Digital Wireless
Microphone System

# SpeechLine
# Digital Wireless

**SENNHEISER**

# Dedicated to speech

SpeechLine Digital Wireless is the world's first microphone series exclusively dedicated to speech. It is dedicated to speech because every feature and element has been optimized for best speech intelligibility and easiest handling during presentations, lectures or meetings. If you want to get your message across in a presentation, you cannot rely on a limited system. You need to have full bandwidth and full audio quality. As a professional tool, SpeechLine Digital Wireless comes with 20 to 20.000 Hz Audio Frequency Range and 24 Bit / 48 kHz Audio Sampling Rate.

All capsules of the SpeechLine Digital Wireless microphone series provide best speech intelligibility and are optimized for speech applications. Besides the best capsules for speech, SpeechLine Digital Wireless also comes with the best algorithms for speech. So, you don't have to set any sensitivity level or audio level anymore. The Automatic Level Management makes sure that a signal is always in the right range. Besides that, you can choose from sound profiles such as male voice and female voice that bring sound to a higher level even if no sound technician is on site to improve the audio.

"Dedicated to speech" means also providing maximized usability and full remote control even in largest set-ups. With the revolutionary Sennheiser Control Cockpit software, all network enabled devices can be conveniently remote controlled even in campus-wide installations. With its Multi-Room Mode that allows the adjustment of transmission power to every size of room, SpeechLine Digital Wireless ensures best scalability. To provide full integrability for state-of-the-art installations, the SpeechLine Digital Wireless system is perfectly compatible with Dante™ and third party control options.

Kai Tossing Product Manager
SpeechLine Digital Wireless

Enjoy easiest handling, easiest remote control and future-proof technology with SpeechLine Digital Wireless microphones – focus on the content, not the technology.

## Designed for corporations ...

In our globalized business world with its increased importance of remote working and flexible open plan offices, modern workplaces call for state-of-the-art audio solutions. High sound quality is moving to the heart of every business. Reliable and flexible microphone solutions for presentation and meeting rooms that allow intuitive, fuss-free set-up and easy and reliable operation are essential for professional communication that ensures maximized efficiency.

## ... and educational applications.

SpeechLine Digital Wireless meets the real-life requirements of universities, schools and colleges with reliable, future-proof solutions. All products keep things trouble-free in the lecture room and are to 100% focused on seamless integration and ease of operation. SpeechLine Digital Wireless is widely scalable and answers best all needs of your everyday working and lecturing environment – from small room setups to huge campus-wide installations.

# Highest reliability

SpeechLine Digital Wireless performs with greatest reliability thanks to advanced system automatics and full remote control.

## Advanced System Automatics



**Sennheiser Control Cockpit Software**

The revolutionary new tool for easy handling, control and maintenance of the entire SpeechLine Digital Wireless system. It provides a global overview of all network enabled devices and their status information and makes setting adjustments very easy.
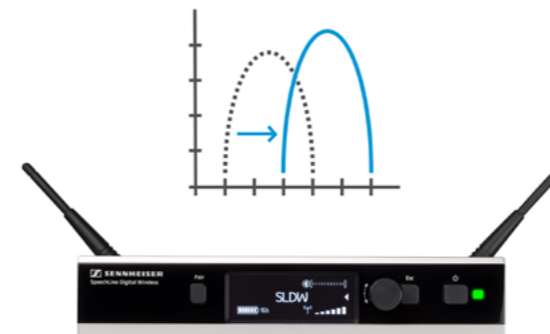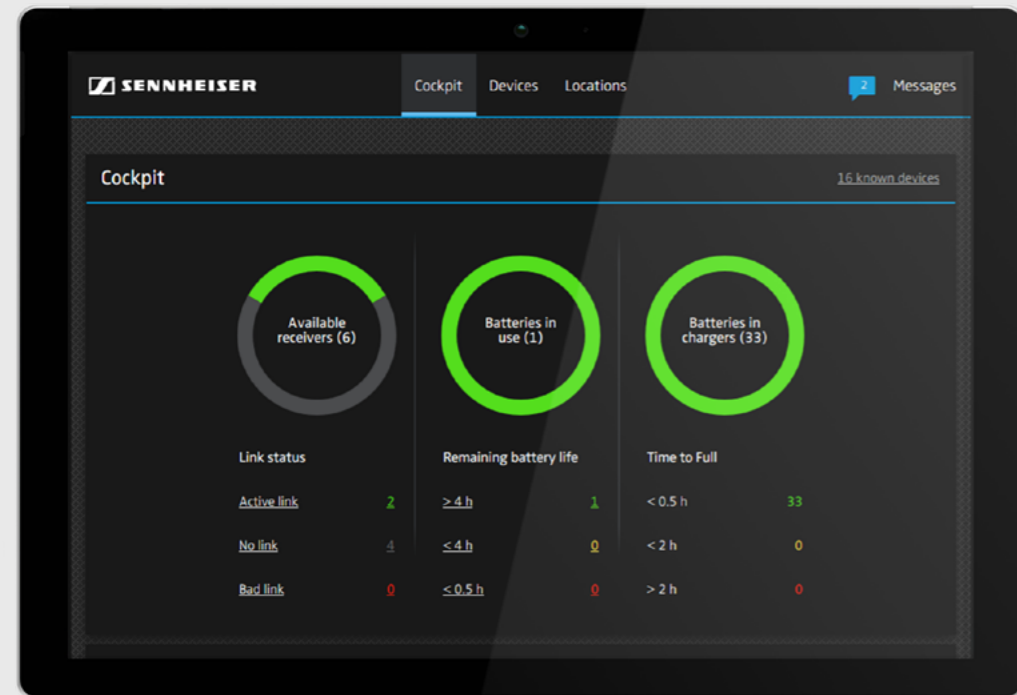


**Automatic Frequency Management**

For easiest set-up, Automatic Frequency Management performs an on-site real-time scan on startup to find free frequencies.



