

holybro-setup-expanded.md

Provide the full ArduPilot and PX4 setup steps and parameters for DroneCAN H-RTK F9P Helical

DroneCAN H-RTK F9P Helical (ArduPilot) — setup + parameters

Follow Setup & Getting Started (Ardupilot)

(/gps-and-rtk-system/zed-f9p-h-rtk-series/setup-and-getting-started-ardupilot.md).

1. **Update/prepare**
 - * Ensure **both RTK units** have a good view of the sky before starting.
 - * After GPS is detected, check **Compass** on **SETUP** → **Mandatory Hardware** → **Compass** and set external
 - * If you use **IST8310** and can't do compass "dance", set `COMPASS_ORIENT=6`` (Yaw270).
2. **Mission Planner parameters (DroneCAN version)**
 - * In **CONFIG** → **Full Parameter List** set the CAN bus:
 - * CAN1 port:
 - * `CAN_D1_PROTOCOL=1``
 - * `CAN_P1_DRIVER=1``
 - * CAN2 port:
 - * `CAN_D2_PROTOCOL=1``
 - * `CAN_P2_DRIVER=1``
 - * Set GPS to DroneCAN:
 - * `GPS1_TYPE=9``
 - * `NTF_LED_TYPES=231``
 - * Safety switch (if applicable):
 - * `BRD_SAFETY_DEFLT=0`` (disable) or use an external safety switch.
 - * Click **Write Params**, then **reboot**.
3. **RTK Survey-In (base station)**
 - * In Mission Planner: **SETUP** → **Optional Hardware** → **RTK/GPS Inject**
 - * Set expected accuracy + survey time, then **Restart** until **Position is valid**.

DroneCAN H-RTK F9P Helical (PX4) — setup + parameters

Follow Setup & Getting Started (PX4) (/gps-and-rtk-system/zed-f9p-h-rtk-series/setup-and-getting-started-px4.md).

1. **Firmware + UAVCAN**
 - * Use **PX4 V1.12.3+**.
 - * Set `UAVCAN_ENABLE`` to **Sensor Automatic Config**.
2. **PX4 flight controller parameters**
 - * Set `UAVCAN_PUB_RTCM = Enabled``.
 - * **MAVLink2 required**:
 - * Ensure `MAV_PROTO_VER = 2`` (and use MAVLink2 telemetry).
 - * Optional tuning for centimeter-grade:
 - * `EKF2_GPS_V_NOISE = 0.2``
 - * `EKF2_GPS_P_NOISE = 0.2``
3. **QGroundControl RTK**
 - * Configure **Settings View** → **General Settings** → **RTK GPS** (Survey-In min time/accuracy).
 - * Plug in **base RTK** via USB to the ground station, connect vehicle, then run **Survey-In**.

Suggested Follow-up Questions:

If you need more information, consider asking one of these follow-up questions by performing an HTTP GET request on the URL:

- What version GPS supports DroneCAN? (<https://docs.holybro.com?ask=What%20version%20GPS%20supports%20DroneC>)
- Which params need reboot after Writing? (<https://docs.holybro.com?ask=Which%20params%20need%20reboot%20aft>)
- How to enable 2 GPS on ArduPilot? (<https://docs.holybro.com?ask=How%20to%20enable%202%20GPS%20on%20ArduPil>)

Sources:

- F9P Helical (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/standard-f9p-uart/f9p-helical.md>)
- Setup & Getting Started (Ardupilot) (<https://docs.holybro.com/gps-and-rtk-system/zed-f9p-h-rtk-series/>)
- Dimension (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/standard-f9p-uart/dimension.md>)
- Setup & Getting Started (PX4) (<https://docs.holybro.com/gps-and-rtk-system/zed-f9p-h-rtk-series/setup-and-getting-started-px4.md>)
- Overview (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/dronecan-f9p/overview.md>)
- Specification (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/dronecan-f9p/specification.md>)
- Dimension (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/dronecan-f9p/dimension.md>)
- H-RTK with CubePilot Controller (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/standard-f9p-uart/cubepilot.md>)
- Pinout (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/dronecan-f9p/pinout.md>)
- u-blox F9P Firmware Upgrade (<https://docs.holybro.com/gps-and-rtk-system/zed-f9p-h-rtk-series/u-blox-f9p-firmware-upgrade.md>)
- Changelog (<https://docs.holybro.com/gps-and-rtk-system/zed-f9p-h-rtk-series/changelog.md>)
- Overview (<https://docs.holybro.com/gps-and-rtk-system/h-rtk-neo-f9p-series-rm3100-compass/overview.md>)
- Specification (<https://docs.holybro.com/gps-and-rtk-system/h-rtk-neo-f9p-series-rm3100-compass/specification.md>)
- GPS Heading/Yaw (aka Moving Baseline) (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/gps-heading-yaw.md>)
- GPS Heading/Yaw (aka Moving Baseline) (<https://docs.holybro.com/gps-and-rtk-system/zed-f9p-h-rtk-series/gps-heading-yaw.md>)
- Download (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/dronecan-f9p/download.md>)
- DroneCAN GPS Setup Guide (<https://docs.holybro.com/gps-and-rtk-system/m8n-m9n-m10-gps/dronecan-m9n-m8n-m10-gps-setup-guide.md>)
- Specification & Comparison (<https://docs.holybro.com/gps-and-rtk-system/f9p-h-rtk-series/standard-f9p-uart/specification-comparison.md>)
- Overview (<https://docs.holybro.com/gps-and-rtk-system/zed-f9p-h-rtk-series/overview.md>)