



# ENGLISH

Being rescued immediately by your companions with the 3+, avalanche probes and shovels is practically the only chance of survival after being buried by an avalanche. Read the instructions of use for the 3+ avalanche transceiver carefully, practice how to handle it and train how to rescue your companions effectively! You can find valuable information about helping your companions, preventing accidents and about the current safety products from ORTOVOX at [www.ortovox.com](http://www.ortovox.com)

The ORTOVOX 3+ avalanche transceiver does not protect you against avalanches.

Never go backcountry skiing and freeriding alone – always do these types of sport in a small group.

You can reach us by email at [ortovox@ortovox.com](mailto:ortovox@ortovox.com)

ORTOVOX wishes you wonderful, safe tours!

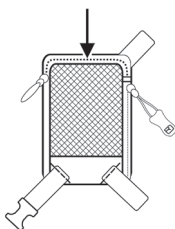
Here are the benefits of the ORTOVOX avalanche transceiver 3+

- Automatic switch over to the best transmission antenna ("Smart Antenna")
- 3-antenna technology
- Signal analysis (scan the avalanche debris and locate every signal quickly and accurately)
- Marking function (3 signals)
- Only 1 ALKALINE battery AA 1.5V
- Partner check
- Automatic transmission switch over
- Update



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The back of the carrier bag contains an extra compartment for storing the 3+ and carrying straps.



NAME:	ORTOVOX 3+
FUNCTION:	digital
CASING:	ergonomic, waterproof, impact resistant
SIZE:	119 x 71 x 25mm
FREQUENCY:	457 kHz

The 3+ receives transmission signals from every avalanche transceiver conforming to standards without restrictions.

### DIGITAL RECEPTION

RANGE:	40m
SEARCH STRIP WIDTH:	up to 40m
TEMPERATURE RANGE:	-20° C to +45° C

If the transceiver gets wet, do not use direct heat, i.e. such as a hair dryer to dry it out. Heat applied in a direct manner may permanently damage the device beyond repair.

POWER SUPPLY:	1 Alkaline AA 1.5 V LR 06 battery
OPERATING TIME:	Transmitting: approx. 250 hours Receiving: approx. 15 hours
WEIGHT:	approx. 189g incl. battery (Comfort carrier bag approx. 98g)

### ADDITIONAL FUNCTIONS

- Partner-Check
- Update

The ORTOVOX 3+ exceeds the high requirements of the European Standard EN 300 718.



## EU DECLARATION OF CONFORMITY

Manufacturer: X-log Elektronik GmbH

Person responsible: Johann Nowotny, Bahnhofstr. 95, D-82166 Gräfelfing

declares that the product: type: ORTOVOX, model: 3+

Intended purpose: avalanche victim search device when used properly meets the essential requirements according to Article 3 of the R&TTE regulations 1999/5/EC and that the following standards have been applied:

1. Health [Article 3.1.a of the R&TTE regulations], ETS 300 718 edition: 05/01
2. Safety [Article 3.1.a of the R&TTE regulations], ETS 300 718 edition: 05/01
3. Electromagnetic compatibility [Article 3.1.b of the R&TTE regulations] ETSI EN 300 718-1, edition: 05/01
4. Efficient use of the radio frequency spectrum [Article 3.2.b of the R&TTE regulations] ETSI EN 300 718-2, edition: 05/01
5. Electromagnetic compatibility and radio band matters [Article 3.3.e of the R&TTE regulations] ETSI EN 300 718-3, edition:

Munich, July 26, 2010

p.p. Andrea Reintges

**CHANGES OR MODIFICATIONS TO THIS DEVICE NOT APPROVED BY ORTOVOX CAN VOID THE USERS AUTHORITY TO OPERATE THE EQUIPMENT.**

### INFORMATION FOR THE USER

Registration Number:

FCC ID No. KF5 ORTOVOX 3

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

- (1) the device may not cause harmful interference and
- (2) the device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for an intentional radiator pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential

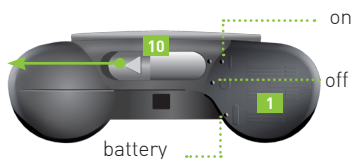
installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

### SWITCHING ON

Undo the LOCKING SLIDE (10) and turn the SWITCH-ON LEVER (1) counter-clockwise. The SWITCH-ON LEVER is now secured from being switched off unintentional. Right now the appliance number is indicated, the self-test starts and the remaining battery capacity is shown in %.



