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S1 DIGITAL

 **SENNHEISER**

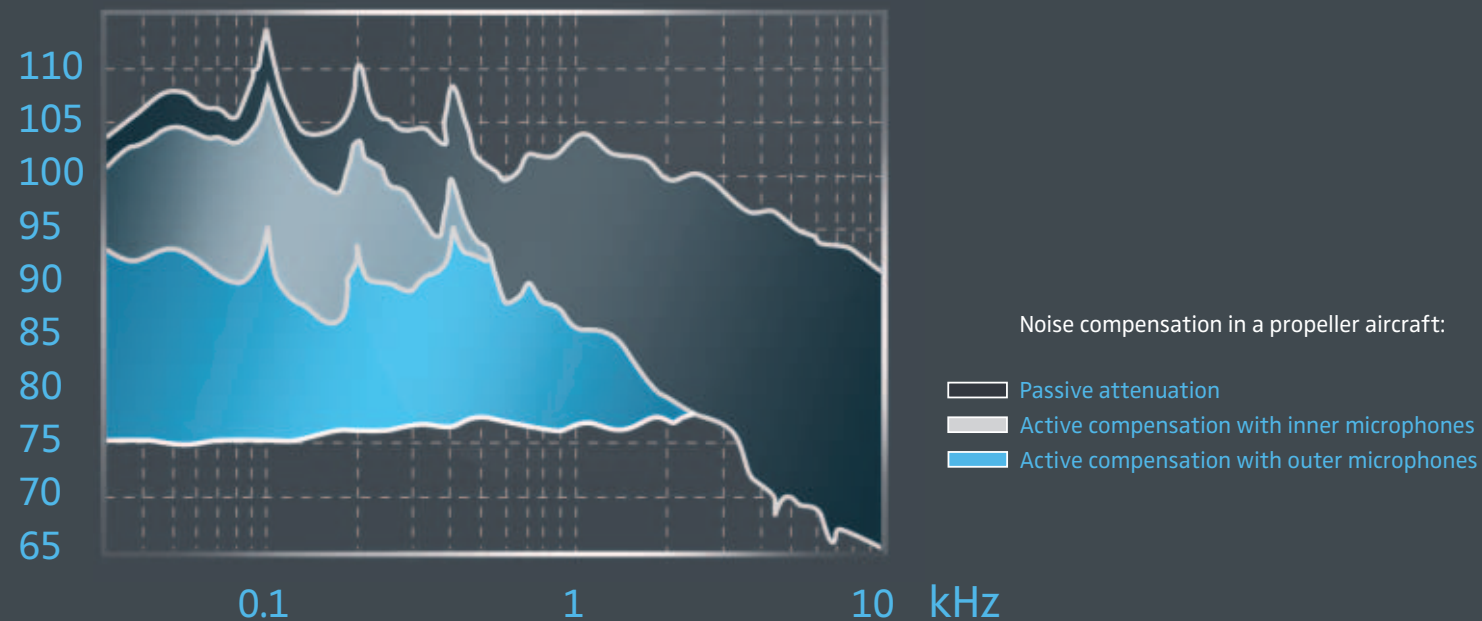


A Milestone in Professional Audio – The Quiet Revolution in Aviation.

Our commitment to ensuring the best sound, optimum speech intelligibility, and the fulfillment of the most stringent safety standards has won over aircrews and airlines throughout the world. For decades, general aviation pilots have put their trust in Sennheiser professional headsets. The new S1 Digital general aviation headset was specially developed for pilots of single- and twin-engine propeller aircraft and ensures safe and reliable voice communication, easy control, outstanding audio quality, and wearing comfort – even on the longest flights. At the heart of this technical innovation is the new Digital Adaptive NoiseGard™ system, a technology that sets entirely new standards in the field of noise compensation and makes the dream of flight even safer.

Digital Adaptive NoiseGard™ Superior Protection – Highest Safety.

dB SPL



Pilots in flight are constantly confronted with extreme noise – whether from aircraft engines or wind. Thanks to NoiseGard™/digital, Sennheiser is now offering pilots the best noise-canceling performance ever.

NoiseGard™/digital is the next generation of Sennheiser's NoiseGard™ technology. The fully adaptive digital noise-reduction technology can be quickly optimized for changing noise environments by a touch of a button, taking into account the actual noise situation for the pilot.

Unlike analog noise compensation, which works with set filters, the fully adaptive NoiseGard™/digital measures the spectrum and intensity of the surrounding noise when the pilot presses the Smart Update button. At the core of the new noise-cancelling technology is a powerful digital signal processor, which generates a filter algorithm that specifically reduces the dominant noise spectrum. By analyzing both the frequency band

and the noise peaks, the filters can be perfectly adapted to the situation at hand. In order to pick up the surrounding noise as accurately as possible, two external and two internal microphones are used. Usually, the anti-noise signal is calculated by microphones integrated either on the outside or on the inside of the ear cups. Microphones on the outside directly pick up the noise generated by the engines and air flow over the plane, enabling a broadband noise reduction. Microphones fitted inside the headphones, on the other hand, pick up the sound signal close to the ear. This sound can vary – above all, depending on how well the headphones fit (different head shapes, if glasses are worn, etc.). Internal microphones generally offer very good performance in the low-frequency range.

NoiseGard™/digital combines the benefits of both systems: the combination of external and internal microphones ensures a significantly better overall noise reduction and thus more safety and comfort for the pilot.

S1 DIGITAL – A Masterpiece Made in Germany.



