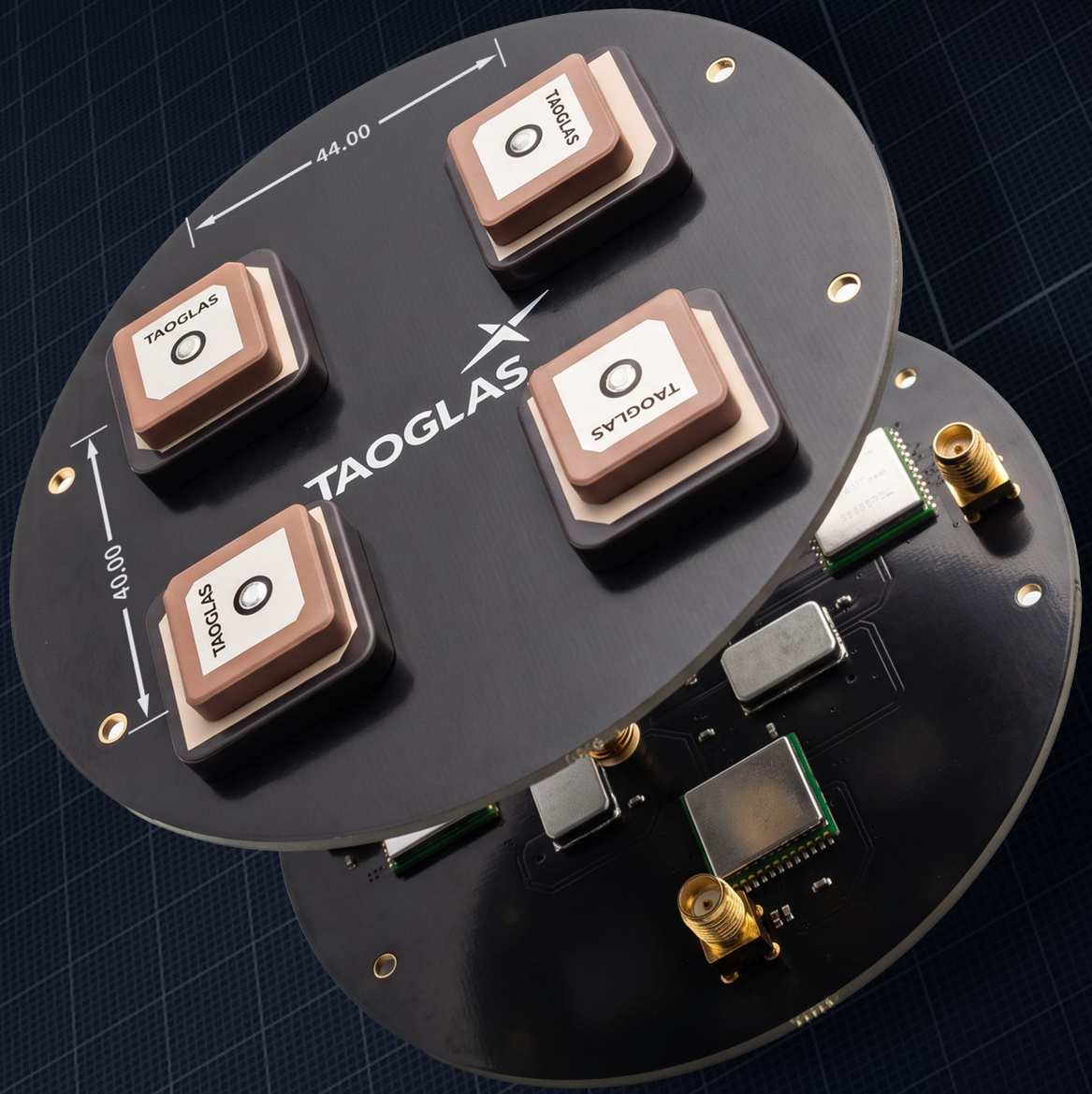


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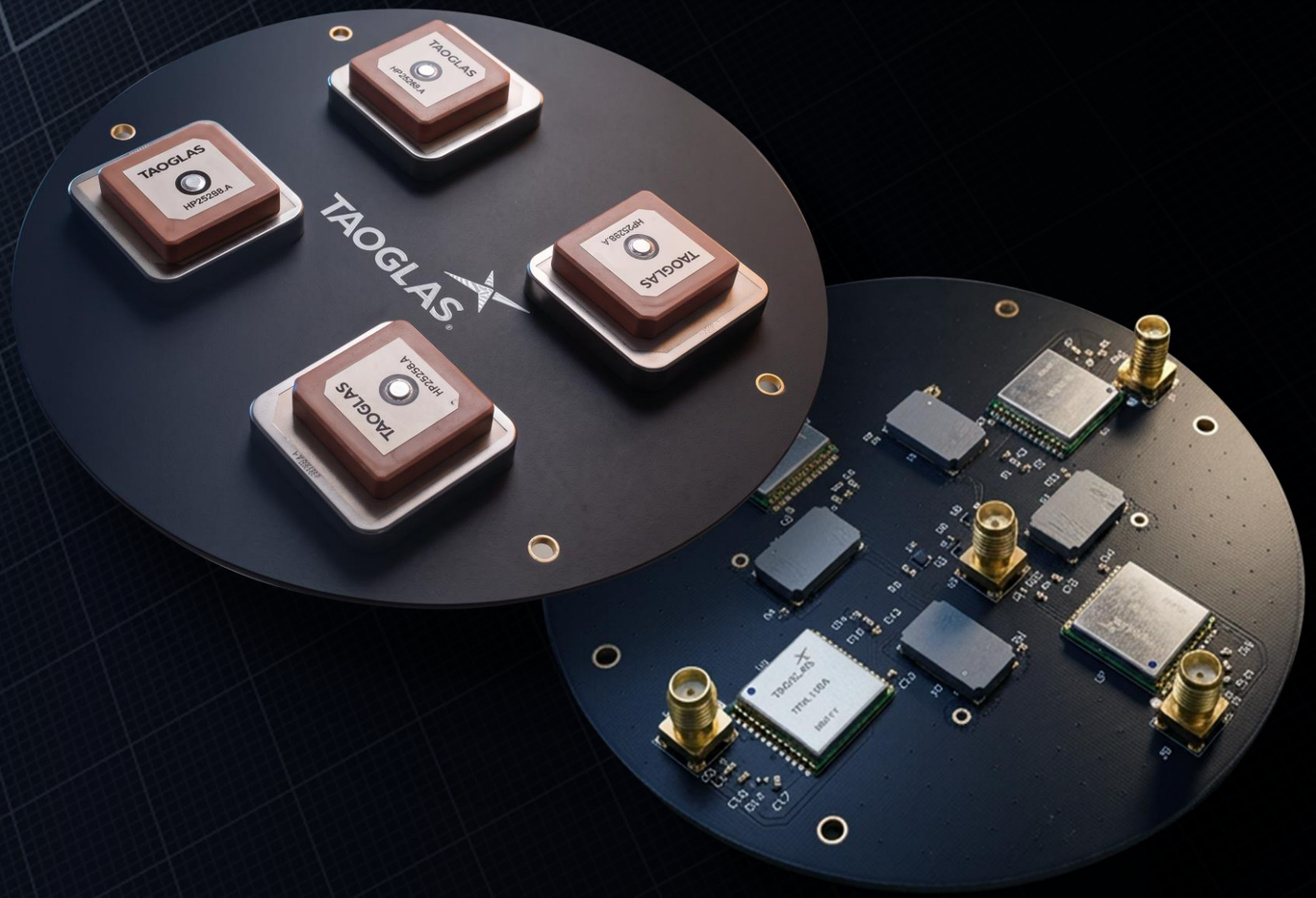
CRPA Reference Design

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CRPA Reference Design

Accelerating the Development of Resilient GNSS Systems

