SENNHEISER

evolutionwireless **G3**

SKM 300

Contents

An animated instruction manual can be viewed on the SKM 300 G3 product page on our website at www.sennheiser.com.

Important safety instructions

- Read this instruction manual.

- Keep this instruction manual. Always include this instruction manual when passing the product on to third parties.

- Heed all warnings and follow all instructions.

- Clean the product only with a slightly damp cloth.

- Do not place the product near any heat sources such as radiators, stoves, or other devices (including amplifiers) that produce heat.

- Only use attachments/accessories specified by Sennheiser.

- Refer all servicing to qualified service personnel. Servicing is required if the device has been damaged in any way, liquid has been spilled, objects have fallen inside, the product has been exposed to rain or moisture, does not operate properly or has been dropped.

- WARNING: To reduce the risk of short circuits, do not use the product near water and do not expose it to rain or moisture.

Intended use

Intended use of the ew 300 G3 series products includes:

- having read this instruction manual, especially the chapter ''Important safety instructions'' above on this page,

- using the products within the operating conditions and limitations described in this instruction manual.

''Improper use'' means using the products other than as described in these instructions, or under operating conditions which differ from those described herein.

The SKM 300 G3 radio microphone family

The SKM 300 G3 radio microphone is part of the evolution wireless series generation 3 (ew G3).
This series offers high-quality state-of-the-art RF transmission systems with a high level of operational reliability and ease of use. Transmitters and receivers permit wireless transmission with studio-quality sound.

Features of the evolution wireless 300 G3 series:

- Optimized PLL synthesizer and microprocessor technology
- HDX noise reduction system
- Pilot tone squelch control
- True diversity technology
- Switching bandwidth of 42 MHz
- Increased immunity to intermodulation and interferences in multi-channel operation
- Interchangeable microphone heads, allowing the use of different pick-up patterns and sensitivities
- Extended muting function due to MIC button on the radio microphone

The frequency bank system

The radio microphone is available in 6 UHF frequency ranges with 1,680 transmission frequencies per frequency range:
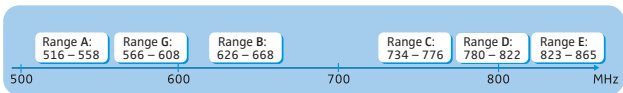
Each frequency range (A–E, G) offers 26 frequency banks with up to 24 channels each:
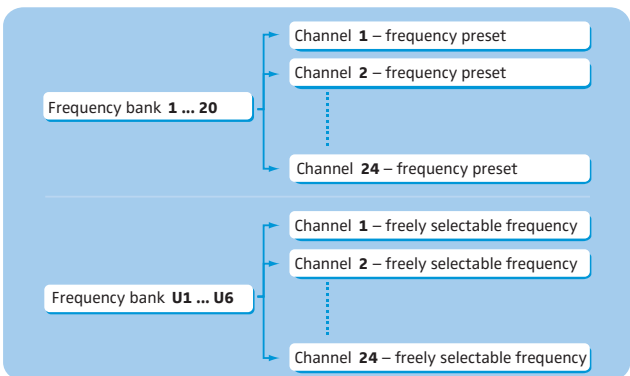
Each of the channels in the frequency banks "1" to "20" has been factory-preset to a fixed transmission frequency (frequency preset).

The factory-preset frequencies within one frequency bank are intermodulation-free. These frequencies cannot be changed.

For an overview of the frequency presets, please refer to the supplied frequency information sheet. Updated versions of the frequency information sheet can be downloaded from the SKM 300 G3 product page on our website at www.sennheiser.com.
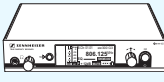
The frequency banks "U1" to "U6" allow you to freely select and store transmission frequencies. It might be that these transmission frequencies are not intermodulation-free.

Areas of application

The radio microphone family can be combined with the EM 300 G3 rack-mount receiver.

The EM 300 G3 rack-mount receiver is available in the same UHF frequency ranges and is equipped with the same frequency bank system with factory-preset frequencies. This has the advantage that:

- a transmission system is ready for immediate use after switch-on,
- several transmission systems can be operated simultaneously on the preset frequencies without causing intermodulation interference.

Radio microphone	Interchangeable microphone heads	Receiver
SKM 300-835 G3[*]	MMD 835-1	EM 300 G3
SKM 300-845 G3[*]	MMD 845-1	
SKM 300-865 G3[*]	MMD 865-1	

[*] The name of the radio microphone is a combination of the name of the transmitter and the name of the microphone head:

Transmitter + Microphone head = Name of the radio microphone
SKM 300   + MMD 835-1   = SKM 300-835 G3

Overview of the microphone heads:

Microphone head	Type	Pick-up pattern
MMD 835-1	dynamic	– cardioid
MMD 845-1	dynamic	– super-cardioid
MMD 865-1	condenser	– super-cardioid

The name and pick-up pattern of the microphone head are printed on the sound inlet basket of the radio microphone.

Delivery includes

The packaging contains the following items:

1 SKM 300 G3 radio microphone incl.
microphone head

2 AA size batteries, 1.5 V

1 microphone clamp

1 instruction manual

1 frequency information sheet

1 supplement ''Framework requirements and
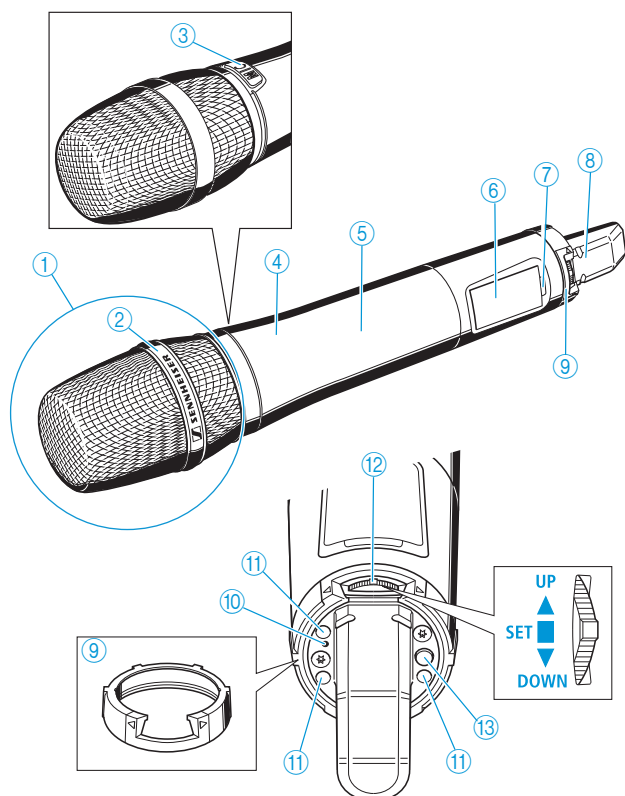restrictions on frequency usage''

A list of accessories can be found on the
SKM 300 G3 product page at www.sennheiser.com.

