Notoxytech GCS Companion for Windows

User Manual

Version 4.0 · October 2026
For drone operators

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1. About this manual

This manual shows you, step by step, how to fly and film with **Notoxytech GCS Companion for Windows**. You do not need any technical knowledge. GCS means **Ground Control Station**: the screen you use to watch, control and film with your drone.

The Companion runs on a Windows laptop next to your remote controller. The laptop joins the Wi-Fi of the remote and shows the same flight data, map and camera picture on a big screen. You can control the drone and the camera from the laptop as well as from the remote.

How to read this manual

- Words in **bold** are buttons or names you see on the screen.
- A path like **SETUP › Map** means: open SETUP, then choose Map.
- Yellow numbered circles in the pictures match the numbered list under each picture.
- Safety boxes tell you how to avoid damage or injury. Always read them.
- For the OEM manufacturer boxes mark settings protected by a password. They are set up by the manufacturer of your drone system and are not explained in this manual.

2. Before you fly

Check these things every time, before you switch anything on.

What you need

- The drone, with charged flight batteries.
- The remote controller with Notoxytech GCS running on it, and a charged Windows laptop.
- Offline maps of the flying area, if there is no internet there (see “The map”).

Safety rules

- Fly only where flying is allowed, with the permissions your country requires.
- Keep the drone in sight. Stay away from people, buildings, power lines and airports.
- Do not fly in rain, strong wind or fog.
- Before take-off, make sure nobody is near the propellers.
- Keep enough battery to come back. Start returning when the battery reaches your reserve, not when it is empty.
- If anything looks wrong in the air, press **Pause** first: the drone stops and holds its position. Then think.

> **SAFETY**
> The GCS helps you fly, but you are always responsible for the flight. Never rely on the screen alone; keep watching the drone.

3. Starting the app

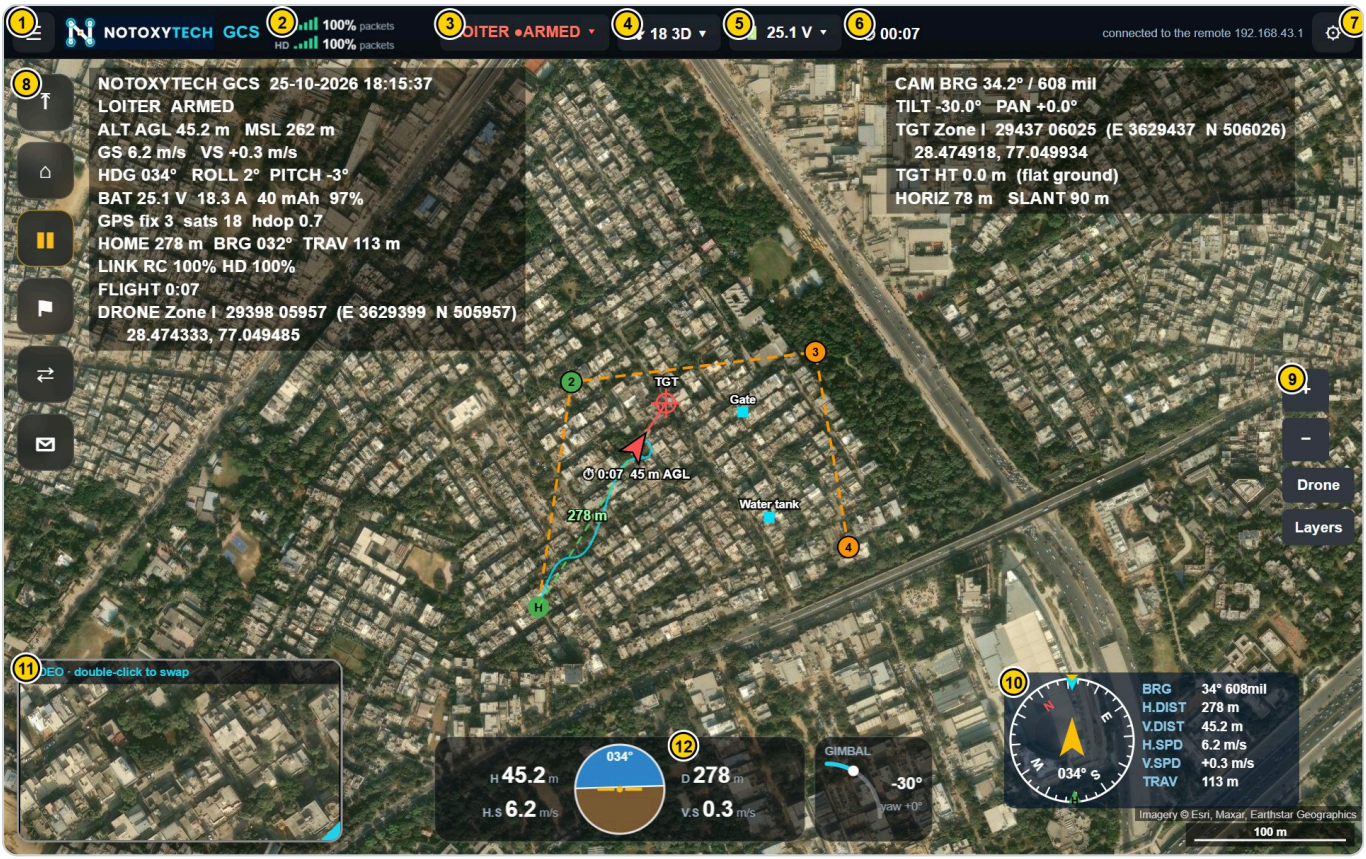
The app opens with the Notoxytech entry video. Press **ENTER ▶** (or wait for the video to end) to reach the main screen. The **Preflight checklist** may open next (see “Preflight checklist”).

1. Switch on the remote controller and open Notoxytech GCS on it.
2. On the remote, turn on its Wi-Fi hotspot. On the laptop, join that Wi-Fi network.
3. Double-click **NotoxytechGCS-Companion.exe**. It finds the remote by itself.
4. The first time, Windows asks whether to allow the app through the firewall. Tick **Private** and **Public**, then click **Allow**.

> **TIP**
> To close the app, click ⏻ **EXIT** at the bottom of the side menu.

4. The main screen

The main screen shows everything you need while flying. The map and the camera picture share the screen: one is large, the other is a small window in a corner.



The main screen with the map large.

1. **Menu** ☰ – opens the side menu with the tabs (FLY, PLAN, TARGET, POINTS, GIMBAL, SETUP).
2. **Signal** – RC: the link from you to the drone (control). HD: the link from the drone to you (video and data). 100% is a perfect link. Click for details.
3. **Flight mode and ARMED / DISARMED** – click to change the mode, or to arm and disarm.
4. **GPS** – number of satellites and fix. Wait for **3D** and at least 10 satellites before you fly.
5. **Battery** – voltage; click for percentage and details.
6. **Flight timer** – time since the motors were armed.
7. **Setup** ⚙ – settings (see "Settings you can change").
8. **Left buttons** – take off / land, return home, pause, start mission, swap map and video, messages.
9. **Map buttons** – zoom in and out, **Drone** (centre on the drone and follow it), **Layers** (map style).
10. **Compass and distances** – drone heading, home (H) and camera direction, with bearing and distance to home.
11. **Small window** – the camera picture. Double-click it to swap it with the map.
12. **Instruments** – height (H), speed (H.S), distance to the next waypoint (D), climb speed (V.S), artificial horizon and the camera tilt.

Left buttons

Button	Name	What it does
⤒ / ⤓	Take off / Land	On the ground: arms and climbs to the height you enter. In the air: lands where the drone is.
⌂	Return home	Flies back to the take-off point and lands. Asks you first.
⏸	Pause	Stops the drone where it is; it holds its position.
⚑	Mission	Starts the mission uploaded in PLAN.
⇄	Swap	Swaps the map and the camera picture.

Button	Name	What it does
✉	Messages	Shows the latest messages from the drone, newest first.

Information on the picture (OSD)

The text over the map and the video is the OSD (on-screen display). Left: date and time, flight mode, height above take-off (AGL) and above sea level (MSL), speeds (GS ground speed, VS vertical speed), heading, roll and pitch, battery, GPS, distance and bearing to home, distance travelled, link quality, flight time and the drone's position. Right: the camera bearing in degrees and mils, its tilt and pan, and the position, height and distance of the point the camera looks at (TGT).

