

RV-423

4.3m Gateway and TT&C antenna system (S/X dual-band)



RV-423 is a 4.3m antenna system engineered for multi-orbit satellite missions, supporting LEO, MEO, and GEO satellites. Its TLE-based auto-tracking system and advanced satellite tracking algorithm enable precise tracking of LEO satellites travelling at 7.5 km/s, effectively eliminating keyhole effects.

RV-423's robust pedestal ensures durability in harsh conditions, withstanding winds up to 60m/s without a radome. Its modular design features detachable Az, El, and Tilt axes for easy maintenance.

The system's RF feed supports both S and X frequency bands with a single antenna, providing versatile performance. The included ACU (Antenna Control Unit) ensures precise control of the antenna's direction, orientation, and movement, complemented by a user-friendly web-based ACS (Antenna Control System). An optional, patented AI-based anomaly detection feature offers real-time monitoring and failure detection for antenna components.

RV-423 integrates these advanced capabilities into a single, cost-effective solution, making it the most price-competitive choice for Ground Station as a Service (GSaaS), scientific and communication missions, and ground stations in polar regions.

TLE-based auto-tracking system

Robust pedestal ensures durability without radome

Custom structure and function

3-axis pedestal with modular design (No key hole)

100% in-house technology & 4-month leadtime

Connecting Ground And Space

Specification

Item	Description
Frequency(GHz)	Dual -band feed S-band Rx : 2.2 ~ 2.3, Tx : 2.025 ~ 2.120 X-band Rx : 8.0 ~ 8.5
G/T @ 10° EL	S-band : 14dB/K X-band : 27dB/K
RX Polarization	LHCP and RHCP (Simultaneous)
TX Polarization	LHCP and RHCP (Selectable)
Axial Ratio	≤ 2dB
Reflector diameter	4m
Antenna Type	Cassegrain
Travel Range	Azimuth ±270°
	Tilt ±270°
	Elevation 0~180°
Velocity	Azimuth 15°/s
	Tilt 5°/s
	Elevation 10°/s
Acceleration	Azimuth 5°/s ²
	Tilt 5°/s ²
	Elevation 5°/s ²
Pointing Accuracy	≤60m° rms (1 sigma) ≤ 150m° peak (3 sigma)
Operating	33m/s
Survival Wind	60m/s

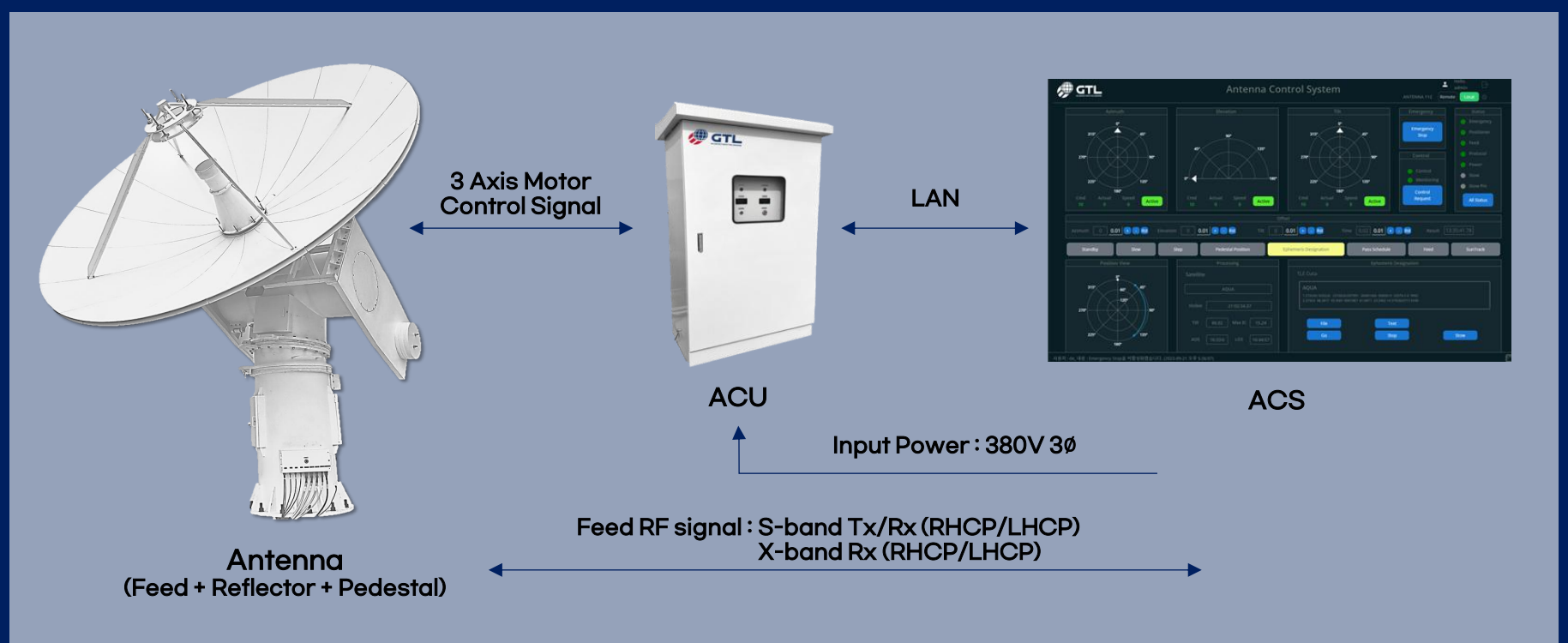
3-Axis Precision Pedestal

- 3 axis Az/EI + Tilt
- ≤0.060° rms pointing accuracy
- **No keyhole**

Available Options

- AI-based anomaly detection
 - Real-time antenna components monitoring and failure detection
- Loop-Back Tests
- SSPA
- Up/Down Converter

Product Package



Global sales

64, Dongjeonsandandong-ro 12 beon-gil, Buk-myeon, Uichang-gu, Changwon-si, Gyeongsangnam-do, Republic of Korea

Tel : +82 55 715 7071 Email : info@gtlsystems.kr