For information on suppliers, contact your local
Sennheiser partner:
www.sennheiser.com > ''Service & Support''.

Product overview

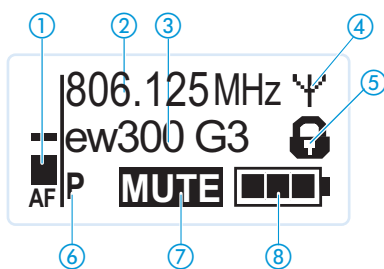## Overview of the SKM 300 G3 radio microphone
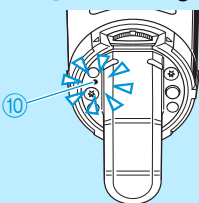
① Microphone head (interchangeable)

② Name and pick-up pattern of the microphone head (not visible here, see page 4)

③ MIC button

④ Body of radio microphone

⑤ Battery compartment (not visible from outside)

⑥ Display panel, backlit in orange

⑦ Infra-red interface

⑧ Antenna

⑨ Color-coded protection ring; available in different colors

⑩ Operation and battery status indicator, red LED (lit = ON/flashing = LOW BATTERY)

⑪ Charging contacts

⑫ Multi-function switch: ▼ (DOWN), ▲ (UP) and ▬ (SET)

⑬ ON/OFF button with ESC function (cancel)

Overview of the displays

After switch-on, the radio microphone displays the standard display "Frequency/Name". For further illustrations and examples of the different standard displays, refer to page 17.

The display backlighting is automatically reduced after approx. 20 seconds.

Display	Meaning
① Audio level "AF"	Modulation of the radio microphone with peak hold function
② Frequency	Current transmission frequency
③ Name	User selectable name
④ Transmission icon	RF signal is being transmitted
⑤ Lock mode icon	Lock mode is activated
⑥ "P" (pilot)	Pilot tone transmission is activated
⑦ "MUTE"	Audio signal is muted/ RF signal is deactivated
⑧ Battery status	Charge status:
	approx. 100%
	approx. 70%
	approx. 30%
	critical charge status, the red LOW BATTERY LED ⑩ is flashing:

Putting the radio microphone into operation

## Inserting and changing the batteries/ accupack

For powering the radio microphone, you can either use two 1.5 V AA size batteries or the rechargeable Sennheiser BA 2015 accupack (optional accessory).

CAUTION

Danger of damage to the radio microphone!

When unscrewing the radio microphone during operation while pressing the MIC button ③ at the same time, the radio microphone can be damaged.

▶ Hold the radio microphone's body ④ as shown below to make sure that the MIC button ③ is not accidentally pressed.

▶ Unscrew the lower part of the radio microphone from the radio microphone's body ④ by turning it counterclockwise.
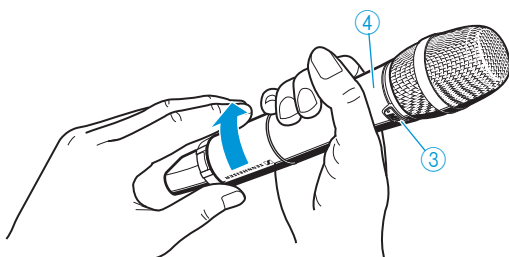
> When unscrewing the radio microphone during operation, the muting function is automatically activated. ''MUTE'' appears on the display panel.
>
> When screwing the lower part of the radio microphone back to the radio microphone's body, the muting function is deactivated and ''MUTE'' disappears from the display panel.

▶ Slide back the lower part of the radio microphone as far as it will go.
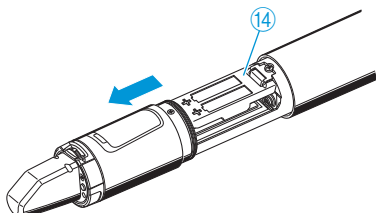
▶ Open the battery compartment cover ⑭.
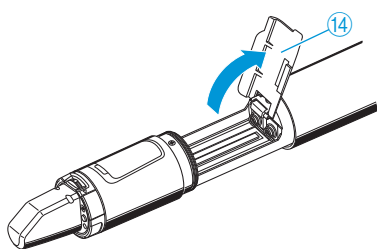
▶ Insert the batteries or the BA 2015 accupack as shown on the battery compartment cover. Observe correct polarity when inserting the batteries/ accupack.
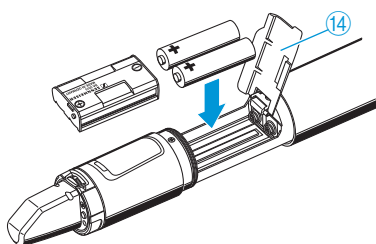
▶ Close the battery compartment cover ⑭.

▶ Push the battery compartment into the radio microphone's body.

▶ Screw the lower part of the radio microphone back to the radio microphone's body ④.

Charging the accupack

To charge the radio microphone with the inserted BA 2015 accupack (optional accessory):

▶ Insert the radio microphone into the LA 2 charging adapter (optional accessory) until it locks into place.
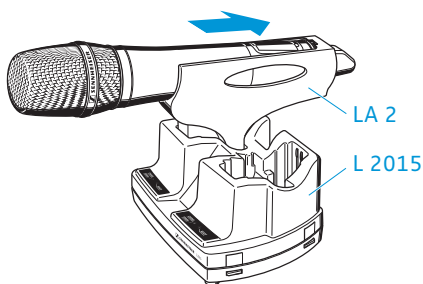
▶ Plug the LA 2 charging adapter with the inserted radio microphone into the L 2015 charger (optional accessory).

ℹ The LA 2 charging adapter and L 2015 charger can only charge the radio microphone with the BA 2015 accupack installed. Standard batteries (primary cells) or individual rechargeable battery cells cannot be charged in this way.

Changing the microphone head

The microphone head ① easy to change.

