BARRYVOX® S

REFERENZHANDBUCH	DE
EXTENDED REFERENCE MANUAL	EN
MANUEL DE RÉFÉRENCE	FR
MANUALE DI REFERENZA	IT
GUÌA DE REFERENCIA	ES
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DECLARATIONS OF CONFORMITY	

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BARRYVOX® S

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EXTENDED REFERENCE GUIDE

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Congratulations on the purchase of your new Barryvox®S.

This user manual explains the functionality and use of the Barryvox®S. The Barryvox®S is a revolutionary, sensor-controlled avalanche transceiver, which is very easy to use. Additional detailed information and advanced instruction may be found in the Barryvox®S Extended Reference Guide.

Register your Barryvox®S and get a 3 year warranty extension!

Register your Barryvox®S today at www.Barryvox.com, to get important information such as announcements about the availability of software updates.
After a successful registration your device is covered for 5 years by warranty.

Barryvox® Transceivers – Made in Switzerland

Our heritage is compelling. Mammut and Barryvox® follow the time-honored tradition of world-class precision products made in Switzerland. From its design to its engineering and production, this device is completely made in Switzerland.
This device is compatible with all avalanche transceivers that comply with the EN 300718 standard and operate on a frequency of 457 kHz.

The following documents for the Barryvox® transceivers are available at www.mammut.com/BarryvoxManual:

Barryvox®S User Manual

This user manual describes the SEND and group check functions as well as the standard search mode. In addition, you will find all information regarding basic maintenance, warranty and repair as well as the technical specifications.

Barryvox®S Extended Reference Guide

The Extended Reference Guide is a comprehensive resource of information for your Barryvox®S. It includes additional information that augments the user manual concerning device settings, advanced search and rescue techniques, and in particular the alternative search mode. It is an important and valuable resource for advanced recreational and professional users – and all educators.

Approval / Conformity

All information concerning approval and conformity is available at the very end of this booklet.

Like all transceivers, the Barryvox® contains shock sensitive ferrite antennas. Therefore, you should handle it with utmost care!
Store the device and the carrying system in a dry spot that is protected from extreme cold or heat and direct sunshine.
Always check the result of the self- and battery test, pay attention to alert messages and carry out the group check.
It is your responsibility to frequently check your Barryvox® for mechanical damage of the casing, proper function of the main switch, battery compartment cover as well as cleanliness and mechanical integrity of the battery contacts.
To ensure the proper performance of the transceiver, it is highly recommended that you send your device to an official Barryvox® service center once every three years for a functional test. The recommended date of the next check can be viewed under «Maintenance» in the shut down sequence of the device. (see chapter «Periodic Checks» of the Barryvox®S Extended Reference Manual).

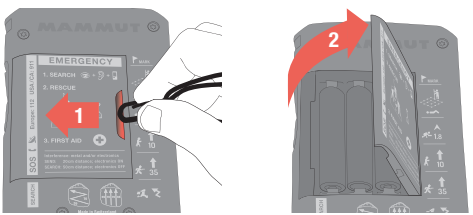
Interferences

Always avoid having other electronic devices (e.g. mobile phones, radios, headlamps, cameras), metal objects (pocket knives, magnetic buttons), or other transceivers close to (20 cm in SEND; 50 cm in SEARCH) your running avalanche transceiver.
You should not wear clothing with magnetic buttons! Users of pacemakers are advised to carry the device in a secure pants pocket (no vital data detection). Consult the manufacturer's instructions with regard to the impact on pacemakers.

- BarryTip: **When searching, hold the device at a minimum of 50cm away from these objects and turn off any electronic devices, if possible. It is highly recommended to turn OFF mobile phones!**

Batteries

Only use alkaline (LR03/AAA) or lithium (LR92/AAA) batteries of the same type. Always insert 3 new batteries of the same type. In case these batteries need to be removed, the same 3 batteries or 3 new batteries must be reinserted. Never use rechargeable batteries and always replace all the batteries at the same time.
Make sure the lid is properly closed and that the device and the batteries stay dry.



Use a fingernail or the leash clip to slide battery door to the left, and it will swing open.

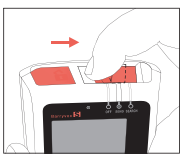
Periodically inspect the battery compartment. Clean or dry it, if needed, since moisture can cause corrosion.
Avoid touching the contacts with your hands, use a clean cloth. A reliable power supply is crucial for safe operation.

When storing or not using the transceiver for an extended period of time (summer, travelling, shipping), remove alkaline as well as lithium batteries. The warranty becomes void if batteries have leaked!

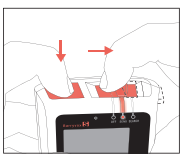
- **Caution: Risk of damage if you use batteries of the wrong type.**
- **Lithium batteries must be compliant to the following IEC-standards: IEC 60086-4 and IEC 62281.**

Main Switch OFF / SEND / SEARCH

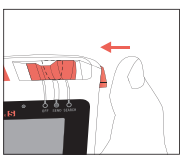
The main switch is located on the top side of the device. In the left position OFF, the device is turned off, in the center position SEND the device is in SEND mode and in the right position SEARCH, the device is in SEARCH mode. For safety reasons, it is required to press the hinged unlock button to leave the SEND mode. To return from SEARCH to SEND, simply push the main switch sideways.
Always make sure that the switch locks into position mechanically to avoid an undesired change of mode.



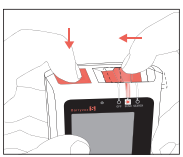
OFF –> SEND



SEND –> SEARCH



SEARCH –> SEND



SEND –> OFF

User Interface and Use of Buttons

The Barryvox®S uses an easy navigation based on three buttons: The two scroll-bar buttons located on the side and the orange button on the front. To scroll up or down in any menu or list, use the up and down buttons on the side. To confirm your selection, use the orange button on the front. The action triggered by pressing the button is shown in menus or in the softkey bar at the bottom of the screen.

Samples:
Press the button to…
…confirm your selection.

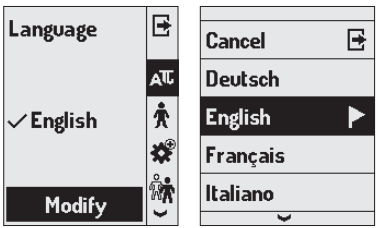
SETTINGS

Access to the settings menu is only possible during the initial start-up sequence. For safety reasons, there is no access to the settings once the device is in group check, SEND or SEARCH mode.
The main purpose of the settings is to allow users to adapt the user interface and available function of the device to best fit their individual requirements and capabilities. However, even if you configure your device for a typical “pro-user”, it will still be possible for a novice to use it efficiently as the fundamental elements of group check, SEARCH and SEND intentionally follow the same principles and user interaction.
The current choice of setting is always marked with the ▶-symbol. While scrolling the available settings, this allows you to see what remains stored if you simply exit the menu.

Language

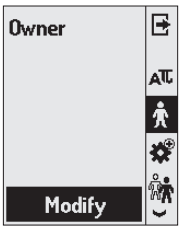
This setting allows you to select the language of your transceiver’s user interface.

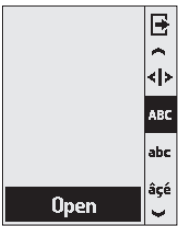
When turning the device on for the first time and switching to SEND, the user language must be selected. Use the scroll-bar to scroll up or down in the list and confirm your selection by pressing the ▶ button on the front.



Owner

The Barryvox® S allows you to enter your name, address, and other information, such as your phone number or e-mail address. This information is displayed every time the transceiver is turned on.





Beware of the meaning of the following icons:

- Save and exit
- Backspace
- Space
- New line
- Change cursor position
- ABC Uppercase letters
- abc Lowercase letters
- ÂÇÉ Uppercase special characters
- âçé Lowercase Special characters
- @+ Symbols
- 123 Number

Pro Settings

The factory settings of the device are optimally preconfigured for a basic user, directly proceed to chapter “Self- and Battery Test” for further information on basic use. For advanced and professional users, it is advised to adjust these settings to best fit their requirements and abilities.

Pro Search

The factory default setting is OFF. If you turn “Pro Search” ON, the device will allow you:

- to hear the analog tone in all search phases in standard search mode (see chapter “Analog Tone“).
- enables access the the Pro Check function within group check (see chapter „Pro Check“)
- to scroll the list of buried subjects which allows more efficient group searches and triage decisions (see chapter “List of Burials“)
- to see the vital data of the buried subjects you are searching in order to take triage decisions (see chapter “Vital Data“)
- to access the alternative and extended range search modes (see chapters “Extended Search Strip in Extended Range Mode” and “Alternative Search Mode“)
- to mark deep burials up to distance indication of 6.0 (see chapter “Deep Burial“)
- to unmark a buried subject (see chapter “Erase Mark“)

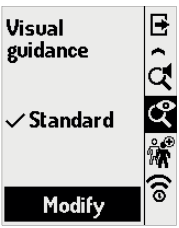
- BarryTip: **The analog tone allows you the ability to identify signal-overlap or other difficulties encountered during multiple-burial searches, so the searcher has a definitive indication of when an alternative search strategy (micro search strips, microbox, 3-circle method) is required. Furthermore, analog tone allows you to reliably differentiate between “false positives” and “real signals”, which is particularly important if you are searching in heavily disturbed areas such as ski resorts or when you are searching with a radio or other electronic equipment turned on in parallel.**

Audio Guidance

Choose between digital or analog tone. The setting is valid for all search phases in standard search mode.

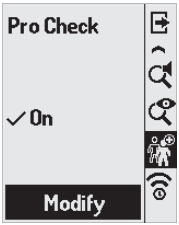
Visual Guidance

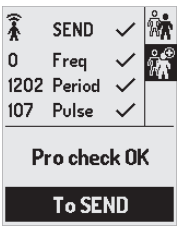
Choose between standard and classic visual guidance. The standard setting is suitable for all user groups, including advanced and professional users. The standard setting with animated search support and intelligent fine search guidance provides useful and user-friendly search clues for each search phase and yet still allows focusing on numbers only.