**Automatic Interference Management**

During operation, Automatic Interference Management changes seamlessly to a free channel in case of frequency disturbances.

# Sennheiser Control Cockpit Software

The Sennheiser Control Cockpit Software is the central tool for easy handling, complete control and efficient maintenance of the entire SpeechLine Digital Wireless system. It provides a dashboard overview of all network-enabled SpeechLine Digital Wireless devices, shows status information at a glance and allows setting adjustments for one or multiple devices at the same time. In room overview, location and status of any specific device can be determined easily.
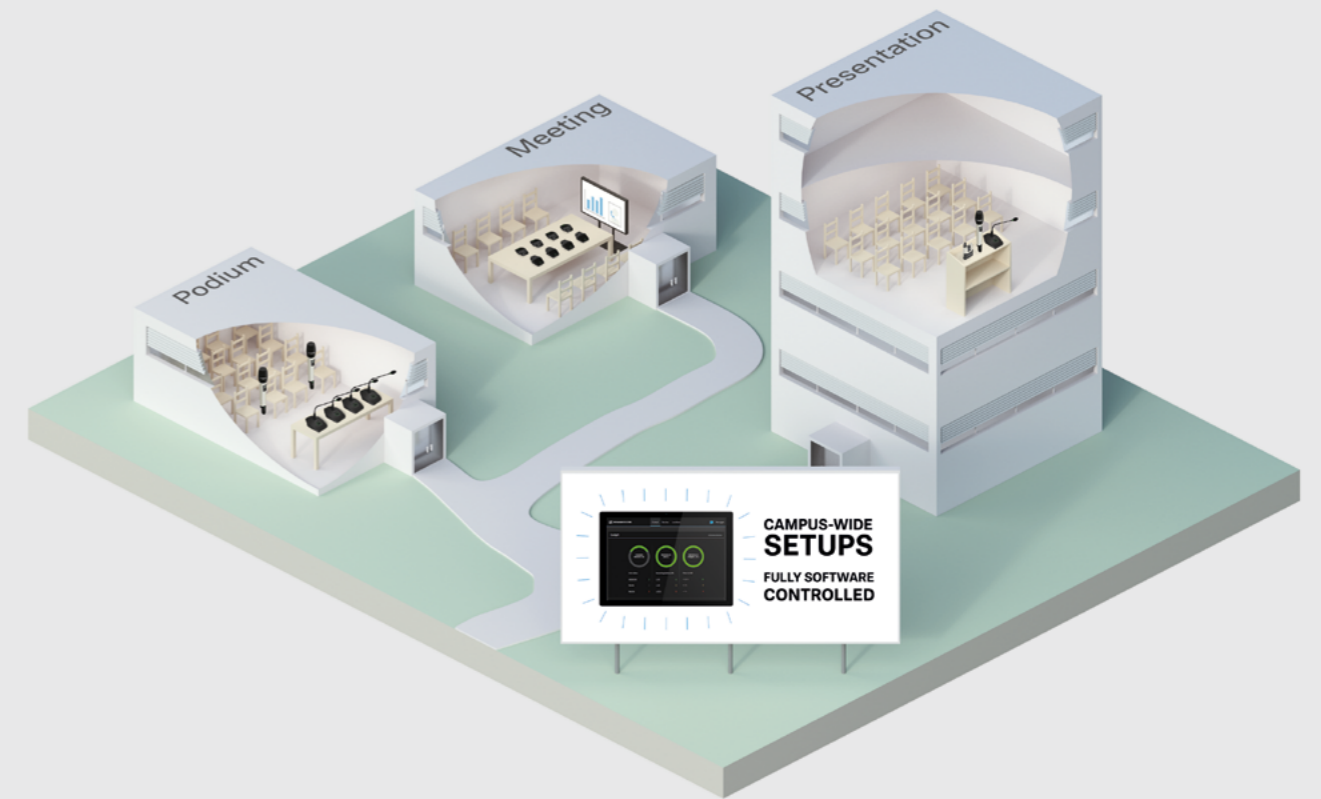
# Campus-wide setups

The Sennheiser Control Cockpit Software is accessible everywhere in the intranet via web browser across all platforms. Managing huge set-ups with multiple devices is reliably easy and extremely efficient.

The versatile SpeechLine Digital Wireless microphone range and the innovative Sennheiser Control Cockpit Software represent a complete and scalable solution that is a future-proof investment ideally suited for education.

