Pilot's Guide

SkyHound

Traffic and Weather Receiver

with Integrated Display



Warnings, Cautions & Notes

SkyHound is an advisory traffic and weather awareness display. It is not a certified primary navigation, terrain, obstacle, or collision-avoidance system.

WARNING: Install and mount SkyHound so that it does not obstruct the pilot's field of view or interfere with aircraft controls, instruments, or emergency egress.

WARNING: Do not rely solely on SkyHound traffic information for collision avoidance maneuvering. The pilot remains responsible for see-and-avoid and for compliance with ATC instructions and standard operating procedures.

WARNING: Traffic shown on the display may be incomplete or inaccurate. Aircraft without compatible equipment, poor signal reception, limited ADS-B ground-station coverage, shielding, or erroneous transmitted data can result in traffic not being shown or being shown incorrectly.

WARNING: Do not use data-link weather information for close-in tactical maneuvering in, near, or around hazardous weather. NEXRAD and other weather products may not represent current conditions at the aircraft's location.

WARNING: Do not use the displayed age of weather products as the sole indicator of data timeliness. Collection, processing, uplink, and reception delays can make weather information older than the displayed age.

WARNING: GPS-derived position, ground track, time, and other computed indications may differ from panel instruments, certified avionics, or other approved sources. Resolve any discrepancy before relying on displayed information.

WARNING: SkyHound operating procedures should be learned and practiced on the ground before use in flight.

WARNING: No portable device can monitor every possible failure condition. Cross-check SkyHound information against outside visual scanning, certified cockpit instruments, and other available information sources.

WARNING: Do not use outdated software, configuration data, or stale weather information. Advisory displays are only as useful as the data currently being received and shown.

WARNING: SkyHound is intended for traffic and weather awareness only. Do not use it as the primary source for navigation, terrain clearance, obstacle clearance, or aircraft separation.

CAUTION: Use only a soft, clean, lint-free cloth to clean the display and casing. If needed, lightly dampen the cloth with water or isopropyl alcohol. Do not use abrasive or aggressive chemical cleaners.

CAUTION: SkyHound contains no pilot-serviceable internal components. Unauthorized repair, modification, or wiring changes may reduce reliability and may void product support or regulatory compliance.

NOTE: Use of polarized eyewear may make the display appear dim or change perceived contrast.

NOTE: Screen images and feature behavior may differ slightly from the installed software version or future product revisions.

NOTE: Lightning depiction is still under development in the supplied SkyHound UI reference and should be treated as preliminary unless confirmed by the installed software release.

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SECTION 1 OVERVIEW

1.1 Unit Overview

SkyHound presents advisory traffic and weather awareness information on a compact radar-style display. The display emphasizes nearby traffic, monitored airport weather, NEXRAD availability, GPS status, and system status indicators.

Unlike a full-featured aviation navigator, SkyHound is focused on situational awareness. It does not provide route navigation, terrain or obstacle clearance, certified weather avoidance guidance, or collision-avoidance resolution advisories.



Representative SkyHound display layout

1.2 Getting Started

Before flight, confirm that the SkyHound installation is secure, the display is visible without obstructing the outside scan, and any connected power or antenna leads are routed so they cannot interfere with controls.

- Apply power to the SkyHound system in accordance with the installed hardware instructions.
- Allow the unit to acquire GPS position and ADS-B reception, indicated by tracked aircraft. Confirm GPS has a lock.
- Verify the displayed own-ship information. Select to edit own-ship data by tail number.
- Confirm the desired display brightness, traffic filter setting, alert setting, and radar range before takeoff.

Preflight Recommendation

- Practice common tasks on the ground before first operational use.
- Verify that display brightness is adequate for cockpit lighting conditions.
- Treat missing traffic, missing weather, or unexpected own-ship data as a condition requiring cross-check and troubleshooting.