Map and video side by side



Split view: map and camera picture side by side.

On the laptop you can drag the small window by its bar, resize it from its corner, and double-click it to swap. Keys **M**, **V** and **B** show the big map, the big video, or both side by side.

5. Connecting to the drone

The GCS connects by itself once the drone and the link are switched on. Your remote type and camera were set up by the manufacturer, so normally you only switch things on.

You are connected when the top bar shows a flight mode (for example **LOITER DISARMED**) instead of **NO LINK**, and the signal bars show a percentage.

1. The app on the remote must be open and connected to the drone.
2. The laptop must be on the remote's Wi-Fi hotspot.
3. Open **SETUP › Telemetry link**. **Connect via** should be **Notoxytech GCS app on a remote (Wi-Fi hotspot)**.
4. Click **Find remote**, then **Connect**. Flight data, the camera picture and camera control now come through the remote.



SETUP › Telemetry link: how this laptop reaches the drone.

1. **Connect via** – the kind of link.
2. **Remote IP** – leave empty to find the remote automatically.
3. **Connect** – connects with these settings.
4. **Find remote** – searches the Wi-Fi for a remote running Notoxytech GCS.
5. **Refresh ports** – lists USB radios again after you plug one in.

The camera picture

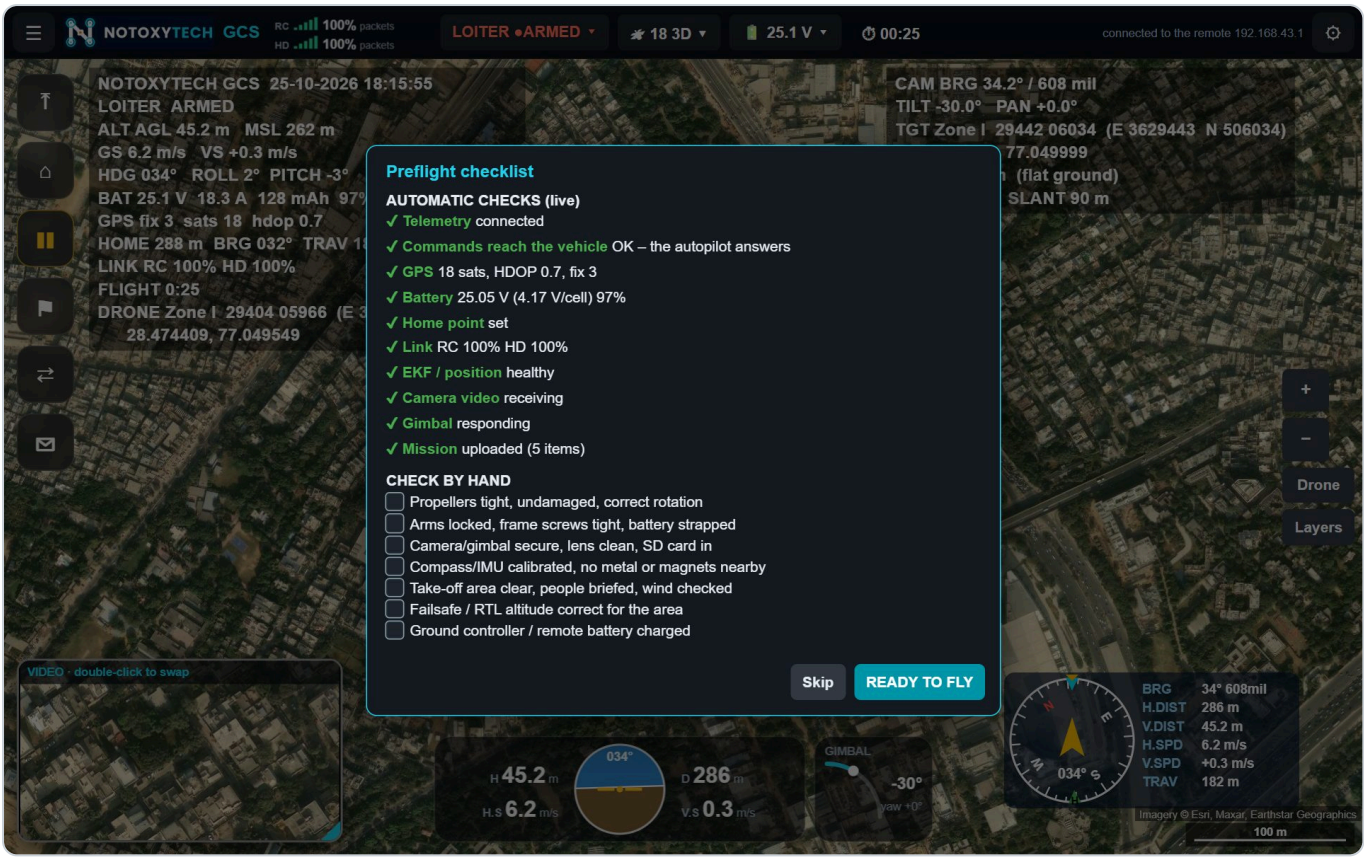
The camera picture starts by itself. If the video window stays black, wait 10 seconds; the text in the window says what the app is waiting for.

> **SAFETY**
> Do not take off until the top bar shows a flight mode, GPS shows 3D and both signal bars are green.

> **FOR THE OEM MANUFACTURER**
> The choice of remote, radio link and camera, and the video and camera-control addresses, are under password-protected Setup sections. If the link or camera type is wrong, contact your manufacturer.

6. Preflight checklist

The preflight checklist makes sure the drone is ready for every flight. It opens when the app starts; you can also open it with ☑ **Preflight checklist** in the FLY tab.



The preflight checklist. Green ✓ = good, orange ! = check it, red ✗ = do not fly yet.

Automatic checks (live) – the app checks these itself, twice a second:

Check	Green when
Telemetry	The drone is connected
Commands reach the vehicle	The drone answers your commands
GPS	3D fix, at least 10 satellites, HDOP 1.5 or lower (lower is better)
Battery	90% or more
Home point	The take-off point is set
Link	Signal 70% or more
EKF / position	The drone knows its position well
Camera video	The picture is coming in
Gimbal	The camera mount answers
Mission	The planned mission is uploaded (only if you made one)
Autopilot	Shown in red if the drone reports a problem that stops it from arming

Check by hand – look at the drone and tick every box: propellers, arms and battery strap, camera and SD card, compass area free of metal, take-off area clear, return height right for the area, remote battery charged.

When everything is green and all boxes are ticked, click **READY TO FLY**. It does not close while a box is unticked. **Skip** closes the list without checking; use it only for tests on the ground.

