# RTP30 Radio Telescope

The RTP30 is a State-Of-The-Art integrated Radio Telescope, fully motorized which is designed for professionals. This is an ideal radio telescope system for those interested to start serious research in radio astronomy.

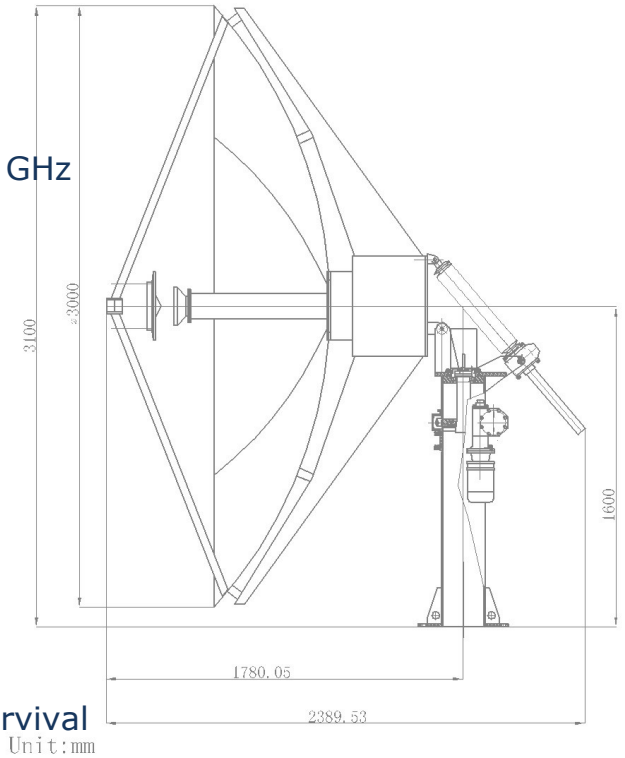
## Integrated RTP30 includes:

- **A 3.0 meter dual-reflector antenna.**
- **Pedestal with EL/AZ high precision motors and high resolution encoders.**
- **Antenna Control Unit with tracking option.**
- **Receiver unit with high resolution digitizer and high dynamic range detector.**
- **Sensitive and ultra low noise Front-End outdoor unit.**
- **Imaging and control software with radio sources database.**

## Main Features:

### DISH:

- Antenna Diameter: 3.0m
- Antenna Type: Ring focus antenna
- Operating frequency: Suitable for up to 18 GHz
- Gain : 42 dBi @ 4GHz
- VSWR : 1.25:1
- -3dB Beamwidth: 1.45° @ 4GHz
- Noise temperature : 34°K @10° El
- First Sidelobe : < -14dB
- Surface accuracy : 0.5mm
- Reflector material : Aluminium
- Operating wind speed : 80 km/h
- Survival wind speed : 210 km/h
- Operating temperature : -40°~+60℃
- Relative humidity : 0%~100%
- Total weight ( with pedestal): ~800 Kg
- Seismic : 0.3 G horizontal, 0.15 G vertical
- Ice Loading: 13mm Operational; 25mm Survival
- Adaptation : Salt, pollutant, radiation, rain

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## PEDESTAL:

- Mount type: EL over AZ Configuration
- EL range:  0-90 degree
- AZ range: 0-360 degree
- Supports Solid Reflectors up to 3.0 meter or mesh reflector up to 5m
- High Reliability and Accuracy
- High Torque and Low Backlash
- High resolution encoders.
- PC-based Automated Computer Control with ACU.
- Total weight( with 3.0m solid reflector): ~800 Kg
- Operating temperature : -40°~+60℃
- Relative humidity : 0%~100%
- Power requirement: single or three phase according to order

## ANTENNA CONTROL UNIT:

- PC Based Controller
- Local Control via RS-232 or USB
- Multi-speed inverter (optional)
- Digital Display of Antenna Position and Error Signals
- Display screen of alarm, antenna position and fault indication.
- Secure Operation; software and hardware travel limit switches ensure the safety operation.
- Modes of Operation; Remote, Standby, Manual and Slave
- Internal memory
- Position control for up to three axes
- Optical isolation of process interface
- Display range of angle: AZ  0-360°  ; EL  0-180°
- Reading Resolution: Single phase motors $0.1^0$ , 3-phase motors $0.01^0$
- Utilizes Commercial Off-The-Shelf Hardware
- Standard 19-in Rack Mount
- Power supply: 115/230 V~ ±10%, 50/60 Hz
- Environmental temperature:  0°~+45℃
- Humidity: <90%, non-condensing

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## RECIVER SYSTEM:

- IF frequency: L band
- Digitizer Bandwidth(-3dB): 1 GHz
- Digitizer Resolution: 12 Bits
- Digitizer input sensitivity: 20 mV/div
- Digitizer Sampling rate: 5 GS/s real–time
- Digitizer Rise time (calculated): 350 ps
- Power sensor Dynamic Range: 50 dB
- Power sensor VSWR: 1.03 typ.
- Power sensor measurement speed: 30 msec typ.
- Mode of observation: continuum and spectral line
- Local Control via RS-232/ USB
- Remote operation via internet ( Optional)
- Automatic frequency calibration & temperature compensation
- Effective, easy-to-use Windows GUI
- Standard 19-in Rack Mount
- Power supply: 115/230 V~ ±10%, 50/60 Hz
- Environmental temperature: 0°~+45℃
- Humidity: <90%, non-condensing

## FRONT-END UNIT:

- Single polarized Feed-Horn System in L-Band
- Feed horn system in X, C, Ku or Ka Bands (optional)
- Ultra Low Noise Amplifier with more than 35 dB gain and less than 0.5 dB N.F.
- Output IF frequency: L-Band
- Internal stable Local Oscillator
- Width band and flat noise calibrator source (optional)
- Compact weatherproof housing
- Temperature range : -40°C to +60°C

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