# Best scalability

from presentation
rooms with two
microphone links
up to campus-wide
installations with more
than 2,000 links.

2 Links

20+ Links

2000+ Links
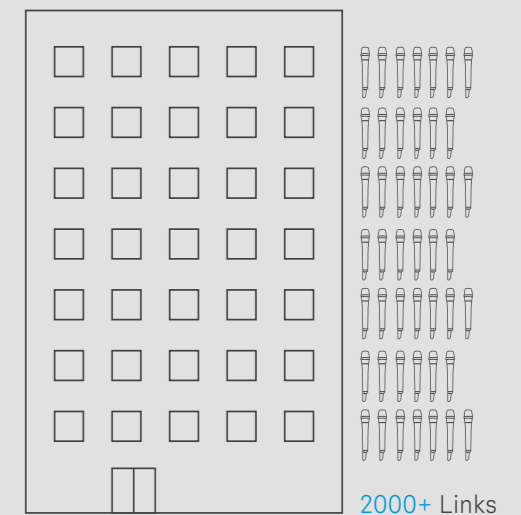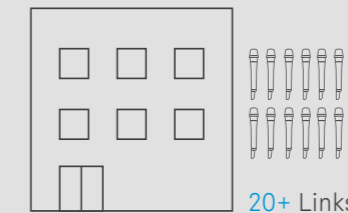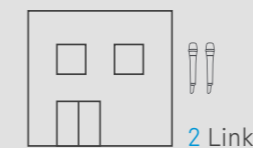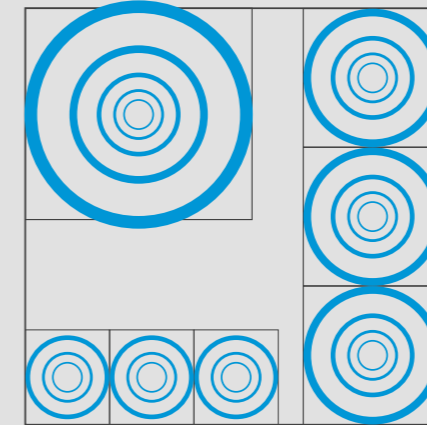
## Multi-Room Mode –
## for every application
## size

No matter what size your installation is, SpeechLine Digital Wireless always guarantees the highest speech intelligibility with its Multi-Room Mode.

SpeechLine Digital Wireless uses the future-proof, license-free 1.9 GHz frequency range. In order to make the most of this frequency range, SpeechLine Digital Wireless features two operating modes. The Automatic Mode ensures the simplest startup and a reliable, maximum range for up to 20* simultaneously used links. In Multi-Room Mode, the transmission power is adjusted to the room size to allow a significantly larger number of links. These setting options make the system ideal for a wide variety of different project sizes.

*Depends on the locally approved version

# Maximized flexibility

SpeechLine Digital Wireless offers a fully remote controlled microphone solution for every kind of application and speaker's preference.



## Maximized flexibility and remote control

Experience the comfort of remote controlled flexibility with SpeechLine Digital Wireless. The stationary SL Rack Receiver DW is the easy-to-integrate core of the SpeechLine Digital Wireless system. Thanks to the bi-directional communication, all settings of all mobile transmitters can be adjusted from the receiver side.
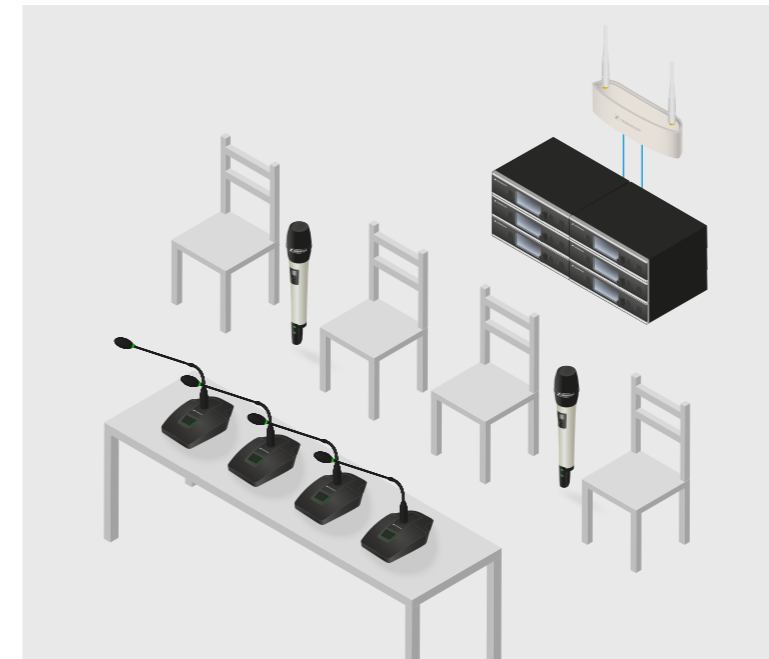
Thanks to the easy-to-handle pairing process, transmitter and receiver are securely linked. Via network integration of the SL Rack Receiver DW, all settings and statuses of all transmitters are accessible via the Sennheiser Control Cockpit software.

