DHRUVA SPACE

# BOLT

## BY DHRUVA SPACE


www.dhruvaspace.com

# About BOLT by Dhruva Space

A valuable asset to the company's full-stack offerings, Dhruva Space Private Limited's Bolt module is a hybrid connectivity module that facilitates real-time IoT connectivity and seamlessly switches between mobile and satellite connectivity. In legacy applications, the wireless connectivity solutions offered by Bolt can be customised to implement new features and to create innovative use cases as well as to introduce new service models.

The product was developed for Qualcomm's Design in India Challenge 2021, during which Dhruva Space was named the winner.

(From left to right): **Abhay Egoor**, CTO, **Krishna Teja Penamakuru**, COO, **Chaitanya Dora Surapureddy**, CFO, **Sanjay Nekkanti,** CEO

# Hardware & Mechanical

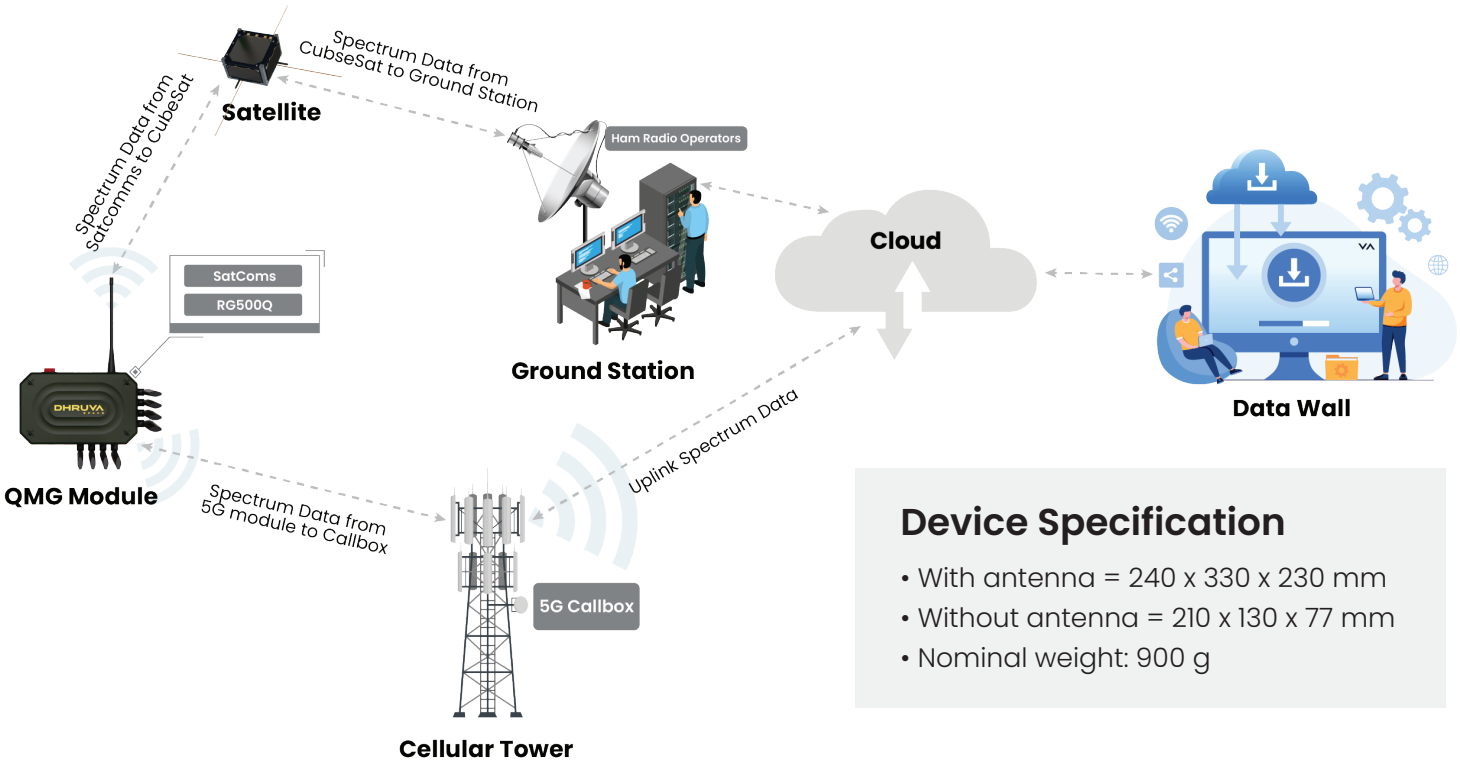
## Core Technology

As a hybrid connectivity module facilitating real-time IoT connectivity and seamlessly switching between mobile and satellite connectivity. That said, the Bolt has a built-in processor capable of handling heavy computation. It also switches between mobile networks (4G/5G) with fallback connectivity to Dhruva Space's satellite network for continuous network coverage, taking into account transmission distance and frequency, power consumption, and interoperability.

The data sent by Bolt with a mobile network – be it 4G or 5G – or through satellite can be monitored on a software stack used to store and analyse the received sensor data from these devices.

Depending on the applications' different sensors can be interfaced with the module with minimal optimisation in the hardware while significantly increasing the scalability and flexibility of the network.

# BOLT in the world




## Device Specification

- With antenna = 240 x 330 x 230 mm