1.3 Connecting SkyHound to an EFB (Electronic Flight Bag)

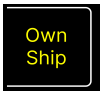
SkyHound supports most major EFB applications (ForeFlight, Garmin Pilot on IOS, iFly, Etc…)

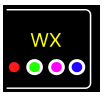
- Apply power to the SkyHound system in accordance with the installed hardware instructions.
- Allow the unit to fully boot and hit Accept on the disclaimer screen.
- Search for the SkyHound WIFI network on your EFB device **'SkyHound_SKH1-[your serial number]'**
- Join the network
- If needed accept the warning that the network does not provide Internet access
- Open your EFB and allow up to 30 seconds for your EFB to discover and utilize SkyHound as an ADS-B device

Note: Most EFBs will automatically discover SkyHound. SkyHound provides an industry standard GDL-90 data feed. It is possible your EFB will not automatically discover SkyHound and may need some additional settings enabled. Please review the documentation for your EFB for any additional settings. You may also contact info@houndavionics.com and we will attempt to assist you to the best of our abilities based on our experience testing EFB software.

1.4 Controls and Indicators

The SkyHound display is built around a central radar presentation with dedicated status and control keys around the perimeter. The supplied reference identifies the following primary controls and indicators:

Control / Indicator	Function
  **GPS Status**	Shows GPS lock status and satellites in use versus visible. EXT is displayed when the external GPS is in use.
 **ID**	Toggles aircraft identification labels on traffic targets.
 **Brightness**	Changes screen brightness to support daytime, dusk, and night cockpit conditions
 **Own-Ship**	Shows entered own-ship identity.

Control / Indicator	Function
 **Weather**	Indicates METAR availability for up to 4 monitored airports and opens weather details.
 **NEXRAD**	Shows when a NEXRAD image is available.
  **Zoom - / Zoom +**	Changes radar display range from 2 NM to 100 NM.
 **Aircraft Tracking**	Indicates the number of aircraft currently being tracked.
 **Tower Icon**	Shows reception of an ADS-B ground-station signal.
 **Auto Range**	Automatically adjusts range to the nearest displayed traffic, to a minimum of 2NM.
 **Alerts**	Toggles between high, low and off traffic alert status and indications.
 **Filter +/- 5k ft**	Filters out traffic more than 5,000 feet above or below your current position.
 **Track/North**	Toggles track-up or north-up display orientation; track-up engages automatically above 30 knots (if option is enabled through Settings Setup).
 **Settings**	Opens system configuration settings screen.
 **Time**	Shows GPS-derived Local time (as a pilot configured offset) or Zulu time.

1.5 Display Conventions

- Traffic is shown relative to own-ship on the circular radar display.
- Relative altitude is displayed in hundreds of feet.
- Target trend arrows indicate climbing or descending traffic when the climb or descent rate exceeds 500 feet per minute.
- A line extending from a target indicates approximate course and speed trend.

- Range values (+/-) on the left and right of the radar image correspond to the current radar scale. Select to increase or decrease the range.
- Weather dots in the WX area indicate the flight category of the monitored airports: green for VFR, blue for MVFR, red for IFR, and purple for LIFR.

1.6 Basic Operation

A typical in-flight workflow is to confirm own-ship and GPS status, select an appropriate range or Auto Range, enable alerts as desired, and then monitor the display while maintaining an outside scan.

Range management: Use Zoom - and Zoom + to select a range appropriate to traffic density and phase of flight. Auto Range can reduce workload by keeping the nearest relevant traffic in view.

Target labeling: Use ID when you want to display tail numbers or flight numbers for identified traffic targets.

Weather review: Select WX to review monitored airport METAR information and adjust the airport list.

Orientation: Use Track/North to match the display to pilot preference. In higher-speed operation, automatic track-up behavior can make traffic geometry easier to interpret (when enabled in Setup Settings).

Status checks: Monitor the tower icon, aircraft tracking, and GPS status, to confirm that the system has the inputs needed for advisory display functions.

1.7 Settings

The Settings control opens system configuration functions identified in the SkyHound reference. Update, Status, Setup, Volume, Timezone offset, Restart and Sleep options. Also shown on the bottom of this screen is the SkyHound serial number and software version.



- 'Update' allows you to download the latest software version when available. To complete this process, you must connect to a Wi-Fi network. When selected, the Update Settings screen will scan for available networks. You can select a detected network or manually enter a Wi-Fi network. The unit will automatically reboot with the new version if there was an update.



- 'Status' shows the status of the SkyHound unit including Messages, UAT Towers, Radio Devices, Device Stats, GPS Accuracy and Pressure Altitude.



