

audio-technica



ESW

Engineered Sound Wireless

DECT Wireless System

Engineered Sound Wireless (ESW)

Simple, Smart, Scalable

Overview

The demand for wireless microphones has grown as a result of the increasing prevalence of videoconferencing and web conferencing. Audio-Technica's Engineered Sound Wireless System is a DECT wireless system that offers simple, smart, and scalable high-quality audio. This system overcomes many challenges of conventional wireless microphones, such as frequency coordination.

Operation is incredibly easy for end users, with microphones ready to use by simply removing them from the charging station. At full charge, the batteries offer all-day operation. Installation is also made easy with a PoE power supply for the receiver and Dante audio output capabilities. Wiring is as simple as connecting a single Cat 5e cable to a PoE switch. This helps streamline the installation process, with no need to worry about having to install multiple antennas. System integrators are able to configure detailed settings to meet a wide variety of end-user needs.

Seamless setup and management is controlled via Audio-Technica's Wireless Manager software, which is capable of managing multiple wireless systems, including UHF wireless systems, from a single screen.

Features

- Automatic DECT-based frequency management
- Up to 192 simultaneous usable channels, Simple setup with Cat 5e cable and 8-channel audio output and Dante support
- Standard mode (96 channels) minimises latency, and HD mode (192 channels) maximises the number of channels
- Selectable RF power output to optimise coverage area
- Compatible with Audio-Technica's Wireless Manager software for centralised management of system settings and operations
- Presets allow transmitters to be customised for multiple applications
- Roaming function allows transmitters to connect to multiple receivers within preconfigured rooms/areas
- Long-lasting internal lithium-ion batteries for all-day transmitter use
- Sound quality optimised for intelligible, crystal-clear audio
- Adjustable high-pass, transmitter gain, and volume for each receiver channel
- AES256 encryption support for superior security
- Compatible with Syslog protocol
- Ability to configure, monitor, and save device settings as projects in Wireless Manager
- DECT RF scan identifies number of available DECT wireless channels via A-T's Wireless Manager software

System elements

ESW-R4180DAN 8ch Receiver

ESW-T4101 Body-Pack Transmitter

ESW-T4102/C510 Handheld Transmitter

ESW-T4106 Boundary Microphone Transmitter

ESW-T4107 Desk Stand Transmitter

ESW-CHG4 Two-Bay Charging Station

ESW-CHG5 Four-Bay Charging Station

Audio-Technica Wireless Manager Software



ESW-R4180DAN
8CH RECEIVER



ESW-T4107 DESK
STAND TRANSMITTER



ESW-T4106
DESK BOUNDARY
MICROPHONE TRANSMITTER



ESW-T4102/C510
HANDHELD TRANSMITTER



ESW-T4101
BODY-PACK
TRANSMITTER



ESW-CHG5
FOUR-BAY CHARGING
STATION



ESW-CHG4
TWO-BAY CHARGING
STATION

Overall system specifications

Operating frequency ⁽¹⁾	DECT Mode 00 (Europe): 1,880 to 1,900 MHz
Dynamic range	> 105 dB (A-weighted), typical
Total harmonic distortion	<1.0%
Operating range ⁽²⁾	Up to 100 m (328') with RF output power Mid
System frequency response ⁽³⁾	Standard: 20 to 20,000 Hz HD mode: 20 to 20,000 Hz
Receiving system	Diversity
Latency (ESW-R4180DAN)	Standard: 16.7 ms typ. HD mode: 24.0 ms typ.
Latency (ESW-R4180LK)	Standard: 16.3 ms typ. HD mode: 23.6 ms typ.
Audio sampling rate	Standard: 24 bits, 48 kHz HD mode: 24 bits, 48 kHz
Encryption system	AES256
Switchable RF outout power ⁽⁴⁾	Max: 250 mW / High: 100 mW / Mid: 30 mW / Low: 10 mW / Min: 2 mW
Maximum simultaneous use ^{(5) (6)}	Standard: 96 channels HD mode: 192 channels

[1] It is set to DECT Mode in accordance with national laws and regulations.

[2] Open range environment with no interfering signals.

[3] Depending on attached microphone element.

[4] Note that transmitting power due to local regulations.

[5] In case of DECT Mode 00/24.

[6] Depending on region and the environment.

