AGS-3

High performance cost-optimized tracking antenna

Turnkey flexible ground station with open source software environment.

The AGS-3 is a high performance cost optimized ground station designed for harsh environmental and radio conditions.

As a scalable ground segment infrastructure element, it is designed to be easily integrated into your hardware and software mission setup.

To ensure a smooth deployment, the AGS-3 is self-contained:

- "all-in-one-box" electronic architecture for an easy RF cable management and lifecycle,
- installation options for any type of surface (roof pallet, soft ground, concrete slab…),
- transport platform made of a single flyable case.

To achieve best-in-class RF performance, the AGS-3 offers high linearity front-end modules. Aggressive noise figure - bandwidth trade-off is achieved through Adrelys' customizable low-loss helical cavity filter technology.

Simultaneous multi-band communications are allowed thanks to the multi-feed software defined radio system architecture. The computing platform embeds an advanced GPU, available to offload DSP algorithms.

The AGS-3 has extensive I/O options (WAN, Gigabit Ethernet, optical fiber...) with a cybersecurity strategy by bastions making it an ideal choice for full remote operation.

Polar / tropical environment capability

High reliability positioner

Stand-alone solution : full remote operation

Fast deployment : flyable case & small team

Built-in cybersecurity

All-in-one design : no equipment shelter

VHF + UHF capability

S, X and/or Ku/Ka band Antenna (depending options)

- RF options :
  - VHF 144-146 or 148-151MHz RX+TX 60W
  - UHF 400-402 or 435-440MHz RX+TX 50W
  - S band 2-2,3GHz or 2,4-2,5GHz RX+TX 40W
  - X band 8-8,5GHz (upgradable Q2 2025)
  - Ku band 10-10,5GHz – 10W (Q2 2025)
  - Ka band downlink (25.5 – 27.0GHz Q4 2025)
- Built-in cybersecurity (firewall with bastions...)
- Support for GNU Radio and streaming interfaces
- Support for third-party (SDRnode GS…) or custom application
- Open source software environment
- Full remote operation option
- ITAR-Free - made in France solution

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Specifications

Specfications	Typical
Power supply	
RF section feeding Voltage	48V DC (40 to 58V)
An outdoor cabinet at the base of the mast accommodates a 48V power supply compatible with the local power grid.	

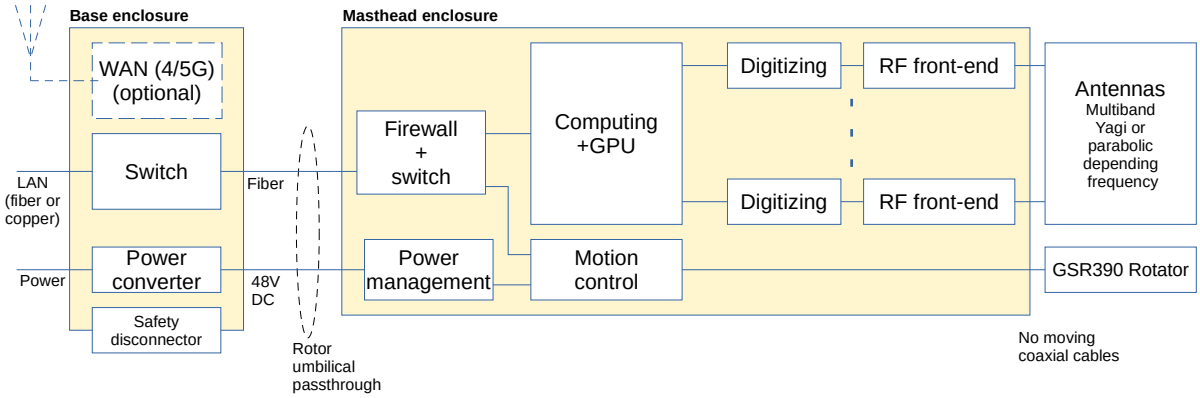
Antennas	
VHF	15dBi (coupled)
UHF	17dBi (coupled)
S-band / X-band (2,40m parabolic)	33dBi / 43dBi
Custom bands upon request	
Pointing accuracy	<0.5° rms, <0.1°rms with opt. 004
Azimut range	540° (1,5 turns) - Physical endstops
Elevation range	-5° to 185° - Physical endstops
Angular velocity	6°/s max

Transmitters	
VHF	60W
UHF	50W
S-band	40W (2-2,15GHz)
Ku-band	10W (10GHz)

Environmental conditions	
Wind resistance	
Survival	220km/h
Operating	120km/h
Hardening options upon request	
Operating Temperature	-20 / +45°C
Polar and tropical options upon request	

Specfications	Typical
Receivers	
VHF	
Coverage	144-146MHz 148-151MHz
Front-end Noise figure	0.09dB – LNA + post-SAW filter only @435MHz 0.7dB – Including filters and couplers losses
LNA IP3	35dBm
LNA Gain	26dB
Technology	Zero IF custom SDR with helical cavity filter front-end
UHF	
Coverage	400-402MHz 430-440MHz
Front-end Noise figure	0.09dB – LNA + post-SAW filter only @435MHz 0.8dB – Including filters and couplers losses
LNA IP3	38dBm
LNA Gain	25dB
Technology	Zero IF custom SDR with helical cavity filter front-end
S-band	
Coverage	2.2-2.3GHz
Noise figure	0.7dB
LNA IP3	39dBm
LNA Gain	16dB
Technology	Zero IF SDR with saw filter + polarizer
X-band (Preliminary – Available Q2 2025)	
Coverage	7.9-8.5GHz
Noise figure	0.6dB
Technology	Donwnconverter with airpin filter + Zero IF SDR
Other bands / power options upon request	

Hardware architecture



AGS-3 transceivers

The AGS-3 is a highly customizable and scalable platform.

VHF and UHF front-ends are engineered to provide top of the art linearity and first class blocking imunity through careful design.

With an open-source software design, AGS-3 is the perfect takeoff for your long range communication network, whether you rely on off-the-shelf software or choose to develop your own application.

Quality of service and traceability are the key factors of customer confidence : the "CertiWave" option allows you to keep a record of transmitted and reflected power throughout each of your transmission operations.

For custom needs, Adrelys's technology experts can help you to get your full ground segment faster : dedicated digital signal processing applications, software modem design…

CertiWave
RELIABLE RADIO TRANSMISSIONS

CertiWave is an Adrelys registred trademark.

It guarantees the use of the open CertiWave protocol for the control and supervision of RF power amplifiers.

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