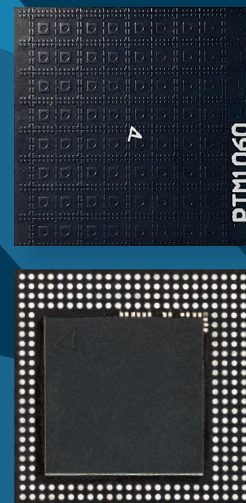# PHARROWTECH

PTM1060 60 GHz 64-Patch Phased Array Antenna Module

Description

The PTM1060 is a complete mmWave antenna module embedded with CMOS receiver and transmitter Radio Frequency Integrated Circuit (RFIC) PTR1060 in a 20 × 20 mm BGA package that operates from 57 GHz to 71 GHz. This linearly polarized phased array antenna consists of 8x8 radiating elements, driven by 32 RF I/Os of the RFIC. PTM1060 has a built-in crystal oscillator that can serve as system reference clock allowing for user selectable characteristics and phase coherent transmit and receive operations and 64 patches phased array antenna module in single antenna package.

The device integrates a low noise PLL and allows modulations up to 64 QAM and various RF channel bandwidth sizes from 270 MHz up to 2.16 GHz. PTM1060 supports Single Carrier (SC) and OFDM modulation formats. The transmit and receive paths are combined on chip with a TR switch and connected to a 64 patches antenna module to minimize system BoM cost and rapid design integration. Data connectivity to the baseband IC is provided through a universal analog baseband I/Q interface. The control interface consists of bit banging 10 x GPIO-like high-speed control lines and a (Q)SPI interface. Additionally, PTM1060 has been designed to support multi-tiling to create larger coherent arrays with higher TX EIRP and lower RX sensitivity.

Finally, PTM1060 has 1024 beam book entries enabling fine beam steering capabilities for both receiver and transmitter, independently.
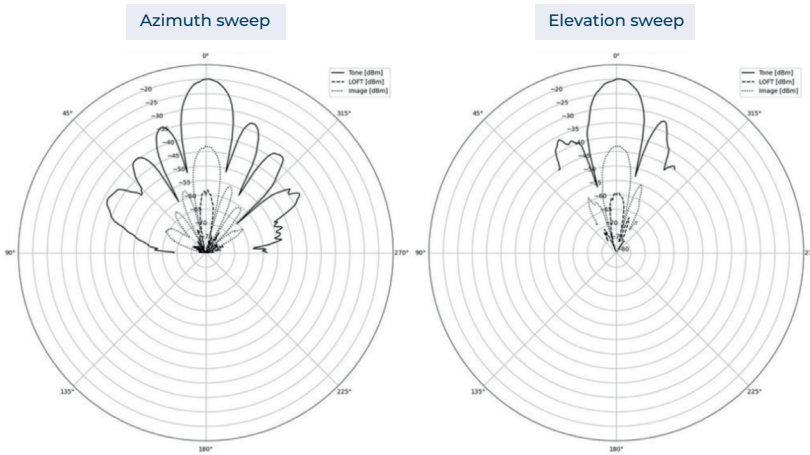
Key Features

- Antenna: 8x8 phased-array antenna with electronic beamforming
- Frequency range: 57-71 GHz
- Polarization: Linear
- RF chains: 32 TX and RX
- Total antenna gain: 22.5 dBi
- FoV Azimuth: ±45 °
- FoV Elevation: ±30 °
- Dimensions: 20 x 20 mm
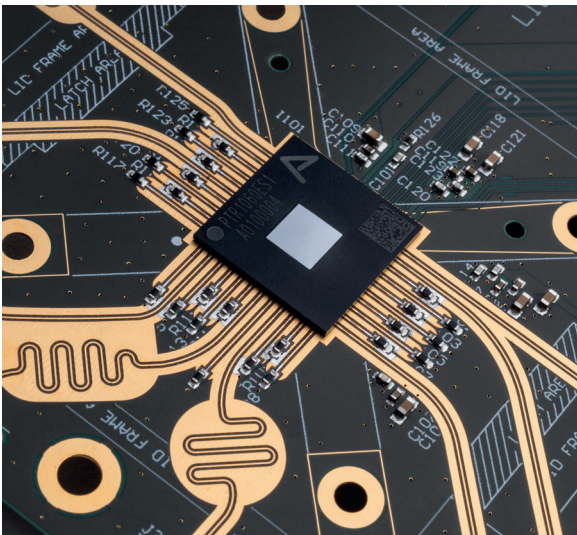
Antenna patterns

Broadside beam

Azimuth sweep

Elevation sweep

Target applications

- Fixed Wireless Access (FWA)
- Infrastructure connectivity
- 5G Small cell backhaul
- Industrial, Scientific, and Medical (ISM) band data transfer
- High-definition video wireless transmission
- AR/VR

Ordering Information	Ordering Part Number	Package	Shipping
	PTM1060	20 x 20 mm BGA package, 252-balls	JEDEC Tray

About Pharrowtech

Pharrowtech develops innovative wireless platforms to simplify and accelerate the adoption of millimeter-wave technology for mass-market applications. Our products include radio-frequency and digital semiconductors, phased array antennas, and software solutions.

Pharrowtech's leading products serve fast growing markets including broadband fixed wireless access (FWA) and 5G, as well as high-performance WiFi platforms for consumer electronics, virtual reality (VR) headsets, and smart city IoT applications.).

Contact us at **info@pharrowtech.com** for more information.

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