Pro Check

The „Pro Check“ verifies the transmit frequency, the pulse duration as well as the period lengths of the tested device (see chapter “Group Check”).





Auto-Revert SEARCH to SEND

The Auto-Revert SEARCH to SEND function switches the transceiver from SEARCH mode to SEND mode if there is no user interaction or major motion for a specific amount of time. In case of a secondary avalanche burying rescuers or a device being unintentionally left in SEARCH, this function increases the chance of being found in time.
This function is critical for your personal safety! If you disable this setting, you will see the warning symbol during signal search in SEARCH mode.

Group Check

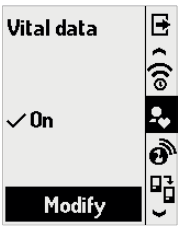
The group check setting allows to define the test distance during the group check. Choose «Sledding» (5m) for the motorized application and «Touring» (1m) for all other cases.

Time for Auto-Revert to SEND

Auto-revert to SEND switches the transceiver from SEARCH mode to SEND mode or from Rescue-SEND mode to SEND mode if there is no user interaction or major motion for a specific amount of time. The default setting of 4 minutes is appropriate for most users, shorter times tend to lead to more frequent, involuntary switchovers. As rescuers which inattentively switch to SEND mode may cause severe distraction to an ongoing search, only change this setting if you have an important reason to do so.

Vital Data

Your Barryvox®S detects slight motion of the body, such as a pumping heart or breathing lungs. Any motion is interpreted as a vital sign, for further information on vital data see chapter “Vital Data Detection”. While you are buried, the device transmits your vital data via the W-Link radio connection to the rescuers (default setting). In SEARCH mode, the Barryvox® displays the vital status, provided the sender has enabled the W-Link and the ability to transmit vital data.
If you do not wish to have these data transmitted, you can disable this feature. Utilizing vital data as one triage criteria can increase the ratio of survival in a search where rescue resources are stretched – for this reason only change this setting if you have an important reason to do so.



W-Link Regions

- **Europe and neighboring countries (W-Link Region A)** [= light grey]
- **US, Canadian, New Zealand and Australian Version (W-Link Region B)** [= dark grey]
- **Countries without W-Link** [= black]
- **Countries with unknown region allocation** [= white]

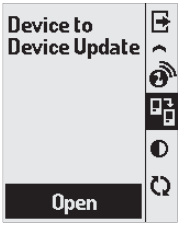
Frequency regulations do not allow that the user modifies the frequency setting. To enable the user to take his Barryvox® with him when travelling into another region, it is possible to switch the W-Link off and on again when returning home.

Please note that the W-Link setting has no effect on the signal which is used to locate a buried subject.

If the W-Link is switched off, location information is not affected, but transmission and reception of vital data is not possible (Chapter «Triage Criteria and Vital Data»).

Device to Device Update

Thanks to the device-to-device update you may share the new functions of your firmware with older Barryvox® S devices.



Requirements for the device-to-device update:

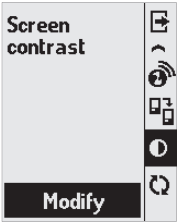
- Battery charge in both devices greater 30%.
- Only one upgrade can be done at a time in the same building or within 50 m radius.
- Only devices of the same w-link region (no device-to-device upgrade for devices purchased in Japan).
- Follow the instructions on the screen.

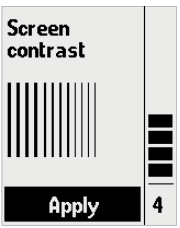
1. Turn both devices OFF
2. On the device with the newer firmware, select “Device to Device Update” by pressing the ▶ button in the settings menu.

3. Press the ▶ button to start the update procedure.
   In case you do not want to perform the update, exit the menu by cancelling the update.
4. Press and hold the ▶ button on the device which needs to be updated and slide the main switch simultaneously from OFF to SEND. Release the ▶ button after 2 seconds.
5. While the firmware is being installed, the progress is shown on the screen of the device with the newer firmware.

Adjusting the Screen Contrast

Adjust the contrast of the screen for best visibility in different ambient light conditions.
In the dark, the Barryvox® S automatically turns on the screen backlight.



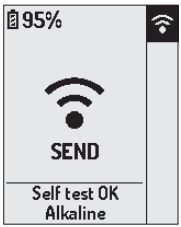


Reset device to factory settings

The function «Reset device to factory settings» allows you to restore all default factory settings. All modified settings, except the owner information are lost.

Start-Up / Self- and Battery Test

While starting, the device conducts a self test. The result of the self-test is shown the first time the device enters a SEND mode.
If the battery power falls below 30% (alkaline) or the battery icon is displayed, the batteries must be replaced as soon as possible!



Battery Test and Battery Level Indicator

The following table gives you average values for the battery levels. The remaining battery level can only be displayed correctly if batteries are used according to the chapter «Insert / Replace Batteries» Low temperatures, age, and brand can have a negative impact on the battery life and the accuracy of the battery level indication. As the risk of a battery failure increases towards end of the battery life, we recommend to replace alkaline batteries at 40% and lithium batteries at 30%.

100%:

Normative requirement (=minimum requirement):
min 200hrs SEND at 10°C followed by 1hr SEARCH at -10°C

Typical values for the Barryvox® S with alkaline batteries:
300hrs SEND at 10°C (measured with PULS Power).

Typical values for the Barryvox® S with lithium batteries:
400hrs SEND at 10°C (measured with Energizer ULTIMATE and ADVANCED).

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less than: 30% (alkaline) / 20% (lithium)

The batteries must be replaced as soon as possible!
Emergency reserve at 30% (Al) / 20% (Li):
Max. 20 hrs in SEND mode at 10°C and max. 1 hr in SEARCH mode at -10°C left.

Battery capacity unknown

The battery capacity cannot be reliably determined.
The batteries must be replaced as soon as possible!
The transceiver sounds a warning if the battery level is running on emergency reserve or unknown at startup.

Change between Alkaline and Lithium Batteries

As soon as one battery is removed and a reinserted or replaced, the device tries to recognize the battery type (alkaline or lithium).

Be aware of the following important details when answering the questions:

- 3 new

Only confirm this questions if you really inserted 3 new lithium batteries, which have never been used before in any other device.

- The same

Only confirm this question, if you have removed one or multiple batteries and reinsert now the same, in the meantime never for any other purpose used batteries (i.e. batteries you have removed over the summer).

- Unknown

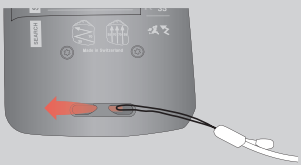
You must take this choice when you have mixed alkaline and lithium or inserted lithium batteries which you have used before, or in the meantime, in other devices.

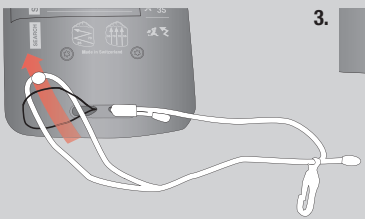
If you mix alkaline and lithium batteries, or try to use lithium batteries which have already been used in other devices, it is impossible to determine the battery capacity. In this case, the alert message “Battery capacity unknown!” will be shown.

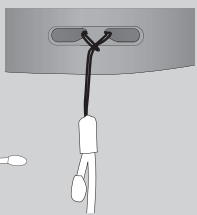
CARRYING POSITIONS

Adjust the BarryMount to fit your body. Regardless of the carrying position, the display should always face your body!
The detection of vital data is only possible if you carry the device in the BarryMount. (Chapter «Triage Criteria and Vital Data»).

BarryLeash

1. 

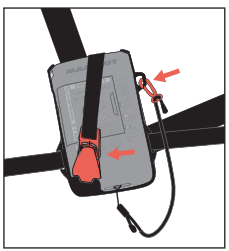
2. 

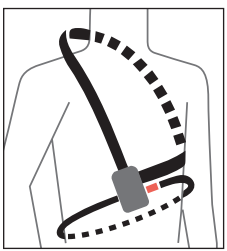
3. 

Attach the BarryLeash to the bottom of the device.

BarryMount (Recommended Carrying Position)

The BarryMount should be put on over your innermost layer of clothing prior to beginning the trip (see illustration) and must be worn on your body for the duration of the trip. The transceiver must always remain covered by one layer of clothing. The device itself is inserted into the BarryMount according to the illustration. It should always remain attached to the holster using the clip of the BarryLeash.

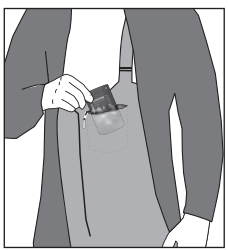


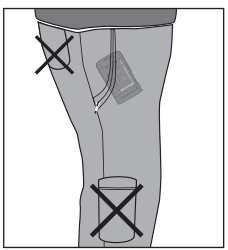


Carrying the Transceiver in a Pocket

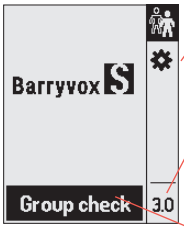
(without vital data detection)

If you carry the Barryvox® in a pants pocket, the zipper must remain closed for the duration of the trip. Always use a secured pocket (see illustration). The wrist loop should be secured to your pants or around your belt.





Turning the Device ON and OFF



Settings: scroll down to access the settings menu.

Firmware Version (BarryHeart)

Group Check: enter group check by pressing the ▶ key.

The device shuts down 2 seconds after the main switch has been moved to the OFF position.

Press the ▶ key to access device and maintenance info.

Settings and Navigation in Lists

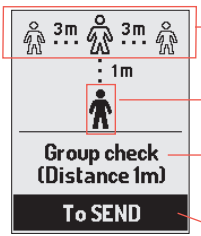
Exit door: use the «exit door» to leave a menu or function.

List arrow up: indicates that a list includes more entries further up. Use the scroll-bar on the side to scroll in lists and menus.

