# Altus NR2
## Compact GNSS rover for GIS and surveying

**septentrio**



## Key Features

▶ **Lightweight and portable**
▶ **Robust modern communications systems including an on-board Wi-Fi modem**
▶ **Best in its class for reliable centimeter level RTK accuracy**
▶ **Advanced Web UI for easy monitoring and configuration**
▶ **On-board GIS data collection**

**esri** Partner Network
Silver

The Altus NR2 combines easy-to-use RTK technology with unrivalled communications tools for a successful surveying or GIS project every time. The Altus NR2 is best in class for reliable GNSS performance in difficult environments. It is straightforward to configure through the Web UI and is fully compatible with Esri® Collector for ArcGIS® which brings GNSS data directly collected by the Altus NR2 into Esri's®familiar ArcGIS® interface.

### Best possible signal coverage

Signal quality is always an issue out in the field but Septentrio's advanced suite of technologies has it covered. APME+, industry leading multipath technology, and IONO+ technology provide resistance against elevated ionospheric activity. These features together with advanced IONO modeling combine to offer the best possible quality of measurements for Altus NR2's GNSS position calculations.

### Connectivity in the field

Never drop a call out in the field thanks to the Altus NR2's advanced integrated communication capabilities. The built-in Bluetooth enables rapid data streaming while the internal GSM/GPRS modem provides data corrections and internet connectivity.

### Use your own device

Thanks to Septentrio's open architecture, the Altus NR2 is fully compatible with leading 3rd party hardware and software solutions thus maximizing the use of existing equipment while driving down the cost of ownership over the lifetime of the device.

### GIS made simple

Unify GNSS data collection and the power of GIS into one utility by having Esri® Collector for ArcGIS® with you all the time. Collector for ArcGIS® enables collection of high accuracy GNSS data and brings it directly into ArcGIS Online®.

The Altus NR2 gives you full control of your ArcGIS® Online maps either by using Esri® Collector for ArcGIS® or by using the integrated Web UI of the receiver.

# Altus NR2

## FEATURES

### GNSS Technology

132 hardware channels for simultaneous signal tracking

Dual-frequency L1/L2 code/carrier tracking of GPS and GLONASS signals.

All-in-view SBAS (EGNOS, WAAS, GAGAN, MSAS, SDCM)

DGPS/RTK Rover & Base

RAIM included

Septentrio's GNSS+ patented technologies:

- APME+ Multipath mitigation technology
- ION+ Advanced ionospheric scintillation mitigation
- Track+ for robust tracking under weak signal conditions
- RTK+ a novel, multi-system centermeter-accurate positioning engine
- GLO+ a special ultra-precise GLONASS bias calibration

### Connectivity

Integrated Bluetooth (2.1 + EDR/4.0)

Integrated Wi-Fi (802.11 b/g/n) access point and client mode (also allowing Rover/Base setup)

Dynamic DNS for remote access and Base/Rover setup

Integrated quad-band cellular modem (EDGE, 2G, 3G, 3.5G) - 850/900/1800/1900 MHz

NTRIP (v1 and v2), direct IP, data call (CSD) calling and accepting mode[1]

1 x 9-pin Lemo connector for:
- Full speed USB (host – with access to internal disk, TCP/IP communication and with 2 extra serial ports)
- 1 high-speed serial port (RS232) ideal for external UHF radio or custom integrations

### Data formats and storage

- 8 GB internal memory
- NMEA v2.30, NMEA 3.01 and NMEA 4.0 output format
- Highly compact and fully documented Septentrio bnary format (SBF) output

Corrections input and output:
- RTCM v2.2, 2.3, 3.0 or 3.1 and 3.2 (including MSM)
- CMR and CMR+ (CMR+ input only)

### Models

- **Altus NR2 C:**
  All features for full RTK rover and base functionality

- **Altus NR2 M:**
  For meter and sub-meter applications (DGPS included)

