



# Evolution Wireless Digital

PDF export of the original HTML instructions



## Contents

1. Preface.....	10
2. Product information.....	11
Products of the EW-D series.....	11
EW-D EM rack receiver.....	12
EW-D SKM-S handheld transmitter.....	13
EW-D SK bodypack transmitter.....	14
Sets available for the EW-D series.....	16
EW-D ME2 SET   Lavalier Set.....	16
EW-D ME3 SET   Headmic Set.....	18
EW-D ME4 SET   Lavalier Set.....	20
EW-D CI1 SET   Instrument Set.....	21
EW-D SK BASE SET   Base Set.....	22
EW-D 835-S SET   Handheld Set.....	24
EW-D SKM-S BASE SET   Base Set.....	26
EW-D ME2/835-S SET   Combo Set.....	28
Products of the EW-DX series.....	30
EW-DX EM 2 rack receiver.....	30
EW-DX EM 2 Dante rack receiver.....	32
EW-DX EM 4 Dante rack receiver.....	33
EW-DX SKM   EW-DX SKM-S handheld transmitter.....	34
EW-DX SK   EW-DX SK 3-PIN bodypack transmitter.....	36
Table stand EW-DX TS 3-pin   EW-DX TS 5-pin.....	38
Sets available for the EW-DX series.....	40
EW-DX 835-S SET   Handheld Set.....	40
EW-DX MKE 2 SET   Lavalier Set.....	42
EW-DX MKE 2-835-S SET   Combo Set.....	44
EW-DX SK-SKM-S BASE SET   Base Set.....	46
Products of the EW-DP series.....	48
EW-DP EK portable receiver.....	49
EW-DP SKP plug-on transmitter.....	50
Sets available for the EW-DP series.....	51
EW-DP ME-2   Lavalier Set.....	51
EW-DP ME-4   Lavalier Set.....	53
EW-DP 835   Handheld Set.....	55
Smart Assist app.....	57



Accessories.....	58
BA 70 rechargeable battery and L 70 USB charger.....	58
CHG 70N-C network-enabled charger.....	60
EW-D ASA antenna splitter.....	62
EW-D AB antenna splitter.....	63
Antennas.....	64
Accessories for rack mounting.....	68
Mounting accessories for EW-DP EK.....	69
Cables for EW-DP EK.....	70
Color Coding Sets.....	71
Frequency ranges.....	72
3. Instruction manual.....	75
EW-D EM rack receiver.....	76
Product overview.....	76
Connecting/disconnecting the receiver to/from the power supply system.....	79
Connecting antennas.....	81
Outputting audio signals.....	83
Installing receivers in a rack.....	84
Switching the receiver on and off.....	87
Lock-off function.....	88
Meaning of the LEDs.....	89
Displays on the receiver's display panel.....	91
Buttons for navigating the menu.....	93
Opening the menu and navigating the menu items.....	94
Using EW-D Color Coding Sets to label transmission paths.....	102
EW-D SKM-S handheld transmitter.....	103
Product overview.....	103
Inserting and removing the batteries/rechargeable batteries.....	105
Replacing the microphone module.....	107
Using EW-D Color Coding Sets to label transmission paths.....	109
Switching the handheld transmitter on and off.....	110
Checking the battery status of the transmitter (Check function).....	111
Identifying the paired receiver (Identify function).....	112
Meaning of the LEDs.....	113
Establishing a connection to the receiver.....	116
Muting the handheld transmitter.....	117
EW-D SK bodypack transmitter.....	118



Product overview.....	118
Inserting and removing the batteries/rechargeable batteries.....	120
Connecting a microphone to the bodypack transmitter.....	122
Connecting an instrument or line source to the bodypack transmitter.....	124
Using EW-D Color Coding Sets to label transmission paths.....	125
Changing the belt clip.....	126
Switching the bodypack transmitter on and off.....	127
Checking the battery status of the transmitter (Check function).....	128
Identifying the paired receiver (Identify function).....	129
Meaning of the LEDs.....	130
Establishing a connection to the receiver.....	133
Muting the bodypack transmitter.....	134
EW-DX EM 2 rack receiver.....	135
Product overview.....	136
Connecting/disconnecting the receiver to/from the power supply system.....	139
Connecting receivers in a network.....	142
Connecting antennas.....	143
Outputting audio signals.....	145
Installing receivers in a rack.....	147
Switching the receiver on and off.....	150
Lock-off function.....	151
Using the headphone output.....	152
Meaning of the LEDs.....	153
Displays on the receiver's display panel.....	155
Buttons for navigating the menu.....	163
Opening the menu and navigating the menu items.....	164
Menu structure.....	165
Setting options in the menu.....	166
System menu item.....	192
Updating the firmware of the receiver.....	204
EW-DX EM 2 Dante rack receiver.....	205
Product overview.....	206
Connecting/disconnecting the receiver to/from the power supply system.....	209
Connecting receivers in a network.....	212
Connecting receivers in a Dante® network.....	213
Connecting antennas.....	219
Outputting audio signals.....	221



Installing receivers in a rack.....	223
Switching the receiver on and off.....	226
Lock-off function.....	227
Using the headphone output.....	228
Meaning of the LEDs.....	229
Displays on the receiver's display panel.....	231
Buttons for navigating the menu.....	239
Opening the menu and navigating the menu items.....	240
Menu structure.....	241
Setting options in the menu.....	242
System menu item.....	268
Updating the firmware of the receiver.....	281
EW-DX EM 4 Dante rack receiver.....	282
Product overview.....	283
Connecting/disconnecting the receiver to/from the power supply system.....	287
Connecting receivers in a network.....	288
Connecting receivers in a Dante® network.....	289
Connecting antennas.....	294
Outputting audio signals.....	297
Installing receivers in a rack.....	299
Switching the receiver on and off.....	301
Lock-off function.....	302
Using the headphone output.....	303
Meaning of the LEDs.....	304
Displays on the receiver's display panel.....	306
Buttons for navigating the menu.....	313
Opening the menu and navigating the menu items.....	314
Menu structure.....	315
Setting options in the menu.....	316
System menu item.....	342
Updating the firmware of the receiver.....	355
EW-DX SKM   EW-DX SKM-S handheld transmitter.....	356
Product overview.....	356
Inserting and removing the batteries/rechargeable batteries.....	358
Replacing the microphone module.....	360
Switching the handheld transmitter on and off.....	362
Checking the battery status of the transmitter (Check function).....	363



Identifying the paired receiver (Identify function).....	364
Meaning of the LEDs.....	365
Establishing a connection to the receiver.....	368
Information on the handheld transmitter’s display.....	369
Buttons for navigating the menu.....	371
Opening the menu and navigating the menu items.....	372
Lock-off function.....	384
Configuring mute mode and muting the handheld transmitter (EW-DX SKM-S only).....	385
Updating the firmware of the transmitter.....	387
EW-DX SK   EW-DX SK 3-PIN bodypack transmitter.....	388
Product overview.....	389
Inserting and removing the batteries/rechargeable batteries.....	391
Connecting a microphone to the bodypack transmitter.....	393
Connecting an instrument or line source to the bodypack transmitter.....	397
Changing the belt clip.....	399
Switching the bodypack transmitter on and off.....	400
Checking the battery status of the transmitter (Check function).....	401
Identifying the paired receiver (Identify function).....	402
Meaning of the LEDs.....	403
Establishing a connection to the receiver.....	406
Information on the bodypack transmitter’s display.....	407
Buttons for navigating the menu.....	409
Opening the menu and navigating the menu items.....	410
Lock-off function.....	423
Configuring mute mode and muting the bodypack transmitter.....	424
Updating the firmware of the transmitter.....	425
Table stand EW-DX TS 3-pin   EW-DX TS 5-pin.....	426
Product overview.....	426
Inserting and removing the BA 40 rechargeable battery.....	428
Charging the table stand.....	429
Meaning of the LEDs.....	431
Connecting a gooseneck microphone.....	433
Switching the table stand on/off.....	434
Establishing a connection to the receiver.....	435
Muting the table stand.....	436
EW-DP EK portable receiver.....	437



Product overview.....	437
Power supply.....	440
Outputting audio signals.....	442
Mounting the receiver / mounting options.....	443
Switching the receiver on and off.....	452
Meaning of the LEDs.....	453
Displays on the receiver's display panel.....	455
Buttons for navigating the menu.....	457
Opening the menu and navigating the menu items.....	458
EW-DP SKP plug-on transmitter.....	468
Product overview.....	468
Power supply.....	471
Using a microSD card.....	473
Attaching an XLR microphone.....	475
Connecting a lavalier microphone.....	476
Switching the plug-on transmitter on and off.....	477
Starting/stopping recording.....	478
MUTE mode.....	479
Meaning of the LEDs.....	480
Establishing a radio link   Synchronizing the receiver and transmitter.....	484
Connecting to the EW-D EM receiver / synchronizing the EW-D EM.....	485
Connecting to the EW-DX EM receivers / synchronizing the EW-DX EM.....	487
Connecting to the EW-DP EK receiver / synchronizing the EW-DP EK.....	489
L 70 USB charger.....	491
Connecting/disconnecting the charger to/from the power supply system.....	491
Charging the rechargeable battery.....	492
CHG 70N-C charger.....	494
Product overview.....	494
Connecting/disconnecting the charger to/from the power supply system.....	496
Connecting a charger in a network.....	498
Cascading chargers.....	500
Charging the rechargeable battery.....	502
Power saving mode.....	504
EW-D ASA antenna splitter.....	505
Product overview.....	505
Connecting/disconnecting the EW-D ASA to/from the power supply system.....	507
Connecting receivers to the EW-D ASA.....	508



Connecting antennas.....	509
Information on antenna amplifiers and cable lengths.....	510
Configuring multi-channel systems.....	511
Installing the EW-D ASA in a rack.....	513
Switching the EW-D ASA on and off.....	514
AWM active directional antenna.....	515
Product overview.....	515
Antenna setup.....	518
Connecting the cable to the antenna.....	519
Recommended cable lengths.....	521
Installing and mounting the antenna.....	522
Setting the gain.....	529
GAIN LED.....	530
Cleaning and maintenance.....	531
4. Frequently asked questions.....	533
Radio and frequencies.....	533
Audio.....	535
Usability.....	537
Accessories.....	541
Smart Assist app.....	543
5. Specifications.....	545
System.....	545
EW-D EM rack receiver.....	547
EW-DX EM 2 rack receiver.....	548
EW-DX EM 2 Dante rack receiver.....	549
EW-DX EM 4 Dante rack receiver.....	550
EW-D SKM-S handheld transmitter.....	551
EW-DX SKM   EW-DX SKM-S handheld transmitter.....	552
EW-D SK bodypack transmitter.....	553
EW-DX SK   EW-DX SK 3-PIN bodypack transmitter.....	554
Table stand EW-DX TS 3-pin   EW-DX TS 5-pin.....	555
EW-DP EK portable receiver.....	556
EW-DP SKP plug-on transmitter receiver.....	557
EW-D ASA antenna splitter.....	558
EW-D AB antenna booster.....	561
AWM active directional antenna.....	562
ADP UHF passive directional antenna (470 – 1075 MHz).....	569



BA 70 rechargeable battery.....	571
L 70 USB charger.....	572
CHG 70N-C charger.....	573
6. Contact.....	575



# 1. Preface

## **PDF export of the original HTML instructions**

This PDF document is an automated export of an interactive set of HTML instructions. It may be the case that not all contents and interactive elements are contained in the PDF as they cannot be presented in this format. Furthermore, automatically generated page breaks may cause coherent contents to be moved slightly. We can therefore only guarantee the completeness of the information in the HTML instructions, and recommend that you use these. You can find these in the download section of the website under [www.sennheiser.com/download](http://www.sennheiser.com/download).



## 2. Product information

All information about the product and available accessories at a glance.

[Products of the EW-D series](#)

[Sets available for the EW-D series](#)

[Products of the EW-DX series](#)

[Sets available for the EW-DX series](#)

[Products of the EW-DP series](#)

[Sets available for the EW-DP series](#)

[Smart Assist app](#)

[Accessories](#)

[Frequency ranges](#)

### Products of the EW-D series



For information about the available **accessories**, see [Accessories](#).

For information about the available **sets**, see [Sets available for the EW-D series](#).

For information about the **frequency ranges**, see [Frequency ranges](#).

You can find technical **specifications** for the series and the individual products under [Specifications](#).

You can find information about **starting up** and **operating** the products under [Instruction manual](#).



## EW-D EM rack receiver



The **EW-D EM** rack receiver is available in the following versions:

**EW-D EM (Q1-6)** | 470.2 – 526 MHz | Art. no. 508800

**EW-D EM (R1-6)** | 520 – 576 MHz | Art. no. 508801

**EW-D EM (R4-9)** | 552 – 607.8 MHz | Art. no. 508802

**EW-D EM (S1-7)** | 606.2 – 662 MHz | Art. no. 508803

**EW-D EM (S4-7)** | 630 – 662 MHz | Art. no. 508804

**EW-D EM (S7-10)** | 662 – 693.8 MHz | Art. no. 508805

**EW-D EM (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508806

**EW-D EM (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508808

**EW-D EM (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508809



You can find more detailed information about the EW-D EM in the following sections:

- **Startup and operation:** [EW-D EM rack receiver](#)
- **Specifications:** [EW-D EM rack receiver](#)



## EW-D SKM-S handheld transmitter



The **EW-D SKM-S** handheld transmitter is available in the following versions:

**EW-D SKM-S (Q1-6)** | 470.2 – 526 MHz | Art. no. 508790

**EW-D SKM-S (R1-6)** | 520 – 576 MHz | Art. no. 508791

**EW-D SKM-S (R4-9)** | 552 – 607.8 MHz | Art. no. 508792

**EW-D SKM-S (S1-7)** | 606.2 – 662 MHz | Art. no. 508793

**EW-D SKM-S (S4-7)** | 630 – 662 MHz | Art. no. 508794

**EW-D SKM-S (S7-10)** | 662 – 693.8 MHz | Art. no. 508795

**EW-D SKM-S (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508796

**EW-D SKM-S (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508798

**EW-D SKM-S (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508799



You can find more detailed information about the EW-D SKM-S in the following sections:

- **Startup and operation:** [EW-D SKM-S handheld transmitter](#)
- **Specifications:** [EW-D SKM-S handheld transmitter](#)
- **Compatible microphone modules:** [Replacing the microphone module](#)



## EW-D SK bodypack transmitter



The **EW-D SK** bodypack transmitter is available in the following versions:

**EW-D SK (Q1-6)** | 470.2 – 526 MHz | Art. no. 508780

**EW-D SK (R1-6)** | 520 – 576 MHz | Art. no. 508781

**EW-D SK (R4-9)** | 552 – 607.8 MHz | Art. no. 508782

**EW-D SK (S1-7)** | 606.2 – 662 MHz | Art. no. 508783

**EW-D SK (S4-7)** | 630 – 662 MHz | Art. no. 508784

**EW-D SK (S7-10)** | 662 – 693.8 MHz | Art. no. 508785

**EW-D SK (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508786

**EW-D SK (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508788

**EW-D SK (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508789



You can find more detailed information about the EW-D SK in the following sections:

- **Startup and operation:** [EW-D SK bodypack transmitter](#)
- **Specifications:** [EW-D SK bodypack transmitter](#)
- **Compatible microphones:** [Connecting a microphone to the bodypack transmitter](#)



## Sets available for the EW-D series

Related information

[EW-D ME2 SET | Lavalier Set](#)

[EW-D ME3 SET | Headmic Set](#)

[EW-D ME4 SET | Lavalier Set](#)

[EW-D CI1 SET | Instrument Set](#)

[EW-D SK BASE SET | Base Set](#)

[EW-D 835-S SET | Handheld Set](#)

[EW-D SKM-S BASE SET | Base Set](#)

[EW-D ME2/835-S SET | Combo Set](#)

### EW-D ME2 SET | Lavalier Set



The set consists of the following components:

- **EW-D EM** rack receiver
- **EW-D SK** bodypack transmitter
- **ME 2** lavalier microphone

The set is available in the following versions:

**EW-D ME2 SET (Q1-6)** | 470.2 – 526 MHz | Art. no. 508700

**EW-D ME2 SET (R1-6)** | 520 – 576 MHz | Art. no. 508701

**EW-D ME2 SET (R4-9)** | 552 – 607.8 MHz | Art. no. 508702

**EW-D ME2 SET (S1-7)** | 606.2 – 662 MHz | Art. no. 508703

**EW-D ME2 SET (S4-7)** | 630 – 662 MHz | Art. no. 508704

**EW-D ME2 SET (S7-10)** | 662 – 693.8 MHz | Art. no. 508705



**EW-D ME2 SET (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508706

**EW-D ME2 SET (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508708

**EW-D ME2 SET (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508709



You can find more detailed information about the set in the following sections:

- **Startup and operation:** [Instruction manual](#)
- **Specifications:** [Specifications](#)



## EW-D ME3 SET | Headmic Set



The set consists of the following components:

- **EW-D EM** rack receiver
- **EW-D SK** bodypack transmitter
- **ME 3** lavalier microphone

The set is available in the following versions:

**EW-D ME3 SET (Q1-6)** | 470.2 – 526 MHz | Art. no. 508710

**EW-D ME3 SET (R1-6)** | 520 – 576 MHz | Art. no. 508711

**EW-D ME3 SET (R4-9)** | 552 – 607.8 MHz | Art. no. 508712

**EW-D ME3 SET (S1-7)** | 606.2 – 662 MHz | Art. no. 508713

**EW-D ME3 SET (S4-7)** | 630 – 662 MHz | Art. no. 508714

**EW-D ME3 SET (S7-10)** | 662 – 693.8 MHz | Art. no. 508715

**EW-D ME3 SET (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508716

**EW-D ME3 SET (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508718

**EW-D ME3 SET (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508719



You can find more detailed information about the set in the following sections:

- **Startup and operation:** [Instruction manual](#)
- **Specifications:** [Specifications](#)



## EW-D ME4 SET | Lavalier Set



The set consists of the following components:

- **EW-D EM** rack receiver
- **EW-D SK** bodypack transmitter
- **ME 4** lavalier microphone

The set is available in the following versions:

**EW-D ME4 SET (Q1-6)** | 470.2 – 526 MHz | Art. no. 508720

**EW-D ME4 SET (R1-6)** | 520 – 576 MHz | Art. no. 508721

**EW-D ME4 SET (R4-9)** | 552 – 607.8 MHz | Art. no. 508722

**EW-D ME4 SET (S1-7)** | 606.2 – 662 MHz | Art. no. 508723

**EW-D ME4 SET (S4-7)** | 630 – 662 MHz | Art. no. 508724

**EW-D ME4 SET (S7-10)** | 662 – 693.8 MHz | Art. no. 508725

**EW-D ME4 SET (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508726

**EW-D ME4 SET (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508728

**EW-D ME4 SET (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508729



You can find more detailed information about the set in the following sections:

- **Startup and operation:** [Instruction manual](#)
- **Specifications:** [Specifications](#)



## EW-D CI1 SET | Instrument Set



The set consists of the following components:

- **EW-D EM** rack receiver
- **EW-D SK** bodypack transmitter
- **CI 1** lavalier microphone

The set is available in the following versions:

**EW-D CI1 SET (Q1-6)** | 470.2 – 526 MHz | Art. no. 508730

**EW-D CI1 SET (R1-6)** | 520 – 576 MHz | Art. no. 508731

**EW-D CI1 SET (R4-9)** | 552 – 607.8 MHz | Art. no. 508732

**EW-D CI1 SET (S1-7)** | 606.2 – 662 MHz | Art. no. 508733

**EW-D CI1 SET (S4-7)** | 630 – 662 MHz | Art. no. 508734

**EW-D CI1 SET (S7-10)** | 662 – 693.8 MHz | Art. no. 508735

**EW-D CI1 SET (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508736

**EW-D CI1 SET (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508738

**EW-D CI1 SET (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508739



You can find more detailed information about the set in the following sections:

- **Startup and operation:** [Instruction manual](#)
- **Specifications:** [Specifications](#)



## EW-D SK BASE SET | Base Set



The set consists of the following components:

- **EW-D EM** rack receiver
- **EW-D SK** bodypack transmitter

The set is available in the following versions:

**EW-D SK BASE SET (Q1-6)** | 470.2 – 526 MHz | Art. no. 508740

**EW-D SK BASE SET (R1-6)** | 520 – 576 MHz | Art. no. 508741

**EW-D SK BASE SET (R4-9)** | 552 – 607.8 MHz | Art. no. 508742

**EW-D SK BASE SET (S1-7)** | 606.2 – 662 MHz | Art. no. 508743

**EW-D SK BASE SET (S4-7)** | 630 – 662 MHz | Art. no. 508744

**EW-D SK BASE SET (S7-10)** | 662 – 693.8 MHz | Art. no. 508745

**EW-D SK BASE SET (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508746

**EW-D SK BASE SET (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508748

**EW-D SK BASE SET (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508749



You can find more detailed information about the set in the following sections:

- **Startup and operation:** [Instruction manual](#)
- **Specifications:** [Specifications](#)



## EW-D 835-S SET | Handheld Set



The set consists of the following components:

- **EW-D EM** rack receiver
- **EW-D SKM-S** handheld transmitter
- **MMD 835** microphone module

The set is available in the following versions:

**EW-D 835-S SET (Q1-6)** | 470.2 – 526 MHz | Art. no. 508750

**EW-D 835-S SET (R1-6)** | 520 – 576 MHz | Art. no. 508751

**EW-D 835-S SET (R4-9)** | 552 – 607.8 MHz | Art. no. 508752

**EW-D 835-S SET (S1-7)** | 606.2 – 662 MHz | Art. no. 508753

**EW-D 835-S SET (S4-7)** | 630 – 662 MHz | Art. no. 508754

**EW-D 835-S SET (S7-10)** | 662 – 693.8 MHz | Art. no. 508755

**EW-D 835-S SET (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508756

**EW-D 835-S SET (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508758

**EW-D 835-S SET (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508759



You can find more detailed information about the set in the following sections:

- **Startup and operation:** [Instruction manual](#)
- **Specifications:** [Specifications](#)



## EW-D SKM-S BASE SET | Base Set



The set consists of the following components:

- **EW-D EM** rack receiver
- **EW-D SKM-S** handheld transmitter

The set is available in the following versions:

**EW-D SKM-S BASE SET (Q1-6)** | 470.2 – 526 MHz | Art. no. 508740

**EW-D SKM-S BASE SET (R1-6)** | 520 – 576 MHz | Art. no. 508741

**EW-D SKM-S BASE SET (R4-9)** | 552 – 607.8 MHz | Art. no. 508742

**EW-D SKM-S BASE SET (S1-7)** | 606.2 – 662 MHz | Art. no. 508743

**EW-D SKM-S BASE SET (S4-7)** | 630 – 662 MHz | Art. no. 508744

**EW-D SKM-S BASE SET (S7-10)** | 662 – 693.8 MHz | Art. no. 508745

**EW-D SKM-S BASE SET (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508746

**EW-D SKM-S BASE SET (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508748

**EW-D SKM-S BASE SET (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508749



You can find more detailed information about the set in the following sections:

- **Startup and operation:** [Instruction manual](#)
- **Specifications:** [Specifications](#)



## EW-D ME2/835-S SET | Combo Set



The set consists of the following components:

- **EW-D EM** rack receiver
- **EW-D SK** bodypack transmitter
- **EW-D SKM-S** handheld transmitter
- **ME 2** lavalier microphone
- **MMD 835** microphone module

The set is available in the following versions:

**EW-D ME2/835-S SET (Q1-6)** | 470.2 – 526 MHz | Art. no. 508770

**EW-D ME2/835-S SET (R1-6)** | 520 – 576 MHz | Art. no. 508771

**EW-D ME2/835-S SET (R4-9)** | 552 – 607.8 MHz | Art. no. 508772

**EW-D ME2/835-S SET (S1-7)** | 606.2 – 662 MHz | Art. no. 508773

**EW-D ME2/835-S SET (S4-7)** | 630 – 662 MHz | Art. no. 508774

**EW-D ME2/835-S SET (S7-10)** | 662 – 693.8 MHz | Art. no. 508775

**EW-D ME2/835-S SET (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508776

**EW-D ME2/835-S SET (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508778

**EW-D ME2/835-S SET (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508779



You can find more detailed information about the set in the following sections:

- **Startup and operation:** [Instruction manual](#)
- **Specifications:** [Specifications](#)



**EW-DP 835 SET (U1/5)** | 823.2 – 831.8 MHz & 863.2 – 864.8 MHz | Art. no. 508736

**EW-DP 835 SET (V3-4)** | 925.2 – 937.3 MHz | Art. no. 508738

**EW-DP 835 SET (Y1-3)** | 1785.2 – 1799.8 MHz | Art. no. 508739



You can find more detailed information about the set in the following sections:

- **Startup and operation:** [Instruction manual](#)
- **Specifications:** [Specifications](#)



## Smart Assist app

You can operate your products easily and intuitively using the **Smart Assist** app for iOS and Android.

You can make all device settings in the app and access other functions that are not available on the devices themselves.



The app offers you the following benefits:

- Use all products easily and intuitively
- Update the firmware of all devices
- Easily configure multi-channel systems with automatic frequency setup
- Assign names and color labels to wireless links
- Get tips and support



## Accessories

Related information

[BA 70 rechargeable battery and L 70 USB charger](#)

[CHG 70N-C network-enabled charger](#)

[EW-D ASA antenna splitter](#)

[EW-D AB antenna splitter](#)

[Antennas](#)

[Accessories for rack mounting](#)

[Mounting accessories for EW-DP EK](#)

[Cables for EW-DP EK](#)

[Color Coding Sets](#)

### BA 70 rechargeable battery and L 70 USB charger



**BA 70** | Rechargeable battery | Art. no. 508860

**L 70 USB** | Charger | Art. no. 508861

**EW-D CHARGING SET** | L 70 USB charger with two BA 70 rechargeable batteries | Art. no. 508862



You can find more detailed information about the BA 70 rechargeable battery and the L 70 USB charger in the following sections:

- **Startup and operation:** [L 70 USB charger](#)
- **Specifications:** [BA 70 rechargeable battery](#) | [L 70 USB charger](#)



## CHG 70N-C network-enabled charger



**CHG 70N-C** | Charger | Art. no. 700332



**CHG 70N-C + PSU KIT** | CHG 70N-C charger with NT 12-35 CS power supply unit | Art. no. 700333



You can find more detailed information about the CHG 70N-C in the following sections:

- **Startup and operation:** [CHG 70N-C charger](#)
- **Specifications:** [BA 70 rechargeable battery](#) | [CHG 70N-C charger](#)



## EW-D ASA antenna splitter



### EW-D ASA active antenna splitter

Product versions:

**EW-D ASA (Q-R-S)** | 470 – 694 MHz | Art. no. 508879

**EW-D ASA CN/ANZ (Q-R-S)** | 470 – 694 MHz | Art. no. 508998

**EW-D ASA (T-U-V-W)** | 694 – 1075 MHz | Art. no. 508880

**EW-D ASA (X-Y)** | 1350 – 1805 MHz | Art. no. 508881



You can find more detailed information about the EW-D ASA in the following sections:

- **Startup and operation:** [EW-D ASA antenna splitter](#)
- **Specifications:** [EW-D ASA antenna splitter](#)



## EW-D AB antenna splitter



### EW-D ASA active antenna splitter

Product versions:

**EW-D AB (Q)** | 470 – 550 MHz | Art. no. 508873

**EW-D AB (R)** | 520 – 608 MHz | Art. no. 508874

**EW-D AB (S)** | 606 – 694 MHz | Art. no. 508875

**EW-D AB (U)** | 823 – 865 MHz | Art. no. 508876

**EW-D AB (V)** | 902 – 960 MHz | Art. no. 508877

**EW-D AB (Y)** | 1785 – 1805 MHz | Art. no. 508878



You can find more detailed information about the EW-D AB in the following sections:

- **Use:** [Information on antenna amplifiers and cable lengths](#)
- **Specifications:** [EW-D AB antenna booster](#)



## Antennas

### Rod antennas



Product versions:

**Half Wave Dipole (Q)** | 470 – 550 MHz | Art. no. 508868

**Half Wave Dipole (R)** | 520 – 608 MHz | Art. no. 508869

**Half Wave Dipole (S)** | 606 – 694 MHz | Art. no. 508870

**Half Wave Dipole (U)** | 823 – 865 MHz | Art. no. 508871

**Half Wave Dipole (V)** | 902 – 960 MHz | Art. no. 508966

**Half Wave Dipole (Y)** | 1785 – 1805 MHz | Art. no. 508872



## AWM active directional antenna



Product versions:

**AWM UHF I** | 470 – 694 MHz | Art. no. 508865

**AWM UHF II** | 823 – 1075 MHz | Art. no. 508866

**AWM 1G8** | 1785 – 1805 MHz | Art. no. 508867



You can find more detailed information about the AWM antenna in the following sections:

- **Startup and operation:** [AWM active directional antenna](#)
- **Specifications:** [AWM active directional antenna](#)



### ADP UHF passive directional antenna (470 – 1075 MHz)



ADP UHF | 470 – 1075 MHz | Art. no. 508863



Specifications: [ADP UHF passive directional antenna \(470 – 1075 MHz\)](#)



**AD 1800 passive directional antenna**



**AD 1800** | 1400 – 2400 MHz | Art. no. 504916



## Accessories for rack mounting

### GA 3 rack mount kit

19" rack adapter for mounting the EW-D EM, EW-DX EM 2 or EW-D ASA in a 19" rack.

Art. no. 503167



### AM 2 antenna front mount kit

Antenna front mount kit for installing antenna connections on the front of the rack when using the EW-D EM, EW-DX EM 2 or EW-D ASA together with the GA 3 rack mount kit.

Art. no. 009912





## Mounting accessories for EW-DP EK



Product versions:

**Mounting plate (single)** | Art. no. 588188

**Mounting plate set** | Art. no. 700005



Mounting kit for attaching the EW-DP EK portable receiver to cameras, cages or sound bags.