▶ Unscrew the microphone head ①.
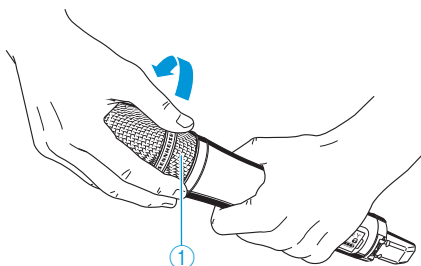
ℹ️ Do not touch the contacts of the radio microphone nor the contacts of the microphone head ①. The contacts can become dirty or damaged if touched.
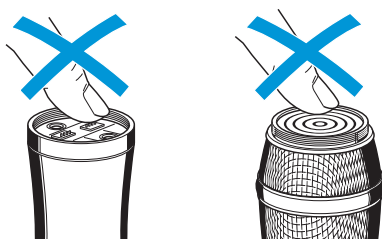

When unscrewing the microphone head ① during operation, the muting function is automatically activated. "MUTE" appears on the display panel.

When screwing the microphone head ① back to the radio microphone's body, the muting function is deactivated and "MUTE" disappears from the display panel.

▶ Screw the desired microphone head to the radio microphone.
The radio microphone is operational again.
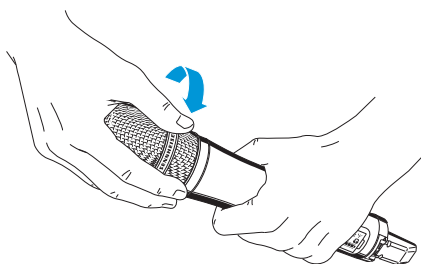
Changing the color-coded protection ring

The color-coded protection ring ⑨ prevents the multi-function switch from accidental operation.

Protection rings ⑨ in different colors are available as accessories. The protection rings allow you to clearly identify each radio microphone.

▶ Remove the color-coded protection ring ⑨ as shown.

▶ Put on a new protection ring as shown.
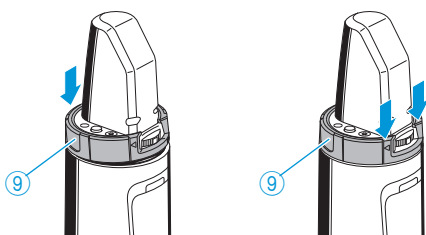
Using the radio microphone

Reduced transmission power!

If you touch the antenna ⑧ of the radio microphone, the transmission power will be considerably reduced!
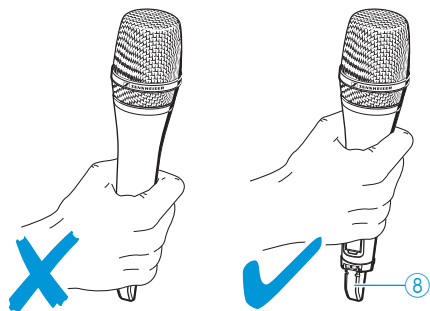
▶ Only hold the radio microphone by its body.

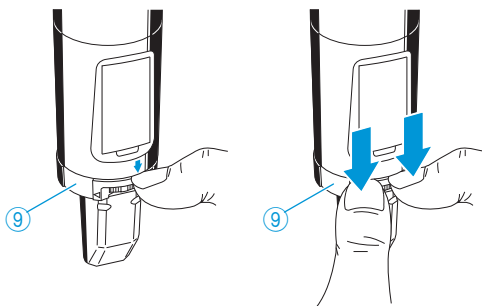To establish a transmission link, proceed as follows:

1. Switch the radio microphone on (see next section).

2. Switch the receiver on (see the receiver's instruction manual).
   The transmission link is established and the display backlighting of the receiver changes from red to orange.

ℹ It is vital to observe the notes on frequency selection on page 29.

If you cannot establish a transmission link between transmitter and receiver, read the chapter ''Synchronizing the radio microphone with a receiver'' on page 29.

Switching the radio microphone on/off
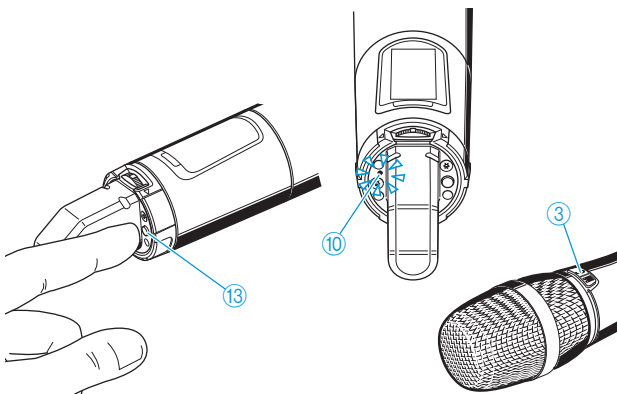
To switch the radio microphone on (online operation):

ON/OFF ▶ Briefly press the ON/OFF button ⑬.
The red ON LED ⑩ lights up. The "Frequency/ Name" standard display appears on the display panel. The backlighting of the MIC button ③ depends on the setting in the "MIC LED" menu item (see page 26). The transmission icon ④ is displayed. The radio microphone transmits an RF signal.

ℹ You can switch the radio microphone on and deactivate the RF signal on switch-on. For more information, see below.

To switch the radio microphone off:

▶ If necessary, deactivate the lock mode (see next chapter).

ON/OFF ▶ Press the ON/OFF button ⑬ until "OFF" appears on the display panel. The red ON LED ⑩ and the MIC button ③ go off. The display panel turns off.

ℹ When in the operating menu, pressing the ON/ OFF button ⑬ will cancel your entry (ESC function) and return you to the current standard display.

To switch the radio microphone on and to deactivate the RF signal on switch-on (offline operation):

ON/OFF ▶ Keep the ON/OFF button pressed until "RF Mute Off?" appears on the display panel.
▶ Move the multi-function switch.
"RF Mute On?" appears on the display panel.
▶ Press the multi-function switch.
The transmission frequency is displayed but the radio microphone does not transmit an RF signal. The transmission icon ④ is not displayed. The backlighting of the MIC button ③ depends on the setting in the "MIC LED" menu item (see page 26). When the pilot tone function is activated on both radio microphone and receiver, "RF Mute" appears on the receiver's display panel.

806.125MHz —————④
ew300 G3 🔒
AF P MUTE ▮▮▮▯

ℹ Use this function to save battery power or to prepare a radio microphone for use during live operation without causing interference to existing transmission links.

To activate the RF signal:

ON/OFF ▶ Briefly press the ON/OFF button ⑬.
"RF Mute On?" appears on the display panel.
▶ Move the multi-function switch.
"RF Mute Off?" appears on the display panel.
▶ Press the multi-function switch.
The transmission icon ④ is displayed again.

Deactivating the lock mode temporarily

You can activate or deactivate the automatic lock mode via the "Auto Lock" menu item (see page 24).

