



BARRYVOX®S

EXTENDED REFERENCE GUIDE



MAMMUT
SWISS 1862

Please review the regular Barryvox Reference Guide before reading this guide. This guide is designed to supplement the other Barryvox guide.

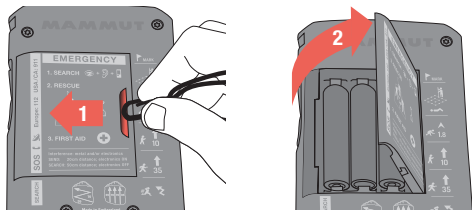
mammut.com

INITIAL SETUP

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.**

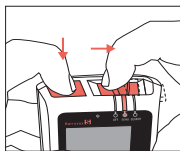
Main Switch OFF / SEND / SEARCH

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.

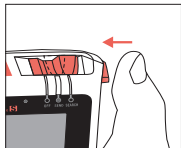
Always make sure that the switch locks into position mechanically to avoid an undesired change of mode.



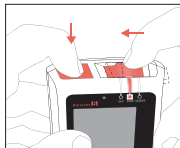
OFF -> SEND



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.

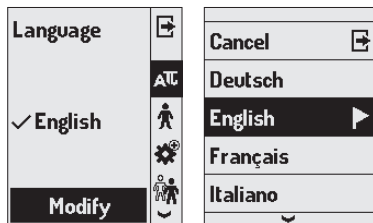
The main purpose of the settings is to allow users to adapt the user interface and available function of the device to best fit their individual requirements and capabilities. However, even if you configure your device for a typical “pro-user”, it will still be possible for a novice to use it efficiently 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

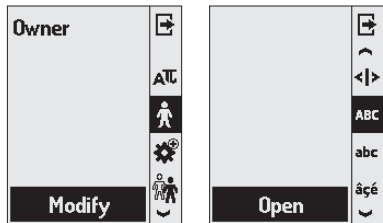
This setting allows you to select the language of your transceiver’s user interface.

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
- ÀÇÉ** Uppercase special characters
- àçé** Lowercase Special characters
- @+** Symbols
- 123** Number

Pro Settings

The factory settings of the device are optimally preconfigured for a basic user, directly proceed to „[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 „[Analog Tone](#)“).
- ▶ enables access the the Pro Check function within group check (see „[Pro Check](#)“)
- ▶ to scroll the list of buried subjects which allows more efficient group searches and triage decisions (see „[List of Buried Subjects](#)“)
- ▶ to see the vital data of the buried subjects you are searching in order to take triage decisions (see „[Vital Data](#)“)
- ▶ to access the alternative and extended range search modes (see „[Extended Search Strip in Extended Range Mode](#)“ and „[Alternative Search Mode](#)“)

- ▶ to mark deep burials up to distance indication of 6.0 (see „[Deep Burials](#)“)
- ▶ to unmark a buried subject (see „[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.

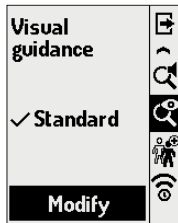
Audio Guidance

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



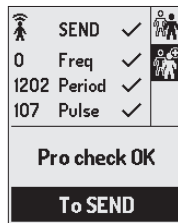
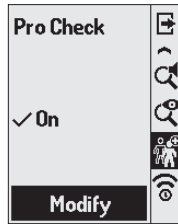
Visual Guidance

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. In the "classic", simple user interface the fine search is carried out by manual bracketing.




Pro Check

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

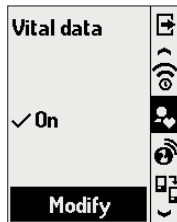
Auto-revert to SEND switches the transceiver from SEARCH mode to SEND mode or from Rescue-SEND mode to SEND mode if there is no user interaction or major motion for a specific amount of time. The default setting of 4 minutes is appropriate for most users, shorter times tend to lead to more frequent, 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 „[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.

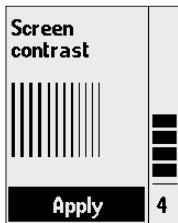
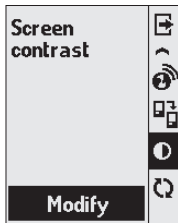
If you do not wish to have these data transmitted, you can disable this feature. Utilizing vital data as one triage criteria can increase the ratio of survival in a search where rescue resources are stretched – for this reason only change this setting if you have an important reason to do so.



