

Technical Data & Information

# GIRSBERGER

Mountain Rescue Technology



**ATC Avalanche Training Center**  
[avalanche-training-center.ch](http://avalanche-training-center.ch)





# TRAINING

## ATC Avalanche Training Center

The ATC Avalanche Training Center is a stationary system for training transceiver and probe search.

The system has been proven for a long time and has been overhauled completely in the year 2015. Some innovative solutions provided decisive advantages to the users and to the operators. The system can simulate from six to sixteen transceivers. The transmitters that are buried in the search area emit signals that are exactly equal to the signals from real avalanche transceivers.

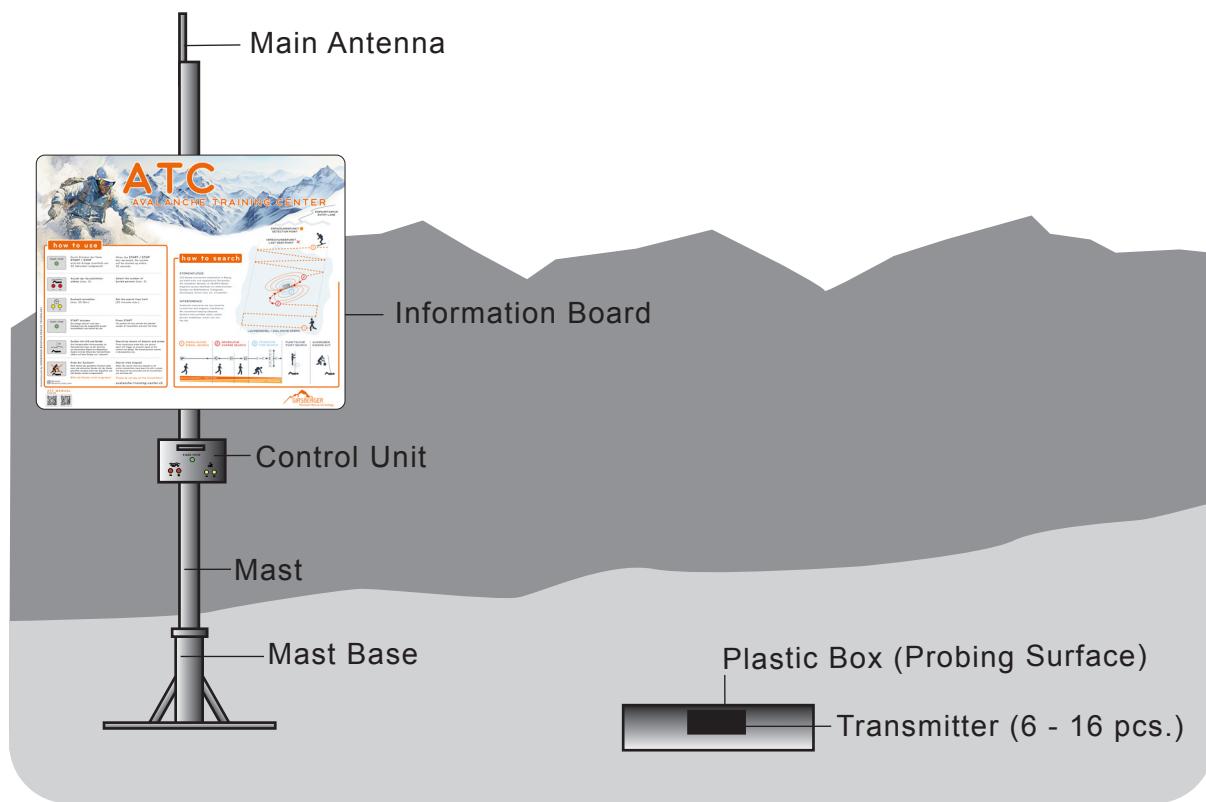
At the control unit, the remotely controlled transmitters can be selected at random (standard mode) or individually (expert mode). This allows for training simple as well as complex (multiple burials) burial situations.

The transmitters will provide automatic feedback upon a probe hit. A probe hit on the probing surface of a transmitter is indicated at the control unit and signaled acoustically. The search times for every transmitter are also indicated.

The control unit also incorporates a counter for the number of exercises that can be read out at any time. The entire system is equipped with standard batteries for autonomous operation throughout a winter season. No mains supply required.

In order to save precious energy, the system automatically enters a sleep mode when not used for some time. There is no need to turn the system off manually.