# Covers all needs for all speech applications

## Podium

For podium discussions, the wireless SL Tablestand 133-S and SL Tablestand 153-S can be placed just where they are needed. For panelists, they provide a good orientation. The SL Handhelds DW are easy to use microphones for questions and reactions from the audience with best speech intelligibility.
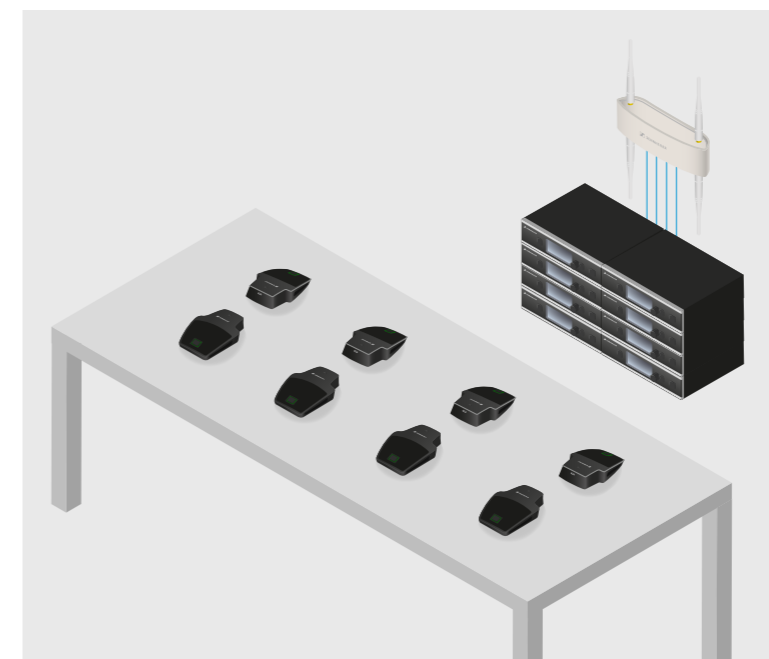
## Presentation

For hands-free presentations, you can choose between wireless table stand, handheld or bodypack transmitter for use with lavalier or headmic – depending on the speaker's preferences.

## Meeting

For conference rooms, the unobtrusive SL Boundary 114-S DW ensures best speech intelligibility and ease-of-use for all meeting participants. Due to their wireless charging function, the highly flexible boundary microphones are ready for us literally all the time. They provide best speech intelligibility for telephone conferences, for instance in combination with Sennheiser TeamConnect.

# Integrates perfectly

SpeechLine Digital Wireless stands for seamless integrability due to its compatibility with Dante™, third party control options and multiple antenna solutions.

**Dante™ Interface**

The SL DI 4 XLR Dante™ interface easily adds wireless microphone receivers or mic/line inputs to a Dante™ system. The small form factor of the SL DI 4 XLR allows it to be mounted almost anywhere and to get close to audio sources to minimize interference-prone analog wiring.

**Antenna Solutions**

The SpeechLine Digital Wireless antenna solutions allow for easy and unobtrusive installation of antennas just where they are needed. In combination with recommended passive combiners, the number of antenna wall mounts and cables can be minimized and the reception quality can be maximized.

**Third Party Control**

For maximum remote controllability, all SpeechLine Digital Wireless devices are fully compatible and remote programmable with standard programming interfaces from Crestron.
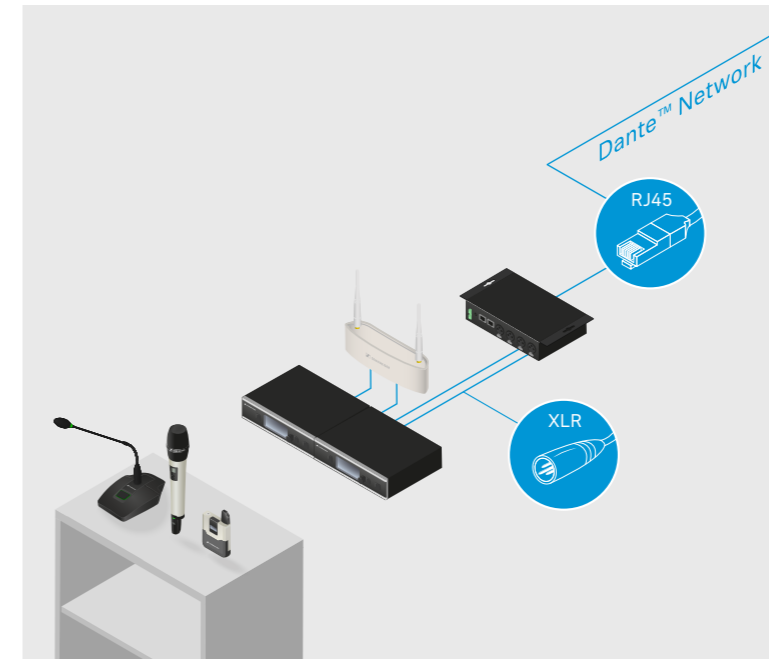
# Dante™ applications



**For presentation**

For the application presentation, the SL Handheld DW, the SL Bodypack DW and the SL Tablestand 133-S / 153-S DW can all be connected to the SL DI 4 XLR four input Dante™ preamp. Just connect the microphone of your choice via the SL Rack Receiver DW to the four mic inputs of the SL DI 4 XLR that transfers the audio signal to your Dante™ network over a single RJ45 audio cable.