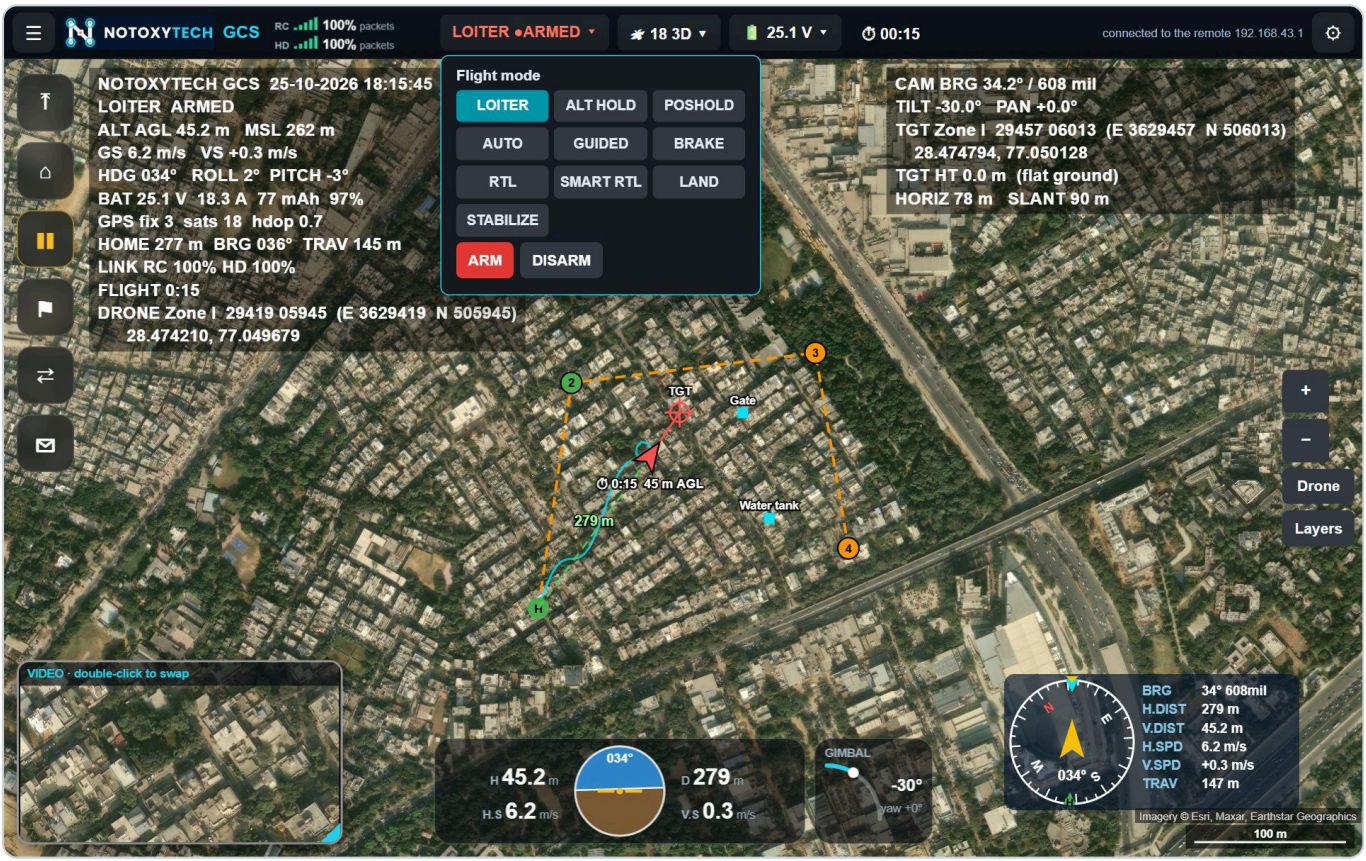
7. Flying

Most flights need only four buttons: **Take off**, **Pause**, **Return home** and **Land**. Every button that moves the drone asks you to confirm first.

Take off

1. Complete the preflight checklist.
2. Click ⤒ on the left (or **TAKEOFF** in the FLY tab).
3. Enter the take-off height in metres, for example 20, and confirm.
4. The drone arms its motors, climbs straight up to that height and waits there.

Flight modes



Click the flight mode in the top bar to change the mode, or to ARM and DISARM.

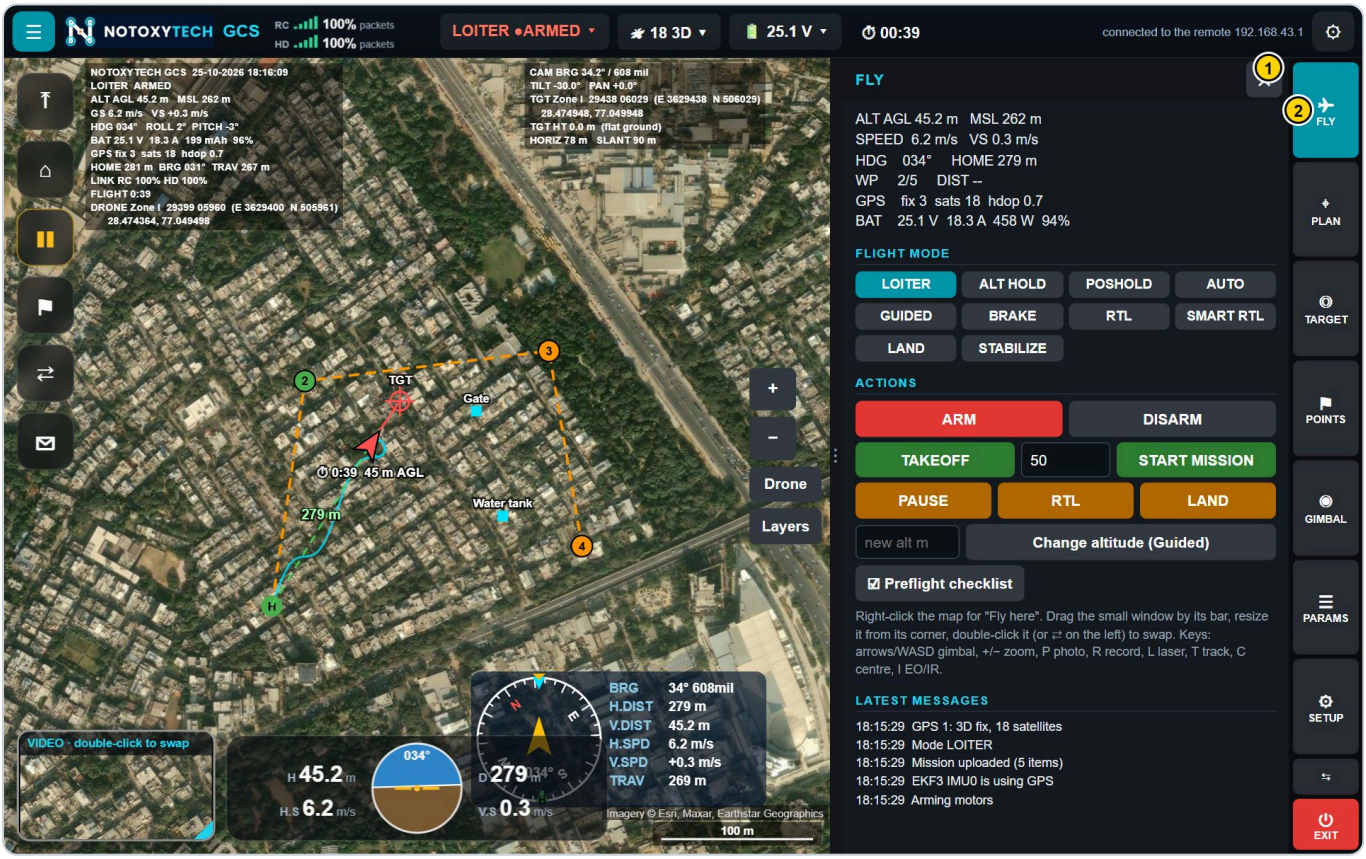
Mode	What the drone does
LOITER	Holds its position and height by GPS when you let go of the sticks. Best for most flying.
POSHOLD	Like LOITER, with softer stops.
ALT HOLD	Holds its height only; it drifts with the wind. Needs practice.

Mode	What the drone does
GUIDED	Flies to a point you choose on the map (“Fly here”).
AUTO	Flies the uploaded mission.
BRAKE	Stops as fast as possible and holds.
RTL	Return To Launch: flies home and lands.
SMART RTL	Flies home along the way it came, then lands.
LAND	Lands where it is.
STABILIZE	Manual: no height or position hold. For trained pilots only.

Planes and VTOL drones show their own modes (for example FBWA, CRUISE, QHOVER, QLOITER).

> **SAFETY**
> Never DISARM in the air: the motors stop and the drone falls. The app warns you if the drone seems to be flying.

The FLY tab



The side menu (1) and the FLY tab (2).

1. **Side menu** – opens a tab; click it again to close it.
2. **FLY tab** – flight data, flight modes, ARM / DISARM, TAKEOFF with its height, START MISSION, PAUSE, RTL, LAND, change altitude and the preflight checklist. The latest drone messages are at the bottom.

Pause, return home, land

- ⏸ **Pause** – the drone stops and holds its position. Use it whenever you are unsure.
- ⌂ **Return home** – the drone flies back to the take-off point and lands.
- ⤓ **Land** – the drone lands where it is. The take-off button turns into the land button while the drone is in the air.

Fly here

Right-click the map and choose **Fly here**. Confirm the height, and the drone flies there in GUIDED mode and waits.

Change the height

In the FLY tab, type the new height and click **Change altitude (Guided)**. The drone climbs or descends where it is.