If the lock mode is activated, you have to temporarily deactivate it in order to be able to operate the radio microphone:

▶ Press the multi-function switch.
"Locked" appears on the display panel.

▶ Move the multi-function switch.
"Unlock?" appears on the display panel.

▶ Press the multi-function switch.
The lock mode is temporarily deactivated.
How you are using the radio microphone determines how long the lock mode remains deactivated:

When you are in the operating menu

The lock mode remains deactivated until you exit the operating menu.

When one of the standard displays is shown

The lock mode is automatically activated after 10 seconds.

The lock mode icon ⑤ flashes prior to the lock mode being activated again.

Muting the audio signal or deactivating the RF signal
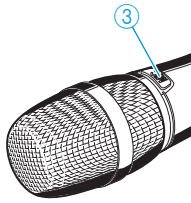
The MIC button ③ allows you to mute the audio signal or to deactivate the RF signal.

Via the "Mute Mode" menu item, you can set the desired function of the MIC button ③:

Setting	MIC button ③ ...	Function
"AF On/ Off"	Press briefly	Mutes the audio signal permanently
		Unmutes the audio signal permanently
"RF On/ Off"	Press briefly	Deactivates the RF signal (offline operation)
		Activates the RF signal (online operation)
"Push To Mute"	Keep pressed	Mutes the audio signal temporarily (cough function)
"Push To Talk"*	Keep pressed	Unmutes the audio signal temporarily (speech function)
"Disabled"	No function	

* If you select "Push To Talk", the radio microphone will be permanently muted until until you press the MIC button.

▶ From the "Mute Mode" menu item, select the desired setting (see page 25).

▶ Exit the operating menu.

▶ Briefly press the MIC button ③ or keep it pressed. The radio microphone reacts as indicated in the table.

ℹ The current state of the muting function or the RF signal is displayed on the radio microphone's display panel (see next section).

An additional display appears on the receiver's display panel

• when the pilot tone function is activated on both radio microphone and receiver and,

in addition,

• this display has been activated via the receiver's "Warnings" menu item (see the receiver's instruction manual).
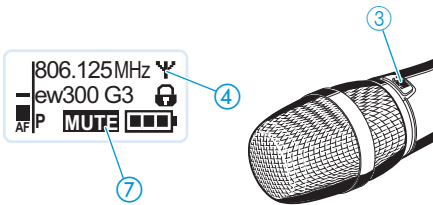
ℹ️ The backlighting of the MIC button ③ depends on the setting in the ''MIC LED'' menu item (see page 26).

Audio signal is muted	
Radio microphone's display panel:	''MUTE'' ⑦ is displayed, transmission icon ④ is displayed
Receiver's display panel:	''TX Mute'' is displayed*

* only when activated on the receiver (see above)

Audio signal is activated (muting is deactivated)	
Radio microphone's display panel:	''MUTE'' ⑦ is not displayed, transmission icon ④ is displayed
Receiver's display panel:	''TX Mute'' is not displayed

RF signal is deactivated	
Radio microphone's display panel:	Transmission icon ④ is not displayed, ''MUTE'' ⑦ is displayed
Receiver's display panel:	''RF Mute'' is displayed*

* only when activated on the receiver (see above)

RF signal is activated	
Radio microphone's display panel:	Transmission icon ④ is displayed, ''MUTE'' ⑦ is not displayed
Receiver's display panel:	''RF Mute'' is not displayed

ℹ️ You can also deactivate the RF signal on switch-on. For more information, refer to the chapter ''Switching the radio microphone on/off'' on page 13.

Using the ON/OFF button, you can also activate/deactivate the RF signal during operation. To do so, briefly press the ON/OFF button and proceed as described on page 13.

Selecting a standard display

⬆️⬇️ ▶ Move the multi-function switch to select a standard display.

Contents of the display	Selectable standard display
806.125MHz ew300 G3 AF P MUTE	"Frequency/Name"
B.Ch: 01.01 806.125MHz AF P MUTE	"Channel/Frequency"
ew300 G3 B.Ch: 01.01 AF P MUTE	"Name/Channel"

Using the operating menu

A special feature of the Sennheiser evolution wireless ew 300 G3 series is the consistent, intuitive menu structure of transmitters and receivers. As a result, adjustments to the settings can be made quickly – even in stressful situations, for example on stage or during a live show or presentation.

Make use of the possibility to adjust settings via the operating menu of the receiver and to transfer these settings to the radio microphone.

For more information on how to transfer settings to the radio microphone, refer to the instruction manual of the receiver. The relevant information is marked with the sync icon.

The buttons

Button	Function of the button
Press the ON/OFF button ON/OFF	• Switches the radio microphone on and off • Cancels the entry and returns to the current standard display (ESC function) • Activates/deactivates the RF signal (special function, see page 13)
Press the multi-function switch △ ▽	• Changes from the current standard display to the operating menu • Calls up a menu item • Enters a submenu • Stores the settings and returns to the operating menu
Move the multi-function switch	• Selects a standard display • Changes to the next/previous menu item • Changes the setting of a menu item

Overview of the operating menu

Main menu "Menu"

Sensitivity
Frequency Preset
Name
Auto Lock
Advanced
Exit

Extended menu "Advanced Menu"

Tune
Mute Mode
MIC LED
RF Power
Pilot Tone
LCD Contrast
Reset
Software Revision
Exit
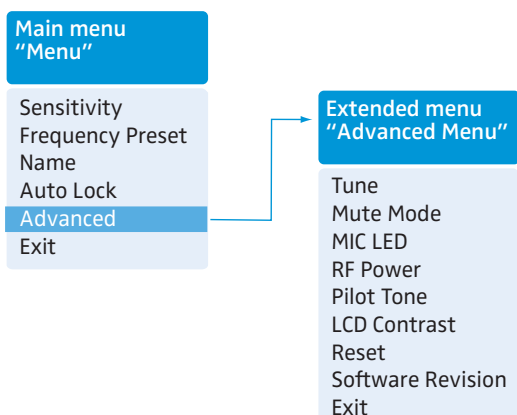
Display	Function of the menu item
Main menu "Menu"	
Sensitivity	Adjusts the sensitivity "AF" (see page 22)
Frequency Preset	Changes the frequency bank and the channel (see page 23)
Name	Enters a name (see page 23)
Auto Lock	Activates/deactivates the automatic lock mode (see page 24)
Advanced	Calls up the extended menu "Advanced Menu" (see page 24)
Exit	Exits the operating menu and returns to the current standard display
Extended menu "Advanced Menu"	
Tune	Sets the transmission frequencies for the frequency banks "U1" to "U6" (see page 24)
	Sets a frequency bank, a channel and a transmission frequency (frequency banks "U1" to "U6" (see page 24))
Mute Mode	Sets the mode for the MIC button ③ (see page 25)
MIC LED	Adjusts the backlighting of the MIC button ③ (see page 26)
RF Power	Adjusts the transmission power (see page 26)
Pilot Tone	Activates/deactivates the pilot tone transmission (see page 27)
LCD Contrast	Adjusts the contrast of the display panel (see page 28)
Reset	Resets the settings made in the operating menu (see page 28)
Software Revision	Displays the current software revision (see page 28)
Exit	Exits the extended menu "Advanced Menu" and returns to the main menu

Working with the operating menu

ℹ️ If the lock mode is activated, you have to deactivate it In order to be able to work with the operating menu (see page 14).