- **Startup and operation:** [EW-DP EK portable receiver](#)



## Cables for EW-DP EK



**CL 35** | 3.5 mm jack cable | Art no. 586365

**CL 35-Y** | 3.5 mm Y-cable | Art. no. 700061

**CL 35 XLR** | 3.5 mm XLR cable | Art. no. 700062

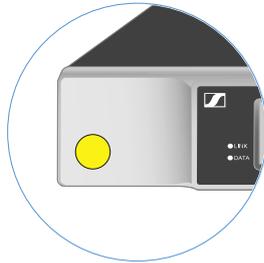


3.5 mm jack cable, 3.5 mm Y-cable and 3.5 mm XLR cable for connecting one or more EW-DP EK units to a camera.

- **Startup and operation:** [EW-DP EK portable receiver](#)



## Color Coding Sets



EM



SKM-S



SK

**EW-D COLOR CODING SET** | For EM, SKM-S, SK | Art. no. 508989

**EW-D SK COLOR CODING** | For SK | Art. no. 508990

**EW-D SKM COLOR CODING** | For SKM-S | Art. no. 508991

**EW-D EM COLOR CODING** | For EM | Art. no. 508992



[Using EW-D Color Coding Sets to label transmission paths](#)



## Frequency ranges



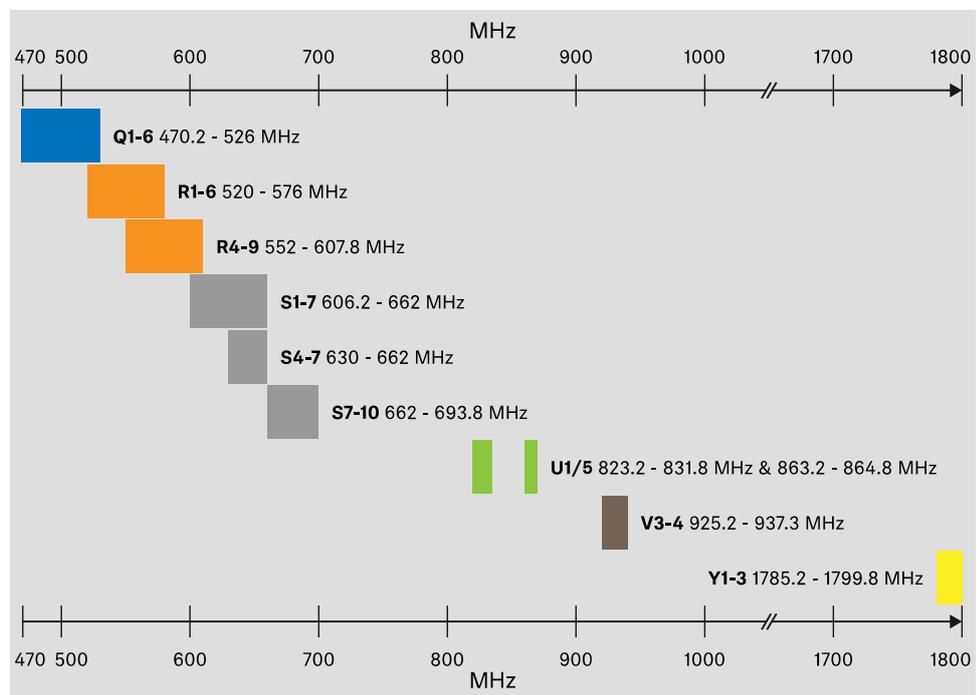
Frequency tables with the factory presets for all available frequency ranges can be found in the download area of the Sennheiser website at:

[sennheiser.com/download](https://www.sennheiser.com/download)

- Enter **EW-D**, **EW-DX** or **EW-DP** in the search bar to show the frequency tables.

### EW-D | EW-DP

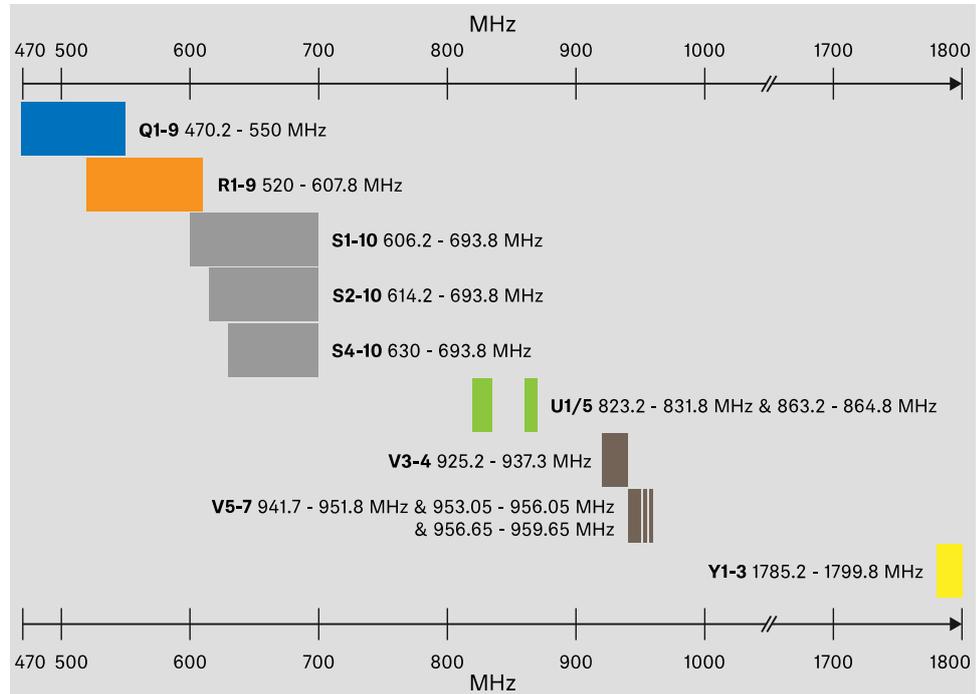
The products **EW-D EM**, **EW-D SKM-S**, **EW-D SK** and **EW-DP EK** are available in the following frequency ranges:





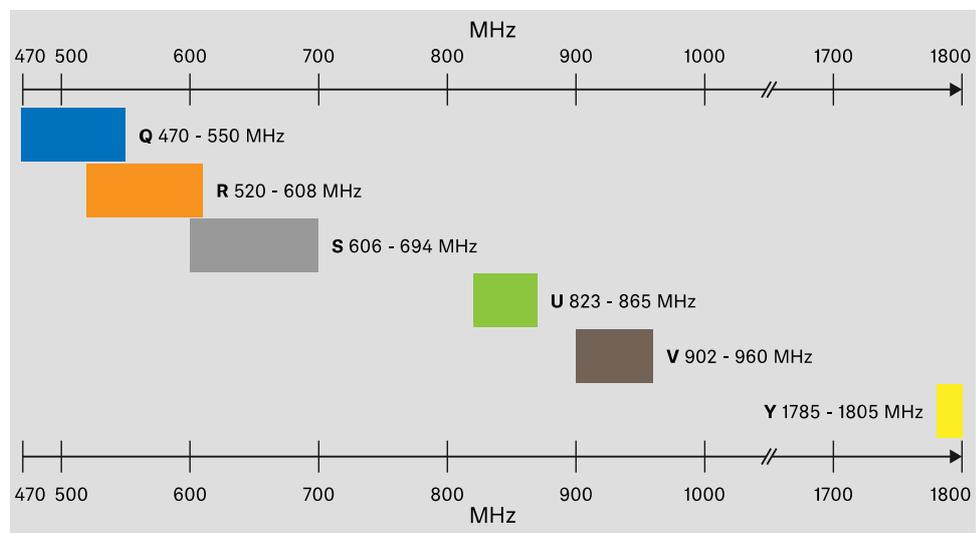
## EW-DX

The products **EW-DX EM 2**, **EW-DX SKM**, **EW-DX SKM-S**, **EW-DX SK** and **EW-D SK 3-PIN** are available in the following frequency ranges:



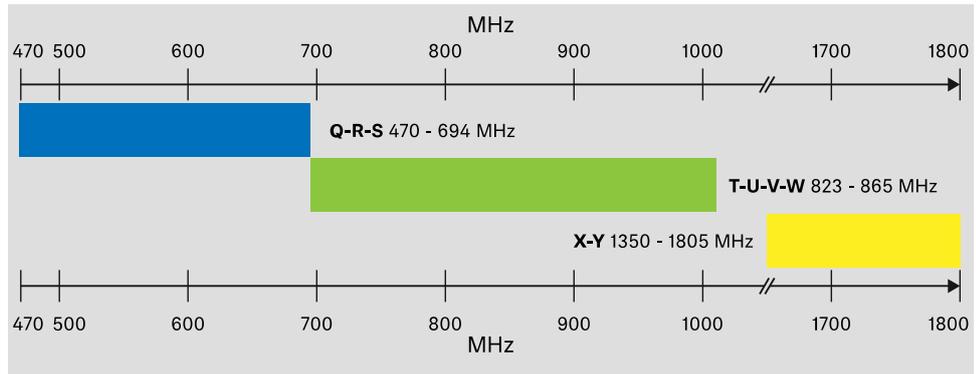
## Accessories

The **EW-D AB** antenna booster and the **Half Wave Dipole** rod antennas are available in the following frequency ranges:





The **EW-D ASA** antenna splitter is available in the following frequency ranges:





## 3. Instruction manual

Starting up and operating devices of the Evolution Wireless Digital series.

Products of the EW-D series

[EW-D EM rack receiver](#)

[EW-D SKM-S handheld transmitter](#)

[EW-D SK bodypack transmitter](#)

Products of the EW-DX series

[EW-DX EM 2 rack receiver](#)

[EW-DX EM 2 Dante rack receiver](#)

[EW-DX EM 4 Dante rack receiver](#)

[EW-DX SKM | EW-DX SKM-S handheld transmitter](#)

[EW-DX SK | EW-DX SK 3-PIN bodypack transmitter](#)

[Table stand EW-DX TS 3-pin | EW-DX TS 5-pin](#)

Products of the EW-DP series

[EW-DP EK portable receiver](#)

[EW-DP SKP plug-on transmitter](#)

Establishing a radio link and synchronizing devices / Compatibility between EW-D, EW-DX and EW-DP

[Establishing a radio link | Synchronizing the receiver and transmitter](#)

Accessories

[L 70 USB charger](#)

[CHG 70N-C charger](#)

[EW-D ASA antenna splitter](#)

[AWM active directional antenna](#)

Cleaning and maintenance

[Cleaning and maintenance](#)



## EW-D EM rack receiver

### Product overview

Connecting/disconnecting the receiver to/from the power supply system

Connecting antennas

Outputting audio signals

Installing receivers in a rack

Switching the receiver on and off

Lock-off function

Meaning of the LEDs

Displays on the receiver's display panel

Buttons for navigating the menu

Opening the menu and navigating the menu items

GAIN menu item

AF OUT menu item

MUTE LOCK menu item

AUTO SCAN menu item

CHANNEL menu item

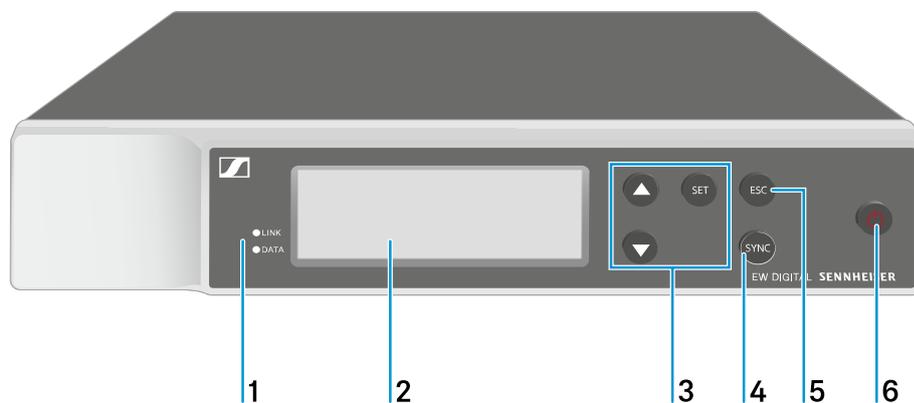
TUNE menu item

RESET menu item

Using EW-D Color Coding Sets to label transmission paths

## Product overview

### Front



**1** LINK and DATA LEDs to indicate connection status and Bluetooth status

- See [Meaning of the LEDs](#)



2 Display for status information and operating menu

- See [Displays on the receiver's display panel](#)

3 UP/DOWN/SET menu buttons for navigating the operating menu

- See [Buttons for navigating the menu](#)

4 SYNC button

- See [Establishing a radio link | Synchronizing the receiver and transmitter](#)

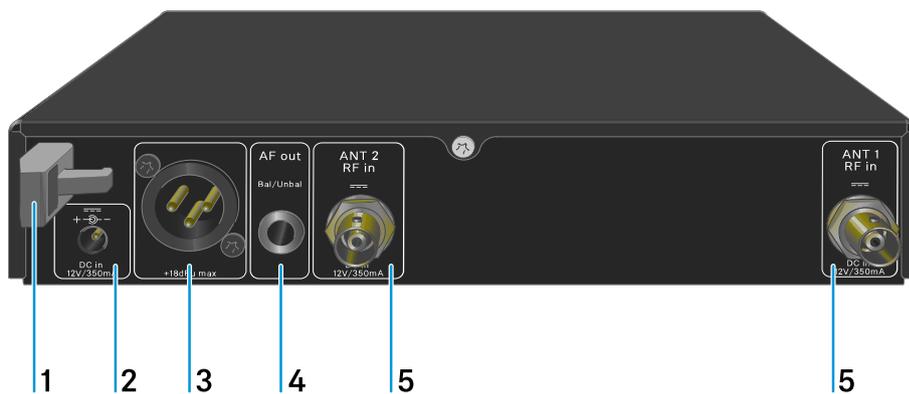
5 ESC button for canceling an action in the menu

- See [Buttons for navigating the menu](#)

6 ON/OFF button for switching the device on and off

- See [Switching the receiver on and off](#)

## Back



1 Strain relief for the connection cable of the power supply unit

- See [Connecting/disconnecting the receiver to/from the power supply system](#)



**2 DC in** connection socket for the power supply unit

- See [Connecting/disconnecting the receiver to/from the power supply system](#)

**3 XLR-3 socket AF out Bal** for audio output

- See “[Outputting audio signals](#)”

**4 6.3 mm jack socket AF out Unbal** for audio output

- See [Outputting audio signals](#)

**5 BNC sockets ANT 1 RF in and ANT 2 RF in** for antenna inputs

- See [Connecting antennas](#)

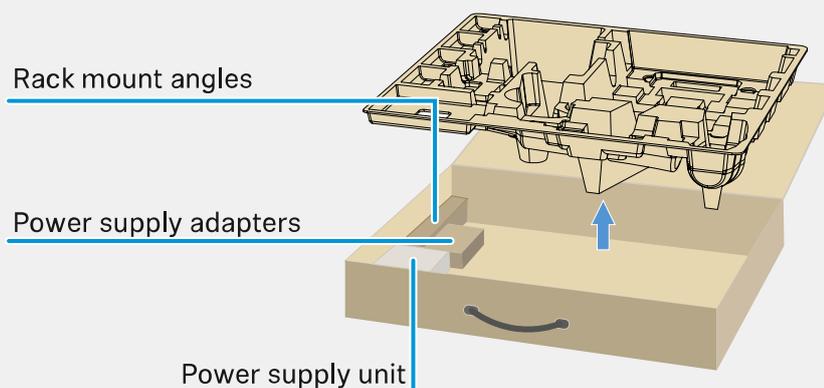


## Connecting/disconnecting the receiver to/from the power supply system

Use only the supplied power supply unit. It is designed for your receiver and ensures safe operation.



You will find the power supply unit and the country adapters in the packaging under the tray:

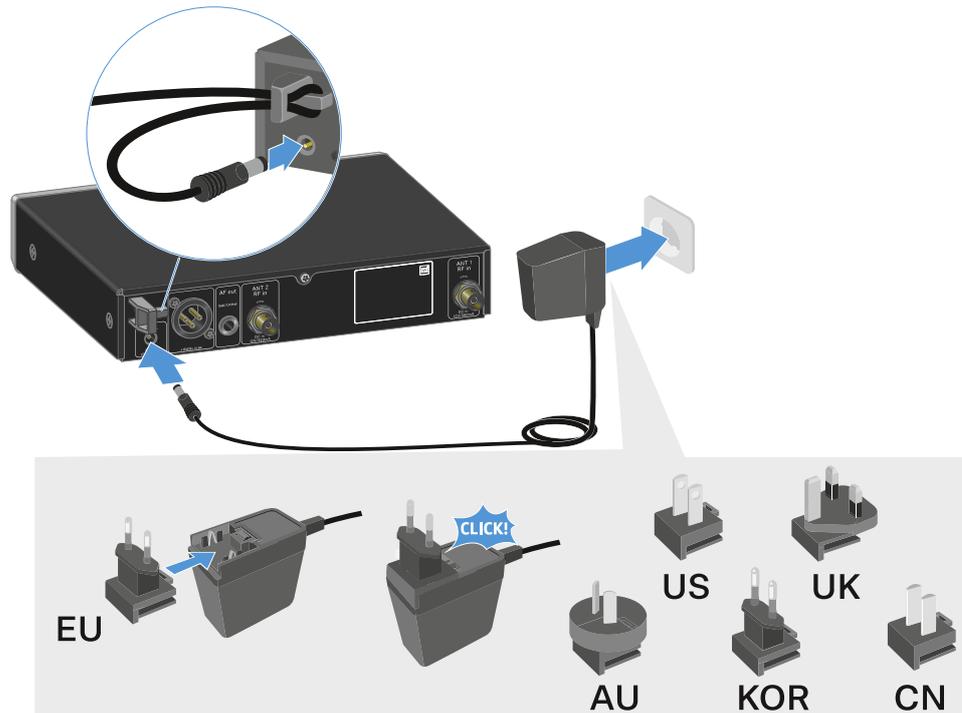


### To connect the receiver to the power supply system:

- ▷ Insert the plug of the power supply unit into the **DC in** socket on the receiver.
- ▷ Pass the cable of the power supply unit through the strain relief.



- ▷ Slide the supplied country adapter onto the power supply unit.
- ▷ Plug the power supply unit into the wall socket.



**To completely disconnect the receiver from the power supply system:**

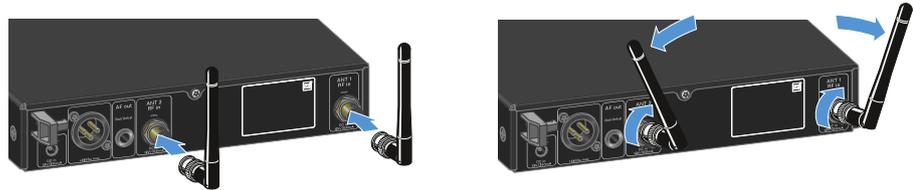
- ▷ Unplug the power supply unit from the wall socket.
- ▷ Unplug the power supply unit from the **DC in** socket on the receiver.



## Connecting antennas

### To connect the supplied rod antennas:

- ▷ Connect the antennas to the two antenna inputs on the receiver as shown in the figure.
- ▷ Slightly angle the antennas to the left and right as shown in the figure.

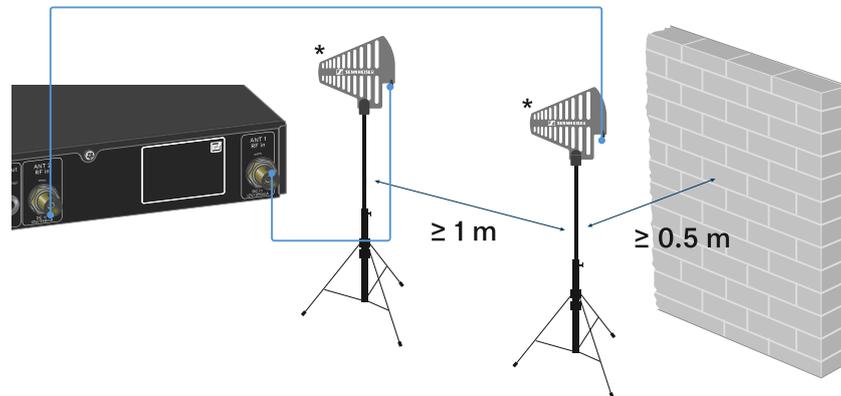


If you are using more than one receiver, we recommend using remote antennas and possibly the [EW-D ASA antenna splitter](#) ([EW-D ASA antenna splitter](#)).

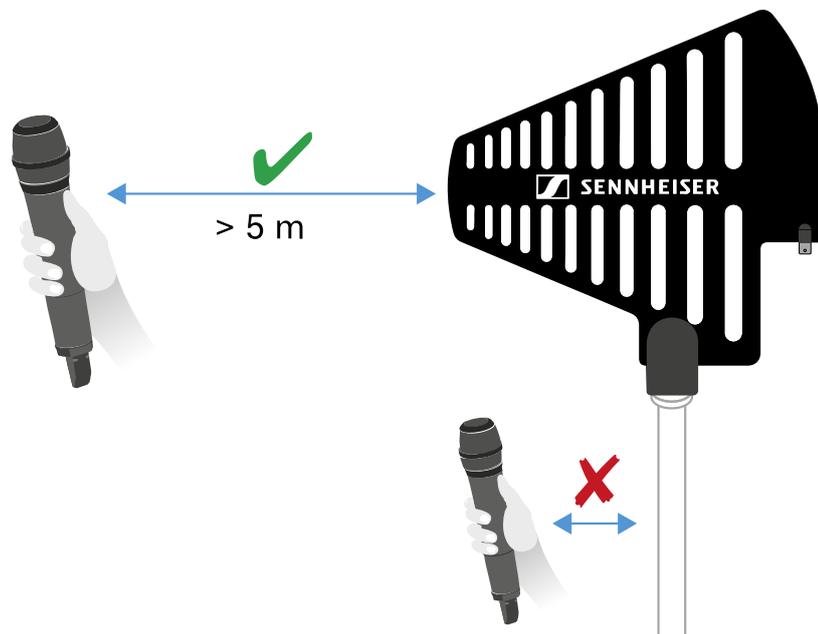


**To connect remote antennas:**

- ▷ Connect the antennas to the two antenna inputs on the receiver as shown in the figure.



- ▷ Observe the specified minimum spacing.
- ▷ Observe the specified minimum spacing to the transmitters.



**\*Recommended antennas:**

- ADP UHF | 470 – 1075 MHz
- AD 1800 | 1400 – 2400 MHz



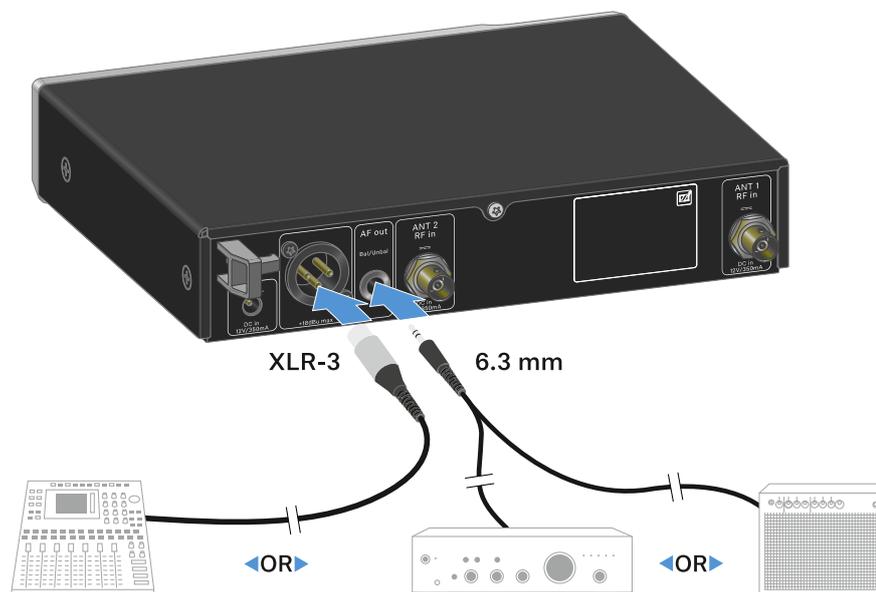
If you are using more than one receiver, we recommend using remote antennas and possibly the EW-D ASA antenna splitter ([EW-D ASA antenna splitter](#)).



## Outputting audio signals

The EW-D EM has a balanced XLR-3M output socket and an unbalanced 6.3 mm jack output socket.

- ▷ Always use only one of the two output sockets.



### To connect an XLR cable:

- ▷ Plug the XLR cable into the **AF out Bal** socket on the EW-D EM.

### To connect a jack cable:

- ▷ Plug the jack cable into the **AF out Unbal** socket on the EW-D EM.

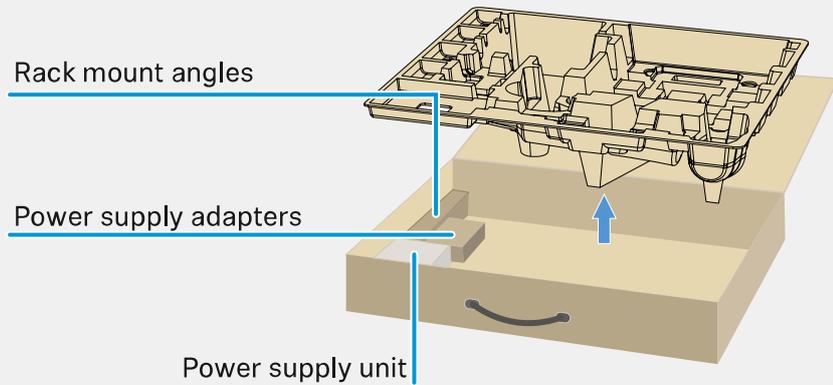


## Installing receivers in a rack

Observe the following instructions when mounting the receiver in a rack.



The mounting brackets for installing the receiver in the rack can be found in the packaging under the tray:



### NOTICE



#### Rack mounting poses risks!

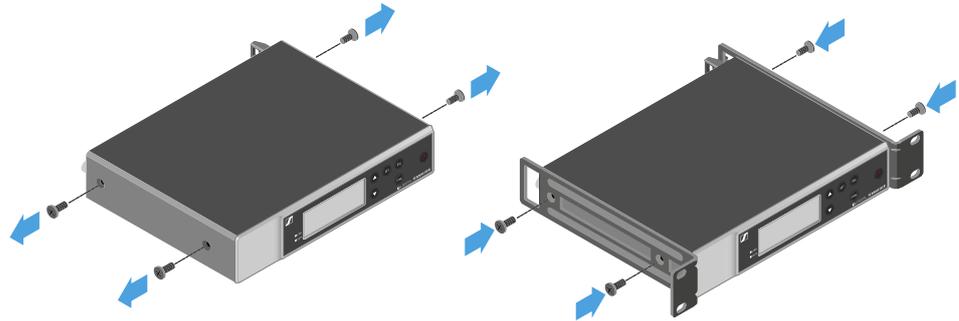
When installing the device in a closed 19" rack or multi-rack assembly, please consider that, during operation, the ambient temperature, the mechanical load and the electrical potentials will be different from those of devices which are not mounted into a rack.

- ▷ Make sure that the ambient temperature within the rack does not exceed the permissible temperature limit stated in the specifications. See ([Specifications](#)).
- ▷ Ensure sufficient ventilation; if necessary, provide additional ventilation.
- ▷ Make sure that the mechanical load of the rack is even.
- ▷ When connecting to the power supply system, observe the information indicated on the type plate. Avoid overloading the circuits. If necessary, provide overcurrent protection.
- ▷ When mounting in a rack, please note that intrinsically harmless leakage currents of the individual power supply units may accumulate, thereby exceeding the permissible limit value. As a remedy, ground the rack via an additional ground connection.

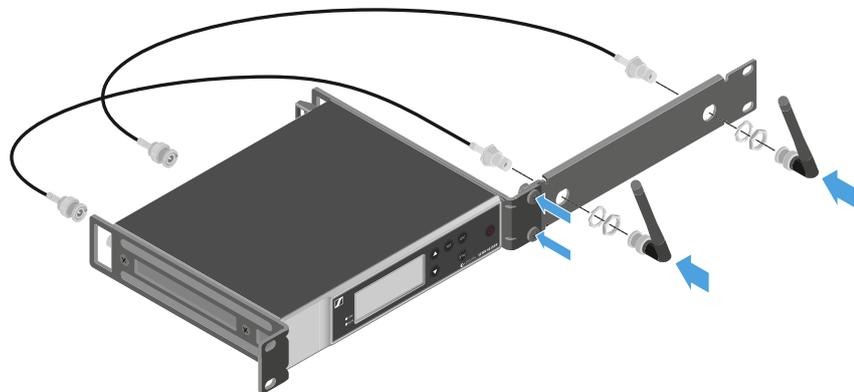


**Mounting a single receiver in a rack:**

- ▷ Connect the mounting brackets to the sides of the receiver as shown.



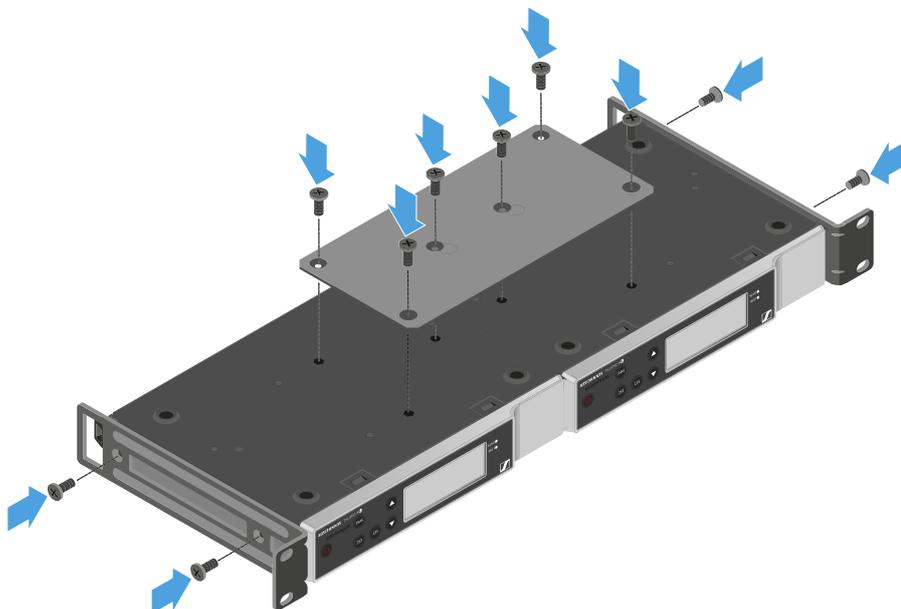
- ▷ Attach the front panel as shown.
- ▷ If desired, attach the antennas to the front panel as shown. This requires the optional AM 2 antenna front mount kit (see [Accessories for rack mounting](#)).





