



## NanoSense GPS Kits

### Datasheet

Kit with GPS module and antenna for NanoDocks ADCS

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# 1 Table of Contents

2	OVERVIEW .....	4
3	MAIN FEATURES OF GPS MODULE.....	4
4	KIT CHOICES .....	4
5	MOUNTING .....	5
5.1	Mounting on a NanoDock DMC-3 or ADCS-3 .....	5
5.2	Mounting on a NanoDock ADCS-6.....	5
6	ANTENNAS.....	6
7	MOUNTING BLOCK .....	6
8	RAILS.....	6
9	DISCLAIMER .....	7

## 2 Overview

GomSpace offers GPS antenna kits designed for mounting on NanoDock DMC-3, NanoDock ADCS-3 and NanoDock ADCS-6. Each GPS kit contains a NovAtel GPS module and a GPS antenna.

The datasheet and manuals for the GPS module and antennas can be found here:

GPS:

[http://docs.novatel.com/OEM7/Content/Technical\\_Specs\\_Receiver/OEM719\\_Specifications.htm](http://docs.novatel.com/OEM7/Content/Technical_Specs_Receiver/OEM719_Specifications.htm)

Antennas:

<https://www.inventeksys.com/actpat184-01-ip-gps-antenna/>

<https://www.tallysman.com/product/tw1322-embedded-single-band-gnss-antenna-pre-filtered/>

## 3 Main Features of GPS Module

- Precision, position: 1.5 m
- Precision, velocity: 0.03 m/s
- Power: 3.3 V and <400 mA
- COCOM limit removed
- Mass: 31 g
- Size: 46 x 72 x 11 mm

## 4 Kit Choices

Each kit includes:

- A NovAtel OEM719 GPS module. The location of the connectors on the PCB depends on which NanoDock it is mounted on. If a NanoDock ADCS-6 is used, the GPS module is mounted on a pair of rails.
- An antenna (choice of the below):
  1. Inventek ACTPAT154-01-IP
    - Antenna cable length, Choice of 15, 25, 35 or 45 cm
    - Antenna mounted with glue
    - Mounted on a small aluminium block
    - Collective mass: 42 – 45 g, including GPS module, dependent on antenna cable length
  2. Tallysman TW1322
    - Antenna cable length, Choice of 15, 25, 35 or 45 cm
    - Four holes for screws used for mounting
    - Collective mass: 54 – 57 g, including GPS module, dependent on antenna cable length

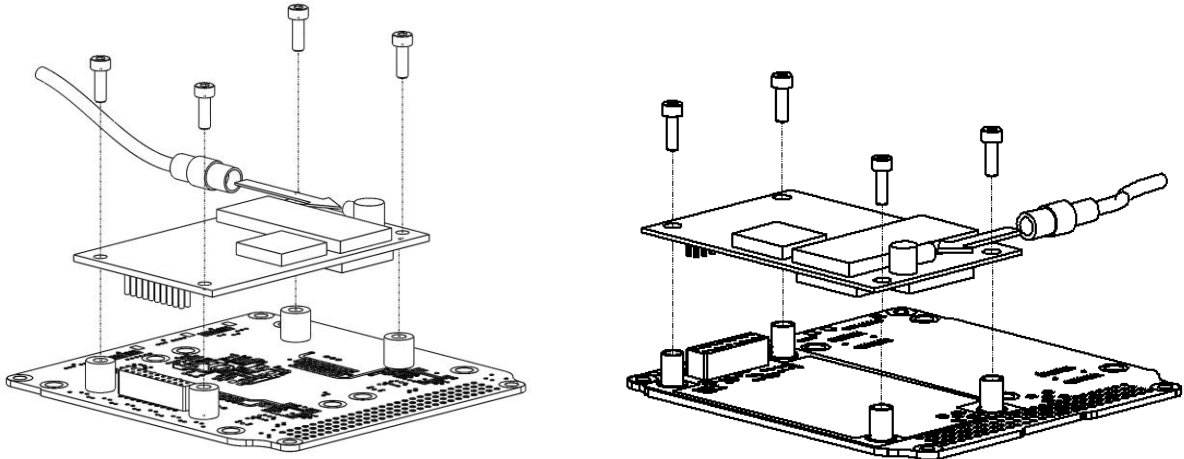
*If space permits select the Tallysman antenna for superior performance (gain and detuning sensitivity).*

## 5 Mounting

Mounting of the GPS module is different depending on the NanoDock. See the details below