By way of example of the "Sensitivity" menu, this section describes how to use the operating menu.

Changing from a standard display to the operating menu

△▽ ▶ Press the multi-function switch.
The current standard display is replaced by the main menu.
The last called up menu item is displayed.

Selecting a menu item

▲▼ ▶ Move the multi-function switch to change to the "Sensitivity" menu item.
The current setting of the selected menu item is displayed:

```
Menu
Sensitivity
                    –12 dB
```
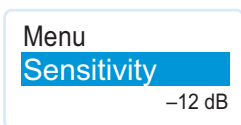
Calling up a menu item and adjusting and storing the setting

```
Menu              →   Sensitivity      →   Sensitivity
Sensitivity            –12 dB               –36 dB
        –12 dB
Call up               Select the desired    Store the setting
"Sensitivity"         setting

              "Stored"
```
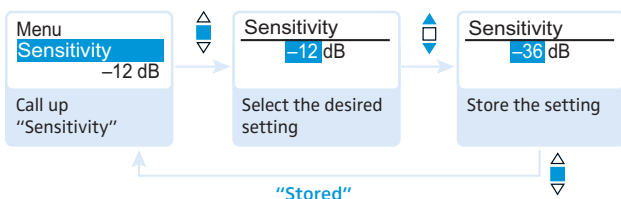
△▽ ▶ Press the multi-function switch to call up the menu item.

▲▼ ▶ Move the multi-function switch to adjust the input sensitivity.

△▽ ▶ Press the multi-function switch to store the setting.

Canceling an entry

ON/OFF ▶ Press the ON/OFF button to cancel the entry.
The current standard display appears on the display panel.

To subsequently return to the last edited menu item:

△▽ ▶ Press the multi-function switch repeatedly until the last edited menu item appears.

Exiting a menu

▶ Change to the "Exit" menu item.

```
Menu
Exit
```
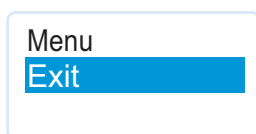
▶ Confirm your selection.
You return to the next higher menu level or exit the operating menu and return to the current standard display.

To directly return to the current standard display:

ON/OFF ▶ Press the ON/OFF button.

Adjusting settings via the operating menu

Make use of the possibility to adjust settings via the operating menu of the receiver and to transfer these settings to the radio microphone.

For more information on how to transfer settings to the radio microphone, refer to the instruction manual of the receiver. The relevant information is marked with the sync icon.

The main menu "Menu"

Adjusting the input sensitivity – "Sensitivity"

Menu Sensitivity −12 dB		Sensitivity −12 dB		Sensitivity −36 dB
Call up "Sensitivity"		Select the desired setting		Store the setting

"Stored"
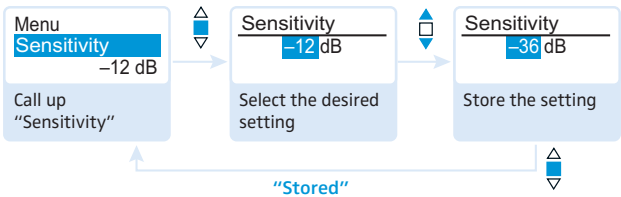
Adjustment range: 0 to −48 dB, adjustable in steps of 6 dB

The audio level display "AF" always indicates the audio level, even if the radio microphone is muted, e.g. allowing you to check the adjusted sensitivity before live operation.

B.Ch: 01.01
806.125 MHz
AF P MUTE

①
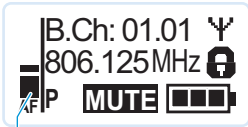
Input sensitivity is adjusted…	Effect/display
… too high	Close talking distances, speakers with loud voices or loud music passages cause overmodulation in the transmission link. The audio level display "AF" ① shows full deflection for the duration of the overmodulation.
… correctly	The audio level display "AF" ① shows full deflection only during the loudest passages.
… too low	The transmission link is under-modulated. This results in a signal with high background noise.

The following figures are a guide to the best settings:

Transmission situation	Sensitivity setting
Loud music/vocals	−48 to −18 dB
Presentations	−18 to −12 dB
Interviews	−12 to 0 dB

Selecting the frequency bank and the channel manually – "Frequency Preset"
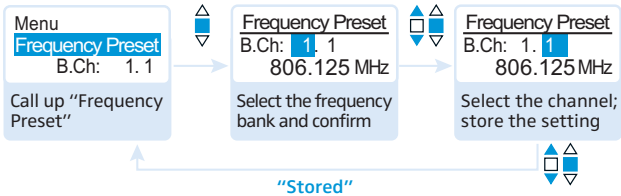
> ℹ When you are in the "Frequency Preset" menu item, the RF signal is deactivated.

Overview of the frequency banks and channels:

Frequency bank	Channels	Type
"1" to "20"	up to 24 per frequency bank	System bank: frequencies are factory-preset
"U1" to "U6"	up to 24 per frequency bank	User bank: frequencies are freely selectable

> ℹ When setting up multi-channel systems, please observe the following:
>
> Only the factory-preset transmission frequencies within one frequency bank are intermodulation-free (see page 29).
>
> Radio microphone and receiver of a transmission link have to be set to the same frequency.
>
> ▶ Pay special attention to the notes on frequency selection on page 29.

Entering a name – "Name"
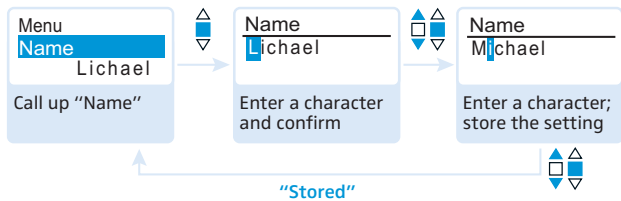
Via the "Name" menu item, you can enter a freely selectable name for the radio microphone.