'Setup' Settings include the following:

- 'Auto Track' will enable the unit to switch from North up to Track up mode automatically when the own ship reaches 30 knots.
- 'Speed-Aware Alerts' will suppress traffic alerts until the own ship reaches 30 knots. This is designed to suppress traffic alerts prior to takeoff.
- 'Baro Sensor' can be disabled if SkyHound is within a pressurized cabin. When 'Baro Sensor' is off GPS altitude will be used for relative traffic altitude information (Note - GPS altitude can be different from ADS-B altitude by as much as 500').



- 'Volume' sets the volume for audio output.
- 'Timezone' is used to set the Zulu time offset for local time.
- 'Restart' reboots the unit.
- 'Sleep' will put the unit into a low power state while keeping the GPS active. This will ensure a fast GPS lock when the unit is rebooted. Unplug the unit from power and then plug it back in to wake from sleep.

Operational status is shown continuously through the GPS, tower and aircraft tracking. A disciplined scan should include these status items, not just the traffic symbols in the center of the display.

SECTION 2 TRAFFIC AWARENESS

2.1 Traffic Overview

SkyHound's primary display function is advisory traffic awareness. Traffic targets are shown on the radar display using information received on both 1090 MHz Extended Squitter (1090ES) and 978 MHz UAT.

Traffic information is intended to improve situational awareness. It does not replace visual scanning, radio communications, or standard see-and-avoid techniques.

2.2 Radar Display

The center of the display provides a radar-style plan view around own-ship (current location). The circular rings help the pilot judge proximity, and the displayed range values indicate the selected scale.

Use the radar display to identify traffic concentration, relative bearing, approximate closure trend, and which traffic is nearest. The display is best used as a cueing aid to direct the pilot's visual scan.

2.3 Target Information

- Relative altitude is displayed in hundreds of feet from own-ship.
- Range is measured from the current GPS-derived own-ship position.
- Up and down arrows indicate traffic climbing or descending by more than 500 feet per minute.
- A course/speed trend line provides an indication of target movement.
- When ID is enabled, the system displays the target's tail number or flight number when available.

2.4 Alerts

The Alerts control toggles visual and audible alerting settings between High, Low and Off. When enabled, SkyHound can provide attention-getting cues for relevant traffic conditions as defined by the installed software.

Pilots should verify the alert setting before takeoff. Advisory alerts are helpful, but they should never substitute for active visual scanning or radio/ATC awareness.


TRAFFIC
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-
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BZ2026
+25
GTG2024
86
Zulu
11:59
ALERT
SkyHound™


GPS
20/26
Own
Ship
WX
NEXRAD
ID
N
2
-
2
+
+2
BZ2026
+25
GTG2024
86
Zulu
11:59
Auto
Range
Alerts
Low
Filter
±5kft
Track
North
SkyHound™

2.5 Display Filtering and Orientation

The Filter +/- 5k ft control limits displayed traffic to aircraft within 5,000 vertical feet of own-ship. This can reduce clutter in busy airspace, especially during cruise.

Track/North selects either north-up or track-up presentation. SkyHound will automatically switch to track-up above 30 knots if enabled in Setup Settings. Pilots should understand the selected orientation before interpreting traffic bearing.

Interpreting a Filtered Display

- Filtered traffic is not the same as absent traffic.
- Traffic above the selected filter band may still be operationally relevant in climb or descent.
- Turn off the filter when a wider vertical awareness picture is needed.

2.6 ADS-B Coverage and Limitations

- Traffic display quality depends on compatible traffic transmissions being received by SkyHound.
- Some aircraft may not appear because they are not equipped, are transmitting incomplete data, or are outside effective reception/ground-station coverage.
- Signal blockage by aircraft structure, installation geometry, or local interference can affect reception.
- Ground-station dependent services may be unavailable at low altitude, on the ground, or in areas with limited coverage.

Because of these limitations, traffic not shown on the display must still be considered possible at all times.

SECTION 3 WEATHER AWARENESS

3.1 Weather Overview

SkyHound provides advisory weather awareness functions built around monitored-airport METAR information and NEXRAD availability. These features are intended to improve strategic awareness, not tactical penetration or close-in weather maneuvering.

Weather information on SkyHound should be cross-checked with certified or approved cockpit sources, ATC information, preflight briefings, and common-sense avoidance practices.

3.2 Monitored Airport METARs

The WX control indicator will turn on (yellow) when at least one METAR report is available and displays four color-coded status dots for the monitored airports.