### Mounting two receivers side by side in a rack

- ▷ Place both receivers upside down and side by side on an even surface.
- ▷ Tighten the jointing plate as shown.
- ▷ Attach the mounting brackets as shown.

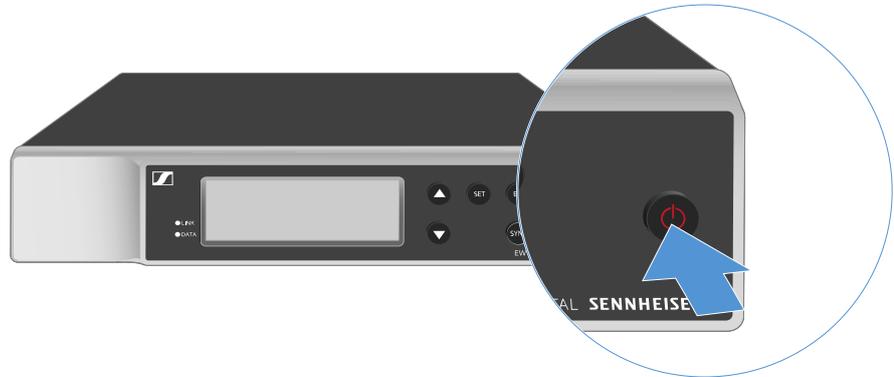




## Switching the receiver on and off

### To switch the receiver on:

- ▷ Short-press the **ON/OFF** button.
  - ➡ The receiver switches on.



### To switch the receiver to standby mode:

- ▷ If necessary, deactivate the lock-off function (see [Lock-off function](#)).
- ▷ Hold down the **ON/OFF** button until the display switches off.

### To switch the receiver off completely:

- ▷ Disconnect the receiver from the power supply system by unplugging the power supply unit from the wall socket.



## Lock-off function

### To activate the key lock:

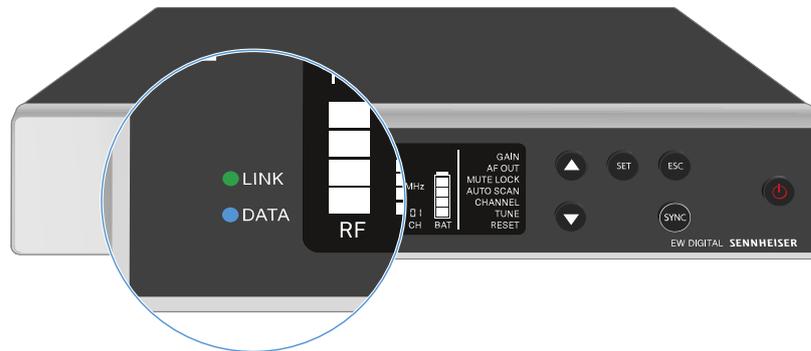
- ▷ Press the **UP** and **DOWN** buttons simultaneously.
  - ➔ Key lock is activated and the lock icon is shown on the display.

### To deactivate the key lock:

- ▷ Simultaneously press the **UP** and **DOWN** buttons again.
  - ➔ Key lock is deactivated and the lock icon disappears from the display.



## Meaning of the LEDs



The **LINK** and **DATA** LEDs on the front of the receiver can indicate the following information.

### LINK LED

The **LINK** LED provides information about the status of the radio link between the transmitter and receiver, as well as status information for the paired transmitter.

---

The LED is green:



- The link between the transmitter and receiver is established.
- The audio signal is active.

---

The LED is yellow:



- The link between the transmitter and receiver is established.
- The audio signal is muted.



or

- No microphone module is mounted on the SKM-S handheld transmitter.

---

The LED is flashing yellow:



- The link between the transmitter and receiver is established.
- The audio signal is overdriven (clipping).

---

The LED is continuously red:



- No link between the transmitter and receiver.

---

The LED is flashing red:



- The battery/rechargeable battery in the paired transmitter is low.

---

## DATA LED

The **DATA** LED provides information on the receiver's **Bluetooth Low Energy** link to the **Smart Assist** app and on the synchronization of transmitters and receivers.

---

The LED is flashing blue:



- The **Bluetooth Low Energy** link is being established between the receiver and a smartphone or tablet with the **Smart Assist** app.

or

- The receiver is being synchronized with a transmitter.

---

The LED is blue:



- The firmware is being updated.

---

The LED is off:



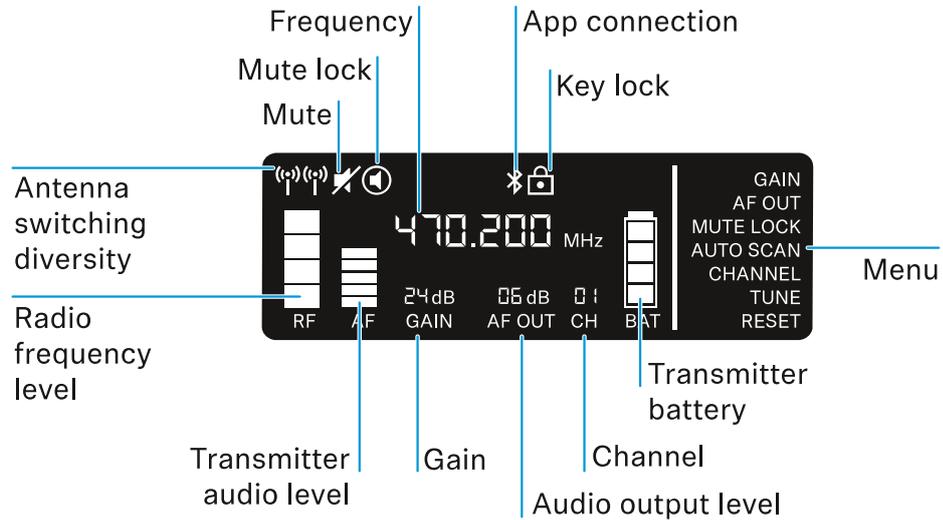
- Normal operation
  - There is currently no active data link.
-



## Displays on the receiver's display panel

Status information such as frequency, reception quality, battery status and audio level is shown on the display.

The display also shows the operating menu, which you can use to configure all of the settings (see [Buttons for navigating the menu](#)).



### Further information

Antenna switching diversity / radio level:

- [Establishing a radio link | Synchronizing the receiver and transmitter](#)

Mute / mute lock:

- [MUTE LOCK menu item | Muting the handheld transmitter | Muting the bodypack transmitter](#)

Frequency:

- [AUTO SCAN menu item | CHANNEL menu item | TUNE menu item](#)

Connecting to the app:

- [Smart Assist app](#)

Lock-off function:

- [Lock-off function](#)



Menu:

- [Buttons for navigating the menu](#)

Transmitter battery

- [SKM-S: Inserting and removing the batteries/rechargeable batteries](#) | [SK: Inserting and removing the batteries/rechargeable batteries](#)

Channel:

- [CHANNEL menu item](#)

Audio output level:

- [AF OUT menu item](#)

Gain:

- [GAIN menu item](#)

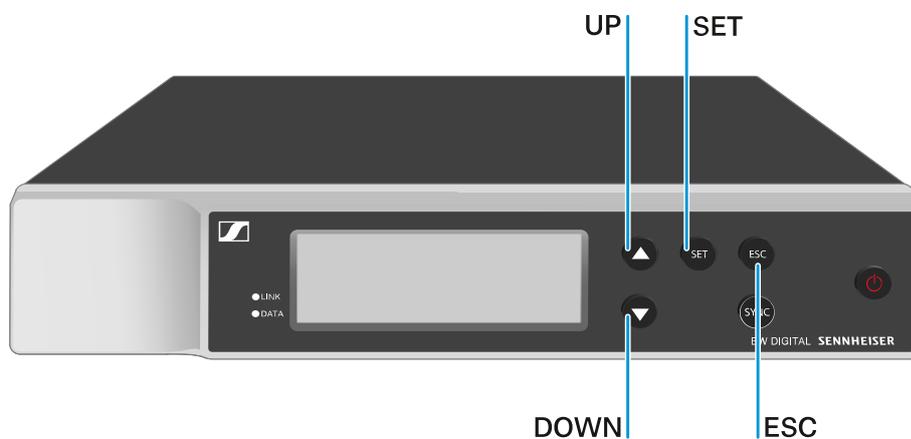
Transmitter audio level:

- [GAIN menu item](#)



## Buttons for navigating the menu

Use the following buttons to navigate through the receiver's operating menu.



Press the **SET** button

- Open the menu
- Save settings in a menu item

Press the **UP** or **DOWN** button

- Changes to the previous or next menu item
- Changes the setting of a menu item

Press the **ESC** button

- Cancel input



[Opening the menu and navigating the menu items](#)



## Opening the menu and navigating the menu items

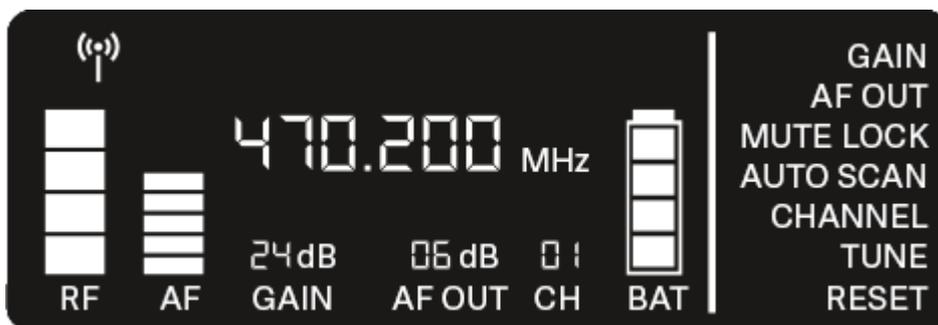
### To open the menu:

- ▷ Press the **SET** button.
- ➔ The first menu item **GAIN** flashes.



### To navigate the menu items:

- ▷ Press the **UP** and **DOWN** buttons.
- ➔ The currently active menu item flashes.



### To open a menu item:

- ▷ Navigate to the desired menu item until it flashes.
- ▷ Press the **SET** button to open the selected menu item.

### Related information

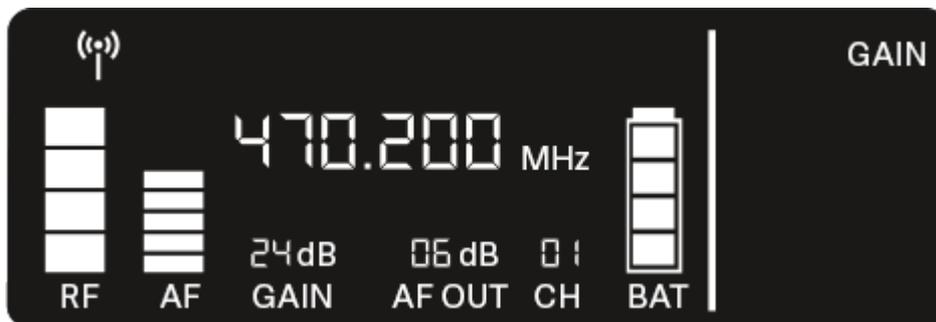
- [GAIN menu item](#)
- [AF OUT menu item](#)
- [MUTE LOCK menu item](#)
- [AUTO SCAN menu item](#)
- [CHANNEL menu item](#)
- [TUNE menu item](#)
- [RESET menu item](#)



## GAIN menu item

Under the **GAIN** menu item, you can set the level of the audio signal coming from the coupled transmitter (e.g. vocals via EW-D SKM-S or guitar via EW-D SK).

- ▷ Open the **GAIN** menu item.
  - ➔ The item flashes on the display as follows.



- ▷ Press the **UP** or **DOWN** button to adjust the value. Make sure that the level indicator **AF** on the display is not too high.
  - ➔ The **LINK** LED flashes yellow when the signal is overdriven.
- ▷ Press the **SET** button to save the set value.



### Recommended settings for a unity gain link:

**Unity gain** refers to the configuration where the audio signal arriving at a device leaves the device with the same level.

**Example:** If you are using an EW-D wireless link instead of a guitar cable, with **unity gain** settings, the volume of the guitar in the guitar amplifier will be as high as it would be if using a guitar cable.

Possible **unity gain** settings:

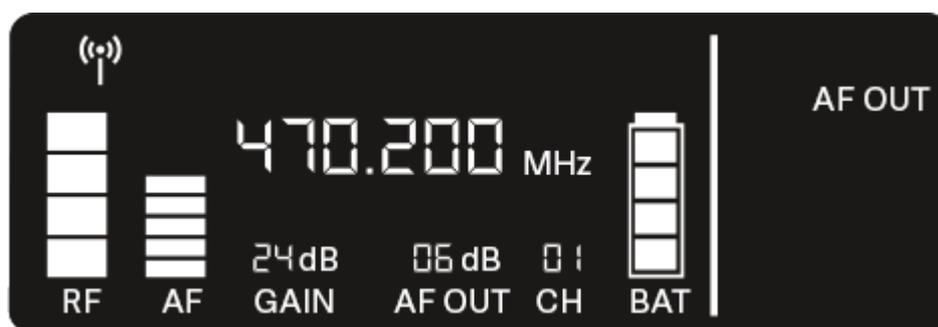
- AF Out **18 dB** | Gain **27 dB**
- AF Out **12 dB** | Gain **33 dB**
- AF Out **6 dB** | Gain **39 dB**



## AF OUT menu item

Under the **AF OUT** menu item, you can set the level of the audio signal coming from the receiver's audio outputs (**AF out Bal/Unbal**). This audio signal can be output to a mixing console or an amplifier, for example.

- ▷ Open the **AF OUT** menu item.
  - ➔ The item flashes on the display as follows.



- ▷ Press the **UP** or **DOWN** button to adjust the value. Make sure that the signal in the next device in the signal chain (e.g. mixing console, power amplifier, guitar amplifier, etc.) is not overdriven.
- ▷ Press the **SET** button to save the set value.



### Recommended settings for a unity gain link:

**Unity gain** refers to the configuration where the audio signal arriving at a device leaves the device with the same level.

**Example:** If you are using an EW-D wireless link instead of a guitar cable, with **unity gain** settings, the volume of the guitar in the guitar amplifier will be as high as it would be if using a guitar cable.

Possible **unity gain** settings:

- AF Out **18 dB** | Gain **27 dB**
- AF Out **12 dB** | Gain **33 dB**
- AF Out **6 dB** | Gain **39 dB**

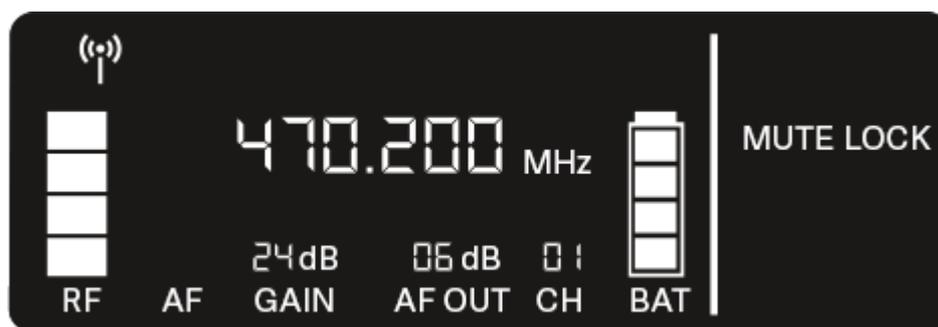


## MUTE LOCK menu item

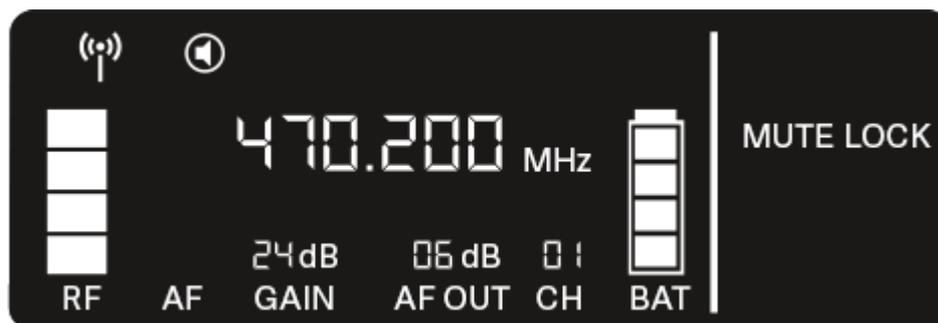
Under the **MUTE LOCK** menu item, you can disable the mute switch on the paired transmitter.

The transmitter can then no longer be muted.

- ▷ Open the **MUTE LOCK** menu item.
  - ➔ The item flashes on the display as follows.



- ▷ Press the **UP** or **DOWN** button to enable or disable the function.
  - ➔ If the following icon appears on the display, the transmitter's mute switch is disabled.



- ▷ Press the **SET** button to save the set value.



## AUTO SCAN menu item

Under the **AUTO SCAN** menu item, you can perform an automatic frequency scan of your area. This enables you to easily find and assign free radio frequencies.

The scan starts at the lowest frequency in the device's frequency range.

- ▷ Open the **AUTO SCAN** menu item.
  - ➔ The scan starts automatically. The next free frequency is shown on the display.



- ▷ Press the **SET** button to accept the displayed frequency.
  - Or
- ▷ Press the **UP** or **DOWN** button to display the next free frequency.
  - Or
- ▷ Press the **ESC** button to cancel the scan.
  - ➔ The previous frequency remains unchanged.



If you have set a new frequency, you must still **synchronize the receiver with the transmitter** to establish the radio link (see [Establishing a radio link | Synchronizing the receiver and transmitter](#)).

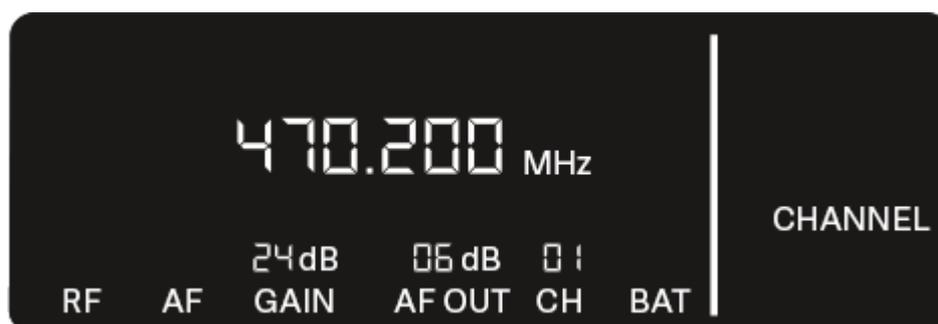


## CHANNEL menu item

Under the CHANNEL menu item, you can set the radio frequency by selecting a preset channel.

**i** If you are not sure whether the selected frequency is free, we recommend performing a scan to detect all free frequencies: [AUTO SCAN menu item](#).

- ▷ Open the **CHANNEL** menu item.
  - ➔ The item flashes on the display as follows.



- ▷ Press the **UP** or **DOWN** button to select a preset channel.
- ▷ Press the **SET** button to accept the displayed frequency.
  - Or
- ▷ Press the **ESC** button to cancel the scan.
  - ➔ The previous frequency remains unchanged.

**i** If you have set a new frequency, you must still **synchronize the receiver with the transmitter** to establish the radio link (see [Establishing a radio link | Synchronizing the receiver and transmitter](#)).



## TUNE menu item

Under the **TUNE** menu item, you can manually set the radio frequency independently of the preset channels.



If you are not sure whether the selected frequency is free, we recommend performing a scan to detect all free frequencies: [AUTO SCAN menu item](#).

▷ Open the **TUNE** menu item.

➔ The item flashes on the display as follows.



▷ Press the **UP** or **DOWN** button to set the frequency in the megahertz range.

▷ Press the **SET** button to save the set value.

➔ The item flashes on the display as follows.



▷ Press the **UP** or **DOWN** buttons to finely adjust the frequency in the kilohertz range.

▷ Press the **SET** button to accept the displayed frequency.

Or

▷ Press the **ESC** button to cancel the scan.

➔ The previous frequency remains unchanged.



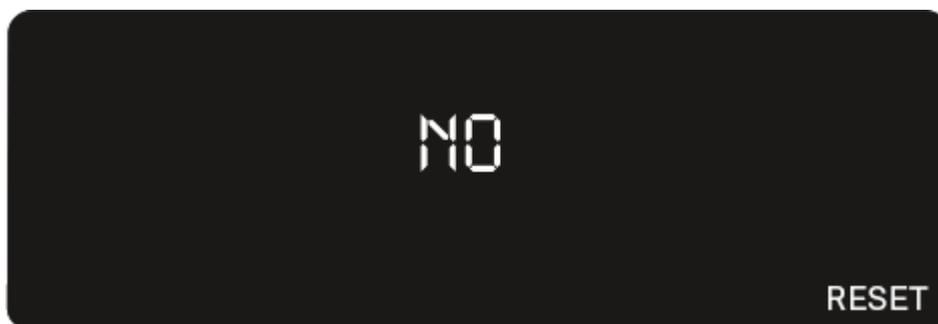
If you have set a new frequency, you must still **synchronize the receiver with the transmitter** to establish the radio link (see [Establishing a radio link | Synchronizing the receiver and transmitter](#)).



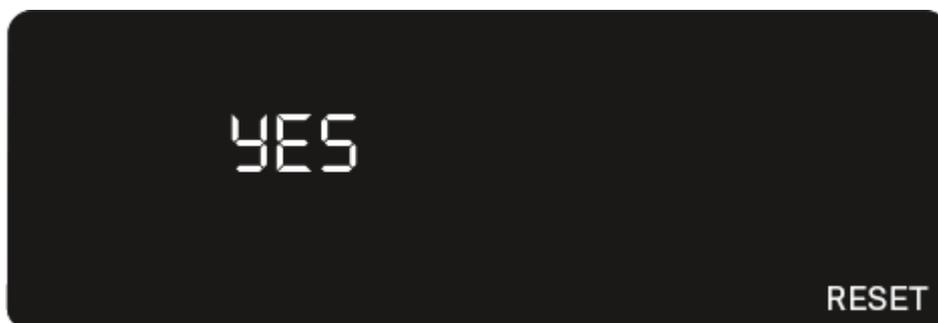
## RESET menu item

Under the **RESET** menu item, you can reset the receiver to its factory settings.

- ▷ Open the **RESET** menu item.
  - ➔ The item flashes on the display as follows.



- ▷ Press the **UP** or **DOWN** button to switch between the options YES and NO.



- **YES:** The receiver is reset to its factory settings.
- **NO:** The receiver is not reset.
- ▷ Press the **SET** button to save the set value.

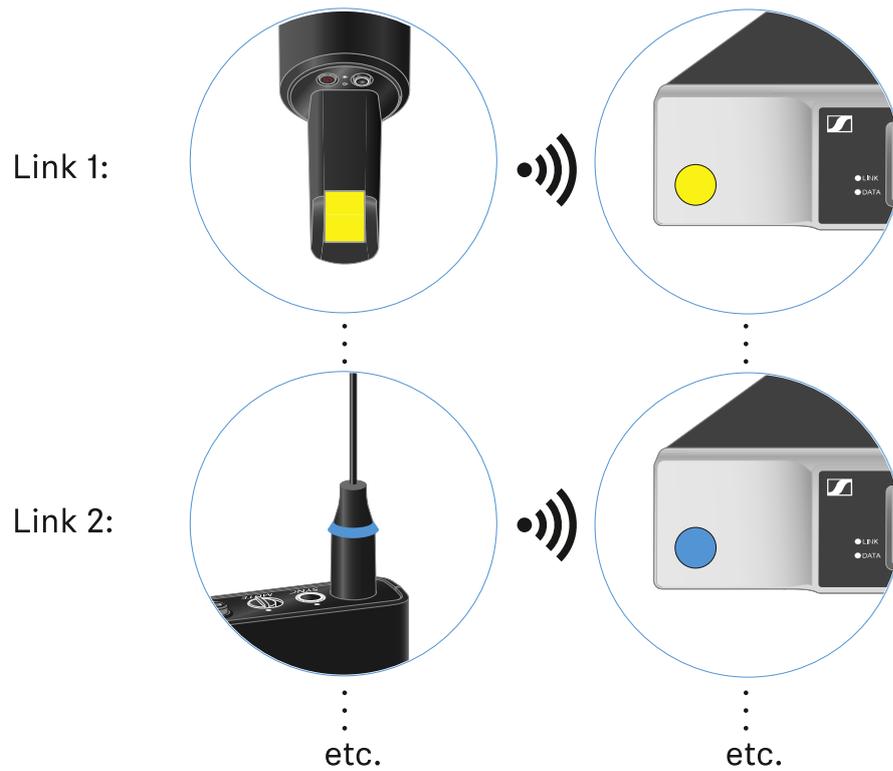


## Using EW-D Color Coding Sets to label transmission paths

You can use the **EW-D Color Coding Sets** (see [Color Coding Sets](#)) to identify which transmitters belong to which receivers. This makes it easier to match up the individual devices, especially in multi-channel systems.



You can also assign colors to the devices in the **Smart Assist** app.





## EW-D SKM-S handheld transmitter

### Product overview

Inserting and removing the batteries/rechargeable batteries

Replacing the microphone module

Using EW-D Color Coding Sets to label transmission paths

Switching the handheld transmitter on and off

Checking the battery status of the transmitter (Check function)

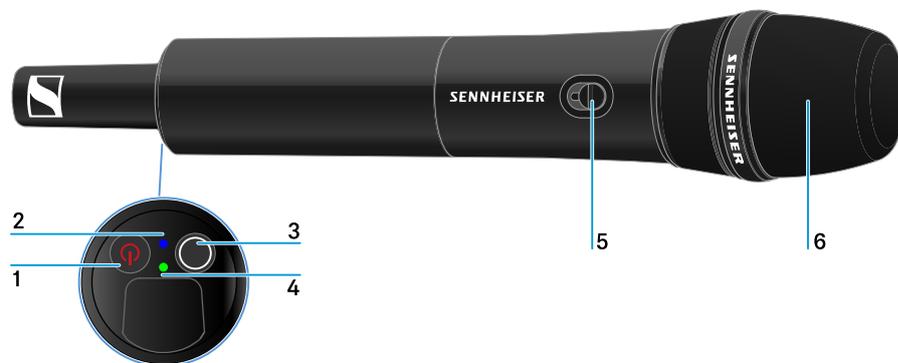
Identifying the paired receiver (Identify function)

Meaning of the LEDs

Establishing a connection to the receiver

Muting the handheld transmitter

### Product overview



#### 1 ON/OFF button

- See [Switching the handheld transmitter on and off](#)

#### 2 DATA LED

- See [Meaning of the LEDs](#)

#### 3 SYNC button

- See [Establishing a radio link | Synchronizing the receiver and transmitter](#)

#### 4 LINK LED

- See [Meaning of the LEDs](#)



**5** Mute switch

- See [Muting the handheld transmitter](#)

**6** Microphone module

- See [Replacing the microphone module](#)



## Inserting and removing the batteries/rechargeable batteries

You can operate the handheld transmitter either with batteries (AA, 1.5 V) or with the rechargeable Sennheiser BA 70 battery.

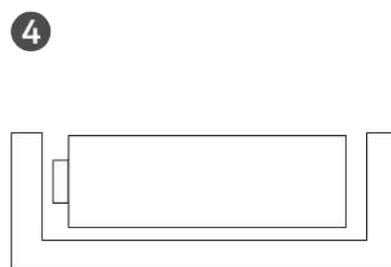
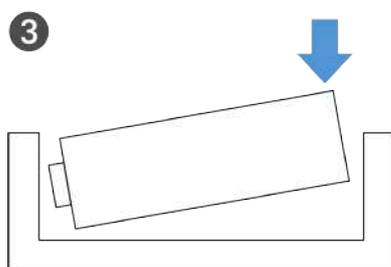
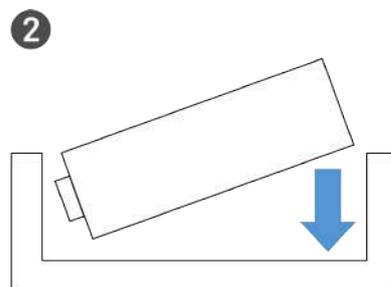
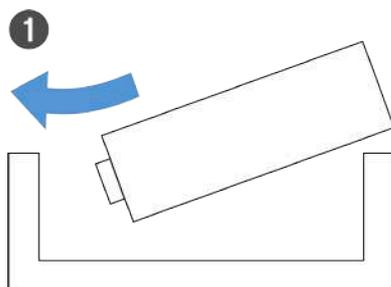


- ▷ Unscrew the microphone housing as shown in the figure and pull it down as far as it will go.
- ▷ Insert the batteries or the BA 70 rechargeable battery as indicated in the battery compartment. Observe correct polarity.
- ▷ Screw the microphone housing back on.



**Note about the BA 70 rechargeable battery**

- Make sure that the BA 70 rechargeable battery is inserted as follows:





## Replacing the microphone module

To replace the microphone module:

- ▷ Unscrew the microphone module.
- ▷ Screw the desired microphone module on.
- ▷ Do not touch the wireless microphone contacts or the microphone module contacts. If you touch the contacts, they may become dirty or bent.



