

AGENCY

Calling all radio amateurs – be the first to hear satellite EIRSAT-1 from orbit

29/11/2023 11754 VIEWS 53 LIKES

ESA / Education / CubeSats - Fly Your Satellite!

The Educational Irish Research Satellite, [EIRSAT-1](#), is a 2-unit [CubeSat](#) from University College Dublin. Part of [ESA Academy's Fly Your Satellite!](#) programme, it is scheduled to launch on 1 December at 18:19 UTC (19:19 CET). [EIRSAT-1](#) will downlink in the UHF band, and radio enthusiasts from around the world are invited to help listen to the first signs of activity from the satellite in orbit!

— Be the first to hear from EIRSAT-1

EIRSAT-1 is expected to be injected into a +/-520-km Sun-Synchronous Orbit approx. 90 minutes after launch, with the satellite's antenna deployment attempts beginning 45 minutes later. The current estimated first possible transmissions may commence at 20:28 UTC (21:28 CET) over the Pacific Ocean, see figure above for an approximation of the ground track. You can also find a preliminary set of Two-Line Elements for the EIRSAT-1 mission below.

Update 1 December 2023 at 21.35 CET: The data below are final.

EIRSAT-1									
1	00000U	230000	23335.82087963	.00000000	00000-0	21496-3	0	13	
2	00000	97.4580	34.4530	0004963	233.8130	-164.3640	15.20235057	0000001	

EIRSAT-1's beacon is transmitted in the UHF band, at a frequency of 437.1 MHz. The downlink is GMSK modulated at a data rate of 9600 bps. Instructions for decoding the EIRSAT-1 beacon are available on the [EIRSAT-1 instruction page](#).

— [EIRSAT-1 Control Room](#) in Dublin, Ireland

The first confirmed recording of EIRSAT-1 from each continent (Europe, Africa, Asia, North America, South America, and Oceania) within a week of launch will be rewarded with a QSL card from ESA! These "special postcards" confirm that radio contact was made, and will include acknowledgement of the help given by the winners to ESA and the EIRSAT-1 team in acquiring the first signals from EIRSAT-1.

To enter this competition, please send in your recording, timestamp of passage over your ground station, and the location of your ground station to cubesats@esa.int. Be sure to include "EIRSAT-1 competition" in the subject of the e-mail. By participating, you agree to the [ESA Academy data privacy notice](#).

EIRSAT-1 is Ireland's first satellite, and was designed, built, and operated by students with the support of [ESA Education's Fly Your Satellite!](#) programme. In addition to the radio transmitter, EIRSAT-1 houses three main experiment payloads, which were built from scratch by the student team:

- [GMOD](#) is a detector to study gamma ray bursts, which are the most luminous explosions in the universe and occur when a massive star dies or two stars collide.
- [EMOD](#) is an experiment to see how a thermal treatment protects the surface of a satellite when in space.
- [WBC](#) will test a new method of using Earth's magnetic field to change a satellite's orientation in space.

For more updates on [EIRSAT-1](#) and [Fly Your Satellite!](#) [click here](#).