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.



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).

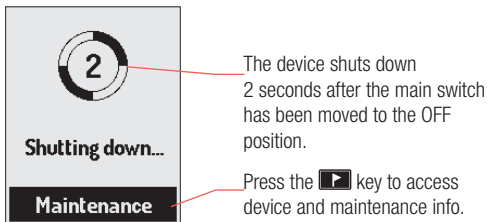
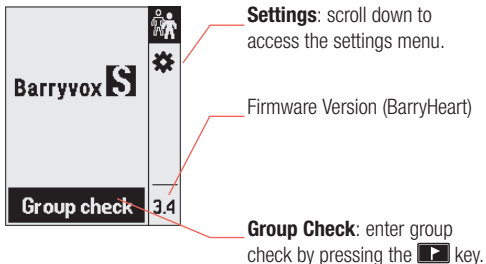
▶ Unknown

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.

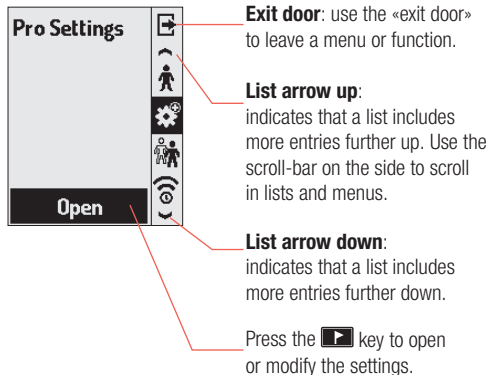
If you mix alkaline and lithium batteries, or try to use lithium batteries which have already been used in other devices, it is impossible to determine the battery capacity. In this case, the alert message “Battery capacity unknown!” will be shown.

COCKPIT – OVERVIEW OF FUNCTIONS

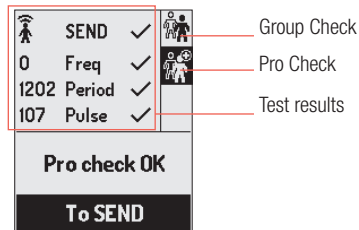
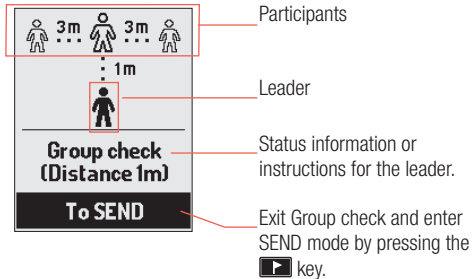
Turning the Device ON and OFF