**For meetings**

For the application meeting, you can connect four SL Boundary 114-S DW microphones via the SL Rack Receiver DW to the four mic inputs of the SL DI 4 XLR that transfers the audio signal to your Dante™ network over a single RJ45 audio cable.
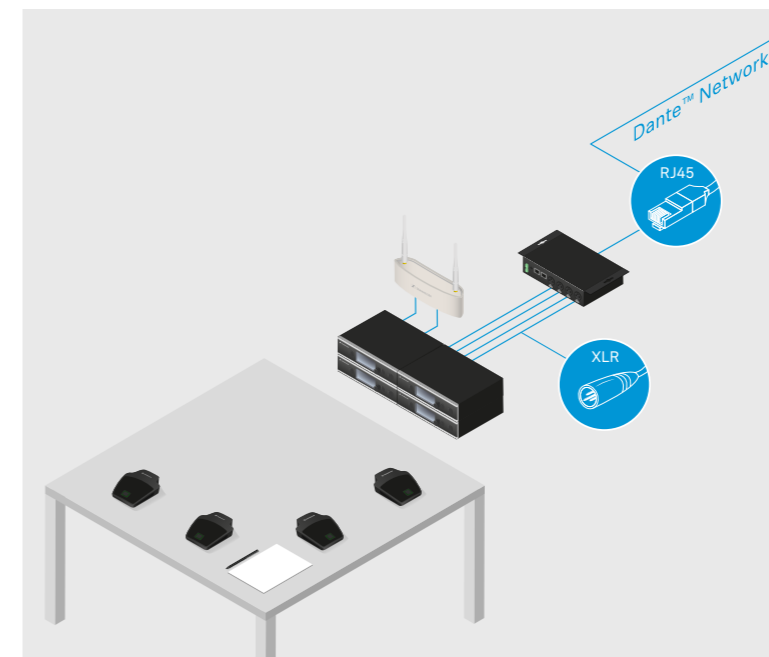
## SpeechLine Digital Wireless supports Dante™

As one of the world's leading producers of audio technology, Sennheiser has aimed for decades to provide up-to-date audio solutions. Sennheiser's decision to make use of Dante™, the worldwide leading multi-channel audio over IP standard, is part of this ongoing effort to create future-proof products. The Australian based company Audinate created Dante™ as digital media networking technology with near-zero latency and synchronization that has been established as key audio networking solution preferred by leading AV manufacturers from all over the world.

# Benefits

**Automatic Frequency Management**

**Automatic Interference Management**
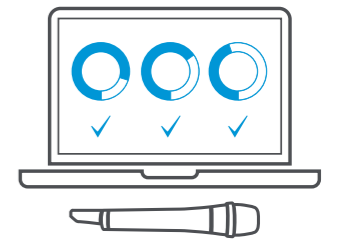
**Software Based Status Monitoring**

**Multi-Room Mode**

**Dante™ Interface**
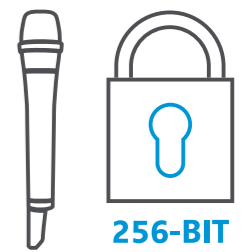
**Advanced 256-bit AES Encryption**

256-BIT
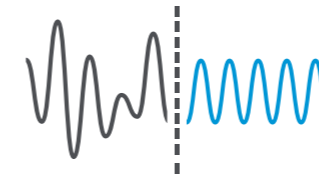
**Automatic Audio Level Management**
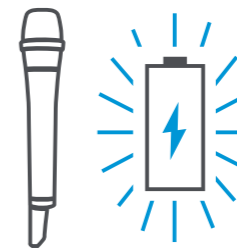
**Convenient Recharging**
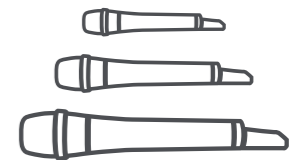
**Multichannel Operation**

UP TO 20

**Optimum Speech Intelligibility**

**License-Free Operation**

FREE
1.9 GHz

**Future-proof 1.9 GHz**

FUTURE-PROOF

# References

## Understanding our customers needs.



### Royal College of Physicians, London

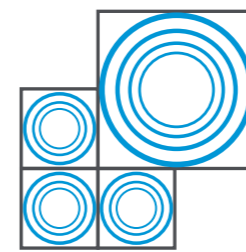The Royal College of Physicians (RCP), located in Regent's Park London, was the first professional body to install Sennheiser's new SpeechLine Digital Wireless microphone system. A total of 34 channels were purchased to replace the existing radio microphone system and to increase the number of available channels.



### University of Edinburgh, Edinburgh

The University of Edinburgh is currently replacing its analogue Sennheiser microphones with Sennheiser's latest SpeechLine Digital Wireless microphone series. These Dedicated-to-Speech products are to be installed in 320 rooms.

Stephen Dishon, the university's AV officer, took this step because SpeechLine Digital Wireless products can solve several of his problems at a stroke: they get around frequency traffic jams, avoid interference with other microphones and the batteries last longer. Last but not least, Stephen Dishon thinks the robust design of the German-made digital microphones will be useful in the tough, everyday life at the University.

