pittman, A. L. et al. (2014). J Am Acad Audiol, 25(9)



## TELL PARENTS OR CAREGIVERS

Helps your child understand speech in noisy situations and is even proven to improve children's ability to complete complex listening tasks. Speech Guard LX makes sounds audible and comfortable across different listening situations and at the same time is able to preserve natural speech cues.

## DID YOU KNOW?

The benefits of the adaptive compression in Speech Guard LX have been documented in a number of studies. Amongst those, a study by Pittmann et al. (2014) where Speech Guard LX proved superior to fast and slow compression strategies.

## “ TELL PARENTS OR CAREGIVERS

Increases speech understanding by letting your child hear more speech sounds like /s/ and /th/.

### DID YOU KNOW?

Speech Rescue LX uses a multilayered lowering technique. The inaudible HF source sounds are copied and placed on the border of the child's usable hearing. The destination is never below 1600 Hz, as a primary aim of Speech Rescue LX is to both protect the information carried by low frequencies and provide high frequency audibility.

# Speech Rescue™ LX

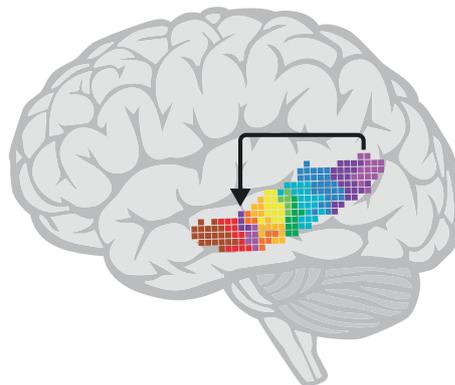


## Making high frequency sounds more audible

Speech Rescue LX is the unique frequency lowering approach that Oticon employs to help children hear high frequency sounds like 's' and 'th' that are important to speech development. Frequency composition, Oticon's frequency-lowering methodology, increases speech understanding by 'rescuing' speech cues that might otherwise be lost.

OpenSound Navigator's precise ability to improve SNR makes Speech Rescue LX more effective in two ways: High-frequency noise is reduced to clean the inaudible high-frequency speech, which is then copied into noise-cleaned mid-frequencies with minimal disturbance.

Speech Rescue LX combines with Speech Guard LX to give children with moderate to severe-to-profound hearing loss (in the high frequencies) access to inaudible high frequency sounds. The three step 'Clean, Rescue and Guard' methodology rescues cleaned high frequency sounds and places them on the edge of the maximum audible output frequency (MAOF). Maximum speech details are then guarded during compression. This methodology supports the child's brain in making sense of speech sounds to improve speech understanding.



# Feedback shield LX



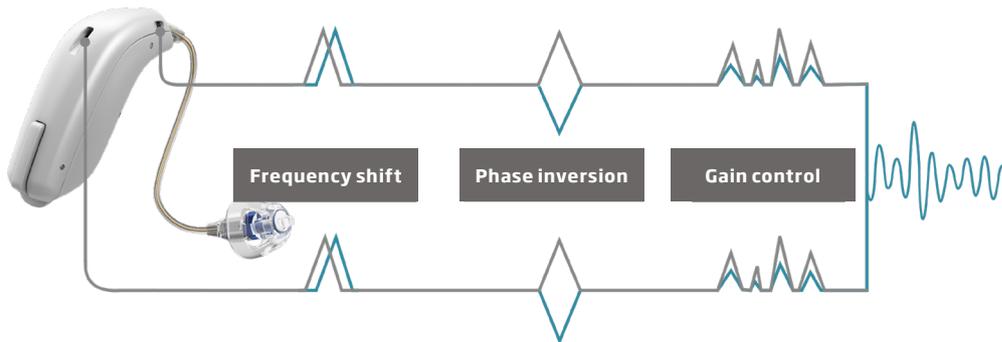
## Dual-microphone feedback system for reducing and suppressing feedback

The Oticon pediatric hearing aids enable Feedback shield LX to support OpenSound Optimizer's ultra-fast reaction and preventive abilities to take feedback management to the next level. Working together, the two technologies combine the strengths of rapid, pro-active feedback elimination with a stable adaptive system to avoid false detections and activation of Feedback shield LX.

The well-known Feedback shield LX operates in two separate paths - one for each microphone. In each path, three distinct technologies work together to suppress feedback and ensure stable amplification. Frequency shift optimizes phase inversion, and gain control may be applied if needed. Thanks to the OpenSound Optimizer, the gain control is now used far less.

With the new system, OpenSound Optimizer's new ultra-fast detection engages pro-active modulation to instantly stabilize the system when a feedback risk emerges. If the risk is only momentary, OpenSound Optimizer disengages the modulation when the risk has passed. If the feedback risk persists, the modulation ensures that the Feedback shield LX system can adapt and stabilize. As Feedback shield LX engages, OpenSound Optimizer's modulation is tapered off gradually.

Combining Feedback shield LX and OpenSound Optimizer allow you to add more gain to reach target. This gives you greater flexibility in the fitting process.



## “ TELL PARENTS OR CAREGIVERS

Let your child enjoy a clear, stable sound without worry about annoying whistling sounds.

### DID YOU KNOW?

Feedback management consists of two functions: to ensure a stable instrument at any given time and to handle dynamic changes.

In pediatric hearing aids, Feedback shield LX and OpenSound Optimizer work together to manage both functions.

## “ TELL PARENTS OR CAREGIVERS

Let your child experience superior sound quality especially when enjoying music or joining in conversations in noisy environments.

### DID YOU KNOW?

Peaks of speech are usually around 12 dB above and 18 dB below the average speech level. In contrast, music is much more dynamic with peaks of up to 30 dB.

Total Harmonic Distortion is a measure of the distortion within the hearing aid. Clear Dynamics ensures less than 5% distortion up to 113 dB SPL.

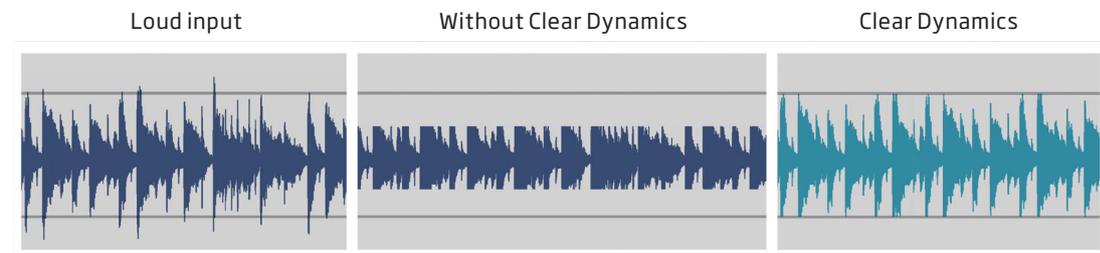
# Clear Dynamics



## Better sound quality in the full dynamic range of life

Clear Dynamics expands the input dynamic range, processing input sounds up to 113 dB SPL, to provide better sound quality without distortion and artifacts at loud input levels, while still keeping the sound quality of soft input levels intact. Clear Dynamics has an operating range from 5 to 113 dB SPL.

With speech cues preserved at high input levels, users enjoy a better listening experience without distortion even in loud environments. Clear Dynamics is especially valuable for children when listening to music or in conversations in busy, dynamic environments, where peaks can often be louder than the available input dynamic range.



# Wind Noise Management



## Better access to speech in situations with wind noise

With the powerful Velox S platform, Wind Noise Management offers innovative and highly efficient wind noise suppression. High speed estimators analyze the presence of wind noise 500 times per second in 16 frequency channels for fast and precise application of up to 30 dB wind noise reduction. Wind Noise Management attenuates wind bursts in less than 50ms, making it fast enough to precisely attenuate wind between words.

The purpose of Wind Noise Management is to attenuate the wind noise and quickly ensure a stable and comfortable loudness level for children, so they can focus on the speech that's important to them.

When speech is present, the signal-to-noise ratio is preserved because wind noise is suppressed when it is louder than speech. When no speech is present, the system will aggressively suppress wind noise to ensure comfort in windy situations.



## TELL PARENTS OR CAREGIVERS

Effectively suppresses annoying wind noise, even between the words in a conversation.

Wind Noise Management off

Wind Noise Management on



## DID YOU KNOW?

Wind fluctuates and is highly modulated, and may result in a very harsh and uncomfortable sound in hearing aids. As a result, many children reject using hearing aids even at moderate wind speed.

Wind Noise Management also suppresses the noise created when brushing against the hearing aid.

# Feature overview

<b>App &amp; Remote Control</b>	Discreetly adjusts volume, switches between programs or controls connectivity sources with Remote Control or Oticon ON App	Page 40 Page 44
<b>Bass Boost</b>	Controls compensation for bass leakage in open fittings when streaming audio	
<b>Binaural Coordination</b>	Coordinates program and volume settings between the two hearing aids	
<b>Binaural Processing</b>	Continuous data exchange between two hearing aids about the sound level in each ear to maintain the difference in input between the ears	Page 7
<b>Clear Dynamics</b>	Expands the dynamic input range, processing sounds up to 113 dB SPL, to preserve sound quality even at loud input levels	Page 14
<b>Data Logging</b>	Logs volume control usage, program usage and total use time	Page 53
<b>DSL Fitting Range</b>	Guides hearing aid selection according to DSL pediatric prescriptive rationale. Available in this Product Guide and in Technical Data sheets	
<b>Feedback Analyzer</b>	Analyzes the risk of feedback with the prescribed gain and chosen acoustics in Genie 2	
<b>Feedback shield LX</b>	Employs a proven and effective feedback management system to reduce the risk of feedback and suppress feedback if it occurs	Page 13
<b>Fitting Bands</b>	16 fitting bands (14 fitting bands for Oticon Xceed Play) for a precise fit and more fine-tuning options for patient fittings	
<b>Fitting Formulas</b>	Include DSL v5.0, NAL-NL2, NAL-NL1, VAC+, DSE and DSE linear	
<b>Made for iPhone®</b>	Indicates compatibility. 'Made for iPhone' means that the hearing aid and accessories have been designed to connect to iPhone, and have been certified by the developer to meet Apple™ performance standards	Page 40
<b>Multiple Directionality Options</b>	Enables conventional directionality settings in addition to OpenSound Navigator transition settings	
<b>NFMI</b>	Near-Field Magnetic Induction – Improves speed of communication and bandwidth between two hearing aids with very low power consumption	
<b>OpenSound Booster</b>	Provides even more help in noisy everyday situations and can be activated in Oticon ON App	Page 40
<b>OpenSound Navigator</b>	Provides listening support by continuously analyzing the environment, balancing sound sources so focus sound is clear and competing sounds are not too disturbing. Finally, it attenuates remaining noise to provide a more accessible sound environment	Page 8

Note: Availability of features depend on hearing aid model and price points

<b>OpenSound Optimizer</b>	Improves listening performance and comfort with ultra-fast proactive feedback detection and prevention. Enables optimal gain and open fittings without compromising sound quality or audibility.	Page 9
<b>Oticon Firmware Updater</b>	Enables you to update Velox S-based hearing aids and connectivity solutions, adding new and improved features with just one click	Page 48
<b>Pediatric Fitting Mode</b>	Supports the pediatric fitting process with guidance, information and relevant tools	Page 50
<b>Processing Channels</b>	Data is analyzed and processed in 64 channels (48 channels for Oticon Xceed Play), more than 100 times per second	
<b>REM AutoFit</b>	Integrates with real ear verification systems to individualize the fitting to the child's ear acoustics ensuring consistent audibility and optimal outcomes	Page 52
<b>Spatial Noise Management</b>	Optimizes listening in asymmetrical, noisy situations	Page 10
<b>Spatial Sound LX</b>	Uses binaural compression to provide precise spatial awareness that helps users identify where sounds are coming from	Page 10
<b>Speech Guard LX</b>	Preserves the dynamics of speech by combining the benefits of linear and non-linear compression	Page 11
<b>Speech Rescue LX</b>	Makes high frequency speech sounds like /s/ and /th/ more audible using frequency composition	Page 12
<b>Stereo Streaming</b>	Streams audio input in stereo	Page 40
<b>Transient Noise Management</b>	Protects against sudden loud sounds with fast recovery to preserve audibility. Offers four different levels for fine tuning, including 'off'	
<b>TwinLink</b>	Combines two distinct radio technologies in an innovative wireless communication system. Features one technology to support seamless, energy-efficient binaural communication between two hearing aids (NFMI) and one to support communication with external electronic and digital devices (2.4 GHz)	Page 7
<b>Visual Indicator</b>	Provides status indications and warnings to give parents confidence in daily use of hearing aid, e.g., start-up, program, and low battery warning	Page 54
<b>Wind Noise Management</b>	Protects against the discomfort of wind noise	Page 15
<b>YouMatic LX</b>	Accommodates personal listening preferences and sound perceptions in the fitting of OpenSound Navigator	Page 51

Instruments





INTRODUCTION	2
TECHNOLOGY & FEATURES	4
<b>INSTRUMENTS</b>	<b>18</b>
CONNECTIVITY & ACCESSORIES	38
FITTING	46





# The audiological difference between performance level 1 and 2

Hearing loss limits the amount of acoustic detail the brain receives. The fewer details, the harder the brain has to work to decode sound. The two performance levels in Oticon Opn Play and Oticon Xceed Play both provide access to a 360° listening environment, but they differ in the way they support and help the brain making sense of sound.

