

# RT-Base

## GPS Base Station

### Features

- 45cm DGPS Corrections
- 20cm L1 Corrections
- 2cm L2 Corrections
- RTCA Format
- Integral 10h Battery
- Integral Charger
- Integral Mains PSU
- Integral Radio Modem
- 450MHz Band
- Error Correcting Transmission
- Save/Restore Antenna Position
- Multi-path Rejecting GPS Antenna
- IP65 Rated Case

### Compatibility

- RT3000
- MicroSAT R20-20cm
- MicroSAT R20-2cm
- DGPS Receivers

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## Portable GPS Base Station with Integral Battery and Radio Modem

The RT-Base is a portable GPS Base Station capable of providing Differential Corrections for Differential GPS Receivers.

The RT-Base can be used with the RT3000 products to give up to 2cm positioning accuracy.

One RT-Base unit can be used to correct multiple DGPS systems. Additional Remote Radio Modems can be purchased for each mobile DGPS system.

### Fast To Install

The RT-Base has been designed with installation speed in mind. Simply connect the GPS Antenna and the Radio Modem Aerial; then turn on. The unit can start transmitting corrections in under 2 minutes with a known location or under 5 minutes if the position needs to be averaged.

Training for operators is also minimal. Instructions are printed on the inside of the RT-Base unit and a Quick Guide is provided to make the operation easy.

### Integral Battery

The RT-Base includes a 10 hour battery for all-day operation. A 12-volt input is provided for an external battery if required.

An internal mains charger can charge the RT-Base's battery in 2 hours. The internal power supply can be used to run the system if mains power is available.

### Multipath Rejection

The RT-Base uses Pulse-Aperture Correlator Technology to minimise the effects of multipath.

The GPS-600 Pin-Wheel Technology Antenna includes a ground-plane to minimise ground surface multi-path and reflections.

### Radio Modem

The RT-Base includes a 1-watt (optional 0.5W) radio modem. This operates in the 450MHz band, which is licence free in many countries.



Advanced Error Correcting Codes are used in the Radio Modem's communication to enhance reliability and minimise the number of corrupt packets.

The Radio Modem provides reliable transmission over a 2km range in an open environment. Since some packets can be dropped or have errors, the Radio Modem can be used up to a range of 5km in open environments.

### IP65 Rugged Case

When the lid is closed the RT-Base has IP65 ingress protection, making it suitable for use in all weathers.

The RT-Base is mounted in a rugged ultra high impact PELI case.

## Components

Qty	Description
1	RT-Base Unit
1	GPS Antenna with integral Ground-Plane
1	15m TNC-TNC GPS Antenna Cable
1	Tripod
2	Radio Modem Aerial/Antenna with 5m cable and Magnetic Mount
1	IEC Mains Cable (UK, EU and US-style plugs can be specified)
1	SATEL Sateline-3AS Radio Modem (for remote vehicle)

## RT-Base Specification

Parameter	Specification
Mains Power	110-240 V AC. 50-60Hz. 3A Max.
Battery	12V, 7Ah, Sealed Lead-Acid
Charge Time	2 hours
Operating Time	> 10 hours
Operating Temperature	0 to 50°C
Charge Temperature	10 to 40°C
Environment	IP65 – with lid closed
Relative Humidity	95%, non-condensing
Corrections	RTCA (Differential, L1, L2)
Frequency	1 Hz
Format	RS232
Dimensions	486 x 392 x 192 mm
Weight	12.6 kg

## Radio Specification

Parameter	Specification
Frequency Range	380 – 470Mhz
Channel Spacing	12.5 kHz
Number of Channels	160
Frequency Stability	1.5 kHz
Type of Emission	F1D
Communication Mode	Half-Duplex
Carrier Power	1W (or 0.5W option for UK)
Carrier Power Stability	+2 dB to –3 dB
Adjacent Channel Power	according to EN300 220-1 / ETS 300 113
Spurious Radiation	according to EN300 220-1 / ETS 300 113
Data Rate	9600 baud