SANAV™
Navigation & Communication

GPS L1 Signal Re-radiator for Indoor Satellites Signal Reception

RK-304

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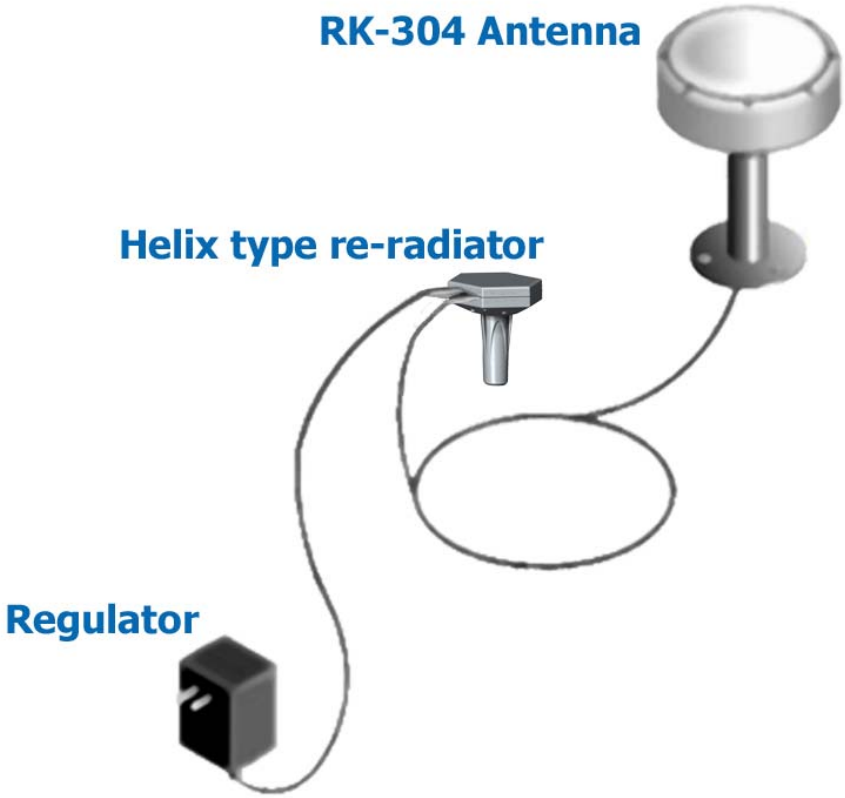

RK-304 Detailed Parts

RK-304 is a complete GPS L1 band signal re-radiating system with dual antennas to re-transmit real-time GPS satellite outdoor reception to an indoor environment. The system kits include a high gain external GPS antenna, a precisely calibrated amplifier circuit with Helix type re-radiator, and a built-in power supply regulator. The Helix type re-radiator allows multiple GPS receivers perform on-the-fly receiver performance within a closed environment, while the main GPS antenna is located on an unmanned outdoor location. GPS L1 signal is a 1575.42Mhz frequency along with a 1.023Mbps Bi-Phase Shift Keying (BPSK) modulated spreading code. The input signal power at the receiving antenna is approximately 130dBm (spreading over 2Mhz), so the desire signal is below the thermal noise floor. The whole system is designed as PNP (Plug-and-Play) hardware and it can be installed either temporarily or permanently to a secured location by using whether dashboard suction cup or screws.

Wherever in lab/building/underground garage, **RK-304** guarantees to bring and re-radiate GPS signal that meets your requirement.

