

QWX27120 Product Brief

5-7 GHz Linear Wi-Fi 7 CMOS Front-End IC

Applications

- Wi-Fi 6E and Wi-Fi 7 systems
- Smartphones and other portable, rechargeable battery-operated devices
- Smart TV, set-top boxes, AR/VR headsets

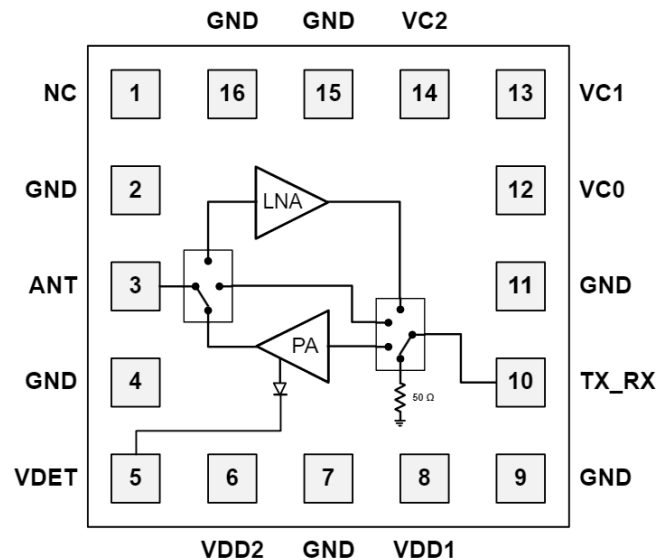
Features

- PA with superior linear output power and best-in-class power efficiency for Wi-Fi 7 high data rate applications
- Monolithic die implementation in CMOS SOI ensures smallest form factor
- LNA with bypass mode and industry leading current consumption
- High gain and low gain transmit modes
- 16-pin LGA 2 mm x 2 mm or bare die with Cu pillars for flip chip assembly
- Power detector output

Key Specifications

- 5150 – 7125 MHz
- Single 3.80V supply voltage
- Transmit output power:
 - 21.5 dBm, 802.11a, 3 dB margin to SEM
 - 18.5 dBm, EHT160 -35 dB DEVM
 - 16.5 dBm, EHT160 -42 dB DEVM
 - 11 dBm, EHT320 -45 dB DEVM
- Transmit gain: 28.5 dB (high gain mode)
- Current consumption:
 - 305 mA at 21 dBm output power
- Noise figure: 2.1 dB
- Receive gain: 16 dB

Functional Block Diagram



Pin description follows on next page.

Description

The QuantalRF QWX27120 is a highly integrated monolithic front-end IC designed for high performance Wireless Local Area Network (WLAN) applications supporting all standards up to Wi-Fi 7. It features a patent pending PA architecture providing superior power efficiency, a low loss single-pole, triple-throw (SP3T) switch and an LNA.

Support for Digital Pre-Distortion (DPD) is implemented in both transmit modes for further improved EVM performance.

All RF ports are matched on-chip to 50 ohms to minimize the external components and application layout area.

The QWX27120 is fabricated as a monolithic die in CMOS SOI technology.

Pin Configuration and Description

| Pin No. | Label | Description |
|------------------------|---------------|--|
| 1 | NC | No connect |
| 2, 4, 7, 9, 11, 15, 16 | GND | Ground |
| 3 | ANT | Bidirectional antenna port, matched to 50Ω |
| 5 | VDET | Power detector output |
| 6 | VDD2 | 3.80V supply |
| 8 | VDD1 | 3.80V supply |
| 10 | TX_RX | Bidirectional TX/RX input/output port |
| 12, 13, 14 | VC0, VC1, VC2 | Control signals |

RoHS Compliance

The part is compliant with the 2011/65/EU RoHS directive, as amended by Directive 2015/863/EU.

Contact Information

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Learn more at [quantalrf.com](https://www.quantalrf.com)

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