

TURN  
SMALL TALK  
INTO  
BIG NEWS

For a First Class  
Hearing Experience

JUNA 9 | 7



**bernafon**<sup>®</sup>  
Your hearing · Our passion

A blurred background image of a cafe table. In the foreground, a white plate holds several golden-brown dumplings. In the middle ground, a clear glass of water sits on a dark, textured wooden table. To the right, a white coffee cup with a saucer and a spoon is partially visible. In the background, another coffee cup is out of focus.

TURN INNOVATIVE  
TECHNOLOGY  
INTO A FIRST CLASS  
HEARING EXPERIENCE



With exceptional speech understanding, impressive listening comfort, and a remarkable selection to choose from, Bernafon delivers what really matters in a premium hearing aid family. This is our promise to you and your clients when you decide on Juna.

Juna comes with a set of meticulously developed high-end features and accessories. All emanate from Bernafon's proprietary Audio Efficiency™ technology. The core system perfectly coordinates the interplay of established and new features, providing a first class hearing experience. With extra custom instrument styles, you will benefit from greater fitting flexibility. You will also be introduced to Bernafon's easy-to-use wireless accessories the SoundGate Mic and the RC-N remote control. Plus, there is a brand new SoundGate App for use with all Bernafon wireless hearing aids.

**Make more out of every single sound. With Juna.  
Your first choice.**

# Turn Adverse Acoustics into Favorable Dynamics

Reverberation is a physical phenomenon and is present in many listening environments. Small living rooms with furniture and curtains have a limited amount of reverberation. Huge buildings such as halls or cathedrals contain a greater amount (see Figure 1). The perceived amount of reverberation depends on the room acoustics (determined by its size and reflection of the surfaces) and the distance from the speaker to the listener.

In highly reverberant conditions, reflections can be a detrimental signal like noise. They can have a negative impact on speech intelligibility and listening comfort. This impairment is more noticeable for people with a hearing loss, even when they are wearing a hearing aid.

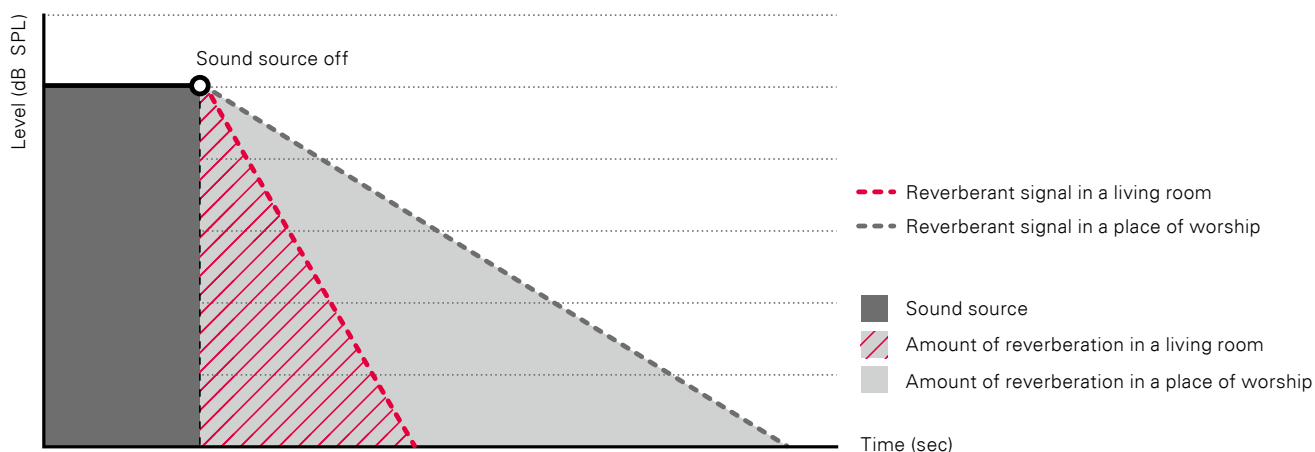


Figure 1: Comparison between reverberation in a living room and in a place of worship