## Three features are key in supporting the brain in making sense of sound:



**OpenSound Navigator** opens the sound by preserving distinct speech and removing the noise that makes speech unclear. The level of noise that can be removed in different listening environments ranging from 9 dB to 3 dB and results in different levels of BrainHearing™ support.



**Spatial Sound LX** in Oticon Opn Play hearing aids makes sure that important information about the location of sound is preserved. With 4 level estimators Oticon Opn Play 1 offers the best spatial information of the two performance levels.



**Speech Guard LX** amplifies and preserves clean speech information and makes it easier for the brain to separate speech from noise. The difference between performance level 1 and 2 lies in the input range (Clear Dynamics) combined with the linear window that ranges from 12 to 9 dB, resulting in different levels of speech cue preservation.

In addition, Oticon Opn Play and Oticon Xceed Play also contain a number of other features that will also influence the support the brain receives in different listening situations e.g. OpenSound Optimizer, Spatial Noise Management, bandwidth, and number of processing channels.

**Performance level 1 provides the maximum support across hearing losses and different listening environments to fit children's needs at every stage of their development.**

# Oticon Opn Play & Oticon Xceed Play product comparison

	Oticon Opn Play 1	Oticon Opn Play 2	Oticon Xceed Play 1	Oticon Xceed Play 2	
<b>Speech Understanding</b>	OpenSound Navigator™	Level 1	Level 3	Level 1	Level 2
	- Balancing power effect	100%	50%	100%	50%
	- Max. noise removal	9 dB	3 dB	9 dB	5 dB
	OpenSound Optimizer™	•	•	•	•
	Speech Guard™ LX	Level 1	Level 3	Level 1	Level 3
	Spatial Sound™ LX	4 estimators	2 estimators	-	-
	Speech Rescue™ LX	•	•	•	•
<b>Sound Quality</b>	Clear Dynamics	•	-	•	-
	Spatial Noise Management	•	-	•	-
	Processing channels	64	48	48	48
	Bass Boost (streaming)	•	•	•	•
<b>Listening Comfort</b>	Transient Noise Management	4 configurations	On/Off	4 configurations	3 configurations
	Feedback shield LX	•	•	•	•
	Wind Noise Management	•	•	•	•
<b>Optimizing Fitting</b>	YouMatic™ LX	3 configurations	1 configuration	3 configurations	2 configuration
	Fitting bands	16	12	14	12
	REM AutoFit	Verifit®LINK, IMC 2*	Verifit®LINK, IMC 2*	Verifit®LINK, IMC 2*	Verifit®LINK, IMC 2*
	Pediatric fitting mode	•	•	•	•
	DSL fitting range	•	•	•	•
	VC step size	-	-	•	•
	Fitting formulas	DSL v5.0, NAL-NL1 + 2, VAC+	DSL v5.0, NAL-NL1 + 2, VAC+	DSL v5.0, NAL-NL1+2, DSE, DSE linear, VAC+	DSL v5.0, NAL-NL1+2, DSE, DSE linear, VAC+
	Bimodal fitting panel	•	•	•	•
<b>Designed for Children</b>	LED	•	•	•	•
	Tamper resistant battery drawer	•	•	•	•
	Hypo allergenic	•	•	•	•
	IP rating	IP68	IP68	IP68	IP68
	Nano coating	•	•	•	•
	Color options	12	12	12	12
	Integrated 2.4 GHz receiver	•	•	•	•
	DAI/FM compatibility	•	•	•	•
	CROS	•	-	•	•

\*Inter Module Communication 2

# Oticon Opn Play delivers the optimal speech signal to support the brain

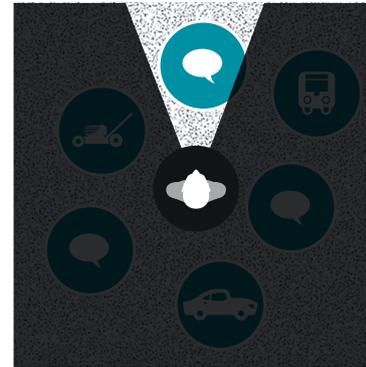
In difficult listening environments, the limitations of traditional hearing aid technology have led to the use of narrow directionality to make speech coming from the front clear. All other sounds – speech and noise alike – are suppressed, which limits opportunities to overhear and to pick up new words through incidental learning. Omni-directional technology, on the other hand, gives equal access to speech and noise. However, it does not attenuate noise, hence does not provide good speech understanding in noise.

With the speed and precision of Multiple Speaker Access Technology (MSAT), OpenSound Navigator is designed to support listening and learning in challenging environments. A research study has shown that OpenSound Navigator improves speech understanding in noise for children with on average a moderate hearing loss, even when facing away from the target talker, while providing access to multiple speakers in the environment.\*

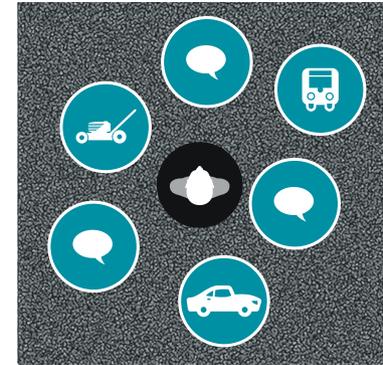
-  Background noise from all directions
-  Noise between speakers from specific directions
-  Distinct speech

\*Browning et al. 2019. Am J Audiol, 28(1); Ng 2017. Oticon Whitepaper

## Traditional technology

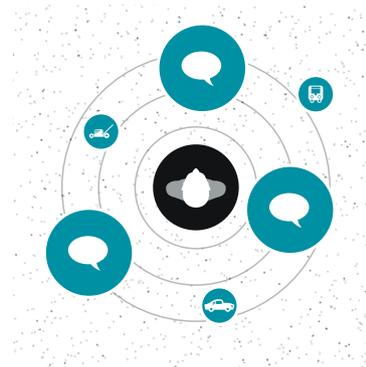


Traditional directionality: focusing on one speaker, while suppressing all other sounds.



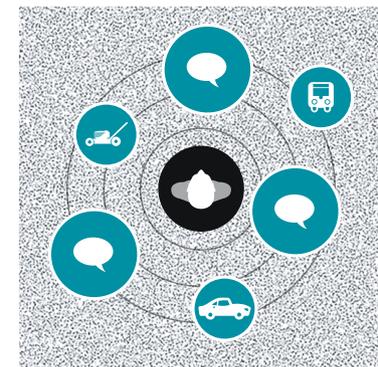
Traditional omni-directional technology: giving equal access to speech and noise, which limits speech understanding in noise.

## MSAT in: Oticon Opn Play 1



The easiest listening experience with maximum reduction of irrelevant background noise and rapid reduction of loud noise coming from specific directions, while preserving speech.

## Oticon Opn Play 2



An improved listening experience with basic reduction of irrelevant background noise and reduction of loud noise coming from specific directions, while preserving speech.

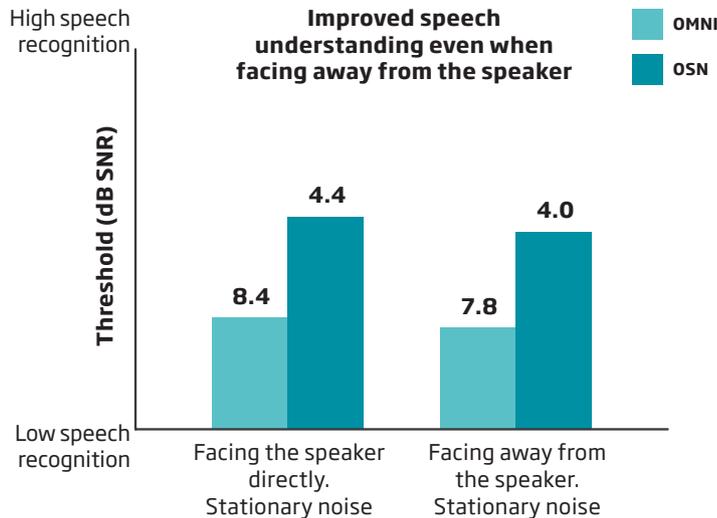
# 30% improved speech understanding with Oticon Opn Play

Children listen and learn in noisy environments. For that reason, it is important for children with hearing loss to hear as much of the auditory environment as possible. Providing good speech understanding in noise while allowing them to have access to multiple speakers is essential.

A study of children with hearing loss, ages 6-15 years and with an average hearing threshold of 45 dB HL, was conducted at Boys Town National Research Hospital. Results showed that OpenSound Navigator (OSN) significantly improved speech understanding in noise by up to 30% when compared to omni-directional technology. The result held true whether the

child directly faced or faced away from the target speaker. This benefit is particularly important for children because they do not always look at the talker while they listen. Children can benefit from OSN even when they look away.\*

In the same study, OpenSound Navigator and omni-directional technology resulted in comparable speech recognition performance in speech noise. This shows that OpenSound Navigator preserves competing speech, allowing access to multiple talkers and thereby provides opportunities for incidental learning.



\*Browning et al. 2019. Am J Audiol, 28(1); Ng 2017. Oticon Whitepaper



# OpenSound Optimizer delivers optimal gain throughout the day

Because of the limitations of current technology, the management of feedback in hearing aids has been a long-term challenge for the hearing aid industry. This is especially evident in power hearing aids. High amplification in a power hearing aid causes a very high risk of feedback.\* To compensate for the slow traditional feedback systems and manage feedback risks, hearing care professionals have been forced to make compromises.\*\*

Traditional anti-feedback systems can leave power users under fit and can manipulate the speech signal due to unstable amplification caused by feedback risks. The result is compromised audibility, sound quality and speech intelligibility.

In fact, traditional anti-feedback technology reduces gain by up to 10 dB for as much as 50% of the day.\*\* This causes discomfort when feedback arises and compromises children's ability to naturally focus on surrounding sounds.

