

BRx6+

GNSS Receiver



The BRx6+ smart antenna expands GNSS capabilities for premium GNSS RTK performance with triple-frequency tracking and measurement on multiple satellite constellations.

KEY FEATURES

- GPS, GLONASS, BeiDou, Galileo, QZSS
- Atlas® L-Band
- Hot-Swap Lithium-Ion Battery
- 4G Penta Band LTE Modem
- On-board Web UI
- Wi-Fi 802.11 b/g/n
- Bluetooth 2.1 + EDR
- 8 GB Internal Memory

GNSS Technology

The BRx6+ updates the Athena™ GNSS RTK engine with triple-frequency tracking on multiple satellite constellations for robust GNSS RTK with Real Time Networks and local base stations. Users will experience fast initialization to Fixed RTK, as well as stable and repeatable performance in varied conditions. The BRx6+ also has integrated Atlas L-Band for Precise Point Positioning with a subscription. The lightweight BRx6+ receiver may be used as a Base or Rover on demand.

Wireless Communications

The BRx6+ has updated to a 4G Penta-Band LTE cellular modem in addition to an integrated UHF transceiver, Wi-Fi and Bluetooth for modern wireless capabilities. Carlson's Listen-Listen service allows Base/Rover operation via the cellular modem for better correction transmission ranges. In addition, SurvCE/SurvPC provides the option to utilize the cellular modem or Wi-Fi in the hand-held computer via the SurvCE Data Collector Internet feature.

SurvCE/SurvPC

Carlson's SurvCE/SurvPC is combined with the BRx6+ on either the Surveyor 2 field computer or RT3 Windows tablet for a full field solution. SurvCE/SurvPC has full BRx6+ configuration, system status and data logging via Bluetooth. For improved Quality Control and efficiency, SurvCE/SurvPC features an intuitive Live Digital Level with an auto-record option when the BRx6+ is level. With SurvCE/SurvPC, users leverage Carlson's expert team to expand features for quality and productivity.



GNSS Receiver

Receiver Type: Multi-Frequency, Multi-Constellation GNSS
Positioning Modes: RTK, L-band, DGNSS, SBAS, Autonomous
Channels: 394
RTK Formats: RTCM3, ROX, CMR, CMR+⁴
L-Band Formats: Atlas H100, Atlas H30, Atlas H10
Update Rate/
Recording Interval: Selectable from 1, 2, 4, 5, 10 Hz (20 Hz available)

Performance (RMS)

	Horizontal	Vertical
RTK: ^{1,2}	8 mm + 1 ppm	15 mm + 1 ppm
Static Performance (long occupation):	3 mm + 0.1 ppm	3.5 mm + 0.4 ppm
Static Performance (rapid occupation):	3 mm + 0.5 ppm	5 mm + 0.5 ppm
L-Band Performance: ³	0.08 m	0.16 m
SBAS (WAAS): ¹	0.3 m	0.6 m
Autonomous, no SA: ¹	1.2 m	2.4 m

Satellite Tracking

GPS: L1CA, L1P, L2P, L2C, L5
GLONASS: G1, G2, P1, P2
BeiDou: B1, B2
QZSS: L1C, L1CA, L2C, L5
Galileo: E1BC, E5a, E5b
SBAS: MSAS, WAAS, EGNOS, GAGAN

Communication

Connectors I/O: 5-pin Lemo, external power & radio
 7-pin Lemo, USB OTG connection & serial port
 TNC antenna connector for internal radio
 TNC antenna connector for modem module
WebUI: Software upgrade, status, settings and download via browser on Wi-Fi
TTS: Smart voice broadcast system. "Speaking" receiver
Reference Outputs: RTCM2.1, RTCM2.3, RTCM3.0, RTCM3.1, RTCM3.2 including MSM

Radio

Frequency Range: 410 - 470 MHz
Channel Spacing: 12.5 KHz / 25 KHz
Emitting Power: 0.5 / 1 W
Operating Range: 3 - 5 km typical / 10 km optimal⁵

Wireless Module

Wi-Fi: 802.11 b/g/n, Integrated module with antenna
Bluetooth: 2.1 + EDR, Integrated module with antenna

- 1 Depends on multipath environment, number of satellites in view, satellite geometry, and ionospheric activity
- 2 Depends also on baseline length
- 3 Requires a subscription from Hemisphere GNSS
- 4 CMR and CMR+ do not cover proprietary messages outside of the typical standard
- 5 Depends on terrain and operating environment

Cellular

PLS8-E (Int.): **4G** - Penta Band LTE - 800/900/1800/2100/2600 MHz - FDD-Band (20, 8, 3, 7, 1)
3G - Tri Band UMTS (WCDMA) - 900/1800/2100 MHz - FDD-Band (8, 3, 1)
2G - Dual Band GSM/GPRS/EDGE - 900/1800 MHz
PLS8-X (North America):
4G - Penta Band LTE - 700/700/850/AWS (1700/2100)/1900 MHz - FDD-Band (13, 17, 5, 4, 2)
3G - Tri Band UMTS (WCDMA) - 850/AWS (1700/2100)/1900 MHz - FDD-Band (5, 4, 2)
2G - Quad Band GSM/GPRS/EDGE - 850/900/1800/1900 MHz

Power

Battery: Hot-swappable 11.1 V - 37.74 Wh lithium (2 per kit)
Battery Life: 12 hours from 2 batteries and UHF in Rx mode
Voltage: 9 to 22 VDC external power input. Hot-swappable 11.1 V - 37.74 Wh lithium (2 per kit)
Charge Time: Typically 7 hours

Memory

SIM card: User accessible SIM card slot
Memory: Internal 8 GB, accessible through USB and Wi-Fi.
SD card: Micro SD card slot, up to 64 GB.

Environmental

Operating Temperature: -30°C to 60°C (-22°F to 140°F)
Storage Temperature: -40°C to 80°C (-40°F to 176°F)
Waterproof/Dustproof: IP67
Shock Resistance: MIL-STD-810G, method 516.6
 2 m pole drop on concrete floor
 1 m free drop on hardwood floor
Vibration: MIL-STD-810G, method 514.6E-I
Humidity: Up to 100%
Inflammability: UL recognized, 94HB Flame Class Rating (3)
Chemical Resistance: Cleaning agents, soapy water, industrial alcohol, water vapor, solar radiation (UV)

Mechanical

Size: 14.1 D x 14.0 H cm (5.5 D x 5.5 H in)
Weight: <1.38 kgs (<3.05 lbs)
Mounting: 5/8"x11, 55° thread angle, stainless steel insert
Phase Center Offset: GPS L1 and L2 offset below 2.5 mm