



The **RTP37** is a high-performance 3.7-meter prime focus reflector radio telescope featuring an **8-panel dish** and an **Az-over-EI pedestal** for precise tracking. The pedestal is mounted on a rigid base extension tube, designed for versatile installation on either ground or rooftop. For non-invasive setups, an **optional NPM (Non-Penetrating Mount)** is available.

Engineered as a **low-cost, fully motorised, integrated radio telescope kit**, the RTP37 is ideal for both professional observatories and educational institutions, making it an excellent entry point into radio astronomy.

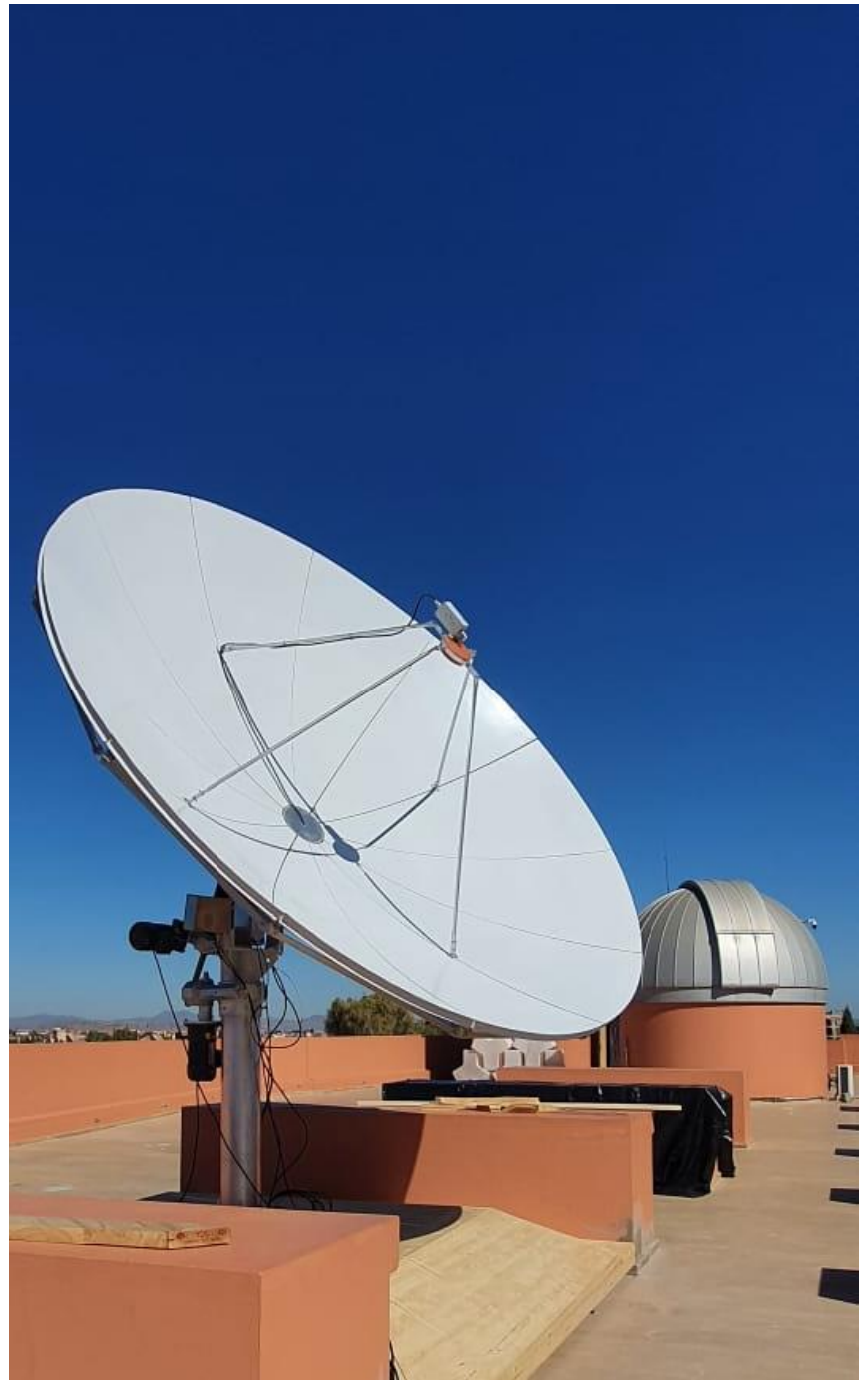
The standard configuration includes an **L-Band front-end receiver**, with optional upgrades to **C, X, Ku, and Ka-band receivers**. These additional front-ends enable a wide range of scientific investigations, from deep-space radio astronomy to advanced solar observations.