8. The map

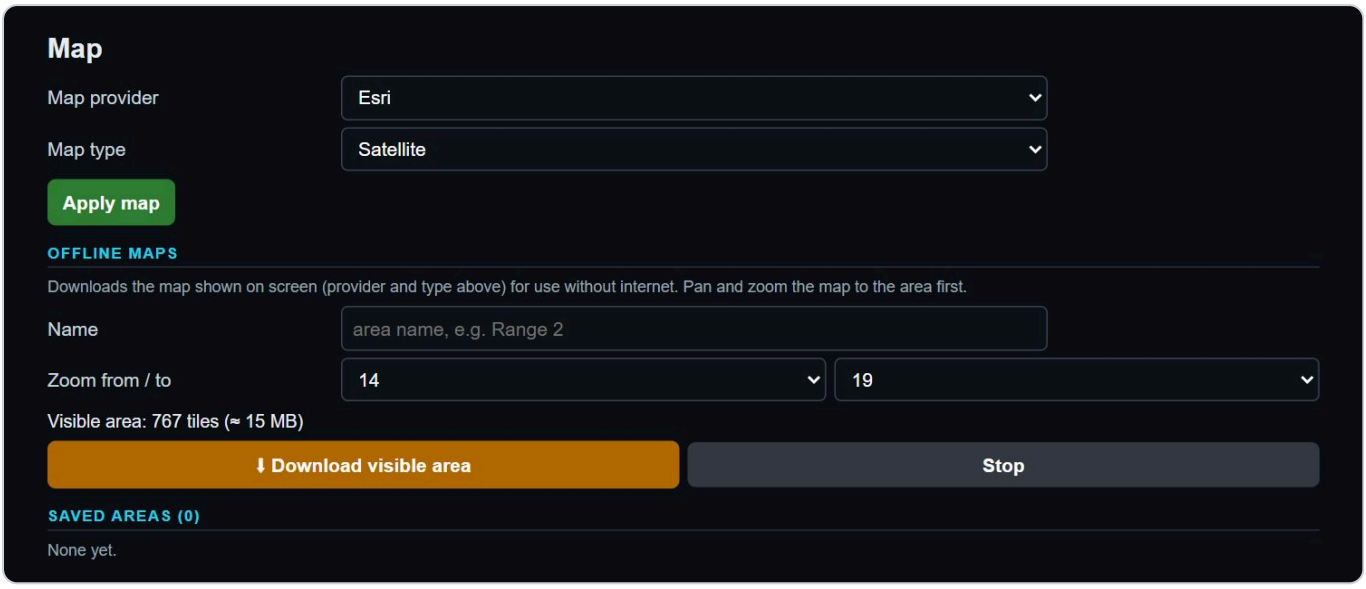
The map shows where the drone is, where it took off, where it has been and where it will go.

On the map	Meaning
Red arrow	The drone and the way its nose points, with flight time and height
Green H	Home: the take-off point
Blue line	The path flown
Dashed line	Straight line from home to the drone, with the distance
Numbered circles and orange line	Waypoints of the mission
Red TGT cross	The point the camera looks at
Blue squares with names	Points you saved

Moving the map: drag to move; zoom with the mouse wheel or **+** / **−**. **Drone** centres the map on the drone and follows it; moving the map stops following. **Layers** chooses satellite, hybrid (satellite with names), street or terrain.

Map menu – right-click the map: **Fly here**, **Save as point**, **Add waypoint here**.

Maps without internet



SETUP › Map: map style and offline map areas.

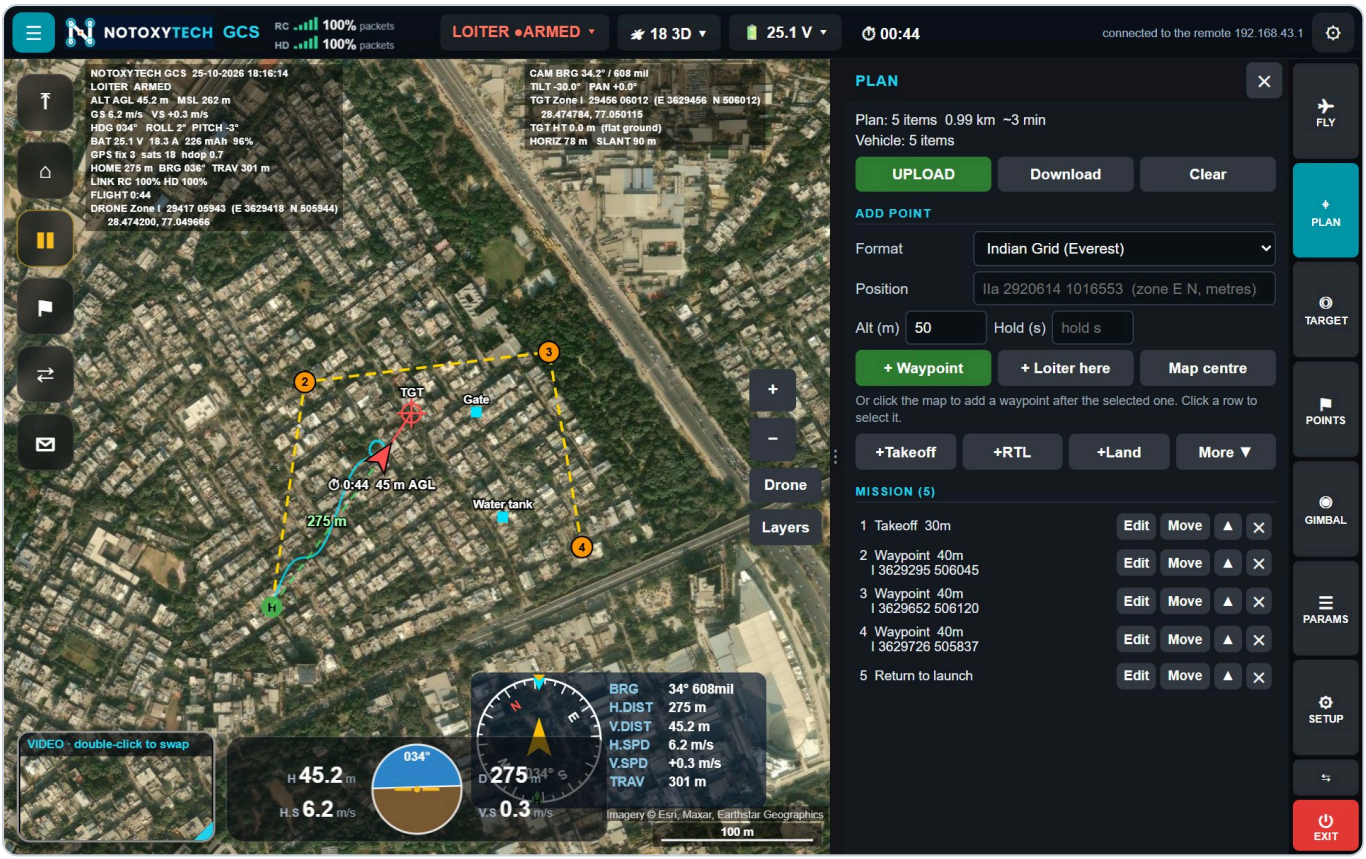
1. **Map provider** and **Map type** – choose, then **Apply map**.
2. **OFFLINE MAPS** – type a name and click **⬇ Download visible area**.
3. Your saved areas: **Show** jumps to one, **Delete** removes it.

1. At home, with internet, open **SETUP › Map**. Choose the map provider and type and apply them.
2. Close Setup. Move and zoom the map so the screen shows the whole flying area.
3. Open **SETUP › Map** again. Under **OFFLINE MAPS**, type a name (for example “North field”) and press **⬇ Download visible area**.
4. Wait until it finishes. The area works without internet from now on.

Map providers: Google, Bing, Esri, OpenStreetMap / OpenTopoMap, Mapbox (with your own key) and a custom address.

9. Missions (PLAN tab)

A mission is a list of places (waypoints) the drone flies to by itself. You draw it on the map, send it to the drone, and start it.



The PLAN tab with a mission of five steps: take off, three waypoints, return home.