The name can be displayed on the "Frequency/Name" and "Name/Channel" standard displays and can consist of up to 8 characters such as:

• letters (without pronounciation marks),

- numbers from 0 to 9,
- special characters and spaces.

To enter a name, proceed as follows:

▶ Move the multi-function switch to select a character.

▶ Press the multi-function switch to change to the next segment/character or to store the complete entry.

Activating/deactivating the automatic lock mode – "Auto Lock"

Menu		Auto Lock		Auto Lock
Auto Lock		Active		Inactive
Active				
Call up "Auto Lock"		Select the desired setting		Store the setting

"Stored"
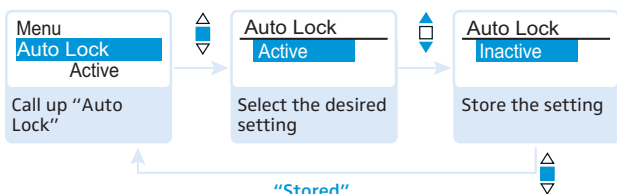
The lock mode prevents that the radio microphone is accidentally switched off or programed during operation. The lock mode icon ⑤ 🔒 on the current standard display indicates that the lock mode is activated.

▶ Move the multi-function switch to select the desired setting.

For information on how to use the lock mode, refer to page 14.

The extended menu "Advanced Menu"

Setting transmission frequencies and frequency banks – "Tune"

ℹ️ When you have selected one of the system banks and then select the "Tune" menu item, the radio microphone automatically switches to channel 1 of the frequency bank "U1". In this case, "U1.1" briefly appears on the display panel.

Upon delivery, the channels of the frequency banks "U1" to "U6" are not assigned a transmission frequency.

When you are in the "Tune" menu item, the RF signal is deactivated.

Via the "Tune" menu item, you can set a transmission frequency to be stored in the current channel or you can select a different channel in one of the frequency banks "U1" to "U6" and assign this channel a transmission frequency.

ℹ️ It is vital to observe the notes on frequency selection on page 29.

Setting a transmission frequency for the current channel

▶ Move the multi-function switch until the "Tune" menu item appears.

▶ Press the multi-function switch.
The frequency selection appears.

Advanced Menu		Tune		Tune
Tune		806.125 MHz		806.125 MHz
806.125 MHz		B.Ch: U1. 1		B.Ch: U1. 1
Call up "Tune"		Select the MHz value and confirm		Select the kHz value; store the setting
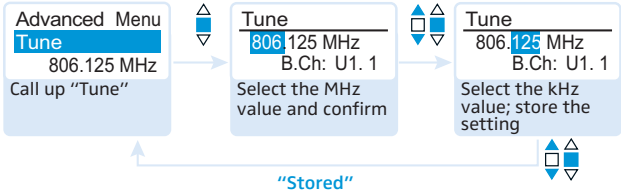
"Stored"

▶ Set the desired frequency.

▶ Press the multi-function switch.
Your settings are stored.
You are back to the operating menu.

Selecting a channel and assigning this channel a frequency

▶ Move the multi-function switch until the "Tune" menu item appears.

▶ Press the multi-function switch until the frequency bank selection appears.

Advanced Menu		Tune		Tune
Tune		806.125 MHz		806.125 MHz
806.125 MHz		B.Ch: **U1**. 1		B.Ch: U1. 1
Call up "Tune" (special function)		Set the frequency bank and the channel		Set the frequency; store the setting

"Stored"
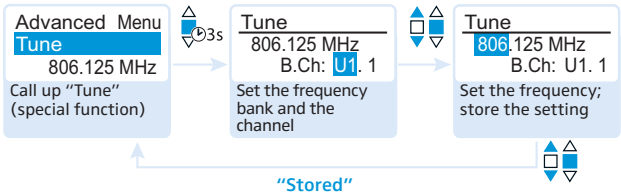
▶ Set the desired frequency bank.

▶ Press the multi-function switch.
The channel selection appears.

▶ Set the desired channel.

▶ Press the multi-function switch.
The frequency selection appears.

▶ Set the desired frequency.

▶ Press the multi-function switch.
Your settings are stored.
You are back to the operating menu.

Setting the mode for the MIC button – "Mute Mode"

Advanced Menu		Mute Mode		Mute Mode
Mute Mode		**AF On/Off**		**RF On/Off**
AF On/Off				
Call up "Mute Mode"		Select the desired setting		Store the setting

"Stored"
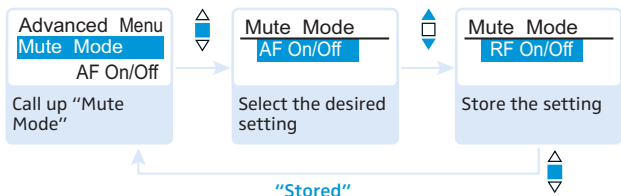
Mode	Function
"AF On/Off"	If you press the MIC button, the audio signal is muted.
"RF On/Off"	If you press the MIC button, the RF signal is deactivated.
"Push To Mute"	The audio signal is muted as long as you press the MIC button.
"Push To Talk"*	The audio signal is activated as long as you press the MIC button.
"Disabled"	No function

* If you select "Push To Talk", the radio microphone will be permanently muted until you press the MIC button.

For information on how to use the MIC button, refer to page 15.

Adjusting the backlighting of the MIC button – "MIC LED"
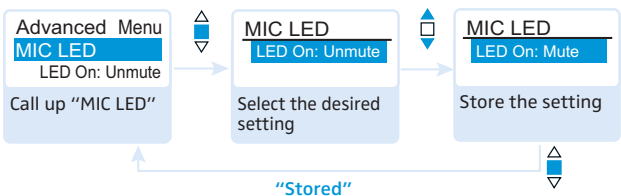
Via the "MIC LED" menu item, you can adjust the backlighting of the MIC button ③ based on the setting of the "Mute Mode" menu item and the status of the RF signal or deactivate the backlighting.

Setting of the MIC LED menu item	Backlighting of the MIC button ③
LED On: Unmute	The MIC button ③ is backlit when the radio microphone is transmitting an RF signal or is not muted.
LED ON: Mute	The MIC button ③ is backlit when the radio microphone is not transmitting an RF signal or is muted.
Disable LED	The backlighting of the MIC button ③ is deactivated.