List arrow down: indicates that a list includes more entries further down.

Press the ▶ key to open or modify the settings.

Group Check

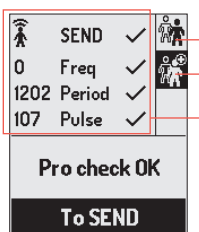


Participants

Leader

Status information or instructions for the leader.

Exit Group check and enter SEND mode by pressing the ▶ key..

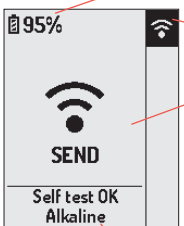


Group Check

Pro Check

Test results

SEND



Remaining battery percentage.

The device is currently in **SEND mode.**

Status of the SEND mode:

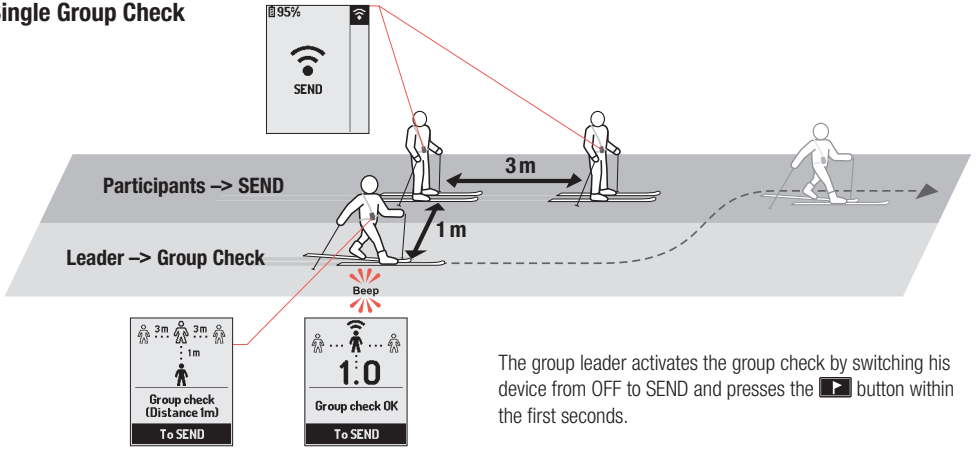
SEND mode is functioning properly.

Alert:
the SEND function is compromised and transmits with reduced power.

Rescue-SEND mode is active.

Self test status information, alert messages and battery type currently used in the device. (Status information disappears after 10sec in SEND mode.)

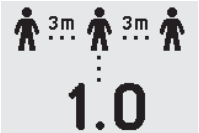
Single Group Check



Before a party takes off, the transceivers of all party members must be checked. The participants switch their device to SEND mode.

The group leader activates the group check by switching his device from OFF to SEND and presses the ▶ button within the first seconds.

The test is successful if you can clearly hear beep sounds from each participant's transceiver within the range indicated on the display.



The members of the party must be spread out appropriately to avoid mutual interference.

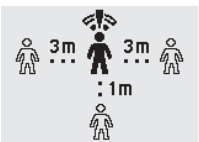
The indicated test distance must not be shortened, or the group check becomes very unreliable.

Once all the participant's devices are tested, the group check is concluded. The group leader's transceiver must be switched to the SEND mode.

If no tone is heard within the indicated range, the device must not be used.

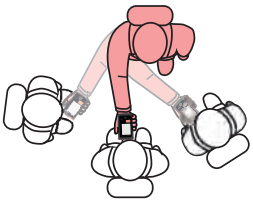
Further procedure:
1. Check if the device is switched to SEND.
2. Replace the batteries.
3. Have the device checked by the manufacturer.

Chapter «Maintenance and Repair».



If your Barryvox®S detects that the transmit frequency of the tested device is out of tolerance, a warning message will be shown. In this case, repeat the test with 5m distance between the participants to identify the defective transmitter. Such devices must be checked by the manufacturer.

SEND Confirmation



In case a regular group check is impossible due to limited space, it is possible to perform a basic verification if the transceivers of all participants are turned on.

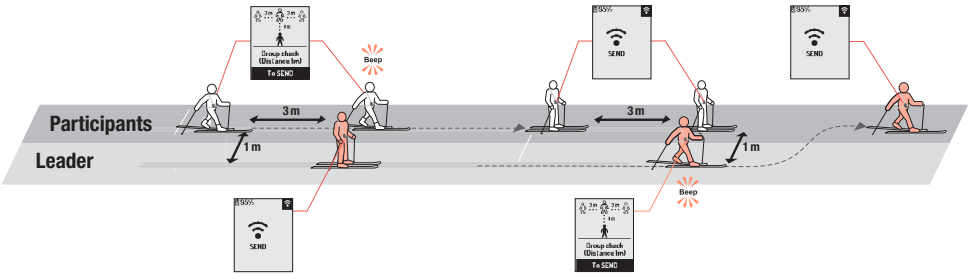
The leader holds his transceiver in group check as close as possible to the transceiver of each participant.

By doing so, the distance indication must decrease to the point where it is impossible to mix-up the result due to close proximity presence of other participants.

As the test distance is too short for a regular group check, there is no affirmative confirmation. Apply a regular group check the next time you check your group to confirm the proper function of the transceivers of the participants.

In case the indicated distance in immediate proximity to the transceiver of a participant does not decrease to a value which excludes with certainty the possibility to mix-up the result with the one of other participants in close proximity, the proper function of the device must be checked by a regular group check.

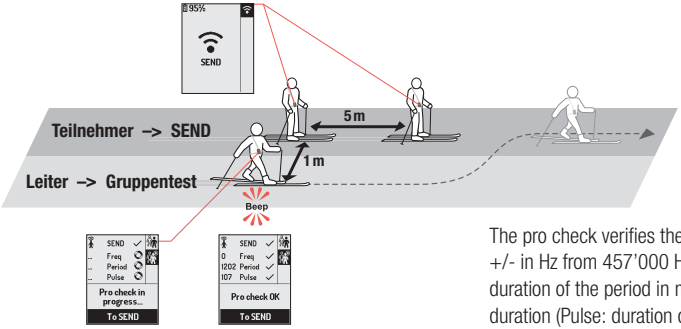
Double Group Check



We recommend to perform a double group check once a week and in general when a new group gets together. The double group check individually tests the SEND and SEARCH function of all devices. The members of the party activate the group check on their transceivers or set them to a low receive volume. The leader switches his or her transceiver to the SEND mode and ensures that all party members can receive.

Subsequently, the party members switch their transceivers to SEND, and the leader activates the group check or sets the transceiver to a low receive volume. The SEND mode of all transceivers is checked, and ultimately the leader switches his or her transceiver to SEND.

Pro Check



The “Pro Check” identifies transmitters which are outside of specification. We especially recommend performing the Pro Check on older 1- and 2- antennae devices and in general for devices which have not been tested by the manufacturer for a prolonged period of time. The Pro Check function must be turned on in the “Pro Settings” (see chapter „Pro Settings”).

The pro check verifies the transmit frequency (Freq: deviation +/- in Hz from 457’000 Hz), the period lengths (Period: duration of the period in milliseconds ms) as well as the pulse duration (Pulse: duration of the signal in milliseconds ms). The device which needs to be tested is set to SEND mode, the distance between the participants must be increased to 5m for the pro check. The group leader activates group check on his device and scrolls down with the side key to the function pro check. Wait until the device has performed the test and the test results are shown.

In case the “Pro Check” discovers problems, the device must not be used. Have the device checked by the manufacturer (see chapter «Maintenance and Repair»).

SEND

The SEND mode is the normal operating mode outdoors or in all other situations in which there is a risk of avalanches.

Each time the SEND mode is activated, this is confirmed by an ascending triple beep sound. Each individual signal pulse is tested. If the test is successful, this is confirmed by a blink of the red SEND-Control LED.

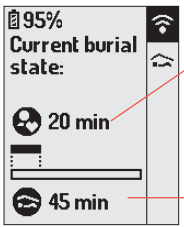
If the device detects that the SEND function is compromised, the red SEND-Control LED stops flashing and the SEND indication on the screen shows an alert sign.

To save battery power, the LCD screen is automatically deactivated in the SEND mode, but can be activated any time by pressing any button.

Vital Data and Burial Data

For further information see chapter “Vital Data and Burial Data History”.

SEND Mode, person not moving or in a state of burial.



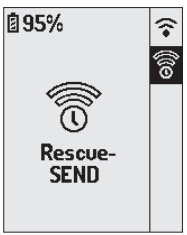
Vital data on the person carrying the device was detected in the first 20 min of burial time.

The person carrying the device has not been moving for 45 min.

Rescue-Send Mode (Rescue-SEND)

The rescue send mode is used by all rescuers who are involved in the rescue operation, but do not perform a transceiver search themselves (shovelers, probe line, surface search, search with other search devices etc.). The rescue send mode monitors the motions of the rescuer and only activates the transmitter if, within 4 minutes (default setting) the movement of the rescuer is on low-enough to assume the lack of motion is caused by burial in a secondary avalanche.
Prior to reverting, the device will sound an audible alarm. Reverting can be avoided if the ▶ key is pressed within 30 seconds of the alarm. To activate the rescue send mode, switch the device to SEARCH and revert to SEND.

During the 5 sec. count-down, “Rescue-SEND” is now shown at the bottom of the screen. Press the ▶ key within this period of time, the activation of the rescue send mode is confirmed by 3 descending beep sounds and the double flashing of the red SEND-Control LED. If you switch between Rescue-SEND and SEARCH during the ongoing rescue operation, the device will always go into rescue send mode when the main switch is in the SEND position. To activate the regular SEND mode, scroll up to the SEND icon in the menu bar and confirm the activation of SEND mode within 5 sec. Alternatively, turn the device off and on to return to the normal send mode.



Although the avalanche transceiver is easy to use, its effective use requires proper training. We recommend that you practice transceiver searches regularly.