# Sets, Components & Chargers

## A complete system

With its sophisticated portfolio of different microphone types, thoroughly compiled microphone sets and accessories like chargers, lavalier or headmics and antenna solutions, SpeechLine Digital Wireless offers a complete system of perfectly combinable advanced audio technology items.

# Sets



**SL Handheld Set**

The SL Handheld Set includes the handheld transmitter, stationary receiver and everything to use or install. It comes with the MME 865 condenser capsule – so not just a capsule, but the best capsule for speech.



**SL Headmic Set**

The SL Headmic Set includes the SL Bodypack DW and comes with the extremely unobtrusive but robust, speech optimized SL Headmic 1. It weighs only 7g without the cable providing best sound performance.



**SL Lavalier Set**

The set includes the bodypack transmitter, stationary receiver and everything to use or install. It comes with the MKE 1 condensor lavalier microphone – so not just a lavalier mic, but the best and most unobtrusive one for great presentations with best speech clarity.



**SL TS 133 GN Set DW**

The SL TS 133 GN Set DW includes the SL Tablestand 133-S DW, the MEG 14-40 B gooseneck microphone and the SL Rack Receiver DW. It can either be charged wirelessly or via USB.



**SL TS 153 GN-L Set DW**

The wireless tablestand set SL TS 153 GN-L Set DW includes the SL Tablestand 153-DW, the MEG 14-40-L-II B gooseneck microphone and the SL Rack Receiver DW. The SL Tablestand 153-S DW is dedicated to speech. For a solid connection with the gooseneck microphone, an XLR 5 socket is featured.



**SL Boundary Set DW**

The SL Boundary Set DW includes the wireless SL Boundary 114-S DW microphone, the SL Rack Receiver DW and everything needed for use and installation. The microphone is optimized for voice transmission in conference rooms and offers highly flexible application possibilities due to the complete absence of cables.

# Components



**SL Rack Receiver DW**

The stationary SL Rack Receiver DW is the easy-to-integrate core of the SpeechLine Digital Wireless system with network integration for remote monitoring and full control.



**SL Handheld DW**

The sleek but robust SL Handheld DW is optimized for speech in presentations or lectures where every word matters.



**SL Bodypack DW**

The robust SL Bodypack DW is compatible with all Sennheiser microphones such as SL Headmic 1 or MKE 1.



**SL Headmic 1**

The SL Headmic 1 is an extremely unobtrusive and comfortable-to-use headworn microphone. It features the proven omni-directional MKE 1 microphone capsule. The adjustable neck band makes its use convenient for everyone. The extremely lightweight (7 g) but robust metal frame makes long-term usage most convenient.



**MKE 1**

Sennheiser's smallest professional clip-on mic. Ideal for musicals, live shows, and broadcasting applications. Full, natural sound. High speech intelligibility. Very sweat-resistant due to protective membrane.



**SL Tablestand 133-S**

The wireless SL Tablestand 133-S DW is dedicated to speech and optimized for podium discussions and lectures.



**SL Tablestand 153-S DW**

The wireless SL Tablestand 153-S DW supports in addition with XLR 5 connectivity the MEG 14-40-L-II gooseneck microphone with integrated LED light ring.



**SL Boundary 114-S DW**

The wireless SL Boundary 114-S DW is optimized for voice transmission in conference rooms and offers high flexibility due to the complete absence of cables.

# Charging stations

**CHG 2**

The CHG 2 two-bay charger makes battery management for two devices really easy. The mobile transmitters, while not in use, are charged in the two charging bays. The microphones are always ready to use.

**CHG 4N**

The CHG 4N is a network enabled charger featuring four individual charging bays. The flexible network interface provides IPv4 and IPv6 compatibility for seamless integration. All settings and status information can be monitored and remote controlled with the Sennheiser Control Cockpit Software.

# Charging solutions

Counterpart of the easy-to-handle SpeechLine Digital Wireless transmitters are our outstanding charging solutions that include a charging base featuring inductive, wireless charging and a network enabled charger that allows for remote control of the mobile transmitters while charging.

**CHG 2W**

The CHG 2W is a wireless power transmitter. It provides convenient wireless charging. It is compatible with SL Tablestand 133-S DW, SL Tablestand 153-S DW and SL Boundary 114-S DW.

# Batterypacks

# Antennas & Rackmount

**BA 10**

Rechargeable battery pack for the SpeechLine Digital Wireless SL Handheld DW transmitters.

**GA 4**

A SpeechLine Digital Wireless compatible rack mount set.

**BA 30**

Rechargeable battery pack for the SpeechLine Digital Wireless SL Bodypack DW transmitters.

**AWM 2**

The AWM 2 is an unobtrusive option to mount the antennas of the SL Rack Receiver DW remotely. It can either be wall mounted or set up on a tripod for ad hoc usage. It helps to achieve best RF performance with line-of-sight-transmission by getting above blocking or absorbing obstacles such as a big audience or metal racks.

**CL 5, CL 10, CL 20**

Antenna cable in 5, 10 and 20 m length. Compatible with AWM 2.