RTP37 INCLUDES:

- 3.7-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, X, Ku and Ka bands Front-End unit
- Training and installation services
- Calibration noise source



ELECTRICAL SPECIFICATIONS:

Operating frequency	L-Band (1350 to 1450 MHz)	Ku-Band (10 to 12GHz)
Polarization	Linear	Linear
G/T	13.55dB/K @1450MHz El=10°	31.33dB/K @ 11GHz El=10°
Gain	33.44 dBi	51.10 dBi
VSWR	≤1.35:1	≤1.35:1
Beamwidth	3.83° @ 1.45GHz	0.50° @ 11 GHz
First Sidelobe	< -15dB	< -16dB
Axial ratio	≤1dB	≤1dB
Isolation	≥40dB	≥40dB
Receiver frequency range	100 MHz to 6000 MHz	
Receiver detectable signal level	-155 dBm	
Minimum Spectral Line Resolution	10 Hz	

MECHANICAL/ENVIRONMENTAL SPECIFICATIONS:

Antenna Diameter	3.7 meter
Reflector type	Prime focus
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	<0.01°
Display Accuracy	<0.001°
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

Radio Telescope Control Software (RTCS) – Version 2

All POAM's solar radio telescopes come with a radio telescope control software RTCS that is used for controlling and data acquisition and runs under Windows 10 or later.

The Radio Telescope Control Software (RTCS) Version 2 is specifically developed for solar radio astronomy applications. It provides precise control of antenna movement and enables data acquisition from compatible radio telescope receiver systems.

RTCS supports automated antenna tracking, radio source scanning, and real-time position display in both Equatorial and Horizontal coordinate systems. The software includes an integrated radio source database containing positional and intensity data for 80 strong radio sources, including pulsars and the Sun.

It offers real-time measurement and visualisation of signal amplitude within a user-selected frequency range or resolution bandwidth. A built-in signal calibration module ensures accurate capture and analysis of transient events, which is essential for studying solar radio emissions.

RTCS includes both manual and automatic solar tracking modes, with options for daily and extended continuous observations. The output data for solar tracking is provided in **Solar Flux Units (SFU)**, based on the internal calibration process, ensuring consistency and accuracy in flux density measurements.



Radio Telescope Receiver System (RTRS) -N6002

The **N6002** is a high-performance dual-channel receiver specifically designed for **radio and solar astronomy** applications. It supports both **spectrum analysis** and **continuum (total power)** measurements across a wide frequency range, making it ideal for observing solar emissions, radio sources, and background cosmic noise.

Key Features:

- **Frequency Range:** 100 MHz to 6 GHz
- **Frequency Resolution:** < 1 kHz
- **Gain Range:** 70 dB (adjustable in 1.0 dB steps)
- **Noise Figure:** 4 dB to 5 dB
- **Maximum Input Power (Pin):** -15 dBm
- **Frequency Accuracy:** ± 2.5 ppm
- **Instantaneous Real-Time Bandwidth:** up to 50 MHz
- **No. of Channels:** 2 (supports spectrum and total power modes)
- **Digital interface port:** USB 3.0

Designed for precision and flexibility, the N6002 ensures accurate signal reception and analysis, making it a robust tool for professional and research-grade radio astronomy systems.



Antenna Controller (ACS-2)

High-Performance Three-Axis Antenna Controller

The antenna Control System (ACS-2) is a suitable unit for automatically controlling three-axis 3-phase motorised mounts. The system mainly consists of the Antenna Control Unit (ACU) and Antenna Drive Unit (ADU) in two separate 2U rackmount units. ACS-2 controls the antenna and displays the real-time angles of the antenna in accordance with the positions of the Azimuth (Az), Elevation (El), and polarisation sensors with a bigger screen size and more accuracy than ACS-1.