**AREAS OF APPLICATION:** Ski Resorts, Huts, Ski Schools, Municipality, Mountain Restaurants



# ATC Avalanche Training Center

## Main Features

- Up to sixteen remotely controlled transmitters
- Random or individual transmitter selection
- Single or multiple burial search scenarios
- Automatic probe hit indication
- Configurable transmit patterns
- Elastic probe hit surface for realistic probing
- Search time indication
- Number of exercises readout at any time
- Battery lifetime for an entire winter season
- Information board with transceiver search phases and short instructions
- Easy operation
- Professional and robust construction
- Compatible with all brands of transceivers (EN 300718)
- Meets all European and national regulations
- Developed and made in Switzerland

# ATC Avalanche Training Center

## Technical Data

### Transmitter RTX457ATC

Transmit Frequency:	457 kHz + / - 30 Hz
Transmitter Field Strength:	ca. 2,0 mA/m at a distance of 1 meter
Remote Control Frequency:	433,92 MHz (ISM Band)
Compatible with:	ETS 300718
Power Supply:	4 Alkaline Batteries 1,5 V Type IEC LR20 (size D)
Battery Lifetime:	ca. 6 months
Casing:	Plastic
Dimensions:	203 x 203 x 102 mm
Weight:	5 kg (including probing surface)
Protection:	IP 67 (waterproof)
Operating Temp. Range:	- 25 to + 50 Degree Centigrade

### Probing Surface

Casing:	Plastic
Dimensions:	600 x 400 x 170 mm
Reinforcement:	Sheet Plastic PE-HMW
Dimensions:	560 x 360 x 6 mm
Probing Surface:	Cell Rubber EPDM
Dimensions:	560 x 360 x 8 mm



# Technical Data

## Control Unit FCU

Remote Control Frequency:	433,92 MHz (ISM Band)
Range:	ca. 150 m
Power Supply:	6 Alkaline Batteries 1,5 V Type IEC LR20 (size D)
Casing:	Steel
Dimensions:	330 x 240 x 130 mm
Weight:	6.6 kg
Protection:	IP 65 (splash water proof)
Operating Temp. Range:	- 25 to + 50 Degree Centigrade
Weather Protection:	Stainless Steel
Mast Fixture:	Tube Brackets

## Antenna

Frequency Range:	406 to 470 MHz
Polarization:	Vertical
Impedance:	50 Ohm
Diameter:	90 / 25 mm
Length:	600 mm
Weight:	1 kg

## Mast

Nominal Length:	3,2 m
Transportation Length:	3.2 m
Diameter:	63 mm
Weight:	5,6 kg
Material:	Aluminium

# Technical Data

## Mast Base

Dimension: 1000 x 1000 x 550 mm  
Weight: 15 kg  
Material: Steel galvanized

## Information Board

Information: Search Phases / Short User Instructions  
Overall Dimension: 910 x 760 mm  
Weight: 8 kg  
Material: Aluminum  
Mounting: Brackets



# Information

## Location

The following requirements should be met by a suitable location:

The altitude should be reasonable to provide sufficient and long lasting snow cover.

The size should be about 100 meters by 100 meters, preferably on a slope.

Keep at least 150 meters distance from possible sources of interference to avoid problems.  
Possible sources of interference are:

- Power lines above and below ground
- Any means of transportation
- Snowmaking equipment
- Technical buildings such as transformer stations, mobile network antennas
- Ski runs (interference from transceivers that are carried by skiers)

For reasons of safety, we recommend to fence the search area.

For easy access, we recommend to mark the area by means of signs, banners or beach flags.

## Number of Transmitters

The system is modular. From six to sixteen transmitters may be installed. Based on our experience, we recommend installing ten transmitters.

## Mast Base

The mast base is placed directly on the ground and must be loaded with weights.

## Energy Supply

The entire system is fitted with off-the-shelf batteries. The batteries will last for an entire winter season. There is no need for a mains supply.

When not used, the system will automatically enter a sleep mode. There is no need for manual switch off.

# Information

## Information Board

The surface of the information board is divided into three areas:

- Graphical presentation of transceiver search phases
- Short user instructions in languages as ordered, up to two languages
- Lower area for placing logos, sponsors information and advertising

If the lower area is too small, an extra board must be installed. This extra board must not be mounted on the telescopic mast for reasons of overload.

