

77 GHz

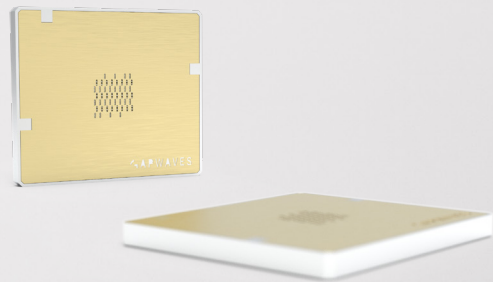
# Automotive reference antenna

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

The innovation in our solutions lies in the patented Gapwaves waveguide technology based on an Artificial Magnetic Conductor (AMC) surface that enables propagation of electromagnetic waves in contactless artificial waveguide structures. This is the key to designing high performance waveguide antenna structures with a high degree of flexibility using well-established, high-volume production processes.

The technology has its most advantages within radar antennas for automotive, last mile delivery and traffic management, phased array antenna solutions for 5G mmWave and products for test & measurements.

## 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 within the telecom and radar antenna industry to create highly efficient mmWave antenna systems that contributes to re-defining everyday life. Gapwaves markets are e.g. mmWave in 5G telecom and radar antennas.

## 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