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ESW-R4180DAN

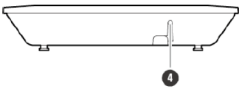
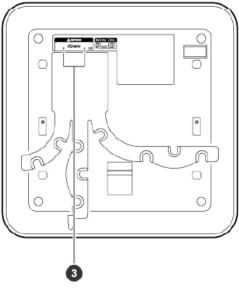
8ch Receiver

- Low-profile white housing that blends in with interior décor
- Onboard LEDs verify link status at a glance
- Included mounting brackets adjust to fit a variety of mounting methods
- Lightweight design for secure installation
- A standard Cat 5e cable supplies 8-channel audio output and Dante support
- Dual network ports for Dante and IP control separation
- Mixed output support for situations with limited input channels
- High-pass filtering and volume for each channel
- Monitoring of transmitter status, audio level, remaining battery time, and other information in A-T Wireless Manager



ESW-R4180DAN specifications

Modulation mode	A-field: $\pi/2$ -BPSK B-field: $\pi/8$ -BPSK
RF sensitivity	< -90 dBm
Network	Dante: 1 Gbps IP control: 100 Mbps
I/O connector	Network/Dante: RJ-45
Power consumption	4.8 W
Power supply	POE (IEEE 802.3af Class 0)
Operating temperature range	-10° C to +50° C
Dimensions	228.6 mm (W) x 228.6 mm (D) x 43.5 mm (H)
Weight (without accessories)	620 g (22 oz)
Included accessory	Bracket



1. Status indicator lights up when powered on. Also shows status of the receiver.
2. Shows link status of the transmitters
3. Network A/B ports for Dante output. Can be used in single cable or split cable mode.
4. Reset button used to check the network mode, reset the network, and factory reset.

ESW-T4101

Body-Pack Transmitter

- Built-in high-quality microphone
- Transmitter neck strap included
- Simple single-button operation
- Lightweight design
- Long-lasting battery for all-day operation
- Compact, sweat-resistant cH-type connectors for use with a variety of Audio-Technica microphones
- Two built-in antennas for stable operation



ESW-T4101 specifications

Frequency response (internal microphone)	20 to 20,000 Hz
Modulation mode	A-field: $\pi/2$ -BPSK B-field: $\pi/4$ -QPSK
Input connection (Audio-Technica cH type)	Four pin locking connector Pin 1: GND Pin 2: MIC DETECTION Pin 3: MIC INPUT Pin 4: DC BIAS +5 V
Battery	Lithium-ion battery LI-220 (included)
Operating temperature range	-5°C to +45°C
Battery life	25 hours ⁽¹⁾
Dimensions	56 mm (W) x 23.5 mm (D) x 90 mm (H)
Weight (with battery)	112.3 g
Included accessory	Neck strap



(1) This varies depending on usage conditions.

ESW-T4102/C510

Handheld Transmitter

- Comes equipped with cardioid dynamic capsule ATW-C510
- Compatible with a wide array of interchangeable Audio-Technica wireless microphone capsules
- Slide-to-mute switch
- Long-lasting battery for all-day operation
- Robust metal design



ESW-T4102/C510 specifications

Modulation mode	A-field: $\pi/2$ -BPSK B-field: $\pi/4$ -QPSK
Microphone capsule	ATW-C510 or ATW compatible capsules
Battery	Lithium-ion battery LI-320 (included)
Operating temperature range	-5°C to +45°C
Battery life	35 hours ⁽¹⁾
Dimensions	ESW-T4102 (without capsule): 188.5 mm long, 37 mm maximum diameter ESW-T4102/C510: 259.5 mm long, 53.7 mm maximum diameter
Weight (with battery)	ESW-T4102 (without capsule): 205 g ESW-T4102/ATW-C510: 334 g
Included accessory	AT8456a Quiet-Flex™ stand clamo (5/8"-27 male to 3/8"-16 female threaded screw adapter)

(1) This varies depending on usage conditions.

Engineered Sound Wireless (ESW)

ESW-T4106

Boundary Microphone Transmitter

- Selectable omnidirectional and cardioid polar patterns
- 2-state RGB LED mute status indicator (7 selectable colors)
- Long-lasting battery for all-day operation
- Transmitter operable while charging via USB-C
- Selectable mute operation (toggle, touch-to-talk, or touch-to-mute)
- Selectable mute or unmute when powered on

ESW-T4106 specifications

Frequency response	Omnidirectional: 20 to 18,000 Hz Cardioid: 20 to 18,000 Hz
Modulation mode	A-field: $\pi/2$ -BPSK B-field: $\pi/4$ -QPSK
Microphone polar pattern	Cardioid. Omnidirectional (selectable)
Battery	Lithium-ion battery LI-220 (included)
Charging time (USB)	Approx. 2 hours 40 minutes ⁽¹⁾
Operating temperature range	-50°C to +45°C
Battery life	22 hours ⁽¹⁾
USB charging connector	USB Type-C (USB 3.0)
Dimensions	90.5 mm (W) x 129.4 mm (D) x 31.9 mm (H)
Weight (with battery)	500 g

(1) This varies depending on usage conditions.