**how to use**

**START / STOP**  
Durch Drücken der Taste START / STOP wird die Anlage innerhalb von 35 Sekunden aufgeweckt.

**Anzahl der Verschütteten wählen (max. 5)**  
Select the number of buried persons (max. 5)

**Suchzeit einstellen (max. 20 Min.)**  
Set the search time limit (20 minutes max.)

**START drücken**  
Die Anlage aktiviert nach dem Zufallsprinzip die eingestellte Anzahl Verschütteter und startet die Uhr.

**Suchen mit LVS und Sonde**  
Drei Sondeuren müssen innerhalb der Suchzeit im Zentrum eines Suchraums einen akustischen Signal aus (Signaltrenn). Zudem wird der Stand des Verschüttetenzählers auf dem Display um 1 reduziert.

**Ende der Suchzeit**  
Nach Ablauf der gewählten Suchzeit (oder wenn alle aktivierte Sender mit der Sonde getroffen wurden) ertönt der Signaltrenn und alle Sender werden ausgeschaltet.

**Bitte die Sender nicht ausgraben!**  
Please do not dig out the transmitters!

**manufactured by GIRSBERGER MOUNTAIN RESCUE TECHNOLOGY**

**how to search**

**STÖREINFLÜSSE**  
LVS-Geräte sind extrem empfindlich in Bezug auf elektrische und magnetische Störquellen. Wir empfehlen deshalb, im SEARCH Modus möglichst grosse Abstände von elektronischen Geräten wie Mobiltelefone, Funkgeräte, Stirnlampen, Action Cam, etc. einzuhalten.

**INTERFERNENZ**  
Avalanche transceiver are very sensitive to electrical and magnetic interference. We recommend keeping adequate distance from portable radios, mobile phones, headlamps, action cam and the like.

**1 SIGNALSUCHE SIGNAL SEARCH**  
Geschwindigkeit / Precision

**2 GROBSUCHE COARSE SEARCH**  
Genauigkeit / Precision

**3 FEINSUCHE FINE SEARCH**  
Point Search

**AUSGRABEN DIGGING OUT**

**GIRSBERGER Mountain Rescue Technology**

# Information

## Installation

First setup is done by Girsberger Elektronik AG together with the customer's personnel who will be responsible for the system.

## Deliverables

The deliverables include the complete ready-for-use system, the first setup as well as the instruction for the personnel.

## Delivery

The system will be delivered by Girsberger Elektronik AG within Switzerland. Delivery cost is included in the price.

The system will be delivered by Girsberger Elektronik AG to European and other countries. Delivery cost is not included in the price.

Customs will be handled by Girsberger Elektronik AG. Custom duties will be taken care of by Girsberger Elektronik AG.

## Maintenance

The positioning and the burial depth of the individual transmitters may need to be adapted during the winter season.

From time to time, you will need to clean traces from earlier exercises on the surface.

A functional check should be performed at regular intervals. At that time, it also makes sense to read out the exercise counters.

## Maintenance Cost

There will be annually recurring costs for replacing the batteries.

## Definitions

<b>ATC</b>	Avalanche Training Center
<b>LVS</b>	Lawinenverschütteten-Suchgerät
<b>Transmitter</b>	A transmitter that is buried in the search area and is capable of emitting exactly the same signals as an avalanche transceiver. The transmitter is turned on and off by wireless commands from the control unit.
<b>Probing Surface</b>	A surface (60 by 40 cm) is made of a plastic box containing the transmitter. The surface is reinforced and, on top of it, there is an elastic rubber sheet.

# Informationen

## Service / Support

Service and support will be provided at any time by Girsberger Elektronik AG. We do recommend that you have the system checked every 5 years by Girsberger Elektronik AG.

## Warranty

The ATC Avalanche Training Center comes with a 2 years warranty, starting at the time of sale as per the sales documents. All parts that have been proven to have a material or production fault will be replaced free of cost. Damage that has been caused by improper handling or normal use will not be covered. The warranty becomes void if devices have been opened by the customer or by non-authorized third parties. The use of devices with replacement parts or accessories that have not been recommended by the manufacturer also voids the warranty.

## Conformity

The ATC Avalanche Training Center is conformant to all relevant European and national regulations. Conformity has been documented, the respective declarations and documents are deposited at the manufacturer.

