



PROTOS 2A98QBTCOM Bluetooth Headset and Intercom User Manual

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PROTOS 2A98QBTCOM Bluetooth Headset and Intercom



Product Information

Specifications

- **Model:** BT-COM
- **Bluetooth-Function:** Bluetooth communication earmuff
- **Gooseneck microphone:** Goose-neck microphone
- **USB charging:** bracket included
- **Transport bag:** Carrying case included

Frequently Asked Questions

- **How do I charge the device?**
 - You can charge the device using the provided USB charging bracket.
- **How do I know when the devices are successfully paired?**
 - The LED indicators will confirm successful pairing by flashing in green.

INTRODUCTION

Congratulations on your decision on the PROTOS® BT-COM communication device for up to four participants.

This product has been developed by implementing the most current electronic know-how.

You can use the BT-COM in combination with a PROTOS® or with the PROTOS® Headset as a hands-free kit for Bluetooth mobile phones and to receive music from Bluetooth-enabled audio devices. You can also have conversations with up to three other BT-COM users over the Intercom Network. To benefit from all the technical options of your device, please read these instructions carefully.

The BT-COM offers you the following functions:

- Four way intercom conference
- Bluetooth headset for Bluetooth capable devices as e. g.:
 - mobile phones
 - audio devices
 - GPS navigation devices
 - radio devices
- Bluetooth intercom with a range up to max. 600 m*
- Clear and natural sound in HD quality
- Hearing protection according to EN 352 (for devices with sound insulation inserts)
- Self-organising, self-healing Intercom Network: in case a participant leaves, the network will be build up again automatically.
- Smartphone app for iOS (iPhone) and Android



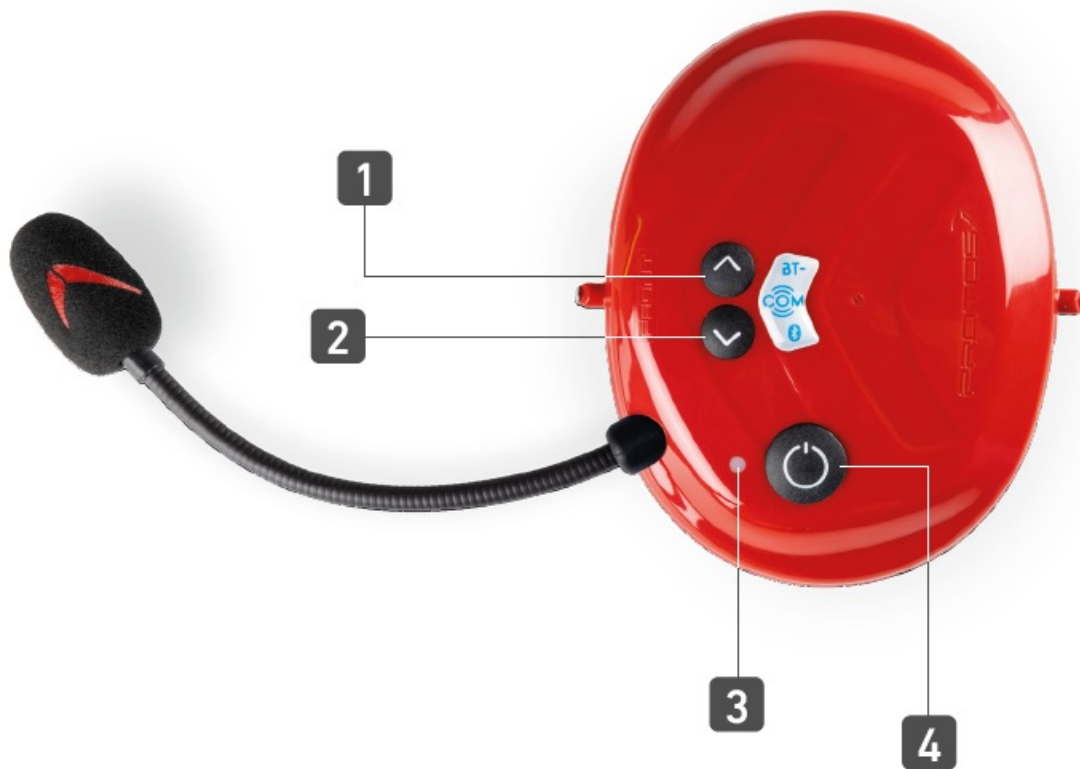
* dependent on open field conditions

PACKAGE CONTENT



1. Bluetooth communication earmuff
2. Goose-neck microphone
3. USB charging bracket
4. Carrying case

CONTROL ELEMENTS



1. Up button
2. Down button
3. LED Indicator
4. Multi-function button

BASICS

Power On

- Press the multi-function button (4). You will hear an ascending signal, and the LED (3) flashes 2x red every 2 seconds.