Adjusting the transmission power – "RF Power"
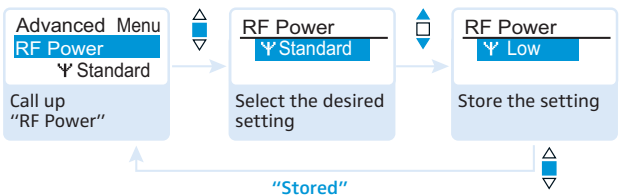
Via the "RF Power" menu item, you can adjust the transmission power in two steps. It is vital to observe the notes on the supplied frequency information sheet!

Activating/deactivating the pilot tone transmission – "Pilot Tone"
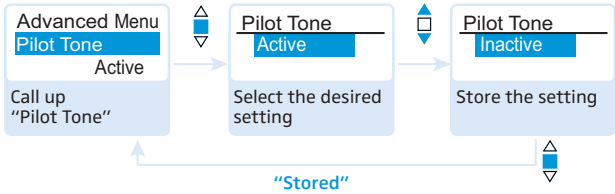
The radio microphone adds an inaudible signal, known as the pilot tone, to the transmitted signal. The receiver detects and evaluates the pilot tone.

The pilot tone supports the receiver's squelch function, thus protecting against interference due to RF signals from other devices.

Devices of the ew 300 G1 series (generation 1) do not support the pilot tone function. Therefore, please observe the following when combining a radio microphone or receiver of the ew 300 G3 series (generation 3) with devices from an earlier evolution wireless generation:

Radio microphone	Receiver	Make sure to ...
ew G3/ew G2	ew G2/ew G3	... activate the pilot tone function on both radio microphone and receiver.
ew G3	ew G1	... deactivate the pilot tone function on the ew 300 G3 radio microphone.
ew G1	ew G3	... deactivate the pilot tone function on the ew 300 G3 receiver.

Adjusting the contrast of the display panel – "LCD Contrast"

You can adjust the contrast of the display panel in 16 steps.

Resetting the settings made in the operating menu – "Reset"
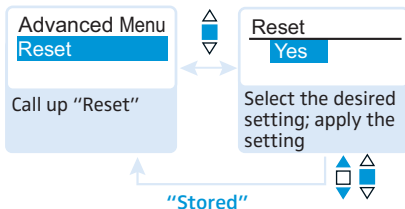
When resetting the settings made in the operating menu, only the selected settings for the pilot tone and for the frequency banks "U1" to "U6" remain unchanged.

When the radio microphone is offline, i.e. when the RF signal is deactivated (see page 13 and page 15), it remains offline even after resetting the settings.

For an overview of the factory-preset default settings, refer to the enclosed frequency information sheet.

Displaying the software revision – "Software Revision"

You can display the current software revision of the radio microphone.

▶ For information on software updates, visit the SKM 300 G3 product page at www.sennheiser.com.

Synchronizing the radio microphone with a receiver

When synchronizing the radio microphone with a receiver, please observe the following:

▶ Only use a radio microphone and a receiver from the same frequency range (see the type plate on the radio microphone and the receiver).

▶ Make sure that the desired frequencies are listed in the enclosed frequency information sheet.

▶ Make sure that the desired frequencies are approved and legal in your country and, if necessary, apply for an operating license.

Synchronizing the radio microphone with the receiver – individual operation

Upon delivery, the radio microphone and the receiver are synchronized with each other.

However, if you cannot establish a transmission link between radio microphone and receiver, you have to synchronize the channels of the devices.

For information on automatic synchronization of the radio microphone with the receiver (individual operation), refer to the instruction manual of the receiver. The relevant information is marked with the **sync** icon.

Alternatively, you can set the channel on the radio microphone manually:

▶ Make sure that you set the radio microphone to the same frequency bank and the same channel as the receiver (see page 23).

If you still cannot establish a transmission link, refer to the chapter ''If a problem occurs …'' on page 32.

Synchronizing radio microphones with receivers – multi-channel operation

Combined with ew 300 G3 receivers, ew 300 G3 radio microphones can form transmission links that can be used in multi-channel systems.

For information on automatic synchronization of radio microphones with receivers (multi-channel operation), refer to the instruction manual of your receiver.

For more information on multi-channel operation, visit the SKM 300 G3 product page at www.sennheiser.com.

Cleaning and maintaining the radio microphone

CAUTION

Liquids can damage the electronics of the radio microphone!

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

▶ Keep all liquids away from the radio microphone.

▶ Use a cloth to clean the radio microphone from time to time.

▶ Do not use any solvents or cleansing agents.

To clean the sound inlet basket of the microphone head (MMD 835-1, MMD 845-1, MME 865-1):

▶ Unscrew the upper sound inlet basket from the microphone head by turning it counterclockwise (see diagram).
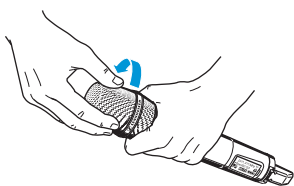
CAUTION

Liquids will damage the microphone head!

Liquids will damage the microphone head.

▶ Only clean the upper sound inlet basket.

▶ Remove the foam insert.

▶ To clean the sound inlet basket:
  – Use a cloth to clean the upper sound inlet basket from the inside and outside
  – or scrub with a brush and rinse with clear water.

▶ If necessary, clean the foam insert with a mild detergent or replace the foam insert.

▶ Dry the upper sound inlet basket.

▶ Dry the foam insert.

▶ Reinsert the foam insert.

▶ Replace the sound inlet basket on the microphone head and screw it tight.

You should also clean the contact rings of the microphone head from time to time:

▶ Wipe the contact rings of the microphone head with a cloth.

Recommendations and tips

… for optimum sound

- Hold the radio microphone in the middle of the microphone body. Holding it close to the sound inlet basket will influence the radio microphone's pick-up pattern.

- You can vary the bass reproduction by increasing/decreasing the talking distance.

- For best results, make sure that the sensitivity is correctly adjusted.

… for optimum reception

- Transmission range depends to a large extent on location and can vary from about 10 m to about 150 m. There should be a ''free line of sight'' between transmitting and receiving antennas.

- To avoid overloading the receiver, observe a minimum distance of 5 m between transmitting and receiving antennas.

- Only hold the radio microphone by its body. If you touch the antenna of the radio microphone, the transmission power will be considerably reduced.

… for multi-channel operation

- For multi-channel operation, you should only use the channels within one frequency bank. Each of the frequency banks ''1'' to ''20'' accommodates factory-preset frequencies which are inter-modulation-free.

- When using several radio microphones/transmitters simultaneously, interference can be avoided by maintaining a minimum distance of 20cm between two radio microphones/transmitters.

