

# NTRIP Base Station

(RLVBNBS-XX)



Experience centimetre-level accuracy with the Racelogic GNSS RTK Base station – a high-performance, quad-constellation, dual-frequency solution designed for ultimate positioning precision.

With built-in cellular and Wi-Fi connectivity, this advanced base station seamlessly connects to NTRIP service providers, enabling you to establish your own personal NTRIP correction service with ease.

Supporting both MSM4 and MSM7 RTK message streams, it delivers reliable, real-time data for demanding GNSS applications in automotive testing, surveying, mapping, and beyond.



## Features

- Survey grade GNSS multi-band receiver (GPS L1/L2/L1C/L2C, GLONASS L1OF/L2OF, Galileo E1B/E1C/E5b, BeiDou B1/B2).
- MSM4 and MSM7 DGNSS output formats
- Inbuilt Cellular and Wifi modems to allow the broadcast of corrections via NTRIP
- Option to be supplied with either an internal or external GNSS antenna
- Range of Internal or External radio options to broadcast RTK corrections up to 10km line of sight
- Can operate up to 24 hrs on the built-in battery life (depending on radios in use) or from external power
- Compatible with a wide range of external radios to suit location and range requirements
- Memory to store and recall different reference locations
- 5/8" UNC thread for mounting to survey tripods

## Inputs

Power	Power can be obtained either from the internal battery supply or from an external source
Multi band GNSS antenna (RLVBACS067) <i>*VBNBS-NRG variants only</i>	Connects to the Base Station via screw-on SMA connectors and must be placed in a position away from any other obstacles that could cause satellite signals to be blocked or reflected. Wherever possible, place the antenna and tripod (needs to be ordered separately) at the highest available spot to ensure the best unobstructed satellite signal reception.
SIM Card	The optional SIM card allows the Base Station lite to connect to NTRIP servers via cellular network
USB	USB connection for unit Firmware upgrades

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## Outputs

RS232 Serial	Serial output of DGNSS correction messages that can be used to connect to a variety of Racelogic radios or to a third party system.
NTRIP Modem	The NTRIP Base Station has the ability to broadcast the DGNSS corrections via internal NTRIP modem.

## Output Messages

### RTCM v3.2 MSM7

Type	Description	NTRIP/Serial >19200kbps	Serial @9600kbps
1005	Stationary RTK Reference Station ARP plus the Antenna Height	10 s	10 s
1033	Receiver and Antenna Description	10 s	10 s
1230	GLONASS bias information	10 s	10 s
1077	GPS MSM7 containing L1 C/A, L2 C and L1/L2 P(Y) data	2 s	4 s
1087	GLONASS MSM7 containing G1 and G2 C/A data	2 s	4 s
1097	GALILEO MSM7 containing E1 and E5a, E5b and E5(a+b) data	2 s	4 s
1127	BeiDou MSM7 containing B1 and B2 data	2 s	4 s

### RTCM v3.2 MSM4

Type	Description	NTRIP/Serial >19200kbps	Serial @9600kbps
1005	Stationary RTK Reference Station ARP plus the Antenna Height	10 s	10 s
1033	Receiver and Antenna Description	10 s	10 s
1230	GLONASS bias information	10 s	10 s
1074	GPS MSM4 containing L1 C/A, L2 C and L1/L2 P(Y) data	2 s	4 s
1084	GLONASS MSM4 containing G1 and G2 C/A data	2 s	4 s
1094	GALILEO MSM4 containing E1 and E5a, E5b and E5(a+b) data	2 s	4 s
1124	BeiDou MSM4 containing B1 and B2 data	2 s	4 s

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## Specifications

Environmental	Power
<ul style="list-style-type: none"><li>Storage Temperature: -40°C to +50°C</li><li>Operating temperature: 0°C to +45°C</li><li>Battery fast charge temperature: 10°C to +50°C</li><li>IP Rating: IP67</li></ul>	<ul style="list-style-type: none"><li>Battery life: Up to 24hr</li><li>Input voltage range: 12 V <math>\pm</math>1 V DC</li><li>Power &lt;28 W</li></ul>
Radio Modems	Memory
<ul style="list-style-type: none"><li>Frequency – Europe: 868 MHz (external)</li><li>Frequency – All other countries: 915 MHz (external)</li><li>Frequency – Satel: 430 MHz (external)</li><li>Frequency - 2.4 GHz (Internal)</li></ul>	<ul style="list-style-type: none"><li>99 known locations</li></ul>

## Package Contents

### *RLVBNBS-NRG NTRIP Base Station with External GNSS Antenna*

Description	Product Code
NTRIP Base Station unit (Ext. GNSS antenna)	VBNBSNRG-V2
USB 'A' – USB Micro 'B' (1.8m)	RLCAB117
VBNBS AC Power Cable	RLCAB203
GNSS Ground plane antenna + 5m Cable	RLVBACS067-5

### *RLVBNBS-NR NTRIP Base Station with Internal GNSS Antenna (No Radio)*

Description	Product Code
NTRIP Base Station unit (No Radio)	VBNBSNR-V2
USB 'A' – USB Micro 'B' (1.8m)	RLCAB117
VBNBS AC Power Cable	RLCAB203

### *RLVBNBS-24 NTRIP Base Station with internal GNSS antenna and 2.4GHz Radio*

Description	Product Code
NTRIP Base Station (2.4GHz Radio)	VBNBS24-V2
USB 'A' – USB Micro 'B' (1.8m)	RLCAB117
VBNBS AC Power Cable	RLCAB203
2.4GHz Radio antenna	ANT24CWHWSMA