

## LOCOSYS U7/U8 *Ultra-High Performance* **GPS / GNSS Mouse Receiver**



### Overview

LOCOSYS U7 and U8 are cost effective GPS/GNSS mouse receivers. They highly accurate, easy to use, ultra-high performance, low power, low weight, water proof, with industrial grade GPS/GNSS smart antenna. Their built-in u-blox engine chips and our experienced design provide fast acquisitions and excellent tracking performance. They both support multiple satellite positioning systems GPS, GLONASS, Beidou, QZSS and SBAS. In addition they support either USB or TTL, RS-232 based interface for you choose.

### Applications

- ***High-precision PPS time service.***
- ***Automatic vehicle location.***
- ***Vehicle navigation device.***
- ***Fleet management.***
- ***Microbase station.***
- ***CCTV & DVR.***
- ***Time synchronization.***
- ***Marine.***



### Features

- Based on u-blox low power single chip
  - >u-blox7 (G7020 chip) high sensitivity and low power.
  - >u-blox8 (M8030 chip) high sensitivity and low power.
- Multi-satellite positioning systems support
  - >GPS/QZSS/GLONASS
  - >GPS/QZSS/Beidou
- SBAS (WAAS, EGNOS, MSAS) support
- Higher update rate (Option)  
Default 1Hz, up to
  - > 10 Hz for GPS&GLONASS or GPS&BEIDOU
- Sensitivity
  - >Acquisition: -148dBm
  - >Tracking: -167dBm
- Built-in 25\*25\*4mm patch antenna
- Low Power: 32mA at continuous tracking
- RTCM 2.3 support
- A-GPS support
- Backup battery support for faster position fix
- LED for position fix indication
- IPX7 Waterproof
- 1 PPS support (Option)
- Windows location sensor support
- Linux/Android support
- Fully EMI shielded
- Operating temperature range -40~85°C
- Built-in magnet
- Manufactured and tested in LOCOSYS IATF 16949 certified production sites
- u-blox chips qualified according to AEC-Q100

## Technical Specifications Receiver Performance Data

Receiver Type	56-channel u-blox 7 engine 72-channel u-blox 8 engine <b>GPS &amp; QZSS:</b> L1 C/A, 1575.42MHz, <b>GLONASS:</b> L1OF, 1598.0625~1605.375MHz <b>BEIDOU:</b> B1 1561.098 MHz SBAS: WAAS, EGNOS, MSAS
Horizontal Position Accuracy	2.5m (Autonomous) 2.0m (WAAS) (including SBAS & QZSS; CEP, 50% 24hr static, -130dBm, >6 SVs)
Velocity Accuracy	0.05 m/s (speed) <0.3° (heading) (50%@30m/s)
Time Pulse Signal Accuracy	30ns (RMS), <60ns (99%) 0.5ms for PPS over USB
Time Pulse Frequency	0.25 Hz ~ 10 MHz
Time To First Fix Hot start Cold start	Autonomous 1.5 sec 26 sec (50% -130dBm)
Sensitivity (Autonomous)	<b>GPS &amp; GLONASS</b> -148dBm (acquisition) -167dBm (tracking) <b>GPS &amp; BEIDOU</b> -148dBm (acquisition) -165dBm (tracking)
Navigation. Update Rate	Max. 10Hz, GPS & GLONASS or GPS & Beidou Default 1Hz
Max. Altitude	50,000 m
Max. Velocity	< 515m/sec (1,852 km/hr)
Protocol Support	NMEA 0183 v2.3 and V4.x UART: 9600 bps N,8,1; GGA, GLL, GSA, GSV, RMC, VTG, TXT
SBAS Support	WAAS, EGNOS, MSAS

## Environmental Data

Operating temperature	-40 ~ 85°C except battery: -20~60°C
Storage temperature	-40~ 85°C except battery: -40~60°C
Operating humidity	5% ~ 95% non-condensing
Waterproof	TBD

## Other Data

Cable Length	2.0m for USB 3.0m for PS2 & RJ-11
Dimension	49*41*14.1mm

## Interfaces

U7 Series	U8 Series
USB, RS-232, TTL	USB, RS-232, TTL

## Model name:

### U7 Series

#### ➤ Smart Antenna Module

LS20070/71/72 (USB/TTL/RS232)

#### ➤ GPS Mouse

LS23070/72/76 (USB/PS2/RJ11)

### U8 Series

#### ➤ Smart Antenna Module

LS20070-G/71-G/72-G (USB/TTL/RS-232)

LS20070-B/71-B/72-B (USB/TTL/RS232)

#### ➤ GNSS Mouse

LS23070-G/72-G/76-G (USB/PS2/RJ11)

LS23070-B/72-B/76-B (USB/PS2/RJ11)