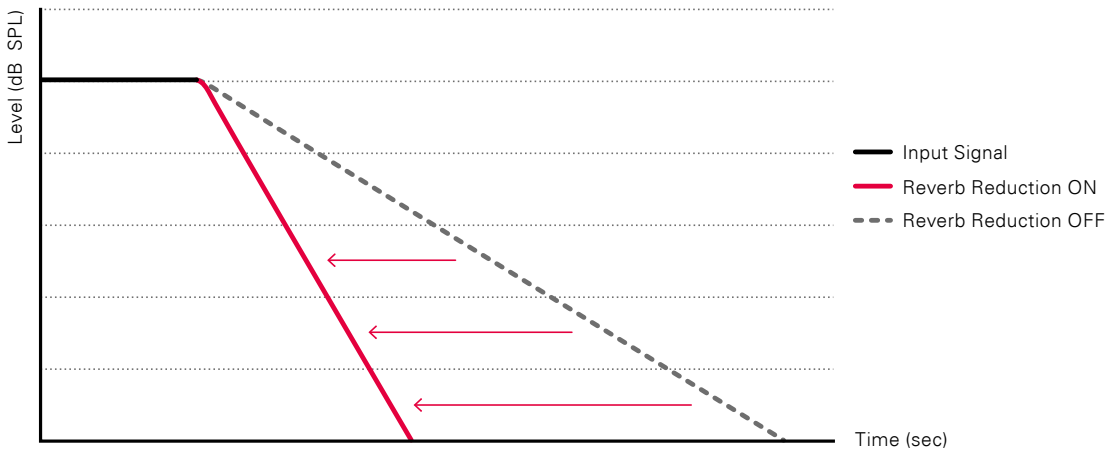


Figure 2: Comparison between Bernafon Reverb Reduction ON and Reverb Reduction OFF

Bernafon's Reverb Reduction is an algorithm that first detects the reverberant part of the signal and its specific characteristics. The system is always active and able to estimate the likelihood of reverberation. Reverb Reduction then attenuates this part of the signal while preserving important speech information (see

Figure 2). This means that the perceived amount of reverberation is reduced and that listening comfort is improved.

# Turn the Ordinary into Something Special

Traditional volume controls adjust the gain uniformly across the whole frequency bandwidth. They don't take into account that some frequency bands are more important than others for speech intelligibility. Consequently, there is no special emphasis on speech-dominant frequency bands. In challenging listening environments, some clients wish to have the freedom of adjusting the gain manually. With Bernafon's intelligent volume control i-VC, volume adjustments

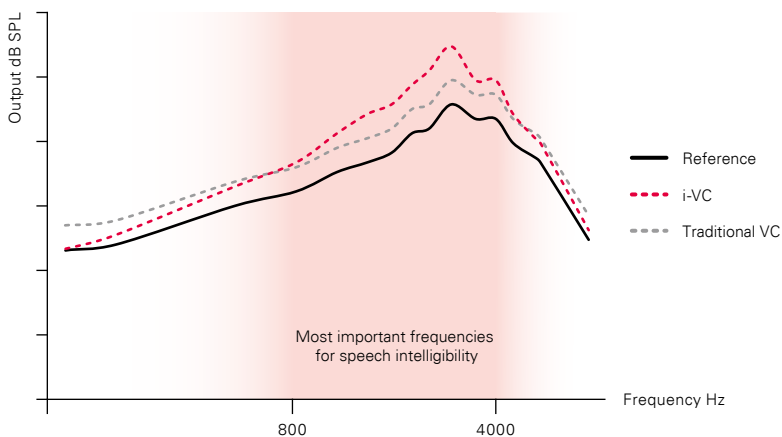


Figure 3: Behavior of i-VC when increasing the volume

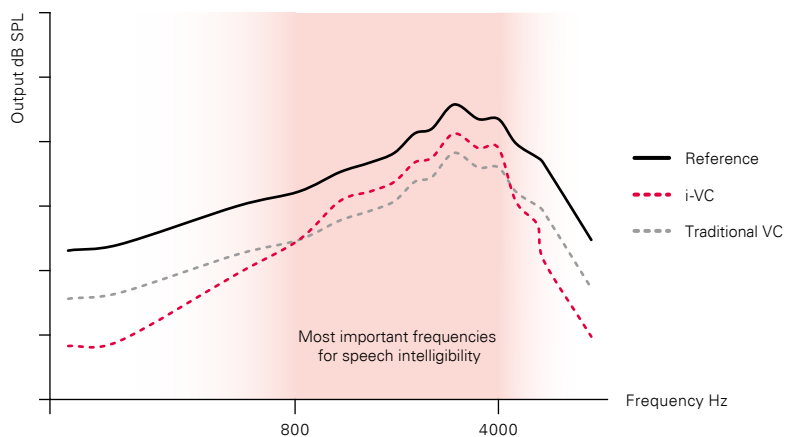


Figure 4: Behavior of i-VC when decreasing the volume

are frequency-shaped. When the volume is increased, i-VC applies more gain to speech-important frequency bands. This results in improved speech audibility and clarity (see Figure 3). When the client lowers the volume for greater comfort, i-VC provides more attenuation to non-speech frequency regions while still preserving sounds in frequencies where speech is important (see Figure 4). With Juna, an ordinary volume control can become a sophisticated one.

