

GB30

User Guide

Local Base Station

Uplink Base Station



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Screens illustrate operation; sensitive text is masked and displayed values are not performance commitments. Match this guide to the installed version. Positioning depends on sky view, installation and network conditions.

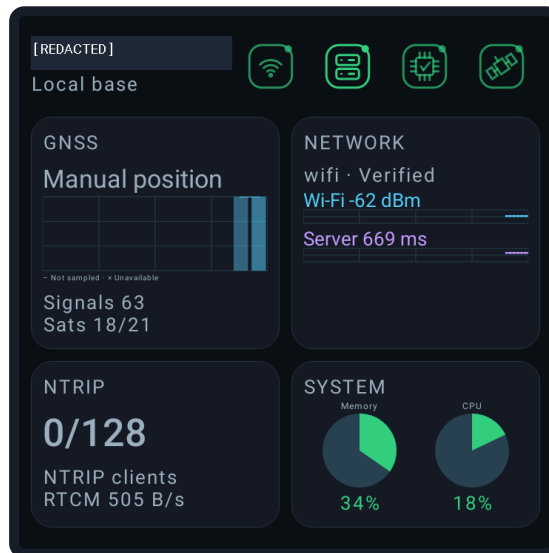
Two operating modes

Local Base Station

Local Base Station mode runs a Caster on the device. It serves the integrated receiver's local correction source and can accept independent sources from uplink stations.

Uplink Base Station

Uplink Base Station mode uploads a locally generated correction source to another bound Caster while its own Caster stays disabled. Each uplink station uses an independent, editable source name.



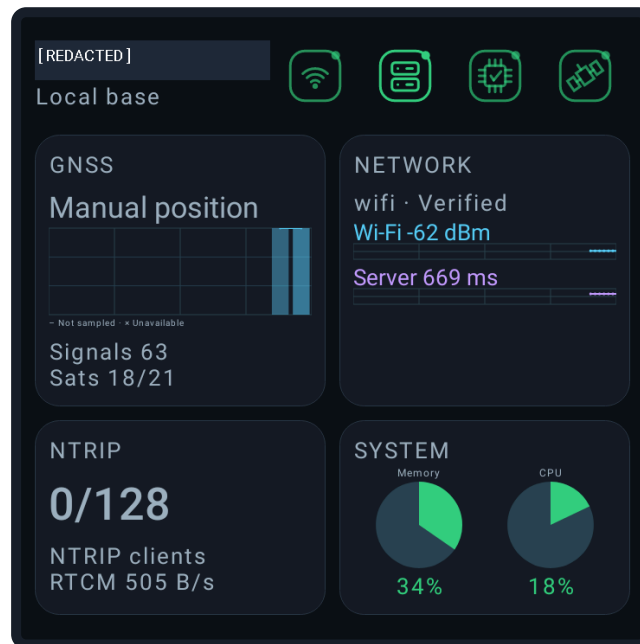
Local Base Station

Identify the sender, receiver and mountpoint before selecting a mode. Configuration exchange, correction reception and source upload can coexist and are separate operations.

01

Product overview and operating modes

GB30 combines positioning observations, correction-source services and connection monitoring. This guide covers Local Base Station and Uplink Base Station operation.



01-01 / Product overview and operating modes

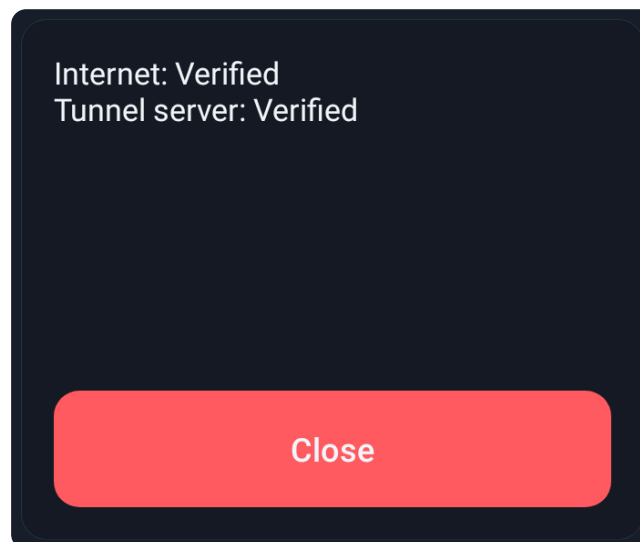
A Local Base Station runs its own Caster and serves local and accepted upstream sources to NTRIP clients. An Uplink Base Station disables its own Caster and uploads an independent source to a bound Caster.

Identify the sender, receiver and mountpoint before selecting a mode. Configuration exchange, correction reception and source upload can coexist and are separate operations.

