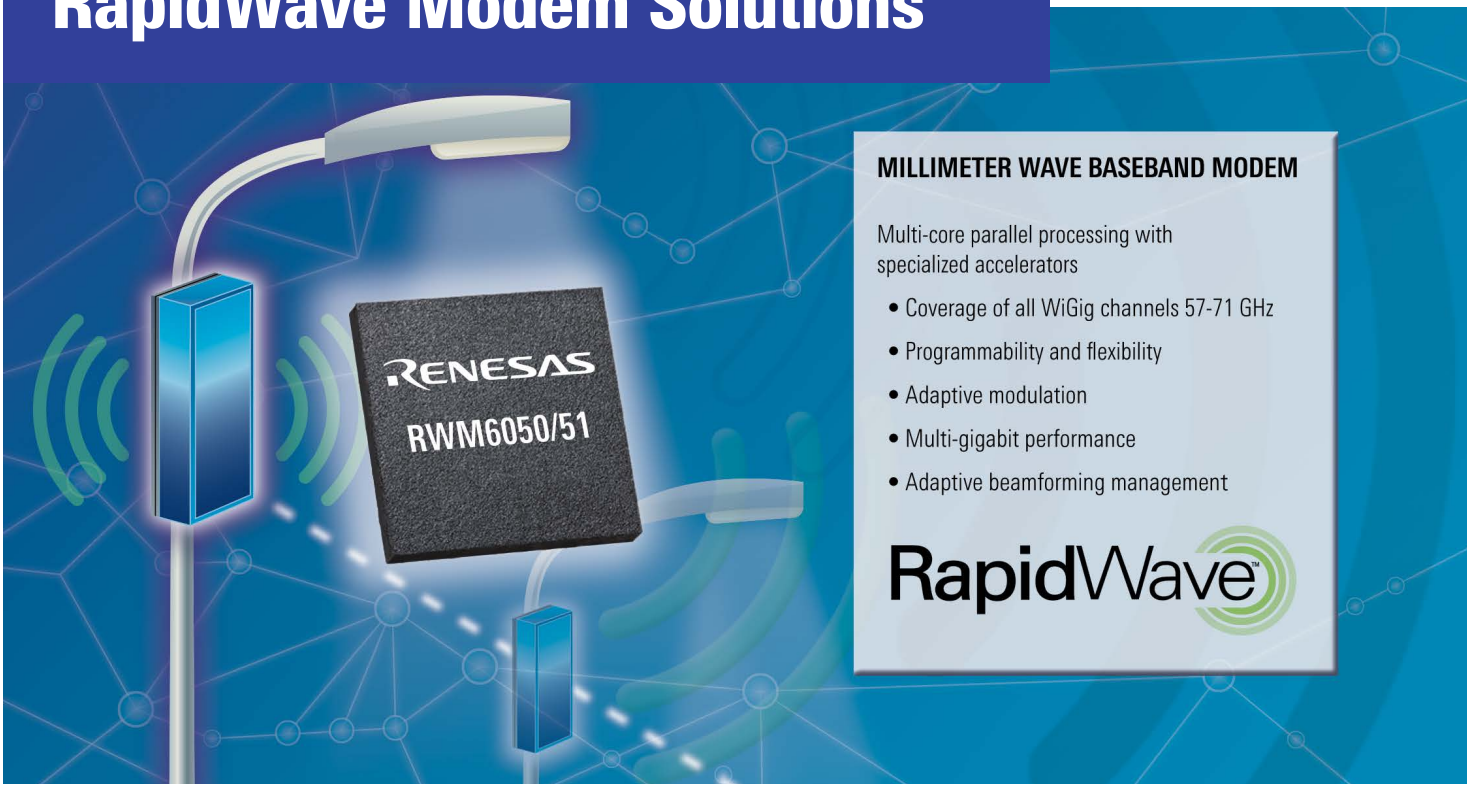
RENESAS
BIG IDEAS FOR EVERY SPACE

RapidWave Modem Solutions



The Renesas RapidWave™ product line is a portfolio of millimeter wave (mmWave) baseband modems for unlicensed 5G applications including fixed wireless access and backhaul infrastructure. The products provide options to deliver cost effective and power efficient solutions for the emerging "last mile" markets. These devices leverage the WiGig standard with vendor specific enhancements to include advanced features beyond the specification.