**BA 40**

Rechargeable battery pack for SpeechLine Digital Wireless SL Tablestand DW & SL Boundary DW transmitters.

**AWM 4**

The AWM 4 supports to connect two antenna links directly. Instead of simply running the antenna cable through the AWM housing, the AWM 4 features four antenna connectors. You can directly connect the antenna cable on the outside so that set-up time is reduced to a minimum. The AWM 4 is also suitable for wall or tripod mounting.

**CL 5 PP, CL 10 PP, CL 20 PP**

Antenna cable in 5, 10 and 20 m length. Compatible with AWM 4.

# Technical data

## System
### Technical data

| | |
|---|---|
| AF frequency response | 20 to 20,000 Hz |
| Dynamic range | > 120 dB (A) |
| THD (1 kHz) | typ. 0.1 % |
| Audio sampling | 24 bit/48 kHz |
| Signal-to-noise ratio | > 90 dB (A) |
| Encryption | AES 256 |
| RF frequency ranges | EU: 1,880 to 1,900 MHz<br>USA: 1,920 to 1,930 MHz<br>Brazil: 1,910 to 1,920 MHz<br>Taiwan: 1,880 to 1,895 MHz<br>Japan: 1,893 to 1,906 MHz |
| Modulation | GFSK with back channel |
| Transmission method | TDMA<br>space diversity |
| Latency | 19 ms |
| Temperature range*<br>   Operation:<br>   Storage: | relative air humidity max. 95 %<br>−10 °C to +55 °C<br>−20 °C to +70 °C |

* The temperature range is influenced by the battery characteristics

## SL Rack Receiver DW
### Technical data

| | |
|---|---|
| RF sensitivity | < −90 dBm |
| RF output power back channel | adaptive, up to 250 mW (country-specific) |
| Digital gain | adjustable in 6-dB steps |
|    Mic/line level switch | −24 dB/0 dB |
|    XLR, balanced | max. +18 dBu |
|    RCA, unbalanced | max. +6 dBu |
| Audio effects | |
|    Low cut | −3 dB at 120 Hz |
|    Equalizer | 7-band graphic equalizer with sound presets |
| Automatic gain control | AGC compression/expansion with automatic make-up gain function |
| Display | OLED |
| Network protocol | Media Control Protocol TCP/IP IPv4 (DHCP, Manual)/IPv6 |
| Power supply | 12 V DC |
| Current consumption | 350 mA |
| AF connection sockets | XLR/2 x RCA |
| Antenna sockets | 2 x Rev-SMA |
| Network socket | RJ45 |
| DC socket for power supply | hollow jack |
| Dimensions | 68 x 212 x 43 mm (6.61" x 8.35" x 1.69") |
| Weight | approx. 828 g (1.8 lbs) |

## SL Handheld DW
### Technical data

| | |
|---|---|
| RF output power | adaptive, up to 250 mW (country-specific) |
| AF frequency response | 50 to 20,000 Hz |
| Input sensitivity | automatic sensitivity adjustment |
| Power supply | |
|    Accupack | BA 10 (Li-Ion, 3.7 V) |
|    Batteries | 2 x AA size battery (1.5 V) |
| Operating time | |
|    Accupack | typ. 15 h |
|    Batteries | typ. 10 h |
| Display | LCD |
| Mute switch | available |
| Dimensions | |
|    Diameter | 40 mm (1.57") |
|    Length | 215 mm (8.46") |
| Weight (w/o accupack) | approx. 262 g (0.6 lbs) (incl. microphone head) |

## SL Bodypack DW
Technical data

| | |
|---|---|
| RF output power | adaptive, up to 250 mW (country-specific) |
| AF frequency response | |
|    Mic | 50 to 20,000 Hz |
|    Line | 20 to 20,000 Hz |
| Max. input level | |
|    Mic | 2.2 V RMS |
|    Line | 3.3 V RMS |
| Line input impedance | 1 MΩ |
| Input sensitivity | automatic sensitivity adjustment |
| Power supply | |
|    Accupack | BA 30 (Li-Ion, 3.7 V) |
|    Batteries | 2 x AA size battery (1.5 V) |
| Operating time | |
|    Accupack | typ. 15 h |
|    Batteries | typ. 10 h |
| Display | LCD |
| AF connection socket | 3.5 mm jack socket, lockable connector assignment: |



| | |
|---|---|
| Dimensions | 100 x 65 x 24 mm (3.94" x 2.56" x 0.94") |
| Weight (w/o accupack) | approx. 88g (0.2 lbs) |

## SL Boundary 114-S DW
Technical data

| | |
|---|---|
| RF output power | adaptive, up to 250 mW (country-specific) |
| AF frequency response | 40 to 20,000 Hz |
| Pickup pattern | cardioid |
| Dynamic range | < 100 dB(A) |
| Microphone sensitivity | 10 mV / PA |
| Power supply | BA 40 accupack (Li Ion 3.6 V) |
| Operating time | typ. 13 h |
| Temperature range | |
|    Operation | 10 °C to 45 °C (50 °F to 113 °F) |
|    Storage | -20 °C to 70 °C (-4 °F to 158 °F) |
| Dimensions | 114 x 85.3 x 30.8 mm (4.49" x 3.36" x 1.21") |
| Weight (w/o accupack) | approx. 208 g (0.45 lbs) |

