X5M

Documentation

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The high precision external GNSS antenna receiver that works with your Android or iOS smartphone or tablet. The perfect solution for entry-level and field experienced professional users. Features an NTRIP correction system that receives data via Internet or Bluetooth. It has a red dot laser indicator for ease of use in geodetic surveys.

Version: 3.0

Main advantages:

- Uses the same GNSS L1/L2/e5 technology found in professional receivers with state-of-the-art components
- Simultaneous reception of all constellations: GPS, GLONASS, GALILEO and BEIDOU
- Multi-band NTRIP corrections with fast convergence times and robust performance, offers centimeter-level accuracy with a Fix solution in seconds
- Allows Geodetic Surveys and Photogrammetry with high-precision geotagging
- Includes its own multi-band helical GNSS antenna
- Data transfer connection via USB port and Bluetooth
- Compatible with GIS and Photogrammetry Applications that operate with NMEA data
- It has a red Laser for easy location of the points to be georeferenced on the field
- Compatibility with Android and iOS devices
- In short: Centimeter-level precision in a small, very low-power module

NOTE: For iOS users, the only compatible app is SW Maps.

If you have any questions that are beyond the scope of this documentation, Please feel free to contact our Mettatec X5 Support contact.

Included components

- GNSS X5 Mobile unit
- HeliX5 multi-band GNSS antenna
- USB Type-C cable for power supply
- r mounting the device on a pole

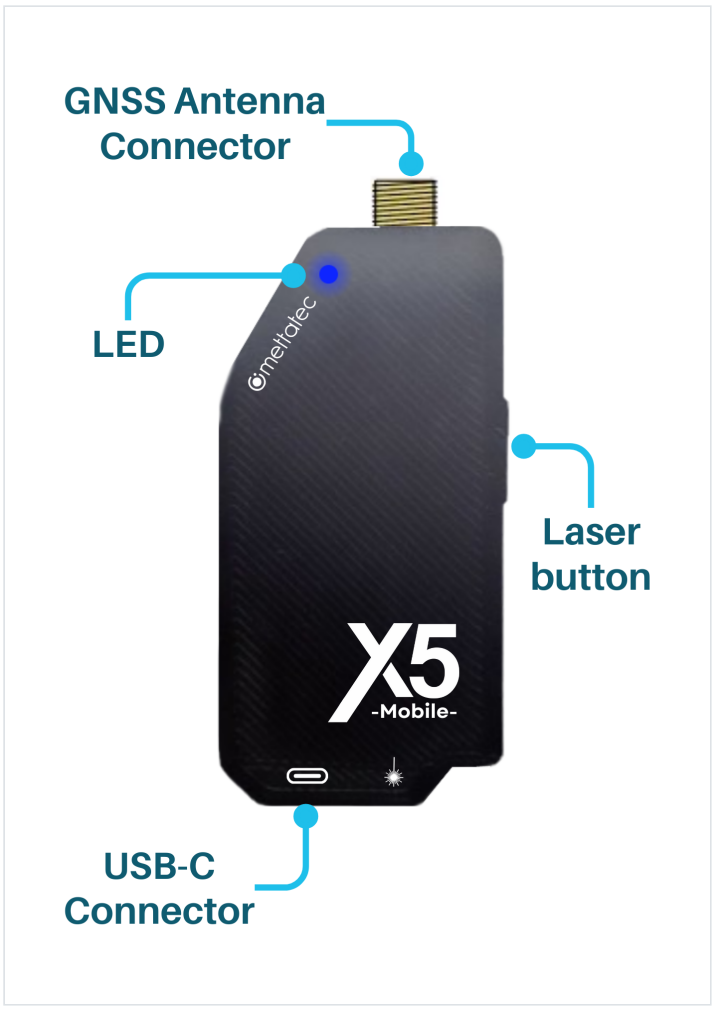
Translate

Technical specifications

Mechanical	• Dimensions: 85 × 40 × 15 mm (without antenna) • Weight: 70g • Operation temperature: -40 to 85 °C
Electrical	• Input voltage: 4.75 – 5.5 V • Antenna DC bias: 3.3 V • Peak current consumption: 5V @ 250 mA • Average current consumption: 5V @ 120 mA • Current limit on USB cable: 500 mA
Connectivity	• Bluetooth V4.2 BR/EDR • USB Serial
GNSS	• Concurrent reception of GPS, GLONASS, Galileo, and BeiDou • Receives both L1C/A and L2C bands • Signal tracked GPS/QZSS L1 C/A, L2 GLONASS L1OF, L2 BeiDou B1I, B2I Galileo E1-B/C, E5b • Number of channels 184 • Navigation update rate: 1 Hz GNSS • Position accuracy: NTRIP 0.01 m + 1 ppm CEP • Convergence time: NTRIP < 10 sec • Time to First Fix: 25s (cold), 2s (hot) • Max Altitude: 50 km (31 miles) • Max Velocity: 500 m/s (1118 mph)

Laser	• Red dot laser • Accuracy: ±10 mm, red indicator varies slightly • Laser wavelength: 650 nm • Beam mode • Dimension: 8 * 13.5 mm • Working life: ≥5000h • Optical power: 1-100mw • Voltage range: 3V-8V • Operating current: ≤150mA • Operating temp range: -25~65 °C • Light deflection angle: ±2° • Beam spot size at 10 m: <15 mm 

Ports and LEDs descriptions



- **USB-C connector:** For power the module and receive data corrections
- **Antenna connector:** MCX female connector. Antenna included
- **Button:**
  - Allows modifying its compatibility with Android or iOS when powering the device via USB Serial cable.
    - If the button is held down when connecting the device, the compatibility will change after releasing it.

