GENESIS-A
TRANSMISSIONS DESCRIPTION

This document describes the transmissions of the GENESIS-A module that is coupled to the YPSAT module developed at the ESTEC center of the European Space Agency (ESA) and that will be sent into space on the maiden flight of Ariane-6. The YPSAT module will be attached to the structure of the second stage of Ariane-6, meaning that neither YPSAT nor GENESIS-A will be deployed in space, falling into the sea along with said stage a few hours after launch, although its height of flight will be considerable, around 600 km.

Modulations used:

GENESIS-A uses FSK modulation for its FT-8 transmissions and FM for SSTV.

Transmission types:

There are 2 types of transmissions carried out:

- FT8
- SSTV Robot 36

The effective radiated power of such transmissions is -8 dBm (75 uW)

FT8 transmissions are made every 16 seconds, while those of SSTV are every 5 minutes. The first transmission after power on is SSTV.

Working frequencies and modes

The working frequencies are the following:

GENESIS-A

- Downlink 144.175 MHz Mode with callsign AO4ARI HO60 if the antenna has been deployed, AO4ARI HO61 if the antenna has not been deployed
- 144.550 MHz downlink SSTV Robot 36 mode with live image

Between FT8 tones, a carrier with a frequency of 144.550 MHz (same frequency as SSTV) is left.

After being activated by the YPSAT Wake Up module, powered by Ariane-6, GENESIS-A waits 120 seconds before proceeding to deploy the antenna for 4860 seconds (81 minutes), time after which transmissions begin.

The antenna deployment is still tried every 10 minutes, without checking.

QSLs

Telemetry reception will be rewarded with a printed QSL. Please send your reports to: genesis@amsat-ea.org or by postal mail:

AMSAT EA
P.O. BOX 74001
28080 MADRID
SPAIN

In the following image you can see the YPSAT module (main structure) and at the bottom (black module) the GENESIS-A module with its folded yellow antenna:
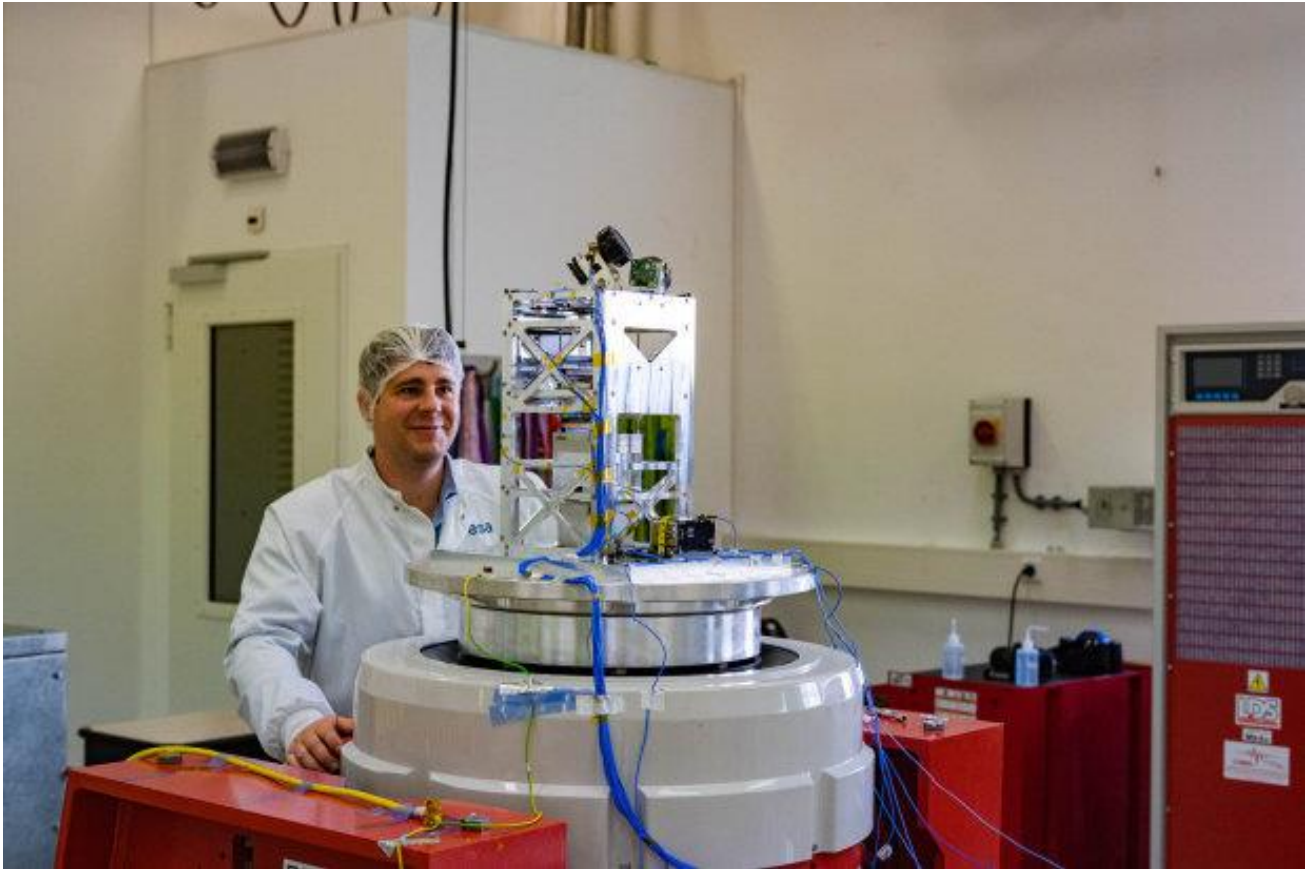
More information

More information, updates and implementation of the ground station can be found on the AMSAT EA website, in the projects section: https://www.amsat-ea.org/projects/