## ATC History of development

	<b>2002</b> Development of the world's first ATC Avalanche Training Center	<b>2003</b> Commissioning of the first three ATC's in Zinal, Andermatt and Davos	<b>2015</b> The ATC was completely revised and brought up to the latest technical state of art
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# ATC Avalanche Training Center

## Locations

### Switzerland

Adelboden  
Airolo  
Andermatt  
Avers/Juf  
Belalp  
Bettmeralp  
Bivio  
Braunwald  
Champéry - Les Crosets  
Crans Montana\*  
Disentis  
Fideriser Heuberge  
Flumserberg\*\*  
Haute Nendaz Siviez  
Laax  
Les Savagnières  
Leysin  
Les Diablerets  
Malbun  
Meiringen-Hasliberg  
Minschuns / Val Müstair  
Moleson  
Mürren  
Pizol\*  
St. Antönien  
Toggenburg/Sellamatt  
Val Bedretto  
(Capanna Piansecco)  
Verbier  
Wasenalp  
Zinal

### Germany

Bad Reichenhall\* \*\*\*  
Feldberg / Schwarzwald  
Mittenwald\* \*\*\*  
Spitzingsee\* \*\*\*

### Austria

Arlberg - Rendl\*  
Bad Gastein  
Dachstein  
Goldeck\*  
Jamtal (Galtür)  
Obergurgl\*  
Praxmar  
Schmirn  
Stubai Gletscher\*  
Tschagguns  
Tux

### Australia

Mount Hotham  
Thredbo NSW

### Sweden

Niehku - Riksgränsen\*\*\*

### Italy

Abetone  
Campo Imperatore\*  
Cortina d'Ampezzo\* \*\*\*  
Ladurns  
Madonna di Campiglio\*  
Pfelders - Moos i. Passeiertal  
Plose - Brixen  
Piz Sella - Wolkenstein  
Sextner Dolomiten  
Sulden  
Valle d'Aosta\*  
Val Formazza

### France

Alpe d'Huez\*  
Avoriaz  
Courchevel\*  
Grand Massif\*\*  
Labellemontagne  
Les Contamines  
La Plagne  
La Rosière  
Les Arcs  
Les 2 Alpes\*  
Méribel\*  
Serre-Chevalier\*  
Valmorel\*\*

All ATC manufactured by Girsberger Mountain Rescue Technology

\* on behalf of ORTOVOX Safety Academy \*\* on behalf of ARVA \*\*\* restricted access

# Comparison table

Main Features	ATC	RTX457
Up to sixteen remotely controlled transmitters	●	
Mobile System with 4, 5 or 6 transmitters		●
Random or individual transmitter selection	●	●
Random or individual transmitter selection	●	
Automatic probe hit indication	●	●
Configurable transmit patterns	●	●
Simulates transmit patterns of all current transceivers	●	●
Probing surface combined with transmitter case	●	●
Elastic probe hit surface for realistic probing	●	●
Reducible transmitter field strength		●
Compatible with all brands of transceivers (EN 300718)	●	●
Operation with standard alkaline batteries	●	●
Battery lifetime for an entire winter season	●	
Constant transmitter strength over battery lifetime	●	●
Single or multiple burial search scenarios	●	●
Search time indication	●	
Number of exercises readout at any time	●	
Range at least 150 m	●	
Information board with transceiver search phases and short instructions	●	
Professional and robust construction	●	●
Easy operation	●	●
Easy operation, immediately ready for use		●
Meets all European and national regulations	●	●
Developed and made in Switzerland	●	●

# ATC Avalanche Training Center Equipment

## Search Strategy Board

In cooperation with experts from the Mountain Rescue Switzerland and Tyrol, such as mountain guides and the SLF, we have developed the new information board „Search Strategy Board“. Our focus was to explain the search strategy with a LVS in the most simple possible way in the case of a single burial as well as a multiple burial step by step.

You will also find further information on the board such as

- Avalanche accident: Behaviour of the persons recorded - Behaviour of the persons not recorded
- First Aid
- Emergency Equipment
- Avalanche Transceiver Interferences

The Infoboard is available in four languages (DE, EN, FR, IT).

Customer-specific adjustments to the emergency number and logo placement are included in the price

### ► DIE KAMERADENRETTUNG HAT HÖCHSTE PRIORITY!

**SUCHSTRATEGIE BEI EINER EINFACHVERSCHÜTTUNG**

**WALINENUNFALL**

Verhalten der Ertrunkenen  
Verdeckt der Lawine zu retten, Skistöcke festhalten. Falls Lawinenabgang vorhersagbar diesen aushalten. Solange der Schneefall nicht aufhört, kann die gesuchte Kraft an der Oberfläche zu halten. Kurz vor dem Abgang kann die gesuchte Kraft versuchte Atemwegs möglichst frei zu halten.