Compatible microphone modules



The following microphone modules are compatible with the handheld transmitter:

- **MMD 835-1** | Dynamic microphone module with cardioid pattern
- **MMD 845-1** | Dynamic microphone module with super-cardioid pick-up pattern
- **MME 865-1** | Condenser microphone module with super-cardioid pick-up pattern
- **MMD 935-1** | Dynamic microphone module with cardioid pattern
- **MMD 945-1** | Dynamic microphone module with super-cardioid pick-up pattern
- **MMK 965-1** | Condenser microphone module with selectable pattern: cardioid and super-cardioid
- **MMD 42-1** | Dynamic microphone module with omni-directional pattern
- **Neumann KK 204** | Condenser microphone module with cardioid pattern
- **Neumann KK 205** | Condenser microphone module with super-cardioid pick-up pattern
- **MM 435** | Dynamic microphone module with cardioid pattern
- **MM 445** | Dynamic microphone module with super-cardioid pick-up pattern
- **ME 9002** | Condenser microphone module with omni-directional pattern
- **ME 9004** | Condenser microphone module with cardioid pattern
- **ME 9005** | Condenser microphone module with super-cardioid pick-up pattern

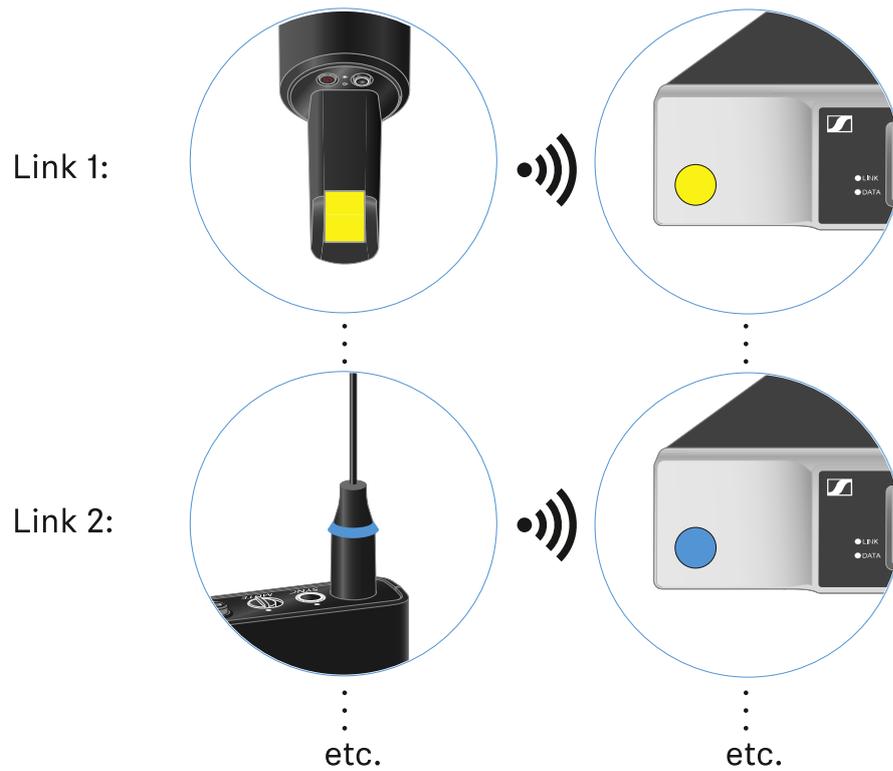


## Using EW-D Color Coding Sets to label transmission paths

You can use the **EW-D Color Coding Sets** (see [Color Coding Sets](#)) to identify which transmitters belong to which receivers. This makes it easier to match up the individual devices, especially in multi-channel systems.



You can also assign colors to the devices in the **Smart Assist** app.

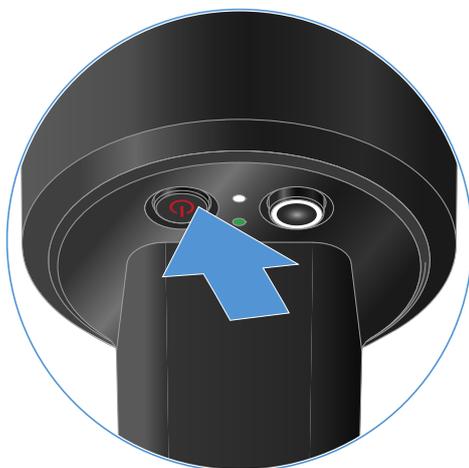




## Switching the handheld transmitter on and off

### To switch the handheld transmitter on:

- ▷ Short-press the **ON/OFF** button.
  - ➔ The **LINK** LED lights up and the transmitter switches on.



### To switch the handheld transmitter off:

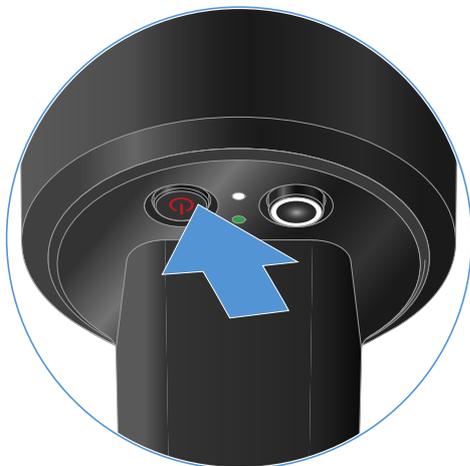
- ▷ Hold down the **ON/OFF** button until the LEDs switch off.



## Checking the battery status of the transmitter (Check function)

To check the battery status of the transmitter:

Short-press the **ON/OFF** button on the transmitter.



➔ The transmitter's **LINK LED** flashes to indicate the current charge level of the battery or the BA 70 rechargeable battery.

LINK LED	
	≤ 100 %
	≤ 60 %
	≤ 20 %



Pressing the transmitter's **ON/OFF** button will simultaneously trigger the Identify function: [Identifying the paired receiver \(Identify function\)](#).



## Identifying the paired receiver (Identify function)

In multi-channel systems, you can use the **Check** function to quickly identify to which receiver the transmitter is paired.

Both the transmitter and receiver must be switched on.

Short-press the **ON/OFF** button on the transmitter.



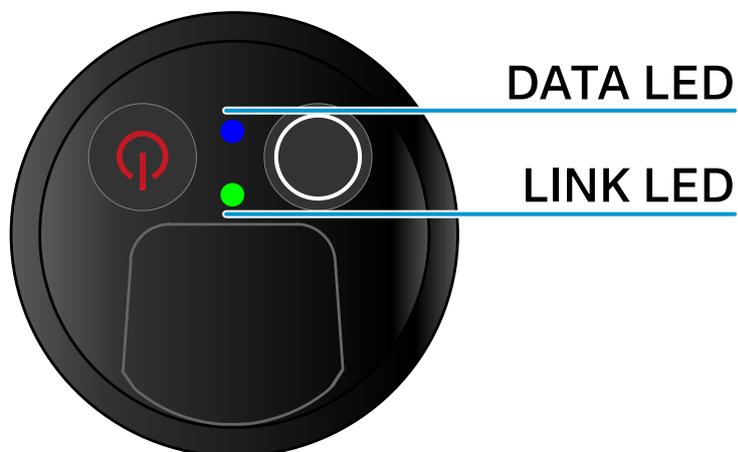
➔ The display on the paired receiver starts flashing.



Pressing the transmitter's **ON/OFF** button will simultaneously trigger the Check function: [Checking the battery status of the transmitter \(Check function\)](#).



## Meaning of the LEDs



The **LINK** and **DATA** LEDs on the bottom of the transmitter can indicate the following information.

### **LINK LED**

The **LINK** LED provides information about the status of the radio link between the transmitter and receiver, as well as status information for the paired transmitter.



---

The LED is green:



- The link between the transmitter and receiver is established.
- The transmission frequency is active.

---

The LED is yellow:



- The link between the transmitter and receiver is established.
- The audio signal is muted or
- No microphone module is mounted on the SKM-S handheld transmitter.

---

The LED is flashing yellow:



- The link between the transmitter and receiver is established.
- The audio signal is overdriven (clipping).

---

The LED is continuously red:



- The (rechargeable) battery in the transmitter is dead.

---

The LED is flashing red:



- The link between the transmitter and receiver is established.
- The battery/rechargeable battery in the transmitter is low.

---

The LED is off:



- No link between the transmitter and receiver.
  - The transmitter is switched off.
-



## DATA LED

The **DATA** LED provides information about the synchronization of transmitters and receivers.

---

The LED is flashing blue:



- The transmitter is being synchronized with a receiver.

The LED is blue:



- The firmware is being updated.

The LED is off:



- There is currently no active data link.
-



## Establishing a connection to the receiver

To establish a radio link between the transmitter and the receiver, the devices must be synchronized.

See [Establishing a radio link | Synchronizing the receiver and transmitter](#)



### **Conditions and restrictions for using frequencies**

There may be special conditions and restrictions for using frequencies in your country.

Before putting the product into operation, find the information for your country at the following address:

[sennheiser.com/sifa](https://www.sennheiser.com/sifa)



## Muting the handheld transmitter

You can mute the audio signal using the mute switch.

Slide the mute switch to the desired position to mute or activate the audio signal.



You can disable the mute switch by activating the **MUTE LOCK** option on the receiver (see [MUTE LOCK menu item](#)).



## EW-D SK bodypack transmitter

### Product overview

Inserting and removing the batteries/rechargeable batteries

Connecting a microphone to the bodypack transmitter

Connecting an instrument or line source to the bodypack transmitter

Using EW-D Color Coding Sets to label transmission paths

Changing the belt clip

Switching the bodypack transmitter on and off

Checking the battery status of the transmitter (Check function)

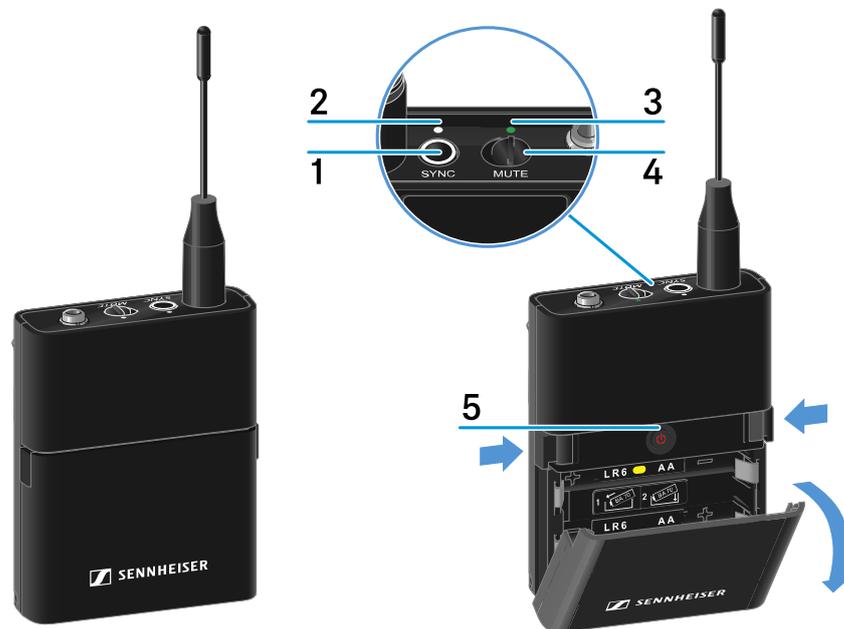
Identifying the paired receiver (Identify function)

Meaning of the LEDs

Establishing a connection to the receiver

Muting the bodypack transmitter

### Product overview



#### 1 SYNC button

- See [Establishing a radio link | Synchronizing the receiver and transmitter](#)

#### 2 DATA LED

- See [Meaning of the LEDs](#)



### 3 LINK LED

- See [Meaning of the LEDs](#)

### 4 Mute switch

- See [Muting the bodypack transmitter](#)

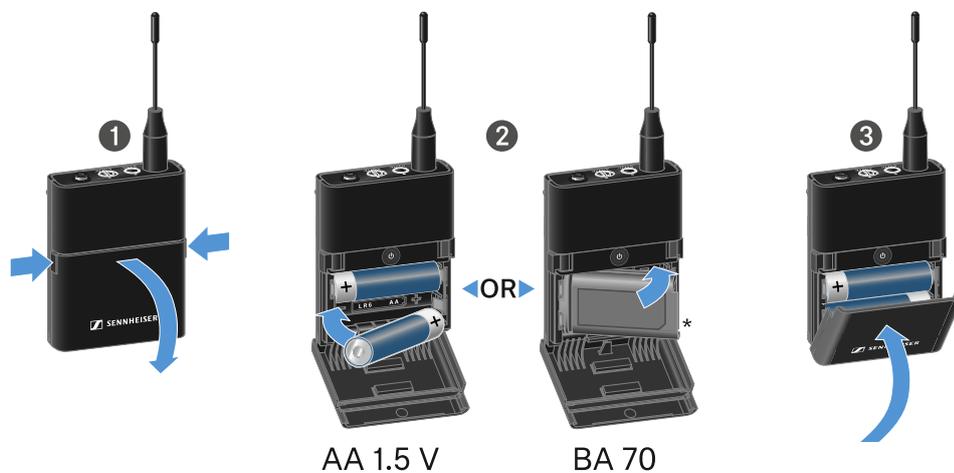
### 5 ON/OFF button

- See [Switching the bodypack transmitter on and off](#)



## Inserting and removing the batteries/rechargeable batteries

You can operate the handheld transmitter either with batteries (AA, 1.5 V) or with the rechargeable Sennheiser BA 70 battery.

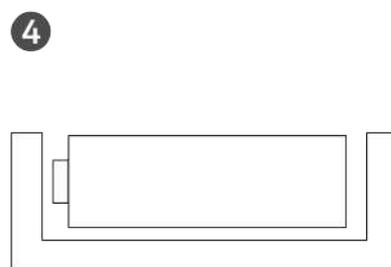
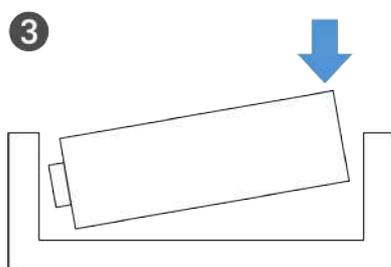
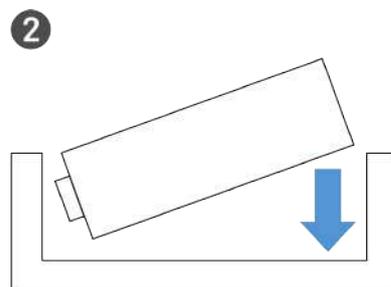
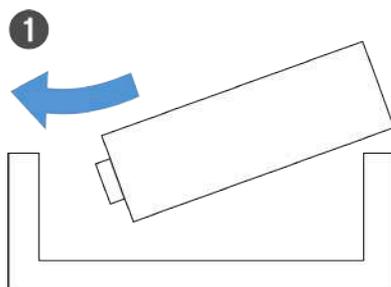


- ▷ Press the two catches and open the battery compartment cover.
- ▷ Insert the batteries or the BA 70 rechargeable battery as indicated in the battery compartment. Observe correct polarity.
- ▷ Close the battery compartment.
  - ➔ The cover locks into place with an audible click.



**Note about the BA 70 rechargeable battery**

- Make sure that the BA 70 rechargeable battery is inserted as follows:





## Connecting a microphone to the bodypack transmitter

**To connect a microphone to the bodypack transmitter:**

- ▷ Insert the cable's 3.5 mm jack plug into the socket on the bodypack transmitter as shown in the diagram.
- ▷ Screw the plug's coupling ring onto the audio socket thread of the bodypack transmitter.



### Compatible microphones

The following microphones are compatible with the bodypack transmitter:



**Lavalier microphones:**

- **ME 2** | Lavalier microphone with omni-directional pattern (models from 2021 and later with gold-plated plug\*)
- **ME 4** | Lavalier microphone with cardioid pattern (models from 2021 and later with gold-plated plug\*)
- **MKE Essential Omni** | Lavalier microphone with omni-directional pattern
- **MKE 2 Gold** | Lavalier microphone with omni-directional pattern (models from 2018 and later with blue serial number label)
- **MKE 1** | Lavalier microphone with omni-directional pattern

**Headset microphones:**

- **ME 3** | Headset microphone with cardioid pattern (models from 2021 and later with gold-plated plug\*)
- **HSP Essential Omni** | Headset microphone with omni-directional pattern
- **HSP 2** | Headset microphone with omni-directional pattern (models from March 2020 and later with code 1090 or higher)
- **HS 2** | Headset microphone with omni-directional pattern (models from 2021 and later with gold-plated plug\*)
- **SL Headmic 1** | Headset microphone with omni-directional pattern

\*Pre-2021 models with a nickel plug are not recommended. They can pick up noise if they are placed too close to the transmitter.



## Connecting an instrument or line source to the bodypack transmitter

You can connect instruments or audio sources with a line level to the bodypack transmitter.

To do this, you will need the **CI 1** (6.3 mm jack plug on a lockable 3.5 mm jack plug) or **CL 2** (XLR-3F plug on a lockable 3.5 mm jack plug) Sennheiser cables.

### To connect an instrument or line source to bodypack transmitter:

- ▷ Insert the cable's 3.5 mm jack plug into the socket on the bodypack transmitter as shown in the diagram.
- ▷ Screw the plug's coupling ring onto the audio socket thread of the bodypack transmitter.



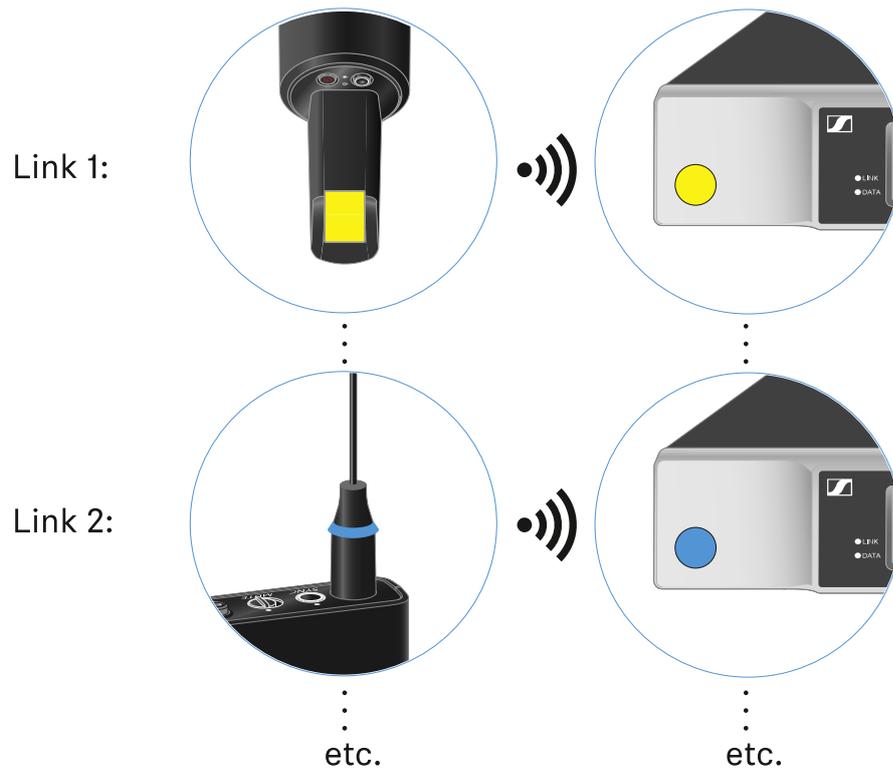


## Using EW-D Color Coding Sets to label transmission paths

You can use the **EW-D Color Coding Sets** (see [Color Coding Sets](#)) to identify which transmitters belong to which receivers. This makes it easier to match up the individual devices, especially in multi-channel systems.



You can also assign colors to the devices in the **Smart Assist** app.



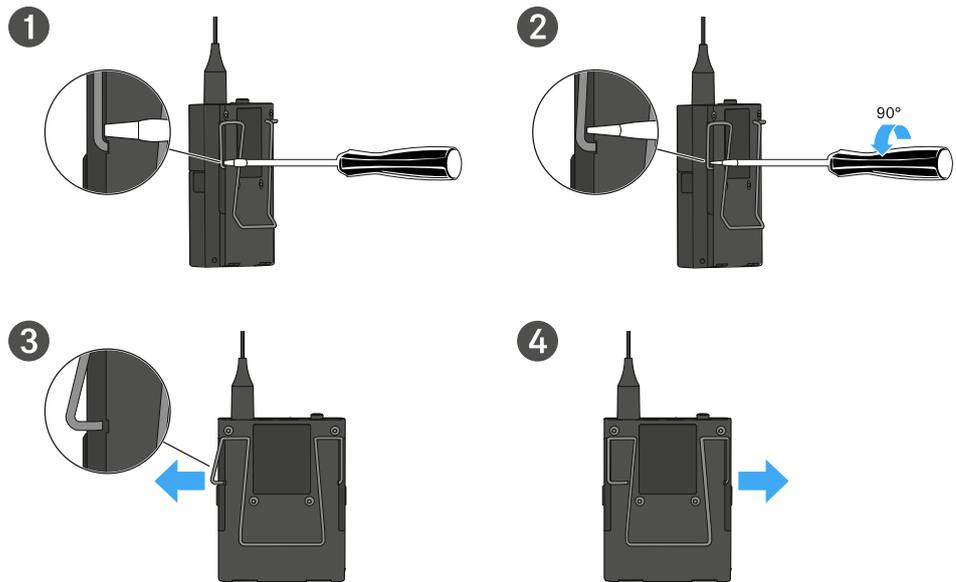


## Changing the belt clip

You can change the belt clip on the bodypack transmitter or flip it over depending on how you want to wear it.

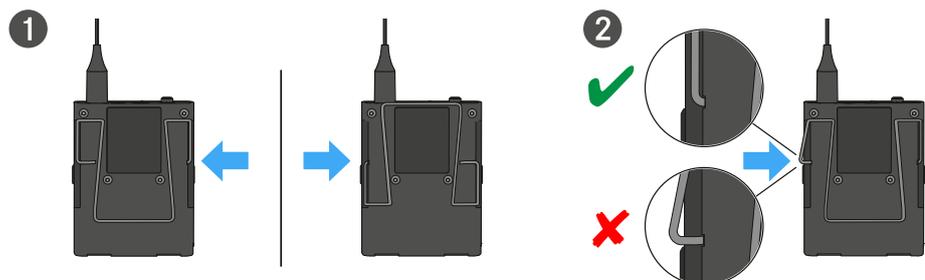
### To remove the belt clip:

- ▷ Carefully loosen the belt clip with a small screwdriver as shown in the figure.
- ▷ Be very careful not to scratch the housing.



### To insert the belt clip:

- ▷ Insert one side of the belt clip first as shown in the figure.
- ▷ Then insert the second side of the belt clip.
- ▷ Gently press the belt clip all the way in on both sides.
- ▷ Always insert one side before the other, not at the same time, as otherwise the belt clip could bend.

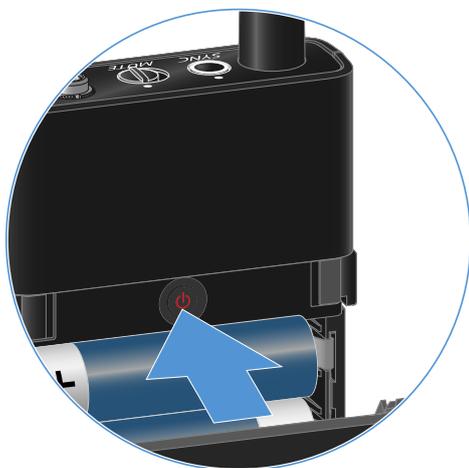




## Switching the bodypack transmitter on and off

To switch the bodypack transmitter on:

- ▷ Short-press the **ON/OFF** button.
  - ➔ The **LINK** LED lights up and the transmitter switches on.



To switch the bodypack transmitter off:

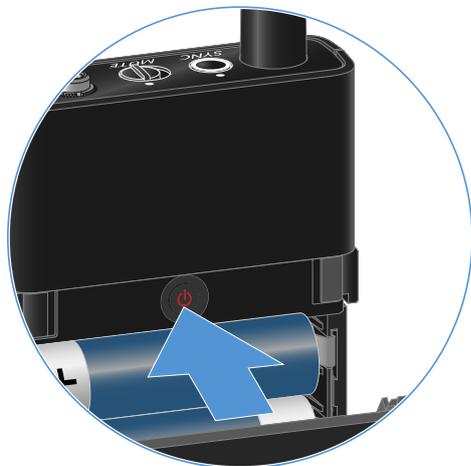
- ▷ Hold down the **ON/OFF** button until the LEDs switch off.



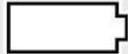
## Checking the battery status of the transmitter (Check function)

To check the battery status of the transmitter:

Short-press the **ON/OFF** button on the transmitter.



➔ The transmitter's **LINK LED** flashes to indicate the current charge level of the battery or the BA 70 rechargeable battery.

LINK LED	
	≤ 100 %
	≤ 60 %
	≤ 20 %



Pressing the transmitter's **ON/OFF** button will simultaneously trigger the Identify function: [Identifying the paired receiver \(Identify function\)](#).

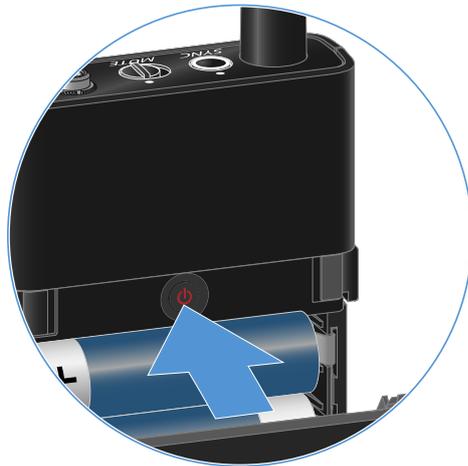


## Identifying the paired receiver (Identify function)

In multi-channel systems, you can use the **Check** function to quickly identify to which receiver the transmitter is paired.

Both the transmitter and receiver must be switched on.

Short-press the **ON/OFF** button on the transmitter.



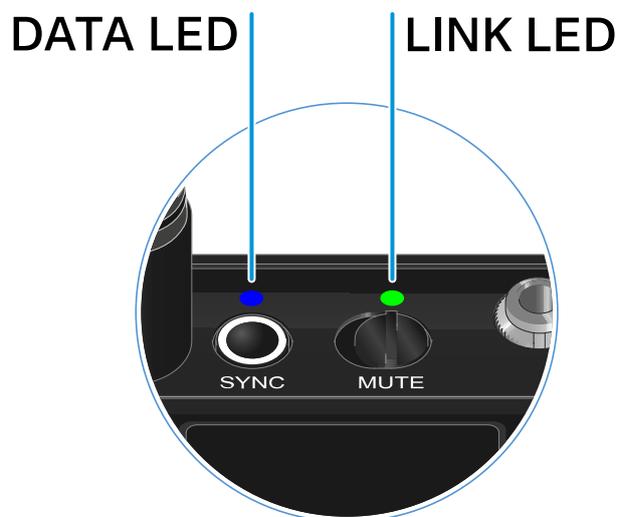
➔ The display on the paired receiver starts flashing.



Pressing the transmitter's **ON/OFF** button will simultaneously trigger the Check function: [Checking the battery status of the transmitter \(Check function\)](#).



## Meaning of the LEDs



The **LINK** and **DATA** LEDs on the top of the transmitter can indicate the following information.

### **LINK LED**

The **LINK** LED provides information about the status of the radio link between the transmitter and receiver, as well as status information for the paired transmitter.



---

The LED is green:



- The link between the transmitter and receiver is established.
- The transmission frequency is active.

---

The LED is yellow:



Or

- The link between the transmitter and receiver is established.
- The audio signal is muted.

- No microphone module is mounted on the SKM-S handheld transmitter.

---

The LED is flashing yellow:



- The link between the transmitter and receiver is established.
- The audio signal is overdriven (clipping).

---

The LED is continuously red:



- The (rechargeable) battery in the transmitter is dead.

---

The LED is flashing red:



- The link between the transmitter and receiver is established.
- The battery/rechargeable battery in the transmitter is low.

---

The LED is off:



- No link between the transmitter and receiver.
  - The transmitter is switched off.
-



## DATA LED

The **DATA** LED provides information about the synchronization of transmitters and receivers.

---

The LED is flashing blue:



- The transmitter is being synchronized with a receiver.

The LED is blue:



- The firmware is being updated.

The LED is off:



- There is currently no active data link.
-



## Establishing a connection to the receiver

To establish a radio link between the transmitter and the receiver, the devices must be synchronized.

See [Establishing a radio link | Synchronizing the receiver and transmitter](#)



### **Conditions and restrictions for using frequencies**

There may be special conditions and restrictions for using frequencies in your country.

Before putting the product into operation, find the information for your country at the following address:

[sennheiser.com/sifa](https://www.sennheiser.com/sifa)



## Muting the bodypack transmitter

You can mute the audio signal using the mute switch.

Slide the mute switch to the desired position to mute or activate the audio signal.

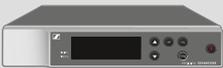


You can disable the mute switch by activating the **MUTE LOCK** option on the receiver (see [MUTE LOCK menu item](#)).



## Establishing a radio link | Synchronizing the receiver and transmitter

### Information on compatibility between EW-D, EW-DX and EW-DP

	EW-D EM 	EW-DX EM 2 	EW-DP EK 
EW-D SKM-S  EW-D SK			
EW-DX SKM EW-DX SKM-S  EW-DX SK EW-DX SK 3-PIN			
EW-DP SKP 			

 The transmitter and the receiver are fully compatible with each other.

 The transmitter and the receiver are compatible with each other. Some features may not be available.



### Conditions and restrictions for using frequencies

There may be special conditions and restrictions for using frequencies in your country.

Before putting the product into operation, find the information for your country at the following address:

[sennheiser.com/sifa](https://sennheiser.com/sifa)

Related information

[Connecting to the EW-D EM receiver / synchronizing the EW-D EM](#)

[Connecting to the EW-DX EM receivers / synchronizing the EW-DX EM](#)

[Connecting to the EW-DP EK receiver / synchronizing the EW-DP EK](#)

## Connecting to the EW-D EM receiver / synchronizing the EW-D EM

To establish a radio link between the transmitter and receiver, we recommend the following procedure.

In order to establish a connection between a receiver and transmitters of the EW-D series, the devices must always be synchronized with each other.



To successfully connect a receiver and a transmitter, both devices must have the same frequency range.

### Step 1: Set a free frequency

- ▷ We recommend using the **AUTO SCAN** function, as this is the most reliable way to identify free frequencies (see [AUTO SCAN menu item](#)).
- ▷ If you know free frequencies in your area, you can also set the frequency manually (see [CHANNEL menu item](#) or [TUNE menu item](#)).