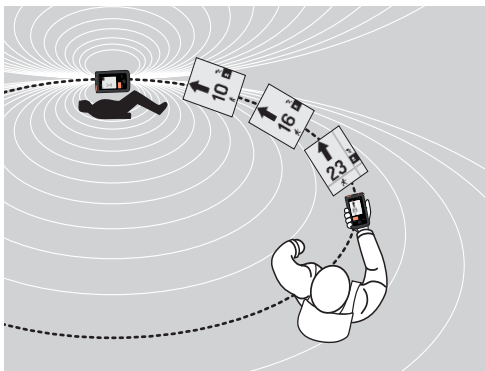
Be aware that electronic devices including mobile phones used by other rescuers may disturb the search. Therefore it is highly recommended to switch off phones which are not absolutely required!
Consider enabling analog tone when searching in circumstances where interference cannot be avoided (see chapter “Analog Tone”).

At the beginning and during the search, pay close attention that the rescuer’s transceivers are not transmitting and do not switch to SEND unintentionally. It does not make sense to remove your backpack and assemble the shovel and probe at the edge of the avalanche debris. Keep your backpack with all the equipment on you! The assembled shovel and probe is only a hindrance during signal and course search. Only remove your pack to assemble probe and shovel once you have successfully concluded the fine search.

Elementary understanding of transceiver search

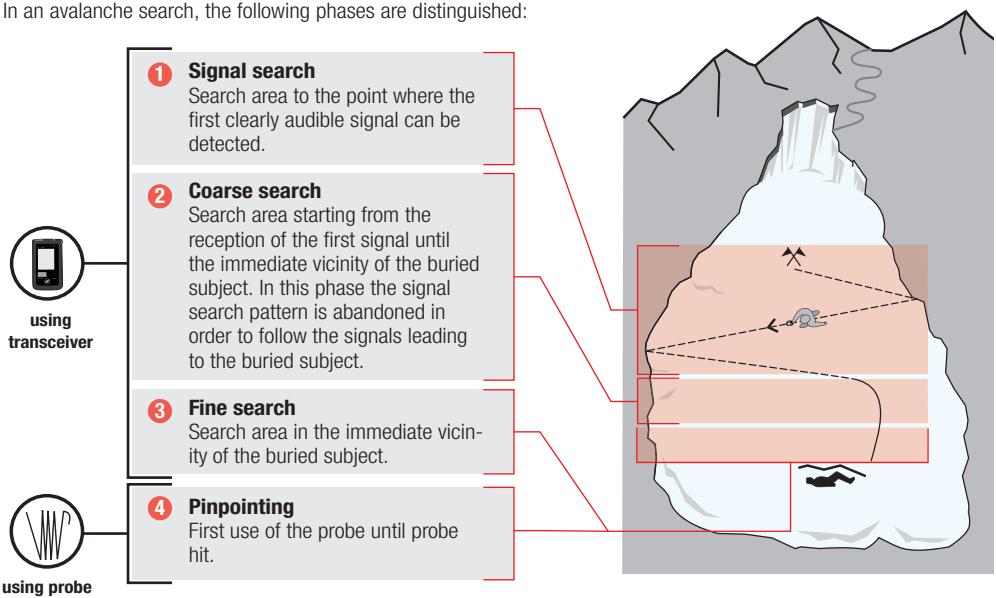
The 457kHz transmitter of the transceiver has a kidney shaped transmit distribution, which is visualized with field lines in the illustration below. The searching transceiver’s arrow leads the rescuer along the field lines and therefore usually in a curved line to the buried subject.

Search Along the Field Line: Flux Line Search

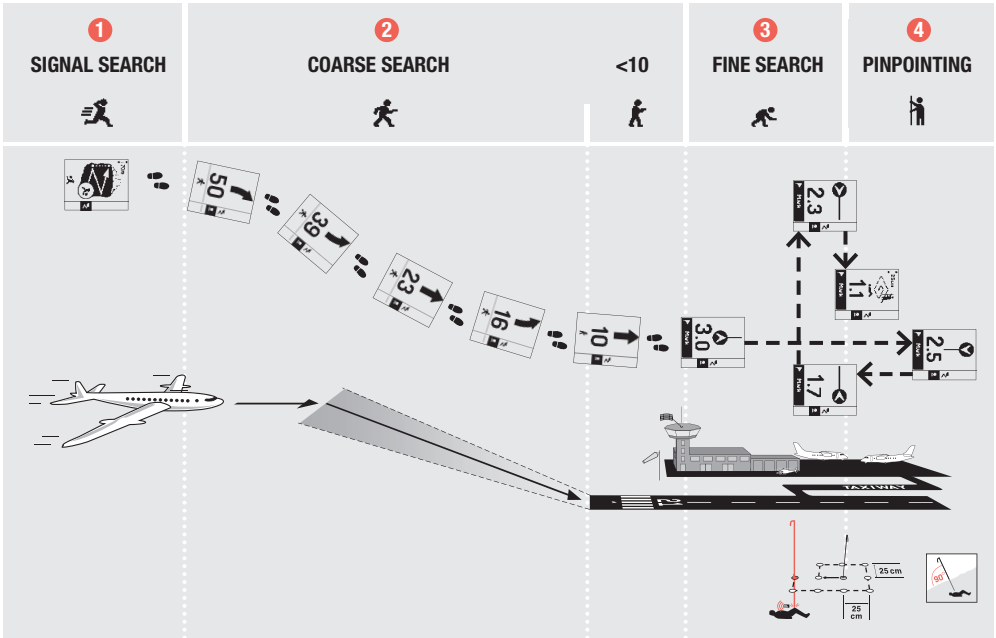


Search Phases

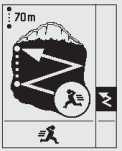
In an avalanche search, the following phases are distinguished:



1. **Signal search**
   Search area to the point where the first clearly audible signal can be detected.
2. **Coarse search**
   Search area starting from the reception of the first signal until the immediate vicinity of the buried subject. In this phase the signal search pattern is abandoned in order to follow the signals leading to the buried subject.
3. **Fine search**
   Search area in the immediate vicinity of the buried subject.
4. **Pinpointing**
   First use of the probe until probe hit.

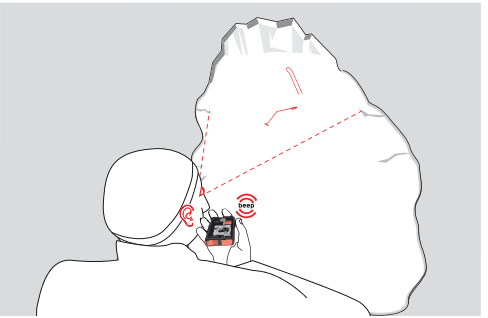

1
SIGNAL SEARCH
2
COARSE SEARCH
<10
3
FINE SEARCH
4
PINPOINTING
50
33
23
16
10
3.0
2.3
1.1
2.5
1.7
25 cm
25 cm
60°

1 Signal Search



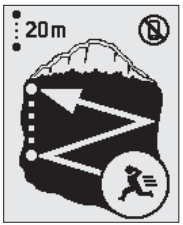
- BarryTip: **Move swiftly.**
- Emergency plan, search strategies and search strip widths: please see back side of device.
- Search avalanche surface systematically.
- During signal search, the rescuer has his visual focus on the surface of the debris in order to look for visual clues on the snow surface. The first signal is indicated by a distinct double beep sound.

From the start of the search until you clearly hear the first tone, you are in signal search.

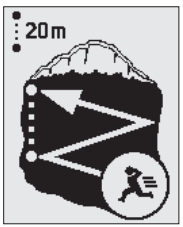


The avalanche surface is searched systematically until you pick up a signal. During the acoustic signal search, the rescuer has the visual focus on the surface of the debris in order to be able to see body parts or objects protruding the snow surface.

If your Barryvox® detects that the signal search strip width needs to be reduced due to interference or due to a device transmitting outside the standard frequency, the reduced search strip width will be indicated.



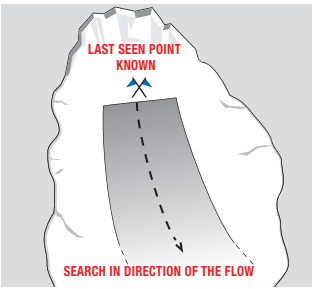
Reduced signal search strip width due to interference.



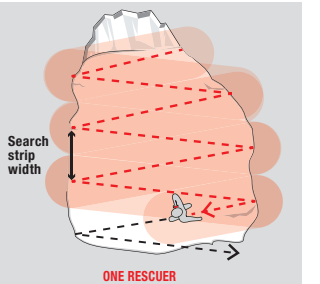
Reduced signal search strip width due to a device transmitting outside the standard frequency.

Regardless of the operating mode, the following search strategies apply:

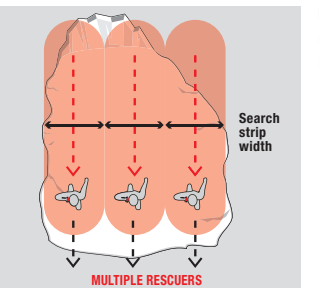
Search strategy if the last seen point is known.
The signal search strip extends downhill from the last seen point in the direction of the slide.



Search strategy if the last seen point is unknown.



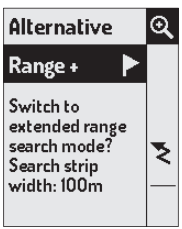
Last seen point unknown, one rescuer.

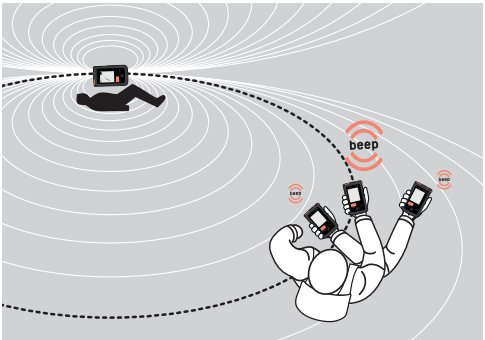


Last seen point unknown, multiple rescuers.