### SWITCHING OFF

Undo the LOCKING SLIDE (10) and turn the SWITCH-ON LEVER (1) clockwise.



### SELF-TEST AND TRANSMISSION MODE

The self-test is visible on the display. The remaining battery capacity (6) is shown: 99 [%].

After a successful self-test the ORTOVOX 3+ starts transmitting and the transmission elements flash on the display. The battery symbol shows the remaining battery capacity.

If a fault is detected during self-test, a warning appears on the display: E1, E2, E3 or E4.





### WARNING

During the self-test the TRANSMIT and RECEIVE functions, the sensors and the battery capacity are tested. If a fault is detected during this function test, then this is indicated with E1, E2, E3 or E4.

A warning can be triggered in the immediate vicinity of a transmitting avalanche transceiver, mobile phone, wireless appliance, large metal objects or particularly strong magnetic fields.



### WHAT THE MOST IMPORTANT WARNINGS MEAN DURING THE SELF-TEST

**E1: Transmitter/ receiver**

**E2: X or Y antenna (reception)**

**E3: X or Y antenna (transmitter)**

**E4: Memory**

If one of the above warnings or any other is displayed during the self-test, then carry out this test again outside in interference-free surrounding. When doing so, it is essential to make sure that no other transmitters are nearby. Switch off all sources of interference (mobile phones, wireless devices etc.) or move them well away. If this warning is shown again, the appliance must be sent to the ORTOVOX service department.

People with pacemakers should wear the 3+ on the right side of their body. It is essential to observe the pacemaker manufacturer's instructions or consult with your physician!



### PARTNER OR GROUP CHECK

("The daily check")

- Switch the ORTOVOX 3+ to SEARCH (= RECEPTION).
- Now switch the 3+ on (1) and press the MARKING BUTTON (8) simultaneously.
- If the transmitter's parameters are OK, then "00" is shown on the display. If no transmitter is located within a circumference of 1 m from the reception device, then "--" is displayed.



Warnings about the tested transmitter are displayed with E1 – E7.

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### WHAT THE WARNINGS MEAN DURING THE PARTNER CHECK

The warnings E1 to E7 signal that one or more of the measured parameters on the transmitter do not meet the standard for avalanche transceivers.

If one of these warnings is shown, then the transceiver must be sent to the service department.

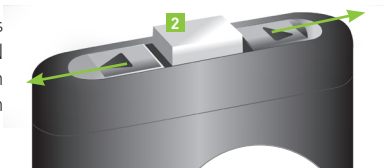
- E1:** Frequency
- E2:** Width of the transmission signal
- E3:** Frequency and width of the transmission signal
- E4:** Transmission cycle
- E5:** Frequency and transmission cycle
- E6:** Transmission cycle and width of the transmission signal
- E7:** All tested parameters defective





### SEARCH

Slide both SWITCHES (2) outwards simultaneously – the TRANSMISSION SWITCH OVER (3) pops out. The search situation is automatically shown on the display.

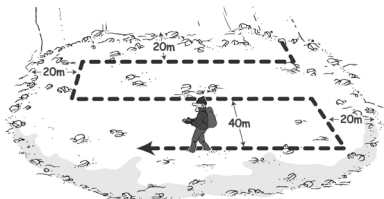


**ORTOVOX recommends switching off mobile telephones and radio equipment during the locating process!**



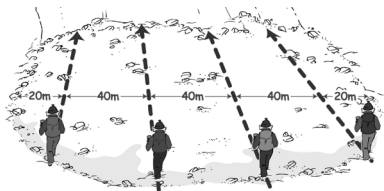
### SIGNAL SEARCH (ONE SEARCHER)

When searching for a signal (= searching for the first signal), pan the 3+ left and right at an angle of 30° and tilt moderately up and down. This compensates unfavourable positions of the transmitter antenna and the transmitting signal can be picked up even earlier. Search strip width: 40m!



### SEVERAL SEARCHER:

The distance between people searching is 40m; the distance to the edge of the avalanche must not exceed 20m.





### COARSE SEARCH

**Use the 3+ in a horizontal position during the coarse search process!**

At a distance of approx. 40m to the avalanche victim, the direction arrow (4) and distance indicator (5) appear on the display. The acoustic signal from the loudspeaker gets faster and louder as you approach. The distance indicator goes down and confirms you are getting closer.