TURN 20 LOUD  
VOICES INTO  
HAPPY BIRTHDAY  
TO YOU



# Turn Random Sounds into Meaningful Words

According to the literature (Moore, 2014), hearing-impaired people can benefit from different amplification strategies. One strategy is to make all parts of the speech signal audible and provide the maximum amount of information. Parts of the speech signal (phonemes) vary in intensity and the softer ones can fall below audible levels (see Figure 5). Therefore, amplifying all phonemes helps to ensure that all the finest detailed speech cues are available to the listener. This strategy is most beneficial for the group of hearing-impaired people who are able to access all the speech cues within the signal. The outcome is improved speech intelligibility.

However, there is another group of hearing-impaired people who do not benefit from such comprehensive amplification. Depending on their age and on the severity of their individual hearing loss, they may experience a growing inability to extract detailed speech cues. As a rule of thumb, the older the person and/or the more severe the hearing loss is, the higher the chance that this individual relies on the overall speech envelope for speech intelligibility (see Figure 6). This group can benefit from a different amplification strategy. For these clients, contrasts in loudness of speech cues is the key.

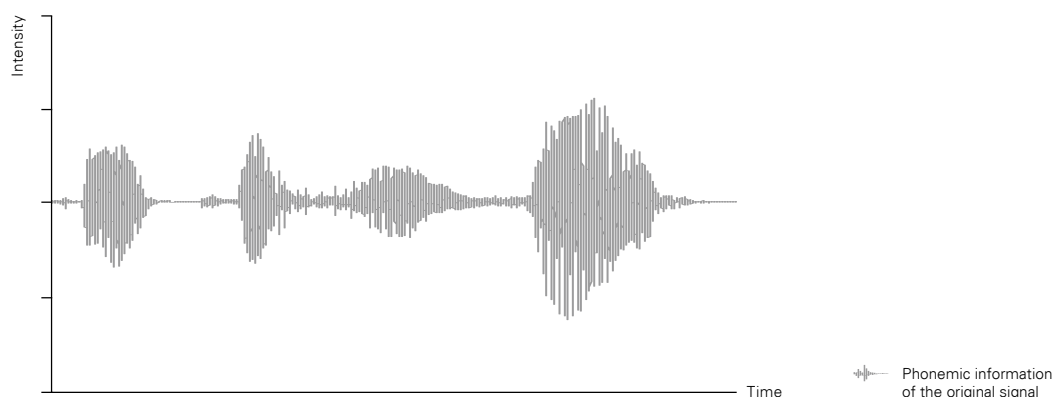


Figure 5: Phonemes have large variations in intensity over time

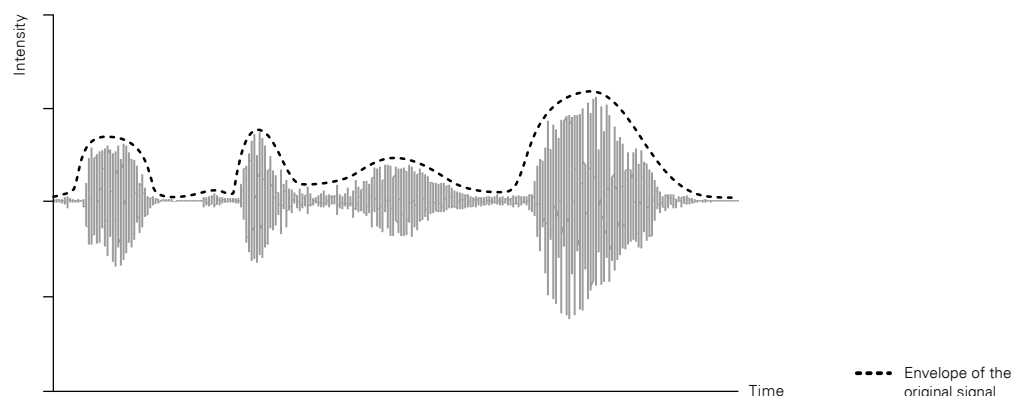
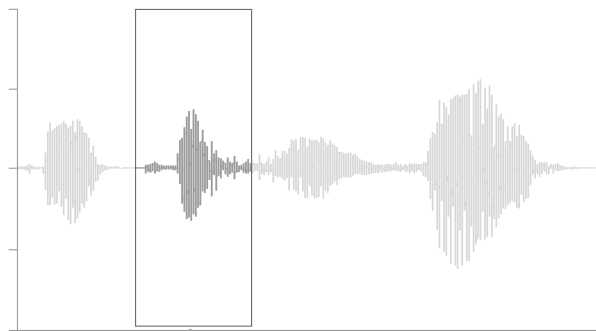