If a problem occurs …

Problem	Possible cause	Possible solution
Radio microphone cannot be operated, "Locked" appears on the display panel	Lock mode is activated	Deactivate the lock mode (see page 14).
No operation indication	Batteries are flat or accupack is flat	Replace the batteries or recharge the accupack (see page 8).
No RF signal at the receiver	Radio microphone and receiver are not on the same channel	Set the radio microphone to the same channel as the receiver.
		Synchronize the radio microphone with the receiver (see page 18).
	Transmission range is exceeded	Reduce the distance between radio microphone and receiving antennas.
		Increase the transmission power (see page 26).
	RF signal is deactivated ("RF Mute")	Activate the RF signal (see page 15).
RF signal available, no audio signal, "MUTE" appears on the display panel	Receiver's squelch threshold is adjusted too high	Reduce the squelch threshold setting on the receiver.
	Radio microphone doesn't transmit a pilot tone	Activate or deactivate the pilot tone transmission (see page 27).
Audio signal has a high level of background noise or is distorted	Radio microphone's sensitivity is adjusted too low/ too high	Adjust the input sensitivity (see page 22).

If a problem occurs that is not listed in the above table or if the problem cannot be solved with the proposed solutions, please contact your local Sennheiser partner for assistance. To find a Sennheiser partner in your country, search at www.sennheiser.com under ''Service & Support''.

Specifications

RF characteristics

Modulation	wideband FM
Frequency ranges	516–558, 566–608, 626–668, 734–776, 780–822, 823–865 MHz (A–E, G, see page 3)
Transmission frequencies	1,680 frequencies, tuneable in steps of 25 kHz
	20 frequency banks, each with up to 24 factory-preset channels
	6 frequency banks with up to 24 user programmable channels
Switching bandwidth	42 MHz
Nominal/peak deviation	±24 kHz / ±48 kHz
Frequency stability	≤ ±15 ppm
RF output power at 50 Ω, switchable	typ. 10 mW (Low) typ. 30 mW (Standard)
Pilot tone squelch	can be switched off

AF characteristics

Compander system	Sennheiser HDX
AF frequency response	80 to 18,000 Hz
Signal-to-noise ratio (1 mV RF, peak deviation)	≥ 115 dBA
THD	≤ 0.9%
Adjustment range of input sensitivity ("Sensitivity")	48 dB, adjustable in steps of 6 dB

Overall device

Temperature range	−10°C to +55°C
Power supply	2 AA size batteries, 1.5 V or BA 2015 accupack
Nominal voltage	2.4 V ⎓
Power consumption:	
• at nominal voltage	typ. 180 mA (30 mW)
• with switched-off radio microphone	≤ 25 µA
Operating time	typ. 8 h
Dimensions	approx. ∅ 50 mm x 265 mm
Weight (incl. batteries)	approx. 450 g

In compliance with

Europe CE	EMC	EN 301489-1/-9
	Radio	EN 300422-1/-2
	Safety	EN 60065
		EN 62311 (SAR)

Approved by

Canada	Industry Canada RSS-123
	IC: 2099A-G3SKMEM
	limited to 698 MHz
USA	FCC-Part 74
	FCC-ID: DMO G3SKMEM
	limited to 698 MHz

Microphone heads

	MMD 835-1	MMD 845-1	MME 865-1
Microphone type	dynamic	dynamic	condenser
Sensitivity	2.1 mV/Pa	1.6 mV/Pa	1.6 mV/Pa
Pick-up pattern	cardioid	super-cardioid	super-cardioid
Max. SPL	154 dB SPL	154 dB SPL	152 dB SPL

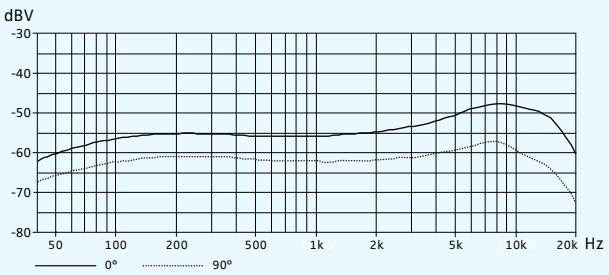# Polar diagrams and frequency response curves of the microphone heads

Polar diagram MMD 835-1

Polar diagram MMD 845-1

Polar diagram MME 865-1
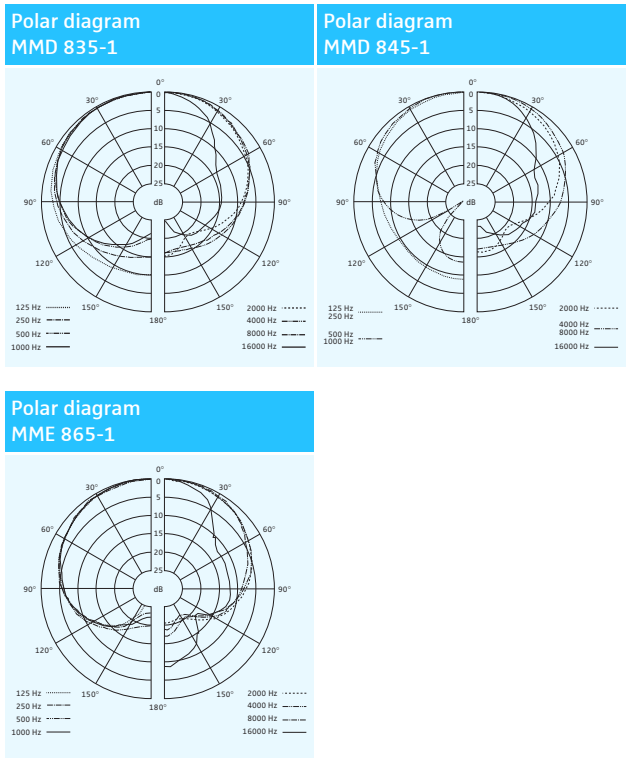
Frequency response curve MMD 835-1
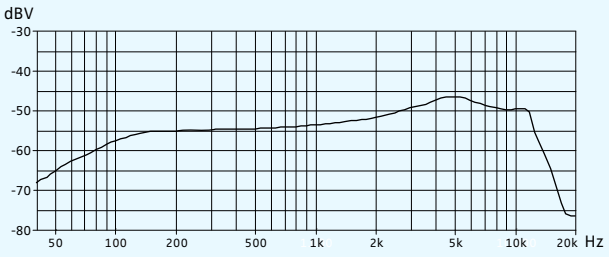
Frequency response curve MMD 845-1

Frequency response curve MME 865-1

0°   90°

evolutionwireless G3

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