02

Preparation and first start

Install the base securely in a stationary position with stable power. Connect a suitable antenna and check the mounting and connectors. Use the power supply specified for the device.



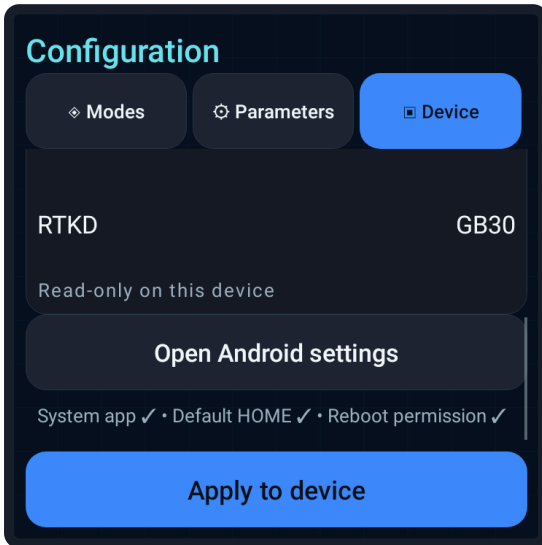
02-01 / Preparation and first start

After startup, check the network, system time and receiver status. Record the software version and intended configuration. An indoor check does not replace positioning checks with a clear sky view.

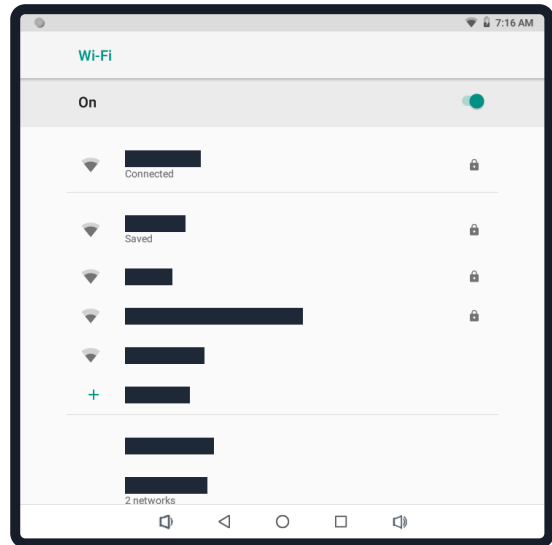
Allow observations and service status to stabilize before applying parameters. Do not interrupt power during configuration writes or updates. Follow device labels for electrical ratings and interfaces.

First startup: connect to Wi-Fi

Settings → Device → Open Android settings → Network & Internet → Wi-Fi



02-02 / First startup: connect to Wi-Fi



02-03 / Wi-Fi

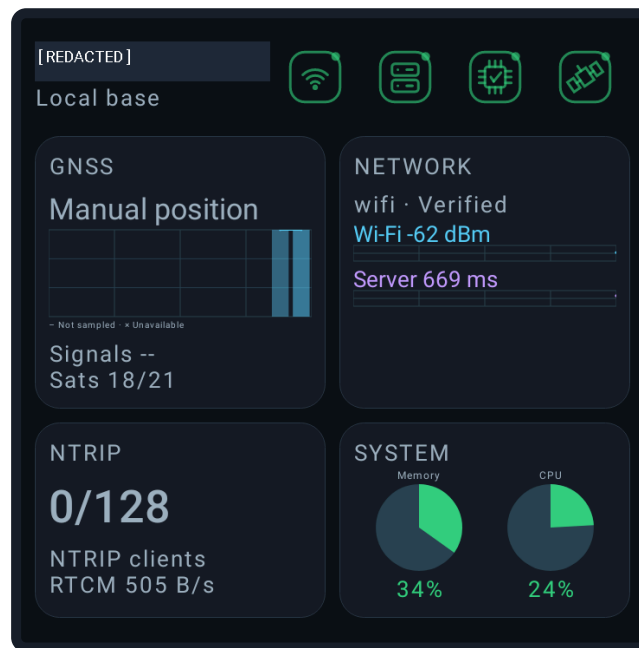
1. With stable power, wait for Home. Touch the screen to reveal bottom navigation, open Settings, select Device and tap Open Android settings. Scroll down on the Device tab to reach this button.
2. Open Network & Internet → Wi-Fi; some firmware shows Wi-Fi directly. Enable Wi-Fi and select the intended available network.
3. Enter the wireless network password and tap Connect. Wait for Connected. Complete web sign-in if required; obtain the password from the site network administrator.
4. Use the system Back control to return to GB30 Home. Open the Network card and check the interface, address and quality, then check tunnel-server status separately.