Figure 6: The envelope has small variations in intensity over time



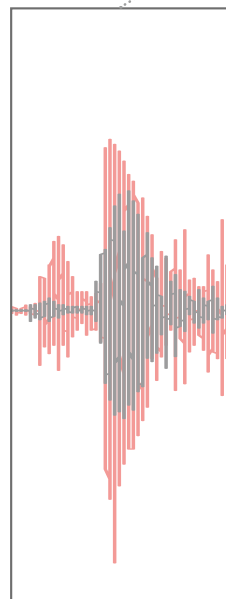
Bernafon's Speech Cue Priority™ provides a solution for both target groups, a solution which offers two alternative amplification strategies. The Phoneme Priority mode focuses on maximum audibility of all the fine details of the speech signal. This strategy rapidly adjusts the gain to apply the precise amount of amplification to each phoneme (see Figure 7). This allows the listener to extract the information that contributes to better speech intelligibility. Again, this strategy is ideal for those hearing-impaired people who are able to access the fine details.

Whereas the Envelope Priority mode is designed to support the other group of hearing-impaired people – those who rely on the information from the envelope for speech understanding. This strategy applies less alteration to the amplification of the speech signal, preserving the crucial contrasts in loudness of the envelope (see Figure 8). Choose either Phoneme Priority or Envelope Priority to best meet the needs of your clients.



**PHONEME PRIORITY**

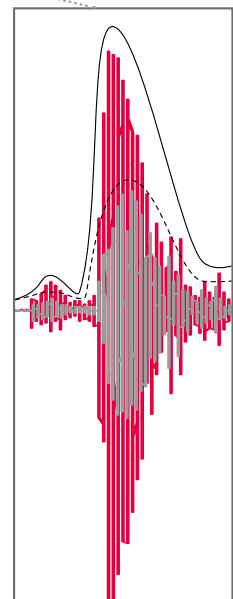
Figure 7: Maximum amplification of each phoneme results in the audibility of all sounds. The contrasts between soft and loud sounds are reduced.



Original Signal  
Output with Phoneme Priority

**ENVELOPE PRIORITY**

Figure 8: Amplification of the envelope information results in the preservation of the contrasts between soft and loud sounds



Original Signal  
Output with Envelope Priority  
Envelope with Envelope Priority  
Envelope of Original Signal



# Turn a Loud Backdrop into a Comfortable Corner

Steady state noises are among the most difficult sounds for hearing aid users to tolerate. Modern hearing aid technology includes adaptive algorithms. These algorithms apply multiple levels of noise reduction for different levels of unwanted noise, such as traffic and construction noise. Even in very complex listening environments, it is essential that important speech information be maintained. In listening environments with very high levels of background noise, Bernafon's Adaptive Noise Reduction Plus (ANR Plus) identifies the very low

signal-to-noise ratio (SNR) and strongly reduces the noise to maximize listening comfort. Conversely, when ANR Plus identifies a higher SNR, it acts quickly to adjust the level of noise reduction appropriately. This ensures that important speech cues can be heard and understood (see Figures 9 and 10).

Juna introduces an additional state within ANR Plus called Ultra Comfort. This new setting is ideal for particularly noisy situations.