Verhalten der Nichtertrunkenen  
• Lawinenabendrung und Erste Hilfe (Verschwindepunkt) genau beobachten  
• Überblick gewinnen - nachdenken, handeln, entscheiden, entspannen, Füllpumpe vermeiden  
• Atemwegs möglichst frei halten (falls keine Verbindung später stärkeren)

Die Gruppe bereitet die Sonden und Schaufeln vor. Der Ertrunkene wird erst nach abgeschlossener Feinsuche, Sonde und Schaufel herausnehmen und auf die Rettung übertragen.

**ALARMIERUNG**  
Telefon (Handy oder Festnetz) / App Schweiz (Rego) 1414 / Rego-App Kanton Wallis 144 Internationale Notruf 112

**UNFALLMELDUNG**

Wer ist der Unfallort?  
Wer meldet (Name, Telefonnummer, Adresse, Telefonnummer, Was ist geschehen? Was ist die Lawinenbedrohung? Wie viele Personen sind ganz verschüttet, Helfer? Wetter am Unfallort?

**GESCHWINDIGKEIT**

**GENAUIGKEIT**

**1. SIGNALSUCHE**

Primärversuchsbereich festlegen (in Fließrichtung des Verschwindepunkts). Den ersten Signalimpuls mit dem Sondenschwung, zeitgleich mit der Signalemission beginnen (sicht bedeutet LVS ausschalten). Ein Skistöckchen wird parallel abgesondert. Die Suchtrichtung wird von der Empfangsrichtung des LVS bestimmt (Siehe Aufdruck Gerätebeschreibung).

**2. GROSSE SUCHE**

Den ersten Signalimpuls mit einem Skistöckchen markieren. Den gesuchten Bereich abarbeiten. Folgen: Kleiner wendende Cettfer. Verschwindepunkte zeigen an, dass du auf dem Verschütteten näherst.

**3. FEINSUCHE**

Auf Kleinteile auseinander und das LVS dabei weiter drehen. Den gesuchten Bereich abarbeiten. Folgen: Kleiner wendende Cettfer. Verschwindepunkte zeigen an, dass du auf dem Verschütteten näherst.

**4. PUNKTSUCHE**

Beginn direkt bei der Markierung (kleiner Wert). Sonde mit dem Skistöckchen abarbeiten. Hoch springt - oder rechts/links von Ihnen nach aussen. Sonde in die gleiche Richtung abarbeiten. Erst jetzt Sonde und Schaufel absetzen und zusammensetzen. Nach erfreulicher Punktfeststellung wird das LVS-Markierfunktion anwenden.

**5. AUSGRABEN**

Bei einem Rettung: die Verschüttungsstelle an der Sonde abheben, bei flachem Boden mit dem Spaten abheben. Hoch springt - oder rechts/links von Ihnen nach aussen. Sonde in die gleiche Richtung abarbeiten. Nach erfreulicher Punktfeststellung wird das LVS-Markierfunktion anwenden.

**WICHTIG**

Nur mit einer vollständigen Rettung: Nur mit einer vollständigen Rettung hast du eine Chance, deine Freunde lebend aus einer Lawine zu bergen.

**LVS = Schaufel + Sonde = ca. 10 min**  
**LVS + Schaufel = ca. 25 min.**  
**LVS = ca. 1-2 h**

**LVS STÖREINFLÜSSE**

LVS-Geräte sind extrem empfindlich. In Berggebieten kann es zu Störungen durch Strömungen. Wer empfunden dasselbige, im Search Modus möglichst grosse Abstände zwischen dem LVS und dem Mobiltelefon, Funkgeräte, Stirnlampen, Action Camcorder, etc. einkehren.

**GIRSBERGER**  
Mountain Rescue Technology

### ► COMPANION RESCUE HAS HIGHEST PRIORITY!

**SEARCH STRATEGY FOR A SINGLE BURIAL**

**AVALANCHE ACCIDENT**

If caught:  
• Try to escape the avalanche area. If you are still pinned, if possible, release it. As long as the snow is firmly attached to your body, do not try to avalanche. Just before coming to a standstill hold your arms in front of your face and try to keep them always free from snow.