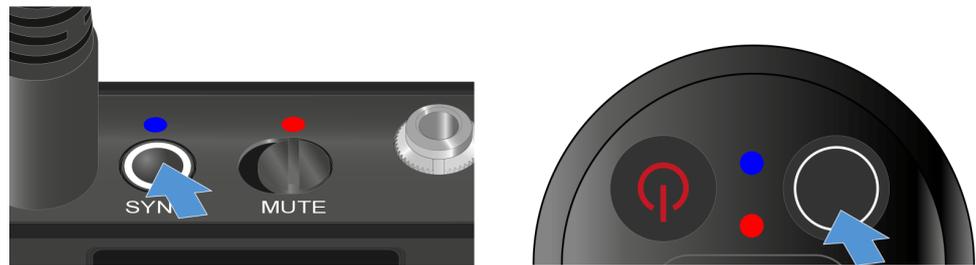


### Step 2: Pairing a receiver with a transmitter

- ▷ Short-press the **SYNC** button on the receiver.
  - ➔ The blue **DATA** LED flashes.



- ▷ Short-press the **SYNC** button on the transmitter.
  - ➔ The blue **DATA** LED flashes.



- ✓ The transmitter and receiver will be paired. Once the link is established, the **LINK** LED on both units will light up green.



Be sure to press the **SYNC** button on all devices only briefly (less than 2 seconds). Holding the **SYNC** button longer than this will start the firmware update mode and cancel the synchronization process.



## Connecting to the EW-DX EM receivers / synchronizing the EW-DX EM

Receiver: EW-DX EM 2 | EW-DX EM 2 Dante | EW-DX EM 4 Dante

To establish a radio link between the transmitter and receiver, we recommend the following procedure.

In order to establish a connection between a receiver and transmitters of the EW-D series, the devices do not necessarily have to be synchronized with each other.



To successfully connect a receiver and a transmitter, both devices must have the same frequency range.

### Step 1: Set a free frequency

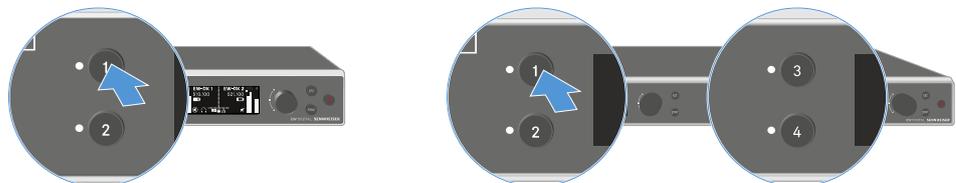
- ▷ We recommend using the AUTO SCAN function, as this is the most reliable way to identify free frequencies (see [Ch 1 / Ch 2 -> Scan / Auto Setup menu item](#)).
- ▷ If you know free frequencies in your area, you can also set the frequency manually.
  - EW-DX EM 2: [Ch 1 / Ch 2 -> Frequency menu item](#)
  - EW-DX EM 2 Dante: [Ch 1 / Ch 2 -> Frequency menu item](#)
  - EW-DX EM 4 Dante: [Ch 1 - Ch 4 -> Frequency menu item](#)
  - EW-DX SKM(-S): [Opening the menu and navigating the menu items](#)
  - EW-DX SK (3-PIN): [Opening the menu and navigating the menu items](#)

Once you have set the same frequency for the desired receiving channel on the receiver and for the transmitter you want to connect, the radio link is established.

To ensure that all settings are transmitted to the transmitter, we recommend synchronizing the transmitter with the receiving channel.

### Step 2: Synchronizing the receiver and transmitter

- ▷ On the EW-DX EM 2 and EW-DX EM 2 Dante receivers, press the **CH 1** or **CH 2** button, and on the EW-DX EM 4 Dante receiver, press the **CH 1**, **CH 2**, **CH 3** or **CH 4** button to select the channel for synchronization.





▷ Press the **SYNC** button on the receiver.



➔ The receiver's display shows that the synchronization process has started.

The blue **DATA** LED flashes.



▷ Short-press the **SYNC** button on the transmitter.

➔ The blue **DATA** LED flashes.



✓ The transmitter and receiver will be synchronized.



## Connecting to the EW-DP EK receiver / synchronizing the EW-DP EK

To establish a radio link between the transmitter and receiver, we recommend the following procedure.

In order to establish a connection between a receiver and transmitters of the EW-DP EK series, the devices must always be synchronized with each other.



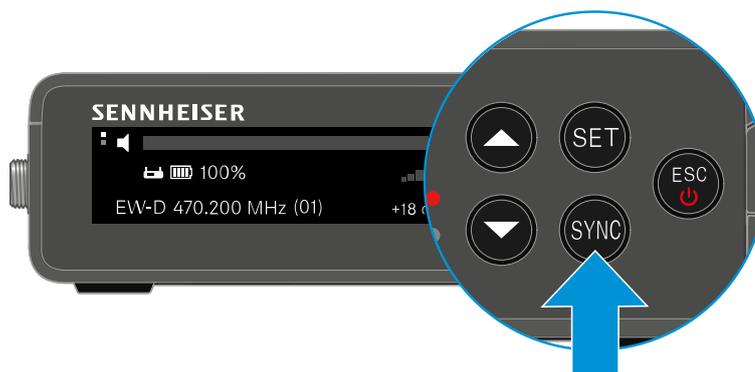
To successfully connect receivers and transmitters, both devices must have the same frequency range.

### Step 1: Set a free frequency

- ▷ We recommend using the **AUTO SCAN** function, as this is the most reliable way to identify free frequencies (see [AUTO SCAN menu item](#)).
- ▷ If you know free frequencies in your area, you can also set the frequency manually (see [CHANNEL menu item](#) or [FREQUENCY menu item](#)).

### Step 2: Pairing a receiver with a transmitter

- ▷ Short-press the **SYNC** button on the receiver.
  - ➔ The blue **DATA** LED flashes.



- ▷ Short-press the **SYNC** button on the transmitter.
  - ➔ The blue **DATA** LED flashes.





- ✓ The transmitter and receiver will be paired. Once the link is established, the **LINK** LED on both units will light up green.



Be sure to press the **SYNC** button on all devices only briefly (less than 2 seconds). Holding the **SYNC** button longer than this will start the firmware update mode and cancel the synchronization process.



## L 70 USB charger

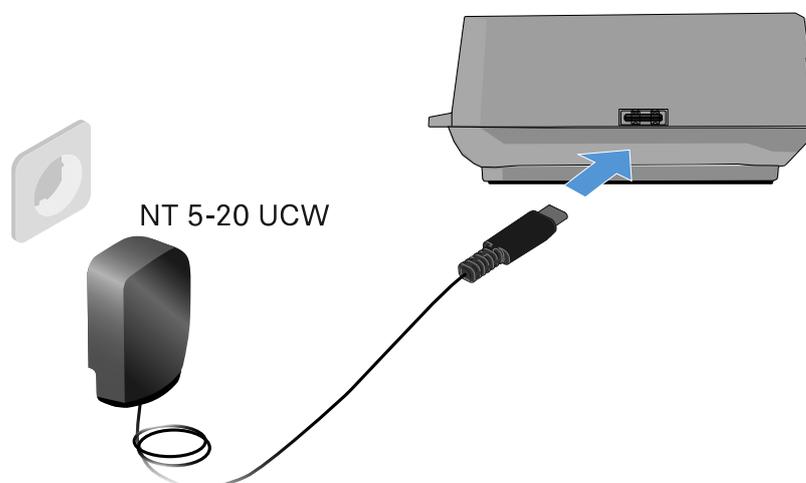
Connecting/disconnecting the charger to/from the power supply system

Charging the rechargeable battery

### Connecting/disconnecting the charger to/from the power supply system

#### To connect the charger to the power supply system:

- ▷ Use only the **NT 5-20 UCW** power supply unit from Sennheiser.
- ▷ Connect the USB-C plug on the charging cable to the USB-C port on the side of the charger.
- ▷ Plug the power supply unit with the correct country adapter into a suitable power outlet.



#### To disconnect the charger from the power supply system:

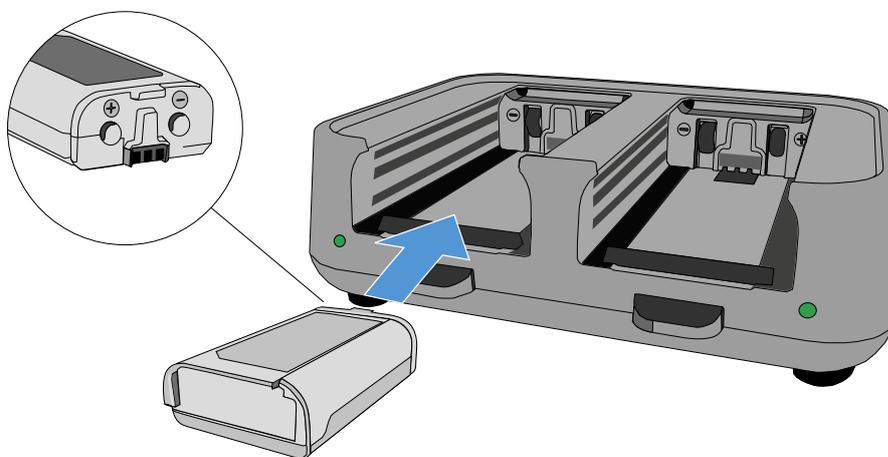
- ▷ Unplug the power supply unit from the wall socket.
- ▷ Remove the USB-C plug on the charging cable from the USB-C port on the side of the charger.



## Charging the rechargeable battery

To charge the BA 70 rechargeable battery in the L 70 USB charger:

Slide the rechargeable battery completely into the charging slot as shown in the figure.



➔ The rechargeable battery will begin charging.



The LED on the charging slot shows the battery's charge level:

LEDs	
	100 %
	> 60 %
	> 20 %
	> 0 %
	Error



## CHG 70N-C charger

Charge the EW-DX SKM/EW-DX SKM-S handheld transmitter, the EW-DX SK/EW-DX SK 3-PIN bodypack transmitter or the BA 70 rechargeable battery in the CHG 70N-C charger.

[Product overview](#)

[Connecting/disconnecting the charger to/from the power supply system](#)

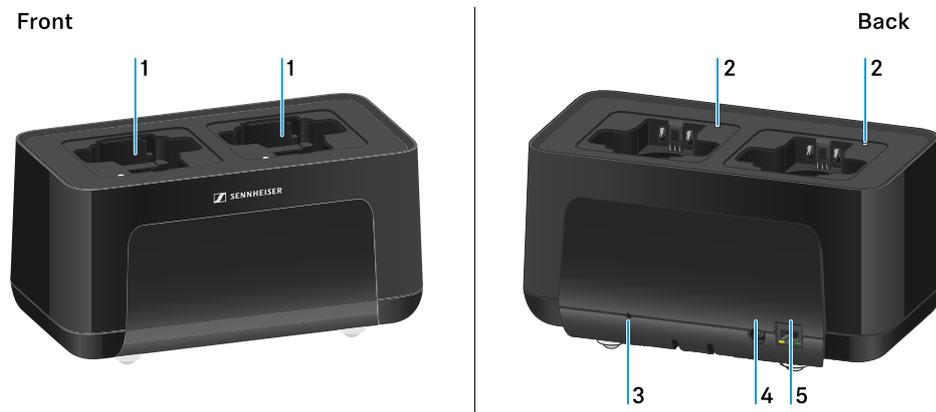
[Connecting a charger in a network](#)

[Cascading chargers](#)

[Charging the rechargeable battery](#)

[Power saving mode](#)

### Product overview



#### 1 Charging slots

- See [Charging the rechargeable battery](#)

#### 2 Status LED of the charging slots

- See [Charging the rechargeable battery](#)

#### 3 Reset button

- Press and hold for 10 seconds to reset the device's network settings, see [Connecting a charger in a network](#)
- Press and hold for 4 seconds to enable power saving mode, see [Power saving mode](#)



4 **DC in** connection socket for the **NT 12-35 CS** power supply unit

- See [Connecting/disconnecting the charger to/from the power supply system](#)

5 **PoE/Ethernet** RJ-45 socket for controlling the device over the network and for Power over Ethernet power supply

- See [Connecting a charger in a network](#)
- See [Connecting/disconnecting the charger to/from the power supply system](#)



You can cascade up to 5 devices with only one power supply and one network connection. See [Cascading chargers](#).



## Connecting/disconnecting the charger to/from the power supply system

You can operate the charger either with the Sennheiser NT 12-35 CS power supply unit or with Power over Ethernet (PoE IEEE 802.3af Class 0). Please refer to the following information.

### Power from the NT 12-35 CS power supply unit

- ▷ Use only the **NT 12-35 CS** power supply unit from Sennheiser. It is designed for your charger and ensures safe operation.



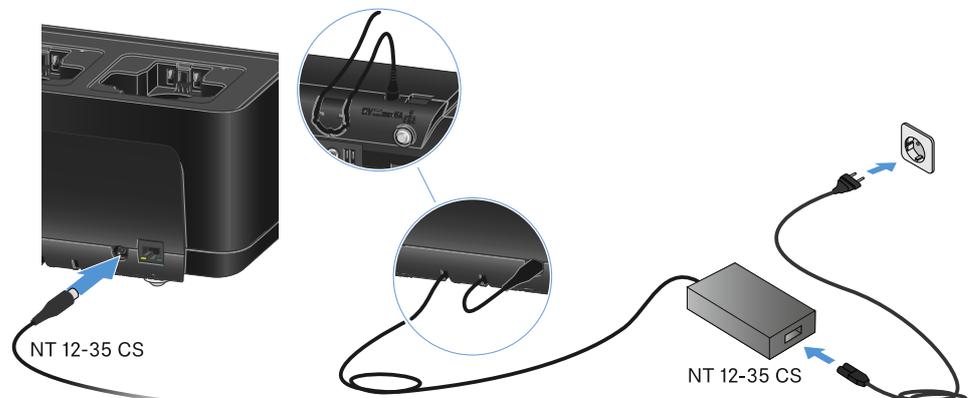
The power supply unit is available either separately (Sennheiser article number 508995) or together with the charger as a kit (see [CHG 70N-C network-enabled charger](#)).

### Power from the NT 12-35 CS power supply unit



Use only the **NT 12-35 CS** power supply unit from Sennheiser. It is designed for your charger and ensures safe operation. The power supply unit is available either separately (Sennheiser article number 508995) or together with the charger as a kit (see [CHG 70N-C network-enabled charger](#)).

- ▷ Connect the hollow jack plug of the power supply unit to the **DC in** socket on the charger.
- ▷ Pass the cable through the strain relief.
- ▷ Plug the power supply unit into the wall outlet using the correct power cable for your country.





### Disconnecting the charger completely from the power supply system

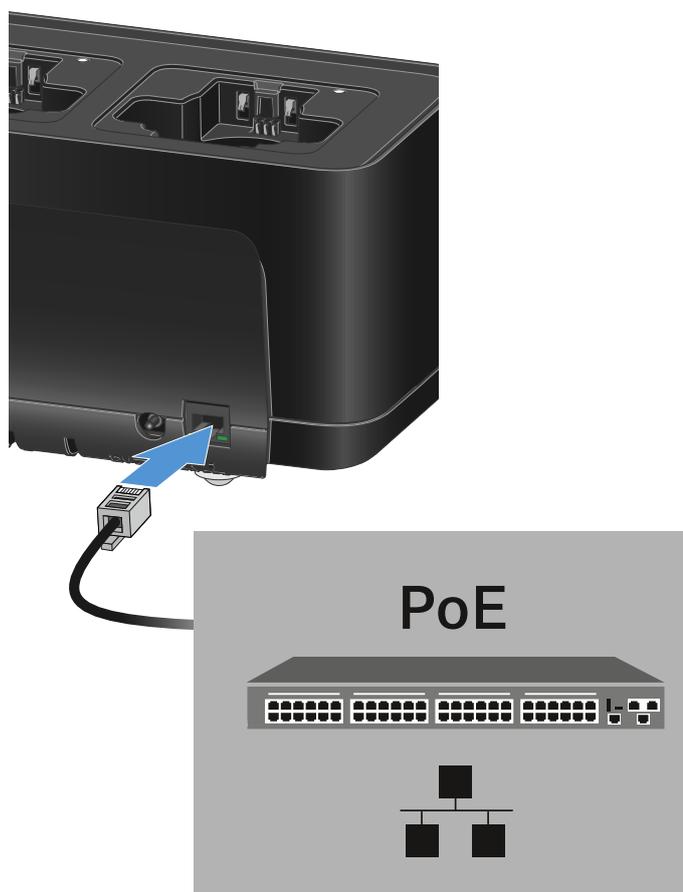
- ▷ Unplug the mains cable from the wall socket.
- ▷ Unplug the hollow jack plug of the power supply unit from the **DC in** socket on the charger.

### Power over Ethernet (PoE)



The charger can be powered via **Power over Ethernet** (PoE IEEE 802.3af Class 0).

- ▷ Connect the charger to a **PoE-enabled** network switch.



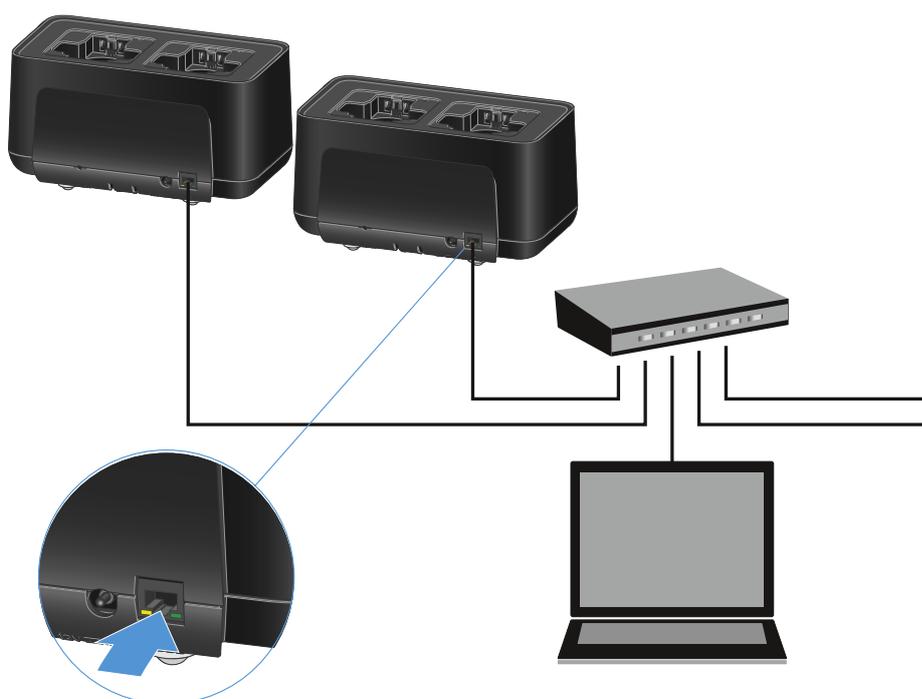


## Connecting a charger in a network

You can monitor and control one or more chargers via a network connection using the **Sennheiser Wireless Systems Manager (WSM)** or **Sennheiser Control Cockpit (SCC)** software.



The network does not have to be a homogeneous network including only chargers. You can integrate the charger into your existing network infrastructure with any other types of devices.



You can integrate the devices into the network individually or cascade up to 5 chargers (see [Cascading chargers](#)).

### To reset the network settings to their factory defaults:

Hold the **Reset** button for 4 seconds.



For more information about controlling devices via the Sennheiser Wireless Systems Manager or Sennheiser Control Cockpit software, refer to the instruction manual for the software. You can download the software here:

[sennheiser.com/wsm](https://sennheiser.com/wsm)

[sennheiser.com/control-cockpit-software](https://sennheiser.com/control-cockpit-software)



## Cascading chargers

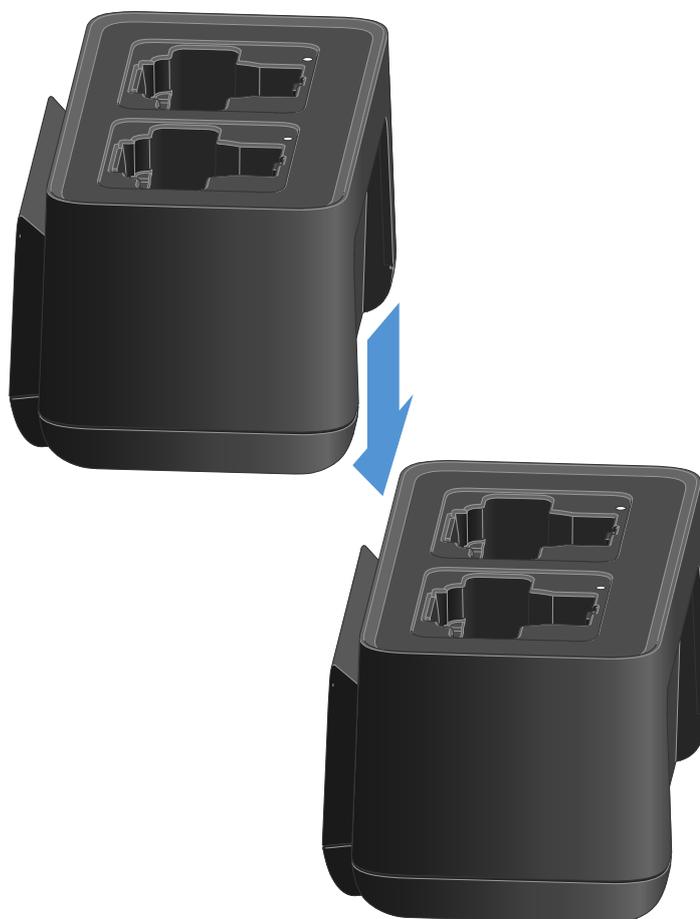
You can cascade up to five CHG 70N-C chargers and operate them with a single power supply and a single network connection. This minimizes the cabling required for larger systems.



The power must be supplied via the NT 12-35 CS power supply unit. Power over Ethernet (PoE) is not possible when cascading.

### To cascade the chargers:

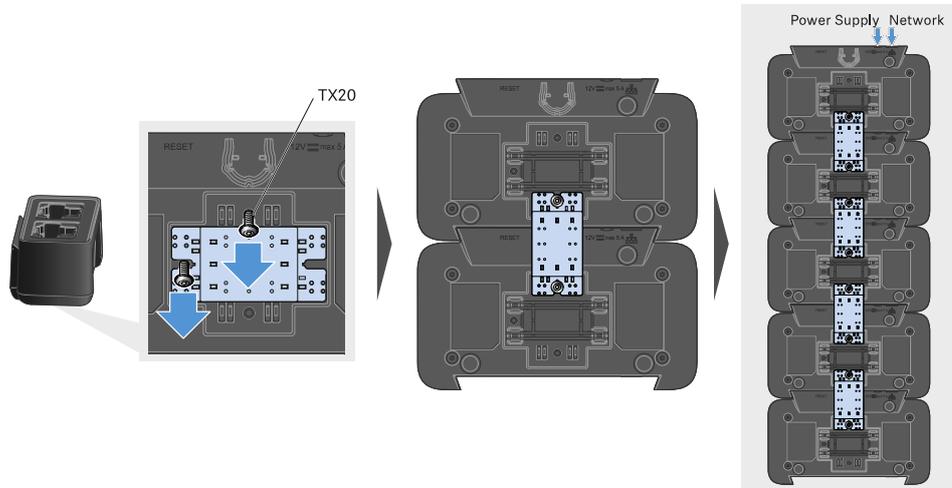
- ▷ Make sure that no chargers are connected to the power before you start.
- ▷ Plug the chargers into each other as shown in the figure.



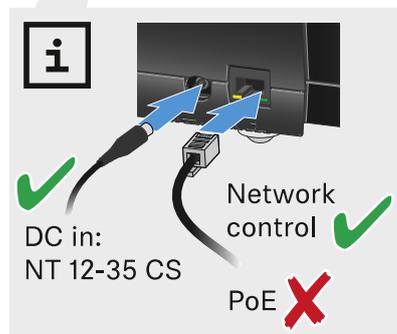
- ▷ Detach the connecting rail on the bottom of the charger.
- ▷ Fasten the connecting rail beneath two chargers as shown in the figure.



➔ The power and the network connection are passed on to all devices via the connecting rails.



- ▷ Connect the first charger in the cascade to the network (see [Connecting a charger in a network](#)).
- ▷ Finally, connect the NT 12-35 CS power supply unit to the first charger in the cascade (see [Connecting/disconnecting the charger to/from the power supply system](#)).



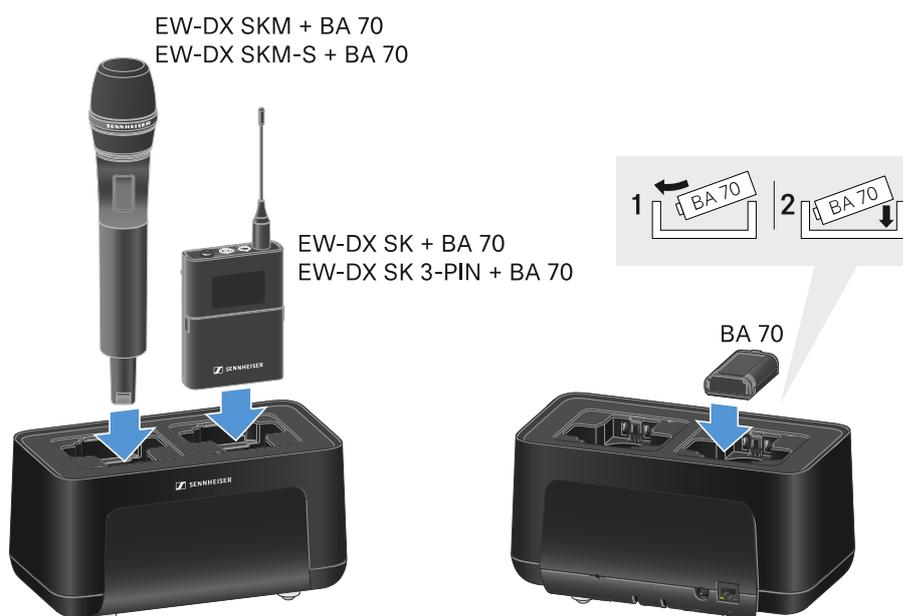


## Charging the rechargeable battery

You can use the CHG 70N-C charger to charge individual BA 70 rechargeable batteries, or to charge EW-DX SKM, EW-DX SKM-S, EW-DX SK or EW-DX SK 3-PIN transmitters with the BA 70 rechargeable battery already inserted.

### To charge the battery:

Insert the individual rechargeable battery or the transmitter with battery already inserted into the charging slot as shown in the figure.



➡ The rechargeable battery will begin charging.



The LED on the charging slot shows the battery's charge level.

LEDs	
	100 %
	> 60 %
	> 20 %
	> 0 %
	Error



## Power saving mode

In power saving mode, the transmitters are charged only once. The charger also does not provide any trickle charge.

### To activate power saving mode:



In power saving mode, the CHG 70N-C cannot be controlled over the network.

- ▷ Remove all transmitters and/or rechargeable batteries from the charging slots.
- ▷ Hold the **Reset** button for 4 seconds.
  - ➔ The charging slot LEDs light up purple.
- ▷ Insert the rechargeable battery/transmitter for charging.
  - ➔ The rechargeable battery will begin charging. The charging slot LED turns green once it reaches full charge.

### To deactivate power saving mode:

- ▷ Disconnect the charger from the power supply system.
- ▷ Then reconnect it to the power supply system.
  - ➔ The charger will start up in the configuration that was set before you activated power saving mode.



## EW-D ASA antenna splitter

### Product overview

Connecting/disconnecting the EW-D ASA to/from the power supply system

Connecting receivers to the EW-D ASA

Connecting antennas

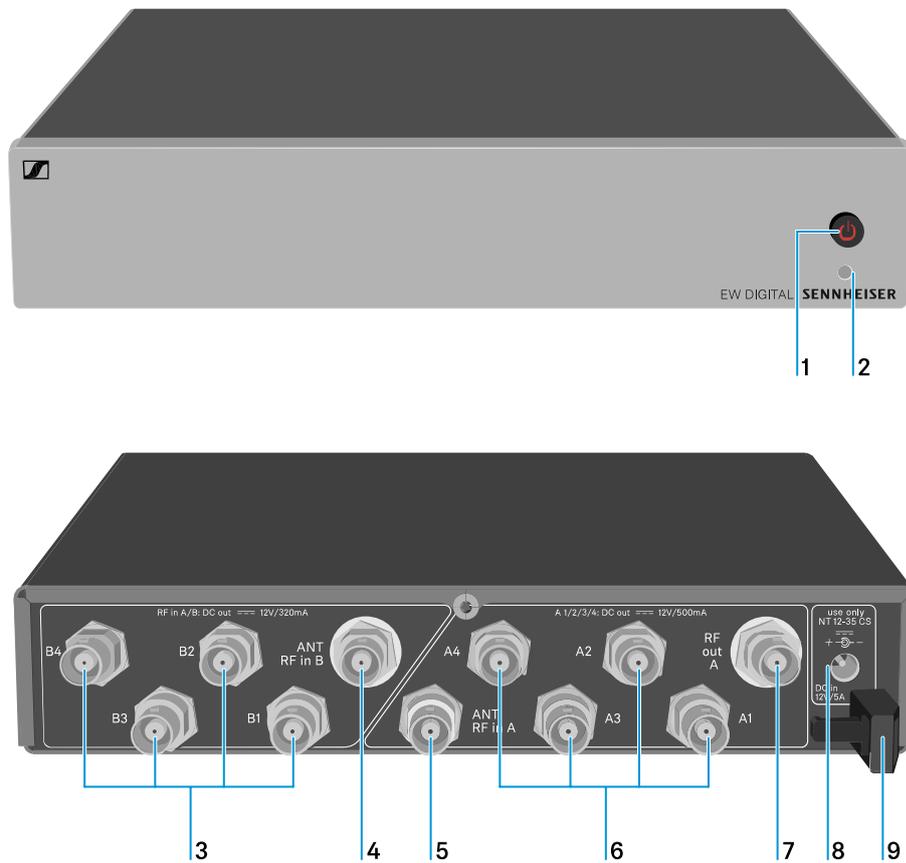
Information on antenna amplifiers and cable lengths

Configuring multi-channel systems

Installing the EW-D ASA in a rack

Switching the EW-D ASA on and off

### Product overview



#### 1 STANDBY button

- See [Switching the EW-D ASA on and off](#)



**2** LED: Operation indicator

- See [Switching the EW-D ASA on and off](#)

**3** 4 BNC sockets **B1** to **B4**

- RF outputs of diversity branch B for connection to the receiver
- See [Connecting receivers to the EW-D ASA](#)

**4** **ANT RF IN B** BNC socket

- Antenna input of diversity branch B
- See [Connecting antennas](#)

**5** **ANT RF IN A** BNC socket

- Antenna input of diversity branch A
- See [Connecting antennas](#)

**6** 4 BNC sockets **A1** to **A4**

- RF outputs of diversity branch A for connection to the receiver
- Each one of these RF outputs can also provide power to an EW-D EM receiver
- See [Connecting receivers to the EW-D ASA](#)

**7** **RF OUT A** BNC socket

- RF output only for connecting an additional ASA 214 to build an 8-channel diversity system
- See [Configuring multi-channel systems](#)

**8** **DC in** socket

- To connect the NT 12-35 CS power supply unit
- See [Connecting/disconnecting the EW-D ASA to/from the power supply system](#)

**9** Strain relief for the connection cable of the power supply unit

- See [Connecting/disconnecting the EW-D ASA to/from the power supply system](#)



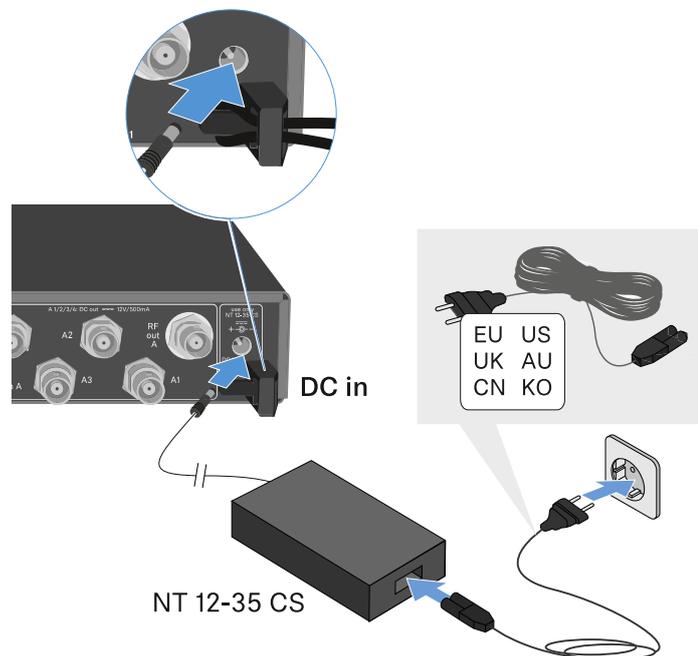
## Connecting/disconnecting the EW-D ASA to/from the power supply system

To supply power to the EW-D ASA, the connected receivers (EW-D EM only) and any antenna amplifiers used, you will need the NT 12-35 CS power supply unit.

