

3D FINDER

User guide.



nivia
3 D FINDER

Congratulations on your new nivia 3D finder.

We are looking forward to sharing our passion for the mountains with you and to be at your side in moments of emergency.

The nivia 3D finder is a revolutionary avalanche transceiver that is quick and easy to understand and use. Thanks to innovative 3D technology, it makes it possible to find buried victims more quickly in an emergency.

It is important to note that an avalanche transceiver does not guarantee protection against avalanches. Please regularly check how you use your nivia 3D finder and pay close attention to avalanche prevention and the planning of tours or freeride descents. Never go into unsecured terrain without an avalanche transceiver, shovel and probe and never go into the terrain alone or with people who are not also equipped with this emergency equipment.

Everything you need to know to get your nivia 3D finder up and running, how sending and searching works, how to install updates and what other functions your 3D finder offers can be found on the following pages.

Have fun & stay safe!



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1. nivia

The mountains are our home. Our passion. Yet progress and technology are also among our passions. Nivia is the combination of both. Our vision: your safety on the mountain.

In fact, we are convinced that we can make a significant contribution to making mountain sports safer with our experience and knowledge.

Quality and innovation are a matter of course for us. As experts in high-frequency technology, we have partnered with the Fraunhofer Institute to significantly advance technology in the field of avalanche transceivers. Around 50 years after the invention of the world's first avalanche transceiver, we are taking the next step and presenting the nivia 3D finder, an avalanche transceiver that will revolutionize the search process. We have scrutinized every aspect to make searching faster and more efficient. However, we hope that you will only need to use this feature in your emergency training.

Is the 3D finder the end of our journey? No, because as our name suggests ("nivis, the snow"; "via, the path"), we are now and will continue our path in the snow with you.

2. Avalanches - dealing with risk

We love the mountains. The endless possibilities they offer us. Their roughness. Their wildness.

However, it is precisely this wildness that can make the mountains dangerous. During winter, this risk primarily manifests away from the secured slopes, taking the form of avalanches.

Slab avalanches in particular are a major risk for winter sports enthusiasts. This is because if someone is caught and

buried by an avalanche, there is a risk to life. Only around one in two people survive when completely buried under the snow. The probability of survival drops rapidly after just 10 minutes, as buried persons often only have a small breathing cavity left.

Although the primary goal should always be to avoid becoming caught in an avalanche, there is always a residual risk when moving in the great outdoors. To minimize this risk, we recommend the following:

- well-informed and conscious risk management
- be fully informed about the current avalanche danger
- behave in accordance with the conditions
- carry the necessary emergency equipment (avalanche transceiver, shovel, probe)

In addition, it is essential that the handling of the equipment and the rescue of comrades are practiced. Practice makes perfect. After all, rapid location and care are essential in an emergency and can save lives.

3. nivia App

With the free nivia app (Apple iOS & Android) you can use the full range of functions of your nivia 3D finder including:

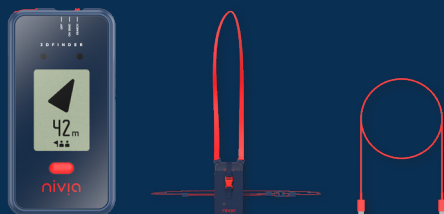
- perform software updates
- register your device
- change device settings
- view operating instructions and tips



!
If you don't have a smartphone, please jump to chapter 6 (Start-up & personal settings) and set up your 3D finder manually.

4. Contents

1x nivia 3D finder
1x USB-C cable
1x nivia 3D finder carrying system
1x User Guide



!
In the event of a warranty claim, keep the packaging so that you can return the device in it's original packaging.

After unpacking your device, check the contents for completeness and possible damage. If necessary, contact your point of sale.

5. Function overview



FRONT

BACK

SIDE

1. Mark button
2. Slider
3. LED & brightness sensor
4. Mark button
5. Speaker
6. Safety loop eyelet
7. USB charging port

6. Start-up & personal settings

6.1. Switch on

To switch on your nivia 3D finder, move the slider to SEND/ON. When switching on, the current software version and the battery status are displayed. The slider can be moved to SEND/ON without pressing the unlock button and locks in this position. To switch to SEARCH or OFF, the unlock button must be simultaneously pressed.

