



QPF4291

Wi-Fi 6 Dual Path Front End Module

Product Overview

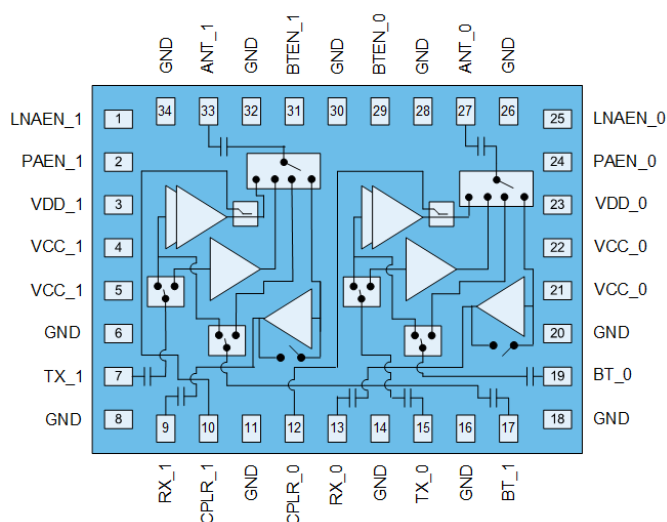
The Qorvo® QPF4291 is an integrated dual path front end module (FEM) designed for Wi-Fi 6 (802.11ax) systems which allows the operation of two separate RF chains to flow through a single front end module. The compact form factor and integrated matching minimizes layout area in the application and greatly 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. High integration allows IoT signals to make use of the PA for an increase in range. 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 QPF4291 dual path front end module features chipset-specific compatible control voltages to facilitate ease of use.

The QPF4291 integrates multiple 2.4 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

- 2402-2482 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 HE40 -43 dB Dynamic EVM
- $P_{OUT} = +19$ dBm MCS9 VHT40 -35 dB Dynamic EVM
- $P_{OUT} = +20.5$ dBm MCS7 HT20 -30 dB Dynamic EVM
- $P_{OUT} = +22$ dBm MCS0 HT20 Spectral Mask Compliance
- $P_{OUT} = +22$ dBm Bluetooth GFSK
- Optimized for +3.85 V Operation
- 30 dB Tx Gain
- 2 dB Noise Figure
- 14 dB Rx Gain & 4.5 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
QPF4291SB	Sample bag with 5 pieces
QPF4291SR	7" reel with 100 pieces
QPF4291TR13	13" reel with 2,500 pieces
QPF4291EVB	Assembled Evaluation Board



QPF4291

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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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