A Wi-Fi connection confirms wireless access only. It does not prove Internet or tunnel-server access. Check the network name, password, signal and sign-in requirements if connection fails; do not clear device bindings to troubleshoot Wi-Fi.

03

Home screen and status indicators

The four upper-right indicators show the network, tunnel server, background service and integrated receiver. Green indicates a verified state, yellow waiting or degraded quality, and red an error; read the detailed status.



03-01 / Home screen and status indicators

Open the four cards for GNSS, network, NTRIP and system information. Bottom navigation hides when idle and returns during touch interaction. CPU and memory are whole-device percentages.

Network access does not prove server connectivity, and server connectivity does not prove correction delivery. Use activity animations together with live counters, timestamps and diagnostic details.

04

Positioning and satellite monitoring

RTK Fixed, RTK Float, Single, DGNSS, no fix and manual position describe different conditions. A manually assigned base position is not proof of a current RTK fixed solution.



04-01 / Positioning and satellite monitoring

Open GNSS to inspect visible, received and used satellites, individual signals and frequencies. Count signals by satellite plus frequency: three received frequencies from one satellite are three signals.

Home history samples every 30 seconds; details and NMEA refresh at the page cadence. Not sampled, unavailable and zero are different. Check receiver availability, data age and received-line counts together.

Raw NMEA



04-02 / Raw NMEA

Open GNSS to inspect visible, received and used satellites, individual signals and frequencies. Count signals by satellite plus frequency: three received frequencies from one satellite are three signals.

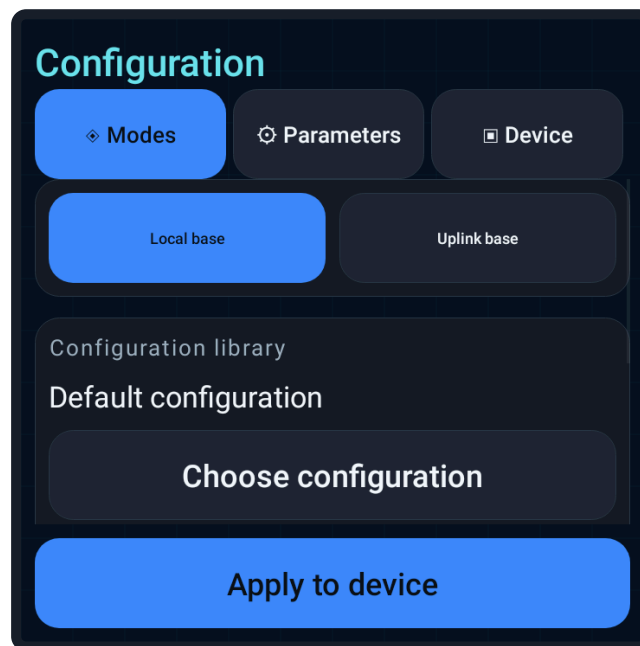
Home history samples every 30 seconds; details and NMEA refresh at the page cadence. Not sampled, unavailable and zero are different. Check receiver availability, data age and received-line counts together.

Sensitive text in figures is masked.

05

Local Base Station mode

Local Base Station mode runs a Caster on the device. It serves the integrated receiver's local correction source and can accept independent sources from uplink stations.

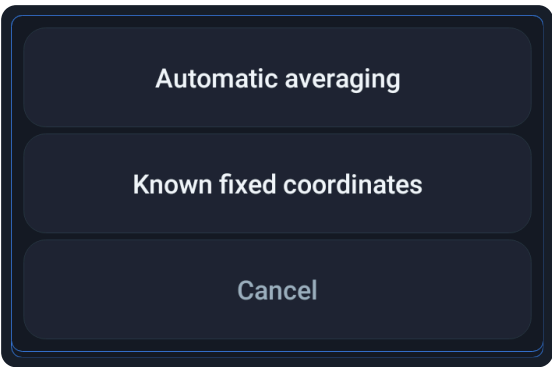


05-01 / Local Base Station mode

In Settings select Local Base Station, load a profile and choose survey-in or known fixed coordinates. Configure the mountpoint, port, protocol and access credentials, apply, and inspect the result.

Verify the coordinate method, listening service, sourcetable and actual data stream separately. Standalone averaging does not establish control-point accuracy; validate reference frame, height type and antenna reference for known coordinates. With survey-in, a reuse distance of 0 recalculates coordinates after restart. The local satellite reference is not sent as a receiver command.