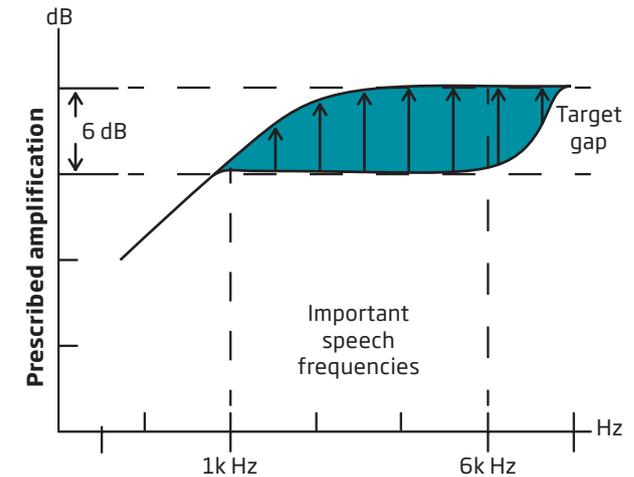
## OpenSound Optimizer delivers optimal and consistent gain, and prevents feedback from happening

OpenSound Optimizer prevents feedback from occurring and dramatically reduces gain reductions during the day. This enables Oticon Opn Play and Oticon Xceed Play to provide optimal gain\*\*\* in a more comfortable and stable way.

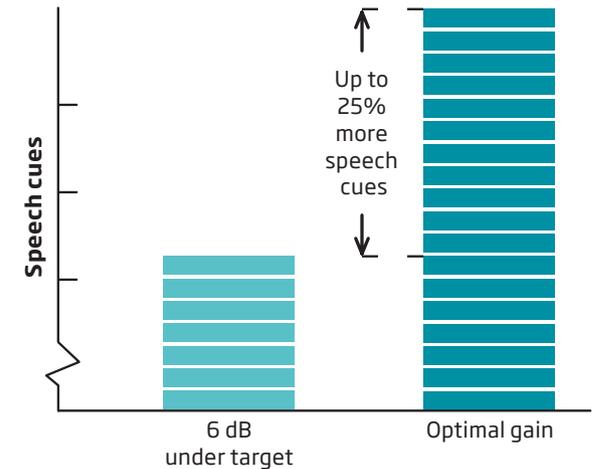
OpenSound Optimizer analyzes the incoming sound at an astonishing 56,000 times/second and significantly reduces feedback before it even happens. The result is more consistent access to speech throughout the day, minimizing the many daily gain reductions.

Without the high risk of feedback, you are better equipped to deliver optimal gain to your pediatric users. In fact, you can fit children with a 6 dB more stable gain.\*\* This additional gain provides the brain with up to 20% more speech cues for Oticon Xceed Play\* and up to 25% more speech cues for Oticon Opn Play. \*\*\*\*

For Oticon Opn Play, the extra headroom for fitting can even be used, in some cases, for more open fittings – without the risk of feedback.



## Oticon Opn Play provides the brain with up to 25% more speech cues

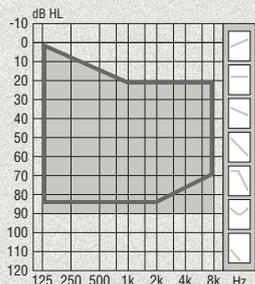


\* Ng & Rumley 2019, Oticon Whitepaper \*\* Callaway 2019, Oticon Whitepaper \*\*\* For best practice fittings with prescribed amplification \*\*\*\*Speech intelligibility index. ANSI S3.5.



## DSL fitting range\*

105



Hook □ Corda miniFit

### OSPL90 (peak)

Ear simulator 138 dB SPL  
2cc coupler 131 dB SPL

### Full-on gain (peak)

Ear simulator 73 dB  
2cc coupler 66 dB

## Powerful and compact BTE PP



Oticon Opn Play BTE PP has a perfect balance of size, ease of use and power. It's an all-round pediatric instrument that will accommodate the needs of most children - covering hearing losses from mild to severe.

offers a full set of features and functionalities. Connectivity and remote microphone access are available through integrated 2.4 GHz technology, and direct FM input.

The compact and powerful Made for iPhone® hearing aid provides an MPO of 138 dB SPL and

Oticon Opn Play BTE PP comes with an LED indicator to monitor hearing aid status and optional tamper resistant battery drawers.

### Hook and Corda miniFit options

BTE PP comes default with an undamped hook. This is interchangeable with a damped hook or child hooks (damped/undamped) or the more discreet Corda miniFit Power and Corda miniFit option. Corda miniFit Power (1.3 mm thin tube) and Corda miniFit (0.9 mm thin tube) are available in 6 different lengths (-1 to 4).



### Accessories for Corda miniFit:

- Measuring tool

The DSL fitting range has a fitting level of 90 dB HL. The fitting level 105 assigned above the graph does not match this number because general fitting levels refers to fittings with VAC+ or NAL-NL2 prescriptive rationales.

### Battery drawers, FM receiver and adapters

The standard battery drawer can be replaced with the following battery drawers, adapters and receivers. The battery drawers and the dedicated FM receiver are available to match instrument colors.



Tamper resistant (TAR) battery drawer

FM adapter battery drawer with optional TAR function

Dedicated FM receiver Oticon Amigo R12G2

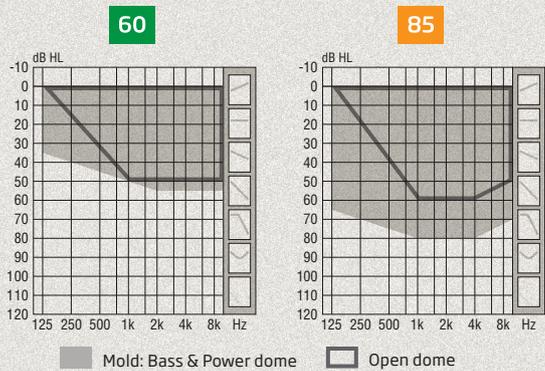
Universal FM adapter FM10

Direct Audio Input adapter AP1000

\* Fitting range is based on Oticon Opn Play 1. Details for Oticon Opn Play 2 are available in Technical Data sheets.



## DSL fitting ranges\*



### OSPL90 (peak)

Ear simulator	116 dB SPL
2cc coupler	105 dB SPL

### Full-on gain (peak)

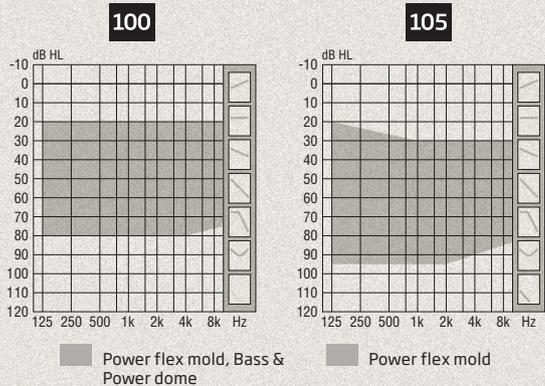
Ear simulator	46 dB
2cc coupler	35 dB

### OSPL90 (peak)

Ear simulator	127 dB SPL
2cc coupler	116 dB SPL

### Full-on gain (peak)

Ear simulator	66 dB
2cc coupler	54 dB



### OSPL90 (peak)

Ear simulator	132 dB SPL
2cc coupler	122 dB SPL

### Full-on gain (peak)

Ear simulator	66 dB
2cc coupler	57 dB

### OSPL90 (peak)

Ear simulator	135 dB SPL
2cc coupler	127 dB SPL

### Full-on gain (peak)

Ear simulator	72 dB
2cc coupler	64 dB

## Easy, discreet miniRITE R



Oticon Opn Play miniRITE R is a discreet rechargeable style with a lithium-ion battery and easy-to-use charger. The wireless charging is based on inductive technology and enables reliable and fast charging in just 3 hours for a full day of hearing, including streaming\*. A quick recharge of 30 minutes gives an additional six hours of power. If a replacement is needed, the lithium-ion battery is easy to replace in the clinic. No need to send in for service.

With miniRITE R, children with hearing loss up to 95 dB HL can choose a rechargeable Made for iPhone® hearing aid with a full set of features

and functionalities. Connectivity and remote microphone access are available through integrated 2.4 GHz technology, and FM can be accessed through the telecoil.

The DSL fitting ranges display fitting levels of 55, 80, 80 and 95 dB HL. The corresponding fitting level 60, 85, 100 and 105 assigned above the graphs do not match these numbers because general fitting levels refers to fittings with VAC+ or NAL-NL2 prescriptive rationales.

### miniFit receivers

Select between three different receivers. miniFit receivers are available with length 0-5.

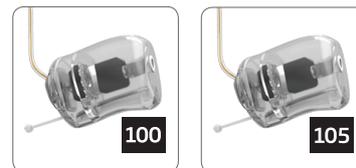


#### Accessories for miniFit receivers:

- Different ear grips for receiver 60 and 85
- Use ProWax miniFit filter
- Measuring tool

### Power Receiver Molds

Select between two Power Receiver Molds. Power Receiver Molds have separate wires, available in length 1-5.



#### Accessories for Power Receiver Molds:

- Use ProWax filter
- Measuring tool

\* Fitting range is based on Oticon Opn Play 1. Details for Oticon Opn Play 2 are available in Technical Data sheets.

\* Expected operating time for rechargeable battery depends on use pattern, active feature set, hearing loss, sound environment, battery age and use of wireless accessories.

## Standard earpieces

miniFit domes		5 mm	6 mm	8 mm	10 mm	12 mm
Open dome		60	60 85	60 85	60 85	
Bass dome, single vent (0.8 mm)			60 85 100	60 85 100	60 85 100	60 85 100
Bass dome, double vent (1.4 mm)			60 85 100	60 85 100	60 85 100	60 85 100
Power dome			60 85 100	60 85 100	60 85 100	60 85 100

### All domes:

- Are made of silicone
- Are only compatible with miniFit receivers
- Have built-in wax protection

## Grip Tip

Select between two different Grip Tip types, in two different sizes (small & large) for both left and right ear.



### Grip Tip:

- Is tinted pink
- Is more durable than domes
- Has a tacky texture to help prevent slippage

## Customized earpieces<sup>1</sup>

Micro mold <sup>2</sup>		60 85
LiteTip <sup>2</sup>		60 85
Power Receiver Mold		100 105
Micro mold, VarioTherm®		60 85
LiteTip, VarioTherm®		60 85

### Micro mold and LiteTip:

- Are made of acrylic
- Use ProWax filter

### VarioTherm®:

- Is thermoplastic
- Remains hard at room temperature for easy insertion
- Softens at body temperature for increased comfort and optimum sealing
- Available in two hardnesses – 50 and 70. 70 is standard

Please note:

VarioTherm® requires gentle warming of the mold with a hair dryer before insertion or removal of the receiver.

1) Requires taking an ear impression. 2) Uses ProWax filter.

® VarioTherm is a registered trademark of Dreve.



**C079** Baby Pink  
**C044** Silver  
**C045** Purple  
**C046** Cool Red  
**C047** Cool Blue  
**C048** Emerald Green



**C057** Power Pink  
**C058** Aquamarine  
**C063** Diamond Black  
**C090** Chroma Beige  
**C093** Chestnut Brown  
**C094** Terracotta

### Battery

Expected operating time (h)\*

### Lithium-ion

24

Rechargeable

Wireless

LED

Directional

Program control

Volume control

Made for iPhone®

ConnectClip

TV Adapter 3.0

Telecoil

Wireless fitting

Cable fitting

Hardware certification

•

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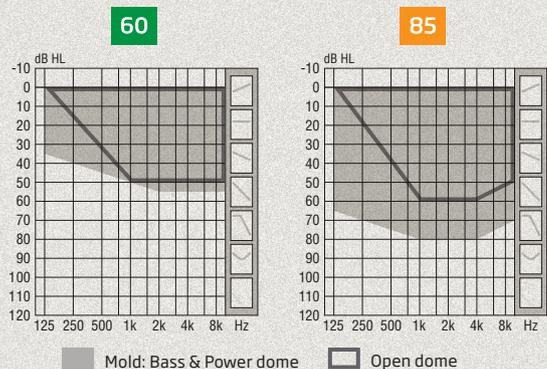
Noahlink Wireless/  
FittingLINK 3.0

FlexConnect and  
Cable #3

IP68

\* Expected operating time for rechargeable battery depends on use pattern, active feature set, hearing loss, sound environment, battery age and use of wireless accessories.

