# SUPERSTAR II

## Features

Carrier phase tracking

Binary or NMEA interface

Standard support for SBAS (WAAS, EGNOS) corrections

## Benefits

Improved positioning accuracy and reliability

Suitable for all systems, whether the focus is high throughput or exceptional compatibility

Increased accuracy without extra cost or additional equipment

**NovAtel's SUPERSTAR II™ is designed for applications requiring highly reliable positioning performance with low power consumption and cost.**

## Carrier phase capability and SBAS support

The SUPERSTAR II features 12-channel code and carrier phase tracking for increased accuracy. Position, velocity, time (PVT) and raw carrier phase measurements output are available at rates of up to 5 Hertz.

The SUPERSTAR II also takes advantage of the corrections offered by SBAS systems such as WAAS and EGNOS for improved accuracy. For precise timing applications, the SUPERSTAR II features a 1PPS accuracy of 50 nanoseconds (typical).

## Small package and low power consumption

The SUPERSTAR II, designed as a drop-in replacement for the SUPERSTAR I, fits with ease into even the smallest systems, measuring just 46 millimeters by 71 millimeters. Available in 3.3 Volt or 5 Volt versions, the receiver also features the low power consumption of 0.5 Watts or 0.8 Watts, respectively.

## Flexible interface

The SUPERSTAR II offers a flexible command and log interface. System integrators can choose either NovAtel's proprietary L1 family binary format, which allows for high throughput, or the industry-standard NMEA format, to ensure compatibility. For DGPS applications, the SUPERSTAR II features RTCM SC-104 messages.

## Development kit available

To further support system design and integration efforts, the SUPERSTAR II development kit is available with the SUPERSTAR II in the FlexPak enclosure, a magnetic mount antenna with RF cable, a serial cable, an automotive adapter, and an AC adapter. NovAtel's Windows®-based StarView™ software is also provided, with an easy to use interface for receiver communication and configuration.

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# SUPERSTAR II

## Performance[1]

**Position Accuracy**

| | |
|---|---|
| Single Point L1 | < 5 m CEP |
| WAAS L1 | < 1.5 m CEP |
| DGPS (L1, C/A) | < 1 m CEP |

**Measurement Precision**

| | |
|---|---|
| L1 C/A Code | 75 cm RMS |
| L1 Carrier Phase | 1 cm RMS (differential channel) |

**Data Rate**

| | |
|---|---|
| Measurements | 5 Hz |
| Position | 5 Hz |

**Time to First Fix**

| | |
|---|---|
| Cold Start[2] | 166 s |
| Warm Start[3] | 45 s |
| Hot Start[4] | 15 s |

| | |
|---|---|
| **Signal Reacquisition** | **< 1 s (typical)** |
| Velocity Accuracy | 0.05 m/s RMS |

**Dynamics**

| | |
|---|---|
| Velocity[5] | 514 m/s |
| Altitude[5] | 18,288 m |

1 Typical values. Performance specifications subject to GPS system characteristics, US DOD operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources.
2 Typical value. No almanac or ephemerides and no approximate position or time.
3 Typical value. Almanac saved and approximate position and time entered. No recent ephemerides.
4 Typical value. Almanac and recent ephemerides saved and approximate position and time entered.
5 Export licensing restricts operation to a maximum of 18,288 meters and 514 meters per second.

## Physical & Electrical

| | |
|---|---|
| **Size** | **46 x 71 x 13 mm** |
| **Weight** | **22 g** |

**Power**

| | |
|---|---|
| Input Voltage | +3.3 or +5 VDC |
| Power Consumption | |
| 3.3 V version | 0.5 W (typical) |
| 5 V version | 0.8 W (typical) |

**Communication Ports**

- 1 TTL serial port capable of 300 to 19,200 bps
- 1 TTL DGPS port capable of 300 to 19,200 bps

**Input/Output Connectors**

| | |
|---|---|
| Main | 20-pin dual-row male header |
| Antenna Input | MCX female |

**Environmental**

| | |
|---|---|
| Temperature | |
| Operating | -30°C to +75°C |
| Storage | -40°C to +85°C |
| Humidity | 5% to 95% non-condensing to 60°C |

## Enclosure Options

FlexPak-SSII rugged, lightweight enclosure

SMART ANTENNA integrated receiver and antenna combination

## Additional Features

- 12 channel “all-in-view” parallel tracking
- PVT and carrier phase measurement output at rates up to 5 Hz
- Precise timing model accurate to ± 50 ns (typical)
- DGPS base station model with RTCM SC-104 corrections
- Rapid time to first fix after power interruption
- Built-in status testing
- Field-upgradeable firmware
- Designed for use with active or passive antennas

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ISO 9001:2000 FM 92323



www.novatel.com 1-800-NOVATEL (U.S. & Canada) or 403-295-4900 | Europe +44 1993 852-436 | Fax 403-295-4901 | E-mail sales@novatel.com