Coordinate methods and parameters



05-02 / Coordinate methods and parameters

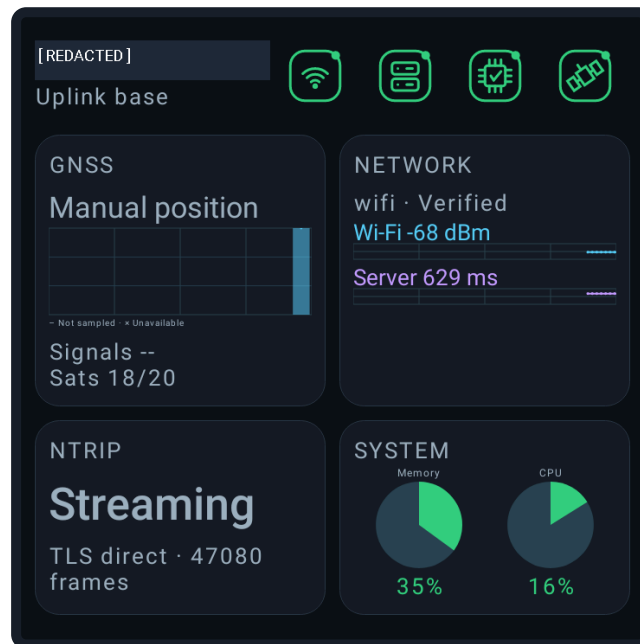
Parameter	Input range	Coordinate methods and parameters
Duration (s)	0-3600 s	Survey-in
Saved-coordinate reuse distance (m)	0-10 m	Survey-in
Local satellite reference (not sent)	4-40	Survey-in
Latitude (degrees)	-90 ... +90°	Fixed coordinates
Longitude (degrees)	-180 ... +180°	Fixed coordinates
Height (m)	-1000 ... +10000 m	Fixed coordinates
Station ID	0-4095	RTCM
Undulation (m)	auto / -1000 ... +1000 m	

Use the current device configuration. Ranges describe input validation and do not guarantee positioning accuracy.

06

Uplink Base Station mode

Uplink Base Station mode uploads a locally generated correction source to another bound Caster while its own Caster stays disabled. Each uplink station uses an independent, editable source name.



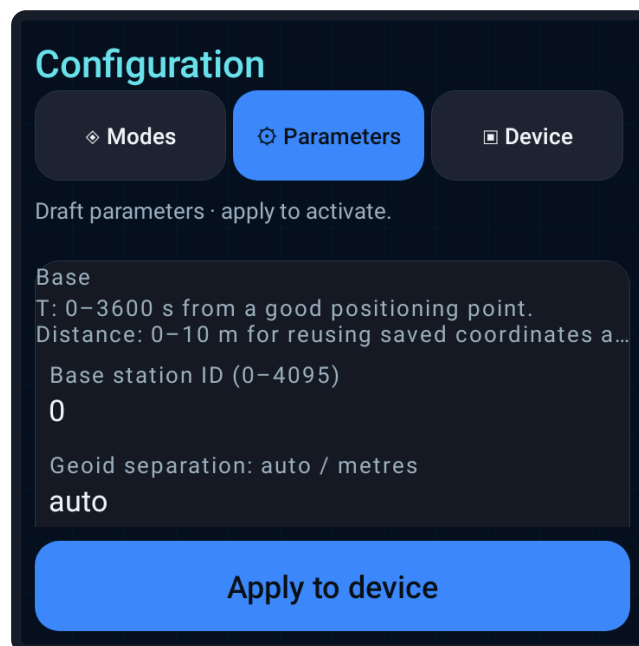
06-01 / Uplink Base Station mode

Bind and select the target Caster in NTRIP and obtain its access configuration. Automatic calibration first receives corrections for a reliable fixed position, then switches the receiver to base output and uploads its source.

Inspect calibration state, final coordinate method, registration and uploaded data. If prerequisites fail, read the timeout, configured averaging fallback or diagnostics. Waiting for calibration is not successful upload.

Automatic calibration and upload

Bind and select the target Caster in NTRIP and obtain its access configuration. Automatic calibration first receives corrections for a reliable fixed position, then switches the receiver to base output and uploads its source.



The screenshot shows a mobile application interface for configuring a device. At the top, the title 'Configuration' is displayed in a light blue font. Below the title are three tabs: 'Modes' (with a diamond icon), 'Parameters' (with a gear icon and highlighted in blue), and 'Device' (with a monitor icon). Below the tabs, a message reads 'Draft parameters · apply to activate.' The main content area contains the following settings: 'Base' (with a sub-note 'T: 0–3600 s from a good positioning point. Distance: 0–10 m for reusing saved coordinates a...'), 'Base station ID (0–4095)' with the value '0', and 'Geoid separation: auto / metres' with the value 'auto'. At the bottom of the screen is a large blue button labeled 'Apply to device'.

06-02 / Automatic calibration and upload

Calibration timeout (s)

30-1800 s

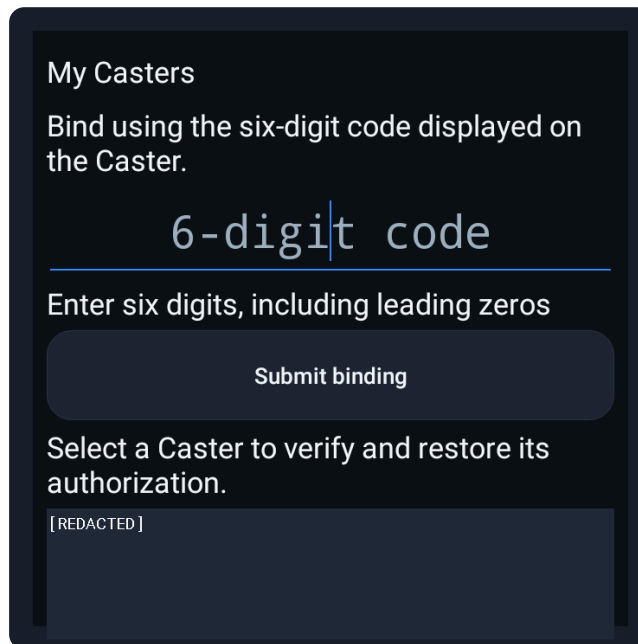
Inspect calibration state, final coordinate method, registration and uploaded data. If prerequisites fail, read the timeout, configured averaging fallback or diagnostics. Waiting for calibration is not successful upload.

Use the current device configuration. Ranges describe input validation and do not guarantee positioning accuracy.

07

Networking, pairing and transport

A six-digit code establishes the initial binding. It is valid for 15 minutes; share it through a trusted channel and complete device confirmation as prompted. A valid binding survives code expiry.



The screenshot shows a dark-themed interface titled "My Casters". Below the title, it says "Bind using the six-digit code displayed on the Caster." followed by a large "6-digit code" label with a vertical line indicating the input position. Below this is the instruction "Enter six digits, including leading zeros". A "Submit binding" button is visible. At the bottom, it says "Select a Caster to verify and restore its authorization." followed by a "[REDACTED]" label.

07-01 / Networking, pairing and transport

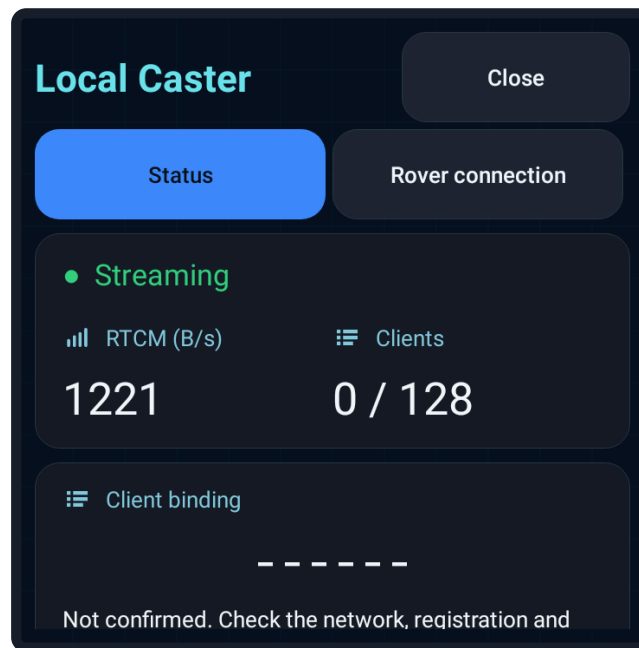
Use the pairing entry on the local Caster. On the uplink device enter all six digits, including leading zeros, submit and wait for authorization. Select from your own bound-Caster list to obtain configuration.

Standard direct NTRIP, TLS upload and tunnels are distinct paths. Verify network, management connection, binding, data channel, NTRIP authorization and actual correction data in that order.

08

Caster and correction sources

The sourcetable discovers available correction sources; the mountpoint selects a specific stream. Keep the local source and each uplink source independent. Do not combine correction bytes from different bases into one source.