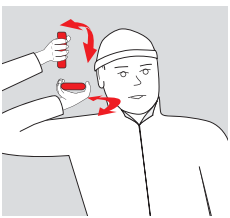
Extended Search Strip in Extended Range Mode

The search strip width can be extended from 70m to 100m by experienced users. For this, the setting “Pro Search” must be turned “ON” (see chapter “Settings”). For the signal search with extended search strip width, scroll to the magnifying glass by using the lateral keys and press the ▶ botton to activate “Extended Range Search Mode”. The screen is now blank, the green LED is illuminated and the search strip width is extended to 100m. Search the avalanche systematically. When you receive the first signal, follow it based on the analog sound in the direction of the strongest signal (tangent search). When the signal clearly rises, the screen switches back on automatically. Conclude the remaining search by following the distance and direction indications.





To optimize the range, rotate the transceiver slowly around all axes. Hold the device with the loudspeaker facing your ear next to your head.

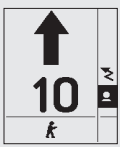


❷ Coarse Search

- BarryTip: **Move swiftly, move in the direction of the arrow.**
- Hold the transceiver with the extended arm horizontally in front of you.
- If the distance increases, then you are moving away from the victim. Continue the search in the opposite direction.

Distance below 10

- BarryTip: **Reduce search speed, precisely follow the arrow.**

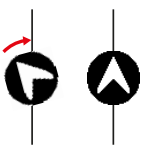


❸ Fine Search

▶ BarryTip: **Follow the arrow! Step slowly forward, backwards, left or right while holding the device at knee height.**

During this search phase hold the transceiver at knee height! You will be guided in a systematic cross search pattern to the point where any further search is faster and more efficient with a probe.

Searching in a strictly perpendicular cross shortens the search time and increases the search precision, thus always try to keep the device and your body in the same orientation during fine search. For best results, always proceed to the end of the axis. In case the arrow indicates that you have deviated from the axis, reorient yourself so that the arrow is in line with the axis.



The point where the device indicates the final probing indication usually corresponds with the point of lowest distance indication. The greater the remaining distance to the buried subject (burial depth), the more repetitions of fine search crosses may be required to reach sufficient search-precision. The device tries to determine these parameters and guides the rescuer accordingly through one or multiple fine search crosses - until the optimal point to start pinpointing with the probe is reached. This spot is indicated by the probe indication.

Immediately place an indicator, i.e. a ski pole at this spot as an important reference with applying the probing spiral. Open your backpack now and assemble probe and shovel. It is recommended to put your backpack immediately back on your shoulders, in particular if you use a back pack with an airbag. In the unusual case of a secondary avalanche, this allows you to take advantage of the safety gear. By strictly keeping the equipment (i.e. first aid kit, radio or mobile phone) with you in your back pack, you will always have it available when you need it while rescuing the subsequent buried subjects.

4 Pinpointing

- BarryTip: **Place a visual indicator at the point where the Barryvox®S shows the probing spiral. The visual reference is important to probe in a systematic pattern.**

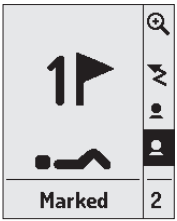
- If the buried subject is hit with the probe, leave the probe in the snow.

Probe Indication

Indication to proceed from fine search to pinpointing.
Stash the device in search mode on your body (i.e. pocket) in order to have both hands available to probe. Begin probing in a spiral at a 90° angle to the snow surface. In particular if the debris is hard, guide the probe with two hands, one pushing from the top, the other guiding the probe closer to the snow surface in order to avoid bending the probe. Keep in mind that the remaining distance shown on the screen indicates the maximum possible distance to the buried subject. I.e. if you see 1.1 on the screen, the buried subject must be within 1.1m probing depth and spiral probe radius. In case there is no probe hit within this area, you have missed the buried subject. Repeat probing with a slightly offset probing pattern (chapter «Pinpointing with Transceiver and Probe Pole»).

Mark

Mark the buried subject as «found» by pushing the ▶ button after you have successfully located it with a probe strike!



Automatic Revert to SEND

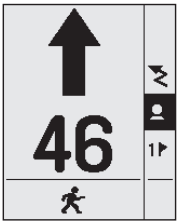
For the safety of the rescuers, the device automatically switches into SEND mode after 4 minutes without user interaction or motion. To modify the automatic revert to SEND time: see chapter «Settings».

Leaving SEARCH Mode

After 4 seconds the device automatically switches into SEND mode.

Press the ▶ button during these 4 seconds to go into Rescue-SEND mode.

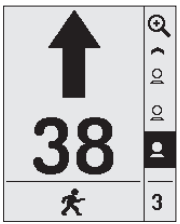
Multiple Burials



The marking feature allows continuing the search for further buried subjects by marking the previously located ones as found. Excavate the buried subjects already found while the search continues, unless the burial depth is particularly deep.

Fast overview with multiple burials

Using the side buttons, you may allways scroll the list of buried subjects to quickly gain an overview (see chapter “Mental Map”).



In Complex Situations Slow Down The Search

If the signal of the buried subject you are currently searching for temporarily overlaps with another signal, the device tries to guide you along the optimal search path. If the signals overlap for a long period of time, reliable guidance is limited. The device indicates this with a flashing distance indication. Radically slow the search until the distance indication stops flashing, indicating the signal overlap has cleared.

Search Tones in Fine Search

Within the fine search range, thus in the immediate vicinity of the buried subject (approx. <3m), the Barryvox® assists you with an artificial, distance and action related sound while fine searching in a cross pattern.
For rescuers who can interpret the analog tone, it is helpful to enable “Pro Search” ahead of time, as the more meaningful analog tone will then be available to identify signal overlaps (see chapter “Pro Search” and “Audio Guidance”).

Erase Mark (requirement: activated “Pro Search” setting)

A mark can be removed by selecting the buried subject in the burial list and selecting “Unmark” with the key. You can only remove the mark if you are in the immediate vicinity (<6 m) of the buried subject (to adjust these settings: see chapter “Search Settings”.

Deep Burials

The transceiver tries to detect high burial depth and, if required, dynamically increases the fine search range. Marking a buried subject at greater than 6 meters depth is not possible. For further information, please see chapter “No Probe Hit”.

Search for Multiple Buried Subjects Using the Standard Search Mode

In standard search mode, the transceiver attempts to analyze all the detectable signals and to determine the number of buried subjects. This is possible because the signals from each transmitter have characteristics which are distinguishable from the signals of other transmitters. The more unique the signal characteristics are, the more accurately the signals can be distinguished and separated (pattern recognition). By automatically associating the signals with their respective sources, multiple burial situations can be solved without applying special search tactics. Transceivers which also transmit W-Link information can be detected particularly fast and reliably. The W-Link information includes a unique identification as well as the trasmit pattern.

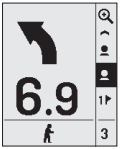
List of Buried Subjects

The buried subjects whose transmit patterns can be identified are inserted in the list of buried subjects based on their signal strength, usually corresponding with distance. The closest buried subject on the avalanche is shown at the bottom, the furthest at the top of the list.

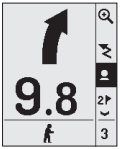
Procedure for Multiple Burials

1. The device favors the closest subject first. Locate the various buried subjects using the transceiver and probe pole.

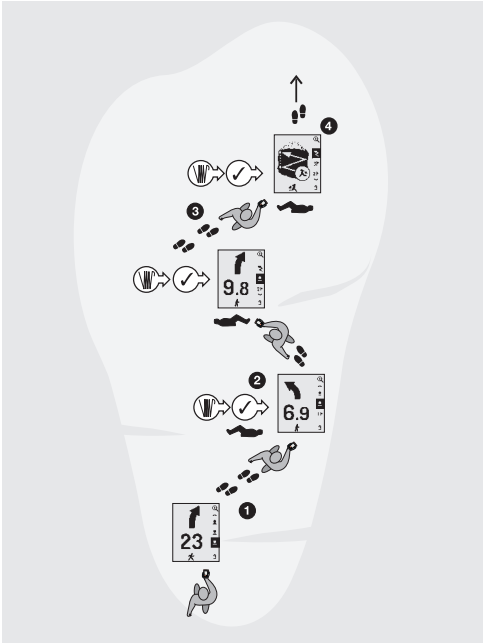
2. As soon as you mark an individual subject, the transceiver takes you to the next closest, unmarked buried subject.



3. Continue this procedure until all subjects are located and marked.



4. The rescuer now searches for additional buried subjects while the display shows the symbol for the signal search phase to indicate that the rest of the avalanche surface must be searched (Chapter «Signal Search»).



Analog Search Tone

Interpretation of the Analog Sound:
Just as in traditional analog transceivers, the analog tone is received by only one antenna. The change in the distance indication can therefore deviate from the change in tone volume. Depending on the relative orientation of the transmitter to the receiver, it is possible for the tone volume and the distance indication to decrease while approaching the buried subject.

The volume of the analog tone is automatically adjusted by the transceiver. Therefore, the volume of the tone cannot be used to tell if you are moving closer or further away from the buried subject. However, an increase or decrease in distance can be easily derived from the distance indication.

“Sound Check”
The analog tone is very useful and important to easily and reliably determine the number of buried subjects: Counting the number of beep sound sequences gives the number of buried subjects. Use this “sound check” to easily and reliably determine the number of buried subjects, between 1 and 3+.

1. Is it possible that I hear only one buried subject?
   No: at least 2.

2. Is it possible that these are only two buried subjects?
   No: at least 3

3. Only for advanced rescuers:
   Is it possible that these are only three buried sujects?
   No: More than 3.

The number of buried subjects needs to be interpreted in conjunction with the distance indication / sensitivity level.

Example: You hear three beeps and the distance reading shows 3.0. Therefore, three buried subjects can be expected within a radius of approx. 4.5 m (indicated distance + ~50%). Always apply the “Sound Check” at the distance indication of 10 and 3.0!