Volume + / –

- Briefly press the up button (1) to increase or the down button (2) to decrease the volume.
- A short confirmation signal sounds. Each click increases the volume by one level.
- When the maximum or minimum volume is reached, a long signal sound will be audible.

Mute

- To mute the microphone, briefly press the multi-function button (4).
- This will be confirmed by a tone sequence. Press again to reactivate the microphone.
- This function is only applicable in combination with a call or in the PROTOS® Intercom Network.

Access the network

- To disconnect a BT-COM from the PROTOS® Intercom Network press the up button (1) for approx. 3 seconds.
- A descending signal will confirm the selection. To re-connect, press the up button (1) again, and an ascending signal will sound for confirmation.

Power Off

- Press the multi-function button (4) for a long time until a signal is audible.
- The LED (3) lights up red for 2 seconds and then turns off.

Ideal surrounding noise suppression



One of the major goals in the development of this product was an interference-free communication.

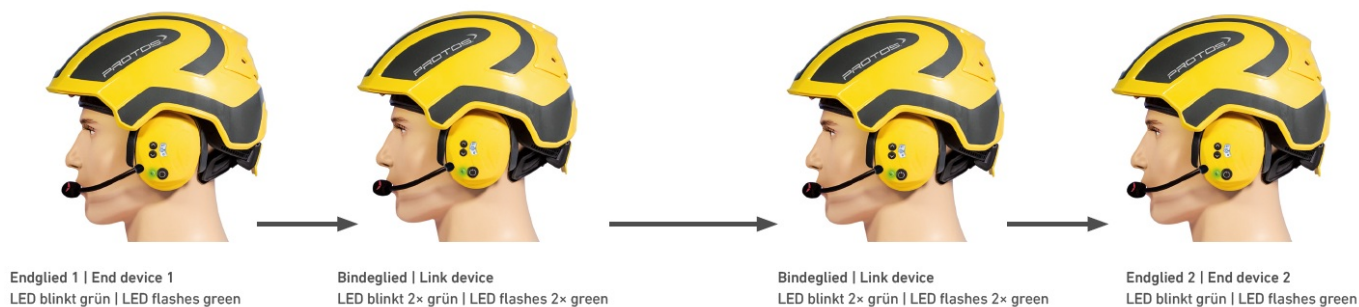
During communication, interfering noise is reduced efficiently by the use of a near-field microphone as well as by a built-in noise cancellation function. For optimum communication, place the microphone as close to the mouth as possible. The red logo should be pointing to the outside, and the white dot on the goose neck towards the mouth. In this way the special near-field microphone capsule is optimally placed to prevent picking up disturbing surrounding noises.

Impacts on the range



The range of radio waves is reduced not only by the surrounding area, e. g. trees, power lines and marsh land, but also by the human body. This is because waves are absorbed by water (e. g. in the human body, by rain or in trees). In this way, the radio range of the BT-COM will e. g. be influenced by the positioning of the heads. The Intercom Network is developed so that with each linked device, the range will be extended.

Operating principle of the BT-COM® Intercom Network



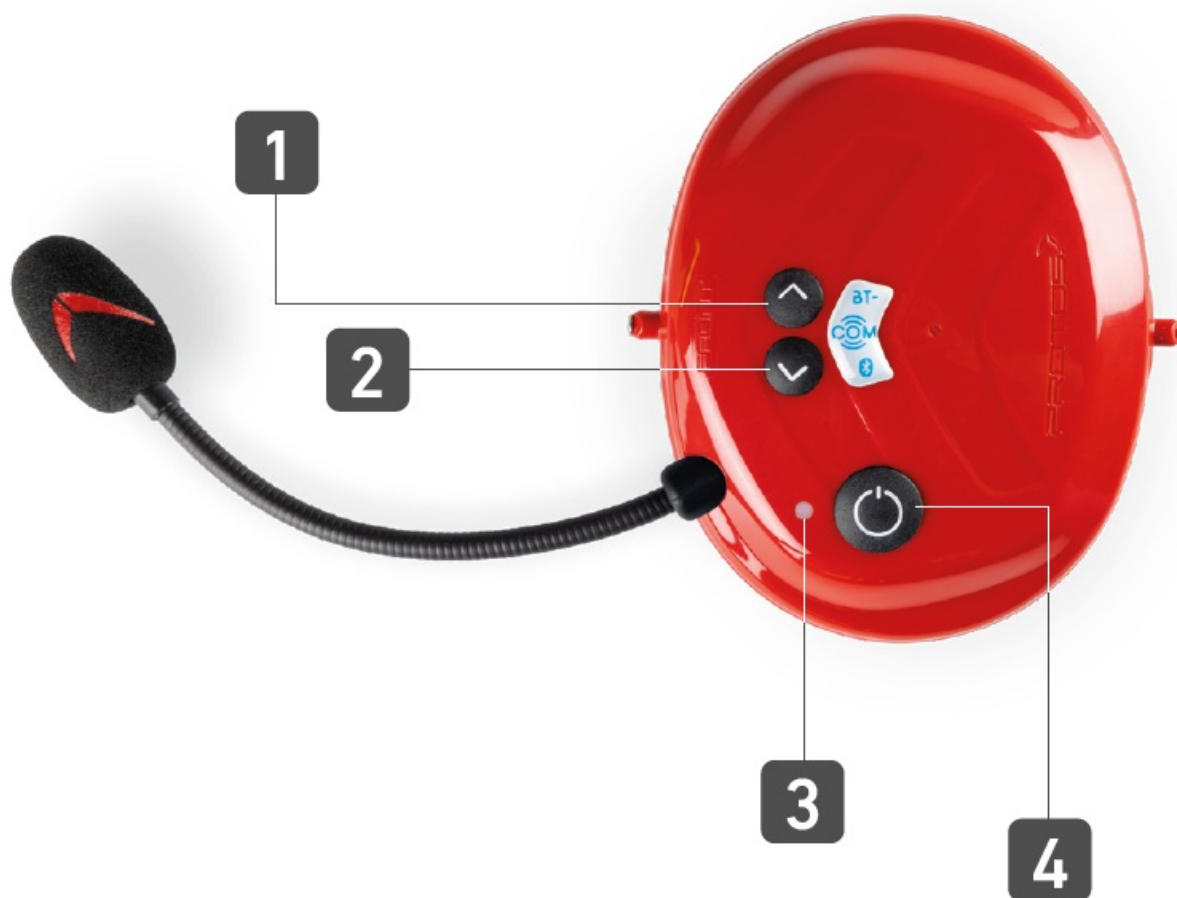
After the initial pairing (page 16) up to four PROTOS® BT-COM communication earmuffs will link automatically to an Intercom Network so that all participants can communicate with each other. If an already paired device enters the range of the Network it will be integrated automatically. By pushing the up button (1) the connection and disconnection can be accelerated. If a device leaves the reach of the Network it will be linked out, and the missing link in the chain will be closed autonomously.

In-between each linked device, a maximum range of 250 m can be reached. The ranges sum but, nevertheless, they are highly impacted by the surrounding factors as explained in the previous chapter.

CONNECT

Setting up a new PROTOS® Intercom Network

To connect up to four BT-COM communication earmuffs, please execute the following steps once:



1. Start pairing mode for communication earmuff 1
 - Simultaneously press the multi-function button (4) and the up-button (1). The LED (3) flashes alternately

in red-green.

2. Start pairing mode for communication earmuff 2
 - Simultaneously press the multi-function button (4) and the up button (1). The LED (3) flashes alternately red-green. Pairing with earmuff 1 begins. After a few seconds, the LED (3) turns purple.
 - After one minute, the LEDs (3) confirm successful pairing by flashing in green.
3. Pairing earmuff 3 and earmuff 4
 - To connect earmuff 3 to the network, repeat the above-described steps with earmuff 2 and earmuff 3. Proceed accordingly with earmuff 3 and 4 to pair earmuff 4 into the Network.
4. The everyday use of the PROTOS® Intercom Network is described.

NOTE

- The initial pairing might take some time.
- Afterwards the devices recognize each other and the connection will be built up faster.

Day-to-day use of an existing PROTOS® Intercom Network

Day-to-day operation of the BT-COM in an existing PROTOS® Intercom Network:

1. Turn on all BT-COM communication earmuffs
 - Press the multi-function button (4) for 3 seconds on all earmuffs. An ascending signal will sound and the LED (3) will flash 2× red every 3 seconds.
2. Connect into a known Network
 - For all earmuffs to be connected, press the up button (1) for 2 seconds. Hereby the order of the earmuffs doesn't matter. The LED (3) will flash green.
 - **HINWEIS:** If a "Reset" has been carried out since the last coupling, the network must be set up again. To do this, reset all devices and follow the steps under "Connect – Set up of a new Intercom Network".
3. Disconnect a BT-COM earmuff from the Network
 - To disconnect a communication earmuff from the Network, press the up button (1) for about 3 seconds until a descending signal sounds. The capsule is now disconnected from the Network. To re-connect, press the up button (1) again until an ascending signal sounds.
4. Mute
 - Press the multi-function button (4) shortly to mute the BT-COM. You will hear a descending signal. To disable the mute function, please press the multi-function button again (4).

Pairing with a Bluetooth device

To connect your BT-COM to a Bluetooth-enabled device, such as a mobile phone or MP3 player, proceed as follows:

1. Switch on the BT-COM by pressing the multi-function button (4).
2. Please ensure that Bluetooth is activated on your mobile phone.
3. Start pairing to the communication earmuff
 - Turn on the communication earmuff. Simultaneously press the multi-function button (4) and the up button

(1). The LED (3) starts to flash alternately red-green. After a few seconds “PROTOS® BT-COM” will appear on the display of the Bluetooth device.

- Confirm the connection. After successfully pairing, the LED (3) will flash twice periodically blue.



4. Receive and reject incoming phone calls

- To answer an incoming call with your BT-COM, briefly press the multi-function button (4).
- To reject an incoming call, press the multi-function button (4) for 3 seconds.

5. Redial

- Shortly press the multi-function button (4) to redial the last called phone number.

Phone calls within an active PROTOS® Intercom Network



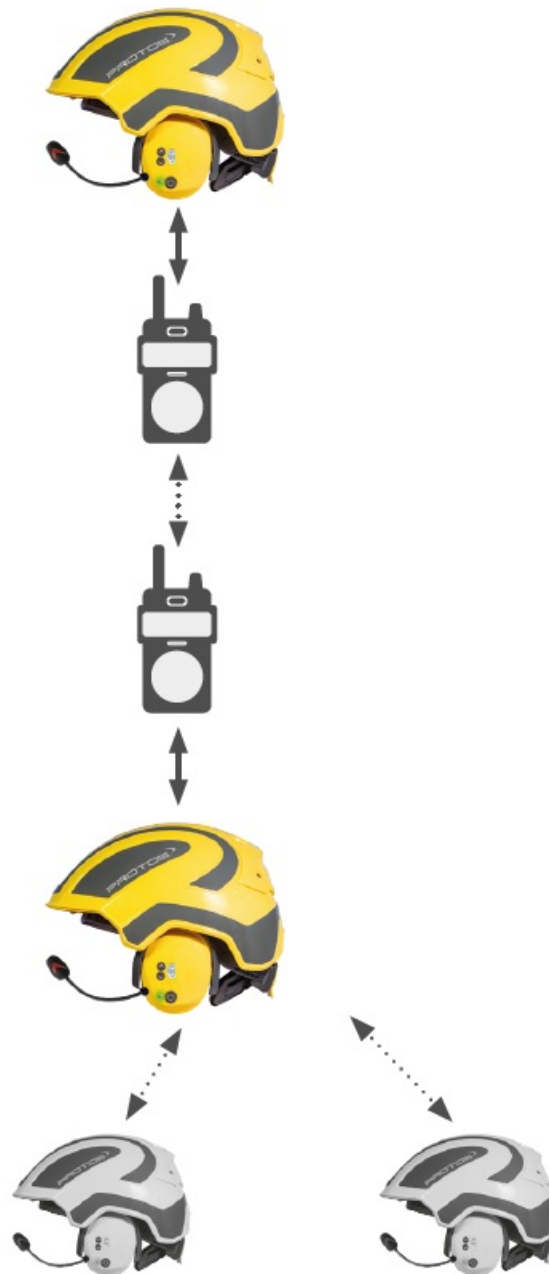
1. Answer a phone call
 - To answer an incoming call, briefly press the multi-function button (4).
 - **ATTENTION:** your BT-COM will be disconnected from the PROTOS® Intercom Network.
2. Reject a phone call
 - To reject an incoming call, press the multi-function button (4) for 3 seconds.
 - The connection to the PROTOS® Intercom Network will be maintained.
3. Hanging up on a call
 - To hang up on a call, press the multi-function button (4).
 - After you finished the call you will automatically be re-connected to the PROTOS® Intercom Network.
4. Voice assistant
 - By pushing the multi-function button (4) twice shortly, you can activate the voice assistant of your smartphone.

NOTE FOR EMERGENCY SITUATIONS:

- Your safety is our priority. This is why we ask you not to take any phone calls or listen to music in any critical or emergency situation.

Connection with an additional Bluetooth device, e. g. radio device

You can connect your BT-COM with Bluetooth compatible radio devices.



1. Please check in the App Store that the newest version of the app is installed on your smartphone. Afterwards you can check with the PROTOS® Control-App that you have installed the most current software on your BT-COM.
2. Make sure that your BT-COM is turned on and connected to the app (see p. 32).
3. Select the BT-COM and then the tile “additional device” in the PROTOS® Control-App. There you will find a selection menu, choose “radio device”. Select the brand and the type of your radio device there.
4. Activate the pairing mode on your radio device and select “pairing” in the PROTOS® Control-App. The voice prompt “radio connected” confirms the successful connection.
5. By pressing the down button for 3 seconds, the BT-COM will switch to the second device mode, the LED will flash blue, and the voice prompt will state “radio mode”.
6. If you press the down button for 3 seconds again, you will go back to the operation mode of the first device “primary mode” and the LED flashes.
7. By pressing the up button for 3 seconds you can switch back to the PROTOS® Intercom Network.

In the additional device mode, the multi-function button serves as Push to talk button, this means that pushing the button opens the speaking channel.

Connection with an additional device, e. g. second Smartphone

The second device function enables you to pair a second mobile phone with your BT-COM. This makes it possible to receive and start calls from two mobile phones, e. g. private phone and work phone. You are also able to set up a Telephone Conference over long distances instead of a radio connection in areas with good reception.

1. Please check in the App Store that the newest version of the app is installed on your Smartphone. Afterwards, you can check with the PROTOS® Control-App that you have installed the most current software on your BT-COM.
2. Make sure that your BT-COM is turned on and connected with the first device and the app.
3. Select the BT-COM and then the tile "additional device" in the PROTOS® Control-App. There you will find a selection menu; choose "mobile device", turn on the pairing mode on the second mobile phone and then press the pairing button. A voice prompt states "second mobile connected".
4. You can switch between the "primary mode" and "second mobile mode" by pressing the down key for 3 seconds. By pressing the up button for 3 seconds you will switch back to the PROTOS® Intercom Network. In case of loud surrounding noises, there is the option of using the multifunction button as PTT button. You can activate the PTT mode in the app under the tile "additional devices".

NOTE

- As long as you are in the Intercom Network you will only hear incoming calls to the first device.
- In the primary mode, the number of connected devices is indicated by the flashing of the LED.

MOUNTING

Mounting of the BT-COM muff into the PROTOS®

To mount the BT-COM muff correctly into your PROTOS® please follow the instructions below:



1. Remove the left ear protector earmuff from the PROTOS® by swivelling it to an angle of 90° to the bracket arm. The ear muff can only be removed in this 90° position and by pressing the side bracket arm away from the earmuff (see picture on the left).
2. Proceed now in reverse order to insert the BT-COM. Place it at a 90° angle into the bracket arm. Then rotate the muff into the straight position.
3. You can adjust the fitting of your BT-COM on the ear by pushing the earmuff in the bracket arm up or down.
4. To charge the battery of your BT-COM please remove the BT-COM earmuff by swivelling it to a 90° angle and pressing the side bracket arm away.

In case you have the PROTOS® Head Protection you can position the BT-COM in three ways: operation position, venting position and parking position. Please be aware that communication only works in operation position.

NOTE

- The charging bracket arm is for charging purposes only.
- Never try to place the charging bracket arm into your PROTOS®!

CHARGING

Charging the battery



Your BT-COM has a Lithium Ion battery with a runtime of 3 – 5 days on standby and 10 hours in PROTOS® Intercom operation. The runtime is dependent on surrounding factors like cold temperatures. At low battery, the LED will flash red 6 times and a signal will be audible every 60 seconds. You can also check the battery charging status of your BT-COM in the PROTOS® Control-App at any time.

To charge the battery place the communication earmuff in the charging bracket arm so that the label FRONT is on the same side as the buttons on the communication earmuff. The LED will light up red during the charging process. As soon as the charging is finished the BT-COM will change to trickle charging and the LED will change to a permanent green colour.

If your battery has not been used for an extended time, it can happen that the charging electronics will not react promptly. The PROTOS® Bluetooth Electronic is designed so that it will try to recover deeply discharged batteries. The charging control light will blink as long as it takes to reactivate the battery for charging.

To achieve an optimum output the battery should be fully charged. The charging time is approximately 30 Minutes for minimum charging and 1,5 hours for complete charging.

NOTE: Please always remove the insulation insert and padding always before charging to prevent waterlogging! If your battery becomes hot you must not use the device any more. Please send it to your retailer.

CLEANING

Cleaning and care of your BT-COM

Humidity and sweat are harmful to the electronics of your BT-COM. Because of this, please take care to dry your device after use. To ensure this, execute the following steps.



1. Remove the sound insulation insert and the padding from the earmuff after each use, by firmly holding the earmuff in your hand and by hooking your index and middle finger under the side of the padding (see left picture). The padding can be removed by pulling firmly.
2. Take the sound insulation insert out and if necessary, vacuum it carefully.
3. If your BT-COM is not in use, leave it in an open position.



NOTE: The sound insulation insert and padding should be replaced every six months to ensure proper insulation functionality.

Not only your BT-COM requires proper care. Please consider the maintenance instructions as well for your PROTOS® head protection.

APP

PROTOS® Control-App

The PROTOS® Multi-function product family is continuously being developed and optimised for you. To give you the opportunity to keep your BT-COM up-to-date, a special app has been developed. Let the app guide you through the different functions of your device. Please enjoy exploring the PROTOS® world!

PROTOS® Control for Android (Samsung, Sony, etc.)





- Please download the PROTOS® Control-App from Google Play.
- To be able to use the app with your BT-COM, it must be paired with the Smartphone first.

PROTOS® Control for iOS (iPhone)

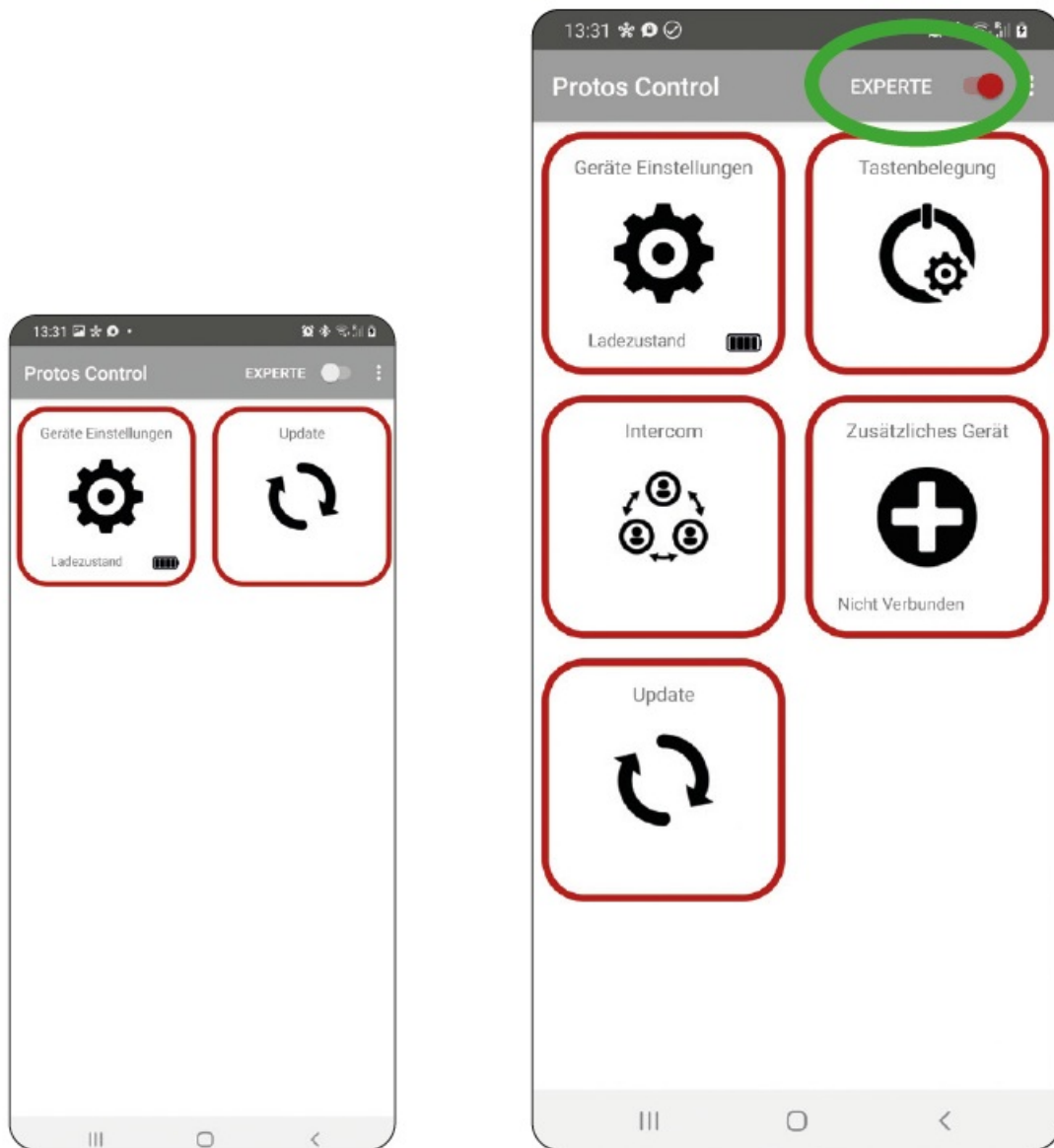


- Pair the BT-COM with your iPhone. Please download the
- PROTOS® Control-App from the App Store. You will need to pair your BT-COM again with the app.

NOTE: By updating your BT-COM software and app regularly, you can benefit from enhanced functionalities for your BT-COM. In the tile "Update" in the app you will be informed on available updates and you can download them as soon as you are connected to the internet. Please keep in mind that an update can take a couple of minutes.

PROTOS® Control-App – Settings

The PROTOS® Control-App offers you several functionalities in combination with your BT-COM and is regularly extended. As this causes higher complexity, you have the option to choose between two views:



Expert View

- The expert view can be activated by tapping the slider in the upper right corner in the bar (see green circle).
- In the different tiles, you can customise your settings of the BT-COM like, for example, setting a direct dial to a defined number by double pressing the multi function button.

Deactivate the Expert View

- By tapping the slider again, the expert view can be deactivated. Only the tiles, that are necessary for updating the software and that are needed to see the device settings will be visible anymore.

FAQ

Frequently asked questions

1. Your BT-COM can not be paired with other BT-COMs?
 - If problems occur when pairing or recognising other devices, we recommend removing all previously paired devices. To do this, press the multi-function button (4) together with the down button (2)! The LED

(3) lights up alternately red and green. All other devices of the intercom network should also be reset. In addition, you can also reset all settings to factory default by simultaneously pressing all buttons for 5 seconds. This procedure deletes all previously paired devices and also resets previously made settings in the app to factory settings.

2. Is it possible to connect more than four devices?

- In theory, more than four devices can be paired with each other.
- Nevertheless, we recommend limiting the conversation to four devices.

3. How can I delete a device in the app?

- When you press the device column in the main screen for a few seconds the trash bin symbol will appear and when selected, the device will be deleted from the app.

4. Do you have issues charging the battery of your BT-COM?

- Please check if you have connected your device properly with the USB charging bracket arm.
- Try to charge the device with another USB charger.
- If the battery was completely empty, it can take a couple of minutes until the LED indicates charging by flashing red.

STANDARDS AND APPROVALS

Notes and test results for sound insulation – EN 352

Your BT-COM automatically limits the sound pressure level to 82 dB(A) when using multimedia (listening to music, streaming services, communication apps, etc.). This complies with the requirements of EN 352-8:2020.

For speech applications, a listening volume (maximum volume) is permitted to ensure better understanding, e. g. in hazardous situations. Please use this maximum volume for a maximum of 50 minutes spread over a working day. If there is no acute danger, we recommend turning down the volume.

Chart 1: Usage time for the highest possible input signal

Requirements	Results
Criterion input level	-57.6 dBFS
Maximum sound power level	91.6 dB(A) at -14 dBFS
Usage time at maximum sound level	0.88 h

Chart 2: Relationship between output sound pressure level and input signal in 5 dB steps

Input signal level [dBFS]	-64	-59	-49	-44	-39	-34	-29	-24	-19	-14
SPL [dB(A)]	75.5	80.5	85.4	89.7	91.7	91.2	91.4	91.4	91.4	91.6

The values show that regardless of the input volume (e. g. outside noise of chainsaw), the automatic volume control guarantees a constant speech volume. Of course, the volume can be adjusted by the volume control.

Notes and test results on sound insulation – EN 352

Hereby PROTOS GmbH declares that the BT-COM complies with Regulation (EU) 2016/425. The full text of the EU Declaration of Conformity is available for the BT-COM on headband (P1K-BT-COM) at www.protos.at/ke_p1k and for the BT-COM on PROTOS® (P1-BT-COM) at www.protos.at/ke_p1. Production tests at irregular intervals (module C2) are performed by the certification and product surveillance body PZT GmbH, Bismarckstraße 264 B, 26389 Wilhelmshaven, Germany, EU identification number 1974.

