Comfort Digisystem User Manual

SecureStream Technology

Microphone DM20

Comfort Audio
HEAR THE FUTURE

User Manual

Table of Contents

Introduction to the Comfort Digisystem

Thank you for choosing Comfort Digisystem.
The products are easy to use, whether you use a hearing aid or not.

Before using the product, please read this User Manual carefully.

Using the Microphone DM20 transmitter, the signal is transferred digitally, resulting in an excellent clear sound.

Comfort Digisystem is fitted with SST SecureStream Technology – a type of digital technology allowing eavesdrop-secure radio transfer in real time.

Presenting the Microphone DM20

The Microphone DM20 is an advanced lecture microphone with built-in receiver which easily attaches to the clothing of the person talking. The sound is mixed with that from another microphone and transmitted to one or more receivers.

The microphone has an input for a clip-on microphone or head microphone. The DM20 is equipped with a voice AGC (Automatic Gain Control) to maintain a comfortable sound level at all times.

Functions of the Microphone DM20

On / Off

Pairing button

Function button

Menu control

Function indicator

Clips

Input for external
sound source

Microphone

Mch: 2
Cch: A54

Comfort Audio

INPUT 5V ▭▭▭ 300 mA ⚡ DM20
ONLY USE LISTED CHARGER
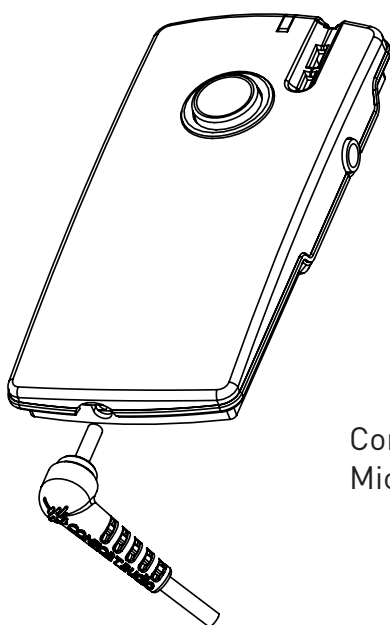
Display
Microphone
DM20

Comfort Audio

Charging socket

Getting Started

Charging

The Microphone DM20 is chargeable. Charge the DM20 at least two hours before you use it for the first time. An empty battery is fully charged within two hours.

During charging, the function indicator shows red and a lightning bolt appears through the battery symbol in the display. Once the battery symbol is filled with green columns and the function indicator shows green the unit is fully charged and switches to automatic float charging.

You must not change the battery yourself; please contact your point of purchase.

Connecting a charger to the
Microphone DM20

Please note:
Only use the charger
supplied by Comfort Audio AB.

First Time Use

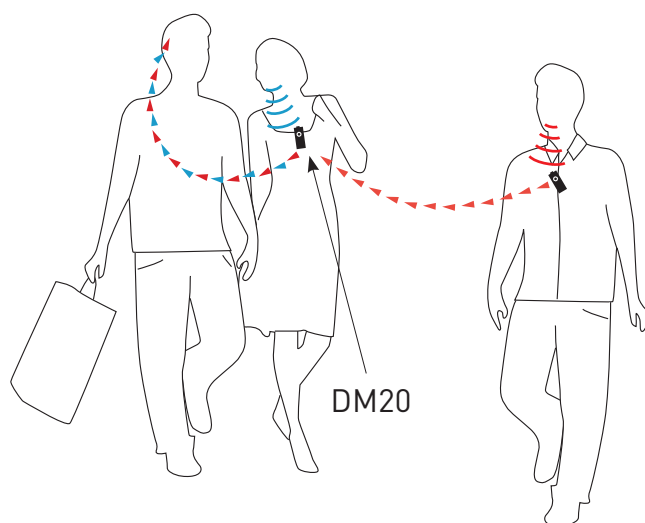The Microphone DM20 is a microphone for closer range. It works best within approx. 30 cm.