Mental Map of the Burial Situation

The “Sound Check” provides the required information to build up the “mental map” of the burial scenario, which is a critical base information for determining the best search strategy.

Knowing the number of buried subjects within a given distance from myself (rescuer) and from each other allows the rescuer to determine when an alternative search strategy is required due to signal overlap or other difficulties, versus when the standard search mode can continue to be used.

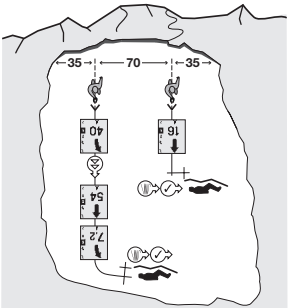
Vital Data and Triage

If not enough rescuers are available to simultaneously search and excavate all buried subjects, buried subjects with increased survival chances, indicated by the - symbol, should be searched and excavated with first priority.

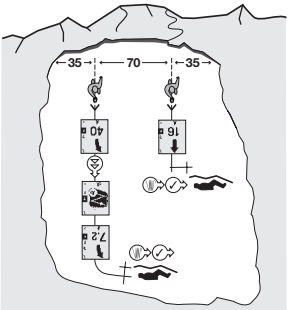
Use the -key, to purposely select in the list of buried subjects one which indicates “increased survival chances” by showing the - symbol. You can find more information on triage criteria and vital data in the chapter «Triage Criteria and Vital Data». The actual prioritization of certain buried subjects over others is up to the rescuer.

Search With Multiple Rescuers

When the search is conducted with multiple rescuers searching at the same time, avoid searching for the same buried subject as another rescuer. Use the scrollbar, to choose in the list of buried subjects which buried subject you are searching for.



Situation 1: Two rescuers receive two buried subjects.
One rescuer continues the search for the buried subject closest to him, the other rescuer should directly search for the second buried subject, without having to mark the first one. Therefore he presses the ^-key, the second buried subject who is slightly further apart is now highlighted in the list and the rescuer will be lead to its position.



Situation 2: The two rescuers only receive one buried subject.
One rescuer continues the search for the buried subject closest to him, the other rescuer should search the remaining of the avalanche for more buried subjects. Thus he presses the ^-key, the selection mark is now on Z-signal search. The signals of the buried subjects who are already in the list of buried subjects are now purposely ignored.
The device is now searching for buried subjects who are not yet in the list of buried subjects and leads the rescuer to those as soon as they are recognized.

Limitations

The larger the number of buried subjects, the more difficult and time-consuming the exact analysis of the situation gets, because of overlapping signals. The more signals there are, the longer the signal overlaps can last. Single antenna transceivers whose technology is more than 25 years old, usually transmit very long lasting signals. Long lasting signals considerably increase the probability of long lasting signal overlaps. The capability to automatically detect and isolate signals from multiple buried subjects is therefore limited.

Number of Burials

With Pro Search “ON” the calculated number of burials is displayed below the list of buried subjects (to activate Pro Search: see chapter “Search Setting”).

Symbol

The Symbol indicates that an additional signal is received that cannot be fully isolated and entered in the list of buried subjects yet. Such a buried subject may be searched, but it is not possible to mark it as found until it is fully recognized. Once the transmit pattern of the buried subject is fully recognized, it will be shown with the symbol in the list. The symbol is only indicated when the setting “Pro Search” is turned ON, otherwise these buried subjects are shown by the regular symbol.

Analog Tone

With the setting “Audio guidance” set to “Analog“, the Barryvox®S always provides the analog tone allowing the rescuer to verify the number of signals received by the device. Counting the number of different tones provides the number of buried subjects.

Use Analog Tone in Circumstances of Interference

Analog tone allows you to reliably differentiate between “false positives” and “real signals”, which is particularly important if you are searching in heavily disturbed areas such as ski resorts or when you are searching with a radio or other electronic equipment turned on in parallel. When the transceiver indicates only distance and direction, but no analog tone is audible, filter out the information as “false positive”. In cases of severe interference, i.e. power lines in close proximity, use alternative search mode and reduce search strip width.

Criteria to Switch to Alternative Search Mode

If the rescuer detects problems with the digital analysis of a multiple burial situation, he or she can always switch to the alternative search mode (see chapter «Alternative Search Mode»). The list of buried subjects is deleted at this time.

If you recognize a discrepancy between your “mental map” of the avalanche and the indications on the transceiver, this is an unquestionable indication that not all buried subjects can be located using the standard mode. In this case, it is advised to switch to the alternative search mode, which is optimized for search strategies such as the micro search strips, the microbox or the 3-circle method.

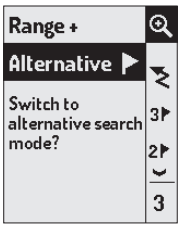
Furthermore, use alternative search mode to search in heavily disturbed areas (interference) when problems occur.

Alternative Search Mode

In the alternative search mode, the transceiver shows distance and direction to the subject with the strongest signal and provides an analog tone. The alternative search mode is mostly used when a clear separation of multiple burials is no longer possible in the digital standard mode.

Switching from standard mode to alternative search mode is achieved by scrolling to the magnifying glass symbol and selecting “Alternative”.

Leave alternative search mode by pressing the -key.



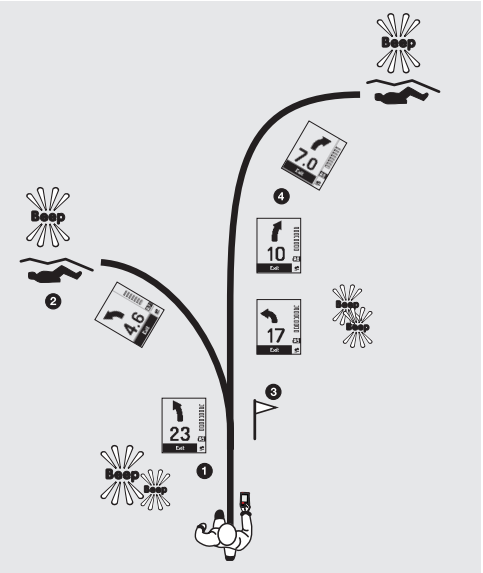
Multiple Buried Subjects in Alternative Search Mode

If multiple burials are detected in alternative search mode, an icon symbolizing multiple burials is shown on the display . Additionally, you can also hear the analog tones. These are helpful in distinguishing the signals acoustically. **The device favors the closest subject.**

The detection of multiple burials may vary based on the subject’s orientation and distance relative to the rescuer. Turn off the transceivers of the excavated subjects to facilitate the further search. If you don’t know the number of buried subjects, you must search the entire avalanche path using the search patterns described in the chapter «Signal Search».

Search Tactics with Multiple, Widely Scattered Burials

1. Mark the location on the avalanche where the «multiple burial» icon appeared on the display or where you left the signal search pattern.
2. Search for the first buried subject using the information on the display along with the analog tones. Once this subject is located, you or other rescuers should dig him or her out immediately.
3. Continue to search for other buried subjects by returning to the previously marked point.
4. Strictly adhere to the signal search pattern and continue down the avalanche path until you are led to the next subject. Initially, the transceiver will want to take you to the previously located subject, because he or she is still the closest. Ignore these indicators until you notice that the transceiver is pursuing a new subject.



Search tactics with multiple, widely scattered burials in alternative search mode

Search Tactics with Multiple Burials in Close Proximity

The interpretation of the acoustic signals is extremely important in this situation. These must be interpreted in connection with the distance readings.

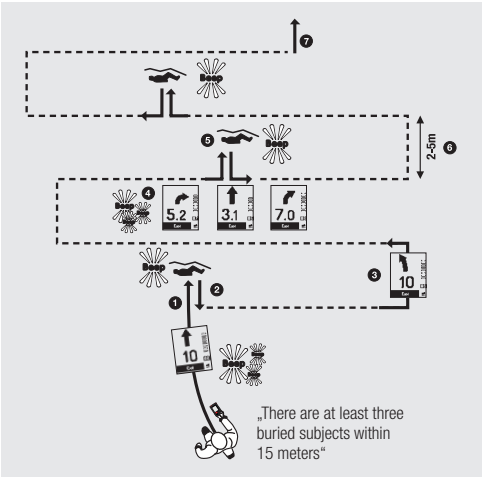
Example: You hear three beeps and the distance reading indicates 3.0. Therefore, the closest buried subject is max 3m away from you, the second and the third buried subject are max 3.0 +~50%, thus approx. 4.5m away from you.

Search Using Micro Search Strips

If you have multiple burials within an indicated distance of 10 or less, search using micro search strips.

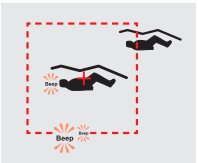
1. Locate the first buried subject.
2. Back up until the display shows 10 and search the area in front of you in parallel search strips.
3. As soon as the distance indication reads 10, you have reached the side of the search strip. Advance 2 to 5 meters and return on the next parallel search strip until this search strip ends as well (distance indication > 10).
4. Maintain the orientation of the transceiver during this phase and concentrate on the increase or decrease of the distance indication as well as the volume of the analog tones.
5. At each point with a lowest distance reading, you leave the micro search strip pattern to fine search the buried subject through bracketing. At a low point of distance indication on a micro search strip, always check by bracketing behind and in front of you for further buried subjects. As burial depth is unknown, every low point in distance indication must be checked! Once the subject is located, you return to the location where you left off in order to continue the pattern.
6. The more buried subjects there are and the closer these are, the tighter the micro search strip grid on the potential search area should be. As a rule of thumb, the search strip width should be between 2 and 5 meters.
7. Continue the pattern, until the distance reading in an entire strip never drops below 10. Then revert to the signal search pattern and search the rest of the avalanche. As long as the signals of the buried subjects you have just found in the micro search strips are audible, only apply 50% of the regular signal search strip width. Exit alternative search mode and use full search strip width when those signals have faded out by distance.

