

QWX27105 Product Brief

5-7 GHz Wi-Fi 6E/7 Front-End IC

Applications

- Wi-Fi 6E and Wi-Fi 7 systems
- