

# FAB S and LAB S

## Gapwaves: Tech That Sees the Human Side of Things



**G**apwaves, a waveguide technology company headquartered in Gothenburg, Sweden, was founded in 2011 by Professor Per-Simon Kildal of Chalmers University. For many years, Gapwaves was considered a strong research institution and partner. However, Gapwaves has recently fostered significant growth and made a splash in the commercial market thanks to the manufacturability of its patented waveguide technology. This technology is applicable to products including slot antennas, filters, diplexers and other passive microwave components, and operates in the mmWave frequency range. As Gapwaves finds more automotive and communication applications, it continues to expand and recently opened a pilot-line facility designed for product development and testing.

Gapwaves' technology is based on artificial magnetic conductors, which create contactless, artificial waveguide structures that facilitate the propagation of the signal. By eliminating physical contact, the manufacturing specifications can be relaxed significantly while maintaining high performance, and the material choice is more lenient. This increase in manufacturability becomes more important as the technology scale grows, positioning Gapwaves to be successful in high volume manufacturing industries, including automotive. Gapwaves' technology and new facility position it for success as the self-driving car and driver safety feature industries experience rapid growth.

Gapwaves opened its pilot-line production facility in November 2024, strategically placing it near its headquarters in Gothenburg, Sweden. The facility functions as an industrialization hub where Gapwaves can validate both new products and high volume manufacturing innovations. Both steps are key during a successful new

product introduction, and the facility enables Gapwaves to perfect products and systems before outsourcing them to their qualified global production partners. The facility is designed for an annual production capacity of 300,000 antennas, many of which are high volume manufacturing tests or research designs. In addition to the manufacturability benefits, this facility is pivotal to obtaining the IATF certification, a crucial certification for the automotive industry. Gapwaves recently started production at the pilot-line facility for partner Valeo's new vehicle radar. Once they optimize the production line, the product will be moved to a full-scale production facility closer to its end use. This will minimize the delivery time and cost, improving overall customer satisfaction.

In addition to automotive, Gapwaves services industries including commercial satcom, telecom and surveillance, as well as defense applications. However, automotive remains a priority not only for its success and high volume opportunity, but for the positive impact it brings. Increasing auto safety goes beyond increased convenience or speed to improved quality and preservation of life. Gapwaves values its positive contribution to automotive safety. As safety features become ubiquitous, there is a global increase in proposals to require certain features in new cars. As these pass and become law, Gapwaves' technology and manufacturability will enable the rapid implementation of safety technology without sacrificing prices.

With over 40 patent families, 14 years of experience, the new production facility and an enthusiastic team, Gapwaves will continue to positively disrupt the waveguide and automotive industries.

**Gapwaves**  
[www.gapwaves.com](http://www.gapwaves.com)