GSLV-F06 GSAT 5P MISSION

Indian Space Research Organisation

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Overall length	:	51.315 m
Lift-off mass	:	418.5 t
No. of stages	:	3
Payload	:	GSAT 5P
Orbit	:	GTO



GSLV-F06 VEHICLE

GSLV-F06 Stages



GS1 GS2 GS3



STAGE PARAMETERS

Parameters	GS1 stage		GS2 stage	GS3 stage
	S139	L40H Strapon		
Length (m)	20.13	19.68	11.56	10.05
Diameter (m)	2.8	2.1	2.8	2.8
Total mass (t)	161.11	191.08	44.30	17.87
Propellant	HTPB	UH25 & N_2O_4	UH25 & N_2O_4	LOX & LH_2
Propellant Mass (t)	138.12	42.67	39.47	15.23

GS3 stage is the imported Cryogenic stage with higher propellant loading and uprated thrust.

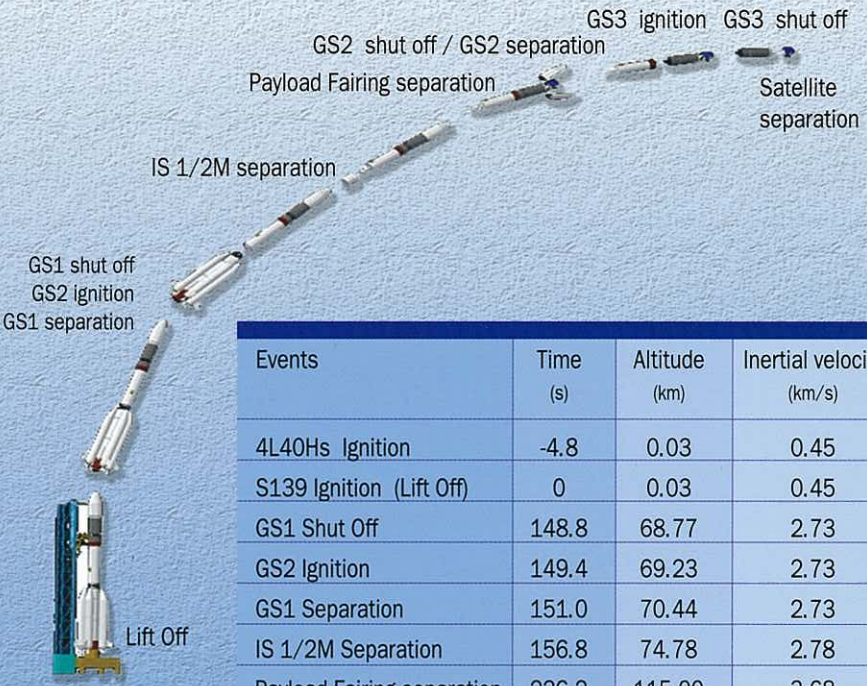
GSAT 5P SALIENT FEATURES



Size	:	1.65 m x 1.53 m x 2.986 m Cuboid (Launch Configuration)
Lift off Mass	:	2310.4 kg
Bus Configuration	:	Standard I2K with stretched propellant tanks
Location in orbit	:	55 Deg. East Longitude
Mission life	:	13.7 years
Payload	:	36 transponders (24 Normal C band, 12 Extended C band) 2 m Offset Shaped Reflector Antenna (Tx) East side 2 m Offset Shaped Reflector Antenna (Tx) West side 0.7 m Rx body mounted EV top Antenna
Onboard Power Generation	:	2331 W (2 wing solar array with 2 panels per wing)
Battery	:	2 x 64 Ah Li-Ion
Payload power	:	1680 W
Deployed Configuration size	:	North-South 9450 mm East-West 5950 mm
On-orbit Attitude Control	:	Momentum biased 3-axis stabilized mode Bipropellant-MMH, MON-3

FLIGHT SEQUENCE

The overall flight sequence is given highlighting the nominal time, altitude and inertial velocity at critical flight events. Actual time of occurrence can vary since they are decided onboard.



Events	Time (s)	Altitude (km)	Inertial velocity (km/s)
4L40Hs Ignition	-4.8	0.03	0.45
S139 Ignition (Lift Off)	0	0.03	0.45
GS1 Shut Off	148.8	68.77	2.73
GS2 Ignition	149.4	69.23	2.73
GS1 Separation	151.0	70.44	2.73
IS 1/2M Separation	156.8	74.78	2.78
Payload Fairing separation	226.2	115.00	3.68
GS2 Shut Off	288.7	137.35	5.07
GS2 Separation	292.2	138.44	5.08
GS3 Ignition	293.2	138.74	5.08
GS3 Shut Off	1124.0	242.83	10.19
Satellite Separation	1139.0	258.37	10.19

COUNTDOWN SUMMARY

The countdown comprises all final preparation steps for the launcher, the satellite and launch site.

Time, T- (hr:mn:sec)	Events
28:30:00	GS2 propellant loading
21.00.00	L40H strapon propellant loading
05:26:00	Filling of Cryogenic Stage with Liquid Oxygen and Hydrogen
00:45:00	Final init file loading
00:12:00	Start Automatic Launch Sequence
00:06:10	Vehicle to internal battery
00:00:04.8	L40H strapon ignition
00:00:01	LHRS release
00:00:00	S139 Ignition
T+00:00:0.5	Cryo arm withdrawal

LAUNCH CAMPAIGN ACTIVITIES AT SHAR



Support Block assembly



NES assembly

LAUNCH CAMPAIGN ACTIVITIES AT SHAR



GS1 Segment assembly



IS 1/2 V assembly



IS 1/2 M assembly



L40 assembly



GS2 assembly



C15 assembly



Equipment Bay



Spacecraft encapsulation



EA assembly



Vehicle at VAB



Vehicle movement
to UT

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