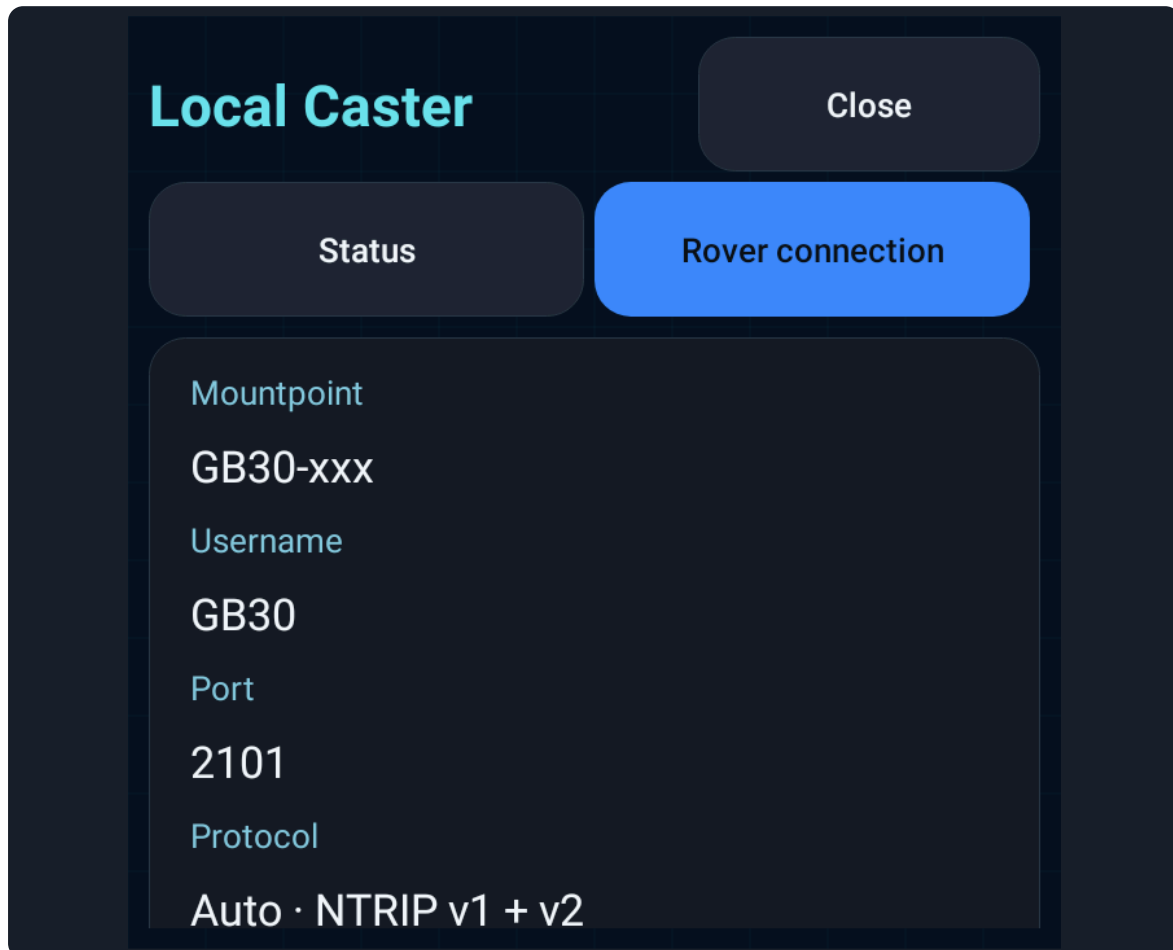
08-01 / Caster and correction sources

Check listener address, port, protocol, account and access permissions. After accepting an uplink station, confirm its independent source is registered, connected and receiving new data.

An IP must be reachable through the actual network path. A private LAN address is not automatically reachable from the Internet. Capacities depend on current configuration and policy, not a tested load guarantee.

Access parameters

Check listener address, port, protocol, account and access permissions. After accepting an uplink station, confirm its independent source is registered, connected and receiving new data.



08-02 / Access parameters

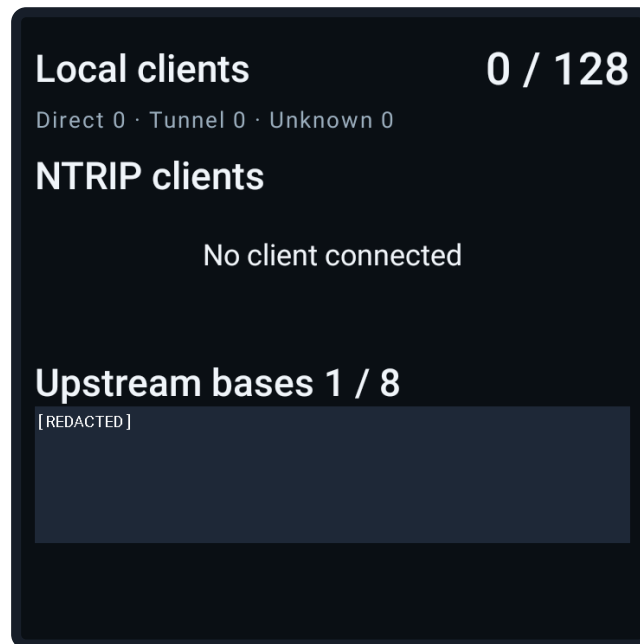
The sourcetable discovers available correction sources; the mountpoint selects a specific stream. Keep the local source and each uplink source independent. Do not combine correction bytes from different bases into one source.

