

# Ground Station Kit

## All-in-one Solution for Tracking LEO Satellites



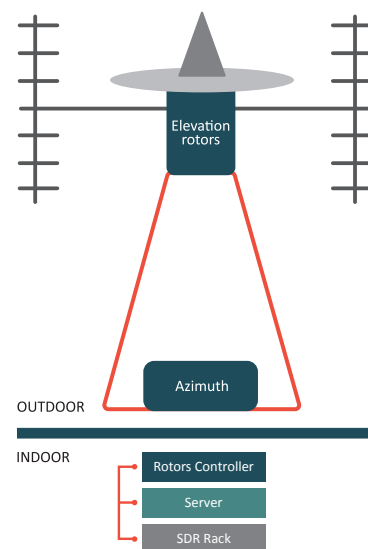
**Alén Space Ground Station Kit (GS-Kit) is a cost effective solution which includes all the elements needed to set up the gateway for your flying satellites and to provide hands-on experience with existing LEO satellites.** From the antennas, structures, rotors, cables... up to our rackable Software Defined Radio for smallsats with integrated power amplifier (GNU Radio compatible).

All the elements are managed with Alén Space ground software that tracks the configured satellites and controls the hardware elements. Remote operation is possible by design.

## GS-Kit elements

- Antennas: different bands and configurations available
- Reliable rotors for azimuth and elevation
- Strong structure with **easy assembly**
- Installation and operation manual.
- Low Noise Amplifiers (LNA)
- Lightning protectors
- Control and RF coaxial cables (30 m)
- 19" rackable units:
  - Ground Station server with SDR and control software
  - Dual GS-SDR with integrated PA
  - Rotors controller
  - Power supply
- Alén Space GS control software
- Extra options:
  - DVB-S2 receiver
  - GS-SDR unit for ground testing (GS suitcase)

Site survey, installation support and training can be provided.



The core of GS-Kit is our **SDR Rack**, a rackable dual Software Defined Radio with integrated PA.

This SDR is **compatible with GNU Radio** allowing the implementation of new waveforms and protocols to support different missions.



Small Satellites: Turnkey  
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### Available bands

VHF	144-146 MHz (uplink/downlink)
UHF	400-480 MHz (uplink) 400-402 MHz (downlink) 430-440 MHz (downlink)
S-band	1980-2120 MHz (uplink) 2170-2290 MHz (downlink)

Up to three bands can be supported in the same GS-Kit. Different antennas can be combined.

Polarization diversity configuration to maximize the reception of satellite signals is also possible.

### Available antennas and LNA

VHF	Crossed Yagi (linear/circular polarization) 12 dBi	G = 10-20 dB (adj.) NF = 0.6 -1.0 dB
UHF 395-410 MHz	Crossed Yagi (linear/circular polarization) 16 dBi	G = 10-25 dB (adj.) NF = 0.7 - 1.0 dB
UHF 435-438 MHz	Crossed Yagi (linear/circular polarization) 15 dBi	G = 10-25 dB (adj.) NF = 0.7 - 1.0 dB
S-band helical	Helical antenna (circular polarization) 16 dBi	G = 25 dB NF = 1.2 dB
S-band dish	Dish and feeder (circular polarization) 31 dBi	G = 25 dB NF = 1.2 dB

### Azimuth and elevation rotors characteristics

Pointing accuracy	0.3 deg
Rotational speed	4 deg/sec



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