GOLDEN MASK

PROFESSIONAL SERIES

Altus

HYBRID TECHNOLOGY

User Guide

Golden Mask Altus User Guide - ver. 1.0 (last updated: November 2025)

About the Altus

The Golden Mask Altus represents a new generation of professional metal detectors. Built with the proprietary Binary Sinus Pulse (BSP) technology, the Altus offers the depth, sensitivity, and target separation needed for advanced treasure hunting.
Designed in cooperation with Bulgaria's most experienced detectorists, it is engineered to locate valuable targets that conventional detectors fail to detect.

Altus Overview

The Golden Mask Altus is a real game changer. It incorporates the new Golden Mask Binary Sinus Pulse (BSP) hybrid technology to outperform any detector on today's market. The shape and cycle of emitted magnetic fields are key to achieving superior detection depth. Mass-market detectors typically use one of two field types:

1. Continuous Sinusoidal Fields (VLF-based):

Efficient, lightweight, fast-response, and easy to produce with good discrimination.

Drawbacks: Shallow depth, poor ground noise suppression, and reduced performance in mineralized soils.

2. Pulsed Rectangular/Trapezoidal Fields (PI-based):

Greater depth, robust in diverse soils, and broader signal range.

Drawbacks: High power consumption, heavy, very expensive, complex, and slow signal analysis with poor selectivity.

To overcome these limitations, GM developed BSP (Binary Sinus Pulse) — a hybrid waveform combining two sine signals of different frequencies, producing a continuous bipolar pulse with sinusoidal edges and plateaus. BSP technology key benefits:

- Exceptional depth performance
- Full ground and cavity noise suppression
- Wide signal spectrum detection
- Strong magnetic field with low power use (high efficiency)
- Lightweight and compact
- Simple and robust search coil system
- High immunity to external interference
- Superior discrimination and selectivity
- Fast, clear target response (high scan rate)

BSP merges the strengths of both VLF and PI systems without their flaws. It supports both deep relic hunting and fast coin shooting. BSP is already implemented in the fast and deep-seeking ALTUS detector.

This detector "loves" targets with high VDI - 60 and above. It could detect targets

made from high conductive metals as Silver, Copper, Bronze and other alloys at incredible depths, while targets with low VDI as tiny jewellery pieces made from low-conductive metals as Gold are detected at "normal" depth, compared to the best detectors on today's market. Note that the VDI depends on the target size and shape mainly, so a Gold coin for example could be a high-VDI target, depending on it's weight, size and alloy ingredients. Rings are usually detected very deep, because they are in fact a closed electrical coil (this is valid for most metal detectors).

Coils and Compatibility

The Altus operates exclusively with Golden Mask BSP-series search coils. These coils are specially tuned for the Altus BSP platform.

Using non-BSP or third-party coils will damage the electronics of your detector and void warranty.

IMPORTANT! PLEASE READ!

The Altus is a very deep PROFESSIONAL metal detector. As such, it has a prolonged learning curve - you will need some time to get used to the detector and it's behaviour. Please, do NOT expect that you will reveal the machine's full potential in a day or two. We would say a week would be normal, but it is strictly individual - some people learn fast, other people - not so fast. So, have patience and try to understand how your machine behaves on different spots and with different settings. We are sure you will be more than happy with your Altus after you get used to it.

Control Panel Overview

1. Power & Audio – ON/OFF VOLUME

Powers the unit and adjusts speaker/headphone volume. Rotate clockwise to switch on and increase volume.

Higher volume makes target signals easier to hear in noisy environments, but it does not increase detection depth or sensitivity. Always use the lowest comfortable loudness to avoid ear fatigue and signal distortion.

2. Discrimination – DISC. LEVEL

Discrimination determines how strongly the detector ignores iron and other unwanted metals.

• Low settings allow more target signals through and provide maximum depth. You may hear iron responses.

• Medium settings balance depth and iron rejection for general searching.

• High settings reject most iron and low-conductive metals, but reduce overall depth and may eliminate small, thin, or low-conductive targets such as small gold items.