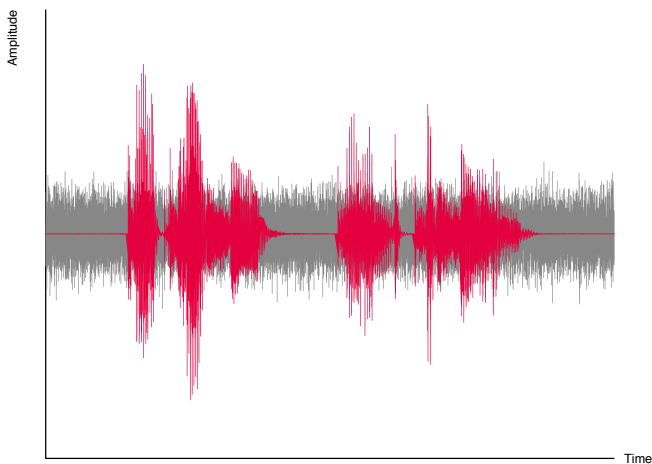


Figure 9: Adaptive Noise Reduction Plus OFF

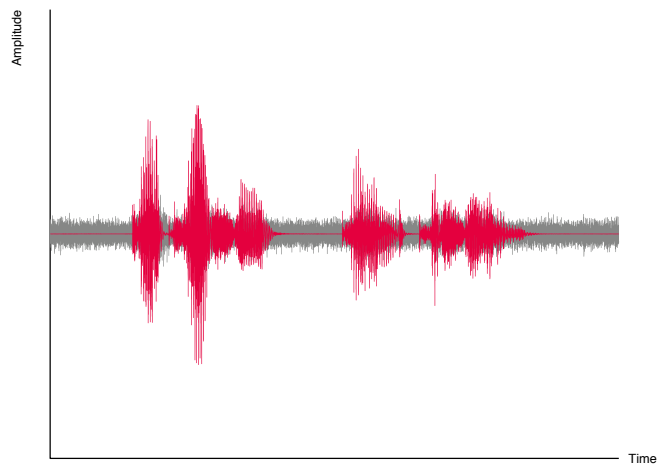


Figure 10: Adaptive Noise Reduction Plus ON

TURN A QUIET  
REMARK INTO  
AN EVENING OF  
LAUGHTER





# Turn a Noisy World into a Quiet Escape

Your clients' lifestyles may be very different. But one thing they probably have in common is that they travel. Commuting by train, taking a taxi on a busy Saturday night, or sitting in an airplane en route to the next holiday destination are just a few examples of travel today. These environments can be very busy and noisy. For this reason, Bernafon has implemented different listening programs in order to make common situations more comfortable for your clients.

Bernafon's newest listening program is dedicated to one of the most preferred modes of travel – air travel. Although flying is convenient and affordable, passengers are exposed to noise from very specific noise sources e.g., the propellers, the engines, and high-speed turbulence. These sources generate very high-level noise with peaks going above 80 dB(A) (Ozcan & Nemlioglu, 2006) (see Figure 11). It is well established that exposure to such noise for a long time can have adverse effects on health, comfort and psychological well-being.

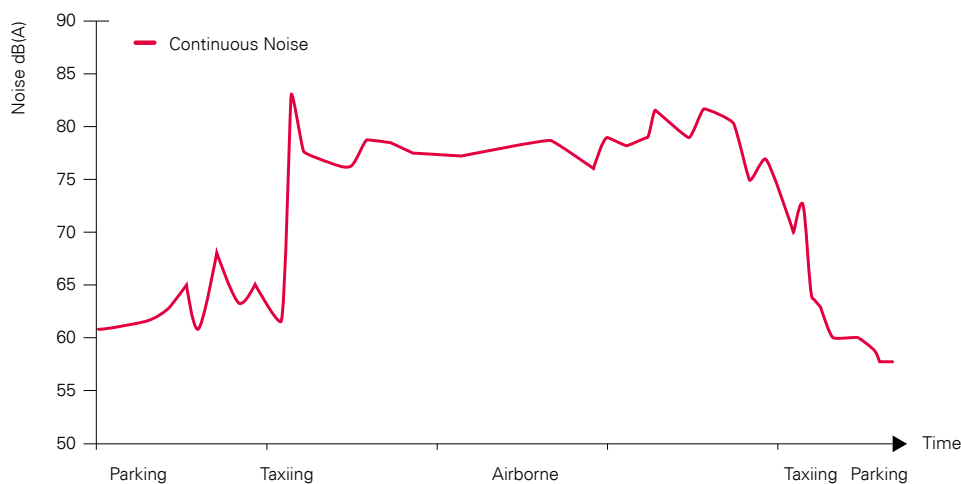


Figure 11: Typical noise levels in an airplane

With this in mind, Bernafon has designed the special Comfort in Airplane program. This program is for your clients who travel by air for business or pleasure. When the Comfort in Airplane program is selected, the gain, noise reduction, and directionality settings are adjusted to reduce the noise and improve listening comfort.

TURN A FINCH'S  
TWEET INTO  
A MORNING  
CONCERT







# Turn a Standard Fitting Session into an Efficient One

With Bernafon's fitting software Oasis, we strive to reduce the time spent in fitting sessions.

Transfer Fitting allows you to copy a complete fitting from one Bernafon hearing aid to another. This is particularly helpful when:

- Your client would like to change to a new hearing aid and keep the sound experience as similar as possible
- Your client is evaluating multiple hearing aids. In this case, you can simply copy their preferred settings from one product family to another or from one style to another.
- Your client was fitted monaurally and is now considering an instrument on the other ear. Transfer Fitting allows you to copy the same settings from right to left or vice-versa.

Allow your clients unparalleled flexibility in evaluating the most suitable hearing solution, while keeping it easy for yourself. With only a few clicks you can make your fitting sessions more flexible, more efficient, and less time-consuming.