An IP must be reachable through the actual network path. A private LAN address is not automatically reachable from the Internet. Capacities depend on current configuration and policy, not a tested load guarantee.

09

Connection monitoring

The Clients page separates NTRIP stream consumers from uplink stations. Connection icons distinguish direct and tunnel paths; rates and update times show ongoing exchange.



09-01 / Connection monitoring

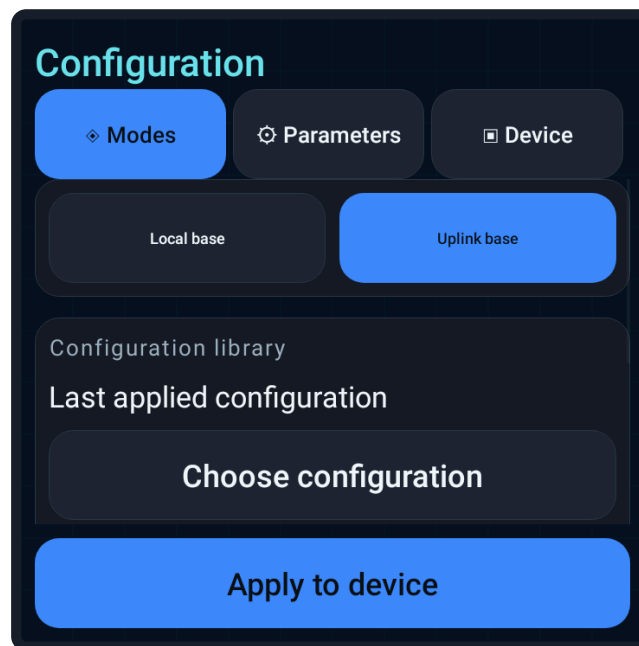
Choose the appropriate category and inspect connection details. Check input rate for uplink sources and selected mountpoint/output rate for consumers. Verify the target before disconnecting a session.

Explicit disconnect and sudden network loss are detected differently. A lost connection may remain until its configured timeout. Distinguish active sessions, timeout waiting and history from cumulative counts.

10

Settings, profiles and maintenance

Each operating mode has separate profiles. Settings may show a selected draft while Home shows the running configuration. Saving a profile does not apply it to the receiver.



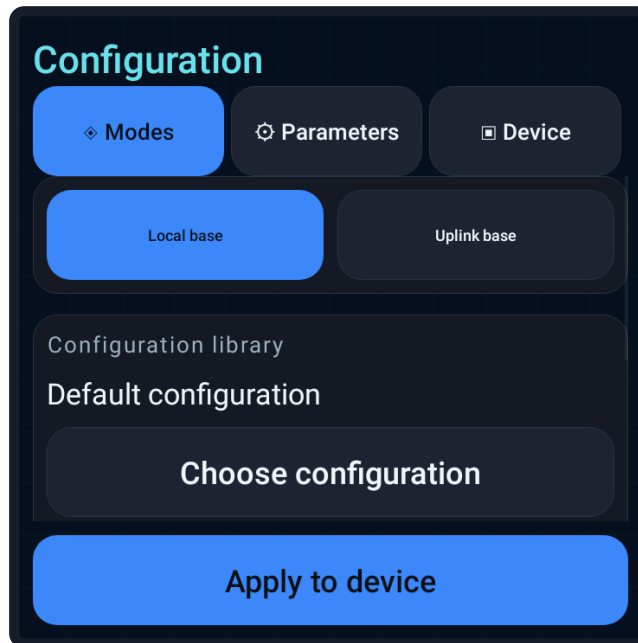
10-01 / Settings, profiles and maintenance

Load the default, last-applied or a custom profile. Edit and save a named copy, then choose Apply to device. Wait for command confirmation and service recovery and verify Home.

Follow the field guidance for retaining an existing password when leaving replacement input empty. Do not record real credentials in shared documents. Keep network and system time aligned; language changes do not apply a working profile.

Saving and restoring configuration

Each operating mode has separate profiles. Settings may show a selected draft while Home shows the running configuration. Saving a profile does not apply it to the receiver.



