

# GPS-RT POSITION/RATE TABLE

## *For Motion simulation*

### Key Features

- Small lightweight Single Enclosure
- Low Initial Investment
- Interfaces with our GPSSIM-14
- All metal construction, Black anodized finish



*GPS-RT shown above with a typical mobile GPS display unit installed for testing.*

**GPS Creations** now offers an economical single-axis position/rate table that can be directly driven by the GPSSIM-14 GPS simulator or similar equipment. (Note: GPS simulator requires MFIO automotive card option when used with the GPS-RT). The GPS-RT rate table rotates in synchronization with the scenario (vehicle turns) being simulated on the GPS simulator permitting verification of GPS receiver and map display designs. Many GPS receivers contain a gyro and/or other sensors for use in dead-reckoning applications and a position/rate table is an ideal method for lab testing the performance of these systems. The GPS-RT contains all the

electronics and mechanical hardware for direct interface to the GPS simulator. The GPSRT is powered from 100-240 volts AC, 50/60Hz. Also, 12 volts DC at 3.0 amps is available at the table for powering the unit under test (U.U.T.). The GPS-RT is designed for use in a laboratory environment but it may be used in other locations if desired. The GPS-RT operating temperature range is -40C to +85C making it possible to place the table plus the UUT in an environmental chamber. The weight is 35 lbs. (15.88 Kg.) making it a much more portable device than most other rate tables of this capacity.

### Innovative Features

- Used for testing inertial components such as Micro Electro-Mechanical Sensors (MEMS)
- 12 inch (30.48 cm) diameter machined aluminum top plate
- 360 degree/second maximum rotation velocity
- Nominal Payload capacity 10 lbs. (5.54 Kg.)
- 12 Volt D.C. step motor direct drive (gear reduction drive)
- 100-240 V.A.C., 50/60 Hz. operation
- 12 Volts D.C. @ 3.0 amps available for U.U.T.
- 10 electrical connections available for U.U.T., barrier strips used for quick connections
- DB-15 Male I/O connector for interface to MFIO card on GPS simulator
- A/D converter accepts 0 to 5 volt (gyro) input
- Multiple threaded mounting holes on table top for securing the U.U.T.
- 35 lbs (15.88 Kg.) machine weight less
- -40C to +85C operation
- Adjustable leveling screws on base of rate table
- Near zero backlash gear box drive
- Includes table diagnostic procedure



# GPS-RT Single Axis Position/Rate Table

*For use with a GPS Constellation Simulator*



8.0 In.

12.0 In.

The small size and weight of the GPS-RT position/rate table makes it an ideal desk-top companion test station for use with a GPS simulator. The motor and gear box assembly provide for a solid, yet quiet, mechanical drive to the table. All electrical connections are provided through an internal slip ring assembly eliminating twisted wires and cables connecting to the unit under test (UUT). Cut-outs on each side of the base allow for lifting and moving the rate table without placing stress on the table drive mechanism. The rate table has a cover plate on the base assembly eliminating dust and dirt build-up on the electronics and mechanical sections. The three leveling screws on the base assembly may be removed to permit different mounting or other orientation for other planes of operation if desired.

## TECHNICAL SPECIFICATIONS

### Electrical Interface:

- 0 to 5 Volt DC table drive (2.5 volt for zero rotation)
- 2 slipring lines with 12 VDC for operation of UUT
- 8 additional slipring lines, 3.0 amp. capacity each for other signals (wheel-tick, forward/reverse, etc.)
- RS-232 or USB interface set-up & diagnostics software included (Specify RS232 or USB when placing order)
- RF Connector - TNC Female
  
- MicroProcessor based design using a PIC 18F2620  
Operational firmware may be upgraded in the field
- P.O.S.T. (Power On Self Test) permits table operation independent of GPS simulator connection.

### Power Requirements:

- Operating Voltage: 100/240 Volts AC
- Frequency: 50/60 Hz
- Current: 2 A
- Front panel on/off fused power (mains) switch
- Three terminal grounded AC power connector

## PHYSICAL CHARACTERISTICS

### Mechanical:

- 360 Degree/Second Rotation Maximum
- 12 Inch (30.48 cm.) Dia. Table Top
- 8 Inches (20.32 cm.) overall height
- 1/4-20 threaded inserts in table top for securing UUT
- Weight: 35 lbs. (15.88 Kg.)
- Black anodized aluminum construction

### Accuracy:

- +/- 5.0 Degrees resolution

## ORDERING INFORMATION

**Part Number - GPS-RT**

**Shipping weight: 55 lbs.**

### Options:

- Additional slipring lines (factory installation required)
- Related Products: GPSSIM-14 GPS simulator  
GPS1011 Horn Antenna
- Contact GPS Creations for GPS Simulator/rate table monthly rental options (3-month minimum rental required).
- GPS Creations also offers on-site training of the GPS simulator and rate table- contact us for more information.



Visit us on the web at [gpscreations.com](http://gpscreations.com) for more information

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