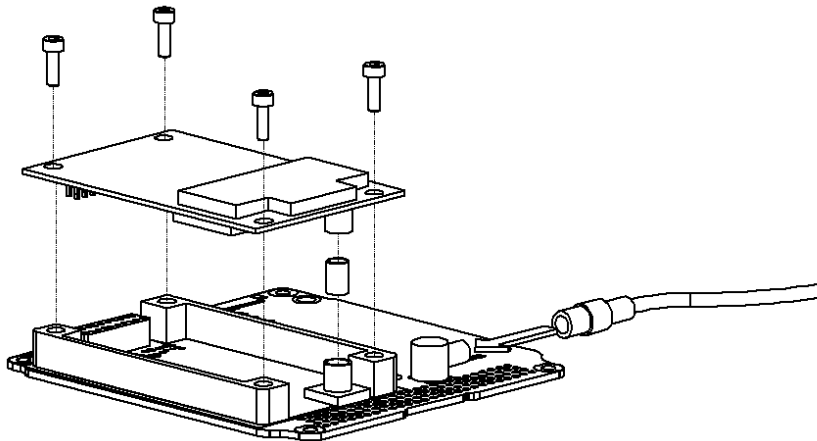
### 5.1 Mounting on a NanoDock DMC-3 or ADCS-3

This kit is mounted on the bottom of the NanoDock DMC-3 (below left) or on the top of the NanoDock ADCS-3 (below right). Notice the antenna connector is on the top.



### 5.2 Mounting on a NanoDock ADCS-6

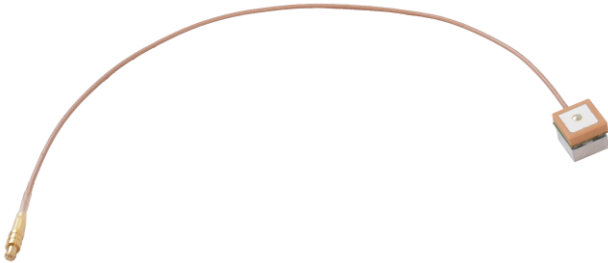
This kit is mounted on the top of the NanoDock ADCS-6 with a RF barrel to connect it to the NanoDock. The antenna is connected to the antenna connector or the NanoDock.



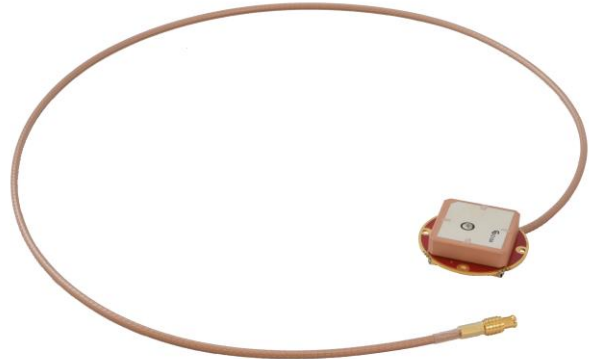
## 6 Antennas

Below are shown photos of the antenna, their cable and connector.

**Inventek**

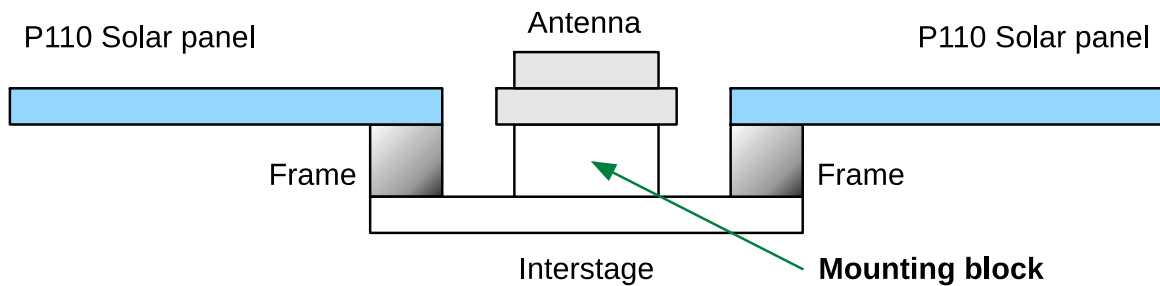


**Tallysman**



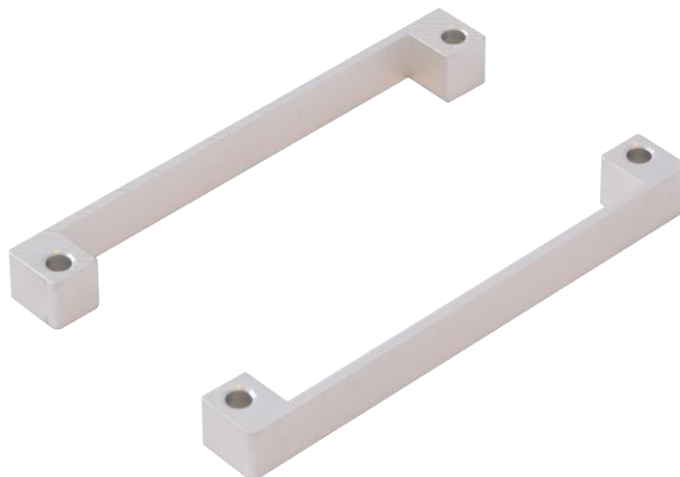
## 7 Mounting Block

On the Inventek antenna is glued a small mounting block, which is used to raise the antenna up from the Interstage, to get a clear line of sight. View the illustration below.



## 8 Rails

The GPS module is mounted on the ADCS-6 with two rails, this is to improve the thermal and vibrations performance of the module.



## 9 Disclaimer

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