10-02 / Saving and restoring configuration

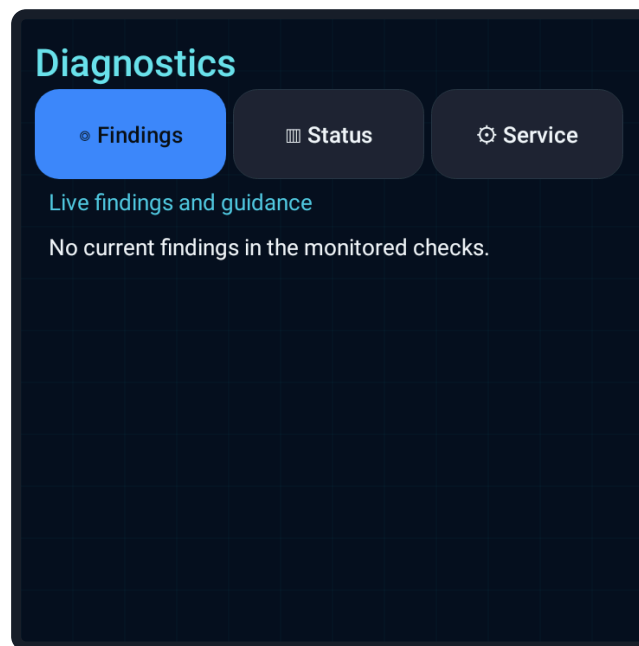
1. Load the default, last-applied or a custom profile. Edit and save a named copy, then choose Apply to device. Wait for command confirmation and service recovery and verify Home.
2. For local operation check the listener and source output. For uplink operation check binding, calibration, source registration and receiving-side data. After restart confirm the saved role, configuration and services recover.

Follow the field guidance for retaining an existing password when leaving replacement input empty. Do not record real credentials in shared documents. Keep network and system time aligned; language changes do not apply a working profile.

11

Diagnostics and troubleshooting

Troubleshoot along the data path: power and receiver, positioning, network, registration, binding, transport, NTRIP authorization, source registration and correction continuity.



11-01 / Diagnostics and troubleshooting

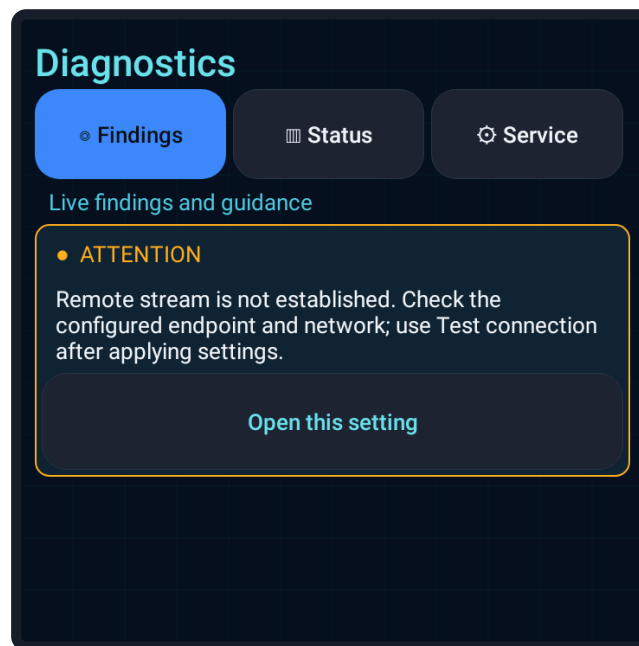
Read the precise diagnostic cause and suggested action before changing settings. When data is missing, verify the target mountpoint and live increments; a downloadable sourcetable or green icon alone is insufficient.

Change one item and recheck the result. Keep timestamps and credential-free status evidence. Do not repeatedly erase bindings, recreate identities or reset the device instead of diagnosing the cause. Contact support when needed.

12

Appendices and quick operation

Before handover record purpose, role, coordinate method, target source, network path and software version. Assign credential and authorization management to responsible personnel.



12-01 / Appendices and quick operation

For local operation check the listener and source output. For uplink operation check binding, calibration, source registration and receiving-side data. After restart confirm the saved role, configuration and services recover.

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Terminology

Local Base Station	Local Base Station
Uplink Base Station	Uplink Base Station
Integrated receiver	Integrated receiver
RTK Fixed	RTK Fixed
RTK Float	RTK Float
Survey-in	Survey-in
Fixed coordinates	Fixed coordinates
Mountpoint	Mountpoint
Sourcetable	Sourcetable
Pairing and binding	Pairing and binding
Direct connection	Direct connection
Tunnel connection	Tunnel connection

RTK Fixed, RTK Float, Single, DGNSS, no fix and manual position describe different conditions. A manually assigned base position is not proof of a current RTK fixed solution.

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GB30 support: contact your supplier or designated maintenance personnel.