Make a mission

1. Open ☰ › **PLAN**.
2. Click the map where the drone should go. Each click adds a numbered waypoint after the selected one. You can also type a position under **ADD POINT** (in the format shown) and press **+ Waypoint**, or press **Map centre**.
3. Add steps: **+Takeoff** (first), **+ Loiter here** (wait at a point), **+RTL** (come home at the end), **+Land** (land at the last point). Under **More ▼**: **+Speed**, **+Loiter turns**, **Default alt**, **Survey area**, **Save file** and **Load file**.
4. Set the height in **Alt (m)** and the waiting time in **Hold (s)** before adding a point.

Change a step

Each row has **Edit** (type, height, wait, speed, circle radius), **Move** (then click the new place), ▲ (move up in the list) and ✕ (delete).

Cover an area (survey)

More ▼ › Survey area, then click the corners of the area and press **Survey: done**. Choose the line spacing, line angle, height and overshoot; the app makes the zig-zag flight lines.

Send and fly

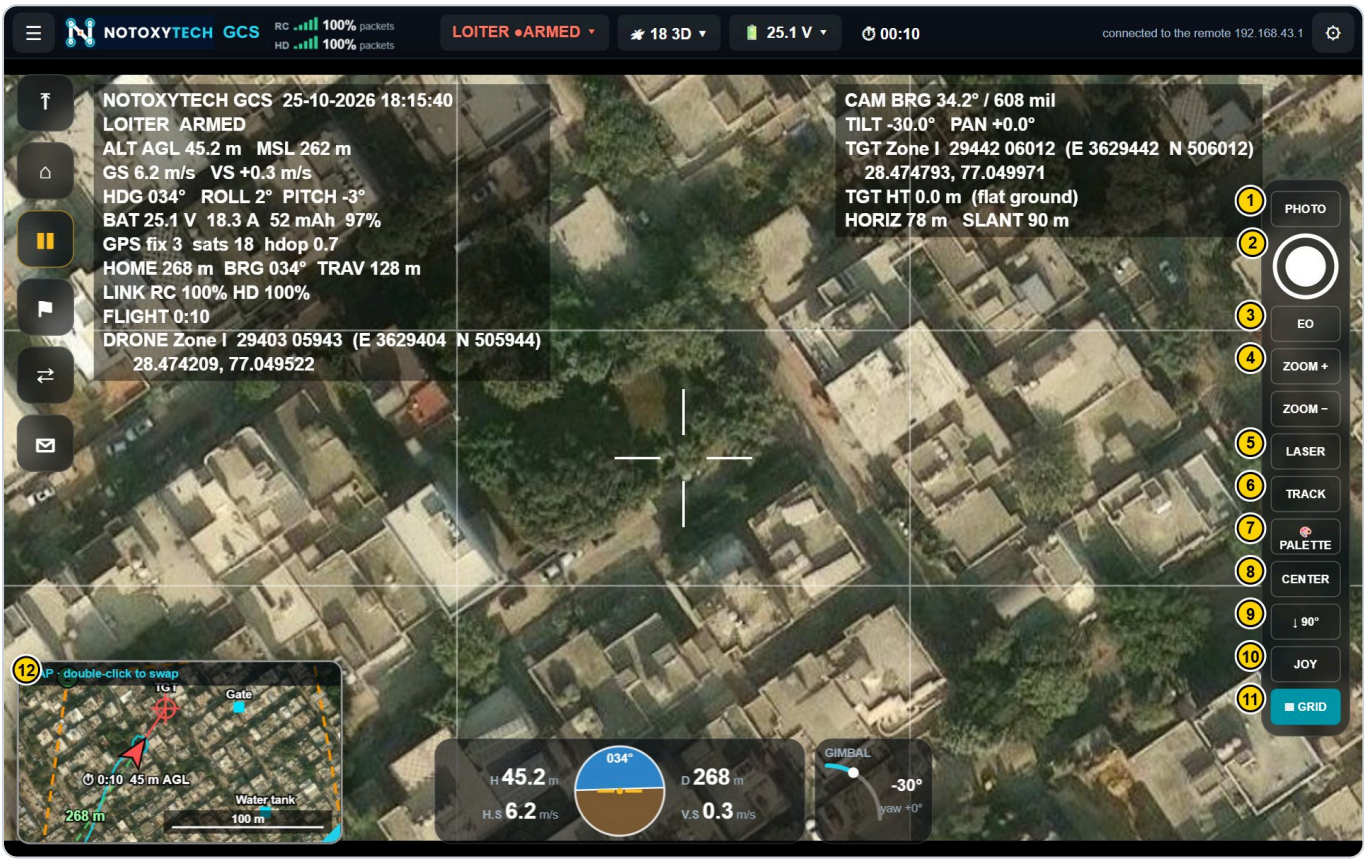
1. Press **UPLOAD** and wait for “Mission uploaded”.
2. Start it with ⚑ on the left, or **START MISSION** in the FLY tab.
3. Press ❚❚ **Pause** at any time to stop, ⌂ **Return home** to bring the drone back.

Download reads the mission already on the drone. **Clear** empties the plan on the screen; the drone keeps its mission until you upload a new one. Mission Planner and QGroundControl *.waypoints* files can be loaded.

> **SAFETY**
> Check every waypoint height against trees, towers and hills before you upload.

10. Camera and gimbal

The gimbal is the motorised mount that holds and points the camera. When the camera picture is large, the camera buttons appear on the right.

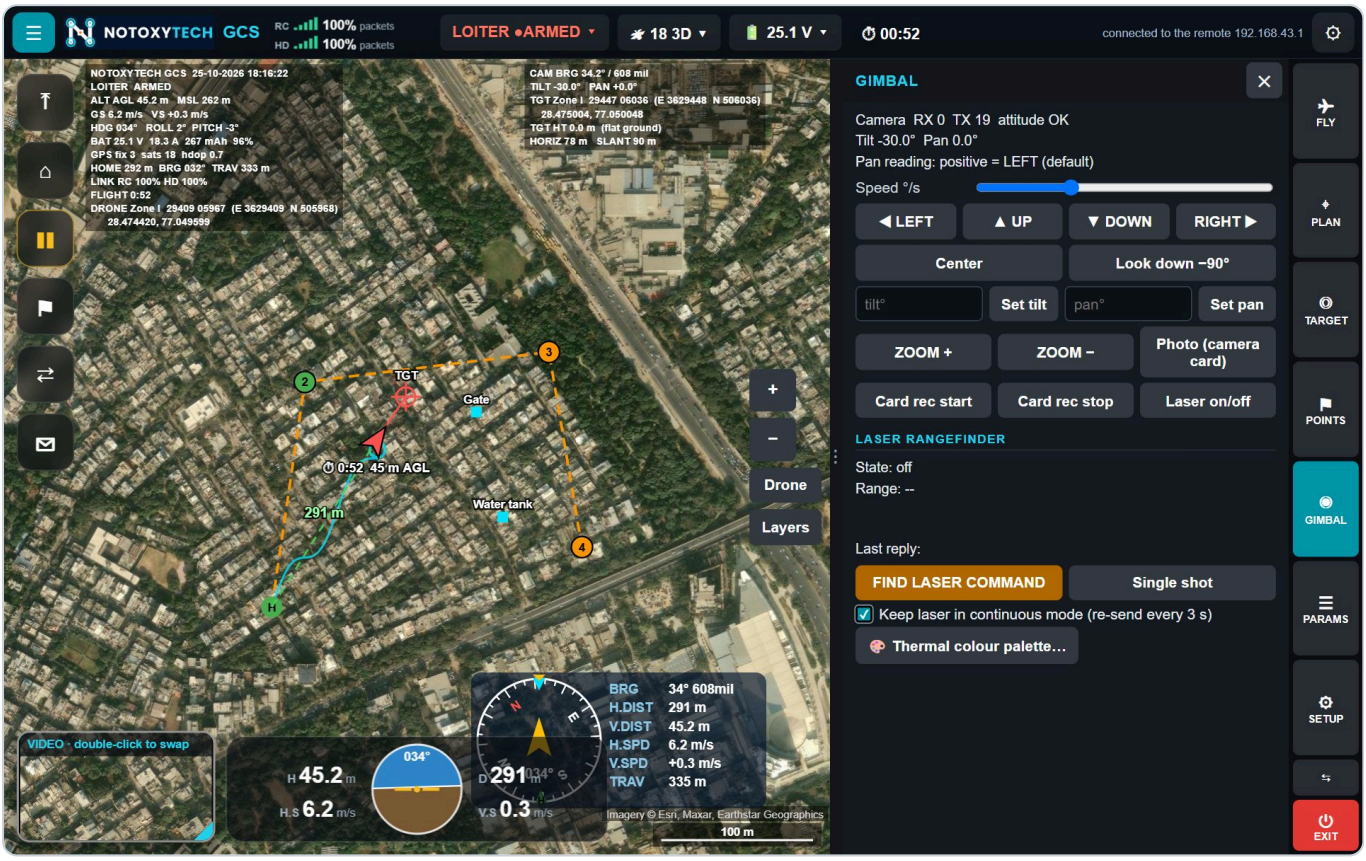


The camera picture large, with the grid lines on.

