

# GSLV Mk III-D2 / GSAT-29 Mission

14 November, 2018

## THE MISSION

GSLV Mk III-D2 carrying on-board the GSAT-29 Satellite lifted-off from the Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota at 05:08 PM (IST) on November 14, 2018. About 17 minutes after lift-off, the launch vehicle injected the satellite into the Geosynchronous Transfer Orbit (GTO) with a 190 km perigee and 35,975 km apogee with an inclination of 21.5°.

GSLV Mk III-D2 is the second developmental flight of GSLV Mk III that successfully launched GSAT-29, which carries Ka / Ku-band high throughput communication transponders which will bridge the digital divide of users including those in Jammu & Kashmir and North Eastern regions of India.



## G S L V M k I I I - D 2

### THE LAUNCH VEHICLE

GSLV Mk III-D2 the fifth generation launch vehicle developed by ISRO, is a three stage launch vehicle with 2 solid strap-ons (S200), a liquid core stage (L110) and a cryogenic upper stage (C25). The strap-on motors are located on either sides of the liquid core stage equipped with two engines. Compared to solid and liquid stages, the C25 cryogenic stage is more efficient as well as complex. The vehicle is configured with a 5 m "Ogive Payload Fairing" (OPLF) and slanted strap-on nose cone to provide aerodynamic robustness.

The success of GSLV Mk III-D2 marks an important milestone in Indian Space Programme towards achieving self-reliance in launching heavier satellites. The success of this flight also signified the completion of the experimental phase of GSLV Mark III.

### SPECIFICATIONS

<b>Height</b>	43.43 m
<b>Lift-Off Mass</b>	640 t
<b>No of Stages</b>	3
<b>Payloads</b>	GSAT-29
<b>Inclination (deg)</b>	21.5°
<b>Apogee</b>	35,975 km
<b>Perigee</b>	190 km
<b>Launch Pad</b>	Second Launch Pad (SDSC, SHAR)



# THE PARAMETERS OF THE LAUNCH VEHICLE

Parameters	Stages		
	Two S200	L110	C25
Length (m)	26.2	21.3	13.5
Diameter (m)	3.2	4	4
Propellants	Solid (HTPB based)	Liquid (UH25+ N <sub>2</sub> O <sub>4</sub> )	Cryogenic (LH <sub>2</sub> & LOX)
Propellant Mass (t)	2 x 205	116	28.6
Stage Mass at Lift-off (t)	472	125.8	33



## GSAT-29

### THE SATELLITE

GSAT-29 is a multibeam, multi-band communication satellite of India, configured around the ISRO's enhanced I-3K bus. The Satellite is a 3-axis body stabilised Geostationary Communication Satellite intended to serve as a testbed for several new technologies. It is specifically designed to cater to the communication requirements of users from remote areas of India. It also carries Q / V-band payload, configured for technology demonstration at higher frequency bands and Geo-stationary High Resolution Camera. An optical communication payload, for the first time is utilized for data transmission.

### SPECIFICATIONS

<b>Weight</b>	3423 kg
<b>Power</b>	4600 W
<b>Stabilisation</b>	3-axis body stabilisation
<b>Type of Satellite</b>	Communication
<b>Payloads</b>	<ul style="list-style-type: none"> <li>• Ku-band four user spot beams</li> <li>• Ka-band four user spot beams and one user steerable beam</li> <li>• Q / V-Band Communication Payload</li> <li>• Geo High Resolution Camera</li> <li>• Optical Communication Payload</li> </ul>
<b>Mission Life</b>	10 Years