Higher discrimination always = more filtering and less depth.

3. Tone Pitch – TONE

This control adjusts the frequency (pitch) of the audio signal only. It helps you select a tone that is most comfortable and easiest for your hearing. It has no effect on depth, discrimination, sensitivity, or target identification. It is a purely ergonomic preference setting.

4. Threshold Level – THRESHOLD

Threshold sets the faint background hum of the detector when no metal is present. This hum acts as a reference point:

• A low, stable threshold allows you to hear weak, deep targets more clearly.

• If set too high, the constant noise will mask faint signals and cause listening fatigue.

• If set too low or silent, you lose sensitivity to very deep or tiny targets.

Proper threshold setting improves both depth perception and response speed.

5. Ground Balance – GROUND BAL.

Essential for stable operation in mineralized soils.

• Normal Range: Precise manual balancing for standard soils

• HR (Hot Rocks): Universal setting for highly mineralized or variable ground conditions

Ground Balance Steps

1. Locate soil spot free of metal.
2. Pump the coil 5–20 cm above the surface.
3. Adjust GB until coil movement produces minimal or no response.

For difficult ground, reduce sensitivity and repeat the process.

6. Sensitivity – SENSITIVITY

This control regulates the detector's amplification and response to weak signals.

• Higher sensitivity increases detection depth and reactivity to small objects

• Too high makes the detector unstable in mineralized soils or EMI-rich areas

• Lower settings improve stability but reduce depth

The goal is to run sensitivity as high as possible while keeping the detector stable.

Operating Conditions

Outdoor Use

The Altus is designed for open terrain. In urban settings, electrical noise and metallic structures may cause instability, false tones, or reduced depth.

For accurate performance testing, operate the detector outside populated areas.

Nearby Metal Detectors

When two metal detectors run close together on similar frequencies, interference tones are normal. Increase distance or adjust settings to reduce noise.

Mobile Phones

Mobile phones with weak network reception periodically increase transmission power, potentially causing strong EMI, resulting in false signals. In normal conditions, phones do not interfere with the Altus.

Maintenance and Care

Coil Protection

Avoid bending or pulling the coil cable where it enters the coil housing. Mechanical stress may break internal wires and cause malfunction.

Cleaning

Use a soft, damp cloth. Do not use detergents and solvents. A drop of soft hand soap on a wet cloth is quite enough and will not harm the detector surface.

Temperature Precautions

After sudden transitions from hot to cold environments—or vice versa—allow 5–10 minutes for the electronics to stabilize before switching on.

Physical Impact

Do not strike the coil on stones, rocks, or hard surfaces.

Coil protection

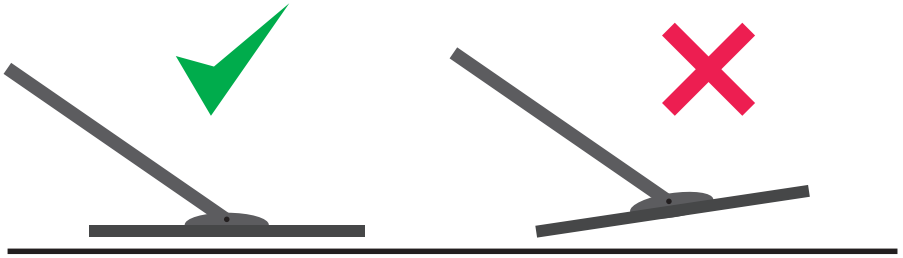
The Altus search coils have a Kevlar/Carbon bottom for strength. An additional protector is not needed and is not offered, since it adds weight, at least.

Searching for Metal Objects

The Golden Mask Altus detector operates in MOTION mode, meaning it can identify a target only when the search coil is in motion. To perform an effective search, sweep the coil left–right just above the ground surface while moving forward at a steady pace. Maintain an overlapping, snake-like coil pattern to ensure complete ground coverage and avoid missing potential targets.

