

77 GHz

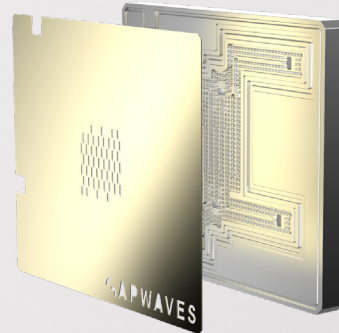
# Automotive reference antenna

Gapwaves offers a metallized plastic Automotive reference antenna working in frequency 76-81 GHz. Gapwaves waveguide technology enables a high gain, compact formfactor and cost effective antenna with wide beam scan possibility. This enables a complete radar solution with high range, compact form-factor to a competitive price.

With this reference antenna Gapwaves aims to demonstrate performance and if of interest start a development project to do a customized adaptation.

## Summary

- Performance - Twice the object detection area
- Compact form factor - 50% reduced size
- Flexible Design - Easy adaption to all radar types
- Thermal handling - Using metal in the layers
- Cost - 25 % cost reduction



## Gapwaves Technology

Gapwaves waveguides is a novel packaging technology for millimeter wave and Terahertz circuits and components. The technology is based on an Artificial Magnetic Conductor that enables multilayer waveguide structures to be built without the need for electrical contact between layers and thus paving the way for lowest manufacturing cost and highest waveguide performance. Gapwaves versatile waveguide technology provides unique possibilities for deep integration of antennas and millimeter wave to Terahertz electronics.

## About Gapwaves

Gapwaves originates from research conducted at Chalmers University of Technology and was founded in 2011. Gapwaves vision is to be the most innovative provider of mmWave antenna systems and the preferred partner to those pioneering next generation wireless technology. By leveraging the disruptive Gapwaves technology we help pioneers in telecom and automotive to create highly efficient mmWave antenna systems that contributes to re-defining everyday life. Gapwaves markets are e.g. mmWave in 5G telecom and automotive.

## Electrical data

Channels	4 (Rx)	2 (Tx)
Frequency (GHz)	76-81	76-81
Gain (dBi)	12.5	15.5
HPBW in EL.	+/-7°	+/-7°
HPBW in Az.	+/-50°	+/-25°
Return loss (dB)	15	15
Polarization	Horizontal	Horizontal
Interface	WR12 ports	WR12 ports
Compatible with standard	UG-387/U	UG-387/U

## Customer specific adaptation

- Beam width / gain
- Antenna placement
- PCB to waveguide transition
- Radome integration