



# QPF4228

## Wi-Fi Front End Module

### Product Overview

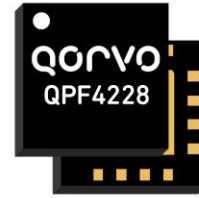
The Qorvo® QPF4228 is an integrated front end module (FEM) designed for Wi-Fi 6 (802.11ax) systems. The compact form factor and integrated matching minimizes layout area in the application.

Performance is focused on optimizing the PA for a 3.3V supply voltage that conserves power consumption while maintaining the highest linear output power and leading edge throughput. Receive path matches the optimal technologies to maximize Rx sensitivity through noise figure performance that is consistent over a wider variety of conditions.

The receive path is pinned out so external filtering can be added in the optimal position. Integrated die level filtering for 2nd and 3rd harmonics as well as 5 GHz rejection for DBDC operation are included.

There are two options for power detect, a DC power detector which has voltage output and an RF power detector with an RF output from a directional coupler.

The QPF4228 integrates a 2.4GHz power amplifier (PA), regulator, single pole three throw switch (SP3T), low noise amplifier (LNA) and coupler into a single device

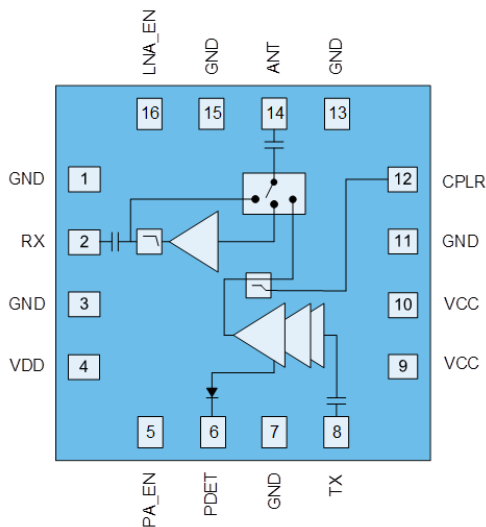


16 Pin 3x3 mm Laminate Package

### Key Features

- 2412-2484 MHz
- P<sub>OUT</sub> = +14dBm MCS11 HE40 -43dB Dynamic EVM
- P<sub>OUT</sub> = +17dBm MCS9 VHT40 -35dB Dynamic EVM
- P<sub>OUT</sub> = +18dBm MCS7 HT20/40 -30dB Dynamic EVM
- P<sub>OUT</sub> = +21dBm MCS0 HT20 Spectral Mask Compliance
- Optimized for +3.3V Operation
- 0.5W Power Consumption at P<sub>OUT</sub> = +17.5dBm
- 33dB Tx Gain
- 2.2dB Noise Figure
- 15dB Rx Gain & 7dB Bypass Loss
- 15dB 5GHz Rejection on Rx Path
- Integrated RF Power Detector Coupler as well as DC Power Detector

### Functional Block Diagram



Top View

### Applications

- Access Points
- Wireless Routers
- Client Equipment
- Customer Premise Equipment
- Internet of Things

### Ordering Information

Part Number	Description
QPF4228SB	Sample bag with 5 pieces
QPF4228SQ	Sample bag with 25 pieces
QPF4228SR	7" reel with 100 pieces
QPF4228TR13-5K	13" reel with 5,000 pieces
QPF4228EVB-01	Assembled Evaluation Board

## Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	Class 1C (1kV)	ANSI/ESDA/JEDEC JS-001
ESD – Charged Device Model (CDM)	Class C2b (750V)	ANSI/ESDA/JEDEC JS-002
MSL – Moisture Sensitivity Level	Level 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: Electrolytic plated Au over Ni

## 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:

- Product uses RoHS Exemption 7c-I to meet RoHS Compliance requirements
- 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
- PFOS Free
- SVHC Free

## Contact Information

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

**Web:** [www.qorvo.com](http://www.qorvo.com)

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