Chart 3: EN 352-1:2020 Sound attenuation values

Frequency [Hz]	Noise insulation M_f [dB]		Standard deviation s_f [dB]		APV [dB]	
	BT-COM on headband	BT-COM on PROTOS®	BT-COM on headband	BT-COM on PROTOS®	BT-COM on headband	BT-COM on PROTOS®
63	17.1	14.9	3.9	3.8	13.2	11.1
125	17.1	13.7	3.7	3.9	13.4	9.8
250	18.7	16.3	1.8	1.4	16.9	14.9
500	24.5	24.3	2.9	3.1	21.6	21.2
1000	29.2	30.9	2.9	2.7	26.3	28.2
2000	34.4	35.7	4.1	2.7	30.3	33.0
4000	41.9	43.3	3.2	4.6	38.7	38.7
8000	43.7	51.5	4.4	9.8	39.3	41.7

Chart 4: ISO 4869-2

	SNR		H		M		L	
	BT-COM on headband	BT-COM on PROTOS®	BT-COM on headband	BT-COM on PROTOS®	BT-COM on headband	BT-COM on PROTOS®	BT-COM on headband	BT-COM on PROTOS®
Mean value	29.8	29.0	34.4	36.1	26.9	26.1	21.4	18.9
Standard deviation	1.7	1.6	2.3	1.9	1.9	1.7	2.0	1.8
Result	28	27	32	34	25	24	19	17

PRECAUTIONS

WARNINGS

Please read and observe the following warnings:

- Before using the device, please familiarise yourself with its proper use by carefully reading the operating instructions.
- The user must verify the proper operation of the instrument before use. If distortion or failure is detected, the user must follow the manufacturer's maintenance instructions.
- During the use of Bluetooth audio transmission, it is possible that certain warningsignals may not be heard in the workplace.
- Improper use or improper fit of the BT-Com significantly reduces the hearing protection attenuation of the BT-COM.
- The life of the BT-COM depends on the maintenance and care of the product. We recommend changing the attenuation inserts and the cushion pads at least every 6 months.
- The capsules and especially the sealing pads and cushion pads can wear out with use and should therefore be inspected frequently for signs of, for example, cracks and leaks.
- To ensure hearing protection, the capsules must be fitted in the PROTOS® in accordance with the fitting instructions.
- The protective effect is only ensured if the hearing protector is worn in noise areas without interruption.
- This product may suffer from certain chemical substances. Further information can be requested separately from PROTOS®.

Provided the prescribed maintenance intervals are observed, the BT-COM meets the safety requirements of EN 352 for 5 years.

For further information, please refer to the user manual of your PROTOS® or PROTOS® Headset.

CE MARKING

Our product has been manufactured and tested according to the latest technical requirements. You can contact PROTOS GmbH for more information regarding the CE marking. This device complies with the latest RoHS Directive.

Please take care of the environment and dispose of this device only through an electronic waste disposal facility rather than in household waste. Our company is certified according to ISO 9001:2015. In compliance with this standard, we maintain a quality management system that helps us guarantee consistently high workmanship. This enables us to ensure that our work – and, therefore, your product – are of the highest quality possible.

We provide consumers with a two-year warranty on electronics in conformity with European law. Do not open up a defective device; instead bring it to your specialist retailer and include a detailed description of the defect. Any unauthorised modifications or repairs to the device will void the warranty!

Water damage and batteries are excluded from the warranty.

By request, we will be happy to replace any defective wear parts for a fee.

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Printing and typesetting errors reserved.

USA FCC compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC RF exposure guidelines, the user must follow the provided operating instructions and avoid any modifications or alterations to the equipment that have not been expressly approved by the responsible party. Any unauthorized changes or modifications may void the user's authority to operate the equipment.

Further languages at: www.protos.at/download/ba_bt-com

Documents / Resources



[PROTOS 2A98QBTCOM Bluetooth Headset and Intercom](#) [pdf] User Manual
2A98QBTCOM, 2A98QBTCOM Bluetooth Headset and Intercom, Bluetooth Headset and Intercom, Headset and Intercom, Intercom

References

- [➤ PROTOS® Kopfschutz & Barrier](#)

- [➤ BT-COM Downloads](#)
- [➤ protos.at/ke_p1](#)
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