Switch on the transmitter by pressing the On/Off button for around two seconds. Function indicator ON

Connect clip-on-microphone or any other microphone if desired.

The clip-on-microphone can be attached to your clothes with its clip.

DM20 can be attached with its clip or carried around the neck with the delivered neck loop (2 lengths available).
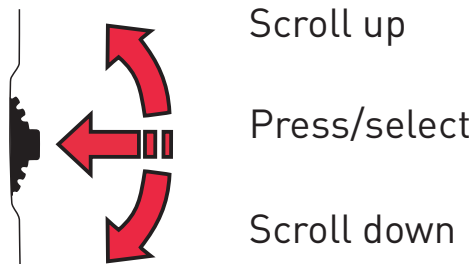
Other functions are explained later in this manual.

DM20

WARNING!
The necklace should not be used if there is a risk of getting stuck, e.g. in a machine or other objects.

Menu

Menu control
Three different selections can be made:

Scroll up

Press/select

Scroll down

To access the menu, press the menu control:

Back
Communication
    ↳ *Channel*
    ↳ *Pair*
    ↳ *Receiver on*
Button mode
    ↳ *None*
    ↳ *Push-to-talk*
    ↳ *Mic. On/Off*
    ↳ *Mute switch*
    ↳ *Receiver On/Off*
Sound
    ↳ *External Mic*
    ↳ *-- Level*
    ↳ *Line In*
    ↳ *-- Level*
    ↳ *Internal Mic*
    ↳ *-- Level*
Settings
    ↳ *PIN-code*
    ↳ *Charge*
    ↳ *Language*
    ↳ *Name*
    ↳ *Func. indicator*
    ↳ *Time out TX*
    ↳ *Factory Reset*
Key lock
About

Back (relates to both the main menu and submenus)

Here you can choose to return to the menu and to the main display.

Communication

Channel

To use the receiver and the transmitter together, they must be set to the same channel. The transmitter and receiver are set to the default channel by the manufacturer.

This does not apply to units with both sender and receiver. In this case the transmitter/receiver are adjusted as described in chapter *Radio range and Channels*.

Change channel:
1. Choose **Channel** in the menu.
2. Choose transmitter or receiver (this applies only to units with both transmitter and receiver).
3. Select a new channel using the menu control.

Channel information is also given when the units are paired.

Channels 1, 2 and 3 are free channels in most European countries that do not require a licence. Under **Extended** more channels can be selected, but these usually require a licence – see the section *Radio Range and Channels*.

FFC (Free Frequency Check) indicates in green the suitable frequencies for the specific environment. Please note! Switch off your other Digisystem transmitters for correct result.

When selecting a channel for units with a built-in transmitter and receiver, refer to the *Built-in receiver* section.

Pair

To use a receiver and transmitter together, they must be paired. All transmitters and receivers are default paired at the factory and will work together.

NB! To prevent eavesdropping, a new code key must be generated and transmitted between the units by pairing.

If the message **Channel combination not possible** shows, see the *Built-in receiver* section.

Transmitting/receiving of pairing information along with a new code can be performed from any Comfort Digisystem unit with a display. To pair units without a display, see sections *Pairing (via pairing button)* for more information. Pairing information or a new code key can be received by several activated units.
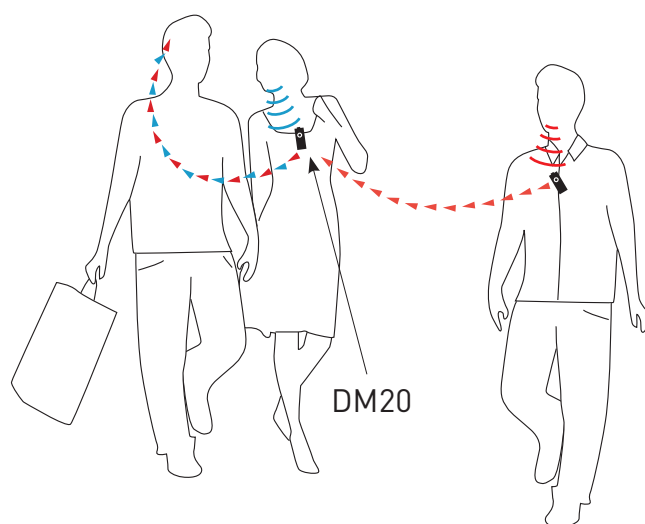
Pairing (via menu)
1. Choose **Communication - Pair**
2. Select **Receive info** on one unit. **Ready to receive pairing info** is shown in the display.
3. Select **New code** on the other unit; select **Yes**.
4. **Generate new code and send info?** is shown in the display. Select **Yes** (Now both the channel and the coding information have been sent, and sound transfer is eavesdrop-secure).
5. To pair another unit into your coded system, select **Send info** instead on one of your paired units.