Color	Flight Category
Green	VFR
Blue	Marginal VFR
Red	IFR
Purple	Low IFR

Select WX to review METAR information for the monitored airports and to change which airports are being monitored.

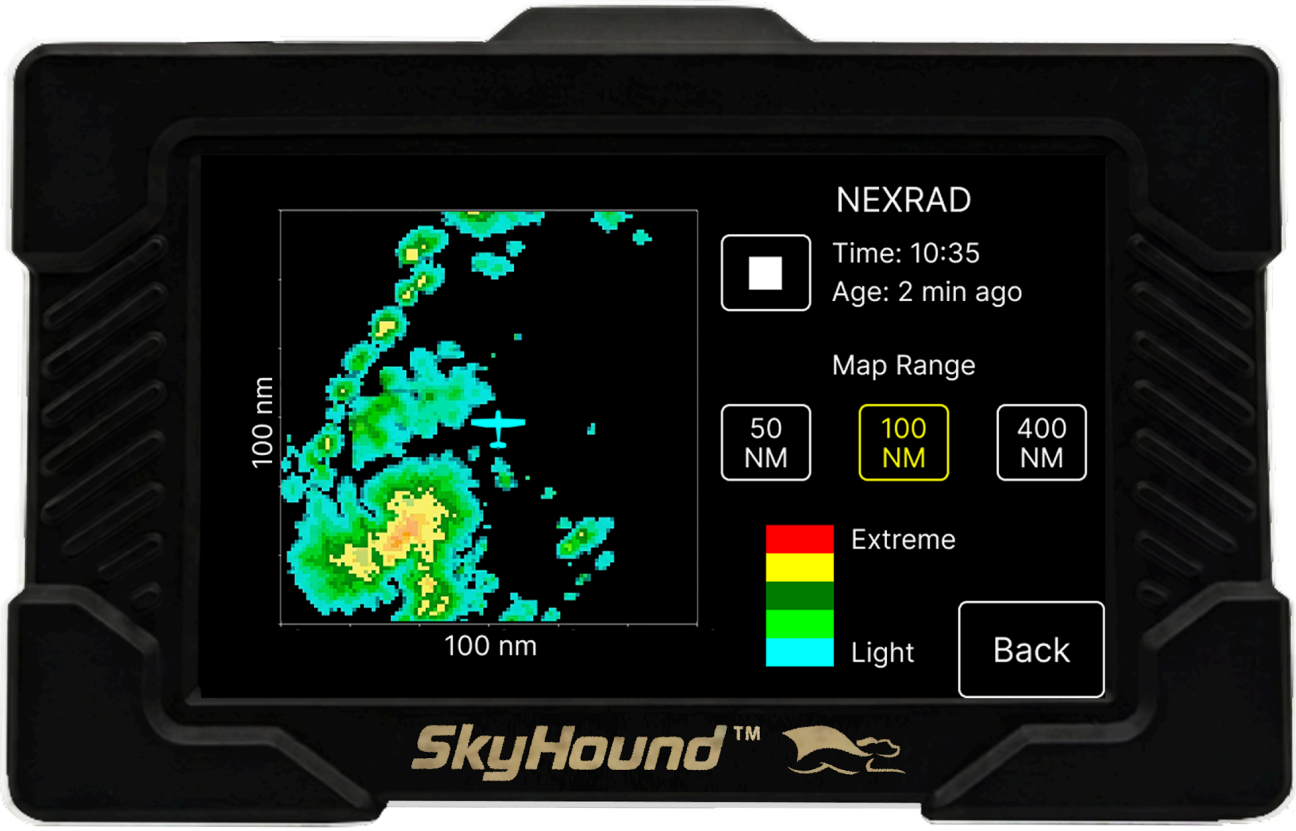


3.3 NEXRAD

The NEXRAD indicator illuminates when a NEXRAD image is available. NEXRAD should be used to identify broader areas of precipitation and convective activity, not as a real-time tactical weather picture.

The Time displayed refers to the time the Nexrad image is captured and transmitted to the ADS-B network for distribution. The Age is the amount of time between when the image was captured and your current time.

Because NEXRAD is a processed mosaic product, the displayed precipitation picture can lag actual conditions by several minutes or more.