Use only the supplied NT 12-35 CS power supply unit. It is designed for your antenna splitter and ensures safe operation.

### To connect the EW-D ASA antenna splitter to the power supply system:

- ▷ Plug the hollow jack plug of the power supply unit into the **DC in** socket of the antenna splitter.
- ▷ Pass the cable of the power supply unit through the strain relief.
- ▷ Connect one end of the power cord to the power supply unit and the other end to the wall socket.



### To completely disconnect the EW-D ASA antenna splitter from the power supply system:

- ▷ Unplug the power cable from the wall socket.
- ▷ Unplug the hollow jack plug of the power supply unit from the **DC in** socket of the antenna splitter.



## Connecting receivers to the EW-D ASA

You can connect and operate up to four EW-D EM or EW-DX EM 2 rack receivers with the EW-D ASA.

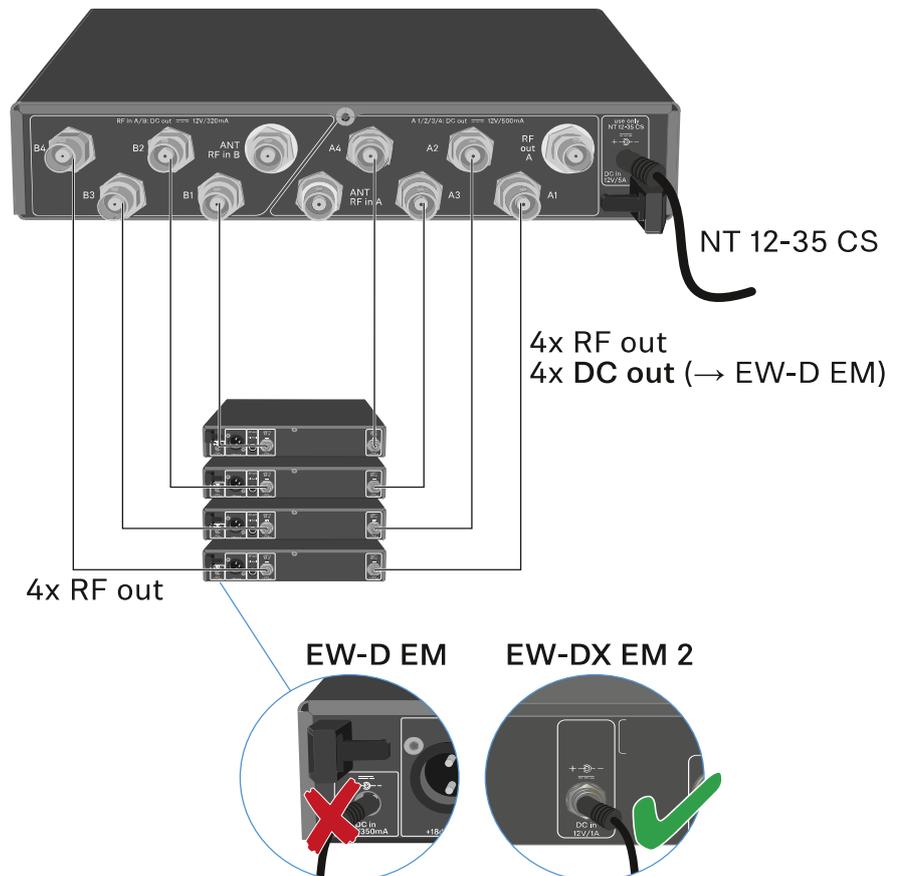
To connect the receivers to the EW-D ASA antenna splitter:

- ▷ Connect one of the receiver's antenna inputs to one of the BNC sockets **A1** to **A4** using one of the supplied BNC cables.
  - ➔ The **EW-D EM** receivers do not require their own power supply. They are powered via the BNC sockets **A1** to **A4**.



The **EW-DX EM 2** receivers cannot be supplied with power via the BNC sockets. They need to be powered by the included power supply unit or by PoE.

- ▷ Connect the receiver's other antenna input to one of the BNC sockets **B1** to **B4** using one of the supplied BNC cables.





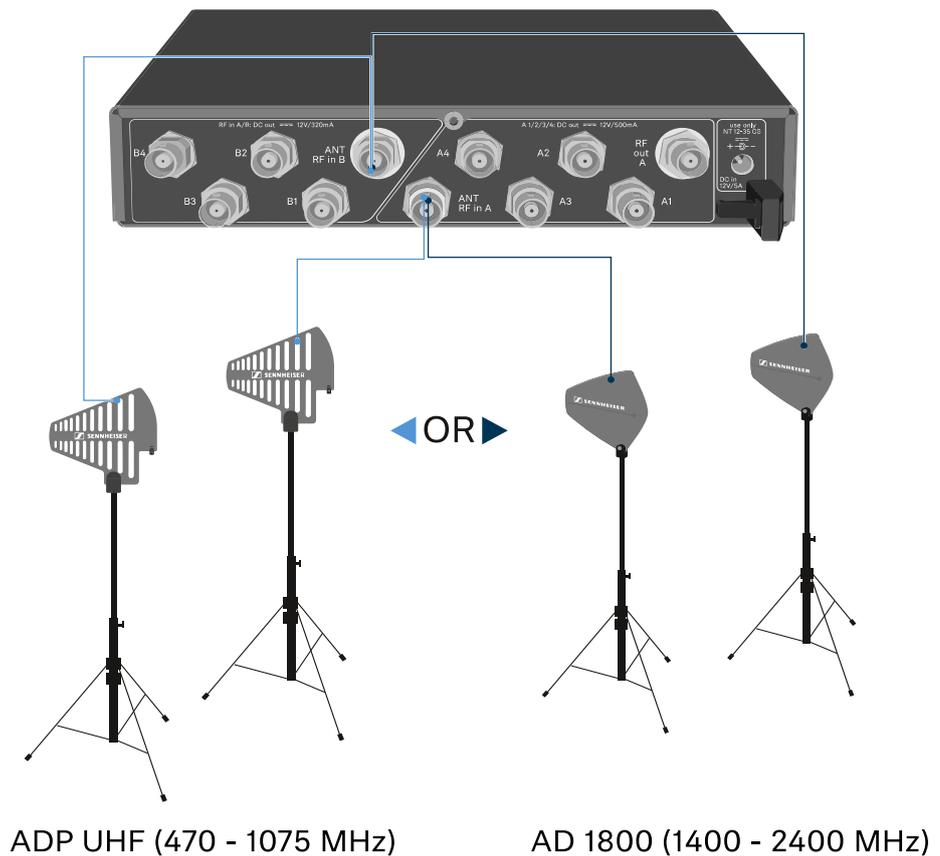
## Connecting antennas



To ensure optimal reception even in the case of poor reception conditions, we recommend using remote antennas.

### Connecting remote antennas

- ▶ Mount an antenna each or a combination of an antenna and an antenna amplifier to the BNC sockets **ANT RF IN A** and **ANT RF IN B**.
- ▶ Refer to the instructions under [Information on antenna amplifiers and cable lengths](#).



### Connecting rod antennas

- ▶ Mount the antennas to the BNC sockets **ANT RF IN A** and **ANT RF IN B**.
- ▶ Align the antennas in a V-shape in order to ensure the best possible reception.



## Information on antenna amplifiers and cable lengths

The following table shows which cable lengths require the use of the **EW-D AB** antenna amplifier as well as the maximum recommended cable lengths.

Frequency range around	Number of EW-D AB	Max. cable length RG 58	Max. cable length GZK 5000
500 MHz	0	8 m	16 m
	1	36 m	72 m
	2	64 m	128 m
700 MHz	0	7 m	14 m
	1	30 m	60 m
	2	53 m	106 m
900 MHz	0	6 m	12 m
	1	26 m	52 m
	2	46 m	92 m
1800 MHz	0	4 m	8 m
	1	16 m	36 m
	2	28 m	64 m



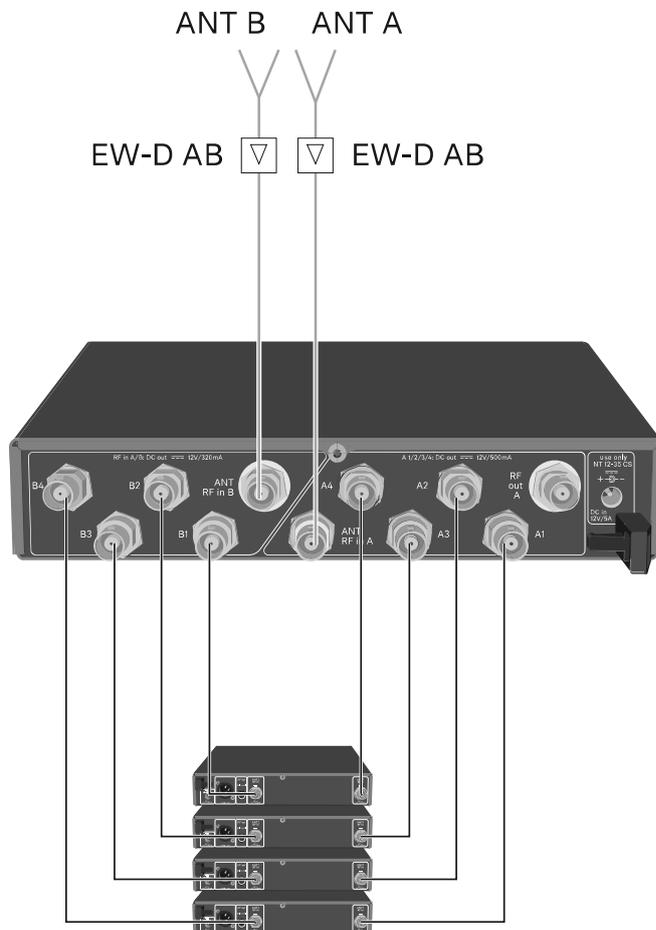
For frequency variants of the EW-D AB, see [EW-D AB antenna splitter](#).



## Configuring multi-channel systems

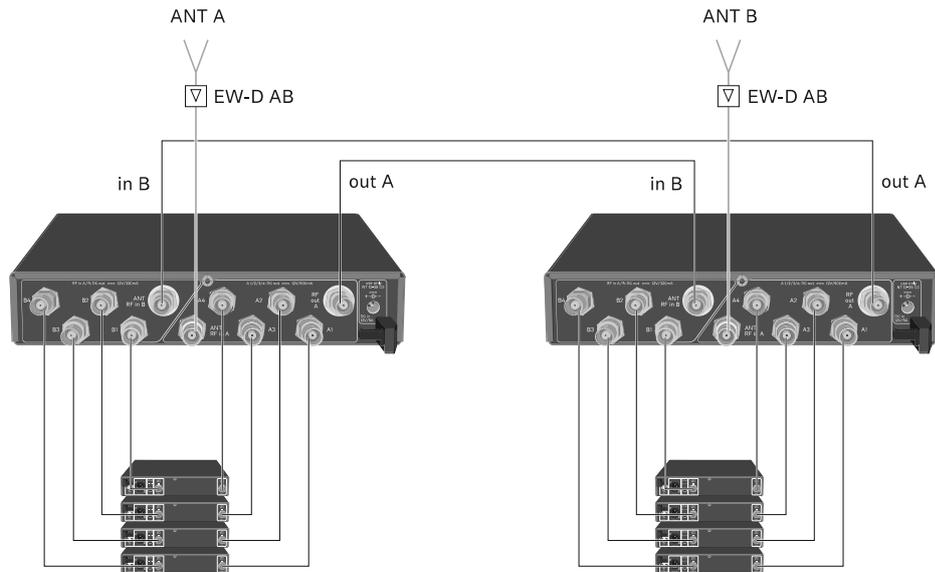
The following options for connecting multi-channel systems are possible:

### Option 1: Two antennas supply a 4-channel system

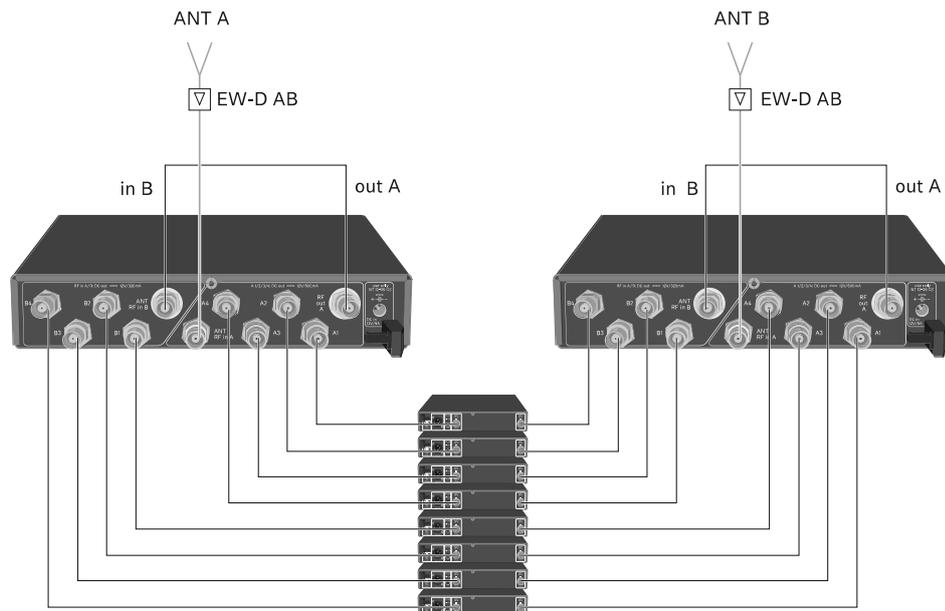




### Option 2: Two 4-channel systems are interconnected



### Option 3: Two antennas supply a 8-channel system





## Installing the EW-D ASA in a rack

### NOTICE



#### Rack mounting poses risks!

When installing the device in a closed 19" rack or multi-rack assembly, please consider that, during operation, the ambient temperature, the mechanical load and the electrical potentials will be different from those of devices which are not mounted into a rack.

- ▷ Make sure that the ambient temperature within the rack does not exceed the permissible temperature limit stated in the specifications. See ([Specifications](#)).
- ▷ Ensure sufficient ventilation; if necessary, provide additional ventilation.
- ▷ Make sure that the mechanical load of the rack is even.
- ▷ When connecting to the power supply system, observe the information indicated on the type plate. Avoid overloading the circuits. If necessary, provide overcurrent protection.
- ▷ When mounting in a rack, please note that intrinsically harmless leakage currents of the individual power supply units may accumulate, thereby exceeding the permissible limit value. As a remedy, ground the rack via an additional ground connection.

To mount the antenna splitter in a rack, you will need the GA 3 rack mount kit (optional accessory).

Rack mounting is carried out in the same way as for the EW-D EM receiver: see [Installing receivers in a rack](#).



## Switching the EW-D ASA on and off

### To switch on the antenna splitter:

- ▷ Short-press the **STANDBY** button.



- ➔ The antenna splitter switches on and the power LED turns green.

The RF signals of the connected antennas are distributed to all connected receivers.

### To switch the antenna splitter to standby mode:

- ▷ Press the **STANDBY** button for approx. 2 seconds.
  - ➔ The LED turns off. The connected antenna amplifiers are switched off. Connected receivers are switched off if they draw their supply voltage from the BNC sockets A1 to A4 (see [Connecting receivers to the EW-D ASA](#)).

### To fully switch off the antenna splitter:

- ▷ Disconnect the antenna splitter from the power supply system by unplugging the power supply unit from the wall socket.
  - ➔ The LED turns off.



## AWM active directional antenna

[Product overview](#)

[Antenna setup](#)

[Connecting the cable to the antenna](#)

[Recommended cable lengths](#)

[Installing and mounting the antenna](#)

[Mounting the antenna on the wall](#)

[Mounting the antenna on the ceiling](#)

[Mounting the antenna on a stand](#)

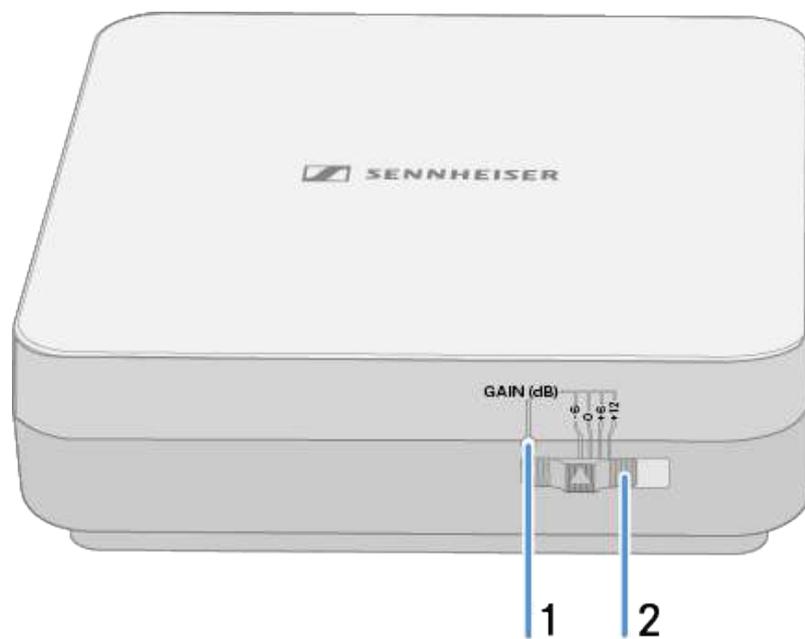
[Mounting the antenna on a VESA mount](#)

[Setting the gain](#)

[GAIN LED](#)

### Product overview

#### Front



1 Gain LED

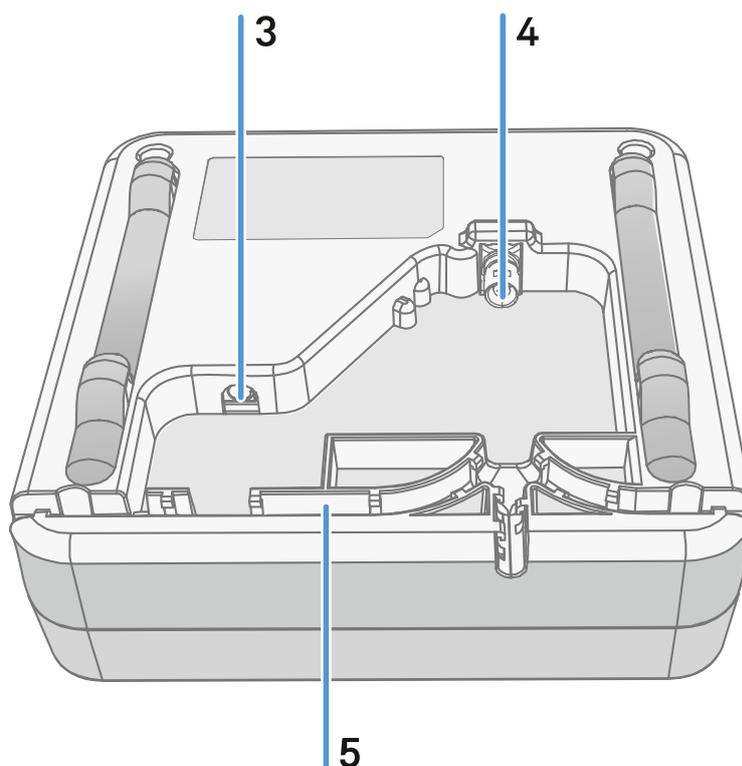
- See [Setting the gain](#)



2 Gain switch

- See [Setting the gain](#)

**Bottom**



**3 DC in** connection socket for the power supply unit

- See [Connecting the cable to the antenna](#)

**4 BNC** socket for **RF out**

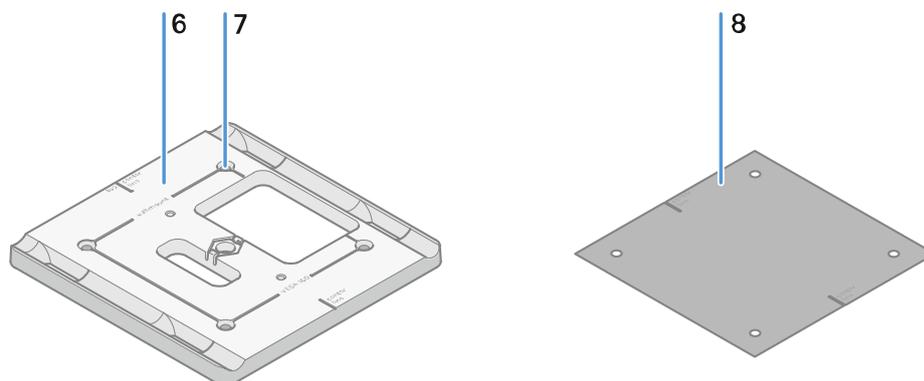
- See [Connecting the cable to the antenna](#)

**5** Wiring duct

- See [Connecting the cable to the antenna](#)



## Mounting frame and drilling template



### 6 Mounting frame

- See [Installing and mounting the antenna](#)

### 7 Hole

- $\varnothing 5.5$  mm

### 8 Drilling template

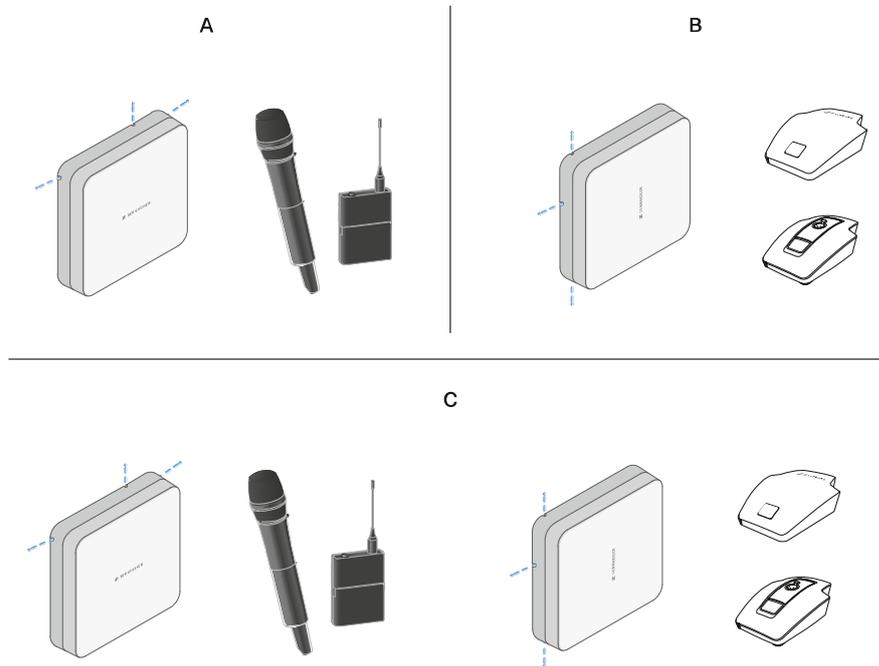
- See [Installing and mounting the antenna](#)



## Antenna setup

Instructions for optimum interaction with Sennheiser transmitters (system polarization)

Recommended setups depending on the antennas – polarization:



### A Vertical (normal orientation)

- Suitable for hand-held or bodypack transmitters

### B Horizontal (rotated orientation)

- Suitable for table stands

### C Vertical and horizontal (mixed orientation)

- Suitable for mixed transmitter types



## Connecting the cable to the antenna

Information on connecting the antenna:

- Observe the recommended cable lengths, see [Recommended cable lengths](#).
- The cable diameter must be <6 mm to fit in the cable sheath.
- Observe the length of the cable within the antenna, see [Cable sheath options](#).
- The DC connection is optional and provides an alternative to the DC supply via the BNC cable.
  - The EW-DX EM 4 Dante and EW-D ASA devices supply the antenna with voltage via the BNC cable, meaning no additional DC supply is required.
  - With the EW-D EM, EW-DX EM 2 and EW-DX EM 2 Dante devices, a power supply via the DC connection is required.



The antenna is supplied with power via the RF or DC cable. As soon as the power supply is established, the antenna switches on automatically. There is no separate on/off switch.

### To connect the cable to the antenna:

- ▷ If necessary, connect the DC cable to the **DC in** socket.



We recommend using the EW-D power supply unit (art. no. 509454).

- ▷ Run the cable out to one side.
- ▷ Connect the RF cable to the **RF in** socket.
- ▷ Run the cable out to the same side.



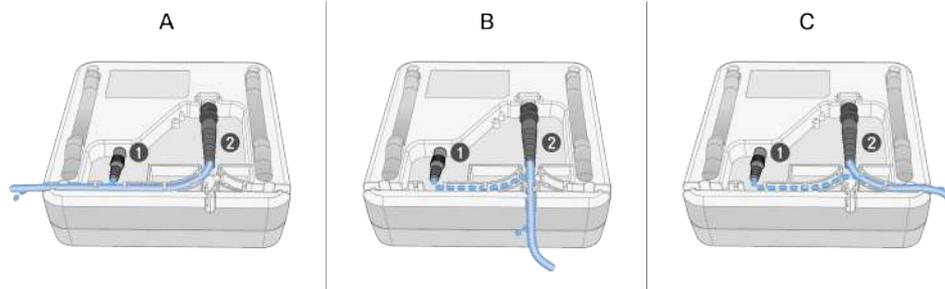
Alternatively, you can connect the cables through an opening in the wall.

### Cable sheath options:



The cable sheath enables optimum antenna characteristics and also enables a plastic cable duct to be laid to discreetly conceal the cables directly up to the antenna housing.

- **A** RF cable length in the antenna >205 mm
- **B** RF cable length in the antenna >110 mm
- **C** RF cable length in the antenna >140 mm





## Recommended cable lengths

To ensure reliable operation, observe the following **maximum antenna cable lengths** and adjust the gain accordingly:



Note the corresponding values in the data sheet of the antenna cable used.

Frequency range around	Gain	Max. cable length RG 58	Max. cable length GZL RG 8x
500 MHz	-6 dB	4.5 m	9 m
	0 dB	9 m	18 m
	+6 dB	18 m	36 m
	+12 dB	36 m	72 m
700 MHz	-6 dB	3.5 m	7 m
	0 dB	7 m	14 m
	+6 dB	14 m	28 m
	+12 dB	28 m	56 m
900 MHz	-6 dB	3 m	6 m
	0 dB	6 m	12 m
	+6 dB	12 m	24 m
	+12 dB	24 m	48 m
1800 MHz	-6 dB	2 m	4 m
	0 dB	4 m	8 m
	+6 dB	8 m	16 m
	+12 dB	16 m	32 m



## Installing and mounting the antenna

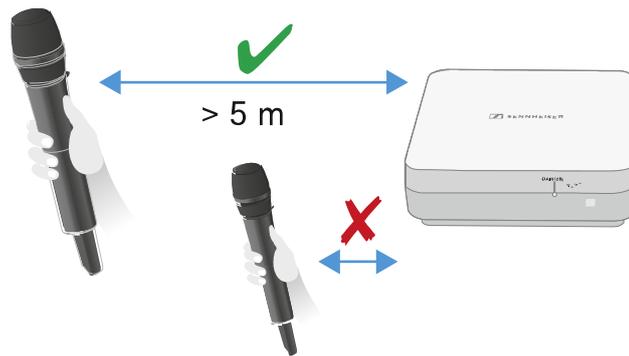
### Safety instructions for installation

Observe the following safety instructions when installing the product:

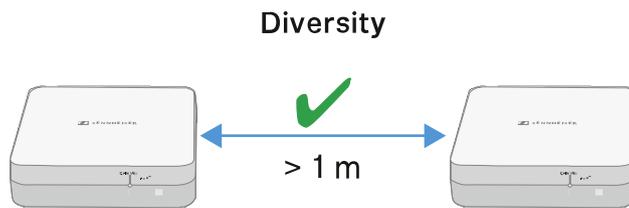
- The physical mounting and all electrical installations must be performed by a specialist.
- The specialist must have sufficient professional training, experience and knowledge of applicable provisions, regulations and standards to be able to properly assess the work assigned to them, identify possible hazards and take appropriate safety measures.
- When mounting the product, observe and follow all local, national and international regulations and standards.