## DSL fitting ranges\*



### OSPL90 (peak)

Ear simulator 116 dB SPL  
2cc coupler 105 dB SPL

### Full-on gain (peak)

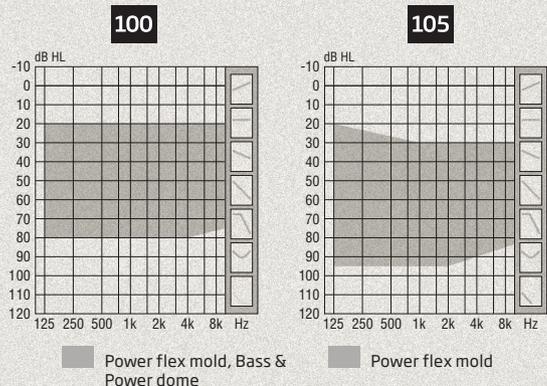
Ear simulator 46 dB  
2cc coupler 35 dB

### OSPL90 (peak)

Ear simulator 127 dB SPL  
2cc coupler 116 dB SPL

### Full-on gain (peak)

Ear simulator 66 dB  
2cc coupler 54 dB



### OSPL90 (peak)

Ear simulator 132 dB SPL  
2cc coupler 122 dB SPL

### Full-on gain (peak)

Ear simulator 66 dB  
2cc coupler 57 dB

### OSPL90 (peak)

Ear simulator 135 dB SPL  
2cc coupler 127 dB SPL

### Full-on gain (peak)

Ear simulator 72 dB  
2cc coupler 64 dB

## Sleek and discreet miniRITE T



Oticon Opn Play miniRITE T is a sleek and stylish style featuring a telecoil, a double push button for easy volume and program control and LED light for monitoring hearing aid status.

With miniRITE T, children with hearing loss up to 95 dB HL can choose a discreet Made for iPhone® hearing aid with a full set of features and functionalities. Connectivity and remote microphone access are available through integrated 2.4 GHz technology. FM can be accessed through the telecoil.

The DSL fitting ranges display fitting levels of 55, 80, 80 and 95 dB HL. The corresponding fitting level 60, 85, 100 and 105 assigned above the graphs do not match these numbers because general fitting levels refers to fittings with VAC+ or NAL-NL2 prescriptive rationales.

### miniFit receivers

Select between three different receivers. miniFit receivers are available with length 0-5.



### Accessories for miniFit receivers:

- Different ear grips for receiver 60 and 85
- Use ProWax miniFit filter
- Measuring tool

### Power Receiver Molds

Select between two Power Receiver Molds. Power Receiver Molds have separate wires, available in length 1-5.



### Accessories for Power Receiver Molds:

- Use ProWax filter
- Measuring tool

\* Fitting range is based on Oticon Opn Play 1. Details for Oticon Opn Play 2 are available in Technical Data sheets.

## Standard earpieces

miniFit domes		5 mm	6 mm	8 mm	10 mm	12 mm
Open dome		60	60 85	60 85	60 85	
Bass dome, single vent (0.8 mm)			60 85 100	60 85 100	60 85 100	60 85 100
Bass dome, double vent (1.4 mm)			60 85 100	60 85 100	60 85 100	60 85 100
Power dome			60 85 100	60 85 100	60 85 100	60 85 100

### All domes:

- Are made of silicone
- Are only compatible with miniFit receivers
- Have built-in wax protection

## Grip Tip

Select between two different Grip Tip types, in two different sizes (small & large) for both left and right ear.



### Grip Tip:

- Is tinted pink
- Is more durable than domes
- Has a tacky texture to help prevent slippage

## Customized earpieces<sup>1</sup>

Micro mold <sup>2</sup>		60 85
LiteTip <sup>2</sup>		60 85
Power Receiver Mold		100 105
Micro mold, VarioTherm®		60 85
LiteTip, VarioTherm®		60 85

### Micro mold and LiteTip:

- Are made of acrylic
- Use ProWax filter

### VarioTherm®:

- Is thermoplastic
- Remains hard at room temperature for easy insertion
- Softens at body temperature for increased comfort and optimum sealing
- Available in two hardnesses – 50 and 70. 70 is standard

Please note:

VarioTherm® requires gentle warming of the mold with a hair dryer before insertion or removal of the receiver.

1) Requires taking an ear impression. 2) Uses ProWax filter.

® VarioTherm is a registered trademark of Dreve.



**C079** Baby Pink  
**C044** Silver  
**C045** Purple  
**C046** Cool Red  
**C047** Cool Blue  
**C048** Emerald Green

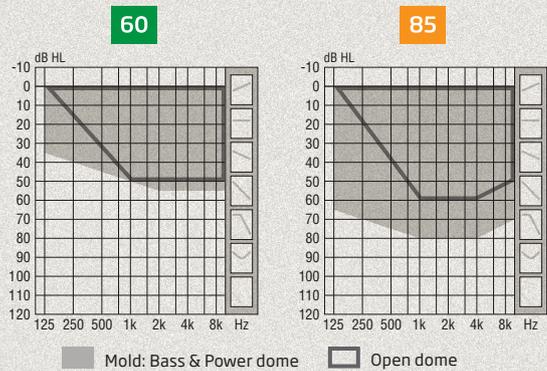


**C057** Power Pink  
**C058** Aquamarine  
**C063** Diamond Black  
**C090** Chroma Beige  
**C093** Chestnut Brown  
**C094** Terracotta

Battery size	312
Battery life (h)*	60-65
Wireless	•
Directional	•
LED	•
Program control	•
Volume control	•
Made for iPhone®	•
ConnectClip	•
TV Adapter 3.0	•
Telecoil	•
Wireless fitting	Noahlink Wireless/ FittingLINK 3.0
Cable fitting	FlexConnect and Cable #3
Hardware certification	IP68

\* Real usage battery life is shown as an estimated interval based on mixed use cases with variable amplification settings and variable input levels, incl. direct stereo streaming from a TV (25% of the time) and streaming from a mobile phone (6% of the time). Interval is shown for miniFit 60. Details for other speakers can be found in Technical data sheets.

## DSL fitting ranges\*



### OSPL90 (peak)

Ear simulator 116 dB SPL  
2cc coupler 105 dB SPL

### Full-on gain (peak)

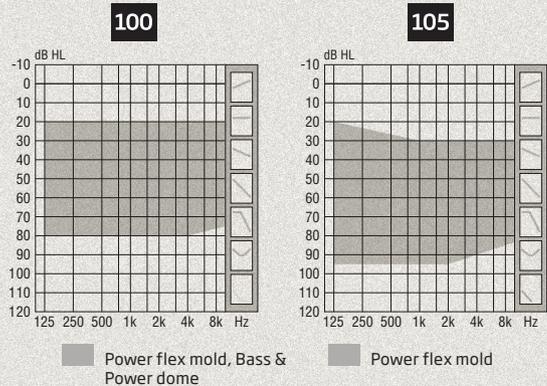
Ear simulator 46 dB  
2cc coupler 35 dB

### OSPL90 (peak)

Ear simulator 127 dB SPL  
2cc coupler 116 dB SPL

### Full-on gain (peak)

Ear simulator 66 dB  
2cc coupler 54 dB



### OSPL90 (peak)

Ear simulator 132 dB SPL  
2cc coupler 122 dB SPL

### Full-on gain (peak)

Ear simulator 66 dB  
2cc coupler 57 dB

### OSPL90 (peak)

Ear simulator 135 dB SPL  
2cc coupler 127 dB SPL

### Full-on gain (peak)

Ear simulator 72 dB  
2cc coupler 64 dB

## Small, discreet miniRITE



Oticon Opn Play miniRITE is a stylish and discreet hearing aid that sits snugly behind the ear and has a smart single push button. With miniRITE, children with hearing loss up to 95 dB HL can choose a discreet Made for iPhone® hearing aid with a full set of features and functionalities. Connectivity and remote microphone access are available through integrated 2.4 GHz technology.

The DSL fitting ranges display fitting levels of 55, 80, 80 and 95 dB HL. The corresponding fitting level 60, 85, 100 and 105 assigned above the graphs do not match these numbers because general fitting levels refers to fittings with VAC+ or NAL-NL2 prescriptive rationales.

### miniFit receivers

Select between three different receivers. miniFit receivers are available with length 0-5.

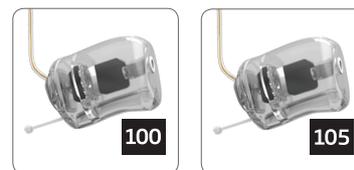


#### Accessories for miniFit receivers:

- Different ear grips for receiver 60 and 85
- Use ProWax miniFit filter
- Measuring tool

### Power Receiver Molds

Select between two Power Receiver Molds. Power Receiver Molds have separate wires, available in length 1-5.



#### Accessories for Power Receiver Molds:

- Use ProWax filter
- Measuring tool

\* Fitting range is based on Oticon Opn Play 1. Details for Oticon Opn Play 2 are available in Technical Data sheets.

## Standard earpieces

miniFit domes		5 mm	6 mm	8 mm	10 mm	12 mm
Open dome		60	60 85	60 85	60 85	
Bass dome, single vent (0.8 mm)			60 85 100	60 85 100	60 85 100	60 85 100
Bass dome, double vent (1.4 mm)			60 85 100	60 85 100	60 85 100	60 85 100
Power dome			60 85 100	60 85 100	60 85 100	60 85 100

### All domes:

- Are made of silicone
- Are only compatible with miniFit receivers
- Have built-in wax protection

## Grip Tip

Select between two different Grip Tip types, in two different sizes (small & large) for both left and right ear.



### Grip Tip:

- Is tinted pink
- Is more durable than domes
- Has a tacky texture to help prevent slippage

## Customized earpieces<sup>1</sup>

Micro mold <sup>2</sup>		60 85
LiteTip <sup>2</sup>		60 85
Power Receiver Mold		100 105
Micro mold, VarioTherm®		60 85
LiteTip, VarioTherm®		60 85

### Micro mold and LiteTip:

- Are made of acrylic
- Use ProWax filter

### VarioTherm®:

- Is thermoplastic
- Remains hard at room temperature for easy insertion
- Softens at body temperature for increased comfort and optimum sealing
- Available in two hardnesses – 50 and 70. 70 is standard.

Please note:

VarioTherm® requires gentle warming of the mold with a hair dryer before insertion or removal of the receiver.

1) Requires taking an ear impression. 2) Uses ProWax filter.

® VarioTherm is a registered trademark of Dreve.



**C079** Baby Pink  
**C044** Silver  
**C045** Purple  
**C046** Cool Red  
**C047** Cool Blue  
**C048** Emerald Green



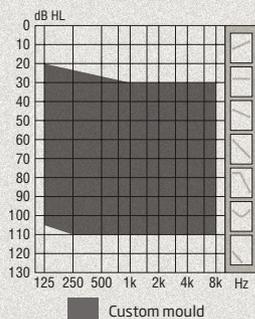
**C057** Power Pink  
**C058** Aquamarine  
**C063** Diamond Black  
**C090** Chroma Beige  
**C093** Chestnut Brown  
**C094** Terracotta

Battery size	312
Battery life (h)*	60-65
Rechargeable	•
Wireless	•
Directional	•
Program control	•
Volume control	•
Made for iPhone®	•
ConnectClip	•
TV Adapter 3.0	•
Wireless fitting	Noahlink Wireless/ FittingLINK 3.0
Cable fitting	FlexConnect and Cable #3
Hardware certification	IP68

\* Real usage battery life is shown as an estimated interval based on mixed use cases with variable amplification settings and variable input levels, incl. direct stereo streaming from a TV (25% of the time) and streaming from a mobile phone (6% of the time). Interval is shown for miniFit 60. Details for other speakers can be found in Technical data sheets.

