

Outback A631 Base Station/Rover

All-in-one, Triple Frequency, Multi-GNSS Receiver Solution



Outback A631 RTK Base Station

- Fast start up and acquisition times
- 900 MHz radio for license free communication
- Mobile use with carrying case and external battery
- Ideal solution to provide customer owned corrections
- Tracks and provides corrections for GPS, GLONASS, BeiDou, Galileo and QZSS constellations



Outback A631 RTK Rover

- Easy installation and setup
- 900 MHz radio for license free communication with A631 RTK Base
- RTK Rover to utilize customer owned corrections for tile plows and ditching applications

GNSS Receiver Specifications

Receiver Type:	Multi-Frequency GPS, GLONASS, BeiDou, Galileo, QZSS, and Atlas
Signals Received:	GPS L1CA/L1P/L1C/L2P/L2C/L5 GLONASS G1/G2/G3/P1/P2 BeiDou B1i/B2i/B3i/B10C/B2A/B2B/ACEBOC Galileo E1BC/E5a/E5b/E6BC/ALTBOC QZSS L1CA/L2C/L5/L1C/LEX/IRNS L5 Atlas
Channels:	800+
GPS Sensitivity:	-142 dBm
SBAS Tracking:	3-channel, parallel tracking
Update Rate:	10 Hz standard, 20 Hz optional (with activation)
Timing (1 PPS)	
Accuracy:	20 ns
Cold Start:	60 s typical (no almanac RTC)
Warm Start:	30 s typical (almanac and RTC)
Hot Start:	10 s typical (almanac, RTC, and position)
Maximum Speed:	1,850 kph (999 kts)
Maximum Altitude:	18,000 m (59,055 ft)

Accuracy

Positioning:	RMS (67%)	2DRMS (95%)
Autonomous, no SA: ¹	1.2 m	2.5 m
SBAS: ¹	0.3 m	0.6 m
Atlas H10: ^{1,3}	0.04 m	0.08 m
Atlas H30: ^{1,3}	0.15 m	0.3 m
Atlas Basic: ^{1,3}	0.50 m	1.0 m
RTK: ^{1,2}	8 mm + 1 ppm	15 mm + 2 ppm

L-Band Receiver Specifications

Receiver Type:	Single Channel
Channels:	1530 to 1560 MHz
Sensitivity:	-130 dBm
Channel Spacing:	5 kHz
Satellite Selection:	Manual or Automatic
Reacquisition Time:	15 sec (typical)

Communications

Ports:	2 full-duplex RS-232, CAN
Baud Rates:	4800 - 460,800
Correction I/O Protocol:	Hemisphere GNSS proprietary, RTCM v2.3 (DGPS), RTCM v3 (RTK)
Data I/O Protocol:	NMEA 0183, NMEA 2000, Hemisphere GNSS binary
Timing Output:	1 PPS, CMOS, active low, falling edge sync, 10 kΩ, 10 pF load

Event Marker

Input:	CMOS, active low, falling edge sync, 10 kΩ, 10 pF load
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Data & Storage

Storage Type:	16 GB (internal)
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Power

Input Voltage:	7-32 VDC
Power Consumption:	1.7 W nominal (L1/L2 GPS/GLONASS; L-band)

Current

Consumption:	0.12 A nominal (L1/L2 GPS/GLONASS; L-band)
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Power Isolation:	No
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Reverse Polarity

Protection:	Yes
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Antenna Voltage:	Internal Antenna
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Environmental

Operating Temperature:	-40°C to +70°C (-40°F to +158°F)
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Storage Temperature:	-40°C to +85°C (-40°F to +185°F)
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Humidity:	95% non-condensing
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Mechanical

Shock:	MIL-STD-810H, Method 516.8 Procedure I, Operational, 50G half sine 11ms
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Vibration:	MIL-STD-810H, Method 514.8, Procedure I, General vibration Category 24 E1
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EMC:	CE, FCC Part 15, Subpart B, CISPR 32
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Enclosure:	IP67
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Mechanical

Dimensions:	15.8 L x 15.8 W x 7.9 H (cm) 6.2 L x 6.2 W x 3.2 H (in)
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Weight:	< 1.05 kg (< 2.53 lbs)
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Status Indications

(LED):	Power, GNSS Lock
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Power/Data

Connector:	12-pin male (metal)
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Antenna

Mounting:	1-14 UNS-2A female adapter, 5/8-11 UNC 2B adapter, flat mount available
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1. Depends on multipath environment, number of satellites in view, satellite geometry, and ionospheric activity
2. Depends also on baseline length
3. Hemisphere GNSS Proprietary