Observe the following instructions when installing the antenna:

- ▷ If possible, position the antennas so that there is a direct line of sight (without obstacles) between the transmitters and the antennas.
- ▷ The distance between the antenna and transmitter must be  $> 5$  m.



- ▷ The distance between two antennas must be  $> 1$  m.



- ▷ In the case of neighboring systems with a high interference level, reduce the gain if the wanted signal is strong enough. See [Setting the gain](#).



The following mounting variants are possible:

[Mounting the antenna on the wall](#)

[Mounting the antenna on the ceiling](#)

[Mounting the antenna on a stand](#)

[Mounting the antenna on a VESA mount](#)

## Mounting the antenna on the wall

- ▷ Before mounting the antenna, see the information in chapter [Installing and mounting the antenna](#).

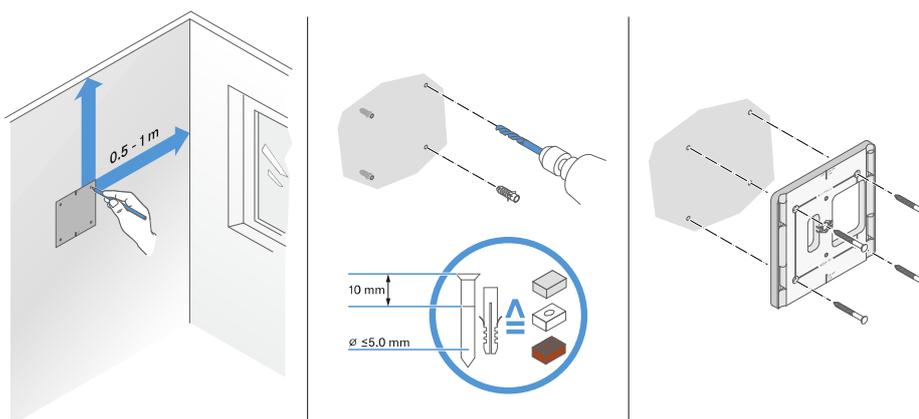
**To mount the antenna on the wall:**



For wall mounting, you will need the mounting frame supplied.

Screws and anchors for mounting the product to the wall are not included with delivery. Use screws and anchors that are appropriate for the particular characteristics of your wall.

- ▷ Use the included drilling template to mark the drill holes for wall mounting.
- ▷ Maintain a distance of 0.5 m to 1 m from other walls and the ceiling.
- ▷ Screw the mounting frame to the wall using four suitable screws and anchors.



### NOTICE



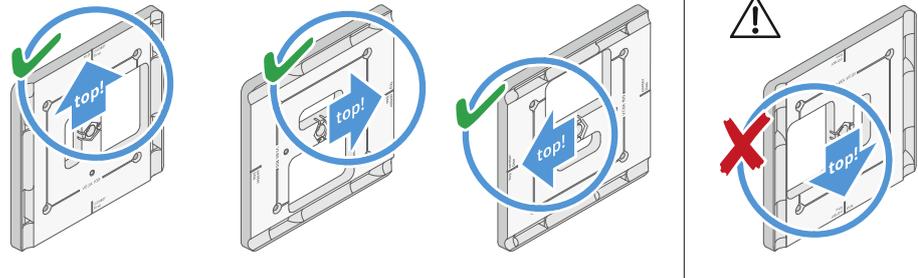
**Damage to the product due to incorrect mounting.**

Otherwise the product may fall and be damaged.

- ▷ The top marking on the mounting frame must not point downward.

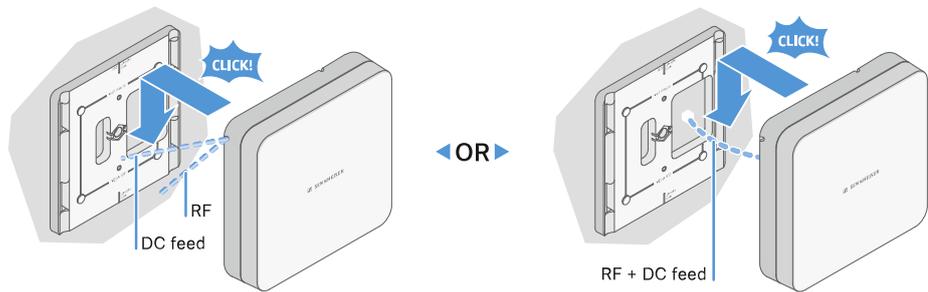


▷ Make sure that the mounting frame is aligned correctly.



▷ Connect the cable to the antenna as described under [Connecting the cable to the antenna](#).

▷ Insert the receiver into the mounting frame as shown in the example until you hear it click into place.



▷ Check that the antenna is correctly seated in the mount.



## Mounting the antenna on the ceiling

- ▷ Before mounting the antenna, see the information in chapter [Installing and mounting the antenna](#).

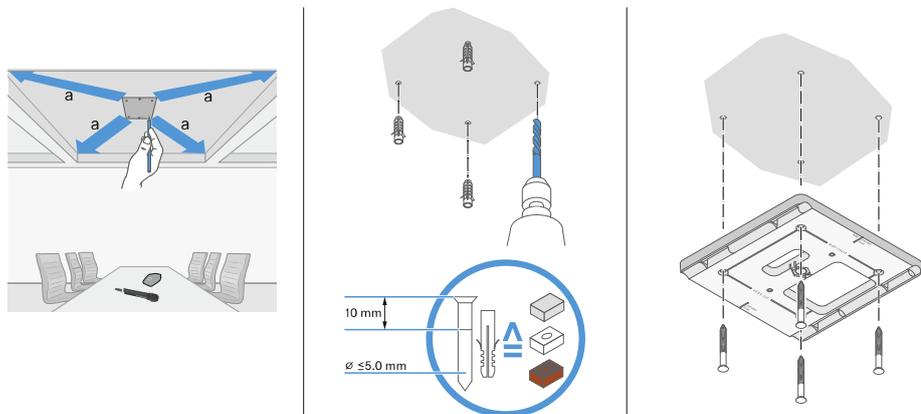
### To mount the antenna on the ceiling:



For wall mounting, you will need the mounting frame supplied.

Screws and anchors for mounting the product to the wall are not included with delivery. Use screws and anchors that are appropriate for the particular characteristics of your wall.

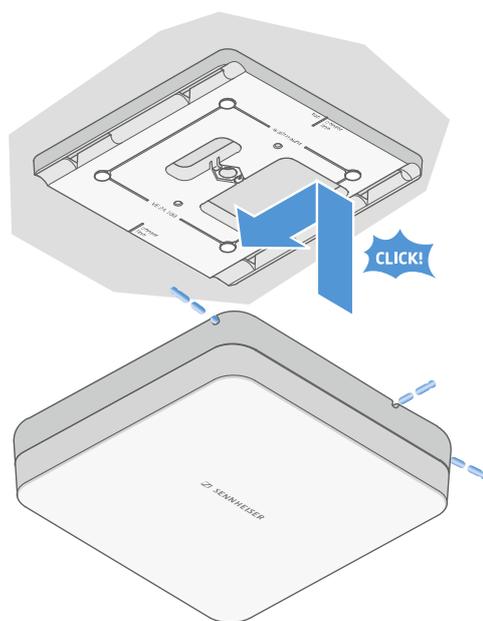
- ▷ Use the included drilling template to mark the drill holes for ceiling mounting. The optimum placement of the antenna is in the middle of the ceiling.
- ▷ Maintain a minimum distance of 0.5 m to 1 m from the walls.
- ▷ Screw the mounting frame to the ceiling using four suitable screws and anchors.



- ▷ Connect the cable to the antenna as described under [Connecting the cable to the antenna](#).



▷ Insert the receiver into the mounting frame as shown until you hear it click into place.



▷ Check that the antenna is correctly seated in the mount.



## Mounting the antenna on a stand

- ▷ Before mounting the antenna, see the information in chapter [Installing and mounting the antenna](#).

### To mount the antenna on a stand:



The thread in the middle of the mounting frame is suitable for mounting on a standard microphone stand with boom arm and 3/8" thread.

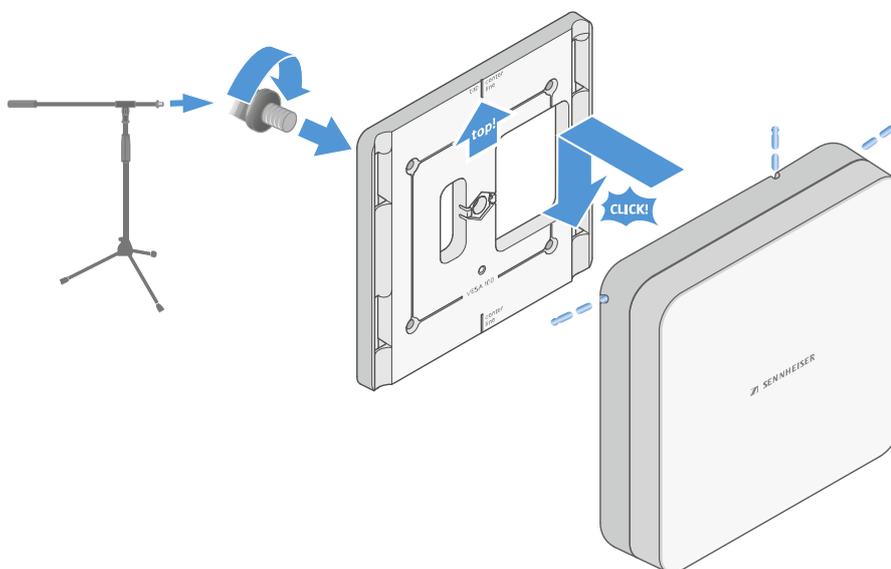
### ⚠ CAUTION



#### Danger due to falling objects

If you mount the antenna improperly on the stand, the stand and receiver may tip over. This can cause personal injury and damage to property.

- ▷ Use a stand that is designed for a central load of 5 kg.
  - ▷ Adjust the length of the boom arm as short as possible, as shown in the figure.
  - ▷ Set the height of the stand to a maximum of 2 meters.
  - ▷ Make sure that the total weight of the stand and the mounted receiver does not exceed 7 kg.
- 
- ▷ Screw the mounting frame onto the microphone stand as shown.
  - ▷ Insert the antenna into the mounting frame as shown until you hear it click into place.





## Mounting the antenna on a VESA mount

- ▷ Before mounting the antenna, see the information in chapter [Installing and mounting the antenna](#).

### To mount the antenna on a VESA mount:

**i** The holes in the mounting frame are positioned 100 mm apart so that the mounting frame can be mounted on any VESA 100 mount.

**i** The antenna characteristics can be changed depending on the type of VESA mount (geometry/material).

### **⚠ CAUTION**

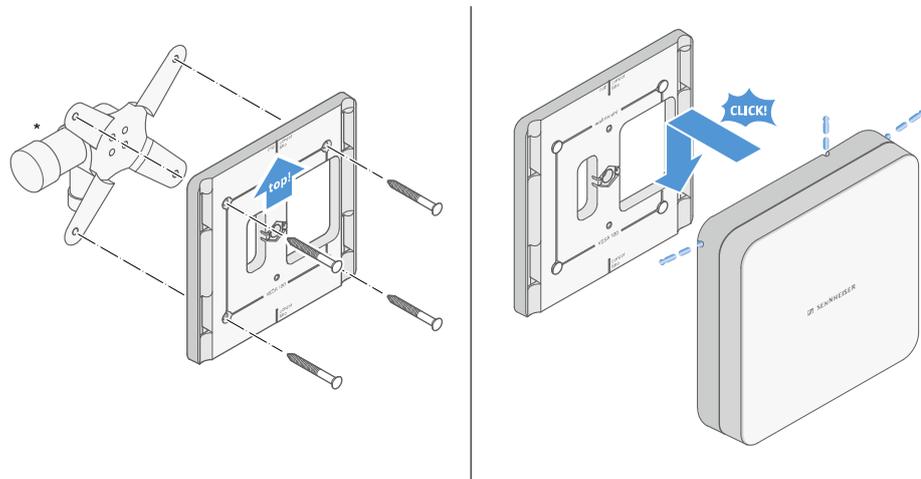


#### **Danger due to falling objects**

If you mount the antenna incorrectly on the VESA mount, the VESA mount and receiver may fall down. This can cause personal injury and damage to property.

- ▷ Follow the installation and safety instructions from the manufacturer of the VESA mount.

- ▷ Screw the mounting frame onto the VESA mount as shown using four suitable screws (not supplied).
- ▷ Insert the antenna into the mounting frame as shown until you hear it click into place.



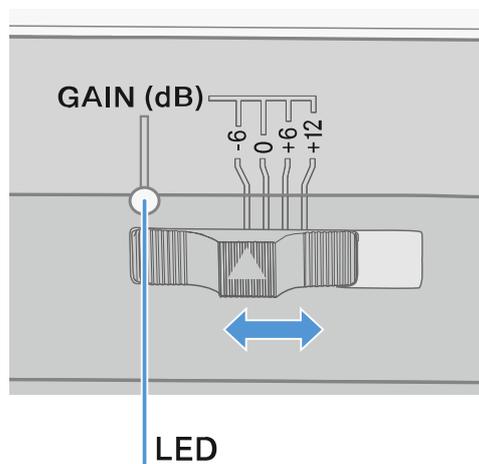
\*Example image of a VESA 100 mount



## Setting the gain

To set the desired gain:

Slide the switch to the desired position.



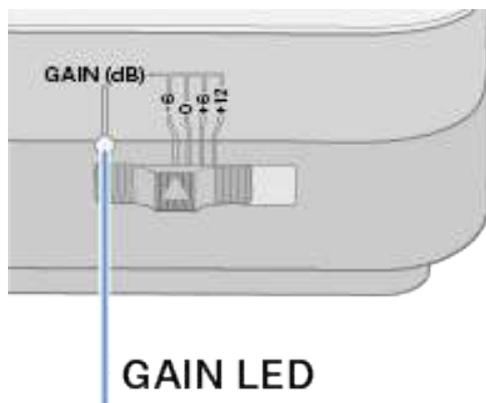
➔ The LED lights up in the appropriate color.



For information about the GAIN LED, see [GAIN LED](#)



## GAIN LED



The **GAIN** LED on the front of the antenna can indicate the following information.

---

The LED is white:

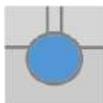
Gain set to +12 dB.



---

The LED is blue:

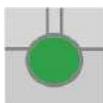
Gain set to +6 dB.



---

The LED is green:

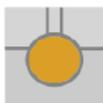
Gain set to 0 dB.



---

The LED is orange:

Gain set to -6 dB.



---

The LED is off:

no or insufficient power supply.





## Cleaning and maintenance

Note the following information when cleaning and maintaining products of the Evolution Wireless Digital series.

### NOTICE



**Liquids can damage the products' electronics.**

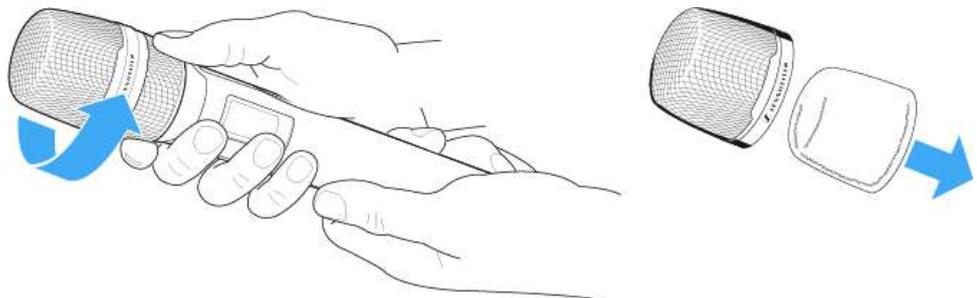
Liquids entering the product housing can cause a short-circuit and damage the electronics.

- ▷ Keep all liquids away from the products.
- ▷ Do not use any solvents or cleansing agents.

- ▷ Disconnect the products from the power supply system and remove rechargeable batteries and batteries before you begin cleaning.
- ▷ Clean all products only with a soft, dry cloth.
- ▷ Note the special cleaning instructions below for the following products.

### Cleaning the sound inlet basket of the microphone module

- ▷ Unscrew the top sound inlet basket from the microphone module by turning it counterclockwise.
- ▷ Remove the foam insert.



You can clean the sound inlet basket in two ways:

- Use a slightly damp cloth to clean the top sound inlet basket from the inside and outside.
- Use a brush and rinse with clean water.

- ▷ If necessary, clean the foam insert with a mild detergent or replace the foam insert.
- ▷ Dry the top sound inlet basket and foam insert.
- ▷ Reinsert the foam insert.
- ▷ Screw the sound inlet basket back onto the microphone module.



From time to time, you should also clean the microphone module contacts:

- ▷ Wipe the contacts of the microphone module with a soft, dry cloth.

#### **Cleaning the transmitter's contacts**

- ▷ Wipe the contacts with a dry cloth.

#### **Cleaning the L 70 USB and CHG 70N chargers**

- ▷ Remove all rechargeable batteries from the charging slots.
- ▷ Disconnect the charger from the power supply system before cleaning.
- ▷ Clean the product with a dry cloth.
- ▷ In addition, use a brush to remove dust from the charging slots.
- ▷ Clean the charging contacts from time to time with a cotton swab, for instance.



## 4. Frequently asked questions

This section contains answers to frequently asked questions and further information.

[Radio and frequencies](#)

[Audio](#)

[Usability](#)

[Accessories](#)

[Smart Assist app](#)

### Radio and frequencies

This section contains answers to frequently asked questions and further information about the following topics:

#### Why won't my transmitter synchronize with my receiver?

- Briefly press the **SYNC** button on both devices, but don't press too long ([Establishing a radio link | Synchronizing the receiver and transmitter](#))
- The two devices must have the same frequency range ([Frequency ranges](#))

#### What is the transmission range of the transmitter?

- Up to 100 m in an ideal environment (without obstacles)

#### What is the best way to wear the bodypack transmitter?

- Do not kink, bend or cover the antenna
- Avoid skin contact with the antenna
- If possible, attach it to your clothing with the belt clip

#### How do I know which transmitter is coupled to which receiver?

- EW-D SKM-S: [Identifying the paired receiver \(Identify function\)](#)
- EW-D SK: [Identifying the paired receiver \(Identify function\)](#)
- EW-DX SKM(-S): [Identifying the paired receiver \(Identify function\)](#)
- EW-DX SK (3-PIN): [Identifying the paired receiver \(Identify function\)](#)
- Additional option: Use color coding: [Using EW-D Color Coding Sets to label transmission paths](#)



### How can I distinguish between my wireless links without displays on the transmitters?

- EW-DX SKM(-S): [Identifying the paired receiver \(Identify function\)](#)
- EW-DX SK (3-PIN): [Identifying the paired receiver \(Identify function\)](#)
- Additional option: Use color coding: [Using EW-D Color Coding Sets to label transmission paths](#)

### The transmitter and receiver are synchronized, but there is no connection.

- Install antennas correctly on the receiver (EW-D EM: [Connecting antennas](#) | EW-DX EM 2: [Connecting antennas](#))
- EW-D: Use the scan function to find a free channel [AUTO SCAN menu item](#) and synchronize the transmitter again [Establishing a radio link | Synchronizing the receiver and transmitter](#)
- EW-DX: Using the Auto Setup function, find a free channel [Ch 1 / Ch 2 -> Scan / Auto Setup menu item](#) and resynchronize the transmitter [Establishing a radio link | Synchronizing the receiver and transmitter](#)

### The display on the receiver shows signal levels even though the paired transmitter is not switched on.

- There may be interfering frequencies (e.g. TV channels)
- EW-D: Use the scan function to find a free channel [AUTO SCAN menu item](#) and synchronize the transmitter again [Establishing a radio link | Synchronizing the receiver and transmitter](#)
- EW-DX: Using the Auto Setup function, find a free channel [Ch 1 / Ch 2 -> Scan / Auto Setup menu item](#) and resynchronize the transmitter [Establishing a radio link | Synchronizing the receiver and transmitter](#)

### Which frequency ranges are available?

- [Frequency ranges](#)



## Audio

### Which microphones can I use with my bodypack transmitter?

- EW-D SK: [Connecting a microphone to the bodypack transmitter](#)
- EW-DX SK (3-PIN): [Connecting a microphone to the bodypack transmitter](#)

### Which microphone modules can I use with my handheld transmitter?

- EW-D SKM-S: [Replacing the microphone module](#)
- EW-DX SKM(-S): [Replacing the microphone module](#)

### What exactly do the “Gain” and “AF Out” settings do?

- Gain: Level of the audio signal coming from the transmitter (EW-D EM: [GAIN menu item](#) | EW-DX EM 2 [Ch 1 / Ch 2 -> Gain menu item](#))
- AF Out: Level of the audio signal coming from the receiver (EW-D EM: [AF OUT menu item](#) | EW-DX EM 2 [Ch 1 / Ch 2 -> AF Out menu item](#))

### How do I adjust the settings so that my wireless link has the same volume as my guitar cable?

- EW-D: Configure **unity gain** settings under the menu items **GAIN** (volume that reaches the receiver from the guitar through the bodypack transmitter – [GAIN menu item](#)) and **AF OUT** (volume output from the receiver to the guitar amplifier – [AF OUT menu item](#)).

Possible **unity gain** settings (depending on the level of the incoming signal):

- AF Out **18 dB** | Gain **27 dB**
- AF Out **12 dB** | Gain **33 dB**
- AF Out **6 dB** | Gain **39 dB**



### How can I adjust sensitivity on the transmitter?

- EW-D: You cannot make any settings on the transmitter. You can adjust the level of the signal coming from the transmitter under the **GAIN** menu item ([GAIN menu item](#)) on the receiver.
- EW-DX: In addition to the gain that is set in the receiver ([Ch 1 / Ch 2 -> Gain menu item](#)), you can also set the trim on the transmitter (EW-DX SKM(-S): [Trim menu item](#) | EW-DX SK (3-PIN): [Trim menu item](#)) to adjust the sensitivity to the incoming audio signal.

### What is the latency?

- 1.9 ms

### Which audio outputs are available on the receiver?

- XLR-3 and 6.3 mm jack (EW-D EM: [Outputting audio signals](#) | EW-DX EM 2: [Outputting audio signals](#))



## Usability

This section contains answers to frequently asked questions and further information about the following topics:

### Why won't my transmitter synchronize with my receiver?

- Briefly press the SYNC button on both devices, but don't press too long ([Establishing a radio link | Synchronizing the receiver and transmitter](#))
- The two devices must have the same frequency range [Frequency ranges](#)

### Is there a way to check the battery status of the transmitter other than on the receiver?

- The Check function allows you to check the battery status on the transmitter.
- EW-D SKM-S: [Checking the battery status of the transmitter \(Check function\)](#)
- EW-D SK: [Checking the battery status of the transmitter \(Check function\)](#)

### How do I know if my transmitter is switched on?

- The transmitter's **LINK LED** lights up.
- EW-D SKM-S: [Meaning of the LEDs](#)
- EW-D SK: [Meaning of the LEDs](#)
- EW-DX SKM(-S): [Meaning of the LEDs](#)
- EW-DX SK (3-PIN): [Meaning of the LEDs](#)

### My LINK LED is steady or flashing yellow. What does that mean?

- EW-D EM: [Meaning of the LEDs](#)
- EW-D SKM-S: [Meaning of the LEDs](#)
- EW-D SK: [Meaning of the LEDs](#)
- EW-DX EM 2: [Meaning of the LEDs](#)
- EW-DX SKM(-S): [Meaning of the LEDs](#)
- EW-DX SK (3-PIN): [Meaning of the LEDs](#)



### **My LINK LED is steady or flashing red. What does that mean?**

- EW-D EM: [Meaning of the LEDs](#)
- EW-D SKM-S: [Meaning of the LEDs](#)
- EW-D SK: [Meaning of the LEDs](#)
- EW-DX EM 2: [Meaning of the LEDs](#)
- EW-DX SKM(-S): [Meaning of the LEDs](#)
- EW-DX SK (3-PIN): [Meaning of the LEDs](#)

### **Can I also operate an EW-D with desktop applications such as WSM or Control Cockpit?**

- No, that is not possible.

### **Can I also operate an EW-DX with desktop applications such as WSM or Control Cockpit?**

- Yes, the EW-DX can be operated with WSM and the Control Cockpit ([Connecting receivers in a network](#)).

### **Is the Smart Assist app necessary to operate my devices?**

- No, every device can also be operated without the Smart Assist app. However, the app offers certain advantages (see [Smart Assist app](#)).

### **Can the transmitter and receiver connect to other Bluetooth-capable systems?**

- A Bluetooth connection can only be established between a receiver and a smartphone with the Smart Assist app installed.

### **How can I turn on my transmitter without it transmitting immediately?**

- Press and hold the **SYNC** button and then short-press the **ON/OFF** button (EW-D SKM-S: [Product overview](#) / EW-D SK: [Product overview](#)).



### Can the ew G4 and EW-D series be operated together?

- The products in the **ew G4** and **EW-D** series are not compatible with each other. However, you can operate the two series in parallel without any problems.

### Are the receivers and transmitters of the EW-D and EW-DX series compatible?

- [Information on compatibility between EW-D, EW-DX and EW-DP](#)

### How can I distinguish between my wireless links without displays on the transmitters?

- EW-D SKM-S: [Identifying the paired receiver \(Identify function\)](#)
- EW-D SK: [Identifying the paired receiver \(Identify function\)](#)
- Additional option: Use color coding ([Using EW-D Color Coding Sets to label transmission paths](#))

### What exactly do the “Gain” and “AF Out” settings do?

- Gain: Level of the audio signal coming from the transmitter (EW-D EM: [GAIN menu item](#) | EW-DX EM 2: [Ch 1 / Ch 2 -> Gain menu item](#))
- AF Out: Level of the audio signal coming from the receiver (EW-D EM: [AF OUT menu item](#) | EW-DX EM 2: [Ch 1 / Ch 2 -> AF Out menu item](#))

### What is the meaning of the Bluetooth icon on the receiver’s display?

- The receiver is paired to a smartphone, so you can make settings via the Smart Assist app.
- [Displays on the receiver’s display panel](#)
- [Smart Assist app](#)

### I don’t want a smartphone to have access to my receiver.

- Disconnect the Bluetooth pairing in your smartphone’s menu.



**What is the best way to wear the bodypack transmitter?**

- Do not kink, bend or cover the antenna
- Avoid skin contact with the antenna
- If possible, attach it to your clothing with the belt clip

**Can you rotate the bodypack transmitter's belt clip so that the antenna points downward?**

- Yes, see [Changing the belt clip](#)



## Accessories

### Which microphones can I use with my bodypack transmitter?

- EW-D SK: [Connecting a microphone to the bodypack transmitter](#)
- EW-DX SK (3-PIN): [Connecting a microphone to the bodypack transmitter](#)

### Which microphone modules can I use with my handheld transmitter?

- EW-D SKM-S: [Replacing the microphone module](#)
- EW-DX SKM(-S): [Replacing the microphone module](#)

### Which batteries can I use for my transmitter?

- 2x AA 1.5 V **or**
- Sennheiser BA 70 rechargeable battery: [BA 70 rechargeable battery and L 70 USB charger](#)
- EW-D SKM-S: [Inserting and removing the batteries/rechargeable batteries](#)
- EW-D SK: [Inserting and removing the batteries/rechargeable batteries](#)
- EW-DX SKM(-S): [Inserting and removing the batteries/rechargeable batteries](#)
- EW-DX SK (3-PIN): [Inserting and removing the batteries/rechargeable batteries](#)

### Can I use accessories that I already have from other microphone series?

- You can use passive devices without a power supply (e.g. AD 1800 or A 1031-U antennas).
- You may already have compatible microphones or microphone modules:
  - EW-D SK: [Connecting a microphone to the bodypack transmitter](#)
  - EW-DX SK (3-PIN): [Connecting a microphone to the bodypack transmitter](#)
  - EW-D SKM-S: [Replacing the microphone module](#)
  - EW-DX SKM(-S): [Replacing the microphone module](#)
- We always recommend using the accessories that are optimized for the EW-D: [Accessories](#)



### Which antennas can I use with my receiver?

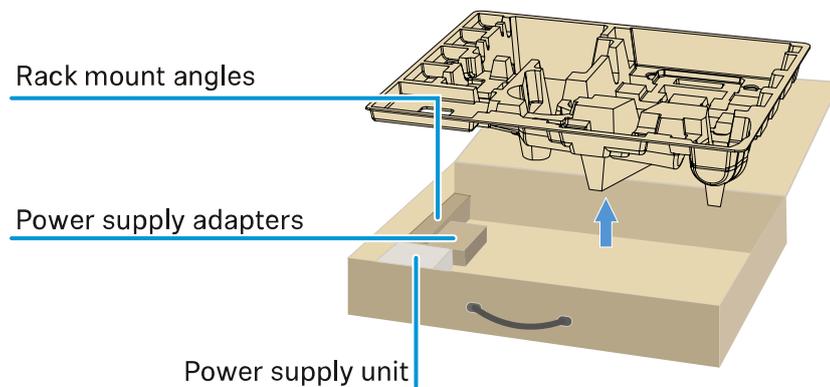
- In principle, you can use all antennas with BNC connectors that cover the frequency ranges of the EW-D series ([Frequency ranges](#))
- Recommended: [Antennas](#)

### What are the advantages of the Half Wave Dipole rod antennas (available as accessories) compared to the shorter rod antennas included with delivery?

- The **Half Wave Dipole** rod antennas have a higher antenna gain and therefore provide greater transmission range in low-scatter and low-reflection environments ([Rod antennas](#)).

### My set is missing the power supply unit and the rack mounting bracket.

- Take out the packaging insert:





## Smart Assist app

### Is the Smart Assist app necessary to operate my devices?

- No, every device can also be operated without the Smart Assist app. However, the app offers certain advantages (see [Smart Assist app](#)).

