

28 GHz, 30 dBi, +56 dBm EIRP

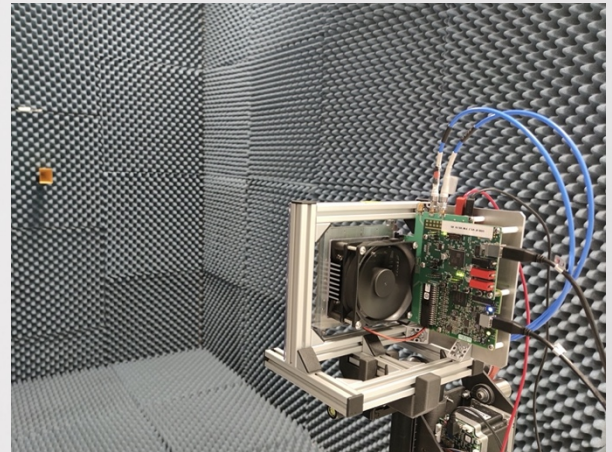
5G mmWave Mid-Power PAAM R1 Evaluation kit

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
- 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



General

Size	215 x 200 x 190mm (w x h x d)
Weight	< 2 kg
Interfaces	
LO_ref:	SMA coax (on interface board)
RX/TX IF:	2 x SMA coax (on interface board)
Power:	+28V and GND (on interface board)
Control:	Through USB-SPI interface modules
Power consumption	< 45 W at 56 dBm EIRP (TX)
Heatsink	Active, supply +6V (from interface board)
Temperature range	+ 25 ± 10° C

Antenna

Antenna Gain	> 28 dBi
Polarization	Horizontal
Number of beams	1
Main lobe steering resolution	
Azimuth:	-60 to +60 in steps of 3°
Elevation:	-10 to +10 in steps of 2°
Main lobe Steering accuracy	± 2.5°
Azimuth / Elevation beam width	typ 6°
Sidelobes (Az,El)	
@(<=±30°, <=±5°)	< -10 dBc
@(<=±60°, 0°)	< -5 dBc
@(<=±60°, <=±10°)	< -3 dBc

General RF/IF

Input LO_ref frequency	5.975 GHz
Input LO_ref level	0 d Bm (± 2 dB)
IF center frequency	2.9 GHz
RF / IF bandwidth	100 MHz
RF center frequency	26.5 – 29.5 GHz

Transmitter

Gain ripple over RF bandwidth	± 1 dB
TX IF input level	-3 dBm *
TX RF EIRP	+56 dBm @ 9 dB BO
TX nominal gain	typ 30 dB *
All spurioues	Total radiated power (TRP) < -13 dBm / MHz

* TX gain setting needs further optimization in order to ensure spurious response. Specified vaules are for maximum available gain.

Reciever

Gain ripple over RF bandwidth	± 1 dB
RX nominal gain (Electrical per RF feed).	typ 15 dB