A practical, adaptable foundation for OEMs and system integrators evaluating anti-jam GNSS architectures.



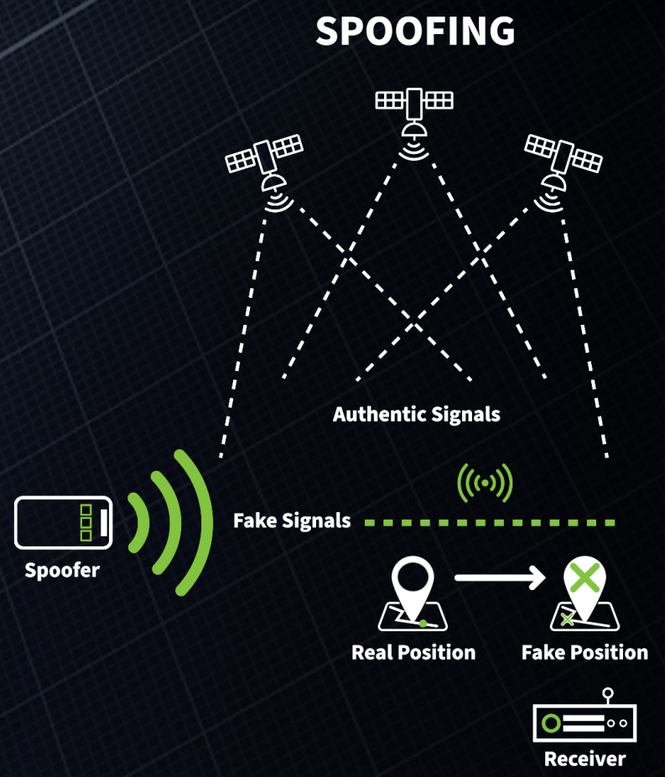
Reliable positioning, navigation and timing is critical across increasingly demanding applications.