1. **PHOTO / VIDEO** – chooses what the round button does; shows the recording time while recording.
2. **Shutter** – takes a photo, or starts / stops a recording.
3. **EO / IR** – day camera (EO) or thermal camera (IR), if your camera has one.
4. **ZOOM + / ZOOM –** – hold to zoom; let go to stop.
5. **LASER** – laser rangefinder on / off: measures the distance to what the crosshair points at.
6. **TRACK** – the camera follows a target: tap it, or drag a box around it. Press again (STOP TRK) to stop.
7. 🎨 **PALETTE** – thermal colours (white-hot, black-hot, iron, rainbow and more).
8. **CENTER** – camera straight ahead.
9. ↓ **90°** – camera straight down.
10. **JOY** – on-screen joystick to aim the camera with your finger or mouse.
11. ▦ **GRID** – nine-box grid lines to help frame the picture. They show only on your screen, not in photos or recordings.
12. **Small map** – double-click to swap it with the camera picture.

A crosshair marks the centre of the picture. With the laser on, the distance shows in large green numbers next to it. The OSD text is also burned into your photos and recordings.

The GIMBAL tab



The GIMBAL tab: aim, zoom, card recording and the laser rangefinder.

- Hold ◀ **LEFT**, ▲ **UP**, ▼ **DOWN**, **RIGHT** ▶ to aim; **Speed** sets how fast.
- **Center** and **Look down −90°**; or type a tilt and pan angle and press **Set tilt** / **Set pan**.
- **Photo (camera card)**, **Card rec start** / **Card rec stop** – photos and video saved by the camera itself, at full quality, on its own SD card.
- **Laser on/off**, **Single shot** (one measurement), **Keep laser in continuous mode**.
- **Thermal colour palette…** – thermal colours, also for the day camera if you wish.

Keyboard

Key	Action
Arrow keys or W A S D	Aim the camera
+ / −	Zoom in / out
P	Photo
R	Start / stop recording
L	Laser on / off

Key	Action
T	Tracking
C	Centre the camera
I	Day / thermal camera
M / V / B	Big map / big video / side by side
Esc	Close a pop-up; stop selecting a target

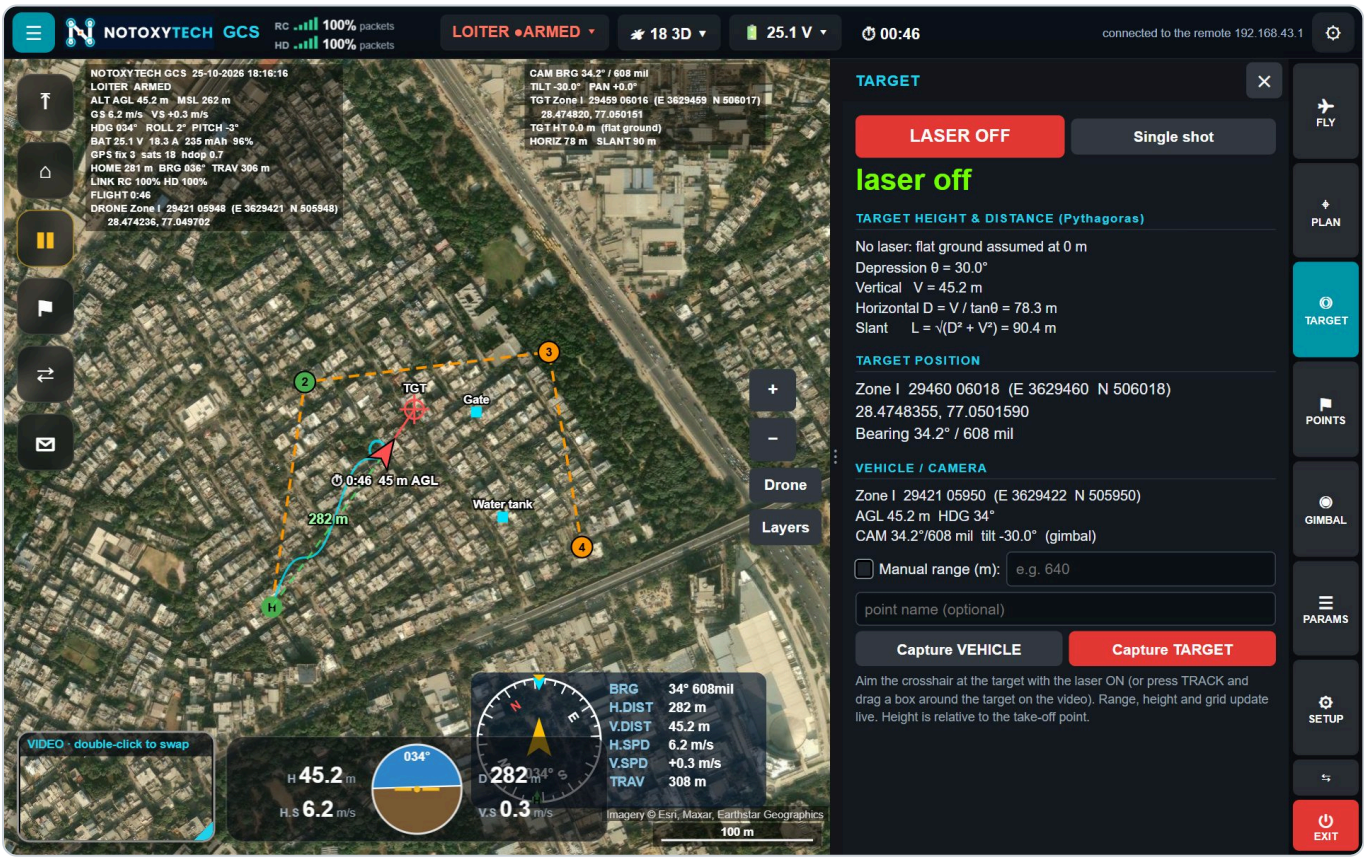
Where photos and videos are saved

On the laptop, in **Pictures\NotoxytechGCS** and **Videos\NotoxytechGCS**.

> **FOR THE OEM MANUFACTURER**
> The advanced part of the GIMBAL tab (camera command set, laser unit and raw commands) is password protected.