The Oasis Sound Player gives you the opportunity to simulate common listening environments. Sounds such as traffic noise, speech in various situations, music, etc. can be played to your client. This can result in a higher first-fit acceptance and fewer follow-up sessions.

# Turn Challenging Situations into Personal Triumphs

Dining at a restaurant, sitting in a car, or listening to a presentation can be very challenging listening situations for your clients. For these environments, Bernafon has expanded its range of wireless accessories by adding the SoundGate Mic. This newest accessory is a small microphone that can be worn by the chosen speaker. Coupled with the SoundGate 3, the speech signal is transferred directly to the hearing aids. The transmission range between the SoundGate Mic and the SoundGate 3 is up to 15 meters (49 feet), making conversations and listening from a distance clearer and easier.



SoundGate Mic



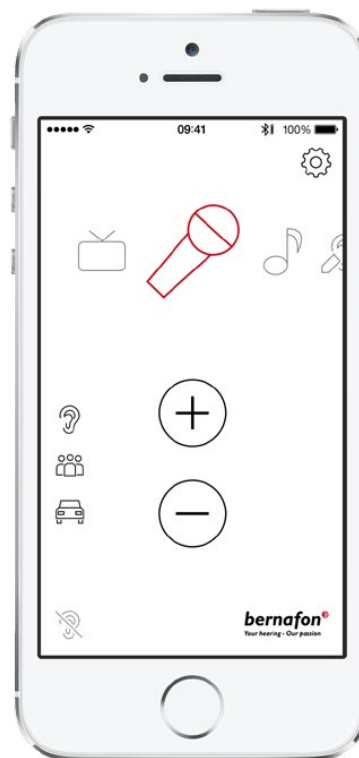
SoundGate 3



Bernafon wireless hearing aids

Clients have maximum flexibility when controlling the SoundGate Mic via SoundGate 3. With an overall weight of only 13 grams, the classic black design, and six hours of constant talking time, the SoundGate Mic is a light and discreet yet powerful device.

With the SoundGate App, Bernafon goes beyond the usual controls of a hearing device. Switching programs, turning the volume up or down, and connecting to multiple devices have never been so easy and certainly not so discreet. Ease of use was the priority when developing the SoundGate App. The user interface is designed to be as uncomplicated and self-explanatory as possible, as you would expect when using any other app. The SoundGate App is for use with iPhone® (SoundGate App supports iPhone 5s, iPhone 5c, iPhone 5, iPhone 4s, and iPhone 4), in combination with all Bernafon wireless hearing aids and SoundGate 3.



Another alternative for a smooth and discreet hearing aid operation is the new, lightweight RC-N remote control. Clients who find it uncomfortable or do not have a control on their hearing aids to change programs or volume can use this device. With excellent tactility and low power consumption, the new remote control is the solution your clients will desire.



Juna CICx now wireless

STYLES AND COLORS

BASE SHELL  
METALLIC SILVER (MSIL)



COBALT BLUE  
COBU

BASE SHELL  
METALLIC ANTHRACITE (MAC)



