

Case Study

Robota and the TW1889

Robota believes that automation and measurement technology can help organizations improve their data collection in order to make more informed decisions with economical benefits.



Background

After years of careful development with drone autopilot UAV mapping system for photogrammetry applications, the Eclipse mapping solution was born.

The **Eclipse** is designed and manufactured in Dallas TX and includes everything needed to start mapping, including custom flight control software. Flying and mapping large areas is easy with the Eclipse professional photogrammetry UAV. Users can quickly collect accurate spatial data, and Robota is right there with the support to ensure smooth project ramping. The Eclipse has been designed with unmatched specifications targeting large area precision land surveys in mind, including centimeter level precision GNSS with PPK capabilities and long range 900 MHz connectivity that does not depend on cellular networks. The figure below depicts the RTK operation data flow.

The UAV's performance can last up to 100 minutes with select battery pack options. The Eclipse can be carried in a compact and portable case.



ROBOTA
ELEVATE EXCELLENCE

TransiTiva



Customer

- Robota

<https://www.robota.us/about>



Tallysman Partner

- TransiTiva

<https://transitiva.com/>



Application

- Drone/UAV



Product

- Tallysman® TW1889

About Tallysman: With global headquarters and manufacturing in Ottawa, Canada, Tallysman is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Tallysman's mission is to support the needs of a new generation of positioning systems by delivering unprecedented antenna precision at competitive prices. Learn more at www.tallysman.com

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Case Study

Context

One of the critical components in a RTK system with PPK capabilities is a GNSS antenna. When using a small drone like the Eclipse, an antenna with a compact form factor and light weight is mandatory. Robota reached out to Tallysman and after examination, the RTK grade GNSS **TW1889** appeared to be the perfect choice for the Eclipse, meeting size, weight reliability and accuracy constraints.

The TW1889 is an embedded antenna and requires a custom radome.

Tallysman verified that Robota's custom radome didn't untune the GNSS antenna. The TW1889 has proven to be a reliable, performant and economical antenna.

A/B Testing

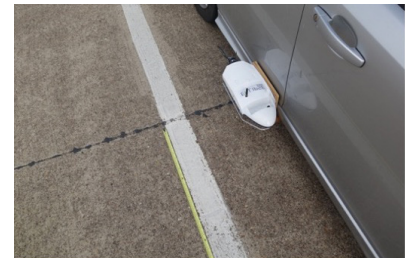
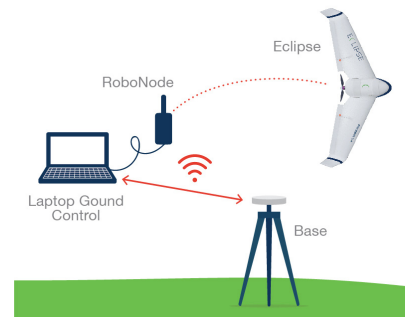
Tallysman TW1889 was tested in a few different ways. The most creative method Robota used to determine accuracy in motion was by traveling with the Eclipse, affixed to a test vehicle – while capturing images of a tape measure under the camera payload. The resulting image showed the physical location of the camera where the image was taken while the GNSS location corroborated the position. These tests were conducted with different potential candidates offered by Tallysman, and the **TW1889 proved to be the greatest fit.**

Product	Type	Weight (g)
TW1889	OEM patch	37

Outcome

- Affordable
- Reliable
- Accurate positioning solution in a compact form factor (Eclipse UAS)

When precision matters.®



Tallysman® TW1889

Provides excellent axial ratio and tight Phase Centre Variation (PCV).