S1 DIGITAL For the development of the S1 Digital, Sennheiser found a perfect partner in BMW Group DesignworksUSA. The result of their collaboration is a unique aviation headset that offers the ultimate in audio quality and noise cancellation thanks to NoiseGard™/digital in combination with sophisticated, innovative design. A black, metallic finish and the exclusive use of the highest-quality materials lend the headset an aura of elegance and calm self-confidence. In addition, the S1 Digital also features impressively simple controls and superb wearing comfort. Bluetooth wireless interface for connection to cell phones and MP3 players makes listening above the clouds an unforgettable experience.



**BMW Group
DesignworksUSA**

NoiseGard™ | digital

Groundbreaking Features – Unique Design.

Adaptive NoiseGard™/digital.

To reduce ambient noise to a minimum, just press the Smart Update button on your headset. The system then analyzes the actual cockpit noise and generates the appropriate anti-noise signal. The entire procedure takes only four seconds and can be repeated whenever needed.

Treble boost control.

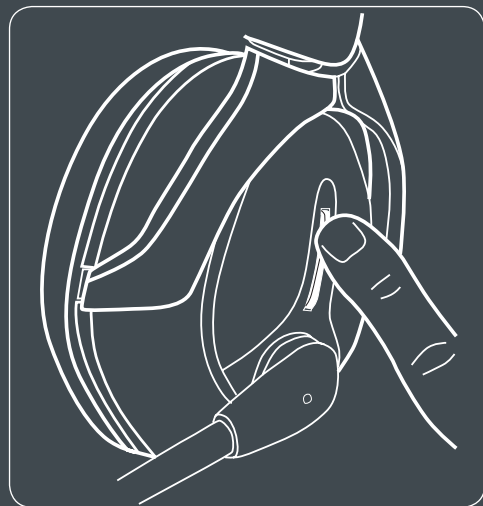
Integrated treble boost control increases speech intelligibility in cockpit communications, adjustable in three steps and independent for right and left ears – providing customized audio clarity.

Bluetooth technology.

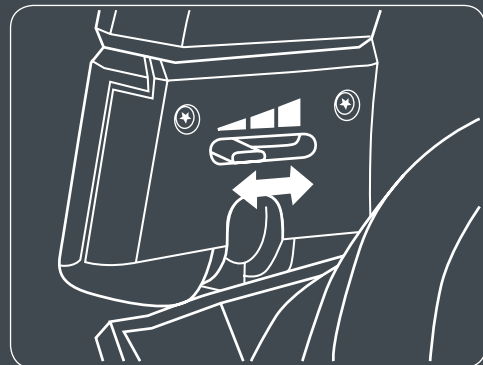
The Bluetooth wireless interface lets you connect your headset to a cell phone and MP3 player. This means you can make or receive phone calls while in flight, or listen to your favorite music. For your safety, the music is muted automatically when communicating with air traffic control.

Wearing comfort.

Optimum noise suppression is also a matter of ergonomic design. The better a headset fits, the more effectively NoiseGard™/digital can do its job. Thanks to the collaboration with BMW Group DesignworksUSA, the new S1 Digital also sets new standards in wearing comfort. Special emphasis was placed on functional details that positively influence the flying experience. Pilots can now adjust the contact pressure of the ear cups in three stages between five and seven newtons. This enables them to find the perfect balance between a comfortable fit and optimum noise compensation. Also new are the ear cushions with a soft, flexible zone near the temples to provide extra comfort when wearing sunglasses. The sleek design with metallic elements is rounded off by the attractive shape of the headband and ear cups that is reminiscent of the sweep of a wing.



The Smart Update button



Three-step slide switches to change the contact pressure

Benefits

- Smart Update digital ANR customizes noise reduction to the user's aircraft environment
- Headband tension adjustment for customized comfort
- Treble boost for customized audio clarity
- Peak-level protection for hearing safety
- Ear-pad comfort zones do not squeeze on user's glasses
- Specially designed communication and music filters optimize sound quality
- Bluetooth phone and music connectivity
- Built-in mic bias voltage for cell-phone use

Technical Data

Headset

Transducer principle	dynamic, closed circumaural
Ear coupling	
Frequency response	20–16,000 Hz
Impedance active/passive mono:	130 Ω passive/180 Ω active stereo: 260 Ω passive/ 360 Ω active
SPL (at 1 kHz, 1 V_{rms})	98 dB
SPL (at 1 kHz, 1 V_{mW})	90 dB
Max. SPL	115 dB
THD	< 0.1%
Contact pressure, adjustable	approx. 5–7 N

Microphone, incl. preamplifier

Type	BKE S1-P
Transducer principle	pre-polarised condenser microphone, noise-compensating
Frequency response	100 Hz–10 kHz
Output voltage	20–80 mV/Pa, adjustable 35 mV/Pa (factory preset)
Terminating impedance	150–2,200 Ω
Supply voltage	8–16 VDC

Delivery includes:

- S1 Aviation headset
- Carrying case
- Belt clip
- Cable clip
- User manual
- Quick-reference guide
- Wind and pop screen

Recommended accessories:

- Cigarette lighter adapter cable
- XLR 3 adapter cable
- Gel ear cushions

General Data

Ambient temperature	operation: –15°C to +55°C storage: –55°C to +70°C
Weight without cable	approx. 410 g
Cable length	approx. 1.90 m
Power supply for NoiseGard™/digital	12–35 VDC at max. 150 mA (on-board DC power supply system) 2.4–3.0 VDC (rechargeable batteries)
Operating time (NoiseGard™/digital)	Alkaline batteries/rechargeable batteries: approx. 25 hrs