        - If the button is not pressed when connecting, the previous compatibility will be maintained.
    - In normal operation, push it to activate the red laser light.
- **NET LED: Bluetooth indicator**
    - Blinking every 100 ms: Waiting for Bluetooth connection with Android compatibility
    - Fading: Waiting for Bluetooth connection with iOS compatibility
    - Solid: Bluetooth connected

Utilization

Installation on mobile device

> NOTE: You must count with a **Base and caster connection** to use this device and receive NTRIP corrections. Contact us to receive credentials for our free caster at https://cloud.mettatec.com/login. Also you need to have Internet access on your mobile device.

To install the X5 Mobile in your device, follow the next steps:

1. Paste the velcro provided in your mobile device.
2. Attach the X5 Mobile.
3. Connect the multi-band Helix antenna.
4. Connect the USB-C cable provided to power up the X5 Mobile.

For Bluetooth mode, enter your device configuration and synchcronize with your X5 Mobile. It appears with Bluetooth ID: **X5 Mobile XXXX**, where XXXX is the MAC address.

Operation modes

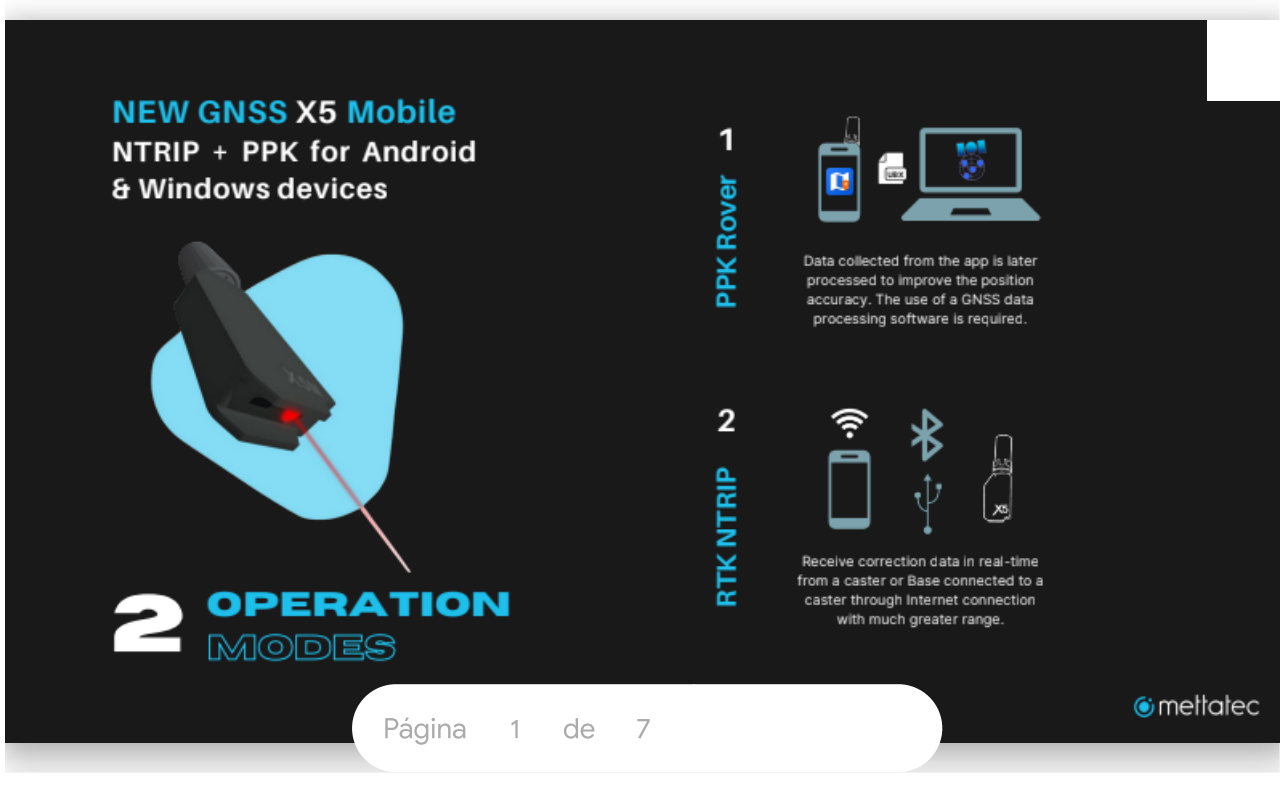
PPK Mode

In this mode, data collected from the app is later processed to improve the position accuracy. The use of a GNSS data processing software is required. For example, in SW Maps there is an option to “Log to File” before connecting to a device, this allows to record an ubx file for post-processing.

NTRIP Mode

In this mode, the X5 Mobile receive correction data in real-time from a caster or Base connected to a caster through Internet connection with much greater range. It can be used via Serial USB or Bluetooth.

Graphic manuals



Video tutorials

X5 Mobile | GNSS Firmwar...

X5 Mobile | Configuration using u-center

Release notes

See what's new added, changed, fixed, improved or updated in the latest versions.

Version 3.0

ADDED Now the position is fixed faster.

Version 2.0

ADDED Compatibility with iOS devices (through Bluetooth).

ADDED Now PPK mode is available.