



# QPF4209

## Wi-Fi 7 Front End Module

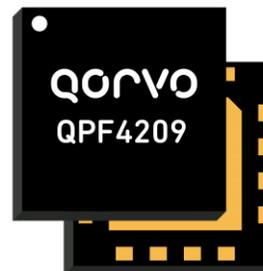
### Product Overview

The Qorvo® QPF4209 is an integrated front end module (FEM) designed for Wi-Fi 7 (802.11be) systems. The small form factor and integrated matching minimizes layout area in the application.

Performance is focused on optimizing the PA for a 5V supply voltage that minimizes power consumption to allow for systems that use digital pre-distortion to achieve the highest linear output power and leading edge throughput for the RF chain.

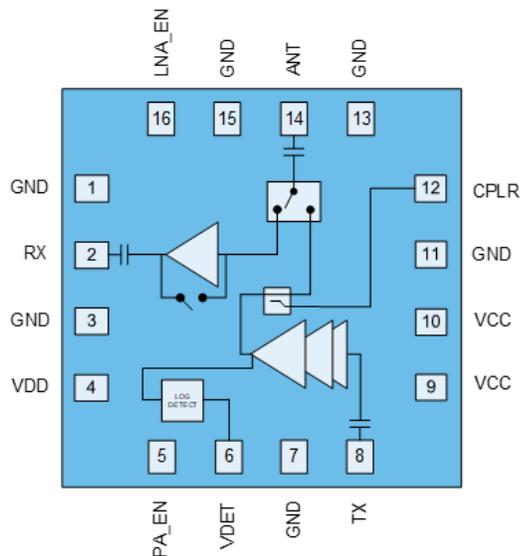
A coupler with RF output is integrated for DPD feedback training. For power control a broadrange, constant slope voltage logarithmic power detector is provided for application feedback.

The QPF4209 integrates a 2.4 GHz power amplifier (PA), single pole two throw switch (SP2T), coupler structure and bypassable low noise amplifier (LNA) into a single device.



16 Pad 3 x 3 mm Laminate Package

### Functional Block Diagram



Top View

### Key Features

- 2412 – 2484 MHz
  - $P_{SAT} = +32$  dBm
  - Corrected DEVM<sup>1</sup>
    - $P_{OUT} = +20$  dBm MCS13 HE20 -47dB Dynamic EVM
    - $P_{OUT} = +22$  dBm MCS11 HE20 -43dB Dynamic EVM
    - $P_{OUT} = +24$  dBm MCS8 VHT20 -35dB Dynamic EVM
    - $P_{OUT} = +26$  dBm MCS7 HT20 -30dB Dynamic EVM
    - $P_{OUT} = +27$  dBm MCS0 HT20 Spectral Mask Compliance
  - Optimized for +5 V Operation
  - DC Power = 1.6 W at +27dBm
  - 33 dB Tx Gain
  - 1.7 dB Noise Figure
  - 15 dB Rx Gain & 7 dB Bypass Loss
  - >40 dB 5-7 GHz Rejection on Rx Path
  - Integrated RF Coupler & DC Logarithmic Power Detector
- <sup>1</sup>Memoryless LUT DPD Correction

### Applications

- Access Points
- Wireless Routers
- Residential Gateways
- Customer Premise Equipment
- Internet of Things

### Ordering Information

Part Number	Description
QPF4209SB	Sample bag with 5 pieces
QPF4209SR	7" reel with 100 pieces
QPF4209TR13	13" reel with 5,000 pieces
QPF4209EVB	Assembled Evaluation Board



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## Wi-Fi 7 Front End Module

### Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	Class 1C (1,000V)	ANSI/ESD/JEDEC JS-001
ESD – Charged Device Model (CDM)	Class C3 (1,000V)	ANSI/ESD/JEDEC JS-002
MSL – Moisture Sensitivity Level	MSL 3	IPC/JEDEC J-STD-020



Caution!

ESD sensitive device

### Solderability

Compatible with both lead-free (260 °C max. reflow temperature) and tin/lead (245 °C max. reflow temperature) soldering processes.

Package lead plating: Electroless Ni/Electroless Pd/Immersion Au (ENEPIG)

### RoHS Compliance

This part is compliant with the 2011/65/EU RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment), as amended by Directive 2015/863/EU.

This product also has the following attributes:

- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A (C<sub>15</sub>H<sub>12</sub>Br<sub>4</sub>O<sub>2</sub>) Free
- SVHC Free
- PFOS Free

### Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

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