11. Targets, points and coordinates

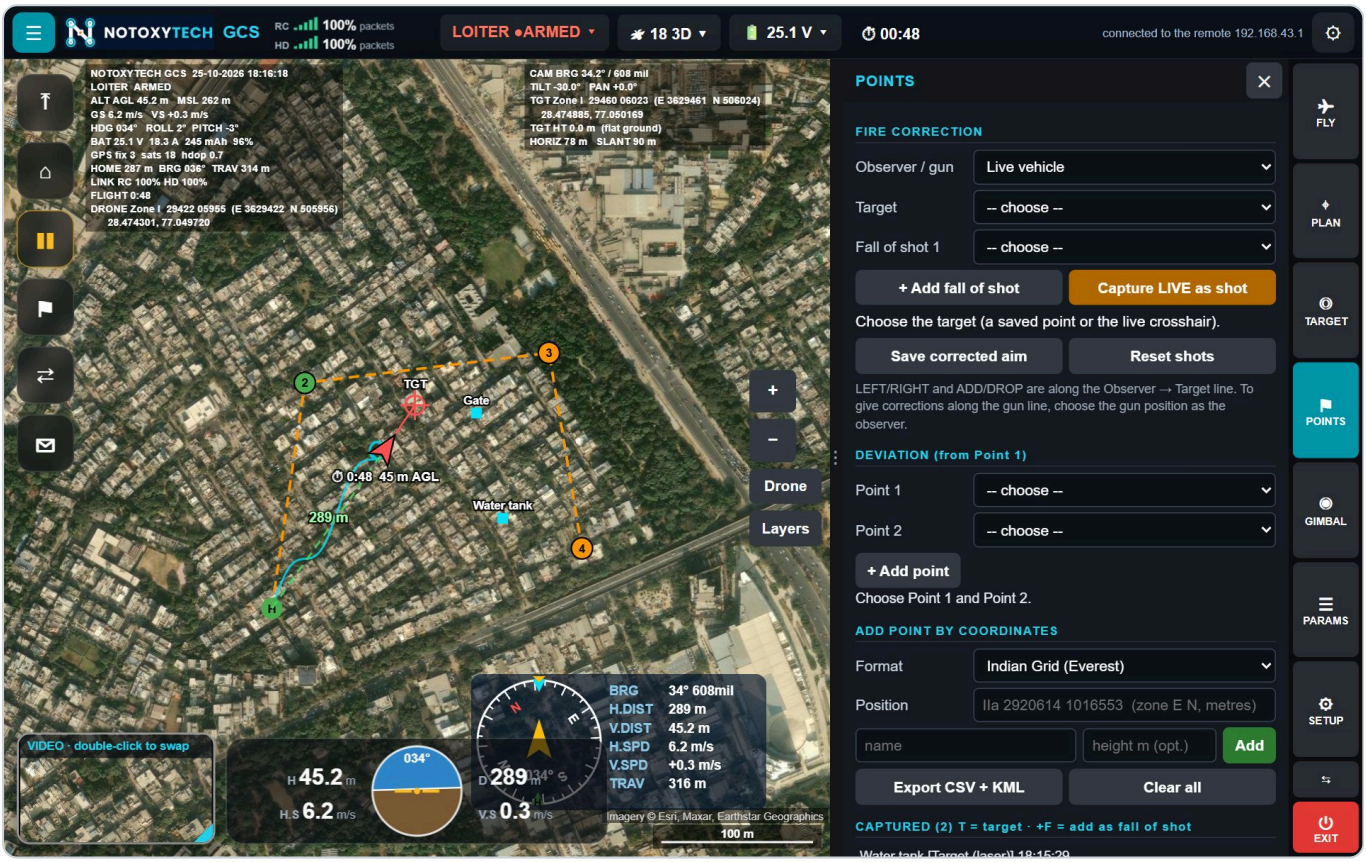
The TARGET tab tells you exactly where the point under the crosshair is: its position, height and distance. The POINTS tab keeps the places you saved and helps with corrections.



The TARGET tab.

1. Point the crosshair at the target. Turn on the laser (**LASER**) for an exact distance; without it the app assumes flat ground at take-off height.
2. Read **TARGET HEIGHT & DISTANCE** (straight-line and ground distance, height) and **TARGET POSITION** (grid, latitude / longitude, bearing).
3. Type a name if you like and press **Capture TARGET** to save it, or **Capture VEHICLE** to save where the drone is.
4. No laser? Tick **Manual range (m)** and type a distance you know.

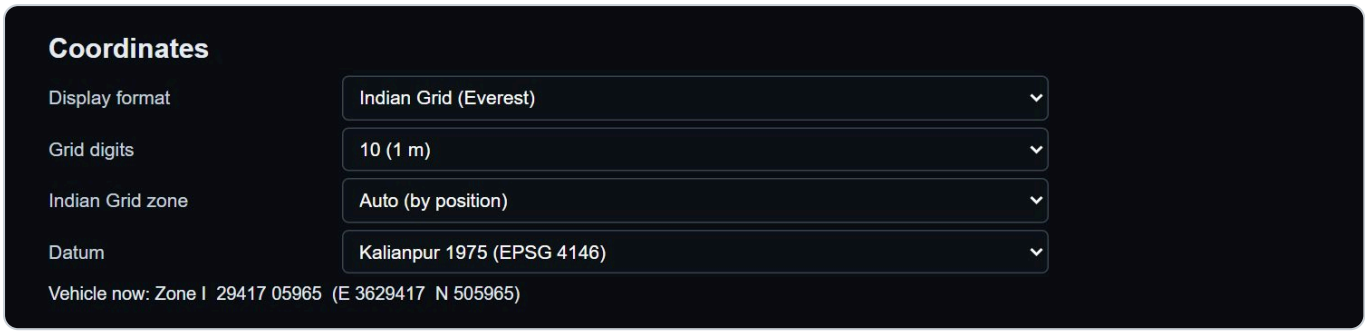
The POINTS tab



The POINTS tab: fire correction, deviation, adding points by coordinates and export.

- **FIRE CORRECTION** – choose the observer (or gun), the target and up to several falls of shot. The app gives the correction LEFT / RIGHT and ADD / DROP along the observer-to-target line, and in grid east / north. **Capture LIVE as shot** uses the crosshair; **Save corrected aim** saves the new aim point; **Reset shots** starts again.
- **DEVIATION** – distance and direction from Point 1 to other points.
- **ADD POINT BY COORDINATES** – choose the format, type the position, a name and (optional) height, press **Add**.
- **Export CSV + KML** – saves all points for Excel and Google Earth. **Clear all** deletes them.
- In the captured list: **T** = use as target, **+F** = add as fall of shot, **WP** = add to the mission, ✕ = delete. Click a point to show it on the map.

Coordinate formats



SETUP › Coordinates: how positions are shown everywhere in the app.

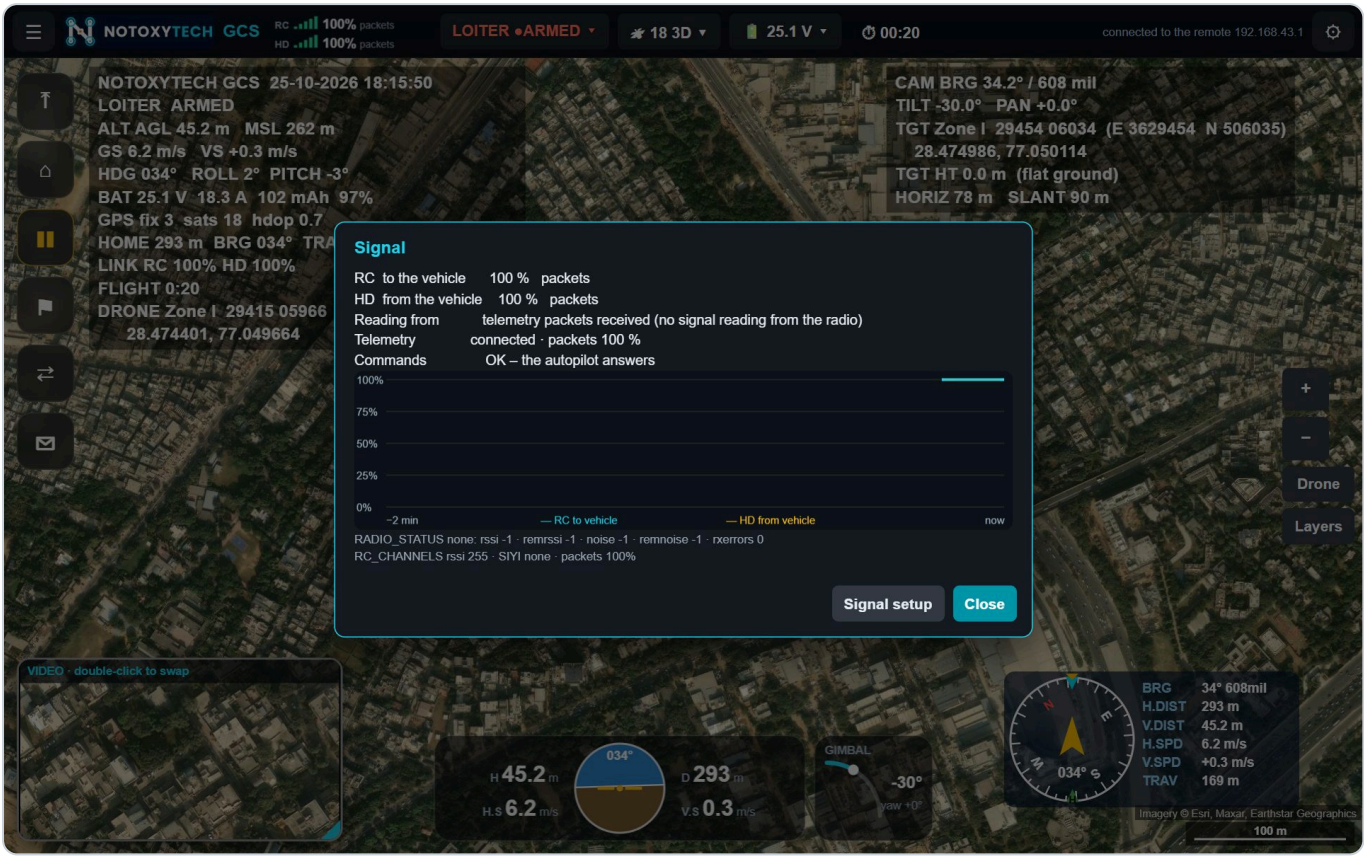
Format	Example	Notes
Lat/Long (decimal)	28.4722, 77.0480	Degrees
Lat/Long (D M S)	28°28'20"N 77°02'53"E	Degrees, minutes, seconds
UTM	43R 578174 2976976	Zone, easting, northing in metres
MGRS	43R EK 78174 76975	Military grid reference
Indian Grid (Everest)	IIa 2920614 1016553	Zones I, IIa, IIb, IIIa, IVa; Kalianpur 1975 or 1937 datum
DSM (India NSF LCC, WGS 84)	8E 512345 523456	18 sectors (5C … 8H); the sector is chosen automatically from where you are

