# MatrixRTK

## GNSS Receiver

**TERSUS**

## Overview

The MatrixRTK is a GNSS RTK receiver. It includes a high-performance, multi-constellation and multi-frequency GNSS board, which can provide high accuracy and stable signal detection.

Working with the choke ring antenna, the MatrixRTK can improve anti-jamming performance and output high-quality RTK corrections, which is an ideal solution for Continuously Operating Reference Station (CORS). The built-in, high-capacity battery can support up to 24 hours of field work. The rugged housing protects the equipment from harsh environments. The system can be operated remotely.

## Key Features

Supports multiple constellations & frequencies
– GPS: L1C/A, L1C, L2C, L2E, L5
– GLONASS: L1C/A, L1P, L2C/A, L2P
– BeiDou: B1/B2
– GALILEO: E1 BOC, E5A, E5B, E5AltBOC
– SBAS: L1C/A, L5

Supports 64GB internal storage and up to 1TB via an external SD card

Rapid RTK integer ambiguity resolution

Supports stable, high-precision measurement output

Supports 3G, WiFi, and external radio.

Supports remote access and operation

# Technical Specifications

## Performance

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|---|---|
| Static GNSS Surveying: | |
| – High-Precision Static: | |
| Horizontal (RMS): | 3mm+0.1ppm |
| Vertical (RMS): | 3.5mm+0.4ppm |
| – Static and Fast Static: | |
| Horizontal (RMS): | 3mm+0.5ppm |
| Vertical (RMS): | 5mm+0.5ppm |

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|---|---|
| RTK Positioning Accuracy: | |
| – Horizontal (RMS): | 8mm+1ppm |
| – Vertical (RMS): | 15mm+1ppm |

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|---|---|
| PPK Surveying: | |
| – Horizontal (RMS): | 8mm+1ppm |
| – Vertical (RMS): | 15mm+1ppm |

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| Network RTK: | |
| – Horizontal (RMS): | 8mm+0.5ppm |
| – Vertical (RMS): | 15mm+0.5ppm |

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|---|---|
| Carrier Phase Measurements Precision: | <1 mm |
| SBAS Positioning Accuracy: | 0.5m |
| Initialization (typical): | <10s |
| Initialization Reliability: | >99.9% |
| RTK Format: | CMR, CMR+, sCMRx, RTCM2.X/3.X |
| Operation System: | Linux |
| Data Storage: | 64GB internal storage |
| – Up to 1TB external SD card | |

## Communication

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|---|---|
| 3G: | TD-LTE, FDD-LTE, TD-SCDMA, WCDMA, GPRS, GSM |
| WiFi: | 802.11b/g |
| USB Ports: | USB 2.0 x1 |
| Serial Ports: | RS232 x3, RS485/RS422 x1 |
| Ethernet: | 10/100M BASE-T x1 |
| External Radio Station (optional): | |
| – Power: | 5W/10W/20W/30W |
| – Frequency: | 450MHz-470MHz |
| – Distance (typical): | 15km |

## Physical

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|---|---|
| Battery (Lithium): | 12500mAh/7.4V x1 |
| – Supports up to 24 hours working | |
| Input Voltage: | 7V~36V DC |
| – With over-discharge protection | |
| Power Consumption (typical): | <5W |
| Size: | 147.6x64.3x246mm |
| Weight: | 2.5kg (with battery) |
| Material: | Magnesium alloy |
| Dust- & Waterproof: | IP67 |
| Shock: | 1m drop onto concrete |
| Operating Temperature: | -40℃ ~ +75℃ |
| Storage Temperature: | -40℃ ~ +80℃ |
| Relative Humidity: | 100% not condensed |