Arrow 100+®

Arrow Series®
Submeter Positioning

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EOS
Positioning Systems

High-Accuracy GNSS Receiver for Your Smartphone, Tablet, or Laptop Computer

The Arrow 100+® is a submeter, multi-constellation GNSS receiver designed to be used with any iOS®, Android™, or Windows® device. The Arrow 100+ incorporates rock-solid, wireless Bluetooth® technology to ensure high-accuracy locations and metadata can be provided to any device, making it a future-proof submeter GNSS receiver that can evolve with your mobile hardware and software choices.

Works with any Mobile GIS App

The Arrow 100+ GNSS receiver does not require any additional hardware or software in order to obtain submeter positioning. Moreover, the Arrow 100+ streams this submeter location data into any mapping or data-collection app on your mobile device. You can choose which data collection software you use with the Arrow 100+, such as Esri's popular ArcGIS® apps, which all work seamlessly.

Real-time Submeter (or Better) Accuracy, Worldwide

The Arrow 100+ takes advantage of all the global GNSS constellations for positioning: GPS, GLONASS, Galileo, BeiDou. Moreover, with free SBAS corrections in most regions of the world, this receiver provides 30 to 60 cm real-time accuracy. For regions without free SBAS, the Arrow 100+ is available and supports the Atlas® H50 satellite subscription service to achieve 30-50 cm accuracy world-wide.

For more details,
www.eos-gnss.com

Arrow 100+ Key Features:

- Full GNSS support (GPS, GLONASS, Galileo, BeiDou)
- 100% compatible with Android, iOS, and Windows devices
- 30 to 60 cm real-time accuracy using free SBAS (WAAS, EGNOS, GAGAN, MSAS, SouthPAN)
- RTK standard accuracy of 1 cm + 1 ppm (10km/6mi short baseline)
- Supports all mobile GIS software
- 30 - 50 cm accuracy anywhere with Atlas®
- Multi-point Bluetooth® support for enhanced connectivity

Multiplexing with the Arrow 100+

The Arrow 100+ has the functionality of the Eos Bridge™ Bluetooth® connector built in. Connect your Arrow 100+ to any third-party sensor (e.g., laser rangefinder), and the Arrow 100+ will stream the content of that sensor to your iOS or other mobile device via the receiver's own location datastream.

Works Where Other Receivers Can't

The Arrow 100+ was designed specifically with GIS users in mind. When GPS satellites are just not enough, the Arrow 100+ connects to GLONASS, Galileo, and BeiDou signals, creating access to at least 100 satellites! This GNSS receiver squeezes more accuracy from SBAS corrections than any other receiver in the world. With its use of patented technology, the Arrow 100® will deliver superior accuracy and performance under trees, around buildings, and in rugged terrain. Accurate positioning occurs in real time, with no post-processing required.

The Arrow 100+ also features the ability to be used with single-frequency RTK. Achieve 1 cm accuracy when your baseline is less than 10km (6 miles).

Specifications

GPS Sensor

Receiver Type:	L1/G1/E1/B1, GPS, GLONASS, Galileo, BeiDou With Carrier Smoothing
Channels	158 Channels, Parallel Tracking
GNSS Signals Received:	12 GPS (15 without SBAS) 12 GLONASS 15 Galileo 22 BeiDou
SBAS Support:	3-Channel, Parallel Tracking (with SBAS Ranging) WAAS, EGNOS, MSAS, GAGAN, SouthPAN
L-Band (Atlas®)	
Support:	1 Channel
Update Rate:	1 Hz Default
SBAS Accuracy:	< 30 cm HRMS[1] < 60 cm 2DRMS[1]
Horizontal Accuracy:	< 2.5 m 2dRMS, 95% Confidence[1]
Atlas Accuracy:	H50 (Basic): 30cm HRMS[1]
Cold Start:	< 60 Seconds Typically (No Almanac or Time)
Reacquisition:	< 1 Second
Maximum Speed:	1,850 kph (1,150 mph, 99 knots)
Maximum Altitude:	18,288 m (60 000 ft)

Communication

Port:	Bluetooth®, USB 2.0, Serial (Optional)
Bluetooth® Transmission:	Class 1, 300 m Typical Range[2], up to 1 km
Bluetooth® Frequency:	2.400 - 2.485 GHz
Fully Bluetooth® Pre-Qualified:	Bluetooth® 2.1 + EDR
Supported Bluetooth® Profiles:	SPP, iAP, Multi-point
Raw Measurement Data:	Binary, RINEX
Correction I/O Protocol:	RTCM, Optional Proprietary Format
GPS Status LEDs:	Power, GNSS, DGNSS, DIFF, Bluetooth®
Battery Status LED:	5-LED Indicator
Output Datum:	Autonomous: WGS-84 (Latest Revision) SBAS and Atlas: ITRF (Current Year Epoch)

Power

Battery Type:	Field Replaceable, Rechargeable Lithium-Ion Pack
Battery Autonomy:	18+ hours[3]
Charging Time:	4 Hours

Environmental

Operating Temperature:	-40°C to +85°C (-40°F to +185°F)[3]
Storage Temperature:	-40°C to +85°C (-40°F to +185°F)
Humidity:	95% Non-Condensing
Compliance:	FCC, CE, RoHS and Lead-Free

Mechanical

Enclosure Material:	Xenoy
Enclosure Rating:	Waterproof, IP-67
Immersion:	30 cm, 30 minutes
Dimensions (cm):	12.5 cm x 8.4 cm x 4.2 cm
Dimensions (inches):	4.92" x 3.3" x 1.6"5"
Weight:	372 g (0.82 lbs)
Data Connectors:	Mini USB Type B Receptacle
Antenna Connector:	SMA Female

Antenna

Frequency Range:	L1, G1, E1, B1
Gain (without Cable):	26 dB (± 2 dB), 35 mA
Voltage:	+4 to +15 VDC
Antenna Voltage Output:	5 VDC
Impedance:	50 Ohms
Dimensions (mm):	125 mm Diameter, 55 mm Height
Weight:	217 g (0.48 lbs)
RF Connector:	SMA Female
Finish:	Fluid Resistant
Operating Temperature:	-40°C to +85°C (-40°F to +185°F)
Immersion:	30 cm, 30 Minutes

Standard Accessories

- Lithium-Ion Battery Pack
- 12 VDC Power Supply
- USB Cable
- GNSS Antenna
- Belt and Shoulder Carry Case
- Antenna Soft Hat
- 1.5 m Antenna Cable

Optional Activations and Accessories

- 10 Hz or 20 Hz
- Spare Arrow Series® Battery Pack
- Atlas Satellite Correction Service
- Vehicle Charger
- Atlas H50 (Basic) Satellite Corrections Subscription
- Optional Single-Frequency RTK: 1 cm + 1 ppm[1]
- Optional Proprietary RTCM: < 20 cm 2dRMS, 95% Confidence[1]

NOTES :
1. Depends on multipath environment, number of satellites in view, satellite geometry, baseline length (for local services) and ionospheric activities. Stated accuracies for baseline lengths of up to 50 km.
2. Transmission in free space.
3. Lithium-Ion battery performance degrades below -20°C (-4°F)

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