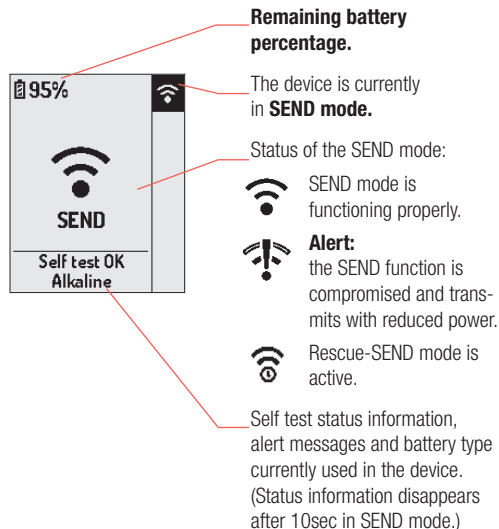
Settings and Navigation in Lists



Group Check

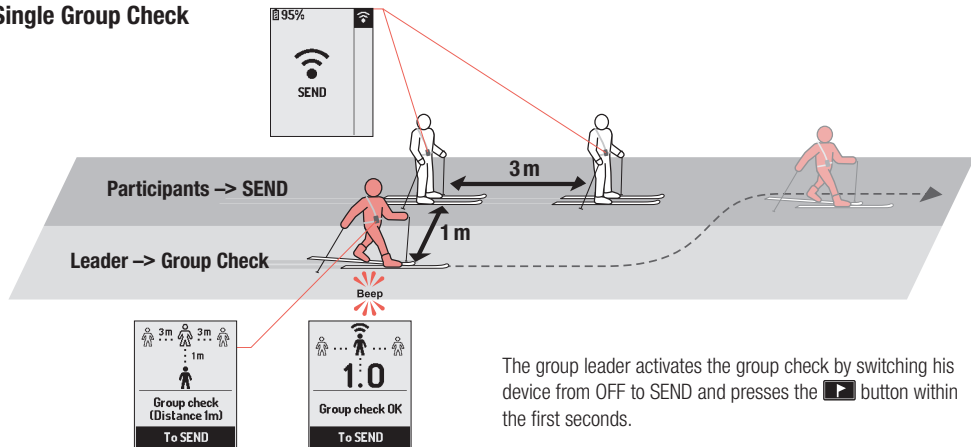


SEND




GROUP CHECK

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.



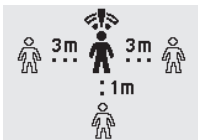
The indicated test distance must not be shortened, or the group check becomes very unreliable.

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.

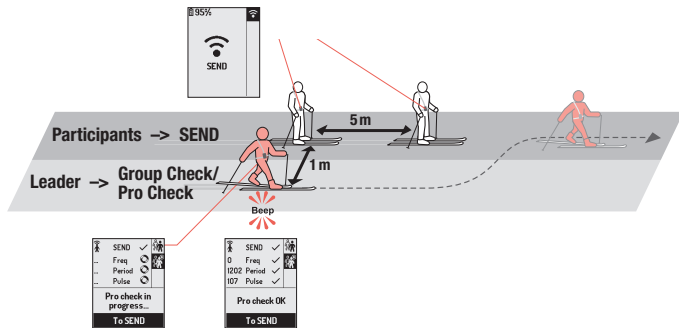
- Further procedure:
1. Check if the device is switched to SEND.
 2. Replace the batteries.
 3. Have the device checked by the manufacturer.

See „[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. Such devices must be checked by the manufacturer.

Pro Check



The “Pro Check” analyzes additional parameters of the tested transmitter and displays them. In case a measured value is out of tolerance, an alert is shown for the respective parameter. 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 „[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.

To increase the measurement accuracy, hold both devices vertical while performing the "Pro Check".

- ▶ **BarryTip:** Please be aware that the measurement accuracy of an avalanche transceiver does not match the accuracy of test- or laboratory equipment and that the "Pro Check" cannot replace the periodic check of the transceiver by the manufacturer. In case the "Pro Check" discovers problems, the tested device should not be used and has to be checked by the manufacturer (see „Maintenance and Repair“).

How to Interpret the Parameters Measured by the Pro Check

All avalanche transceivers worldwide adhere to the same legal standard, or "norm". This norm ensures compatibility between all transceivers worldwide, thus every transceiver is able to search for others and to be found by others, independently of the transceiver brand and model. Although all manufacturers operate under the same standard, there are still many older transceivers in use and every manufacturer applies slightly different transmit parameters within the legal framework.

Rescuers should be aware that each different signal within the norm parameters will always work with other transceivers. Some differences between individual signals, in particular in pulse rate, is even an advantage in multiple burial situations as it reduces the likelihood of persistent signal overlap. At the same time, each different signal can create different scenarios when in combination with various other beacons.

The three parameters you'll see tested in Pro Check are defined by the international norm for avalanche transceivers.

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.



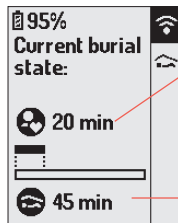
If the device detects that the SEND function is compromised, the red SEND-Control LED stops flashing and the SEND indication on the screen shows an alert sign.

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 „[Vital Data Detection](#)“.

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.


Burial time of the person carrying the device: 45min.

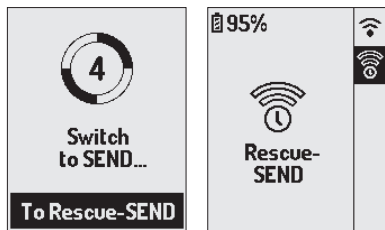
Rescue-Send Mode (Rescue-SEND)

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.