DIRECTION

DISTANCE (44m)

NUMBER OF SIGNALS (1)

### DISPLAY EXAMPLES

Three transmitters (7) are displayed; the nearest transmitter is 44m away.

**Direction: straight ahead!**



Three transmitters are displayed; the nearest transmitter is 15m away.

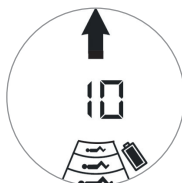
**Direction: keep slightly to the right!**





Three transmitters are displayed; the nearest transmitter is 10m away.

**Direction: straight ahead!**



### FINE SEARCH

Fine search starts automatically when you are 2m away. The direction arrow is switched off. The tendency indicator (= semicircle shaped segments) formulates the fine search process simply, quickly and precisely. The searcher is approaching the victim: the tendency indicator points to the centre of the display. The closer you are to the victim, the faster and louder the acoustic signal beeps.

**DO NOT TURN THE 3+ DURING THE FINE SEARCH!**



The searcher is now going away from the victim. The semicircles get smaller and the distance indicator number will get larger.



The victim has been located. Burial depth: 0.1m. No smaller numbers and no stronger tendency indicator appear.





### MARKING

At a distance of 5m transmitters can be marked. To mark a located transmitter, the MARKING BUTTON (8) is pressed once. The marked transmission signal now appears as a white symbol on a black background.



The distance to the next transmitter is 22m; the direction to the next transmitter: left.



If 4 or more than 4 transmitters are detected, the "4+" symbol appears on the display. ORTOVOX recommends the Sector Method for locating 4 or more than 4 signals.



### PINPOINT SEARCH AND PROBING

Mark the exact point with the probe. Always insert the probe at 90° to the surface of the slope.





### AUTOMATIC TRANSMISSION SWITCH OVER IN CASE OF A SECONDARY AVALANCHE

If the 3+ is not moved over a period of 120 seconds, it automatically switches over to transmission mode from any operating mode.

### STRATEGY IN THE EVENT OF MULTIPLE BURIALS

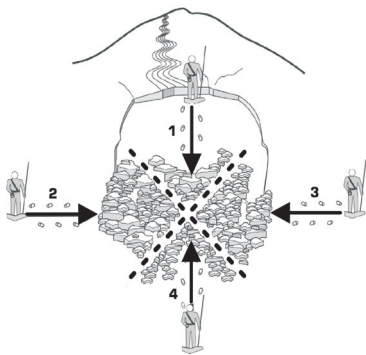
#### ORTOVOX SECTOR METHOD

**1st sector:** After the 1st victim is located and excavated by searchers, the victim's avalanche transceiver is switched off and the avalanche debris field is searched by sector.

**2nd sector:** Approach from the left.

**3rd sector:** Approach from the right.

**4th sector:** Approach from below. Before any approach in a new sector, the 3+ must be briefly switched to TRANSMIT and then immediately back to RECEIVE. Switching over briefly to transmission mode causes the previously marked transmitter to be deleted.



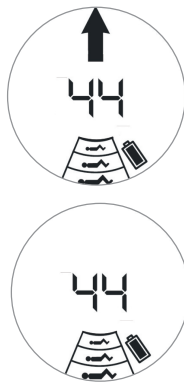
**Attention:** Already located signals can then naturally appear again. The searcher should then concentrate on signals that have not yet been marked in the avalanche debris field.



### SIGNAL OVERLAP - SIGNAL SEPARATION

The transmission signal is measured and analysed by the ORTOVOX 3+. If several transmission signals are received and these transmission signals are transmitting at the same time (simultaneous transmission signal and simultaneous transmission break), then a signal overlap occurs.

This signal overlap is illustrated without a direction arrow (e.g. "44m" and 3 transmission signals).



### IMPORTANT INFORMATION ABOUT SIGNAL SEPARATION

Signal separation helps you when searching for one or especially several avalanche victims. We would like to inform you, however, about important, physically contingent aspects of searching for victims:

When accidents happen, several persons are often buried and transmit a signal at the same time. In this case – depending on the rhythm of the individual transmitters – it is possible for two or even more transmitters to transmit simultaneously over a long time. This can lead to signal overlaps, particularly with analogue appliances with a long pulse and digital appliances that transmit synchronised pulses.