The avalanche probe is very helpful in locating multiple buried subjects in close proximity.



Search tactics with multiple burials in close proximity in alternative search mode

Micro Box

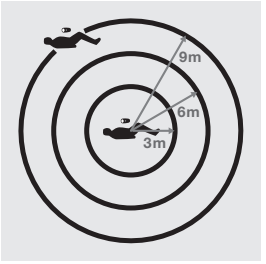


The Micro-Box method is used when there is more than one buried subject within fine search range. In these very close proximity cases, the micro search strips (or the 3-circle method) may not provide a sufficient resolution to reliably separate and thus detect all of the closely buried subjects. Apply the micro-box when more than one sound is audible at the sound check at distance 3.0. Find the point of lowest distance indication of the closest buried subject and visually mark that spot. Then, slowly back up holding the device as close to the surface as possible until the second tone can be heard – this is the range at which to conduct the box search. Holding the transceiver in exactly the same orientation and onto the snow surface, walk a square (box) around the marked spot (center) maintaining that range, until the distance indication changes to show the signal has jumped to the second transmitter. From there the second subject is located using a traditional bracketing method. In case there is no second low point of distance indication on the box, the second buried subject might be below the first. Probe the surface of the micro box with full probe length.

Further Search Methods

There are further methods to search for multiple buried subjects in close proximity.

The 3-circle method uses concentric, circular search strips with radiuses of three, six, and nine meters around the first located subject. As with the micro search strips, the locations with the strongest signal strength are of interest. From there the subjects are located using a traditional bracketing method.



Manual Volume Control in Alternative Search Mode

The user can manually change the sensitivity by pressing the up key for + and the down key for –. M1 represents the shortest, M9 the greatest distance to the buried subject.

As soon as the volume is set manually, the volume bars are shown in solid black colour.

Press the ▶ button to return to automatic volume control.

If the volume is set too high or too low, the distance and direction indications become unreliable. The distance indication blinks and a double arrow symbol (⌃ or ⌄) prompts the user to adjust the volume.

ADDITIONAL INFORMATION

Problem Solving

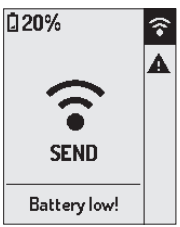
Transceiver doesn't turn on
No self-test at startup

1. Check and replace batteries.
2. If this doesn' t help, have the device checked by the manufacturer.

Alert Messages

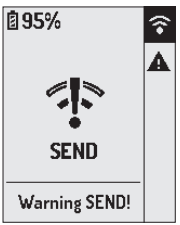
Batteries are weak! Battery capacity unknown!

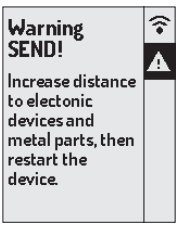
The batteries must be replaced as soon as possible. Refer to the instruction in the chapters «Insert / Replace Batteries» and «Battery Level Indicator».



457 SEND failure!
SEND LED doesn't blink

1. This alert message is usually triggered by external interference. Make sure that no metal objects or electronic devices are close to the transmitter.
2. Check and replace batteries.
3. Turn the transceiver off and turn it back on after it has properly shut down.
4. If this doesn' t help, have the device checked by the manufacturer.





457 SEARCH failure!

1. Make sure that no metal objects or electronic devices are close to the transmitter.
2. Turn the transceiver off and turn it back on after it has properly shut down.
3. If this doesn' t help, have the device checked by the manufacturer. In case of emergency, try to search anyway, but with reduced search strip width.

Sensor failure!

1. Turn the transceiver off and turn it back on after it has properly shut down.
2. If this doesn' t help, have the device checked by the manufacturer.

Use in the Dark

If you use the transceiver in the dark, the display is automatically backlit.

Maintenance and Repair

Barryvox® transceivers, which do not function correctly, despite full and properly inserted batteries (e.g. no signal during the group check, mechanical defects) must be sent to a service center listed at the beginning of this manual.

Maintenance

In the maintenance tab, accessed by pushing the ▶ button when shutting down the transceiver, the date of the next check as well as the software (SW) and hardware (HW) version is displayed.

Use in combination with the Barryvox® Maintenance Software

The Barryvox® Maintenance Software allows to efficiently manage, configure and maintenance transceiver fleets with a computer. The Barryvox® S automatically connects to a service device (Barryvox® tester, W-Link Adapter/Stick) with in w-link range (approx. 50m). In service mode, the serial number is shown on the screen. While in service mode, the SEND mode is deactivated and the red SEND-control LED is double flashing.

Periodic check by a Barryvox® Service Center

To check the proper function of the device it is highly recommended that the device be sent to a Barryvox® service center every 3 years, or when reaching 3000 hours of operation or have it checked by a Barryvox® service point (service charge will apply). The functional test is much more comprehensive and precise than the self and group check. As part of this service the electronics and the mechanical components such as the case, the main switch and the lateral key, the battery contacts, the battery compartment and cover as well as the wrist strap will be checked. In case the check shows abnormal wear and tear due to incorrect or long, very intense use, the service center may recommend that you replace the device.

We recommend that you have your device checked during the summer months so that your Barryvox® is tested and ready to use at the start of the next winter season. In the “Maintenance” tab which you may access when shutting down the transceiver, you can see when the next check is due.

Warranty

There is a 2 year warranty on the Barryvox® transceiver (excluding the batteries, the carrying system and the leash) from the date of purchase shown on the purchase receipt.
If you register your device on www.Barryvox.com by completely filling in the required information, the existing warranty duration, starting from the date of purchase shown on the purchase receipt, will be prolonged by an additional 3 years of warranty.
In case of a warranty claim, all parts that can be shown to have material or production defects will be replaced free of charge. Damage that can be traced to incorrect handling or normal wear and tear is excluded.

The warranty is voided if the buyer or any non-authorized third party opens the device. This is also the case for devices that have been used with spare parts or accessories which are not original and are not recommended by the manufacturer.
A fee will be charged for the diagnostic test of a transceiver not needing any repair. Warranty repairs do not extend the duration of the warranty. There is a six month warranty on replaced spare parts. Warranty repairs will only be conducted if the device is sent in along with the receipt.
The owner will be charged for the shipping. No other warranty shall exist. Any liability for any kind of loss or damage including but not limited to any direct, indirect or consequential damage is explicitly excluded.

Technical Data

Device: Digital-analog device with 3 antennas.

Transmit frequency: 457 kHz (International Standard).

Power supply: 3 x LR03 1.5 V Alkaline (AAA)
or 3 x LR92 1.5 V Lithium (AAA).

Battery life with alkaline:
typical 300 h SEND, min 200 h in SEND mode followed by 1 h in SEARCH mode.

Battery life with lithium:
typical 400h SEND, min 200 h in SEND mode followed by 1 h in SEARCH mode.

Maximum range: up to 70 m in standard search mode.

Search strip width: 70 m in standard search mode,
100 m in extended range search mode.

Operating temperature range: –25° to +45° C.

Dimensions (L x W x H): 115 x 67 x 27 mm.

Weight: 210 g (incl. batteries).

All information is provided without liability. Status July 2018. Technical data and specifications are subject to change without notice

Disposal Information

At the end of its lifetime, this product may not be disposed with regular waste.
It must be recycled by a specialized facility for recycling electronic devices.

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COMPANION RESCUE

Companion rescue means that buried subjects are located and excavated by members of their party immediately after the avalanche slide. Avalanche rescue is a race against time! While most buried subjects can be rescued within the first 18 minutes, the chances of survival decrease rapidly afterwards. Companion rescue, therefore, provides the greatest chances of survival for a buried subject.

If an Avalanche Occurs

As a Victim:

- Escape to the side
- Discard skis, snowboards, and poles
  - anchor effect
- Try to stay on top
- Close your mouth; place your hands in front of your face
  - clear airway when the avalanche stops

Separate instructions apply for the use of specialized safety equipment, such as the highly efficient avalanche airbag.

As a Witness:

- Memorize the last seen point as well as the direction of the avalanche
  - signal search strip
    (See chapter «Signal Search»).

Personal Rescue Equipment

Carrying the proper personal safety equipment is critical for effective companion rescue. A transceiver, a shovel, and a probe pole are necessary to localize and excavate a buried subject quickly and efficiently.
Mammut offers a variety of suitable probe poles and shovels. The use of an airbag system (flotation device) significantly reduces the risk of complete burial and therefore leads to considerably higher survival chances.

The use of the transceiver precedes the use of the probe pole and the use of the probe pole precedes the use of the shovel. Carrying a radio or a mobile phone to call for help is highly recommended.

Emergency Plan

CALL FOR HELP

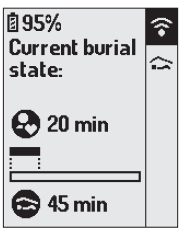
1. **Scene assessment**
2. **If possible, use the snow sport equipment until you reach fine search.**
   Keep your backpack with gear with you at all times.
3. **I am searching with my transceiver: SEARCH**
   I am not searching: Rescue-SEND
4. **At least one rescuer immediately starts transceiver SEARCH, while looking and listening at the same time**
5. **Assemble probe and shovel only when the fine search is concluded**
6. **Transceiver search finished: all transceivers to SEND**
7. **Excavate – First Aid**

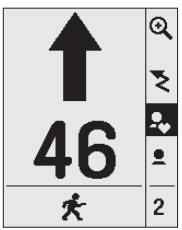
The emergency plan shows the elementary steps for a successful companion rescue.
Depending on the situation at hand, the procedure must be adapted.

Triage Criteria and Vital Data

Triage

With limited resources (few rescuers) it is not possible to locate and dig out all the buried subjects at the same time. The question arises in which order the buried subjects shall be rescued. Subjects with higher chances of survival should be located and dug out first. Besides simple terrain factors, e.g. drop over a cliff, in seracs or crevasses, collision with trees etc., the burial depth and vital data are important triage criteria.





