

QPF4617

Wi-Fi 6E Non-Linear Front End Module

Product Overview

The Qorvo® QPF4617 is a non-linear integrated front end module (FEM) designed for Wi-Fi 6E (802.11ax) systems. It is designed to operate in conjunction with DPD correction. The small form factor and integrated matching minimizes layout area in the application.

Performance is focused on optimizing the PA efficiency 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.

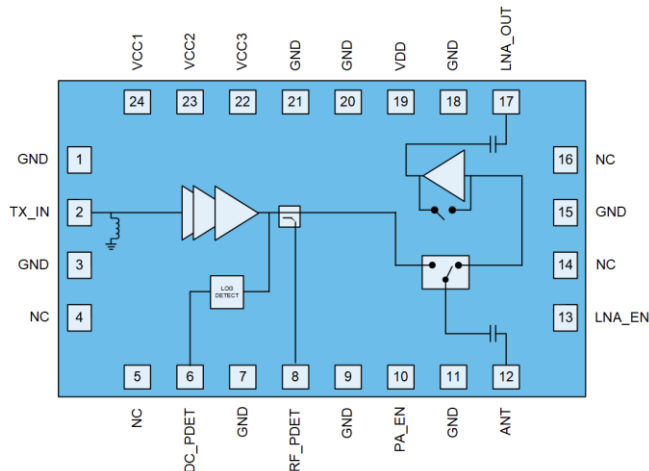
A coupler with RF output as well as a broadrange, constant slope voltage logarithmic power detector is provided for application feedback

The QPF4617 integrates a 6 GHz power amplifier (PA), single pole two throw switch (SP2T) and bypassable low noise amplifier (LNA) into a single device.



24 Pad 5 x 3 mm Laminate Package

Functional Block Diagram



Top View

Key Features

- 5935 – 7125 MHz
- $P_{SAT} = +32$ dBm
- $P_{OUT} = +24$ dBm HE20 -30dB Dynamic EVM
- $P_{OUT} = +20$ dBm HE80 -38dB Dynamic EVM
- $P_{OUT} = +15$ dBm HE80 -41dB Dynamic EVM
- $P_{OUT} = +5$ dBm HE80 -47dB Dynamic EVM
- Optimized for +5 V Operation
- 31 dB Tx Gain
- 1.9 dB Noise Figure
- 14.5 dB Rx Gain & 7.5 dB Bypass Loss
- Integrated RF & DC Power Detector

Applications

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

Ordering Information

| Part Number | Description |
|-------------|----------------------------|
| QPF4617SB | Sample bag with 5 pieces |
| QPF4617SR | 7" reel with 100 pieces |
| QPF4617TR13 | 13" reel with 5,000 pieces |
| QPF4617EVB | Assembled Evaluation Board |

Absolute Maximum Ratings



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Handling Precautions

| Parameter | Rating | Standard |
|----------------------------------|------------------|-----------------------|
| ESD – Human Body Model (HBM) | Class 1C (1000V) | 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: 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:

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

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