METALLIC ANTHRACITE  
MAC



JET BLACK  
JEBL



ANTIQUÉ BRONZE  
ANBR



METALLIC ANTHRACITE  
MAC



SAND BEIGE  
SABE



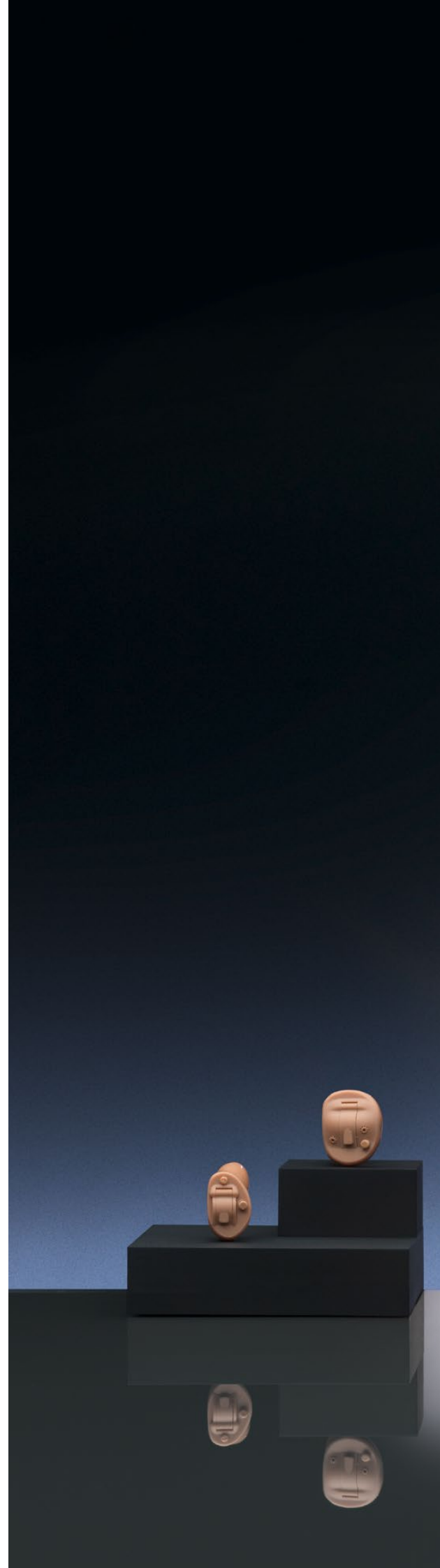
COCOA BROWN  
COBR



METALLIC SILVER  
MSIL



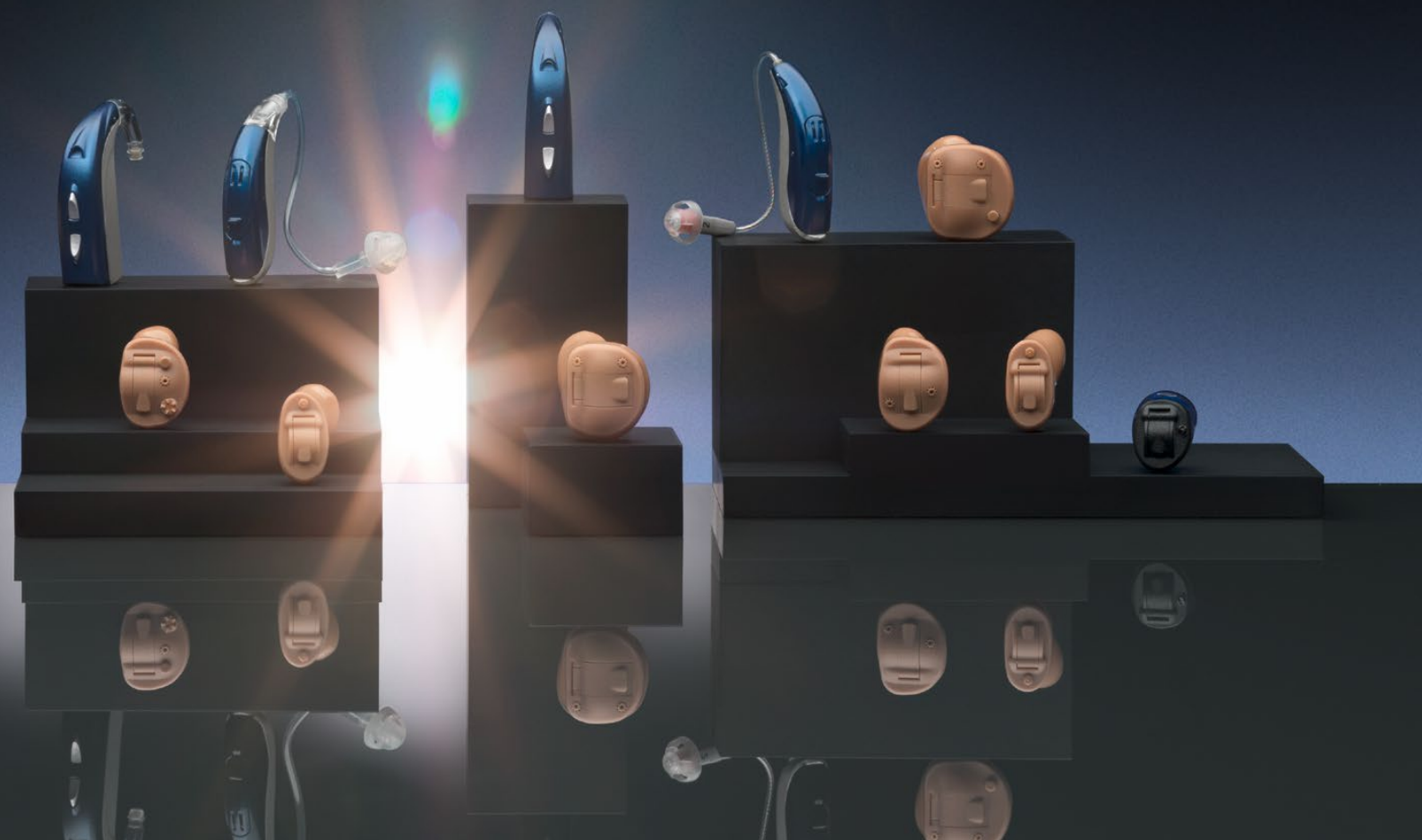
SAND BEIGE  
SABE



# Turn an Instrument of Choice into Your Premium Bestseller

Juna comes in nine different custom instrument styles offering maximum fitting flexibility. The most powerful ITE solutions are the wireless compatible ITEPD (size 13 battery) and ITCPD (size 312 battery). The small CICP and CICx, both equipped with a size 10 battery, can now also enjoy the advantages of wireless communication.