Pairing (via pairing button)
(The only way of pairing units without a display, with the pairing button)
You can activate the Pairing function via the pairing button.
1. One brief press of the button opens the *Pairing* menu (choose transmitter or receiver).
2. Two brief presses activate the **Send info** function.
3. One long press activates the **Receive info** function.

DM20

Receiver ON
Activates the built-in receiver

Units with both transmitters and receivers built in
Comfort Digisystem units with both transmitters and receivers built-in can be paired separately.

When opening the pairing menu, choose the concerning unit (transmitter/ receiver). In units with both transmitters and receivers, the pairing button controls the transmitter.

The transmitter and receiver are paired separately in these units. The code key is always the same for the transmitter and the receiver when these are built-in in the same unit.

The easiest way to get the same code key in the whole Digisystem is to generate a new code key from the combined unit; in that way the built-in receiver gets the same code as the rest of the system.

Button mode
None
When None is selected, the microphone transmits continuously.

Push-to-talk
With Push-to-talk, the microphone and transmitter are only activated when the button is pressed. This is the most commonly used setting for student microphones.

Mic. On/Off
When Mic. On/Off is selected, the internal transmitter is activated/deactivated when the button is pressed.

Mute switch
The Secrecy button allows the microphone to be muted using the function key so that no sound is transmitted.

Receiver On/Off
Activates/deactivates the built-in receiver.

Sound

External Mic

Activated if the external microphone is to be connected to DM20.
Here, the external microphone's level can also be adjusted.

Line in

Activated when, for example, TV or computer cables are to be connected to DM20. When the socket is set to Line In and a cable is connected to the jack, DM20 switches automatically to continuous transmission, even if the button function for DM20 is set on "Push-to-talk" or "Mic On/Off". This offers the advantage that a device which is normally used as a connecting microphone can be used for normal microphone recording as well as for multimedia connection, without needing to be reset.

Here, the level can also be adjusted.

Internal Mic

Used for adjusting the level of the internal microphone.
NB! The internal microphone is switched off automatically if an external microphone is connected.

Settings

PIN code

Here you can enable or disable the PIN code function (selected functions lock).
Under the menu option Change PIN, you can create your own PIN code.
Under the menu option Lock selection you can select one of three different types of menu lock:

- *button function: locks all functions in the "Function button" menu (can be combined with the "Pairing" menu option)*
- *pairing: locks all pairing functions in the unit, as well as the pairing shortcut button*
- *sound: locks the sound menu*
- *all menus: locks all menus*
- *hide PIN entry: When the PIN code is activated, it will only be possible to unlock the menu within 3 seconds of the unit being started by pressing the menu control.*

The PIN code is needed to be able to unlock selected functions when PIN code has been activated.

If you forget your PIN code, please contact your point of purchase to unlock the unit.

Charging
Here you can activate the **Auto Power Off** function to shut down the unit automatically during charging. If **Auto restart** is activated, the unit will start automatically when the charger is disconnected or loses power.

Language
Here you can select the menu language.

Name
Here the text to be displayed is selected. Choose symbols with the menu control. Select ✓ to save and x to close without saving. To move the cursor during editing, use the symbols > and <.

Func. indicator
Here you can enable or disable the function indicator.
This function does not affect charging and pairing status.

Time out TX
If this function is activated, the DM20 will stop transmitting if no sound is registered for 1 minute. As soon as any sound is detected the transmission starts again.

Factory Reset
Resets the unit to the factory settings. Also deletes all pairing information (SST and Bluetooth). To prevent eavesdropping a new code key must be generated.

Key lock
Here you can activate the key lock and thereby lock all buttons. Once the key lock has been activated, **Unlock keys?** appears in the display. Select **Yes** to unlock.

About
Here you find software information.

More Functions

Function indicator (LED)

The function indicator shows the unit's status, depending on its setting.

On normal operation, the indicator flashes once every three seconds.

During charging the indicator shows red. When the charging is completed, the indicator shows green. The indicator stays red even when the battery is fully charged, if the unit is On during charge.

When the battery level gets low, the indicator slowly flashes red (check the battery status on the display).

Once the unit has been set to receive pairing information, the indicator flashes green quickly.

When receiving pairing information, the indicator shows green for three seconds.

When sending pairing information, the indicator flashes red five times.

When using the function **silence button**, the indicator shows red.

Built-in receiver

*NB! The receiver on the Microphone DM20 is switched off on delivery. **Receiver ON** under **Communication** on the menu is not selected. This function must be activated in order to hear what is being said.*

The Microphone DM20 transmitter also contains a receiver which enables you to transfer the sound regis-tered on another Digisystem microphone. For this to be possible, the radio frequencies of the received and transmitted signals must not be too close to each other.
It is possible to select to transmit at a higher frequency and receive at a lower one, or vice versa.

The groupings are as follows:
High frequencies (852 - 872 MHz)
¤ *Channel 1 - 3*
¤ *Channel E1 - E5*
¤ *Channel B1 - B23*
¤ *Channel F1 - F15*
Low frequencies (768 - 785 MHz)
¤ *A13 - A55*

The transmitter takes priority, and if no suitable frequency is set for the receiver the receiver will be deactivated. The **Receiver ON** option under **Communication** on the unit's menu is deselected.

The frequencies (channels) which cannot be selected for the transmitter in combination with the built-in receiver are marked in orange. The receiver will be deactivated if an orange-marked frequency is selected.

The frequencies (channels) which cannot be selected for the built-in receiver are marked in red. It is not possible to select these frequencies.

The simplest way of setting the DM20 is therefore to select the transmitted frequency (channel) first.
The receiver is paired in the same way as other Digisystem units. See the *Pairing* section.

As the built-in receiver is not used, it must be switched off in the **Communication** menu. This is to prevent undesirable interference which may be caused by other electronic equipment.

Channel planning for optimal radio performance
If several transmitting frequencies are being used in the same room, the frequency differences between the units should be at least 1 MHz for optimal function.

Radio Range and Channels

The transmitter and receiver have built-in antennas. The radio range be-
tween the units is around 30 metres. This may however vary depending on the
particular environment you are in. Like all radio systems, Comfort Digisystem
communicates on specific channels. If you use two transmitters on the same
channel or a neighbouring one, there may be interference. Other electronic
equipment can also interfere with radio transmissions.

In most European countries, channels 1-3 (863.250 – 864.750 MHz) may be
used for hearing products. However, you should always check with the fre-
quency assignment authority in your own country which channels are free and
which require a licence.

In addition to channels 1-3, under **Extended** there are several channels in
bands A-F, which require a licence in most European countries:

A   768 - 785 MHz
B   854 - 863 MHz
E   852 - 854 MHz
F   865 - 872 MHz

When using the built-in receiver, the choice of frequency for the receiver or
transmitter is restricted as shown in
the *Built-in receiver* section.

Attached Accessories

Necklace
Two different lenghts.

Clip-on microphone

Charger

Split cable for charging

Audio cables

Colour codes

Other original Accessories

Car charger
The car charger is designed for cars with a 12 volt (-) earthed electrical system. The charger has short-circuit and automatic overload protection. Disconnect the charger from the socket after use.

