

28 GHz, 30 dBi, +56 dBm EIRP

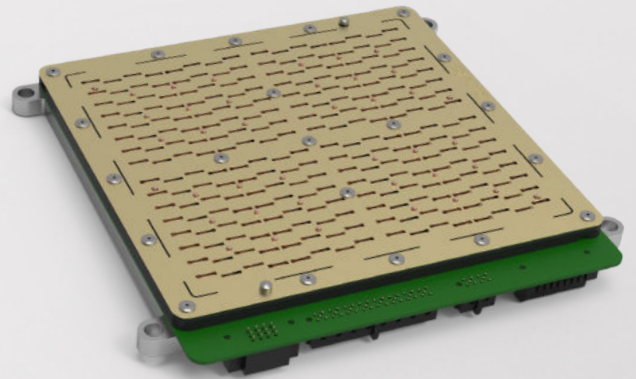
# 5G mmWave Mid-Power Phased Array Antenna Module R1

Gapwaves offers highly efficient array antenna modules based on Gapwaves patented waveguide technology for integration in 5G mmWave base stations. With intrinsic low losses and innovative design Gapwaves waveguide antennas offer best in class performance with market-leading power efficiency, addressing the 5G mmWave challenges:

- Extending the range of 5G mmWave systems
- Improving the power efficiency
- Solving out-of-band suppression
- Increasing the uplink performance

This platform constitutes the foundation for next generation 5G phased array antennas based on Gapwaves waveguide technology with unique advantages:

- High EIRP with market-leading power efficiency
- Reduced complexity and highest design flexibility enabled by Gapwaves unique multilayer waveguide-based antenna building practice
- Maximized component reliability due to excellent thermal performance
- High performance, low loss filtering optional for critical out-of-band suppression
- Modular product structure with common mechanical building practice and interfaces to ensure shortest time-to-market and fast introduction of new frequency bands
- Scalability to high production volumes due to innovative design and well-established high-volume manufacturing processes



## 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 technologies. 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.

## Technical specifications

Size	135 × 122 × 15 mm
Frequency range	26.5-29.5 GHz
Antenna gain	>30 dBi
Polarization	Vertical or Horizontal
Number of beams	4 beams
Elevation scan	+/- 10°
Elevation beam width	typ. 6°
Azimuth scan	+/- 60°
Azimuth beam width	typ. 6°
EIRP @ 9 dB back-off	+56 dBm
Power consumption /pol	<45W (R2: <30W)
Operation modes	RX, TX or Idle
Module interface	
IF & LO	Board to board coax
Power	6-12 V and ground
Control	2 x SPI & Digital I/O