Choose the format in **SETUP › Coordinates** (**Display format**, **Grid digits**, and for Indian Grid the zone and datum). The same format is used on the OSD, in TARGET, POINTS and PLAN, and when you type positions.

12. Sharing video and data

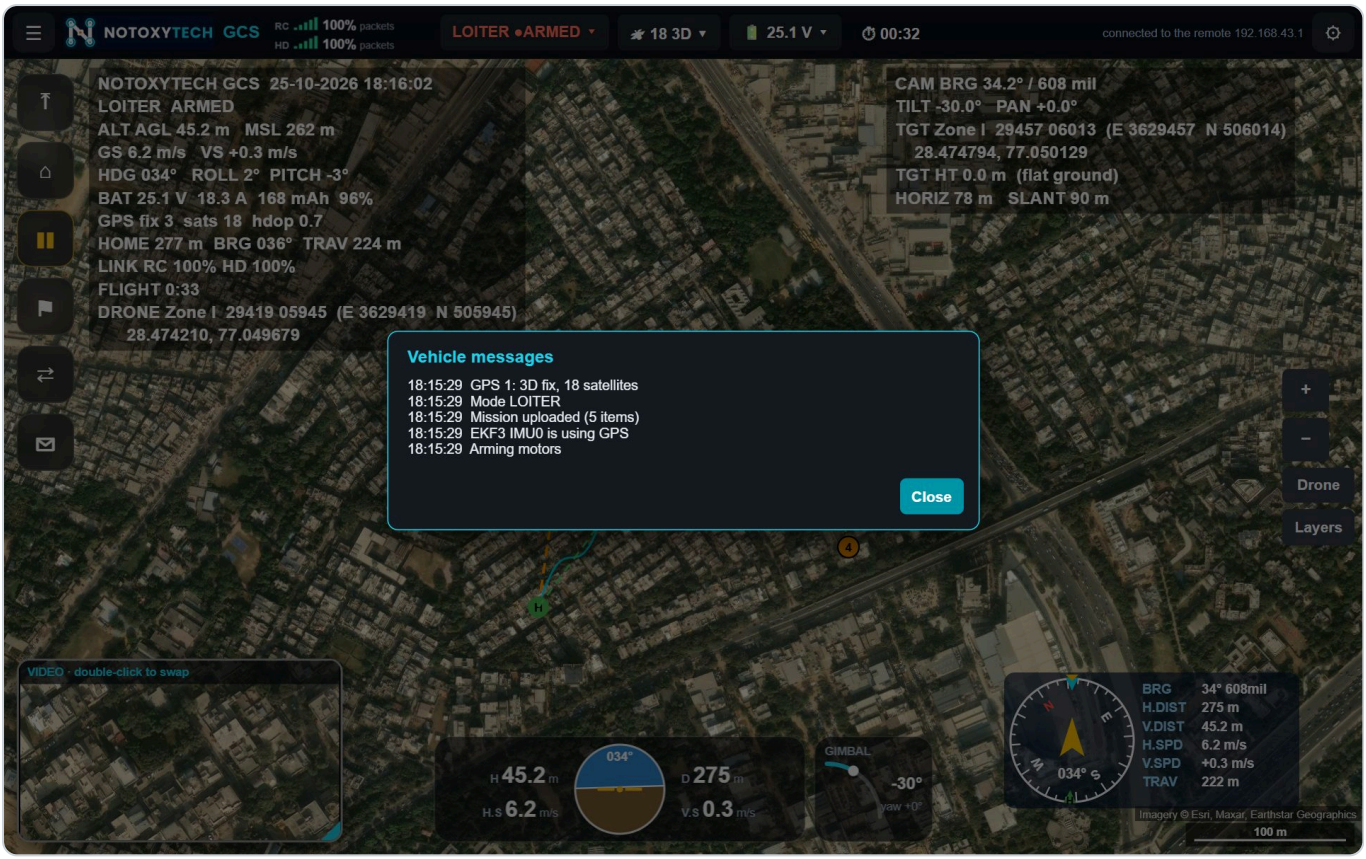
The Companion gets everything through the app on the remote: flight data, the camera picture, camera control and the laser. You can open the same picture in VLC on another computer from the addresses shown in the remote's SHARE tab.

13. Signal, battery and messages



Click the signal bars for both directions of the link and a two-minute graph.

- **RC** is the link from you to the drone; **HD** the link from the drone to you. Green bars: good. Orange (below 50%): weak – come closer. Red (below 25%): turn back now.
- The percentage comes from the radio's own signal reading when the radio sends one, otherwise from the share of messages that arrive (labelled “packets”). Beside the drone it should read about 100%.
- Click the battery for voltage, current and capacity used. Land with enough reserve.



Messages: what the drone reported, newest first. Errors are marked ERR, warnings WARN.

The app can also speak warnings aloud (low battery, weak link, lost link, mode changes), if the manufacturer has turned the voice on.

14. Problems and what to do

Problem	What to do
Top bar shows **NO LINK**	Switch on the drone and wait 30 s. Check the radio link is on. Open **SETUP › Telemetry link** to see what the app is waiting for. Make sure the laptop is on the remote's Wi-Fi and the app is open on the remote.
"Autopilot is not answering commands"	Data arrives but your commands do not reach the drone. Check the radio link and its antennas; restart the link.
Video window stays black	Wait 10 s. Check the camera has power. Read the text in the video window. Keep the app open on the remote.
GPS shows NO FIX or few satellites	Move to open sky, away from buildings and metal. Wait a few minutes after switching on.
Signal shows low beside the drone	Check the antennas are fitted and pointing up. Restart the remote and the drone.

Problem	What to do
The drone will not arm	Read ✉ **Messages** and the red lines in the preflight checklist: the drone says why (for example GPS, calibration, battery).
The map is grey	No internet and no offline map for this place. Download offline maps beforehand.
Anything else	Contact Notoxytech: info@notoxytech.com · www.notoxytech.com. Note what the screen and the messages show.

15. Settings you can change, and OEM functions

These Setup sections are open for every operator:

Setup section	What you can do there
Telemetry link	See the connection status, choose how the laptop connects, find the remote, connect.
Coordinates	Choose the coordinate format, grid digits, Indian Grid zone and datum.
Map	Choose the map provider and type; download and manage offline maps; open the photos, videos and documents folders.
About this app	Version and contact details.

> **FOR THE OEM MANUFACTURER**
> The following are protected by a password and are set up by the manufacturer of your drone system. They are not described in this manual: the **PARAMS** tab (autopilot parameters, calibration and tuning), and the Setup sections **Link & camera**, **Video & camera control**, **Signal**, **Gimbal & laser**, **Gamepad flying**, **Battery**, **Screen layout**, **Startup, sound & display**. If something there needs changing, contact your manufacturer.