Boom microphone
Headset microphone.

Earworn microphone
A microphone that is attached around the ear.

Charging stand
Charging stand to connect to the charger supplied. Several charging stands can be connected in series and run from a common charger. More than two charging stands will require a bigger charger.

For other accessories, please visit our website,
www.comfortaudio.com

Trouble Shooting

The transmitter and receiver do not start
Charge the transmitter and receiver. Remember to press the On/Off button down for 2 seconds to switch the unit on. Check that the charger is connected to the plug socket.

Poor speech intelligibility
The distance between the transmitter and the receiver may be too long. The range is around 30 metres. The distance between the microphone and the person who is talking may also be too long; move the microphone nearer to the person talking. Try to change channel/environment.

Poor range and interference
In some environments involving, e.g., concrete, iron or sheet metal structures, the range may be reduced. There may also be equipment nearby causing interference. Change channel.

No sound
Check that the transmitter and receiver are set to the same channel.

Loud hissing noise (no sound transfer)
Check that the units are paired.

The unit will not start during charging
Disconnect the charger. Choose **Settings - Charge - Auto power off** in the menu.

Service and Warranty

Comfort Audio AB accords a limited warranty for two years as of the date of delivery. This covers all defects of manufacture and materials. For accessories the warranty period is 90 days as of the date of delivery. Local agreements or regulations may exist.

Defects caused by careless handling or intervention inside the product or its accessories are not covered by the warranty.

It is perfectly normal that the battery's capacity decreases gradually. Battery lifetime depends on how the product is used. Contact your point of purchase when it is time to change the battery.

You are always welcome to contact Comfort Audio if you have any questions.

Technical Data

Type of transmitter/ receiver:	SST - SecureStream Technology
Range:	Approx. 30 m
Dimensions:	84 x 39 x 14 mm
Weight:	45 g
Frequency range:	Transmitter and receiver 768 - 872 MHz
Antennas:	Built-in
Operating time:	Up to 8 hours
Battery:	Chargeable Li-Polymer
Charging time:	Approx. two hours
Microphone:	Built-in
Connections:	Line in / TV microphone / Earphones / Loop

Important Safety Instructions –
Read these before using your product

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not use near any heat sources such as radiators heat registers stoves, or other apparatus (including amplifiers) that produce heat.

8) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet consult an electrician for replacement of the obsolete outlet. (Only when using polarized plug)

9) Protect the power cord from being walked on or pinched particularly at plugs convenience receptacles. and the point where they exit from the apparatus.

10) Only use attachments/accessories specified by Comfort Audio AB.

11) Unplug this apparatus during lightning storms or when unused for long periods of time.

12) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way such as power-supply cord or plug is damaged liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture does not operate normally or has been dropped.

13) Start listening at a low volume.

14) Too high a volume can seriously damage your hearing.

15) Don't dissasemble the product.

16) Should the product break open because of damage, service should only be done by qualified service personnel.

17) Never use a transmitter or receiver set to a non-permitted frequency. Check with the frequency authority in the country where the equipment is to be used.

18) The product contains sensitive electronic equipment and must be handled carefully.

19) Never charge product in closed, unaired spaces such as handbags, cases or other closed storage bags.

20) Only use batteries and power supply specified by Comfort Audio AB.

21) You must not change the battery yourself; please contact your point of purchase.

22) CAUTION! Danger of explosion if battery is incorrectly replaced.

23) The product shall not be exposed to excessive heat such as sunshine, fire or the like.

24) Products include radio transmitters. Do not use products where it is not allowed to use electronic equipment, e.g. on airplanes.

25) The necklace should not be used if there is a risk of getting stuck, e.g. in a machine or other objects.

26) Do not leave the product unloaded for too long, the battery could get damaged.

27) Do not keep the product connected to the charger if it is not used for a longer period.

Subject to change

Microphone DM20

Comfort Audio
HEAR THE FUTURE

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