ESW-T4107

Desk Stand Transmitter and gooseneck microphones

- Compatible with ES925 Series gooseneck microphones
- 2-state RGB LED mute status indicator (7 selectable colors)
- Long-lasting battery for all-day operation
- Transmitter operable while charging via USB-C
- Selectable mute operation (toggle, touch-to-talk, or touch-to-mute)
- Selectable mute or unmute when powered on

ESW-T4107 specifications

Modulation mode	A-field: $\pi/2$ -BPSK B-field: $\pi/4$ -QPSK
Microphone	ES Series modular gooseneck microphone-compatible
Battery	Lithium-ion battery LI-220 (included)
Charging time (USB)	Approx. 2 hours 40 minutes ⁽¹⁾
Operating temperature range	-5°C to +45°C
Battery life	17 hours ⁽¹⁾
USB charging connector	USB Type-C (USB 3.0)
Dimensions	90.5 mm (W) x 129.4 mm (D) x 47.4 mm (H)
Weight (with battery)	535 g

(1) This varies depending on usage conditions.



Engineered Sound Wireless (ESW)

ESW-CHG4

Two-Bay Charging Station - **Necessary for Network connection for configuration and monitoring**

- Rapid recharge support (approx. 2 hours for ESW-T4101; approx. 3 hours for ESW-T4102)
- Linking of up to 4 charging stations with just one AC adapter and Cat 5e cable
- Charging status and battery level display in A-T Wireless Manager software
- Microphone hanger included for convenient lavalier microphone storage
- Remote firmware updating on all docked transmitters

ESW-CHG4 specifications

Power supply	12 V DC, 3.0 A
Charging output	When charging one to four transmitters: 4.2 V DC, 1.5 A When charging five or six transmitters: 4.2 V DC, 1.1 A When charging seven or eight transmitters: 4.2 V DC, 0.7 A
Power consumption	When charging two transmitters: 15.6 W When charging eight transmitters in four linked charging stations: 30.6 W
Charging time (ESW-T4101) ⁽¹⁾	When charging one to four transmitters: Approx. 50 minutes (50% charged), approx. 2 hours (100% charged) When charging five or six transmitters: Approx. 1 hour 10 minutes (50% charged), approx. 2 hours 50 minutes (100% charged) When charging seven or eight transmitters: Approx. 1 hour 40 minutes (50% charged), approx. 3 hours 40 minutes (100% charged)
Charging time (ESW-T4102) ⁽¹⁾	When charging one to four transmitters: Approx. 1 hour 20 minutes (50% charged), approx. 3 hours (100% charged) When charging five or six transmitters: Approx. 1 hour 40 minutes (50% charged), approx. 4 hours 10 minutes (100% charged) When charging seven or eight transmitters: Approx. 2 hour 20 minutes (50% charged), approx. 5 hours 20 minutes (100% charged)
Network	IP control: 100 Mbps
Operating temperature range	0°C to 40°C
Dimensions	95 mm (W) x 180 mm (D) x 78.5 mm (H)
Weight	532 g
Included accessories	Link cable, link plate, link plate screws, mic holder
Sold separately	AC adapter (AD-SA1230XA), AC cord

(1) This varies depending on usage conditions.



ESW-CHG5

Four-Bay Charging Station - **Necessary for Network connection for configuration and monitoring**

- Rapid recharge in as little as 2 hours
- Linking of up to 2 charging stations with just one AC adapter and Cat 5e cable
- Charging status and battery level display in A-T Wireless Manager software
- Remote firmware updating on all docked transmitters

ESW-CHG5 specifications

Power supply	12 V DC, 3.0 A
Charging output	When charging one to four transmitters: 4.2 V DC, 1.5 A When charging five or six transmitters: 4.2 V DC, 1.1 A When charging seven or eight transmitters: 4.2 V DC, 0.7 A
Power consumption	When charging four transmitters: 30.6 W
Charging time (ESW-T4106/ESW-T4107) ⁽¹⁾	When charging one to four transmitters: Approx. 50 minutes (50% charged), approx. 2 hours (100% charged) When charging five or six transmitters: Approx. 1 hour 10 minutes (50% charged), approx. 2 hours 50 minutes (100% charged) When charging seven or eight transmitters: Approx. 1 hour 40 minutes (50% charged), approx. 3 hours 40 minutes (100% charged)
Network	IP control: 100 Mbps
Operating temperature range	0°C to 40°C
Dimensions	209.9 mm (W) x 303.9 mm (D) x 65.4 mm (H)
Weight	866 g
Included accessories	Link cable, link plate, link plate screws
Sold separately	AC adapter (AD-SA1230XA), AC cord

(1) This varies depending on usage conditions.