- **Altus NR2 Base:**
  Base only model to be combined with Altus NR2 C or M

## PERFORMANCE

### Position Accuracy[2,3]

| | Horizontal | Vertical |
|---|---|---|
| Standalone | 1.2 m | 1.9 m |
| SBAS | 0.6 m | 0.8 m |
| DGNSS | 0.4 m | 0.9 m |

### RTK Performance[3,4,5,6]

| | |
|---|---|
| Horizontal accuracy | 0.6 cm + 0.5 ppm |
| Vertical accuracy | 1 cm + 1 ppm |
| Average time to fix[9] | 7 s |

### Velocity Accuracy[2]

| Horizontal | Vertical |
|---|---|
| 0.01 m/s | 0.015 m/s |

### Static and rapid static

| | |
|---|---|
| Horizontal | 3 mm + 0.5 ppm |
| Vertical | 5 mm + 0.5 ppm |

### Static high precision[7]

| | |
|---|---|
| Horizontal | 3 mm + 0.1 ppm |
| Vertical | 3.5 mm + 0.4 ppm |

### Maximum Update Rate

| | |
|---|---|
| Position (Standalone, SBAS, DGNSS) [8] | 20 Hz |
| Position (RTK) | 10 Hz |
| Measurements | 20 Hz |

### Time to First Fix

| | |
|---|---|
| Average Time to Fixed RTK[5] | < 7 s |
| Cold start[9] | < 60 s |
| Warm start[10] | < 30 s |
| Re-acquisition | avg. 1.2 s |

### Dynamics

| | |
|---|---|
| Acceleration | 10 g |
| Jerk | 4 g/s |

## PHYSICAL AND ENVIRONMENTAL

| | |
|---|---|
| **Size** | 6.5 x 2.7 in (167 x 69 mm) |
| **Weight[11]** | 1.7 lb (780 g) |
| **Internal Battery** | 2 x 3.6V, 3400 mAh (Li-ion) |
| **Battery life time[12]** | 6 hours |
| **Current drain** | 1.0 to 1.5 A, peak 3.5 A |
| **External Power input[13]** | 9–30 V DC |
| **Power Consumption** | 7 W Typical |
| **Operating temperature[14]** | -22°F to 167°F (-30 °C to +75 °C) |
| **Storage temperature** | -40 °F to 167 °F (-40 °C to +75 °C) |
| **Shock/Drop** | 6.6 ft (2 m) |
| **Certification** | CE, FCC Class B Part 15 |
| **Waterproofing** | IP67 |

## OPERATIONAL SYSTEM COMPONENTS

- Embedded Web UI with full control and monitoring functionality
- Septentrio FieldGenius data collection software
- Full support for Carlson SurvCE
- Full support for Esri® Collector for ArcGIS®
- Embedded Septentrio data collector (PinPoint-GIS) for direct access to Esri's® ArcGIS® Online maps
- Mobile PinPoint-GIS App for easy monitoring and control allowing to override location of Android GNSS applications

### Standard System Components:

- Altus NR2
- 4 x Lithium Ion Batteries
- 1 x USB data cable
- 1 x AC Adapter LEMO 9-pin Power Cable
- 1 x Altus NR2 Battery Charger
- 1 x battery charger with ac adapter power supply
- 1 x battery charger cable for cigarette lighter

1. Data call useful in areas with poor internet connection
2. 1 Hz measurements rate
3. Performance depends on environmental conditions
4. 1σ level
5. Baseline <12.42 miles (20 km)
6. RTK Fixed ambiguities
7. Long occupations and precise ephemeris
8. Update rate via Bluetooth limited to 10 Hz
9. No information available (no almanacs, no approximate position)
10. Ephemeris and approximate position known
11. Weight: 1.5 lb (700 g) without batteries
12. Unlimited operation time thanks to hot-swap functionality
13. Power and serial communication provided from Lemo connector with dedicated cable
14. At temperatures lower than -4° F (-20 °C) an external battery may be needed

GET IT ON
**Google Play**

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