## DSL fitting range

110



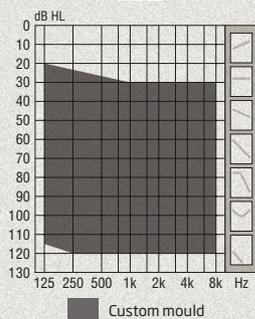
### OSPL90 (peak)

Ear simulator	143 dB SPL
2cc coupler	139 dB SPL

### Full-on gain (peak)

Ear simulator	83 dB SPL
2cc coupler	79 dB SPL

120



### OSPL90 (peak)

Ear simulator	146 dB SPL
2cc coupler	142 dB SPL

### Full-on gain (peak)

Ear simulator	87 dB SPL
2cc coupler	83 dB SPL

## Super Power BTE SP

Oticon Xceed Play BTE SP provides the power needed to support maximum audibility with a BTE covering even profound hearing losses. The robust but still stylish instrument was designed to provide full functionality even under tough mechanical conditions.

BTE SP offer a full set of features and functionalities.

## Maximum Power BTE UP

Oticon Xceed Play BTE UP provides the power needed to support maximum audibility with a BTE covering even profound hearing losses. The robust but still stylish instrument was designed to provide full functionality even under tough mechanical conditions.

The most powerful Made for iPhone® BTE UP hearing aid provides an MPO of 146 dB SPL and an outstanding maximum gain of 87 dB.

### Hook options and the TAR variant

Oticon Xceed Play is defaulted with an undamped adult hook. This is interchangeable with a damped hook or child hooks (damped/undamped). Oticon Xceed Play exists in a tamper resistant (TAR) variant with an undamped child hook and TAR battery drawer mounted.



Connectivity and remote microphone access are available through integrated 2.4GHz technology, and direct FM input.

Oticon Xceed Play BTE SP comes with an LED indicator to monitor hearing aid status and optional tamper resistant battery drawers.



BTE UP offers a full set of features and functionalities. Connectivity and remote microphone access are available through integrated 2.4 GHz technology, and direct FM input.

Oticon Xceed Play BTE UP comes with an LED indicator to monitor hearing aid status and optional tamper resistant battery drawers.

### SP Battery drawers, FM receiver and adapters

The standard battery drawer can be replaced with the following two battery drawers. To attach the FM receiver or adapters, the FM adapter battery drawers is required. The battery drawers and the dedicated FM receiver are available to match instrument colors.



Tamper resistant (TAR) battery drawer	FM adapter battery drawer. Optional TAR function	Dedicated FM receiver Oticon Amigo R12G2	Universal FM adapter FM10	Direct Audio Input adapter AP1000
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### UP Battery drawers, FM receiver and adapters

The standard battery drawer can be replaced with the following two battery drawers. To attach the FM receiver or adapters, the FM adapter battery drawers is required. The battery drawers and the dedicated FM receiver are available to match instrument colors.



Tamper resistant (TAR) battery drawer	FM adapter battery drawer. Optional TAR function	Dedicated FM receiver Oticon Amigo R12G2	Universal FM adapter FM10	Direct Audio Input adapter AP1000
---------------------------------------	--	--	---------------------------	-----------------------------------



<b>C079</b> Baby Pink	<b>C044</b> Silver	<b>C045</b> Purple	<b>C046</b> Cool Red	<b>C047</b> Cool Blue	<b>C048</b> Emerald Green
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<b>C057</b> Power Pink	<b>C058</b> Aquamarine	<b>C063</b> Diamond Black	<b>C090</b> Chroma Beige	<b>C093</b> Chestnut Brown	<b>C094</b> Terracotta
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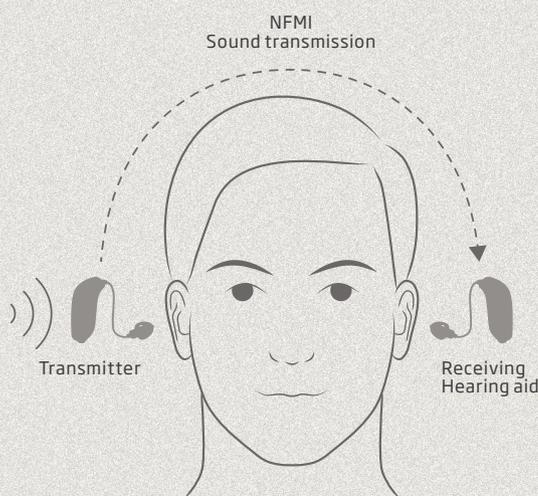
Battery size	SP: 13 / UP: 675
Battery life (h)*	SP: 75-115 / UP: 80-250
Wireless	•
Directional	•
Program control	•
Volume control	•
Made for iPhone®	•
TV Adapter 3.0	•
Remote Control 3.0	•
Wireless fitting	Noahlink Wireless/ FittingLINK 3.0
Cable fitting	Cable #3
Hardware certification	IP68

\* Real usage battery life is shown as an estimated interval based on mixed use cases with variable amplification settings and variable input levels, incl. direct stereo streaming from a TV (25% of the time) and streaming from a mobile phone (6% of the time).

# Single-sided deafness Oticon CROS



Oticon CROS uses the low power technology of Oticon's Velox S platform to enable transmission of sound from the poorer ear to the better ear.



Oticon CROS transmitter is a device designed for people with single-sided deafness.

## **CROS/BiCROS**

Oticon CROS paired with a compatible Oticon hearing aid is a Contralateral Routing of Signal (CROS) amplification system. Sounds are picked up by the microphones in the CROS transmitter located on the poorer ear. Then, they are transmitted via Near-Field Magnetic Induction (NFMI) to a receiving hearing aid located on the better ear. If some hearing loss is present in the better ear, the solution is set up as a Bilateral Contralateral Routing of Signal (BiCROS) configuration.

## **Open sound experience**

Oticon CROS features a version of the OpenSound Navigator designed for transmitting sound to an Oticon hearing aid. The solution provides 360-degree access to sound by scanning the environment, balancing the sounds and removing unwanted noise.

## **Dual-streaming with TwinLink™**

With Oticon CROS' solution, the connection between the transmitter and receiving hearing aid is made using the NFMI part of Oticon's TwinLink™ technology. TwinLink technology makes it possible to connect the receiving hearing aid to external audio streams while simultaneously enjoying sound transmission from the poorer ear to the better ear. External audio is sent directly to the receiving hearing aid using 2.4 GHz Bluetooth® Low Energy and the Oticon CROS transmitter is sending through NFMI. Children can watch television or listen to music and still be aware of speech in the surroundings.

Oticon CROS uses the proven miniFit receivers and earpieces for retention. Oticon CROS is powered by a 312-battery.

### Recommended configuration

It is recommended to fit Oticon CROS with a speaker level 60 miniFit receiver and open dome. The full range of miniFit options is available should the patient need a different configuration for practical or comfort reasons.

For full and updated compatibility overview see [oticon.com](http://oticon.com)

#### Compatibility – Oticon CROS can transmit to the following Oticon hearing aids models:

- Oticon Opn S™ 1
- Oticon Opn S 2
- Oticon Opn Play 1
- Oticon Xceed family
- Oticon Xceed Play family

### Standard earpieces

miniFit domes                      5 mm   6 mm   8 mm   10 mm   12 mm

Open dome						
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#### All domes:

- Are made of silicone
- Are only compatible with miniFit receivers
- Have built-in wax protection



**C090** Chroma Beige    **C094** Terracotta    **C093** Chestnut Brown

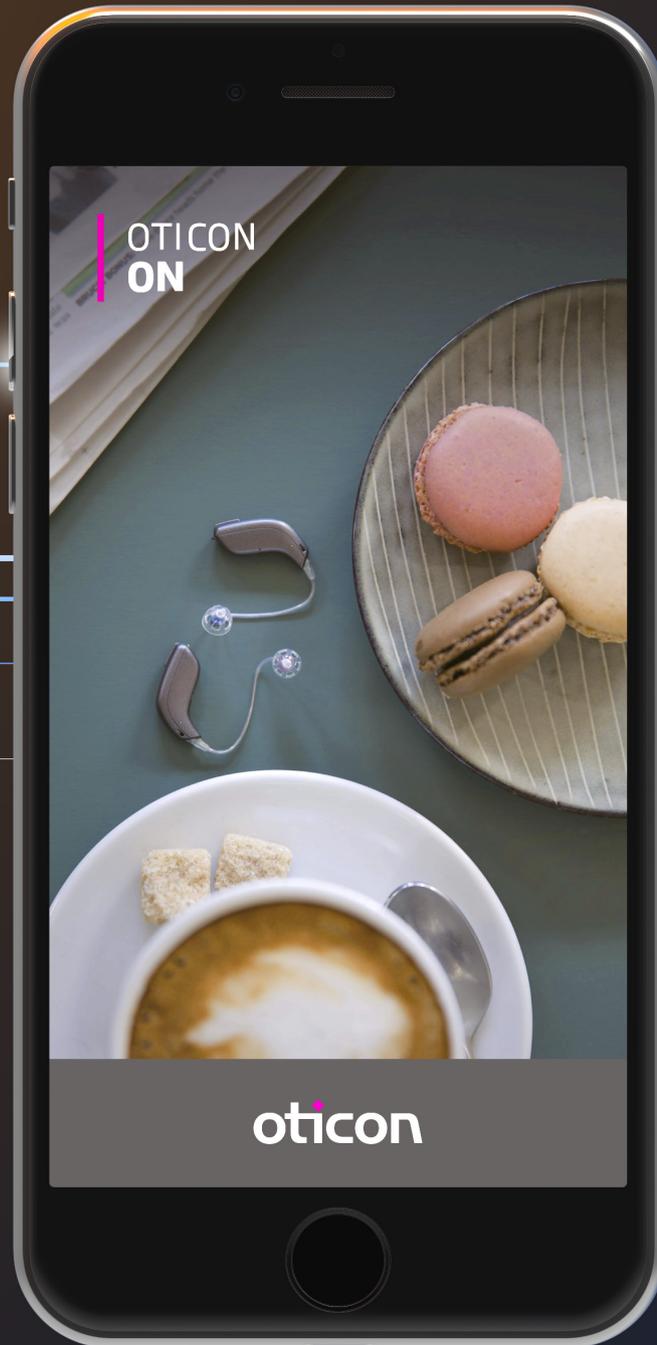


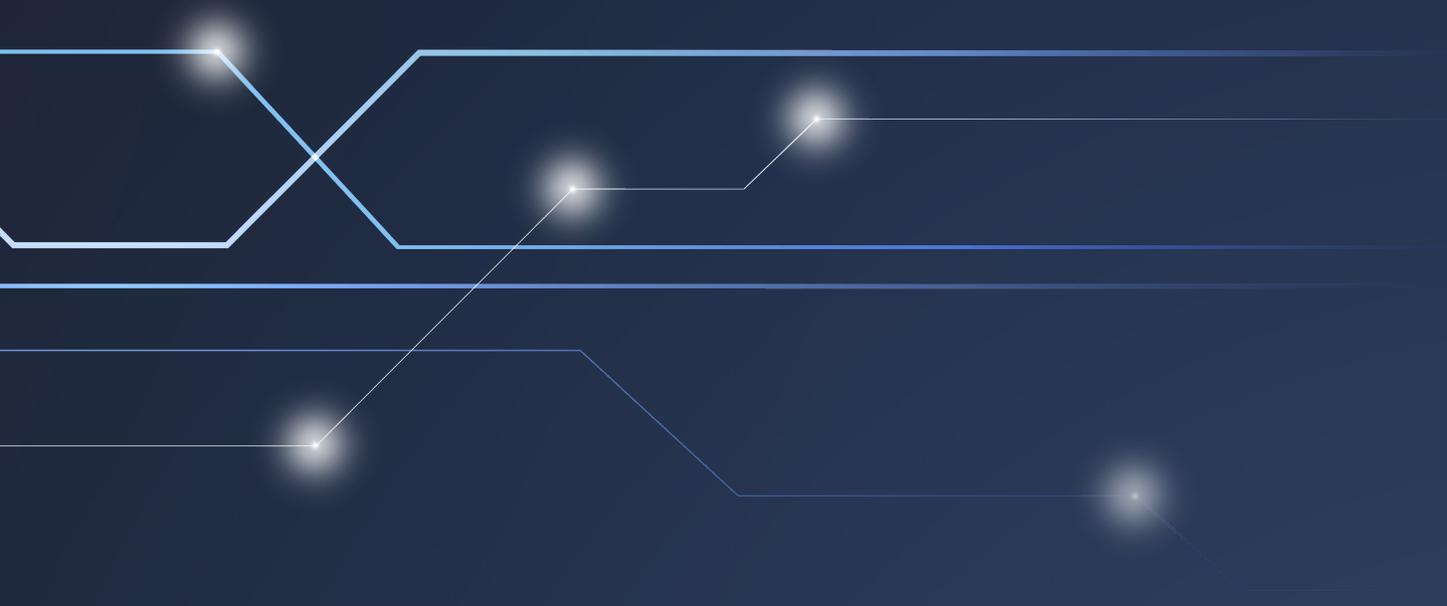
**C063** Diamond Black    **C092** Steel Grey    **C091** Silver Grey    **C044** Silver

Battery size	312
Battery life (h)*	85-105
Program control	•
Volume control	•
Hardware certification	IP68

\* Real usage battery life is shown as an estimated interval based on mixed use cases with variable amplification settings and variable input levels.