If not caught:  
• Watch the avalanche flow and the persons caught (remember the last avalanche).

Get an overview - think - act; assess your own safety, avoid further avalanches - don't panic. Turn on your transceiver (if no connection, alert later).

If in a group prepare probe and shovel. If alone wait until you have finished the first search before assembling probe and shovel.

**ALERT**  
Phone (Cell or SMS) / App Schweiz (Rego) 1414 / Rego-App Kanton Wallis 144 Internationale Notruf 112 / App Echo 112

**ACCIDENT REPORT**

Where is the accident location?  
Who is calling (name, phone number, address, etc.)  
What happened?  
When did the accident happen?  
How many completely buried victims, helpers?  
Weather in the area?

**SPEED**

**PRECISION**

**1. SIGNAL SEARCH**

Decide on the primary search area (downhill of the point of disappearance). Turn off all avalanche beacons not needed for the search. Search the avalanche debris with your eyes and ears while starting the signal search. The search strip width (SSW) depends on your transceiver receiver performance.

**2. COARSE SEARCH**

Mark the first signal reception with a ski pole. Follow the direction arrow on the display. Directly above the probe, search the spot with the lowest distance. At this point get out your shovel and probe.

**3. FINE SEARCH**

At knee height search in a cross pattern do not rotate the avalanche beacon. Directly above the probe, search the spot with the lowest distance. At this point get out your shovel and probe.

**4. POINT SEARCH**

Start probing at your marker. Hold the probe with both hands and work in a right angle to the probe. Directly above the probe, search the spot with the lowest distance. At this point get out your shovel and probe.

**5. DIGGING OUT**

In case of one rescuer:  
• Hold shovel depth at probe. In low angle terrain start shoveling from twice that height. In steep terrain start with a high angle, then down, shovel in a U shape.

If you have more than one searcher use the conveyor belt technique.

Uncover head and chest as fast as possible, clear airways, check if there is a breathing囊 in the snow (snow filled airway + no breathing囊).

**FIRST AID**

Search off the avalanche transceiver of the found person (if you have to search for other persons):

• According to BLS (Basic Life Support): - If no pulse, giving vital signs, start with resuscitation  
• Prevent further cooling - wrap victim in a warm coat  
• Take care of the victim very carefully

**IMPORTANT**

Only with a complete avalanche safety kit you and your friends will have a chance of surviving an avalanche.

**TRANSEIVER = SPODE + PROBE = ca. 10 min**  
**TRANSEIVER + SPODE = ca. 25 min.**  
**TRANSEIVER = ca. 1-2 h**

**INTERFERENCE**

Avalanche transceivers are very sensitive to electrical and magnetic interference. We recommend a minimum distance from portable radios, mobile phones, headlamps, action cameras and the like.

