TAKEME2SPACE

Arya-6 (6U CubeSat Bus)

Technical Specifications

1. Project Overview

TM2Space will provide a satellite bus platform including all necessary subsystems in the bus. The subsystems depend on the customer requirements of the bus and can be varied accordingly.

1.1 Systems of 6U Satellite Bus

Subsystem	Quantity	Datasheet
AeroMag Control	1	https://drive.google.com/file/d/1Rh9TsQo_UHn3Y_sZMEnN0YogzLg2WYOm/view?usp=drive_link
IMUCube	1	https://drive.google.com/file/d/1wxFjfrBo75SXVAAFbgQ8tfXBwoXeHjK3/view?usp=drive_link
Deployed Solar Panels	0 (body mounted only) 2 (single deployed) 4 (double deployed)	https://drive.google.com/file/d/1ALYJK1dbdKuqfM6c9z3dKbrm-YU8LwAz/view?usp=drive_link
EPS	1	https://drive.google.com/file/d/1zCM6gKKXOwGaiZE67J3RjWI1SOWTupNv/view?usp=drive_link
Battery Pack (50Wh)	4	https://drive.google.com/file/d/15H1onnKZB98vKwd1Rz8Mi7vHzW7chY4C/view?usp=drive_link
CMCube (OBC)	1	https://drive.google.com/file/d/106FxmrFTz8CbKcdiPlhrEHqjJz22DSsd/view?usp=drive_link

SunSense (Coarse)	6	https://drive.google.com/file/d/1sdqSaDwkxuQylodNWsEMFu1Nxbg7n5S7/view?usp=drive_link
NavCube (GPS)	1 (Board + Antenna)	https://drive.google.com/file/d/1LojaELN4elTXp4JDplHQJtL6G7wfGFlW/view?usp=drive_link
Reaction wheel (30mNms)	4	https://drive.google.com/file/d/1wh4sM-hyp9qrT49_q3j2wB-rOO7SSlfe/view?usp=drive_link
StarSense Lite	1	https://drive.google.com/file/d/1LEp8P3adMt73WS_qncbc-XeZXhlUkOvZ/view?usp=drive_link
xHF	1 (transceiver + antenna + deployment)	https://drive.google.com/file/d/10pHUgJZQ0ffOTEJop7lOWpALXKSFdb4V/view?usp=drive_link
sBand	1 (transmitter + antenna)	https://drive.google.com/file/d/1OSMSd18MtjGfuTKE5h5OZoHbKJMS71Rg/view?usp=drive_link
HDRM	2 (only for deployable solar panel)	https://drive.google.com/file/d/1aLu7wtXMpOJksobiQRaJAnzKra2ebRoE/view?usp=drive_link
HyperMagCoil	2	https://drive.google.com/file/d/1w8q79hn0jJz7kQHQm46WVevvL33OC1Ru/view?usp=drive_link
AirCoil	1	https://drive.google.com/file/d/1Zdh4ZvELm6ttYt2dHYi5vrtUkSbKfXYn/view?usp=drive_link

1.2 Technical Specifications

The following table outlines the key technical specifications of the satellite bus proposed.

Satellite Bus	6U
Mass	7.5-8.5 kg (configuration dependent)
Dimensions	226.3 x 100 x 366mm
Power	Up to 67.2 W (double deployed panels) Up to 33.6W (single deployed panels) Up to 19.2W (body mounted panels only)
Battery	200 Wh with Li-ion pack (configurable)
Bus Voltage	3.3V, 5V, 12V, Battery raw
Pointing Knowledge	<0.0125° (1σ)
Pointing Accuracy	<0.025° (1σ)

GPS Accuracy (optional subsystem)	PPS accuracy 20 ns Position accuracy 12 m (3σ) Velocity accuracy 0.9 m/s (3σ)
Slew Rate (30mNms reaction wheel assembly)	3 deg/s on each axis 1.2 deg/s simultaneous on all three axes
Encryption	AES-256-GCM/CBC (On-board)
Design Life	1 year (no propulsion)
Payload	
Mass	Up to 4 kg (configuration dependent)
Envelope	Up to 2U (configurable)
Power for payload (peak)	80 W
Payload Interface	
Data	I2C/CAN/SPI/UART/Ethernet
TMTC	UHF/VHF
Power	3.3V, 5V, 12V, Battery raw
Payload Data Transmission	5Mbps (S-Band)
Data Storage	up to 2 TB

Testing & compliance	T-Vac	2 Cycles with temperature range of +60℃ to -25℃
	Vibration	Random vibration acceptance test levels 20 - 2000 Hz at 4.47grms for 60 seconds
	Shock	100 Hz at 30g 1000 Hz at 1500g 5000 Hz at 1500g

2. Budget Estimate

Configuration 1: Only body mounted solar panels

Category	Item	Price (excl. Taxes)
Satellite Bus (excl. AIT)	6U CubeSat Bus (Body mounted panels only)	₹ 2,31,00,000
Payload Integration with bus and testing	Require information on the payload to determine integration effort	TBD

Configuration 2: Single deployed solar panels

Category	Item	Price (excl. Taxes)
Satellite Bus (excl. AIT)	6U CubeSat Bus (Single Deployed Panel)	₹ 2,63,00,000
Payload Integration with bus and testing	Require information on the payload to determine integration effort	TBD

Configuration 3: Double deployed solar panels

Category	Item	Price (excl. Taxes)
Satellite Bus (excl. AIT)	6U CubeSat Bus (Double Deployed Panel)	₹ 3,19,00,000
Payload Integration with bus and testing	Require information on the payload to determine integration effort	TBD

**The above prices are exclusive of AIT, deployer, launch, LEOP & GSaaS. TM2S works with partners to provide the above services and can submit a bundled pricing on request.*

Questions? Queries? Contact us at info@tm2.space