## Connectivity & Accessories





INTRODUCTION	2
TECHNOLOGY & FEATURES	4
INSTRUMENTS	18
CONNECTIVITY & ACCESSORIES	38
FITTING	46

## “ TELL PARENTS OR CAREGIVERS

Let your child enjoy audio streamed directly to their hearing aids from an iPhone®, iPad® or iPod touch®.



## “ TELL PARENTS OR CAREGIVERS

This app connects an iPhone or Android™ smartphone directly to your child's hearing aids so you or they can control volume, switch programs, adjust settings and more with just a tap of your fingers.

# Made for iPhone®

Oticon Opn Play and Oticon Xceed Play are Made for iPhone® hearing aids. The hearing aids connect directly to iPhone and double as a wireless headphone - without the need for an intermediary device. The Bluetooth® technology in Oticon hearing aids support stereo streaming of music and produce sound with high fidelity and bandwidth. When making calls, the child's

voice is picked up by the iPhone microphone. iPhone also serves as a basic remote control for the hearing aids.



# Oticon ON App



Oticon ON App empowers parents and children with a range of features that allow them to easily control and monitor the hearing aids by adjusting volume levels and switching between programs, settings and more. The app is available for both iPhone and Android smartphones\* and connects directly to the hearing aids using Bluetooth® technology.

The app offers the highly valued "Find my hearing aids" search feature which records the position of child's hearing aids and supports them whenever they need to localize their lost instruments.

Moreover the app offers HearingFitness™, links to hearing aid instructions, low battery notification and the OpenSound Booster feature.



Apple, the Apple logo, iPhone, iPad, and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc. Android, Google Play, and the Google Play logo are trademarks of Google LLC.

\*For information on compatibility please visit [www.oticon.com](http://www.oticon.com)

# HearingFitness™

HEARING  
FITNESS™



Like an exercise app for the ears, HearingFitness in Oticon ON App gives parents and children advice and encouragement on using hearing aids more, protecting hearing, and staying healthy

The feature receives data from the hearing aids and analyzes current sound environments, total daily hearing aid use, and historical usage data. HearingFitness shows this data to the app user in a form of daily, weekly and monthly summaries. In this way, it is possible to compare performance to the goal that was set.\*\*

\*\* Oticon HearingFitness will evolve continuously. Please find the current version and available functionalities on the App Store or Google Play.

## IFTTT – Internet connectivity

IFTTT

Through a unique Oticon cloud solution, Oticon hearing aids with 2.4 GHz technology can be linked to the If This Then That (IFTTT) network. This allows parents and children to connect to and control an endless range of devices used in everyday life. Imagine, for instance that hearing aids are able to notify the parent or the child when the hearing aid battery is running low, a text message is received on the smartphone, or tell them when someone is at the front door.

Explore the endless possibilities available when connecting Oticon hearing aids to the Internet.

Visit [oticon.com](http://oticon.com)

### ! IDEAS FOR USE

- Get an overview of the hearing aid usage
- Set hearing goals and track progress
- Receive suggestions for the optimal program setting
- Be motivated to get out into challenging sound environments

### ! IDEAS FOR USE

- Send a text when battery is low
- Get a voice alert when the doorbell rings
- Turn off lights when you leave home
- Switch to home program when entering the front door

## “ TELL PARENTS OR CAREGIVERS

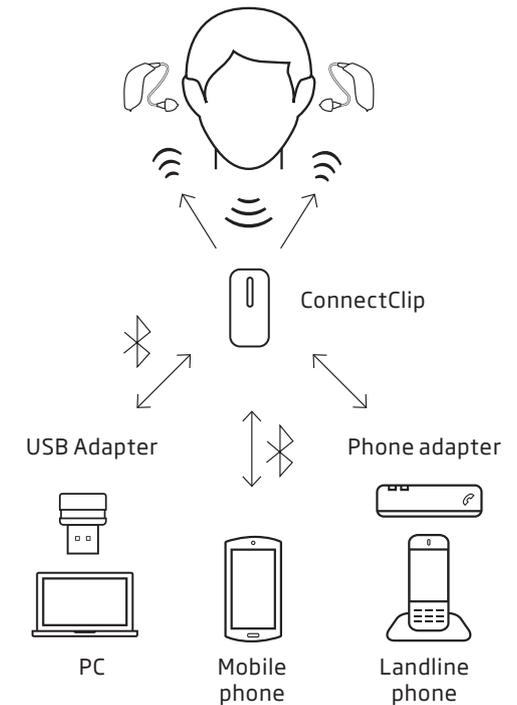
ConnectClip is a small wireless microphone you or teachers can wear in difficult listening environments at home, in the classroom or on the sports field to make sure your child can hear what is being said.



# ConnectClip

ConnectClip is used with mobile phones and other audio devices that don't support direct wireless connectivity (or streaming) to the hearing aids. The ConnectClip microphone option is also ideal for streaming another person's voice directly to Oticon pediatric hearing aids from up to 20 meters away.

For phone calls, the hearing aids function as a wireless headset and the child's conversation is picked up by the built-in directional microphones. Audio from the mobile phone streams to ConnectClip using standard Bluetooth® technology. The audio is then streamed directly to the child's hearing aids using 2.4 GHz Bluetooth® low energy technology. ConnectClip works with almost any mobile phone with Bluetooth® from 2010 onwards.



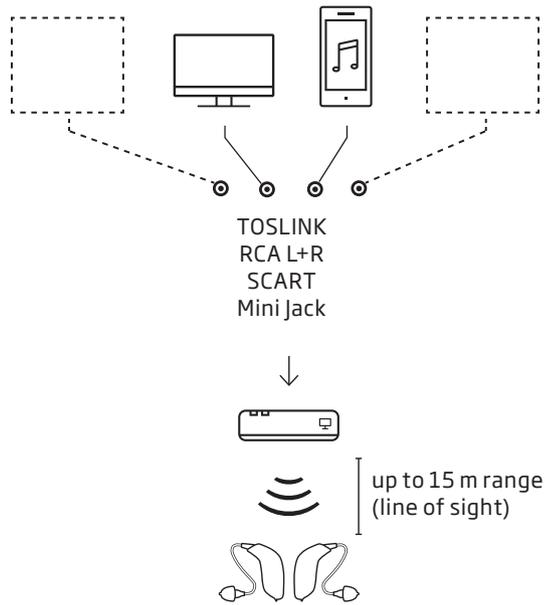
## Phone Adapter 2.0

Phone Adapter 2.0 connects wirelessly to ConnectClip – allowing for hassle-free daily use of traditional phones.

## USB Adapter

The USB Adapter (BTD 800) is a “plug and play” solution which wirelessly connects ConnectClip to practically any computer for Skype, Messenger, Lync and other softphones.

# TV Adapter 3.0



The TV Adapter 3.0 wirelessly transmits real-time stereo audio from a TV, home entertainment system or other audio devices directly to Oticon hearing aids at a distance of up to 15 meters. The child can set the volume to their preferred level for a listening experience free from the distraction of surrounding noise. In Oticon ON App the volume of the sound streamed from the TV can easily be adjusted.

Up to four TV Adapters can be paired to the hearing aids and each connected to e.g. a different television. Practically any audio source can be connected to TV Adapter including digital stereo (PCM) and Dolby Digital® via optical TOSLINK. TV Adapter can be installed in most existing home entertainment systems.

**“ TELL PARENTS OR CAREGIVERS**  
With TV Adapter, your child can enjoy TV sound directly in the hearing aids, at the volume they prefer without the distraction of surrounding noise.



## “ TELL PARENTS OR CAREGIVERS

Gives you discreet and easy control over your child's hearing aids – adjust volume or switch between programs with this small device, roughly the size of a modern car key.

# Remote Control 3.0

Remote Control, roughly the size of a modern car key, allows discreet control over Oticon's hearing aids. Use Remote Control to easily adjust volume, switch between programs or control connectivity sources.



## “ TELL TEACHERS

Oticon Amigo FM transmitters are comfortable, easy to handle and reliable. The built-in LED lights in both the FM receiver and transmitter let you know that the system is working and that your students can hear your voice.

# Oticon Amigo T31/T5 FM transmitters

Amigo FM transmits the teacher's voice clearly and consistently to Oticon hearing aids, without affecting the student's ability to hear other sounds and speech in the environment. With built-in LEDs in both receiver and transmitter, teachers can be certain that the Amigo products are working properly. Amigo FM comes with a high-quality omni-directional lapel microphone and a boom microphone, both with a built-in external antenna in the microphone cord.

Setting up the FM system requires both an FM transmitter and an FM receiver. First, replace the battery drawer on the BTE instrument with the FM adapter battery drawer. Then connect the FM receiver and switch on the FM transmitter to activate the FM system.