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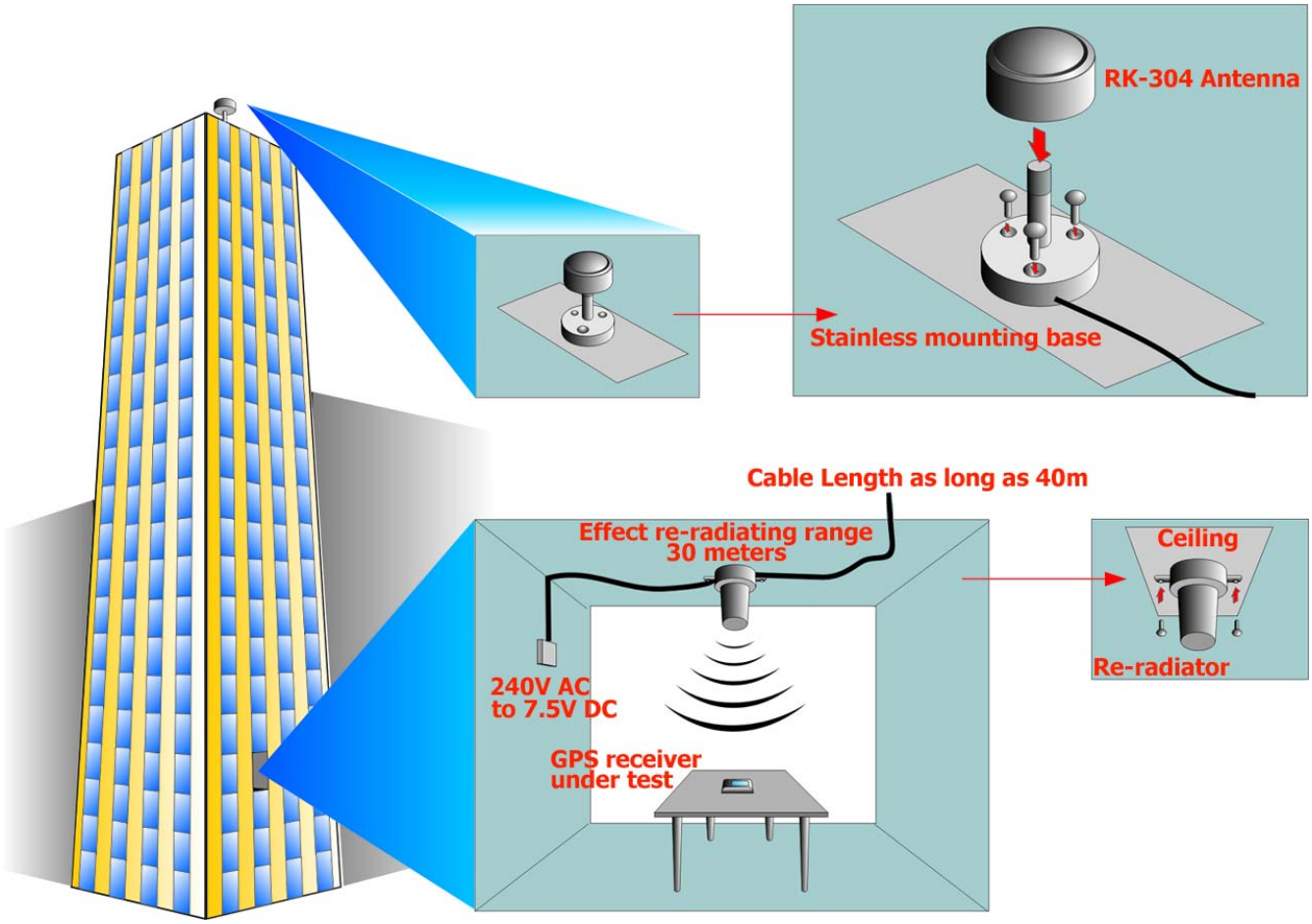
TÜV 122070
Deutscher Akkreditierungs Rat DAR TGA-ZM-07-92
ISO 9001:2000
12 100 18526 TMS



RK-304 Interconnection Diagram

Installation

1. **Locate and mount the RK-304 external antenna on the center roof of building horizontally with the best visibility of the sky.**
2. **Locate and mount the RK-304 helix type re-radiator to the ceiling with its cylinder facing and against the center of the testing bench.**
3. **Connect the RK-304 external antenna to helix type re-radiator with 40m RG58 A/U RF cable.**
4. **Power up the system by plugging the AC 115V (240V) to DC 9V adapter**

NOTE: The helix type re-radiator has to be located/mounted inside the building with adequate isolation from the RK-304 external antenna to avoid interference.

SAN JOSE NAVIGATION, INC.

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Features

- ◇ **Compact size/low cost/high performance**
- ◇ **Polycarbonate radome with fully waterproof at IP66 rating**
- ◇ **Permanently screw mount/dashboard suction cups**
- ◇ **One external re-radiator for multiple, different GPS receivers**
- ◇ **Real-time GPS satellites outdoor reception to an indoor environment**
- ◇ **Cable length as long as 40m RF cable**
- ◇ **Idea for GPS lab/GPS retail store/GPS production line/ GPS repair service**
- ◇ **Re-radiating range as long as 30m**

Applications

- ◇ **GPS Labs**
- ◇ **GPS Retail Stores**
- ◇ **GPS Production Line**
- ◇ **GPS Repair Service**
- ◇ **GPS Signal Reception in Underground Garage**

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Specifications

RK-304		
General Description	**Professional GPS re-radiating system**	
Physical Construction	Construction: Polycarbonate radome enclosure, cast die at the bottom, sealed with weatherproof rubber.	
	Dimensions: Antenna: 4.5" in diameter & 2.9" in height Helix type re-radiator: 37mm (L) x 35mm (W) x 71mm (H) Regulator: 65mm (L) x 32mm (W) x 43mm (H)	
	Cable Length: 40m RG-58 A/U	
	Standard Connector: Antenna: TNC Jack, re-radiator: SMA Jack	
	Weight: Antenna: 237g Helix type re-radiator: 48g Regulator: 85g	
	Standard Mounting: Stainless bracket mount	
	Color: Antenna: White Helix type re-radiator: Black Regulator: Black	
Performance Specification	External Antenna	Polarization: R.H.C.P.
		Absolute Gain @ Zenith: +5 dBi typically
		Gain @ 10° Elevation: -5 dBi typically
		General: L1 frequency, 1575.42 MHz +/-1.023 MHz
		Gain: 27 dB typically
		Bandwidth: 2 MHz min.
		Noise Figure: 2.0 max.
		Axial Ratio: 3dB max.
		Out of Band Attenuation: 20 dB min. @ Fo +/- 50Mhz
		VSWR: 2.0 max.
		Output Impedance: 50 ohm
	Helix Type Re-radiator	Re-radiating Range: 30m
Electrical Specification	Supply Voltage: 100~240V AC to 7.5V DC Regulator	
	Power Consumption: 48mA (+/- 5%) @ 7.5V DC	
Environmental Specification	Operating Temperature: –30° to +85° C	
	Storage Temperature: –40° to +90° C	
	Operating Humidity: 95% RH, non-condensing	

Specification Subject to Change Without Notice