The portfolio includes both dual and single modem SoC products providing a complete linked solution from the infrastructure to client nodes. The RWM6050 and RWM6051 feature a high degree of configurability with flexible channelization modes, adaptive modulation coding and unique interference mitigation techniques to scale bandwidth up to multi-gigabit data rates even in dense deployment scenarios.

RapidWave products extend connectivity from the end of a fibre "point-of-presence" to homes and businesses at a fraction of the cost of a full fibre deployment. These products provide network design flexibility offering options to deliver meshed or branch, point-to-point, or point-to-multipoint topologies. The product options provide scalable low power solutions that can focus on bandwidth performance and platform cost.

Features and benefits

- Multi-gigabit wireless networking
- High reliability with link adaptive features
- Accelerated time to market
- Low power to enable PoE solutions

Market applications

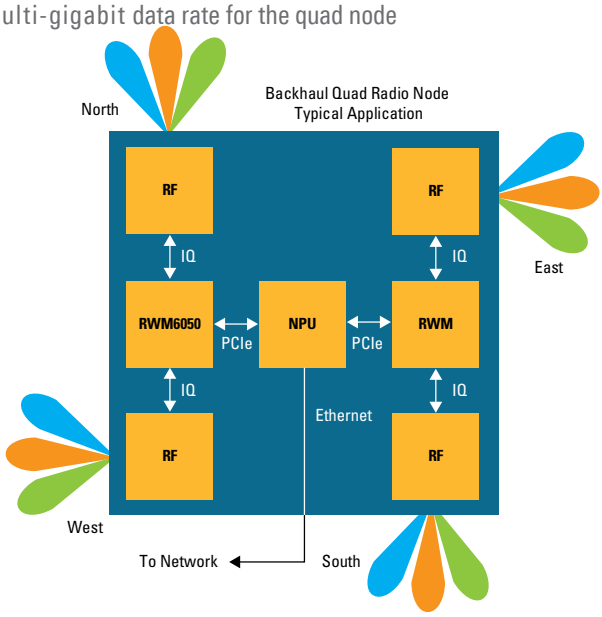
- Small cell backhaul
- Wireless mesh networking
- Fixed wireless backhaul
- Fixed wireless access
- Video surveillance networking

RAPIDWAVE SOLUTIONS

Typical applications

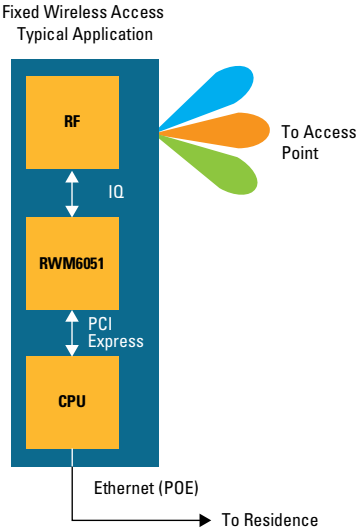
Backhaul Quad Radio Nodes

- Two RapidWave RWM6050s with dual PHY/MAC modems to support 360° azimuth coverage with four mmWave phased array antennas
- Point-to-multi-point backhaul network architecture
- Delivers multi-gigabit data rate for the quad node



Fixed Wireless Access

- Creates wireless mesh access networks for high-speed broadband directly to consumer premises
- Delivers multi-gigabit data rate to urban residential neighborhoods
- Accelerates and reduces cost of equipment deployment with automated link management features
- Power optimized to deliver highest performance from a bounded PoE power budget



This device incorporates technology licensed from and developed in collaboration with Blu Wireless Technology. This document is subject to change for the latest information.

Specifications

- -40°C to +85°C operating range
- Low power consumption
- 19 x 19 mm 484-FCBGA package

Performance

- Multi-gigabit configurable data rate
- Scalable data rates through channelization
- Adaptive modulation up to 64QAM
- Efficient PTMP & QOS
- Phased Array Antenna (PAA) support
- Programmable scheduler
- TDD support
- Multi-core parallel processing with specialized accelerators

Integration

- Wireless Secure Link
- Dual and single modem options
- Leverages WiGig protocol
- Analog front end with integrated ADC/DAC
- IEEE 1588v2 network synchronization
- x2 PCI Express® Gen2

Cost

- Ease of deployment with electronic beam steering for auto-alignment of antenna patterns
- Standard low power/low cost CMOS technology
- Solution scalability to meet cost or performance for the end application

To request samples, download documentation or learn more visit: **renesas.com/rapidwave**

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