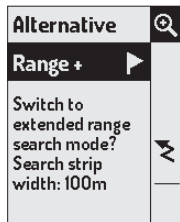
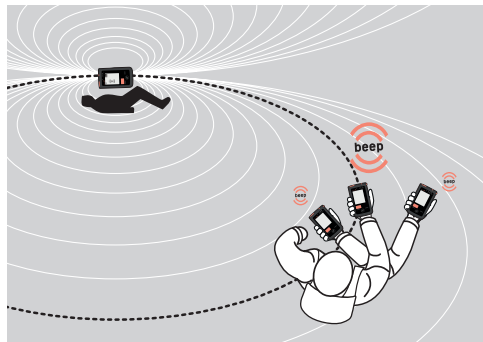
Reverting can be avoided if the  key is pressed within 30 seconds of the alarm. To activate the rescue send mode, switch the device to SEARCH and revert to SEND.

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.



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 „Settings“). For the signal search with extended search strip width, scroll to the magnifying glass by using the lateral keys and press the  button 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.



2 Coarse Search



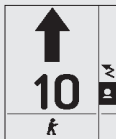
- ▶ **BarryTip:** Move swiftly, move in the direction of the arrow.
- ▶ Hold the transceiver with the extended arm horizontally in front of you.
- ▶ If the distance increases, then you are moving away from the victim. Continue the search in the opposite direction.



Distance below 10



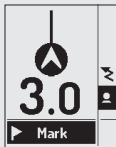
- ▶ **BarryTip:** Reduce search speed, precisely follow the arrow.



3 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.




4 Pinpointing

- ▶ **BarryTip:** Place a visual reference 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.



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.

Mark

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



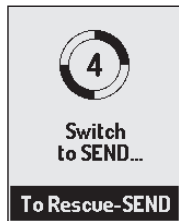
Probe Indication

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

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 „Settings“.

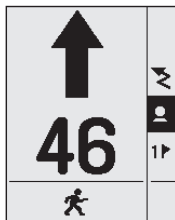
Leaving SEARCH Mode



After 4 seconds the device automatically switches into SEND mode.

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

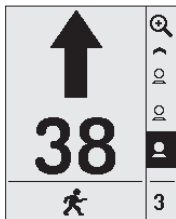
Multiple Burials



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.

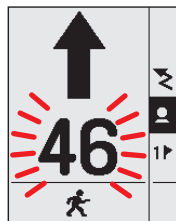
Fast overview with multiple burials

Using the side buttons, you may always scroll the list of buried subjects to quickly gain an overview (see „[Mental Map of the Burial Situation](#)“).



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 „[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.

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 „[No Probe Hit](#)“.

Search for Multiple Buried Subjects Using the Standard Search Mode

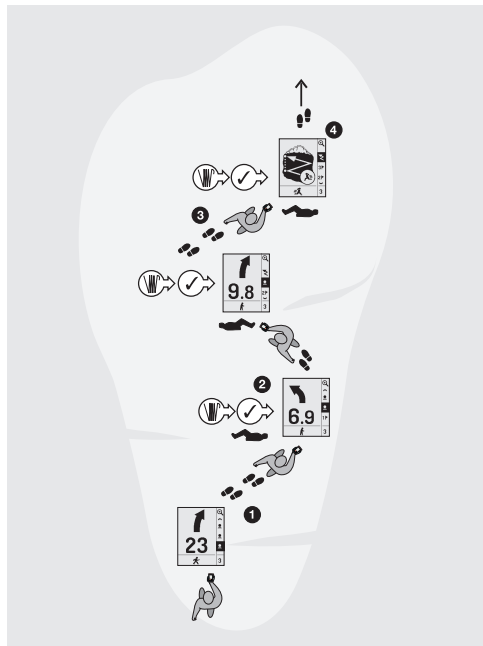
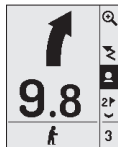
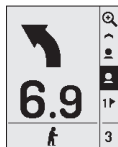
In standard search mode, the transceiver attempts to analyze all the detectable signals and to determine the number of buried subjects. This is possible because the signals from each transmitter have characteristics which are distinguishable from the signals of other transmitters. The more unique the 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 transmit 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. The selection mark (👤) shows the buried subject you are currently searching for. By searching for one buried subject after another and marking them as found, you work through the list of buried subjects from the bottom to the top. Accordingly, the buried subjects already marked as found are shown behind the current position of the selection mark.

