



## BUFFALO GNSS (GPS/GLONASS) MODULE

### KEY FEATURES

Supports GPS L1 signal frequency (1575.42 MHz), C/A code

Supports GLONASS L1 signal frequencies (1598 to 1606 MHz), C/A code

32 tracking channels

NMEA output & input

On-board low noise amplifier

Supports active and passive antennas

Built-in antenna open/short circuit protection

SBAS (WAAS, EGNOS) capable

Update at 1Hz

PPS timing output

28 surface mount castellations

Matches footprint of C1919 and Copernicus II modules

### GENERAL OVERVIEW

Trimble's advanced Buffalo B1919 GNSS module delivers top performance and Trimble quality in a new generation of positioning products.

Buffalo GNSS module helps bring new and innovative products to market faster to allow you to capture greater market share. As a completely qualified positioning solution with full warranty, the Buffalo modules harbor none of the development risk or hidden cost associated with GNSS chipset implementations.

The B1919 GNSS receiver provides L1 Frequency GPS and GLONASS - using the NMEA protocol from two serial ports, and also a PPS timing output. Buffalo can acquire and tracking using both GPS and GLONASS constellations. Galileo and QZSS support will be available through future firmware update.

Buffalo modules match the footprint of Copernicus II and Condor C1919 receiver modules, providing an upgrade path for existing designs.

The B1919 receiver features powerful positioning performance in a 19.0 x 19.0 x 2.54 mm package. The module's 28 reflow-solderable surface-mount edge castellations provide an interface for your design without the need for costly I/O and RF connectors.

Choose the Buffalo module for greater GNSS performance which is backed by Trimble's 30+ years of experience in providing the best positioning solutions in the market today.



Buffalo B1919 (with shield removed)

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## PERFORMANCE SPECIFICATIONS

Accuracy (24 hr static, full sky view, rooftop antenna) (GNSS)

Horizontal	<1.5 m 50%, <4 m 90%
SBAS	<1.3 m 50%, <3.5 m 90%
Altitude	<4 m 50%, <8 m 90%
SBAS	<2.5 m 50%, <5 m 90%
Velocity	0.05 m/sec
Static PPs	15µs PPS (RMS)

Acquisition (Autonomous, -140 dBm, 50% typical)

	GNSS
Reacquisition	2.4 s
Hot Start	2.5 s
Warm Start	22 s
Cold Start	33 s

	GPS+GLONASS
Tracking	-157 dBm
Acquisition*	-146 dbm
Receiver Dynamics	4 G max

\* For hot start with ephemeris otherwise -144 dBm

## INTERFACE CHARACTERISTICS

Connections	28 surface-mount edge castellations
Serial Port	1 serial port
PPS	3.0 V CMOS-compatible pulse, once per second
Protocols	NMEA

## ELECTRICAL CHARACTERISTICS

Prime Power	+2.7 V DC to 3.3 V DC
Power Consumption	(typ.) 62 mA (186 mW) @ 3.0 DC
Backup Power	+2.7 V DC to +3.3 V DC
Ripple Noise	Max 50 mV, peak-to-peak from 1 Hz to 1 MHz

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +105 °C
Vibration	0.008 g2/Hz . . . . . 5 Hz to 20 Hz 0.05 g2/Hz . . . . . 20 Hz to 100 Hz -3 dB/octave . . . 100 Hz to 900 Hz
Operating Humidity	5% to 95% R.H. non-condensing, at +60 °C

## PHYSICAL CHARACTERISTICS

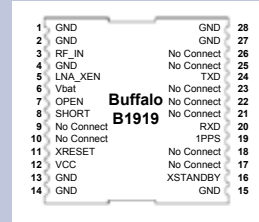
Enclosure	Metal shield
Dimensions	19 mm W x 19 mm L x 2.54 mm H (0.75 in W x 0.75 in L x 0.1 in H)
Weight	<2 g (0.07 oz) including shield

## SUPPORT INFORMATION

Get support information, including documentation and support software, at trimble.com:

<http://www.trimble.com/embeddedsystems/>

## PINOUT ASSIGNMENTS



## ORDERING INFORMATION & ACCESSORIES

Module . . . . . available as 20 piece module package for evaluation  
Tape on reel (100 pieces)  
Tape on reel (500 pieces)

Starter Kit . . . . . Includes B3000, 3 additional Buffalo modules,  
GPS/GLONASS antenna with SMA connector and 5 m cable.  
Also comes with cigarette lighter adapter and AD/DC adapter.  
Software Tool Kit is available from the Trimble Support page.

## ORDERING INFORMATION

MODEL	PART #	PACKAGING		STARTER KIT
		20-PC TRAY	500-PC REEL	
B1919	99777-00	√	√	87777-05

Parts of this product are patent protected.

Trimble has relied on representations made by its suppliers in certifying this product as RoHS compliant.

Specifications subject to change without notice.

Trimble Navigation Limited is not responsible for the operation or failure of operation of GPS/GLONASS satellites or the availability of GPS/GLONASS satellite signals.

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