Engineered Sound Wireless (ESW)

LI-220

Battery

- Battery for Body Pack (ESW-T4101) and desktop transmitters (ESW-T4106 and ESW-T4107)

LI-220 specifications

Type	Lithium ion
Output voltage	3.6 V DC
Capacitance	2.200 mAh
Dimensions	39.7 mm (W) × 56.7 mm (D) × 13.5 mm (H) (W x D x H)
Weight	49 g



LI-220

Battery

Available from
Service Part Department

LI-320

Battery

- Battery for handheld transmitter (ESW-T4102)

LI-320 specifications

Type	Lithium ion
Output voltage	3.6 V DC
Capacitance	3.200 mAh
Dimensions	21.4 mm (W) × 74.8 mm (D) × 20.9 mm (H)
Weight	56 g



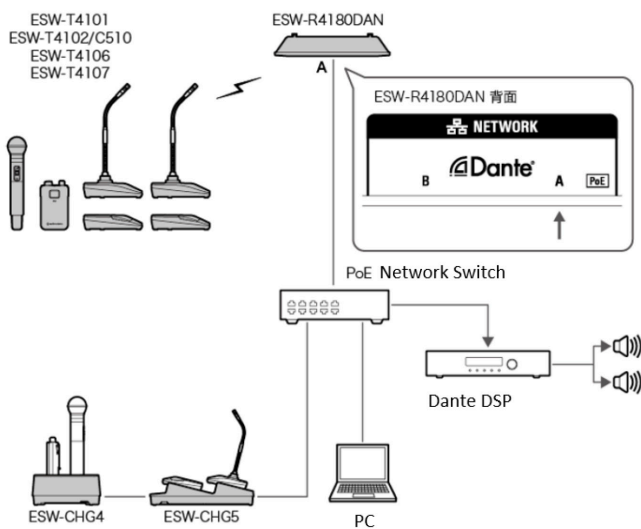
LI-320

Battery

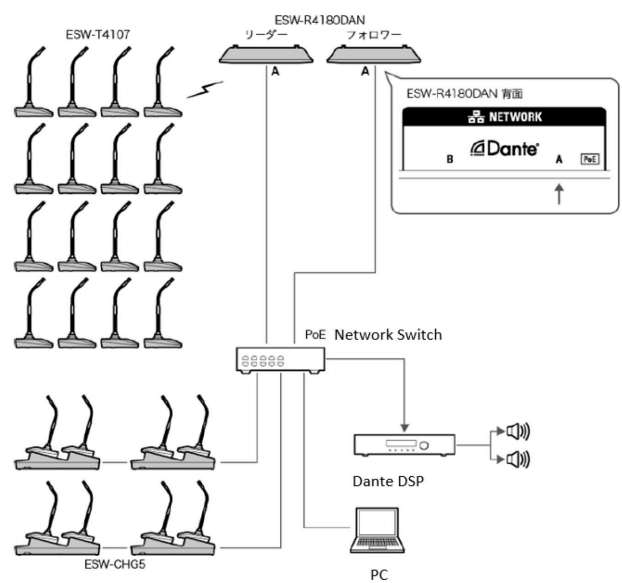
Available from
Service Part Department

System Configuration

ESW-R4180DAN (only one unit connected)
8 channel maximum per unit



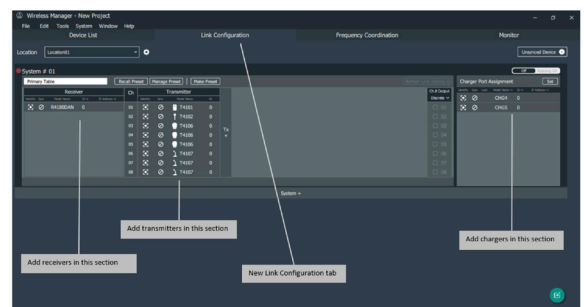
ESW-R4180DAN (multiple units connected)
16 channel maximum with 2 receivers



Audio-Technica Wireless Manager Software

Ver. 2.1.1 or later

- Ability to configure, monitor, and save device settings as projects in Wireless Manager software
- Centralized management (including configuring settings and monitoring) of other Audio-Technica wireless systems
- DECT RF scan for identifying the number of available DECT wireless channels via A-T's Wireless Manager software
- Walk test function for checking coverage area
- Easily exportable equipment lists (CSV format)
- Restore function for recreating currently used system settings





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