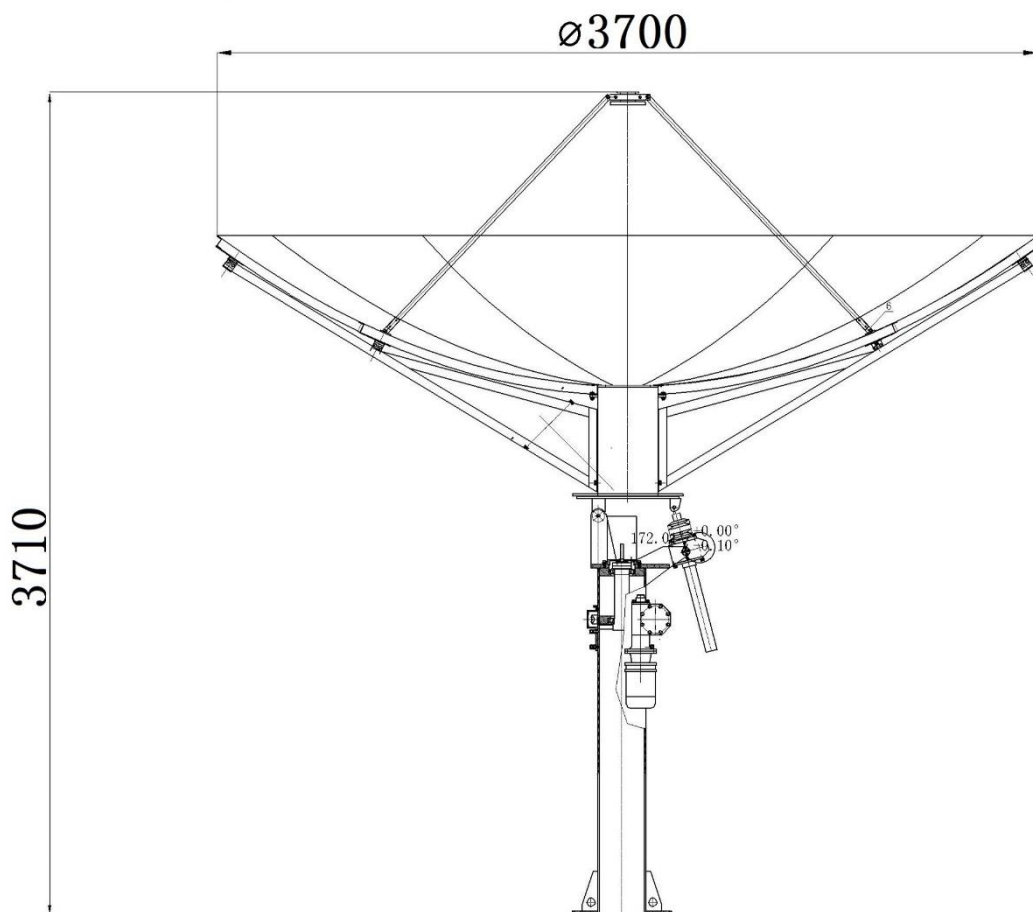


Unit:mm

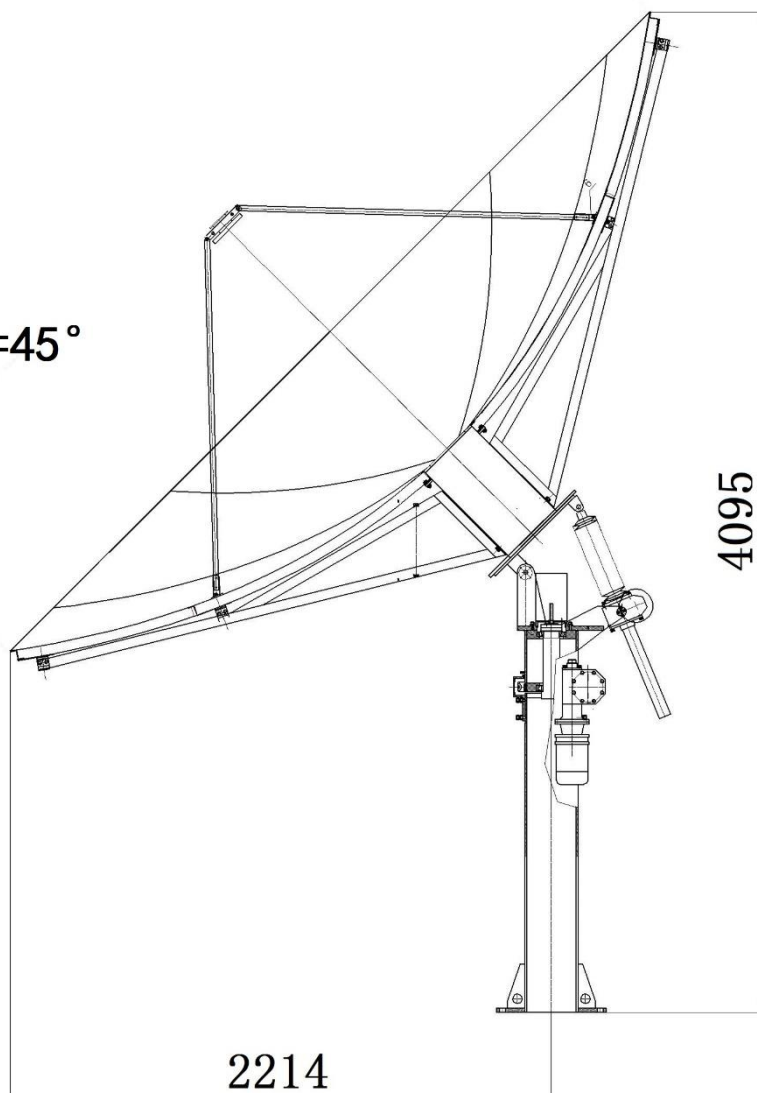
Antenna weight: 420 KG

NPM weight: 230 KG

Elevation=90°



Elevation=45°



Elevation=0°