3.4 Weather Data Limitations

- Do not use displayed weather information for close-range thunderstorm penetration or avoidance maneuvers.
- Weather product age does not fully account for upstream collection and processing delays.
- Coverage, reception quality, and service availability may change with altitude and location.
- A monitored airport showing no valid color indication may reflect unavailable, stale, or unreceived data rather than good weather.

SECTION 4 ADDITIONAL FEATURES

4.1 GPS Status

The GPS Status indication shows the number of satellites in use versus visible. Reliable own-ship presentation depends on valid GPS position data.

If GPS status is lost, advisory traffic will not be displayed, and a message will appear saying "attempting GPS lock".

EXT will appear if an external GPS is plugged into the unit.

4.2 Time Indication

SkyHound displays GPS-derived time and allows the pilot to toggle between local time (via a manually configured offset) and Zulu time.

Use Zulu time when working with aviation weather products, flight planning references, and other time-sensitive operational information.

4.3 Brightness and Audio

Brightness cycles through four display levels to support daytime, dusk, and night cockpit conditions.

Volume is managed through the Settings menu. When alerts are enabled, verify that the selected volume is appropriate for cockpit noise conditions without becoming distracting. Audio alerts will only be heard if SkyHound is connected to an audio panel through the audio port. SkyHound does not have a built in speaker system.

SECTION 5 APPENDICES

Appendix A Control Reference

Item	Normal Indication / Action	Pilot Use
GPS Status	Satellites in use / visible	Confirms own-ship position quality.
WX	METAR availability and airport color dots	Check monitored-airport conditions.
NEXRAD	Illuminates when data is available	Strategic convective awareness.
Tower Icon	Ground-station signal present	Indicates ADS-B tower reception (UAT 978 mhz).
Aircraft Tracking	Tracked target count	Quick awareness of traffic density.
Auto Range	Automatic range management	Reduces workload in changing traffic density.
Alerts	Visual and audible alerting on/off	Attention cueing for relevant traffic.
Filter +/- 5k ft	Traffic within 5,000 feet vertically	Reduces clutter when needed.
Track/North	North-up or track-up	Match display to pilot preference.

Item	Normal Indication / Action	Pilot Use
Settings	Update, Status, Setup, Volume, Timezone offset, Restart and Sleep	System setup and management.

Appendix B Abnormal Operation

No GPS lock: Own-ship position and any GPS-derived functions are unavailable. Use other sources and troubleshoot GPS reception or installation.

No tower indication: ADS-B weather or rebroadcast services may be unavailable in the current location or altitude band.

Unexpected loss of traffic: Assume traffic may still be present. Increase outside scanning and verify antenna, reception, and filter settings.

WX indicator not showing current data: Confirm service availability, reception, and monitored airport configuration.

Own-ship incorrect or absent: Review entered tail number and clear/re-enter if necessary.

Appendix C Installation and Care

- Mount the display where it is easy to scan without blocking critical external visibility.
- Ensure the installation does not interfere with yoke, stick, throttle, flap, trim, or switch movement.
- Route power, antenna, and accessory leads (if used) so they cannot snag, chafe, or interfere with aircraft operation.
- Keep the display clean using only approved non-abrasive cleaning methods.
- Protect the unit from unnecessary heat exposure when the aircraft is parked.
- Do NOT leave the unit in the cockpit when not in use. Similar to a car, the cockpit of an aircraft can reach extreme temperatures that may exceed the storage and/or operating temperatures of the unit.

Appendix D Display/Status Quick Reference

- GPS showing low or no satellite count: own-ship position may be degraded.
- Tower icon not lit: uplink-dependent services may be limited.
- WX dots colored green / blue / red / purple: monitored airports indicate VFR / MVFR / IFR / LIFR.
- Filter lit: traffic above or below the 5,000-foot filter band is suppressed.
- ID lit: target identification labels are shown when available.

Appendix E Glossary

1090ES - ADS-B traffic transmission on 1090 MHz Extended Squitter.

978 UAT - ADS-B Universal Access Transceiver traffic/weather data link used in the United States.

ADS-B - Automatic Dependent Surveillance-Broadcast.

METAR - Meteorological Aerodrome Report.

NEXRAD - Next-generation weather radar mosaic product.

Own-Ship - The aircraft currently being represented by the SkyHound display.

Track-Up - Display orientation in which current aircraft track is toward the top of the screen.

Zulu - UTC-based aviation standard time reference.