

“Taoglas is a wonderful antenna maker. The support we received was fantastic. The moment we needed a meeting it was set up quite quickly to get the experience and knowledge that could help us with our RF needs.”

Alessandro Verdiesen
Basetime Project Manager

Taoglas helps Basetime enable ultra-accurate geometric height measurement for construction applications

About Basetime

Based in the Netherlands, Basetime is an innovative engineering and geodetic consultancy company that stands for Baseline+Time, the two ingredients to make accurate measurements. The 50 employees behind Basetime cover a wide range of expertise from precision-based measurement engineering, to many years of experience in advising construction companies on how to perform geodetic measurements.



The Challenge

In construction, accuracy is critical. Just a fraction of centimeter can directly affect a project's budget, timeline, safety and more. Take the example of a road. Part of the roadbed typically is sand, which settles after it's spread. To achieve the engineering design's specification throughout the entire roadbed, the construction company must be able to measure the sand's geometric height. If those measurements aren't ultra-precise, the project could have significant cost overruns and delays, such as unnecessarily adding or removing sand. Basetime recognized that need and developed Locater One, a device that uses GNSS and RADAR to measure altitudes with sub-centimeter precision.

The Solution

Basetime knew that a highly accurate GPS antenna would be crucial for achieving sub-centimeter precision. So after exploring various antenna options, Basetime chose to work with Taoglas, as their antenna solution was capable of achieving the optimal accuracy whilst keeping the production and assembly costs to a minimum. Initially SODAQ requested the use of printed circuit board (PCB) as the ground plane to block other RF signals which undermine GPS accuracy, however after close deliberation both parties agreed to use a metal ground plane as it achieved the highest level of accuracy. Taoglas recommended the **ADFGP.50A**, an active dual-patch, dual-feed antenna that consists of two stacked patches, 50 and 40mm in width and just 16.8mm thick. It includes an LNA and front-end SAW filter to reduce out-of-band noise. The ADFGP.50A has been tuned and tested on a 50 x 50 mm ground plane specifically for GPS L1 (1575.42 MHz), L2 (1227.6 MHz) and L5 (1176.45 MHz), as well as the GLONASS, Galileo and BeiDou bands. The ADFGP.50A is part of Taoglas' Sure Technology antenna portfolio, which is the most comprehensive series of high-precision GNSS antennas on the market today.

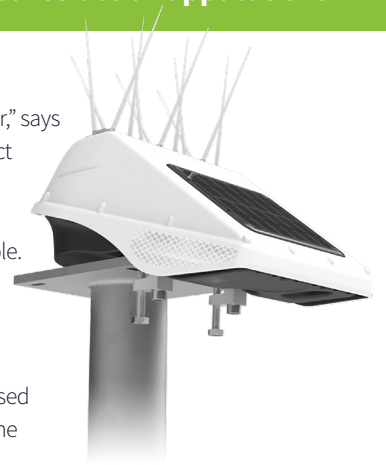
The Outcome

“Taoglas is a wonderful antenna maker,” says Alessandro Verdiesen, Basetime Project Manager. “It was nice that we had the option to modify the antenna cable. Normally it's shipped with a 10 cm cable. We needed one that's 30 cm and with a different connector to improve the assembly process.”

In addition, Basetime also was impressed by the option of having Taoglas tune the antenna in the completed product.

“Taoglas offered a custom tuning service, which we didn't need but will keep the option open for any further improvements,” Alessandro says. “From our knowledge, Taoglas has quite a unique and competitively priced service in the industry— so we were very impressed by that.”

“We have reached consistent, sub centimetre precision where we placed the antenna on a ground plane and using RTK,” Alessandro continued.



Featured Taoglas Product

ADFGP.50A

Embedded Active GNSS dual stacked patch antenna

Dimensions: 50 x 50 x 17mm

 [Click here for ADFGP.50A datasheet](#)