### I want to see if the app is right for me before registering. Where can I get more information?

- In the app's demo mode or on the website: <https://www.sennheiser.com/evolution-wireless-digital-app>

### In which languages is the app available?

- English
- German
- French
- Spanish
- Portuguese
- Russian
- Chinese
- Korean
- Arabic

### Can I pair multiple smartphones with a single receiver?

- No, you can pair only one smartphone with the receiver.

### How many devices can I operate with my app?

- Up to 16 channels

### How do I create a setup with 2 or more devices?

- Use the **Add Device** and **Auto Scan** functions. The app will lead you step by step through the process.



**Can I set a specific frequency range for the Auto Scan function?**

- No, the function scans the entire available frequency spectrum.

**Why can't I access a receiver?**

- The receiver may be switched off or out of Bluetooth range.

**How are the app and the receivers connected to the app secured against possible misuse?**

- To pair a receiver and a smartphone, both devices must be physically present.  
Only after successful pairing can values in the receiver be changed via the smartphone.

**Can I use a Bluetooth dongle to operate the app on a computer?**

- No. The app is only available for iOS and Android.

**How can I display the app on a larger screen?**

- You can use a mirroring service such as QuickTime. However, you still control the app from the smartphone.



## 5. Specifications

All specifications at a glance.

### System

[EW-D EM rack receiver](#)  
[EW-DX EM 2 rack receiver](#)  
[EW-DX EM 2 Dante rack receiver](#)  
[EW-DX EM 4 Dante rack receiver](#)  
[EW-D SKM-S handheld transmitter](#)  
[EW-DX SKM | EW-DX SKM-S handheld transmitter](#)  
[EW-D SK bodypack transmitter](#)  
[EW-DX SK | EW-DX SK 3-PIN bodypack transmitter](#)  
[Table stand EW-DX TS 3-pin | EW-DX TS 5-pin](#)  
[EW-DP EK portable receiver](#)  
[EW-DP SKP plug-on transmitter receiver](#)  
[EW-D ASA antenna splitter](#)  
[EW-D AB antenna booster](#)  
[AWM active directional antenna](#)  
[ADP UHF passive directional antenna \(470 – 1075 MHz\)](#)  
[BA 70 rechargeable battery](#)  
[L 70 USB charger](#)  
[CHG 70N-C charger](#)

## System

### Audio link frequency ranges for EW-D, EW-DP

- **Q1-6:** 470.2 – 526 MHz
- **R1-6:** 520 – 576 MHz
- **R4-9:** 552 – 607.8 MHz
- **S1-7:** 606.2 – 662 MHz
- **S4-7:** 630 – 662 MHz
- **S7-10:** 662 – 693.8 MHz
- **U1/5:** 823.2 – 831.8 MHz & 863.2 – 864.8 MHz
- **V3-4:** 925.2 – 937.3 MHz
- **Y1-3:** 1785.2 – 1799.8 MHz



**Audio-Link EW-DX frequency ranges**

- **Q1-9:** 470.2 – 550 MHz
- **R1-9:** 520 – 607.8 MHz
- **S1-10:** 606.2 – 693.8 MHz
- **S2-10:** 614.2 – 693.8 MHz
- **S4-10:** 630 – 693.8 MHz
- **U1/5:** 823.2 – 831.8 MHz & 863.2 – 864.8 MHz
- **V3-4:** 925.2 – 937.3 MHz
- **V5-7:** 941.7 – 951.8 MHz & 953.05 – 956.05 MHz & 956.65 – 959.65 MHz
- **Y1-3:** 1785.2 – 1799.8 MHz

**Bluetooth® Low Energy (BLE) frequency range**

2402 – 2480 MHz

**Audio frequency response**

20 Hz – 20 kHz (-3 dB) @ 3 dBfs

**Audio THD**

≤ -60 dB for 1 kHz @ -3 dBfs input level

**Dynamic range**

134 dB

**System latency**

1.9 ms

**Operating temperature range**

-10 °C – +55 °C (EW-D, EW-DP)

**Relative humidity**

5 – 95 % (non-condensing)



## EW-D EM rack receiver

### **Input voltage**

DC 11 – 13 V

### **Input current**

≤ 300 mA

### **Transmission power**

BLE: max. 10 mW EIRP

### **Audio output power**

18 dBu max.

### **Dimensions**

212 × 44 × 189 mm (1 3/4" × 3 7/8" × 7 3/16")

### **Weight**

Approx. 1000 g (without antennas and power supply unit)



## EW-D ASA antenna splitter

### Frequency ranges

- **EW-D ASA (Q-R-S):** 470 – 694 MHz
- **EW-D ASA CN/ANZ(Q-R-S):** 470 – 694 MHz
- **EW-D ASA (T-U-V-W):** 694 – 1075 MHz
- **EW-D ASA (X-Y):** 1350 – 1805 MHz

### EW-D ASA antenna splitter

2 x 1:4 or 1 x 1:8, active

### Gain

- in A – out A:  $0 \pm 1$  dB
- in A – out A1 ... A4:  $0 \pm 1$  dB
- in B – out B1 ... B4:  $0 \pm 1$  dB

### IIP3

> 25 dBm

### Impedance

50  $\Omega$

### Reflection loss

10 dB (all RF outputs)

### Operating voltage

DC +12 V from NT 12-35 CS power supply unit

### Current consumption

210 mA

### Total current consumption

Max. 3 A (with 4 EW-D EM and connected EW-D AB)

### Supply for antenna boosters at ANT RF in A and ANT RF in B

- DC 12 V
- 320 mA



**Supply for receivers at A1 to A4**

- DC 12 V
- Typically 350 mA, max. 500 mA

**Relative humidity**

5 – 95 %

**Operating temperature range**

-10 °C – +55 °C (14 °F – 131 °F)

**Storage temperature range**

-20 °C – +70 °C (-4 °F – 158 °F)

**Dimensions**

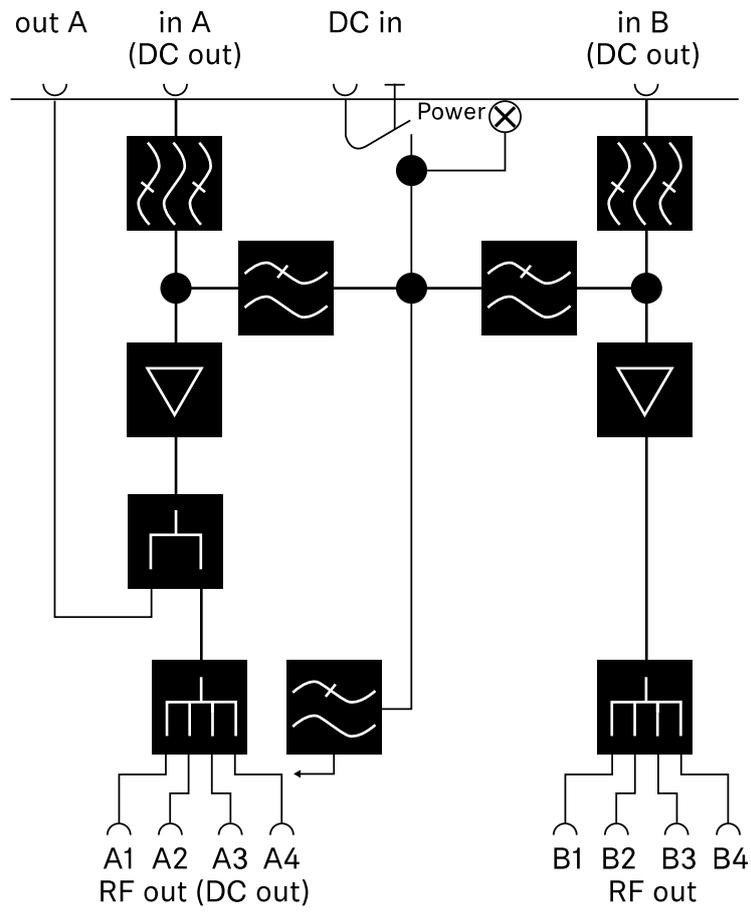
Approx. 212 x 168 x 43 mm

**Weight**

Approx. 1100 g



Block diagram





## EW-D AB antenna booster

### Frequency ranges

- **EW-D AB (Q):** 470 – 550 MHz
- **EW-D AB (R):** 520 – 608 MHz
- **EW-D AB (S):** 606 – 694 MHz
- **EW-D AB (U):** 823 – 865 MHz
- **EW-D AB (V):** 902 – 960 MHz
- **EW-D AB (Y):** 1785 – 1805 MHz

### Power supply (DC coupled)

DC 12 V (DC 9 – 18 V) / max. 160 mA @ 12 V, center contact +

### IIP3

> 25 dBm

### Max. RF input power

+10 dBm

### Gain

Typically 12 dB

### Impedance

50  $\Omega$

### Connections

2x BNC female, DC power supply from OUT to ANT

### Dimensions

Approx. 95 x 47 x 21 mm

### Weight

Approx. 120 g

### Relative humidity

5 – 95 %

### Operating temperature range

-10 °C – +55 °C (14 °F – 131 °F)

### Storage temperature range

-20 °C – +70 °C (-4 °F – 158 °F)



## AWM active directional antenna

### Frequency ranges

- UHF I: 470 – 694 MHz
- UHF II: 823 – 1075 MHz
- 1 G8: 1785 – 1805 MHz

### Apex angle (horizontal, -3 dB)

- UHF I: not applicable
- UHF II: approx. 80°
- 1 G8: approx. 110°

### Front-to-back ratio

- UHF I: not applicable
- UHF II: approx. 10 dB
- 1 G8: approx. 10 dB

### Antenna gain

- UHF I:  $\geq +3.0$  dBi (480 MHz) |  $\geq +3.5$  dBi (582 MHz) |  $\geq +4.5$  dBi (694 MHz)
- UHF II:  $\geq +6.0$  dBi
- 1 G8:  $\geq +6.0$  dBi

### Antenna polarization

Linear

### Amplification (signal booster, low-noise, band-selective, +/-1 dB)

- +12 dB: Max. amplification 12 dB
- +6 dB: Max. amplification 6 dB
- 0 dB<sup>1</sup>: Max. amplification UHF I, UHF II: -0.5; 1 G8: -1.5
- -6 dB: Max. amplification -6 dB

<sup>1</sup> The band-selective booster is bypassed at 0 dB. This mode requires a DC power supply.

### OIP3 (@ “+12 dB”)

$\geq 35$  dBm

### Max. RF output power

- UHF I / UHF II: approx. +22 dBm
- 1 G8: approx. +18 dBm



**RF connection**

BNC female, DC coupled

**Impedance**

50  $\Omega$

**DC connection**

5.5 x 1.6 mm DC hollow jack, polarity: + inside

**Power supply (via BNC or DC)**

12 V DC (9 – 18 V DC) / max. 100 mA @ 12 V

**LED display**

ON (white = "+12 dB"; blue = "+6 dB"; green = "0 dB"; orange = "-6 dB")

OFF (no or insufficient power supply)

**Thread for tripod mounting**

3/8" inside thread

**Mounting holes**

VESA 100 x 100

**Color**

Traffic white (RAL: 9016)

**Housing material**

Halogen-free flame-retardant PC/ABS

**Dimensions**

- Without wall bracket: 180 x 180 x 53 mm
- With wall bracket: 180 x 180 x 63 mm

**Weight**

Approx. 700 g

**Operating temperature range**

-10 °C to +55 °C

**Storage temperature range**

-20 °C to +70 °C

**Relative humidity**

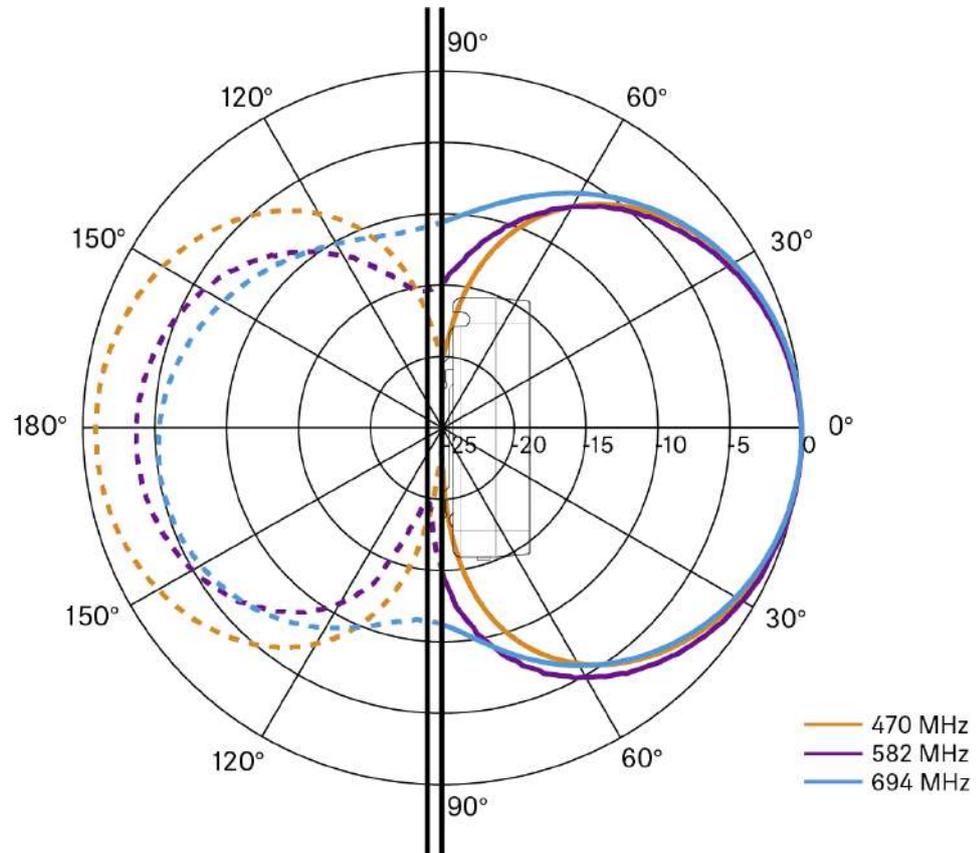


5 to 95%

**Polar diagram**

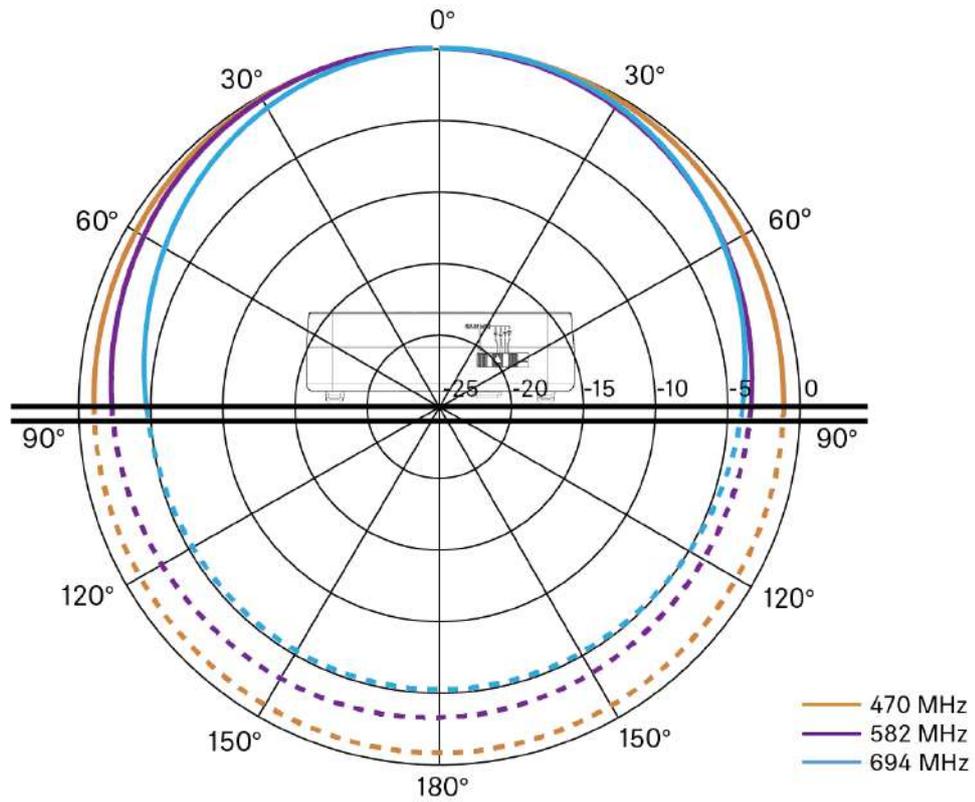
Normalized to max. antenna gain

UHF (470 – 694 MHz) vertical [dB]

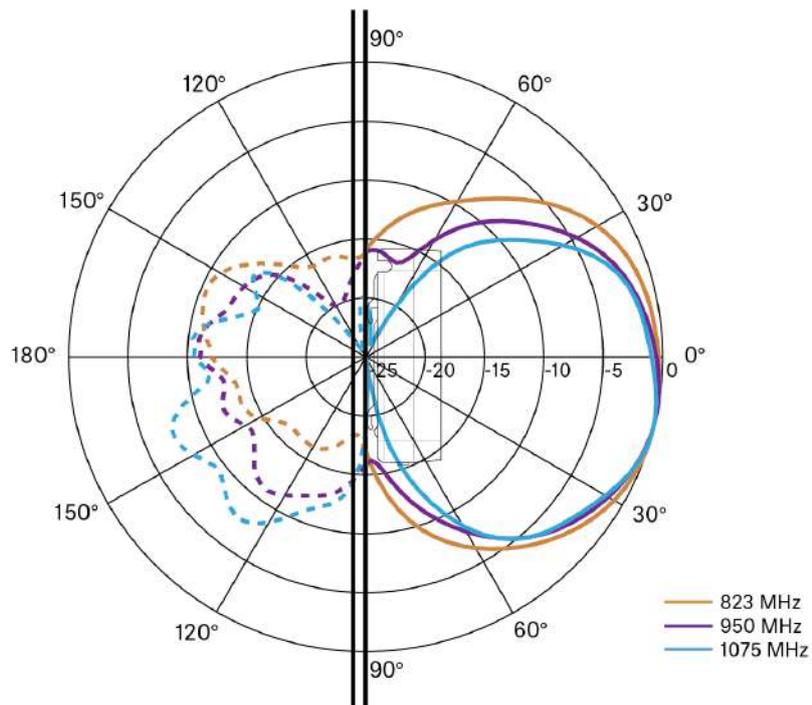




UHF (470 – 694 MHz) horizontal [dB]

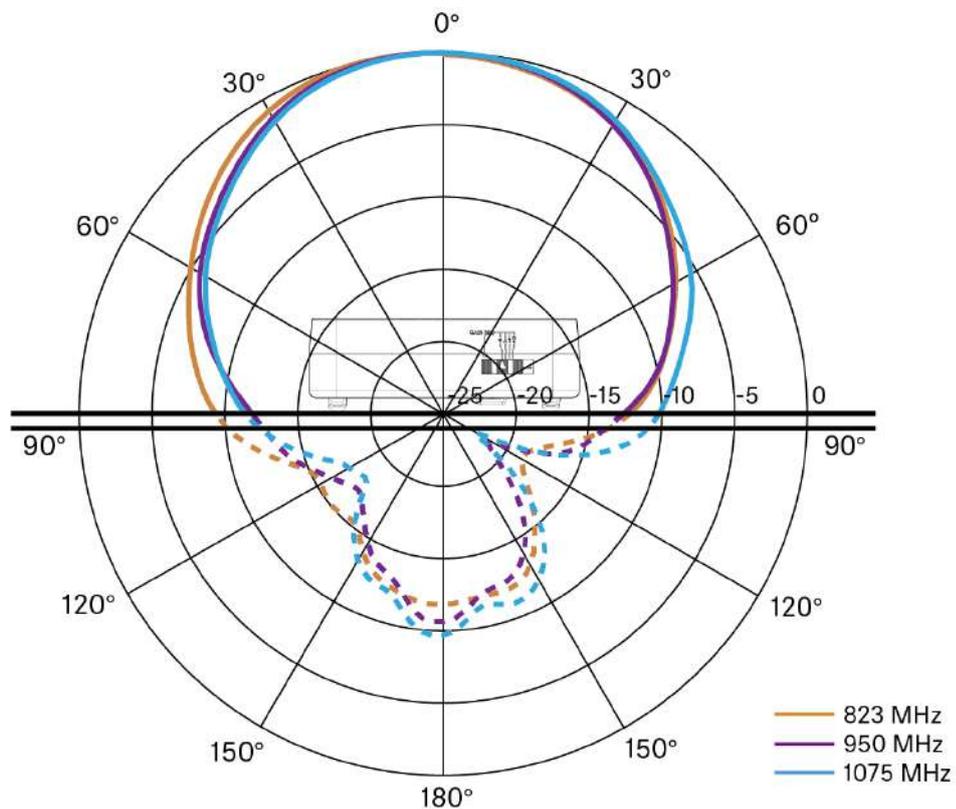


UHF (823 – 1075 MHz) vertical [dB]



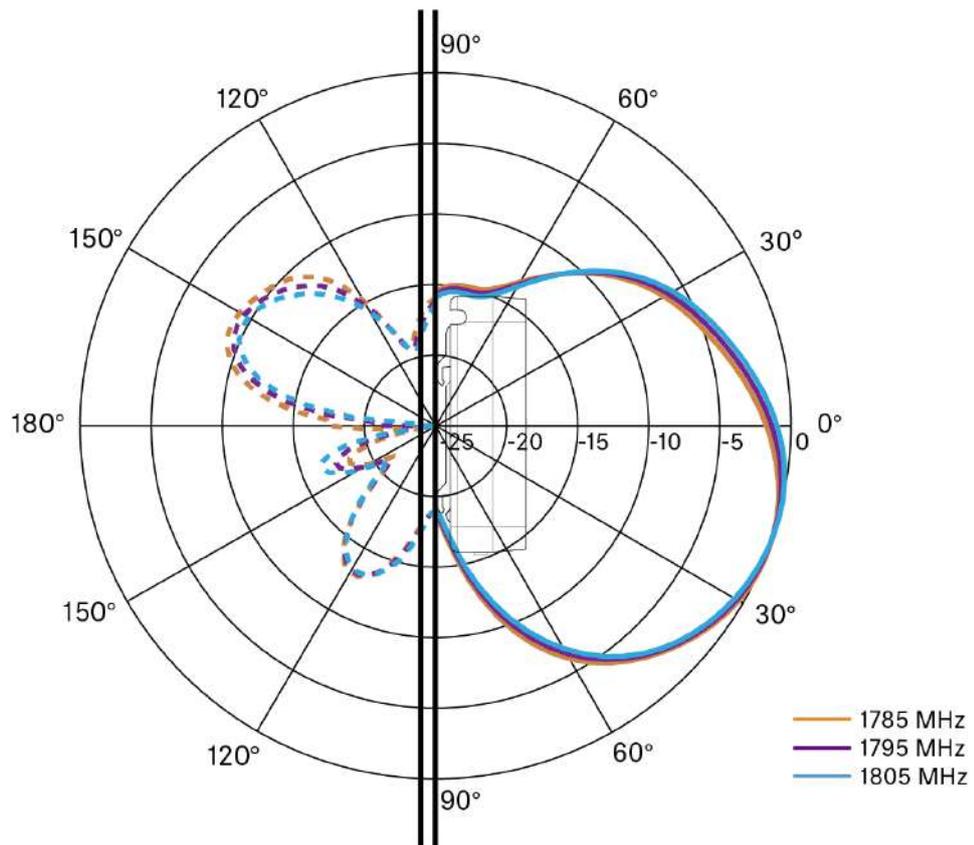


UHF (823 – 1075 MHz) horizontal [dB]



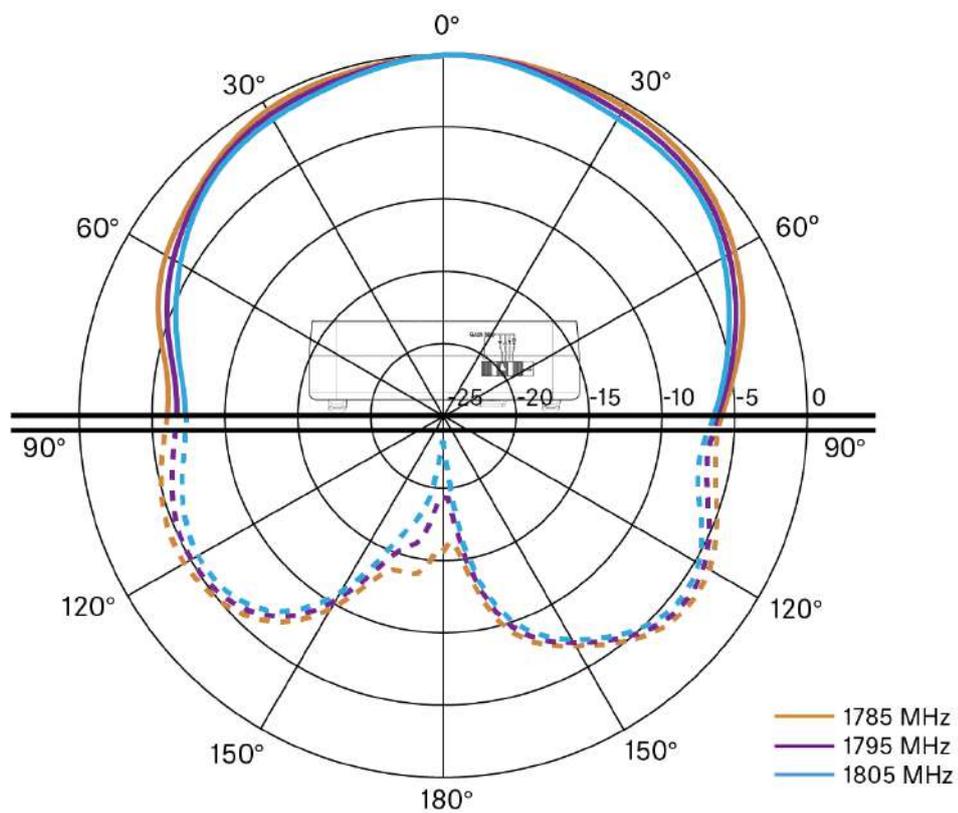


1G8 vertical [dB]





1G8 horizontal [dB]





## ADP UHF passive directional antenna (470 – 1075 MHz)

### **Frequency range**

470 – 1075 MHz

### **Apex angle (-3 dB)**

Approx. 100°

### **Front-to-back ratio**

> 14 dB

### **Gain**

Typically 5 dBi

### **Impedance**

50  $\Omega$

### **Connection**

BNC female, no DC path

### **Thread for tripod mounting**

3/8" and 5/8"

### **Dimensions**

319 x 310 mm

### **Weight**

Approx. 320 g

### **Operating temperature range**

-10 °C to +55 °C

### **Storage temperature range**

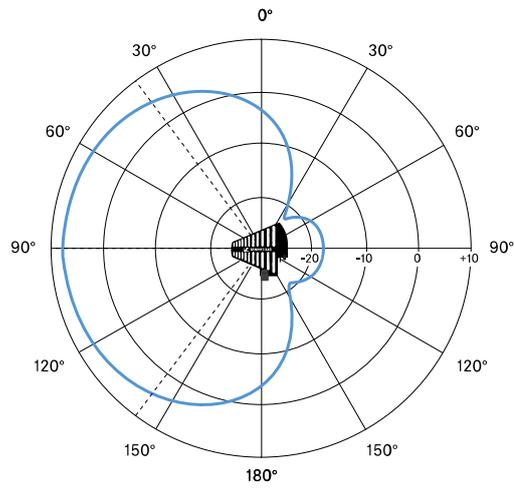
-20 °C – +85 °C (-4 °F – 158 °F)

### **Relative humidity**

5 – 95 %



Typically Polar diagram





## BA 70 rechargeable battery

### **Rated capacity**

1720 mAh

### **Nominal voltage**

3.8 V

### **Charging voltage**

max. 4.35 V

### **Charging time**

Typically 3 h @ room temperature

### **Dimensions**

Approx. 54 x 30 x 15

### **Weight**

Approx. 33 g

### **Temperature range**

- Charging: 0 °C – +55 °C (32 °F – 131 °F)
- Discharging: -10 °C to +55 °C
- Storage: -10 °C to +45 °C

### **Relative humidity**

- Charging/discharging: 25% to 95%, non-condensing
- Storage: 30% to 70%, non-condensing



## L 70 USB charger

### **Charging capacity**

2 Sennheiser BA 70 rechargeable battery packs

### **Input voltage**

Typically 5 V

### **Input current**

max. 2 A

### **Charging voltage**

nominally 4.35 V

### **Charging current**

max. 860 mA per battery pack

### **Charging time**

max. 3.5 h with NT 5-20 UCW power supply unit

### **Temperature range**

- Charging: 0 °C to +55 °C
- Storage: -20 °C to +70 °C

### **Relative humidity**

Max. 95% (non-condensing)

### **Dimensions**

100 × 35 × 70 mm (1 3/4" × 3 7/8" × 7 3/16")

### **Weight**

Approx. 86 g



## CHG 70N-C charger

### Power supply

- DC 12 V (single unit or cascade of up to 5 units)
- PoE IEEE 802.3af Class 0 (CAT5e or higher), single unit only

### Current consumption

max. 3.5 A for a cascade of up to 5 units

### Ethernet

- RJ-45 socket, IEEE802.3
- 100Base-TX (half+full duplex)
- 10Base-T (half+full duplex)

### Dimensions

Approx. 200 x 104 x 116 mm

### Weight

Approx. 640 g, without power supply unit

### Charging slots

2

### Charging capacity per slot

- BA 70 rechargeable battery **or**
- EW-DX SK with BA 70 **or**
- EW-DX SKM with BA 70

### Charging voltage

4.35 V

### Charging current

min. 344 mA

max. 860 mA

### Full charging time

Max. 3.5 h



**Temperature range**

- Charging: -10 °C to +50 °C
- Storage: -20 °C to +70 °C

**Relative humidity**

Max. 95% (non-condensing)



## 6. Contact

Contact information in case of questions about our products and/or services.



### **Questions about the product / Help with technical issues**

If you have any questions about our products and/or services, please do not hesitate to contact us at <https://www.sennheiser.com/support>.

