



# QPF4506

## Wi-Fi Front End Module

### Product Overview

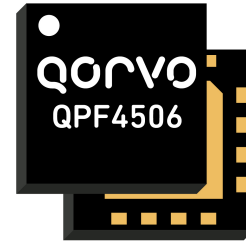
The Qorvo® QPF4506 is an integrated front end module (FEM) designed for Wi-Fi 802.11ax systems. The compact form factor and integrated matching minimizes layout area in the application.

Performance is focused on optimizing the PA for a 5 V 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 has integrated die level filtering for 2<sup>nd</sup> and 3<sup>rd</sup> harmonics as well as 2.4 GHz rejection for DBDC operation are included.

For power accuracy feedback a integration of a DC power detector with logarithmic feedback across power which enables power control to lower powers and enables the possibility to calibrate against a constant slope for applications which use higher gain antennas or end users wanting to reduce device calibration time in production.

The QPF4506 integrates a 5 GHz power amplifier (PA), regulator, single-pole two throw switch (SP2T), and a bypassable low noise amplifier (LNA).



16 Pad 3x3mm Laminate Package

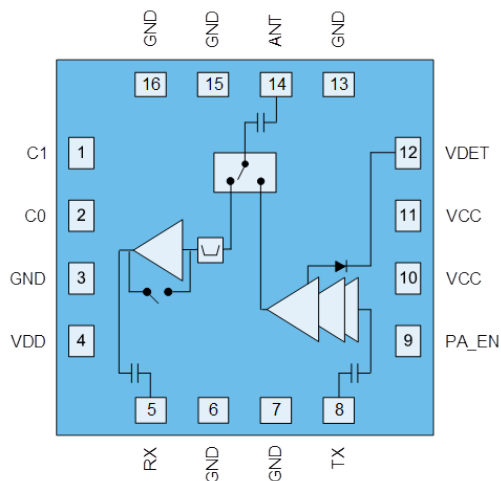
### Key Features

- 5150 – 5925MHz
- $P_{OUT} = +15$  dBm MCS11 HE160 -43 dB Dynamic EVM
- $P_{OUT} = +21$  dBm MCS9 VHT80 -35 dB Dynamic EVM
- $P_{OUT} = +23$  dBm MCS7 HT40 -30 dB Dynamic EVM
- $P_{OUT} = +25$  dBm MCS0 HT20 Spectral Mask Compliance
- Optimized for +5 V Operation
- 30 dB Tx Gain
- 1.7 dB Noise Figure
- 13.5 dB Rx Gain & 6.5 dB Bypass Loss
- 28 dB 2.4 GHz Rejection on Rx Path
- Integrated Logarithmic DC Power Detector

### Applications

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

### Functional Block Diagram



Top View

### Ordering Information

Part Number	Description
QPF4506SB	Sample bag with 5 pieces
QPF4506SQ	Sample bag with 25 pieces
QPF4506SR	7" reel with 100 pieces
QPF4506TR13-5K	13" reel with 5000 pieces
QPF4506EVB-01	Assembled Evaluation Board

## Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	Class 1A (350V)	ANSI/ESD/JEDEC JS-001
ESD – Charged Device Model (CDM)	Class C3 (1KV)	ANSI/ESD/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: 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:

- 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
- SVHC Free

## Contact Information

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

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

**Tel:** 1-844-890-8163

**Email:** [customer.support@qorvo.com](mailto:customer.support@qorvo.com)

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