The signals are overlapped and can no longer be technically distinguished. The signal from an individual transmitter cannot be measured either by analogue or digital means in such a phase. This can last for up to 30 seconds and longer in the worst cases. It is necessary to wait until there is a signal break. This physical phenomenon can be solved with the ORTOVOX 3+ using locating strategies:

**Applying the ORTOVOX sectors method (Page 34)**



### BATTERY CHANGE

#### **(WHEN THE APPLIANCE IS SWITCHED OFF)**

Turn on-off switch (1) until the battery symbol is in line with the index point. Now pull the battery compartment out of the 3+ and insert a new AA alkaline 1.5V battery. When changing the battery, bear in mind the correct polarity. Only brand batteries that conform to standards should be used.



#### INTERFERENCE IN TRANSMITTING AND RECEIVING PERFORMANCE

Interference in the transmission and reception performance can occur through atmospheric forms of interference such as storms, through lifts and power systems, radio equipment, mobile phones and other electronic equipment. Mobile phones and radio equipment should be switched off whilst searching. The distance between two avalanche transceivers and metal, radio equipment, mobile phones, magnetic objects, etc. should be at least 50cm.

## WARRANTY

When purchasing a new ORTOVOX transceiver, on submission of the filled out guarantee card (see instructions for use) and dealer invoice we grant the 5-year ORTOVOX guarantee from the date of purchase, but no longer than 6 years from the date of manufacture. The number IV/15 on the seal in the battery compartment means e.g.: ORTOVOX guarantee valid until 4th quarter 2015; the device was produced 5 years before in the 4th quarter of 2010. The seal also reminds you of the recommended transceiver check in the 4th quarter of 2015. As part of the ORTOVOX guarantee, faulty parts are repaired free of charge or

the avalanche transceiver is replaced by a device of the same design. Damage caused by improper handling and natural wear is excluded. In case of damage due to battery leakage, the ORTOVOX guarantee lapses. Batteries are excluded from the guarantee. Any further warranty in the event of consequential damage is expressly excluded. Enforced guarantees do not extend the guarantee obligation nor does a new guarantee period begin.



## SERVICE

The ORTOVOX 3+ is a rescue device, on whose fault function someone's life can depend. Electronic components can fail – we therefore recommend that the appliance is sent for the factory check without fail on the date recommended on the test seal.

**Please make use of our prompt testing service in the summer months so**

**that your transceiver is ready to use in time at the start of winter.**

For repairs or the factory check, please send the ORTOVOX 3+ direct to our service centre (see Page 102)





### IMPORTANT NOTICE!

The batteries should be removed from the avalanche transceiver during the summer break. In case of damage due to battery leakage the ORTOVOX warranty lapses. Never use rechargeable batteries (such as Ni-Cd batteries). Rechargeable batteries have a much lower operating voltage and hence a lower range and a limited operating period. In addition, faulty recharge-

able batteries are not immediately noticeable. After recharging they show the full operating voltage to start with, only to severely drop off again after a very short operating period (danger to life!).

### IMPORTANT NOTICE!

ORTOVOX avalanche transceivers are designed to support help from companions in the event of avalanche burial! Stopping in an unsecured area is potentially risky and should only be done with experienced participants. The effective use of an avalanche transceiver requires suitable training and repeated practice. Wear your avalanche transceiver close to your body and under your top layer of clothing. ORTOVOX urgently recommends that you carefully read the instructions of use for the avalanche transceiver. Always take a shovel and a probe with you when you are off-piste in an un-

secured area and never wander off on your own. Plan your off-piste activities using the current avalanche report:

**[www.ortovox.com](http://www.ortovox.com)**

Before you enter an area at risk of an avalanche, you should make sure that all avalanche transceivers are working properly and all batteries are in good condition.

**The ORTOVOX 3+ fulfils the maximum safety requirements and is characterised by its simple operation!**

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# GUARANTEE CARD





# GUARANTEE CARD

Name

Street

City, State, Zip,

Telephone , E-mail

Model ORTOVOX 3+

Serial number

(shown on display when switched on)

Purchased at

Please provide below a detailed explanation and description of your unit`s faulty performance!

In case of service please fill out this card and send it to the responsible ORTOVOX service center (see page 102)

**IMPORTANT!**  
**KEEP CAREFULLY!**