## Oticon SafeLine™

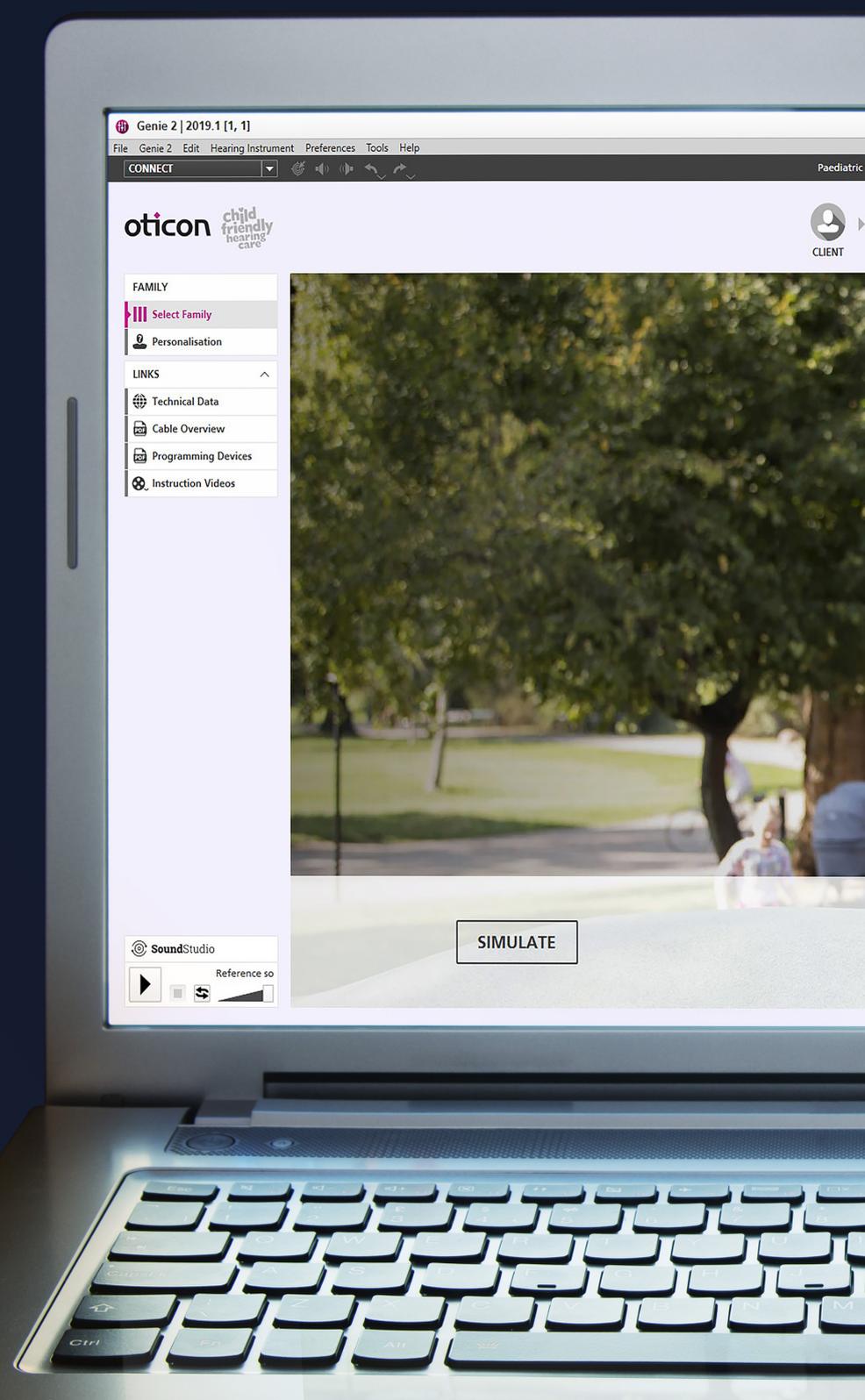


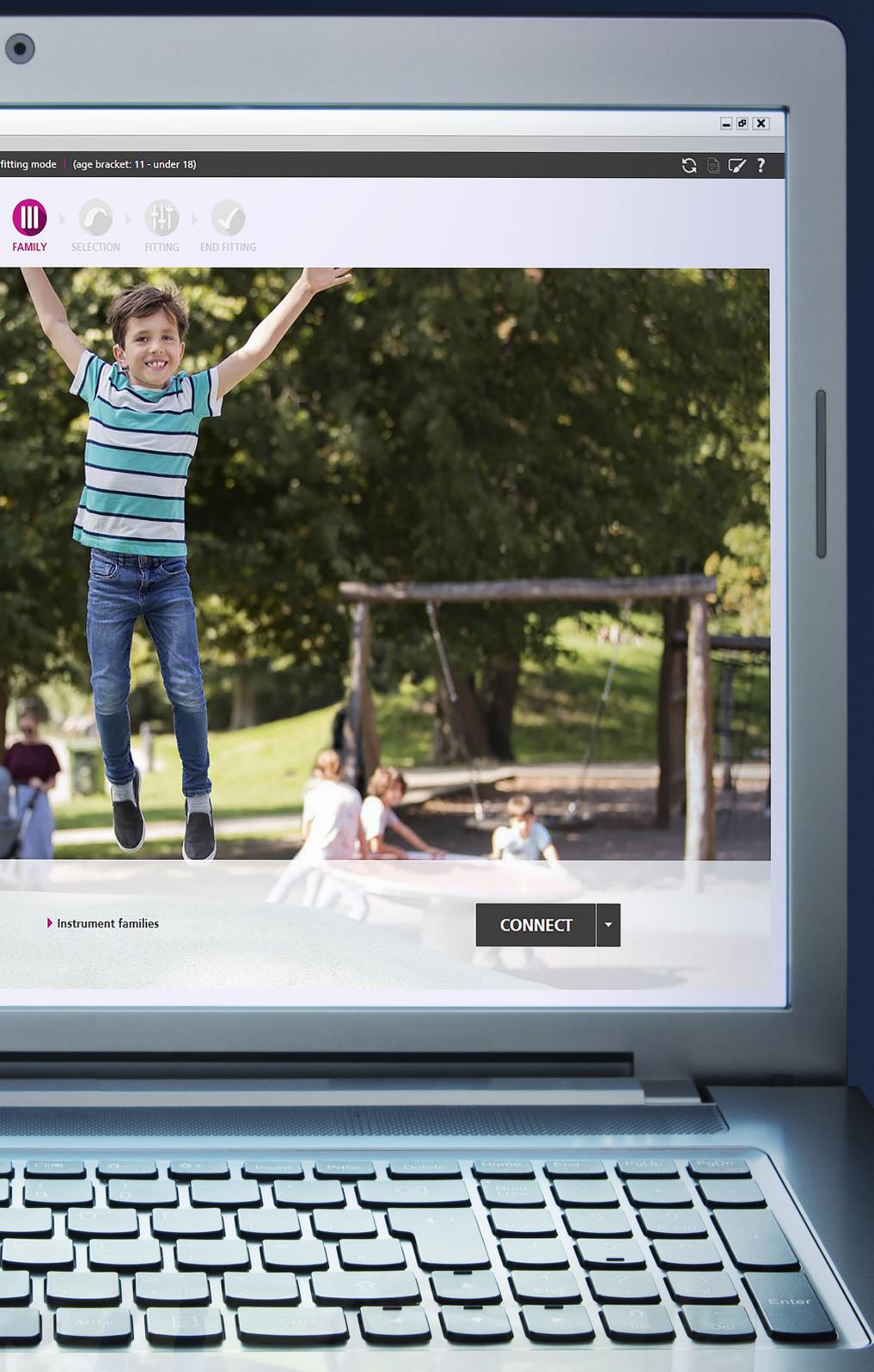
Oticon SafeLine for adults and children is a retention cord that is attached to the hearing aids and to the wearer's collar with a clip to prevent loss and damage of the hearing aids. With SafeLine, children and adults can enjoy activities while retaining access to sound and with confidence that the hearing aids are safe.

SafeLine comes in two lengths and has a breakaway cord with a unique quick-release clasp that easily opens if snagged or pulled.

**“ TELL PARENTS OR CAREGIVERS**  
Oticon SafeLine retention cord attaches Oticon Opn Play hearing aids to your child's collar with a clip to prevent hearing aid loss and damage.

# Fitting





INTRODUCTION 2

TECHNOLOGY & FEATURES 4

INSTRUMENTS 18

CONNECTIVITY & ACCESSORIES 38

**FITTING 46**



# New features in Oticon Genie 2

## Oticon Firmware Updater

Oticon Firmware Updater allows you to perform on-the-spot firmware updates to Oticon hearing aids and accessories. Firmware Updater provides these clear benefits:

- Access to the very latest platform features and performance improvements
- Convenience and time-savings with no need to send hearing aids and connectivity accessories for service

Please note that cable connection is required. HiPro 2 is recommended. Alternatively you can use EXPRESSlink 3 or NOAHlink. HiPro and HiPro USB will result in significantly longer firmware update times as these are older devices.



For more information go to [oticon.com](https://www.oticon.com)

## BE INFORMED

The new hearing aids you receive may have a new FW version that is not compatible with your old Genie 2 installation. Therefore you must always install the latest Genie 2 software, when you receive it from Oticon.

## Breakthrough technology in Oticon Xceed Play lets you take full advantage of the products power capabilities

OpenSound Optimizer and Genie 2 let you take full advantage of the gain and output capabilities in super power and ultra power fittings. The same acoustics now allow for more stable gain, and extra gain is automatically used to reach the rationale target when needed.

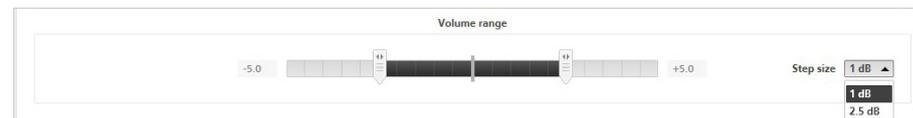
## Unstable gain indicator

Predicted feedback limits have been replaced with an Unstable gain indicator that uses live measurements from the hearing aids.

The Unstable gain indicator will let you know when the risk of feedback is high, so you can focus on getting the optimal fitting for the child.

## Full control of VC range

The VC is by default disabled in pediatric fittings to ensure prescribed gain at all times. However, volume control can be beneficial to minimize feedback with rapid growth of the ear and for temporary conductive overlay. If volume control is activated for these fittings, the range of the volume control can be adjusted to the specific needs of the child.



# Bimodal fitting support

In a bimodal fitting, one ear is stimulated electrically and the other acoustically. These two different types of stimulation can make it challenging to find the right balance between the cochlear implant (CI) and the hearing aid as it requires a flexible fitting approach.

Genie 2 now supports bimodal fittings with new tools and more flexibility. At the center the bimodal fitting panel in Genie 2 is a collection of fitting controls that allow you to precisely balance the bimodal listening experience .

## The bimodal fitting panel and flowchart

The bimodal fitting panel is accessible for monaural fittings, letting you adjust the overall gain, high frequency cut-off and low frequency

emphasis. The overall gain trimmer has been modified, to separate gain and MPO adjustment. Also, even more flexibility is added as the bimodal fitting panel is available for all hearing aid styles and thus more hearing losses.

The bimodal fitting panel reintroduces the bimodal flowchart that provides an intuitive and practical method for fitting a hearing aid on a bimodal patient.

## Open Sound Navigator in bimodal fittings

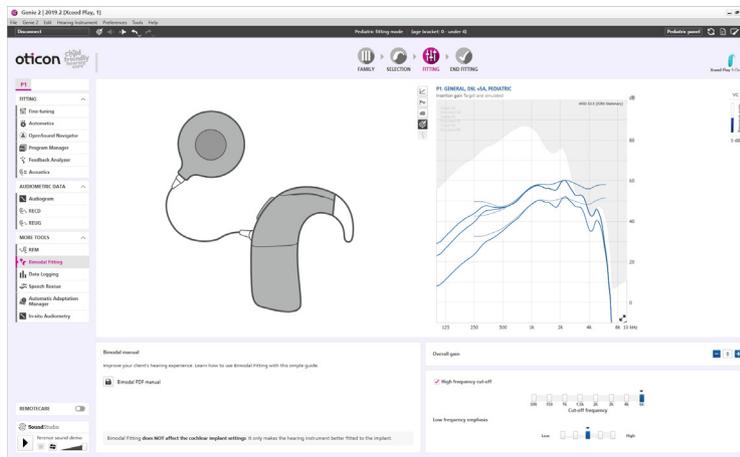
OpenSound Navigator is available in both pediatric hearing aid families and can be used to enhance the listening experience together with any CI as part of a bimodal fitting.

## Oticon CROS in Genie 2

Oticon's new wireless CROS transmitter provides convenient and easy access to the exclusive open sound experience.

When you have connected the hearing aid and selected the CROS transmitter, the transmitter will transmit sound during the whole fitting process. If you select the CROS/BiCROS feature in the Fitting step, you can choose among three settings: CROS, BiCROS and NO CROS/BiCROS. Depending on the program setting you may balance the CROS input level.

To help you during the fitting process we created the CROS Quick Fitting Guide that you can easily access in the CROS/BiCROS tool.



# Fit children of any age with confidence

## Easy-to-use default settings

To make it easier to fit children and teens up to the age of 17, we have developed a more flexible way of handling paediatric default settings.

In Preferences you can customize the following hearing aids settings as a function of age, based on your preferences:

- OpenSound Navigator
- Spatial Noise Management
- Volume control

Child friendly hearing care goes beyond the development of paediatric products and into the realm of fitting software. This is because the fitting process for children typically differs from that used with adults.