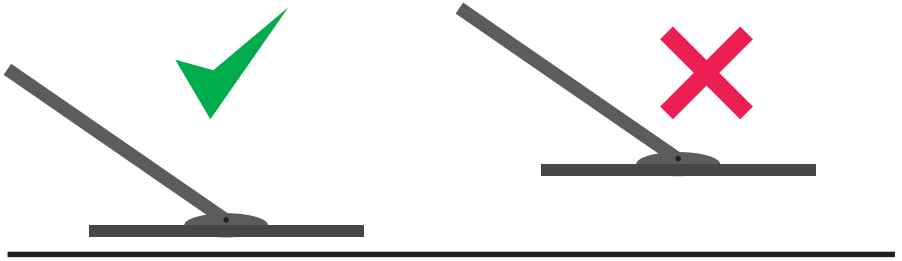
For optimal performance:

• Keep the coil parallel to the ground throughout the sweep. This guarantees the best stability and maximum detection depth.



• Maintain a consistent sweep speed—not too fast and not too slow. With practice, you will determine the ideal pace, although slightly slower sweeping generally produces better results.

• Keep the coil as close to the surface as possible without touching it. Lifting the coil too high will significantly reduce detection depth.



When a metal object enters the detection field, the detector emits an audio response. The type of sound depends on the selected audio mode.

Using the Wireless Headphones

Your Golden Mask Altus may be equipped with optional low-latency WS wireless headphones. The detector is fully WS-ready, so headphones can be purchased and paired at any time.
Important: The Golden Mask Altus does not include a port for wired headphones.

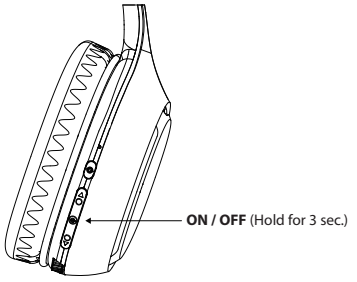
To use the wireless headphones:

1. Set the switch on the detector's front panel to WS HEADPHONES.

2. Turn on the headphones by holding their ON/OFF button for approximately 3 sec.

3. When ready, the headphones will begin to blink blue, indicating active wireless connection.

Volume is controlled by the detector's VOLUME knob, exactly as when using the built-in speaker.



Pairing the WS Headphones

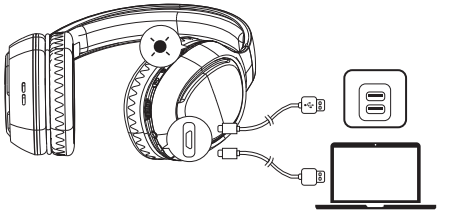
The latest WS headphone models (starting from WS107) support automatic proximity pairing. When both the detector and the headphones are powered on and placed close together, pairing is completed automatically.

Recommended pairing procedure:

1. Switch on the detector and set it to WS HEADPHONES mode.

2. Turn on the wireless headphones.

3. Keep them within a short distance to establish the connection.



Flashing Red Light Twice Every 30 Seconds	Low battery
Steady Red Light	Being charged
Light Off	Fully charged

Charging the Wireless Headphones

The WS headphones contain an internal, non-removable rechargeable battery. Charge them using the supplied USB cable and USB wall charger (or any USB power source providing at least 2A).

• A red LED light indicates active charging.

• When the light turns off, charging is complete and the cable can be disconnected.

Charging the Detector Battery

The Golden Mask Altus includes a factory-installed 8.4V 6000 mAh Li-Ion battery. Under normal conditions, the battery provides approximately 6-7 hours of continuous operation, depending on the sound volume level. If you use the detector with the wireless headphones, this could increase the working time with approximately 1 hour and even up to 2 hours in ideal temperature and usage conditions.

Temperature Considerations

- At temperatures below 10°C, actual battery capacity decreases.
- Near or below 0°C, capacity may drop by up to 50%.
- As temperature rises again, the battery returns to normal performance.

Before First Use

The detector is shipped with about 20% battery charge. You must charge the battery at 100% before operating the detector for the first time.