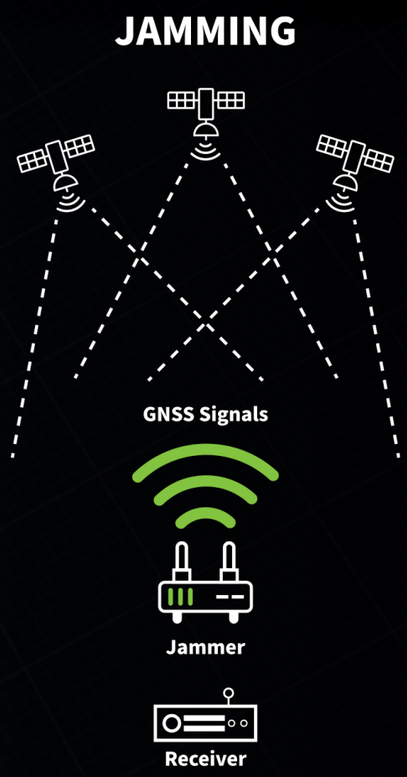
But GNSS signals are received at very low power and can be disrupted by intentional and unintentional interference.

Potential challenges:

- Jamming
- Spoofing
- In-band interference
- Multipath environments

The engineering challenge: How do you maintain resilient GNSS operation when the RF environment becomes more complex?

