Hexstar 1U CubeSat kit

System overview

A real 1U CubeSat for your desk. Three flight-style boards stack on a single 40-pin bus inside a 3D-printed 1U frame with aluminium-style rails. Telemetry goes over LoRa to a pocket USB ground station and appears live in the Hexstar dashboard.

Architecture

Layer	Board	Role
Top	COM · LoRa radio	SX1262 868 MHz link to the ground station, up to +22 dBm
Middle	OBC · On-board computer	ATSAMD21 MCU, IMU, magnetometer, barometer, GNSS, microSD logging
Bottom	EPS · Power system	18650 cell, USB-C charging, protection, 3.3 V buck, power telemetry
Roof	Top plate	GNSS patch antenna (U.FL to OBC), 868 MHz whip (SMA, U.FL to COM)

Specifications

Form factor	1U CubeSat, 100 × 100 × 100 mm (excluding antenna)
Structure	3D-printed PETG panels and plates; 4 rails; M3 hardware
Stack spacing	Brass standoffs between boards
Processor	ATSAMD21G18A, 48 MHz Cortex-M0+
Radio	Semtech SX1262 LoRa, 868 MHz
Sensors	6-axis IMU, 3-axis magnetometer, barometer, GPS + BeiDou
Power	1 × 18650 Li-ion, USB-C charging, 3.3 V / 1 A bus
Safety	Remove-before-flight key, slide switch, resettable fuse
Storage	microSD flight log
Programming	USB-C (Arduino compatible) and SWD

Kit options

Kit	Includes	Price (excl. GST)
Starter	EPS, OBC and LoRa boards (assembled and tested), frame files to print yourself, whip antenna and GNSS patch, example code and docs	INR 25,000
Mission	Everything in Starter + 1U frame with rails and panels, 18650 cell and RBF key, USB pocket ground station, telemetry dashboard and lessons	INR 39,000
Classroom	5 Mission kits, teacher guide and 10-week curriculum, live onboarding, priority support	INR 1,75,000

Pre-orders are reserved with a booking amount of INR 2,000. The balance is due before shipping. Prices exclude GST.

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