

QWX27105 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

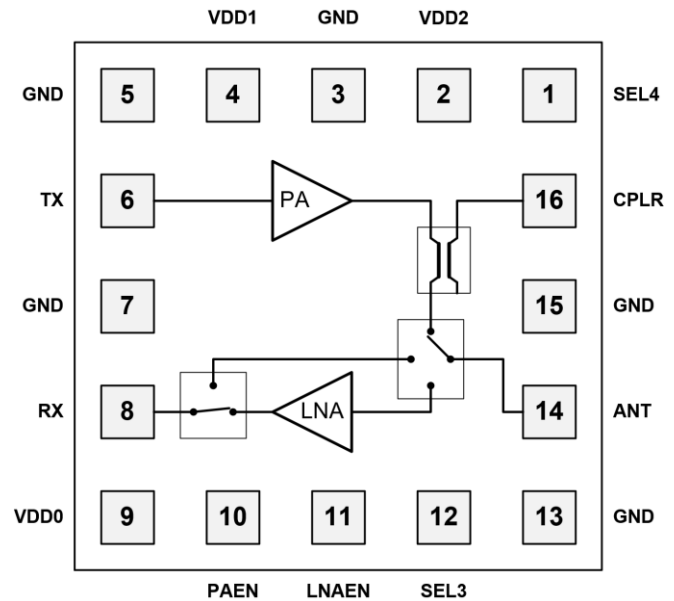
Features

- 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 the smallest form factor
- LNA with high gain, low power and bypass modes
- Transmit with high power, mid power and low power modes
- DPD modes for further power saving
- 16-pin LGA 2 mm x 2 mm or bare die with Cu pillars for flip chip assembly
- Directional coupler output

Key Specifications

- 5150 – 7125 MHz
- 3.8V supply voltage for PA and 1.8V supply voltage for LNA
- Transmit output power:
 - 23 dBm, 802.11a 6Mbps, 3 dB SEM margin
 - 20 dBm, VHT80 -35 dB DEVM
 - 18 dBm, HE160 -42 dB DEVM
 - 16 dBm, EHT320 -45 dB DEVM
- Transmit gain: 31 dB (high gain mode)
- Current consumption:
 - 280 mA at 21 dBm output power
- Noise figure: 1.8 dB
- Receive gain: 15 dB

Functional Block Diagram



Pin description follows in section 2.2.

Description

The QuantalRF QWX27105 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 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 QWX27105 is fabricated as a monolithic die in CMOS SOI technology.

Pin Configuration and Description

Pin No.	Label	Description
1, 3, 5, 7, 13, 15	GND	Ground
2	VDD2	3.8 V supply
4	VDD1	3.8 V supply
9	VDD0	1.8 V supply for LNA
6	TX	RF PA input port
8	RX	RF LNA output port
1, 10, 11, 12	SEL4, PAEN, LNAEN, SEL3	Control signals
14	ANT	Bidirectional antenna port, matched to 50Ω
16	CPLR	TXRF coupler output port

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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