**ATC**  
BEDIENUNGSANLEITUNG/MANUAL

Herzlichen Dank  
unseren Sponsoren



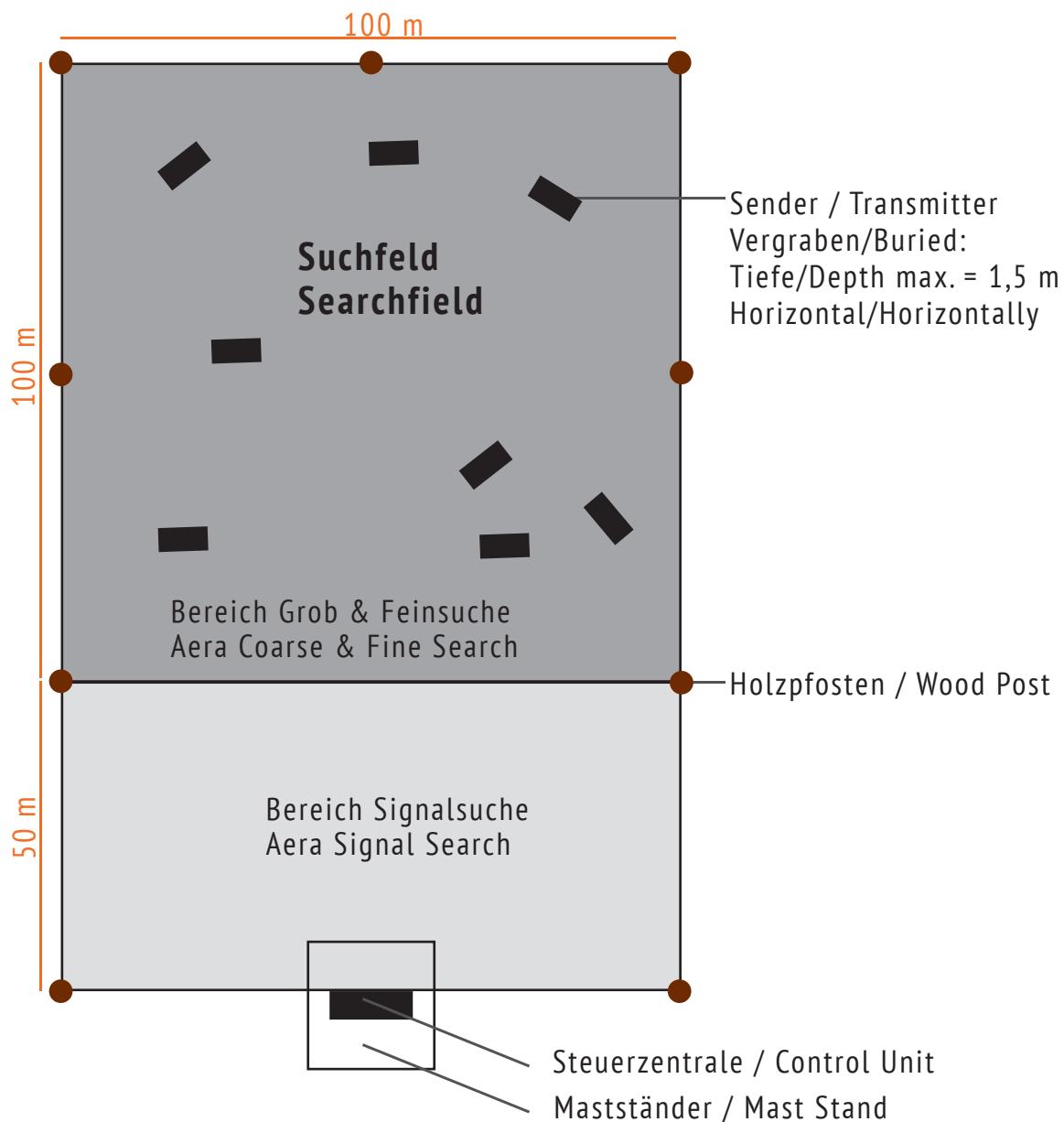
## ATC Signpost

Material: Alu-Dibond

Dims.: 450 x 150 x 4 mm



# ATC Aufbauanleitung / Assembly Guide



**SEHR WICHTIG:** 150 METER MINDEST ABSTAND VON STÖRQUELLEN:

**VERY IMPORTANT:** 150 METER MINIMUM DISTANCE FROM SOURCES OF INTERFERENCE:

- ELEKTRISCHE FREILEITUNGEN / ELECTRIC POWER LINES
- BERGBAHNEN, BESCHNEIUNGSSYSTEME / MOUNTAIN RAILWAYS, SNOWMAKING SYSTEMS
- TECHNISCHE GEBÄUDE, TRAFOSTATIONEN / TECHNICAL BUILDINGS, TRANSFORMER STATIONS,
- PISTEN (LVS GERÄTE) / SLOPES (AVALANCHE TRANSCEIVERS)

**SEHR WICHTIG:** KEINE ELEKTRISCHE BODENLEITUNGEN INNERHALB DES SUCHFELDES

**VERY IMPORTANT:** NO ELECTRICAL GROUND LINES WITHIN THE SEARCH FIELD

**SICHERHEITSEMPFEHLUNG:** ABSPERRUNG UND UMZÄUNUNG DES ATC

**SAFETY RECOMMENDATION:** CORDON OFF AND FENCE OFF THE ATC

**EMPFEHLUNG ERKENNBARKEIT:** PISTENPLAN EINBINDUNG, BESCHILDERUNG, FAHNEN ETC.

**RECOMMENDATION RECOGNISABILITY:** PISTE MAP INTEGRATION, SIGNAGE, FLAGS, E.G.

**MASTSTÄNDER:** GEWICHT BELASTEN (Z.B. STEINE, WASSERKANISTER)

**MAST STAND:** BURDEN WITH WEIGHT (E.G.)



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All components of the ATC Avalanche Training Center have been developed and manufactured in Switzerland.

Girsberger Elektronik AG will always strive to deliver top quality equipment.

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