- Without antenna = 210 x 130 x 77 mm
- Nominal weight: 900 g

## Satellite Communications

| Parameter | Specification |
|---|---|
| Frequency | 430 - 440 MHz |
| Data Rate | Tx = 9600 bps<br>Rx = 1200 bps |
| Modulation | 2FSK |
| Output Power | Up to 30 dBm |
| Data Interface | UART |
| Power Consumption | 36mA @ Idle mode<br>1.2A @ Peak power mode |
| Operating Temperature | -40°C to +85°C |

- Customisable sensor interface
- 24x7 connectivity
- Seamless data handling

## 5G Communications

| Parameter | Specification |
|---|---|
| Frequency Band | 5G sub-6GHz module, 4G, 3G |
| Data Rate | Max. downlink 2.5Gbps /<br>900 Mbps uplink |
| Interfaces | • UART<br>• SPI<br>• SD Card<br>• USB 2.0/3.0/3.<br>• PCIe 3.0<br>• I2C, I2S |
| Other Interfaces | • Wifi<br>• (U)SIM x2<br>• Antennas:<br>▫ Cellular: 6 + 2 (n79)<br>▫ GNSS: × 1 |
| Power Consumption (Typical) | • 0.045 mA @ Poweroff<br>• 1.5 mA @ Sleep<br>• 20.1 mA @ Idle |
| Operating Temparature | -40°C to +85°C |

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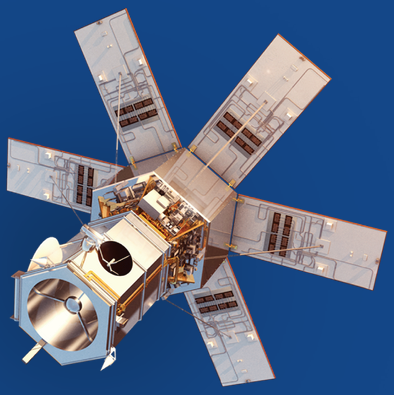
## About us

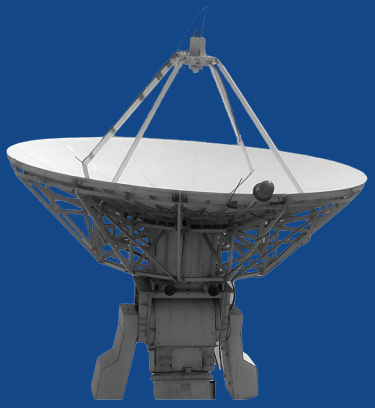
Dhruva Space Private Limited is a National Award-winning Space Technology company focused on building full-stack Space Engineering solutions. The company is based out of Hyderabad, India, and Graz, Austria. We are actively involved in realising Space missions in India and around the world.

Our vision is to offer Satellites coupled with Earth stations and Launch services as an integrated solution or individually as a technology solution to power Space-based applications on Earth and beyond.



**BUILD**

**LAUNCH**



**OPERATE**

**Scan the QR code for more information.**

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