

# R.E.A.C.H. MkX Data Sheet

## Key

- 1. (?UL) - Indicates that value falls in the higher range of possible values
- 2. (?LL) - Indicates that value falls in the lower range of possible values

## Project Overview

Our aim is to achieve the following with R.E.A.C.H.:

- 1. Develop & test a cost-effective solution for experimental testing of new concepts;
- 2. Test a novel recovery method;
- 3. Set Amateur Asian Record for Altitude (Apoapsis) and Eurasian Record for Range of an Amateur Rocket;
- 4. Ultimately breach the Karman Line.

TGT: Cheap Concept Testing

Total Budget (?UL): 400,000 INR

We will require assistance from other organizations for Infrastructural Support.

[Infrastructure Outsourcing List](#)

This is our final vision for the project: To reduce the cost per kilogram for inserting hardware upto 10kg-30kg mass into Low Earth Orbit under 1,000 USD/kg (~ 400,000 INR/launch (~6,500 USD))

## Rocket Statistics

Attribute	Details	Numbers	Notes
Dimensions	8m Cylinder with 0.25 Nose Cone of 0.11m Radius	8.25 x 0.11	Aluminium
Mass (Dry)	-	221Kg (?LL)	50Kg payloads
Mass (Wet)	-	320Kg (?LL)	-
Range	Multiburn Orbit Insertion	400Km/240Mi	Low Earth Orbit
Communications	Satellite Networks	500+Km Range	Undecided
Fuel (Liquid)	Hybrid Bipropellant: Methane / Hydrogen With Oxygen	140 MJ from 1.11Kg (?UL)	Energy Capacity
Motor Dimensions	5.7m PVC Pipe 50mm with 0.105m Radius with 5-star bore	5.7 x (0.005 + 0.105)	Designed to be detachable with minimal Thrust variance
Recovery	Parachute-less Hybrid Recovery	Internal Sustained $G_{max} = 473G$	Insanity