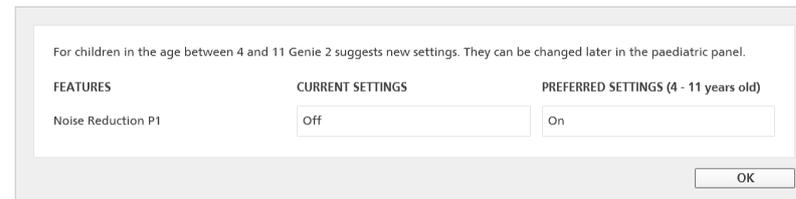
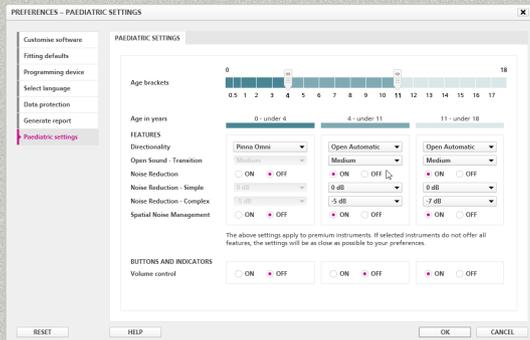
The Paediatric fitting mode is optimized for the paediatric fitting process. It offers easy access to audiogram, RECD and REM tools to support correct gain prescription and fast verification. To support better outcomes for children wearing hearing aids, a range of paediatric validation tools are also made readily available.

Moreover, two central dialogue boxes ensure you get easy access to relevant fitting details at all times and that you can take full advantage of the hearing aid's processing capabilities as the child grows older.

The first is the Paediatric panel that provides a centralized way to view and change the child's hearing aid settings. The panel ensures quick confirmation of the setting, so you can be confident that they are as you intended.

## NEW

The second is the new Adjust settings dialogue. It appears when the child changes age-bracket, as set in Preferences, to inform you about differences between current and preferred hearing aid settings.



# OpenSound Navigator in Genie 2

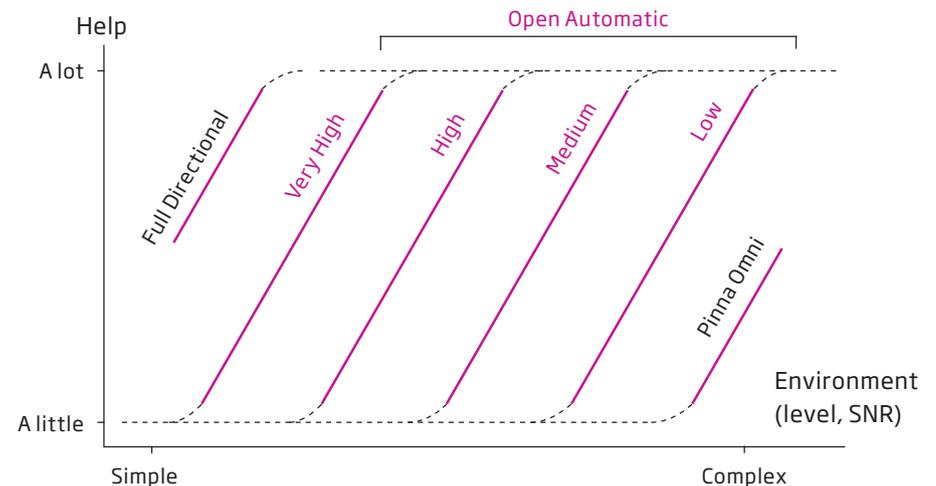
YouMatic LX is specifically used to adjust OpenSound Navigator and how the child's hearing aids process sound in simple and complex environments. Default settings are based on the pediatric settings in preferences.

**(A)** OpenSound Navigator is enabled for all fittings which is reflected in the Open Automatic selection in the Directionality settings drop down menu. Alternatively, you can choose a non-adaptive directionality: Pinna Omni or Full Directional.

**(B)** Open Sound – Transition: Adjust the amount of help (Low, Medium, High or Very High) the child needs in order to focus on speech in noisy environments. The Transition graph right above it reflects your choices graphically by showing you at what point help will kick in for the child in environments ranging from simple to complex.

**(C)** Noise reduction controls: Adjustments to noise reduction are divided into Noise Reduction - Simple and Noise Reduction - Complex. Noise reduction choices are displayed visually in the speech waveforms above each control.

**(D)** Noise reduction on/off: By default, noise reduction is on because it is an integral part of OpenSound Navigator, but it can easily be deactivated if needed.



Open Sound Transitions. Open Automatics adapts to the acoustical conditions based on one of the four transition profiles: Very High, High, Medium, or Low. Pinna Omni does not balance speech and noise sources but gives equal focus to all sounds even in complex listening environments. Full Directional focuses on sounds coming from the front.

## ConnectClip fitting

As with other accessories, ConnectClip is paired with Oticon hearing aids manually outside the Genie 2 fitting session.

Once paired, you can adjust the remote microphone in the Accessories section under the ConnectClip tab, e.g., the level of the hearing aid microphones in relation to the streamed remote microphone signal.

Note: These settings apply to the remote microphone only. To adjust the phone sound settings, use the Phone tab.

Other adjustments of the streamed signal from ConnectClip can be made on ConnectClip itself or using Oticon ON app.

## REM AutoFit with speech mapping

REM AutoFit allows you to complete the REM process efficiently by automatically matching hearing aid gain to targets.\* This enables you to conveniently complete real ear verification of Oticon's pediatric hearing aids in order to support seamless compliance with current amplification guidelines. Individualizing the fitting to the child's ear acoustics ensures consistent audibility\*\* and optimal outcomes\*\*\*.

### NEW

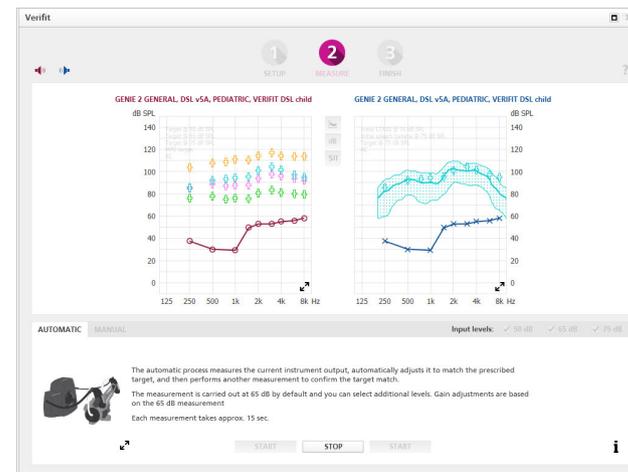
Now REM AutoFit offers speech mapping with compatible systems as an alternative to the existing gain-based verification. When using speech mapping, REM AutoFit displays an output graph view that includes audiometric data and key measures such as Speech Intelligibility

Index (SII), percentiles and MPO. This gives a clearer indication of the audibility of speech in the context of the child's residual dynamic range. To select Speech mapping, go to Genie 2 Preferences.

### NEW

REM AutoFit with Verifit®/LNK always uses speech mapping. Now it offers simultaneous binaural measurements as opposed to sequential measurement when used with Verifit2.

REM AutoFit already offers automatic target matching with many REM systems on the market, including Interacoustics, Audioscan\*\*\*\*, MedRx and Otometrics.



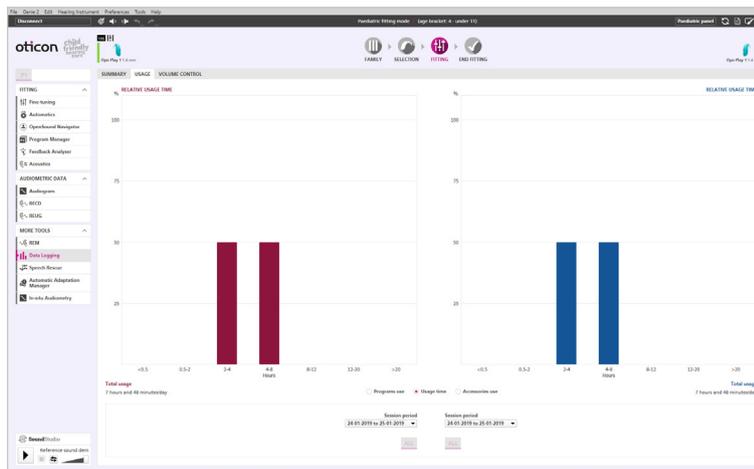
\* Rumley & Crowe, Oticon Whitepaper, 2019, \*\* McCreery, R. W. et al. (2013). Ear Hear, 34(6). \*\*\* Tomblin, J. B. et al. (2015). Ear Hear, 36(Suppl 1). \*\*\*\* Verifit2 and Verifit1 (S/N 2070 and higher).

# Data Logging

Data Logging allows you to assess and monitor the child's progress with hearing aids usage. Data Logging provides statistics on the child's use of the hearing aids: how many hours they are used, in which programs and with which accessories. Data Logging also shows the average volume control settings in different sound environments.

Genie 2 saves the hearing aid's current log when you connect the instruments. When you exit Genie 2 or disconnect the hearing aid, the log is cleared in the hearing aid, but retained in Genie 2. You can access Data Logging from the task pane in the Fitting step.

Usage time is displayed both as total usage time and relative running time per use. If most of the running time occurs for shorter durations for example, it indicates that the hearing aids are frequently turned on and off. This data can help you determine what is going on and what to ask the parents about.



## LED for immediate visual confirmation

The well-known LED on Oticon pediatric hearing aids provides you, teachers and caregivers with immediate visual confirmation of the status of the hearing aids.

The LED can blink to indicate user interaction like program change, volume control level and start-up. The blink pattern for programs, flight mode and mute are repeated continuously to indicate the listening state of the hearing aids. As the child grows older, the patterns can be set to only repeat three times and eventually can be switched off. The LED also has warning indicators such as a battery low warning. The visual indicators are on by default for all children.

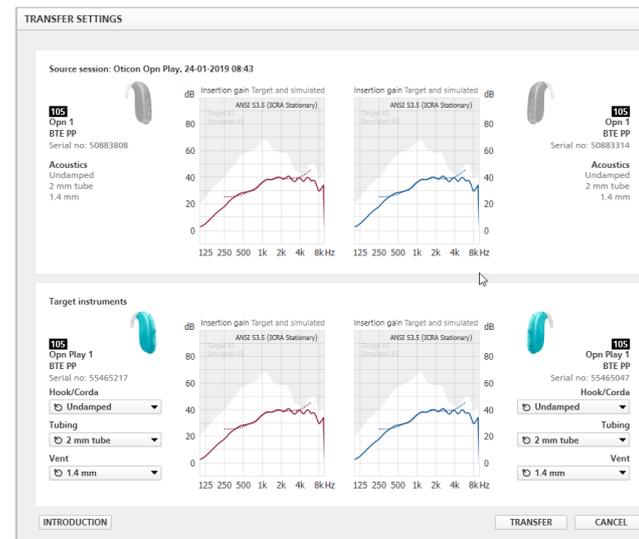
## Transfer settings

Transfer settings now support transfer of all settings, including advanced signal processing features, from one Oticon hearing aid to another that are available on both source and target hearing aids.

You can transfer gain-related settings even when the hearing aids differ in style, fitting or performance level. This is especially useful during the fitting session when you are demonstrating different hearing aids to the same child and would like to retain your fine tunings as you change the hearing aid selection.

The settings are copied as closely as possible given the limitations of the target hearing aids. Settings that are not available on the target hearing aid, measurements and pairings will not be transferred. Also, settings that cannot be transferred accurately will be set to default or prescribed.

The tool can be accessed through Tools Transfer Settings, or when the settings of a new connected hearing aid differ from the existing Noah session.



# Programming devices

In Genie 2, you can use a range of programming devices to program Oticon hearing aids:

## Wireless

- Noahlink Wireless\*  
(recommended)
- FittingLINK 3.0\*

## Wired

- HiPro 2  
(recommended)
- EXPRESSlink 3
- NOAHlink
- HiPro USB\*\*
- HiPro\*\*

Please see the Programming devices overview (available in Oticon Genie 2) for details on which instrument styles are compatible with which programming devices.



\*Compatible with 2.4 GHz hearing aids

\*\*Expect slower programming and firmware update times as these are older devices

