



QPF4591

Wi-Fi 6 Dual Path Front End Module

Product Overview

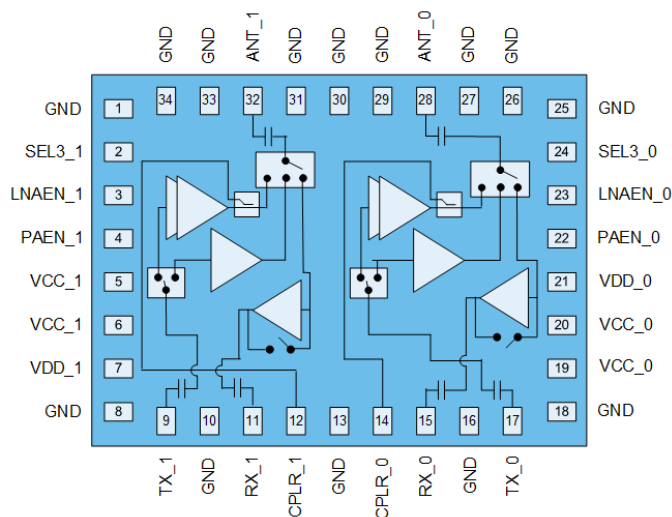
The Qorvo® QPF4591 is an integrated dual path front end module (FEM) designed for Wi-Fi 6 (802.11ax) systems which allows the operation of two separate RF chains to flow through a single front end module. The compact form factor and integrated matching minimizes layout area in the application and greatly reduces the number of external components.

Performance is focused on optimizing a multi-mode PA for a 3.85V supply voltage that allows for optimal throughput based on user conditions. Receive path matches the optimal technologies to maximize Rx sensitivity through noise figure performance that is consistent over a wider variety of conditions while maintaining low current draw.

The QPF4591 dual path front end module features chipset-specific compatible control voltages to facilitate ease of use.

The QPF4591 integrates multiple 5 GHz power amplifiers (PA) with power detector, transmit-receive switches and bypassable low noise amplifiers (LNA) into a single device.

Functional Block Diagram



Top View



34 Pad 4 x 3 mm Laminate Package

Key Features

- 5150-5925 MHz
- Dual Path to Accommodate 2 RF Chains in a Single Device.
- Temperature Compensated Bias Network
- Multiple Transmit Bias Modes
- $P_{OUT} = +16.5$ dBm MCS10/11 SU HE80 -43 dB Dynamic EVM
- $P_{OUT} = +17.5$ dBm MCS9 VHT80 -35 dB Dynamic EVM
- $P_{OUT} = +19$ dBm MCS7 HT20 -30 dB Dynamic EVM
- $P_{OUT} = +21$ dBm MCS0 HT20 Spectral Mask Compliance
- Optimized for +3.85 V Operation
- 30 dB Tx Gain
- 2.8 dB Noise Figure
- 15 dB Rx Gain & 4 dB Bypass Loss
- Integrated RF Power Detectors

Applications

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

Ordering Information

Part Number	Description
QPF4591SB	Sample bag with 5 pieces
QPF4591SR	7" reel with 100 pieces
QPF4591TR13	13" reel with 2,500 pieces
QPF4591EVB	Assembled Evaluation Board



QPF4591

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Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	Class 2 (2000V)	ANSI/ESD/JEDEC JS-001
ESD – Charged Device Model (CDM)	Class C3 (1000V)	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: 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:

- Lead Free
- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A (C₁₅H₁₂Br₄O₂) Free
- SVHC Free
- PFOS Free

Contact Information

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

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