

“The reasons why we chose Taoglas are the quality of their antennas and their ability to tune an existing antenna in the mechanics of the product and to make it on a large scale for mass production,”

Meryam Abou El Anouar
Parrot Technical Leader
for RF and Connectivity



Taoglas GNSS antenna flies with Parrot drones

About Parrot

Founded in 1994 by Henri Seydoux, Parrot is today the leading European group in the fast-growing industry of drones. Visionary, at the forefront of innovation, Parrot is a real ‘End to End’ drone group from hardware and software to services.

The Challenge

Every ounce counts on a drone. Weight is a decisive factor in how long and how far a UAV can fly, as well as the size of its payload capability. That’s why drone manufacturers scrutinize every component. When comparing each supplier’s products, they focus on finding the one that strikes the precise balance of performance and weight. A prime example is the patch antenna used for GNSS. A larger ground plane helps improve the antenna’s performance, but that additional size also increases weight — an unacceptable tradeoff.

The locations available for mounting the antenna are another factor. For example, it must be far enough away from motors and other electronic components that generate RFI, which undermines GNSS positional accuracy. But some of those sufficiently remote locations are off-limits because the antenna system’s weight in those spots would disrupt the delicate balance that drones require to fly safely and effectively. Parrot took all of these factors into consideration when choosing a GNSS antenna solution for its ANAFI USA drone, which is designed for a wide variety of professional applications, including public safety, surveying, inspection, defense and more. Although it weighs just 500 grams, ANAFI USA is designed to operate in winds up to 52.92 km/h.

The Solution

To overcome these challenges and develop a market-leading UAV, Parrot chose Taoglas’ **DSGP.1575.15.4.A.02**, a passive patch antenna that supports GPS L1 and Galileo E1. At just 3.3 grams and 4 mm high, with a 15 mm² footprint, the DSGP.1575 is designed for ultra-compact devices such as fitness wearables, asset trackers and drones. Tuned on a 50x50mm ground plane, the DSGP.1575 operates at 1575.42MHz with a 2.59 dBi gain. The DSGP.1575 uses ceramic materials, which are suitable for UAV applications because drones spend most of their time flying parallel with the horizon. That position helps ceramic antennas collect enough GNSS signals to meet performance requirements.

The DSGP.1575’s light weight and energy efficiency enable the ANAFI USA to carry bigger payloads and fly longer. Those capabilities help Parrot meet the unique requirements of customers such as professional users in public safety, defence & enterprise. For example, ANAFI USA can stay aloft for up to 32 minutes compared to the consumer model’s 25, and it features two 4K 21-megapixel cameras with 32X zoom.

“Taoglas’ hardware engineering team collaborated with Parrot to provide design and testing support,” says **Baha Badran, Taoglas Global Antenna Technology Director**. “Each prototype run and design change was conducted in one of Taoglas’ world-class design centres.” Additionally, local support was provided with Taoglas conducting regular site visits at Parrot’s facility in Paris.



The Outcome

All of that support also helped Parrot minimize the cost and lead time for bringing the ANAFI USA to market. Another key benefit of the DSGP.1575 is that it’s mounted via SMT processes. That design makes it ideal for high-volume, efficient assembly, which gives ANAFI USA another competitive edge.

For further information about ANAFI USA or Parrot visit:
www.parrot.com