1. PRESS THE UNLOCK BUTTON



2. MOVE THE SLIDER TO SEND



6.2. Personal settings

When you switch on your nivia 3D finder for the first time, you can configure your personal settings.

Device management with the nivia app

To set up your device in the nivia app, press the **mark button**. As soon as the message "App Connect" appears on the display after switching on, open the app on your smartphone. Follow the instructions on the display. Further configuration is done via the app.

Select language

To select the language directly on the device, use the **mark button** to scroll through the selection. To select your language, press and hold the **mark button**.



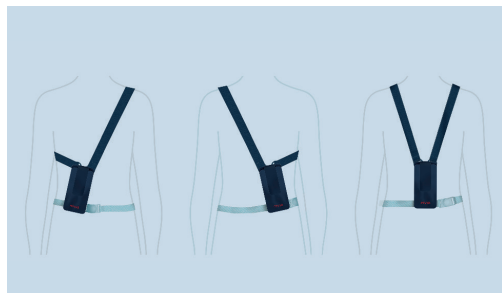
6.3. Switch off

You can switch off your nivia 3D finder by moving the slider to the OFF position. To avoid accidentally switching off, this only works when the unlock button is simultaneously pressed.



7. Carrying system

We recommend using the carrying system provided.



!
The case should not be left open! Always close the flap.

Interference

Your nivia 3D finder, like all avalanche transceivers, can be interfered with by electronic, magnetic and metallic objects and equipment.

These possible sources of interference include:
Smartphones, digital cameras including action cameras, radios, sports watches, GPS devices, power banks, radio masts, lift systems, high-voltage power lines, etc.

To minimize the risk of interference as much as possible and to ensure the full functionality of your device, we recommend that you carry your 3D finder as far away as possible from such sources of interference.

In send mode, the distance should be at least 20 cm and in search mode at least 50 cm. Ideally, you should switch the interfering devices to flight mode or switch them off during a search.

If you have an implanted pacemaker or defibrillator, we recommend that you carry your avalanche transceiver in a secure pant pocket. However, please follow the instructions from the manufacturer of your pacemaker.

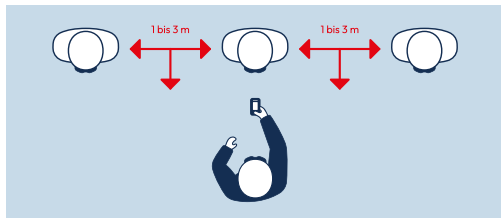
8. Group check

Before you go on tour with your nivia 3D finder, each avalanche transceiver in your group must be checked individually. The easiest way to do this is with the group check.

This ensures that each of your devices is working correctly in send mode. To activate the group check, switch on the device and press the mark button when the corresponding message appears on the display. The other participants must switch their avalanche transceivers to send mode and must be no closer than 1 meter and no further than 3 meters away during the group check process.

The group check is successful when the group leader hears a clear tone for each device in send mode and the distance to the other participants is displayed.





If the nivia 3D finder displays the message “several devices detected”, the participants should increase their distance from each other. The group check must be repeated.

If “transmitter defective” is displayed, the group check should be repeated. If the problem persists, the person with the defective avalanche transceiver should not go into unsecured terrain.

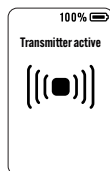
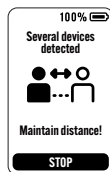
The group check is ended by pressing the **mark button**. The 3D finder then automatically switches to send mode.

9. Send

Your nivia 3D finder switches to send mode when you move the slider from OFF to SEND/ON. “transmitter active” appears on the display and a three-tone sequence is emitted.

If your device detects an error, a double warning tone is emitted and “transmitter interference” appears on the display. Remove all metal objects and electronic devices from the immediate vicinity of your avalanche transceiver.

To save battery power during your tour or freeride adventure, the display switches off after a while of inactivity. However, your 3D finder will of course continue to transmit. The display can be activated by briefly pressing the mark button.



10. Search mode & emergency management

Although we have made the operation of your nivia 3D finder as simple as possible, the use of an avalanche transceiver must be practiced. We therefore strongly recommend that you attend appropriate avalanche training courses and regularly practise searching for buried victims. Because only those who are perfectly trained in searching, probing and excavating can save lives in an emergency.

