

5.3 Meter Radio Telescope



RTP53 consists of 16-panel 5.3 meter dual reflector dish with Az over El pedestal configuration. The pedestal is mounted on a rigid base extension tube suitable for installation on ground or rooftop with an optional NPM (None penetrating Mount). Thanks to dual shape optics for achieved the superior G/T performance.

RTP53 is a State-Of-The-Art integrated Radio Telescope package, fully motorized and computerized. This is an ideal radio telescope system for who are interested in starting serious research in radio astronomy. RTP53 can be supplied with L, C, X, Ku or Ka bands front-end receiver unit to achieve the different science targets in Radio or Solar astronomy.

RTP-53 INCLUDES:

- 5.3 meter dual-reflector shape antenna
- Full sky coverage motorized mount with Azimuth over Elevation configuration
- high resolution (0.01°) encoders
- Limit switches safety mechanism
- Rack mount Antenna Controller
- Rack mount Back-End receiver unit for continuum and spectral line observation
- L-Band Front-End unit
- Imaging and control software with radio sources database.
- 50 meter control and coax cables
- One year warranty and 10 years part supply

OPTIONS:

- NPM (None Penetrating Mount)
- C, Ku, X and Ka bands Front-End unit
- Calibration Noise Source
- Training and installation services
- Reflector heating system



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ELECTRICAL SPECIFICATIONS:

| | | |
|----------------------------------|----------------------------------|--------------------------------|
| Operating frequency | L-Band (1350 to 1450 MHz) | Ka-Band (21 to 22.5GHz) |
| Polarization | Linear | Linear |
| G/T | 16.8 dB/K @1450MHz El=5° | 40.20 dB/K @22 GHz El=5° |
| Gain | 35.52 dB | 59.14 dB |
| VSWR | ≤1.35:1 | ≤1.35:1 |
| Beamwidth | 2.74° @ 1.45GHz | 0.18° @ 22 GHz |
| First Sidelobe | < -14dB | < -16dB |
| Axial ratio | ≤1dB | ≤1dB |
| Isolation | ≥40dB | ≥40dB |
| Receiver B/W | Variable from 100 Hz to 1500 MHz | |
| Receiver detectable signal level | -155 dBm | |
| Minimum Spectral Line Resolution | 10 Hz (optional 1 Hz) | |

MECHANICAL/ENVIRONMENTAL SPECIFICATIONS:

| | |
|-------------------------------|---|
| Antenna Diameter | 5.3m |
| Reflector type | Dual reflector shape |
| Mount type | Az over El |
| Antenna travel range | Az=0 to 360° , El=0 to 90° |
| Acceleration (each axis) | constant |
| Velocity (each axis) | 0.5°/s |
| Tracking Accuracy | <0.1° |
| Pointing accuracy | 0.01° |
| Surface Accuracy | 0.5 mm |
| Outdoor Operating Temperature | -40° to +55° C |
| Indoor Operating Temperature | 10° to 30° C |
| Outdoor Humidity | 0%~100% |
| Indoor Humidity | <85% non-condensing |
| Operational Wind | 75 km/h gusting to 85 km/h |
| Survival Wind | 180 km/h (in park position at zenith) gusting to 210 km/h |
| Seismic | 0.3 G horizontal, 0.15 G vertical |
| Ice Loading | 13mm Operational; 25mm Survival |
| Adaptation | Salt, pollutant, radiation, rain |