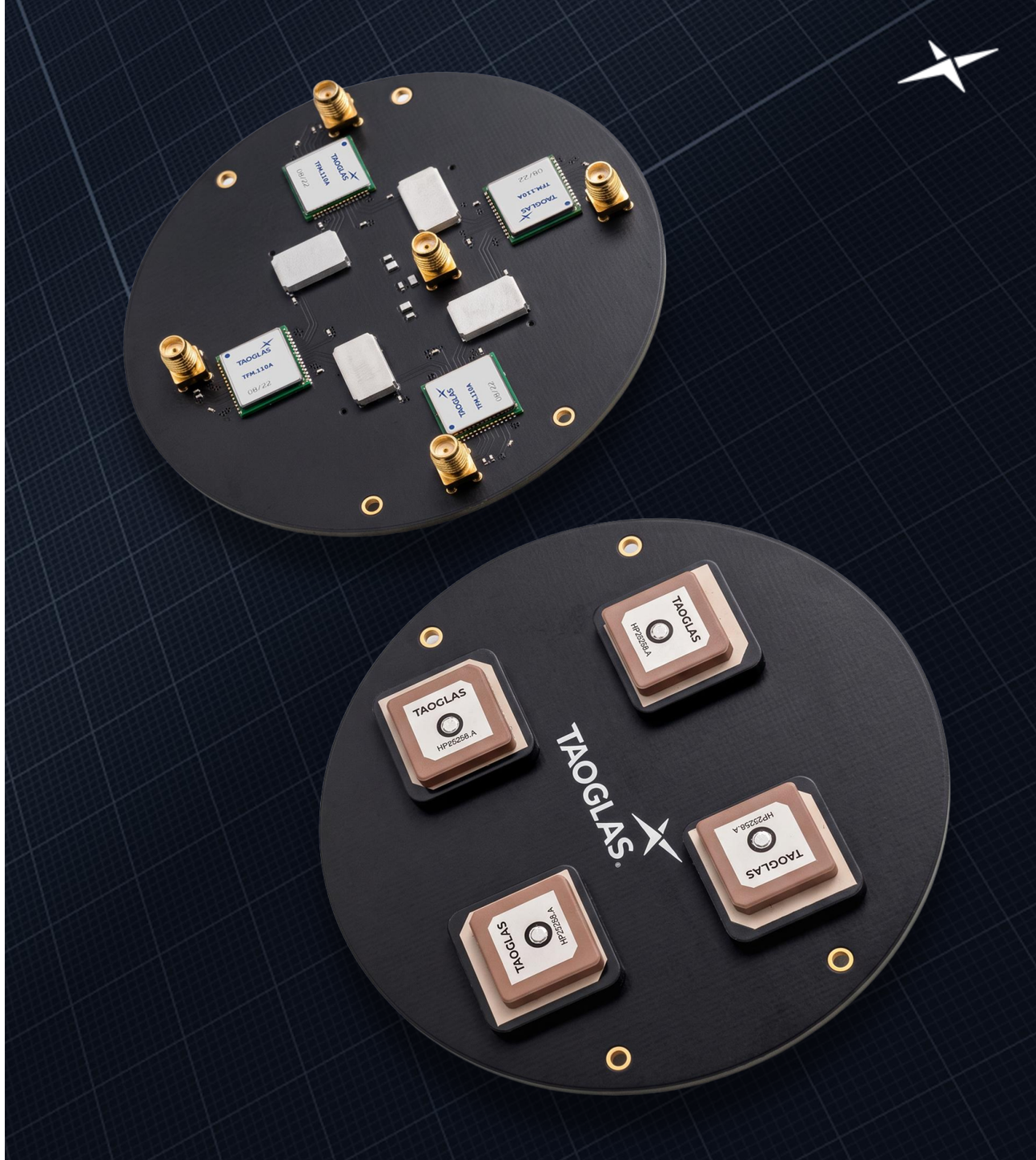




CRPA Reference Design for Resilient GNSS Development

The Taoglas Controlled Reception Pattern Antenna (CRPA) Reference Design provides OEMs and system integrators with a practical starting point for developing more resilient GNSS systems.

Built using commercial off-the-shelf GNSS antennas, front-end modules, and supporting circuitry, the design helps reduce development risk while accelerating evaluation of anti-jam GNSS architectures.



What is a CRPA?

A conventional GNSS antenna receives signals from across the sky using a fixed reception pattern. While effective in open environments, it cannot distinguish between legitimate satellite signals, interference sources, or reflected signals. A CRPA array takes a different approach. Multiple GNSS antenna elements are combined within an array and managed using controlled amplitude and phase weighting. This allows the system to dynamically shape its reception pattern in real time. Three core capabilities make CRPA technology possible:

Beamforming: Enhances reception in the direction of desired GNSS satellites, improving signal quality and effective sensitivity.

Null Steering: Creates areas of reduced sensitivity toward interference sources such as jammers and spoofers.

Multipath Suppression: Helps reject unwanted reflected signals that can degrade positioning accuracy in urban, semi-urban, and vehicle-based environments.



Start Building a More Resilient GNSS System

The **Taoglas CRPA Reference Design** provides a flexible foundation for developing and evaluating resilient GNSS systems. Choose the frequency configuration that best matches your requirements and download the complete design package, with reference design files for all three PCB sizes: 110 mm, 150 mm, and 170 mm.

One download gives you the complete reference design package for all three PCB sizes (110 x 150 x 170mm), including 3D models, Altium-format PCB design files, and 2D PCB drawings.

L1 / L2 CRPA Antenna Reference Design Files

Download Files Now

View 110 mm datasheet
View 150 mm datasheet
View 170 mm datasheet

L1 / L5 CRPA Antenna Reference Design Files

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View 110 mm datasheet
View 150 mm datasheet
View 170 mm datasheet

L1 / L2 / L5 CRPA Antenna Reference Design Files

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View 150 mm datasheet
View 170 mm datasheet

Reference Design Architecture



L1/L5 GNSS Antenna

Accura GVLB258.A

The Taoglas Accura GVLB258.A provides an L1/L5 antenna option for the Taoglas CRPA Reference Design.



L1/L2 GNSS Antenna

Accura HP2258.A

The Taoglas Accura HP2258.A provides an L1/L2 antenna option for the Taoglas CRPA Reference Design.



L1/L2/L5 GNSS Antenna

Accura HP25258.A

The Taoglas Accura HP25258.A provides the L1/L2/L5 antenna option for the Taoglas CRPA Reference Design.



Front End Module

TFM.110A

The Taoglas TFM.110A provides the RF front-end stage within the Taoglas CRPA Reference Design, covering L1/L2/L5 GNSS bands.

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