10.1. Emergency avalanche

Avalanches and avalanche burials are part of the residual risk of mountain tours in the snow. Despite careful tour planning and preparation, an avalanche with buried persons can occur in the mountains in winter. Buried persons have the best chance if they are perfectly trained in the use of emergency equipment (avalanche transceiver, shovel, probe) and as few group members as possible are buried and they search as a team with well-organised emergency management. This all has to be done quickly, because after just 10 minutes the chances of survival decrease rapidly.

10.2. Emergency management

Rescuing buried persons is one of the most important and essential immediate measures in the event of an avalanche burial.

1. Get an overview

First, the group members must find a safe location. Some avalanches trigger further avalanches on other slopes in the surrounding terrain due to vibrations. Once you have observed the avalanche and are in a safe location outside the avalanche cone, try to memorize as precisely as possible how many people are buried and where they disappeared. This can significantly reduce the search area and save valuable time.

!
Avalanche transceivers can easily be interfered with by electronic devices. Therefore, in an emergency and during your training sessions, switch off electronic devices that are not essential.

!
In the event of a burial, ensure that the rescuers' avalanche transceivers are in search or standby mode and not in send mode.

2. Organization

Before the search begins, the most experienced member of the group should take the lead and distribute tasks. All non-buried persons should switch their devices to SEARCH. If there are enough group members, one person should make an emergency call.

!
Keep calm and
proceed in a
structured and
organized manner!

3. Emergency call

Confirm the automatic emergency call in the nivia app on your smartphone (see also 11.1). Alternatively, manually dial the appropriate emergency number:

International emergency call: 112
Switzerland: 1414
(Canton Valais 144 - in the respective network)
Austria: 140
Italy: 118

Important when reporting an accident:

- Location
- Slope direction
- Height
- Visibility conditions
- Number of buried persons

Rescue Coordination Center personnel will ask questions, so try to answer them calmly and accurately. Remain available for any callbacks.

10.3. Avalanche search with the nivia 3D finder

The nivia 3D finder features revolutionary 3D technology. In addition to the conventional magnetic field lines, a GPS grid is generated in order to process the signals of the buried persons more quickly and accurately and thus locate them.

10.3.1 Signal search

Every search begins with a signal search. Depending on where you are, you should start by searching the avalanche cone as quickly as possible with your eyes and ears. People

are often not completely buried and skis, poles etc. can still be seen on the surface.

Search the avalanche cone with your eyes first. If you are approaching from above, keep your skis on. If you are approaching from below, take off your skis. Whatever you do, do it in a way that will allow you to proceed the fastest! If you can see the buried person, walk or ski to them and begin the rescue.

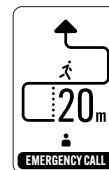
If the buried person is not visible, start a systematic search for the signal for first reception. To do this, walk along the avalanche field in meanders. This means that you keep a distance of 10 meters from the edges and 20 meters between the individual paths. Important: fast running movement is appropriate for this stage of the search! For safety reasons your 3D finder will also display the search strip width in meters.

If your 3D finder receives an initial signal from a buried person, be sure to mark the point of initial detection with a ski pole or backpack, etc. This way, if you lose the signal again, you can always return to this point.

10.3.2 Course search

After receiving the initial signal, hold your avalanche transceiver horizontally in front of you and quickly follow the direction arrow on the display. Unlike other avalanche transceivers, the 3D finder displays the exact distance in meters. Make sure that the value decreases. If the value increases, continue the search in the opposite direction. As long as a distance of more than 10 meters is displayed, you should move at a brisk walk. The closer you get to the buried person, the slower you should move.

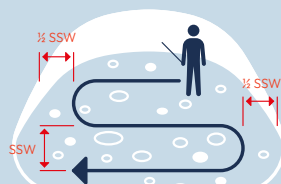
From a distance of 10 meters you can go into the landing approach and shout "10" loudly. Take off your skis if you haven't already. Below a distance of 10 meters, you should move slowly and exactly follow the direction of the arrow on the display.



In addition to the classic magnetic field lines, a GPS coordinate system is created using the newly developed 3D technology of the nivia 3D finder. From the very first signal, this patented algorithm allows the position of the buried person to be determined extremely precisely, regardless of which avalanche transceiver is being searched for. Just like a navigation device, you can directly follow the arrow on your display, without any detours.