All BTEs come in a totally new color palette. With nine colors and the possibility of combining them differently, there is surely something for everybody. With this new concept, the hearing aids can be customized even more to your clients' individual preferences.



# Turn Products and Features into a Comprehensive Care Package

	JUNA 9	JUNA 7
<b>SIGNAL PROCESSING</b>		
ChannelFree™	●	●
Speech Cue Priority™	●	●
Frequency Composition™	●	●
Frequency Bandwidth	10 kHz	10 kHz
<b>LISTENING COMFORT</b>		
Adaptive Noise Reduction Plus (ANR Plus)	5 ctr	4 ctr
Transient Noise Reduction	●	●
Adaptive Feedback Canceller Plus	●	●
Wind Noise Monitor	●	●
Environment Optimizer	1/4	1/1
Advanced Soft Noise Management	●	●
Reverb Reduction	●	-
i-VC	●	●
<b>BINAURAL COORDINATION</b>		
Volume Control, Program Change	●	●
Environment Classification	●	●
Non-Telephone Ear Attenuation (Auto-T)	●	●
<b>ENTERTAINMENT</b>		
Live Music Program	●	●
Cinema Program	●	●
<b>DIRECTIONALITY</b>		
Adaptive Directionality	●	●
Adaptive High-Frequency Directionality	●	-
True Directionality™	●	-
<b>CONVENIENCE FEATURES</b>		
VC Clicks	●	●
Mute Via Push Button	●	●
Configurable Start-Up Delay	●	●
<b>CUSTOMIZATION</b>		
Program Options/Memories	16/4	15/4
Adaptivity Control	●	-
Data Logging & Data Learning	●	●
VC Learning	●	-
Smart VC	●	-
Language Specific Targets	●	●
REMfit™	●	●
Client Interactive	●	●
Comfort in Airplane Program	●	-



HARDWARE

Directionality	dual omni	dir	dir	dir	dir	dir	omni	omni	omni	omni	omni
Battery Size	13	13	312	312	13	312	312	10	10	10	10
Program Selector	●	●	●	●	○	○	○	○	○	○	–
Volume Control	●	●	*	*	*	*	○	*	*	–	–
IP57 Rated	●	●	●	●	–	–	–	–	–	–	–

ACCESSORIES

RC-N Remote Control	○	○	○	○	○	○	–	○	○	–	–
SoundGate 3	○	○	○	○	○	○	–	○	○	–	–
SoundGate Mic	○	○	○	○	○	○	–	○	○	–	–
SoundGate App	○	○	○	○	○	○	–	○	○	–	–
TV Adapter 2	○	○	○	○	○	○	–	○	○	–	–
Phone Adapter 2	○	○	○	○	○	○	–	○	○	–	–
FM/DAI Adapter	○	○	–	–	–	–	–	–	–	–	–

PERFORMANCE (EAR SIMULATOR)

OSPL 90, Peak dB SPL	138	135	127	133	121	135	130	135	128	128	126	119	120	119
OSPL 90, 1600 Hz dB SPL	136	130	127	131	115	130	122	130	119	120	118	108	109	107
Full-On Gain, Peak dB	77	68	55	75	61	70	61	70	59	59	58	53	52	45
Full-On Gain, 1600 Hz dB	74	63	53	70	53	64	53	64	48	49	49	40	42	40
Reference Test Gain	61	55	46	55	37	54	46	54	41	42	42	33	34	34

P-Speaker  
M-Speaker  
ITEPD ITED  
ITCPD ITCD

● standard ○ optional  
\*Push button can be programmed for volume control use  
\*\* Juna 9 only

Since 1946, we have been passionate about developing quality hearing systems that enable people with hearing difficulties to enjoy authentic listening experiences. With Swiss Engineering, precision technology, and our commitment to individual service, we strive to exceed our customers' expectations. Our aim is to provide extra value to our partners every day. Bernafon representatives and employees in over 70 countries fulfill our vision to help people with impaired hearing communicate again without limitations.

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**SWISS**   
Engineering

#### **Bernafon Companies**

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**bernafon**   
Your hearing · Our passion