Vital Data Detection

The Barryvox® S contains highly sensitive sensors (g-sensor) that can detect slight motion of the body, such as a pumping heart or breathing lungs. Any motion within a certain time is interpreted as vital data. The buried subject with a heart-icon indicates high chances of survival. It can be assumed that buried subjects, which have survived the first 35 min, are still able to breathe (air pocket), and therefore have increased chances of survival. At the same time, the detectability of vital data decreases due to hypothermia. Therefore, buried subjects who have transmitted vital data for the first 35 min are considered to belong to the category with high chances of survival for the rest of their burial duration.

All the buried subjects, whose transceivers are technically not capable of detecting vital data or cannot detect any for whatever reason, belong to the category unknown chances of survival.

If you carry the transceiver in a trouser's pocket, the detection of vital data is not possible due to the almost non-existent movements.

The data are displayed on the buried subject's transceiver and also sent across the W-Link radio connection to the transceivers of the rescuers. Based on the list of buried subjects, the rescuer decides in which order he or she will locate and dig them out. Using vital data as a triage criteria shortens the burial duration for those subjects having higher chances of survival . This improves the overall rescue efficiency.

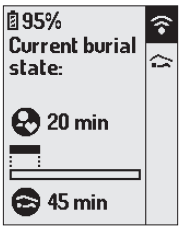
The vital data do not provide an assessment of the health of the buried subject.They do not substitute an assessment by medically trained personnel (physician).

Only rescuers using a transceiver with a W-Link radio connection are able to receive vital data.

The range of the W-Link depends on terrain and body interference, on the physical characteristics of the avalanche debris as well as on the orientation and distance to the buried subject. The range of the W-Link is therefore limited.

Burial and Vital Duration

In case of a burial, the transceiver records the burial duration and detects vital data.
The Barryvox®S automatically displays the burial duration as soon as the transceiver stops being moved.



The burial duration is displayed in hours and minutes along with the time during which vital data was detected. The display of the burial duration is also activated, if the Barryvox®S stops moving outside of an avalanche.

By pressing any key in the SEND mode, you can see at any time the current burial data of the buried subject.
In case the device of the buried subject has been immediately switched off when it has been found, or the patient has been moved (i.e. transported) over a longer period of time, you can recall the burial data of the four last resting periods of the transceiver by scrolling down with the lateral key and opening the burial data overview.

The resting periods are in chronologic order:
- Current recent resting period
- last resting period
- second last resting period
- third last resting period
- oldest resting period

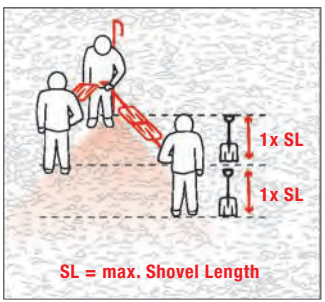
No Probe Hit

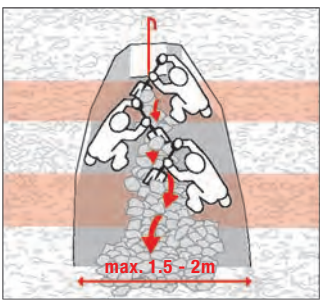
If the buried subject cannot be found by the probe, place the probe approx. 1.5 meter above the point with the lowest distance indication. While digging, enough space is now made available to allow a further fine and pinpoint search within the excavation site.
For further information concerning the search and excavation of deep burials, please consult in publications on “Fine Search in a Circle”.

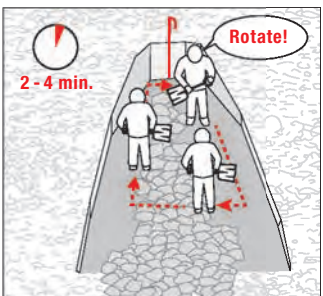
Excavating the Buried Subject

The first rescuer positions him/herself directly at the probe.
The first two rescuers position themselves in a distance of one shovel lengths, all other rescuers are two shovel lenghts apart of each other.
The rescuer at the tip of the conveyor belt digs directly following the probe to the buried subject, thus avoiding any chance to miss it.

▸ BarryTip: **in hard snow, cut blocks with the shovel. In case of multiple burials, switch off the transceiver of the buried subjects as soon as possible.**







DECLARATIONS OF CONFORMITY

USA/Canada/New Zealand/Australia

In this region the Barryvox® W-Link operates in the 915MHz band.

Type / Model: Barryvox® S 7600.0033
IC: 8038A-BARRYVOXS
FCC ID: ARN-BARRYVOX-S

E5720

Canada: IC Statement

This device complies with Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions:

1. This device may not cause interference and
2. This device must accept any interference, including interference that causes undesired operation of the device

Le présént appareil est conforme CNR d'Industrie Canada applicables aux appareils radio exempts de licence.
L'exploitation est autorisée aux deux conditions suivantes:

1. *l'appareil ne doit pas produire de brouillage, et*
2. *l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement*

USA: FCC Statement

This equipment has been tested and found to comply with the limits for 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 residual installation. This equipment generates, uses and can radiate 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 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 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
- To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

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

Europe

In this region the Barryvox® W-Link operates in the 868MHz band.

Type / Model: Barryvox® S 7600.0032 (W-Link enabled)
Barryvox® S 7600.0034 (W-Link disabled)

For additional information concerning the «EU Declaration of Conformity», please visit: www.mammut.com/BarryvoxManual

Europe – EU Declaration of Conformity

bg	С настоящото Mammut Sports Group AG декларира, че този тип радиосъоръжение Barryvox®S е в съответствие с Директива 2014/53/ЕС. Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес: www.mammut.ch/BarryvoxManual
cs	Tímto Mammut Sports Group AG prohlašuje, že typ rádiového zařízení Barryvox®S je v souladu se směrnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: www.mammut.ch/BarryvoxManual
da	Hermed erklærer Mammut Sports Group AG, at radioudstyrstypen Barryvox®S er i overensstemmelse med direktiv 2014/53/EU. EU-overensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse: www.mammut.ch/BarryvoxManual
de	Hiermit erklärt Mammut Sports Group AG, dass der Funkanlagentyp Barryvox®S der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: www.mammut.ch/BarryvoxManual
et	Käesolevaga deklareerib Mammut Sports Group AG, et käesolev raadioseadme tüüp Barryvox®S vastab direktiivi 2014/53/EL nõuetele. ELi vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil: www.mammut.ch/BarryvoxManual
en	Hereby, Mammut Sports Group AG declares that the radio equipment type Barryvox®S is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.mammut.ch/BarryvoxManual
es	Por la presente, Mammut Sports Group AG declara que el tipo de equipo radioeléctrico Barryvox®S es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: www.mammut.ch/BarryvoxManual
el	Με την παρούσα ο/η Mammut Sports Group AG, δηλώνει ότι ο ραδιοεξοπλισμός Barryvox®S πληροί την οδηγία 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο: www.mammut.ch/BarryvoxManual
fr	Le soussigné, Mammut Sports Group AG, déclare que l'équipement radioélectrique du type Barryvox®S est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: www.mammut.ch/BarryvoxManual
hr	Mammut Sports Group AG ovime izjavljuje da je radijska oprema tipa Barryvox®S u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi: www.mammut.ch/BarryvoxManual

it	Il fabbricante, Mammut Sports Group AG, dichiara che il tipo di apparecchiatura radio Barryvox®S è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: www.mammut.ch/BarryvoxManual
lv	Ar šo Mammut Sports Group AG deklarē, ka radioiekārta Barryvox®S atbilst Direktīvai 2014/53/ES. Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē: www.mammut.ch/BarryvoxManual
lt	Aš, Mammut Sports Group AG, patvirtinu, kad radijo įrenginių tipas Barryvox®S atitinka Direktyvą 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu: www.mammut.ch/BarryvoxManual
nl	Hierbij verklaar ik, Mammut Sports Group AG, dat het type radioapparatuur Barryvox®S conform is met Richtlijn 2014/53/EU. De volledige tekst van de EU-conformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: www.mammut.ch/BarryvoxManual
mt	B'dan, Mammut Sports Group AG, niddikjara li dan it-tip ta' tagħmir tar-radju Barryvox®S huwa konformi mad-Direttiva 2014/53/UE. It-test kollu tad-dikjarazzjoni ta' konformità tal-UE huwa disponibbli f'dan l-indirizz tal-Internet li ġej: www.mammut.ch/BarryvoxManual
hu	Mammut Sports Group AG igazolja, hogy a Barryvox®S típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen: www.mammut.ch/BarryvoxManual
pl	Mammut Sports Group AG niniejszym oświadcza, że typ urządzenia radiowego Barryvox®Sjest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: www.mammut.ch/BarryvoxManual
pt	Prin prezenta, Mammut Sports Group AG declară că tipul de echipamente radio Barryvox®S este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: www.mammut.ch/BarryvoxManual
ro	O abaixo assinado Mammut Sports Group AG declara que o presente tipo de equipamento de rádio Barryvox®S está em conformidade com a Diretiva 2014/53/UE. O texto integral da declaração de conformidade está disponível no seguinte endereço de Internet: www.mammut.ch/BarryvoxManual
sl	Mammut Sports Group AG potrjuje, da je tip radijske opreme Barryvox®S skladen z Direktivo 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: www.mammut.ch/BarryvoxManual
sk	Mammut Sports Group AG týmto vyhlasuje, že rádiové zariadenie typu [označenie typu rádiového zariadenia] je v súlade so smernicou 2014/53/EÚ. Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese: www.mammut.ch/BarryvoxManual
fi	Mammut Sports Group AG vakuuttaa, että radiolaitetyyppi Barryvox®S on direktiivin 2014/53/EU mukainen. EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: www.mammut.ch/BarryvoxManual
sv	Härmed försäkrar Mammut Sports Group AG att denna typ av radioutrustning Barryvox®S överensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress: www.mammut.ch/BarryvoxManual

AVALANCHE SAFETY

BEST CHOICE FOR THE WORST CASE

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