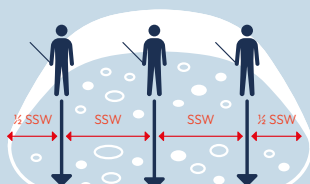
! The 3D technology of your 3D finder is so precise that the cross-out step is no longer necessary in the final phase of the search. The display shows the precise position of the buried person, including the exact burial depth.

Individual search procedure



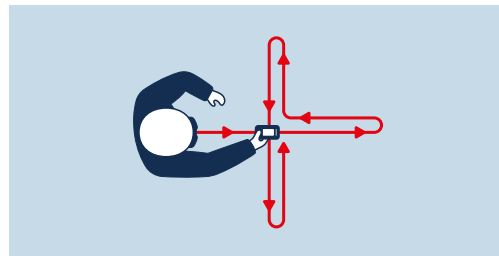
SSW = search strip width

Group search procedure



10.3.3 Fine search

The fine search begins from a displayed distance of 5 meters. Here it is important not to lose track of the direction shown on the display. Below a distance of 2 meters, your 3D finder will stop displaying the direction arrows. The 3D finder will then guide you directly to the probing point. With this new technology, it is no longer necessary to perform the cross-line method is used.



! For example, if your device displays a distance of 1.2 meters to the buried person, the person is 1.2 meters below the snow surface, at right angles to the surface, then the person must be within this 1.2 meter probing depth and spiral radius. If you have missed the buried person while probing, repeat the probing in a slightly offset stitch pattern. Only leave the probe in place for orientation and dig out after successful probing. In an emergency, every second counts.

10.3.4 Point localization

Put away your avalanche transceiver and start probing at the marked point with the shortest distance. Always probe perpendicular to the snow surface and with both hands. If you are not immediately successful, probe in a spiral around the marker. The distance between the insertion holes should be approximately 25 centimeters.

Once you have successfully found the buried person, mark them on your avalanche transceiver using the **mark button**.

10.4. Multiple burials

If several persons are buried and lie within the reception area of your 3D finder, this will be shown at the bottom of your display. Once you have found and probed for the first buried person, you can mark them using the **mark button** and continue your search for the next buried person. Your 3D finder will always guide you to the nearest buried person. If you want to remove a marker, press and hold the **mark button**.

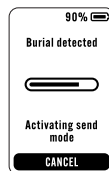
10.5. Post-avalanche: Switch back to send mode

After an avalanche has occurred, it is always possible for another avalanche to trigger on surrounding slopes. Therefore, if your 3D finder is in search mode, it will automatically switch back to transmit mode after no movement has been detected for 2 minutes.

Successfully
flagged



The display shows “Burial detected – Activating send mode” and a signal tone sounds. If you want to cancel this process, press the **mark button**.



10.6. Compatibility

The nivia 3D finder is a revolutionary form of avalanche transceiver. However, as a revolution doesn't happen overnight, our 3D finder is compatible with all other avalanche transceivers available on the market. This means that it can search for and be found by these devices.

11. Additional functions

11.1. Make an emergency call

If your nivia 3D finder is switched to search mode, the “make an emergency call” function is automatically displayed. If you want to make an emergency call in the event of an avalanche, press the mark button. Confirm the emergency call on your smartphone, which will then connect you to the nearest rescue coordination center.



Leave the probe in place for orientation and dig out first after the search is over. In an emergency, every second counts.

11.2. Emergency charging function

In emergency situations, it is important to have a fully charged and working cellphone. Unfortunately, this is often not the case when temperatures are low and you have been out in the mountains all day. In the worst-case scenario, your cellphone battery is dead and you can't call for help. To solve this problem we have equipped the nivia 3D finder with an emergency charging function for your cellphone, so that you can still make an emergency call in an emergency. To do this, use a USB-C cable to connect your smartphone to your 3D finder. As soon as it is sufficiently charged, you can make the emergency call and disconnect the two devices.

12. Updates

How are updates installed?

Updates are automatically installed on the 3D finder as soon as your avalanche transceiver is connected to your smartphone. Do not switch off your 3D finder during the update.

13. Cleaning

If you want to clean your nivia 3D finder, it is best to use a damp cloth without any detergents or cleaning agents.



Do not clean the 3D finder under running water, steam or with cleaners. This could impair the functionality of your device.

14. Storage

It is best to store your 3D finder in a dry space at room temperature.

You should fully charge the battery to 100% before storing it for several months. A stored device must be fully charged again after six months at the latest.