## SL Tablestand 133-S / 153-S DW
Technical data

| | |
|---|---|
| Microphone connector | XLR-3F / XLR-5F |
| AF frequency response | 75 to 20,000 Hz |
| Max. input level | 1.7 V RMS |
| Input impedance | 30 kΩ |
| Microphone sensitivity | 10 mV / PA |
| Power supply | BA 40 accupack (Li Ion 3.6 V) |
| Operating time | typ. 12 h |
| Operating temperature | -10 °C to 55 °C (14 °F to 131 °F) |
| Relative humidity | max. 95 % |
| Dimensions | 166.7 x 120.2 x 47.9 mm (65.63" x 47.32" x 18.86") |
| Weight (w/o accupack) | approx. 650 g (1.43 lbs) |

## CHG 2
Technical data

| | |
|---|---|
| Input voltage | 12 V ⎓ |
| Input current | max. 1100 mA |
| DC connection | + ⊙ − |
| Charging voltage | 5 V ⎓ |
| Charging time for full charge at 20 °C | 100 % = approx. 160 min = green |
| Temperature range Operation | 0 °C to 45 °C (32 °F to 113 °F) |
| Storage | -20 °C to 70 °C (-4 °F to 158 °F) |
| Relative air humidity, non-condensing | Operation: 25 % to 95 % Storage: 5 % to 95 % |
| IP protection class according to IEC/EN 60529 | IP2X |
| Dimensions | 175 x 135 x 93 mm (6.89" x 5.31" x 3.66") |
| Weight | approx. 375 g (0.83 lbs) (without power supply unit) |

## CHG 4N
### Technical data

| | |
|---|---|
| Input voltage | 12 V ⎓ |
| Current consumption | 2.5 A |
| Network socket | RJ 45 |
| Network protocol | Media Control Protocol<br>IPv4 (DHCP, manual) / IPv6 |
| Charging bays | 4 |
| Charging voltage per bay | 5 V |
| Charging current per bay | 1 A |
| Charging status indicator | 4 LEDs per bay<br>(red, yellow, green, green) |
| Charging time for full charge<br>    SL Handheld DW<br>    SL Bodypack DW | <br>2 h<br>2 h |
| Operating temperature | 0 °C to 45 °C<br>(32 °F to 113 °F) |
| IP protection class<br>according to IEC/EN 60529 | IP2X |
| Dimensions | 270 x 100 x 102 mm<br>(10.6" x 3.9" x 4") |
| Weight | approx. 1100 g (2.23 lbs) |

## CHG 2W
### Technical data

| | |
|---|---|
| Input voltage | 12 V ⎓ |
| Input current | 1.67 A |
| DC connection | + ⊙ − |
| Charging voltage | 5 V ⎓ |
| Charging current | max. 1 A |
| Compatible devices | SL Boundary 114-S DW<br>SL Tablestand 133-S DW<br>SL Tablestand 153-S DW |
| Charging time for full charge<br>    SL Tablestand 133-S DW<br>    SL Tablestand 153-S DW | <br>on: 5 h / off: 3 h<br>on: 5.5 h / off: 3 h |
| Temperature range<br>    Operation<br><br>    Storage | <br>5 °C to 35 °C<br>(41 °F to 95 °F)<br>-40 °C to 80 °C<br>(-40 °F to 176 °F) |
| Dimensions | 278 x 190 x 10 mm<br>(10.9" x 7.5" x 0.4") |
| Weight | approx. 525 g (1.15 lbs) |

## SL DI 4 XLR
### Technical data

| | |
|---|---|
| Power consumption | 500 mA |
| Powering | 12V DC or 802.3af PoE |
| Phantom powering | P 48 |
| THD, total harmonic distortion | typ. 0.1 % |
| Connection<br>    Audio In:<br>    Ethernet / Dante™:<br>    PowerLink: | 4x XLR3F<br>2x RJ 45 (1x with PoE)<br>2x 2pole connector |
| Compatible Products | SL Rack Receiver DW<br>ewG3 EM 300<br>MEB 114<br>MEG 14-40-L<br>... and others. |
| Dimensions | 219 x 38 x 120 mm<br>(8.63" x 1.50" x 4.74") |
| Weight | approx. 770 g (1.7 lbs) |



| | MME 865-1 | MKE 1 | SL Headmic 1 |
|---|---|---|---|
| Microphone type | | pre-polarized condenser microphone | |
| Sensitivity | 1.6 mV/Pa | 5 mV/Pa | 5 mV/Pa |
| Pick-up pattern | super-cardioid | omni-directional | omni-directional |
| Max. SPL | 152 dB SPL | 142 dB SPL | 142 dB SPL |



| | ME 36 B | MEG 14-40 B | MEG 14-40-L-II B |
|---|---|---|---|
| Microphone type | | pre-polarized condenser microphone | |
| Sensitivity | 18 mV/Pa | 15 mV/Pa | 15 mV/Pa |
| Pick-up pattern | hypercardioid / lobar | cardioid | cardioid |
| Max. SPL | 130 dB SPL | 130 dB SPL | 130 dB SPL |

**The Future
of Audio**