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 (see „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 subjects?

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. 4.5m (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

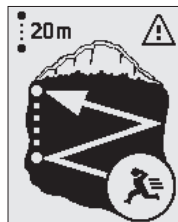
If not enough rescuers are available to simultaneously search and excavate all buried subjects, buried subjects with increased survival chances, indicated by the - symbol, should be searched and excavated with first priority.

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 [„Triage Criteria and Vital Data“](#). The actual prioritization of certain buried subjects over others is up to the rescuer.

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.





If your Barryvox® detects an increase of complexity in the search, it reduces the signal search strip width. Reducing the search strip width often lowers the complexity as the device only takes a smaller range and thus a smaller number of buried subjects into account. When fewer transmit signals of fewer buried subjects need to be processed at ones, they may be found more efficiently and more reliably. While the search strip width is reduced, the list of buried subjects contains only the buried subjects within the reduced range.



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 „Pro Search“).

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 „[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.

Range +	
Alternative 	
Switch to alternative search mode?	3 
	2 
	
	3

Multiple Buried Subjects in Alternative Search Mode

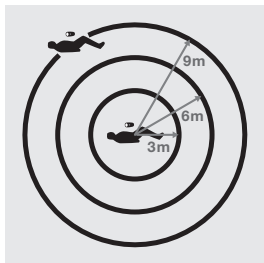
If multiple burials are detected in alternative search mode, an icon symbolizing multiple burials is shown on the display . Additionally, you can also hear the analog tones. These are helpful in distinguishing the signals acoustically. **The device favors the closest subject.**

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 „[Signal Search](#)“.

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.





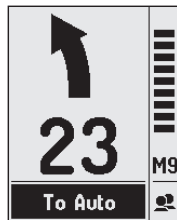
Manual Volume Control in Alternative Search Mode

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.



Problem Solving

Transceiver doesn't turn on

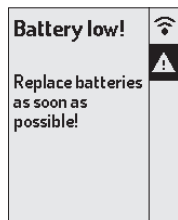
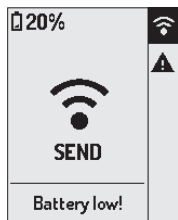
No self-test at startup

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!

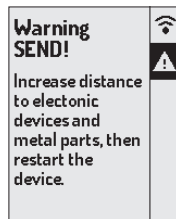
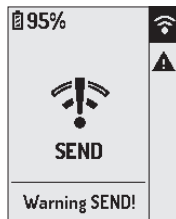
The batteries must be replaced as soon as possible. Refer to the instruction in „[Batteries](#)“ and „[Battery Test and Battery Level Indicator](#)“.



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.

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

Transceiver: 457 kHz (International Standard).

W-Link Region A: 869.85MHz (Europe)

W-Link Region B: 915 ... 926 MHz (North America)

Field strength / Transmitting power

Transceiver: max. 7 dB μ A/m (2,23 μ A/m) at a distance of 10 m

W-Link Region A: max. 5mW / E.R.P.

W-Link Region B: max. 5mW / E.R.P.

Power supply:

3 x LR03 1.5 V Alkaline (AAA)

or 3 x LR92 1.5 V Lithium (AAA).

Battery life with alkaline:

typical 300h SEND, min 200h in SEND mode

followed by 1 h in SEARCH mode.

Battery life with lithium:

typical 400h SEND, min 200h in SEND mode

followed by 1 h in SEARCH mode.

Maximum range:

up to 70 m in standard search mode.

Search strip width:

70m in standard search mode,

100 m in extended range search mode.

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

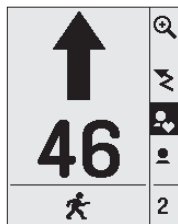
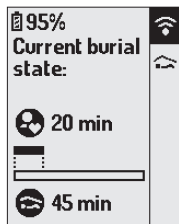
Dimensions (L x W x H): 115 x 67 x 27 mm.

Weight: 210 g (incl. batteries).



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).

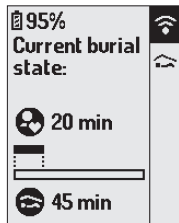
Only rescuers using a transceiver with a W-Link radio connection are able to receive vital data.

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