Charging Frequency

Recharge the detector before every search day to ensure sufficient power. Li-Ion batteries do not suffer from memory effect—charging at any level is safe for the battery.

When the battery reaches a minimum level, a continuous sound is emitted (sounds like an old mobile ring tone). You must charge the battery to continue using the detector.

Charging Procedure

1. Locate the charging socket on the front side of the control box.

2. Connect the charger to the charging port.

3. Plug the charger into a power socket.

4. The charging LED will turn RED during charging and switch to GREEN when charging is completed.

The detector charging system automatically disconnects charging once the battery is full. Although not required, unplugging the charger afterward is

recommended for energy efficiency.

At room temperature, the battery is charged from 5 to 100% in approximately 3.5 hours.

Battery lifespan is approximately 1000 charge cycles with proper use and storage.

Warning: Do not turn on the detector while charging or while connected to the charger. This could damage the detector electronics.

Battery Care Guidelines

Follow these recommendations to maximize battery health and lifespan:

- Do not charge the battery below 5°C. Allow the detector to reach room temperature for 3–6 hours before charging.
- Store the detector between 5°C and 25°C.
- Do not leave the battery unused for long periods. Check charge level every 6 months and recharge if necessary.
- Before long-term storage, charge or discharge the battery to about 50%.
- Recharge to 50% at least every 6 months during storage.
- Monitor older batteries closely. Typical Li-Ion life expectancy is 2–3 years or 300–500 cycles.
- Battery self-discharge increases at temperatures above 20°C.

Li-Ion Battery Safety Rules

- Do not disassemble, crush, or puncture the battery.
- Do not short the external contacts.
- Do not dispose of a battery in fire or water.
- Do not expose to temperatures above 60°C (140°F).
- Avoid excessive shock or vibration.
- Do not use a damaged battery.
- If the detector has been stored long-term and the battery is completely depleted, consider it damaged—do not attempt to recharge. Contact your dealer for replacement.
- Replace the battery if runtime drops below 70% of original or charging time increases significantly.

• If battery fluid contacts the eyes, flush thoroughly with water for 15 minutes and seek medical attention.

• Follow all local regulations regarding transportation and recycling of Li-Ion batteries. Transporting damaged or end-of-life batteries may be restricted.

• For recycling: follow local guidelines or contact your regional battery recycling organization.

Helpful Advice

• Do not test the detector indoors—houses contain numerous electromagnetic interference (EMI) sources that will cause instability and false signals.

• Sweep the coil close to the ground without touching it. Avoid overly fast movement. Practice will help you find the optimal speed.

• Always respect private property and obtain permission before detecting. Unauthorized detecting can result in legal and financial consequences.

• Follow all national laws regarding cultural heritage and archaeological sites. In all European countries, metal detecting on or near archaeological sites is strictly prohibited.

Good Luck!

TECHNICAL SPECIFICATIONS	
Operating principle	BSP (Binary Sinus Pulse)
Operating frequency	BSP Multi-Frequency
Audio tones	Bi-Tonal
Audio output	Speaker or Wireless Headphones
Wireless headphones	Optional WS107, WS-ready
Wireless technology	Real time audio (Low Latency 12ms), 2.4Ghz
Discrimination	Yes, high-fidelity discrimination at any depth
Ground balance	Manual
Search Coils	Golden Mask BSP
Weight	1.9 kg with 11x14" BSP coil
Shaft	Adjustable lenngth, carbon fibre telescopic shaft
Battery (main)	Li-Ion 6000 mAh
Power Autonomy (detector on speaker)	Minimum 6 Hours (temperature and sound volume depending)
Power Autonomy (detector on WS headphones)	Up to 7 Hours (temperature depending)
WS107 Power Autonomy	Up to 45 Hours (temperature and sound volume depending)
Warranty	5 Years Warranty - the electronics 2 Years Warranty - the battery and the coil(s)
Charger	Dedicated charger
Operating Temperature Range	-10°C to +40°C (+14°F to +104°F)