

Differential Base Station

(RLVBBS6)



The RACELOGIC DGNS RTK Base Station is designed to improve positional accuracy of VBOX systems as well as other compatible GNSS systems by calculating and transmitting differential GNSS correction data.

By setting up the Base Station in a known position, it is able to accurately monitor the difference between its known position and the position that it is calculating from GNSS satellite signals.

The difference is then transmitted via radio to allow a remote GNSS system to correct its position.

The differential correction message can be broadcasted in RTCM v2, RTCM v3, RTCM v3.2 MSM4 and MSM7, or proprietary RTK formats using an internal or mast mounted radio modem transmitter.

Depending on the type of rover unit used, position accuracies of up to 2 cm* are available.



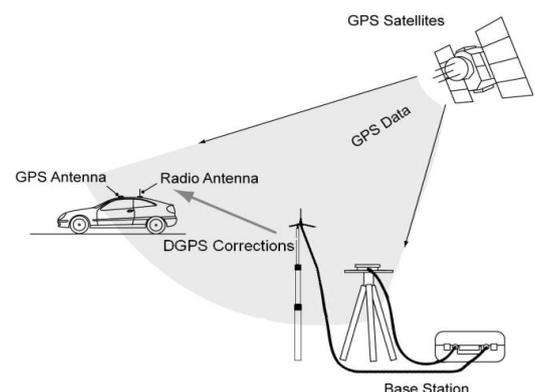
Features

- Survey grade GNSS multi-band receiver (GPS L1/L2/L1C/L2C, GLONASS L1/L2, Galileo E1/E5a/E5b, BeiDou B1/B2).
- Accuracy*: Horizontal up to 5mm + 0.5ppm x Baseline; Vertical up to 10mm + 0.8 x Baseline
- RTCM v2, RTCM v3, RTCM v3.2 MSM4 and MSM7, or proprietary outputs
- 25-position memory to store and recall different reference locations
- Optional integral or mast mount radio transmitters with range of up to 10 km (approx. 6.2 miles) line of sight and 2 km in built-up areas
- Self-survey mode
- Up to 18 hrs built-in battery life (depending on radios in use) or external power
- Rugged IP64 (splash proof) enclosure
- Compatible with a wide range of radios to suit location and range requirements

* 95 % CEP (Circle Error Probable) means 95 % of the time the position readings will fall within a circle of the stated radius.

Communication with external units is carried out via radio. The Base Station is designed to work with a variety of different radios to suit different requirements.

RACELOGIC has a number of radio sets available, allowing you to select the most suitable frequency and range for your region.



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Output Messages

RTCM v3.2 MSM7

Type	Description	Rate
1006	Stationary RTK Reference Station ARP plus the Antenna Height	10 s
1008	Antenna Descriptor and Serial Number	10 s
1033	Receiver and Antenna Description	10 s
1230	GLONASS bias information	10 s
4091	Topcon Positioning Systems Proprietary	10 s
1077	GPS MSM7 containing L1 C/A, L2 C and L1/L2 P(Y) data	1s*
1087	GLONASS MSM7 containing G1 and G2 C/A data	1s*
1097	GALILEO MSM7 containing E1 and E5a, E5b and E5(a+b) data	1s*
1127	BeiDou MSM7 containing B1 and B2 data	1s*

* 2s when set to 0.5 Hz update rate

RTCM v3.2 MSM4

Type	Description	Rate
1006	Stationary RTK Reference Station ARP plus the Antenna Height	10 s
1008	Antenna Descriptor and Serial Number	10 s
1033	Receiver and Antenna Description	10 s
1230	GLONASS bias information	10 s
4091	Topcon Positioning Systems Proprietary	10 s
1074	GPS MSM4 containing L1 C/A, L2 C and L1/L2 P(Y) data	1s*
1084	GLONASS MSM4 containing G1 and G2 C/A data	1s*
1094	GALILEO MSM4 containing E1 and E5a, E5b and E5(a+b) data	1s*
1124	BeiDou MSM4 containing B1 and B2 data	1s*

* 2s when set to 0.5 Hz update rate

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RTCM v3

Type	Description	Rate
1004	Extended L1&L2 GPS RTK Observables for GPS RTK Use	1 s
1012	Extended L1&L2 GLONASS RTK Observables	1 s
1006	Stationary RTK Reference Station ARP plus the Antenna Height	10 s
1008	Antenna Descriptor and Serial Number	10 s

RTCM v2

Type	Description	Rate
1	Differential GPS corrections	1 s
3	GPS Reference Station Parameters	10 s
31	Differential GLONASS corrections	1 s
32	GLONASS Reference Station parameters	10 s

Inputs

Power	Power can be obtained either from the internal battery supply or from an external source via a front panel (using the supplied mains power supply, or via an external waterproofed connector from a suitable 8-30 V DC supply).
Multi band GNSS antenna	Connects to the Base Station via screw-on TNC 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.

Outputs

Radio Antenna	None included. Variety of radios available depending on country and range requirements: please see radios info sheet or contact RACELOGIC.
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Specifications

Temperature	Power
<ul style="list-style-type: none">Storage: -40°C to +50°COperating: 0°C to +45°CBattery fast charge: 10°C to +50°C	<ul style="list-style-type: none">Battery life: Up to 18hr (depending on radios)Input voltage range: 8-30 Volts DCInput current:Operating and charging @19V: 2.25 AmpsOperating but not charging @19 V: <0.5 Amps
Radio Modems	Memory
<ul style="list-style-type: none">Frequency – Europe: 868 MHzFrequency – All other countries: 915 MHzFrequency – Satel: 430 MHzFrequency - 2.4 GHz	<ul style="list-style-type: none">25 known locations

Package Contents

Description	Product Code
Base Station 6 unit	VBBS6
Country-specific main cable	ACS020
3m antenna cable (RG-223 TNC to TNC)	RLCAB101-3
GNSS Ground plane antenna	ACS320
Lead (9 Way 'D' Plug to SKT Lead)	CSLEAD76