15. Waste disposal

Please note that your nivia 3D finder is an electronic device. Disposal via public waste management authorities is therefore not possible. Please comply with the applicable regulations in your country when disposing of the device.

16. Intended use

The 3D finder is an avalanche transceiver that is used to locate persons buried by an avalanche. Usage must not deviate from this purpose. Any other use requires the written consent of Rosenberger Hochfrequenztechnik GmbH & Co.

KG. Improper use may endanger people or damage the device. In the event of non-compliance with the intended use, liability and warranty claims are excluded.

The 3D finder may only be operated under the operating conditions specified in the user guide and may only be put into operation after reading and understanding these instructions.

17. Self-test, battery indicator & service

17.1. Self-test

Your nivia 3D finder performs a self-test every time it is switched on and checks the current battery level of your device. The battery level is shown on the display. If the battery level is between 11 and 100 percent, the nivia 3D finder switches directly into send mode.

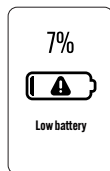
If the battery level is below 10 percent, your avalanche transceiver emits a double warning tone.

17.2. Battery indicator

Use the included USB-C cable to charge your nivia 3D finder via a power source such as a laptop or charger plugged into a power outlet. The LED flashes green during the charging process. If the LED indicator lights up green continuously, your nivia 3D finder is fully charged. You can check the charging status at any time by pressing the MARK BUTTON.

17.3. Service

Your next necessary service appointment with nivia Support is displayed when you switch off your device. If the message "device malfunction – service required" appears, your 3D finder must be checked by our service center. It is best to use the summer months for this purpose. This is the only way to ensure proper use and the required operating time. The best way to do this is to use the nivia app or visit nivia.de



To ensure that you always have sufficient charging capacity on tour or in the field, we strongly recommend that you check the battery status of your 3D finder before every excursion and charge the battery accordingly.

18. Liability

In this user guide, we describe the features of the nivia 3D finder without guaranteeing them.

We accept no liability for damage caused by:

- Improper use
- Failure to observe the operating instructions
- Unauthorized modifications to the 3D finder
- Continued use of the 3D finder despite signs of wear and tear
- Unauthorized and improper repairs
- Repairs carried out without authorization
- Catastrophes, foreign bodies and force majeure



To optimize the battery performance of your device, we recommend that you only charge it when the battery level is below 80 percent. Avoid short and/or frequent charging.

19. Warranty conditions

Our warranty period for processing and material defects is 2 years from the date of purchase. If you register your 3D finder via the nivia app, you can extend your warranty period to 3 years. If you register your device via the app, we can also send you safety information.

The battery and charging cable are excluded from the guarantee, as are damages caused by improper handling or natural wear and tear. For guarantee claims, please contact the relevant point of sale with your proof of purchase and a description of the defect.

20. Technical data

Model:

3D finder, digital device with 3 antennas

Transmission frequency:

457 kHz (international standard)

Search strip width:

max. 50 m (determined according to ICAR: AVA REC 0007)

Transmission field strength 457 kHz:

max. 7 dB μ A / m (2.23 μ A / m) at a distance of 10 m

Power supply:

Lithium polymer battery, 3.7 V / 66 Wh

Charging port:

USB-C

Bluetooth Low Energy transmission frequency:

2.402 GHz - 2.480 GHz Bluetooth Low Energy

Transmission power:

max. 0 dBm

Temperature range:

-20 °C to +45 °C (-4 °F to 113 °F)

Dimensions:

67 x 130 x 24 mm

Weight:

225 g



Devices that have been altered or modified without the express permission of the manufacturer must not be used.

21. Declarations of conformity

Rosenberger Hochfrequenztechnik GmbH & Co. KG hereby declares that the nivia 3D finder complies with Directive XX. The complete declaration of conformity is available at the following link: [XXXX](#).

22. FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Changes or modifications made to this equipment not expressly approved by Rosenberger Hochfrequenztechnik GmbH & Co. KG may void the FCC authorization to operate this equipment.

22.01 FCC and Canada Warning Statements:

This device complies with Part 15 of the FCC Rules and contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS standard(s).

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 of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

23. Manufacturer address & support

Rosenberger Hochfrequenztechnik GmbH & Co. KG,
Hauptstraße 1,
83413 Fridolfing

In case of technical problems, please contact our support at:
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Stand 02/2025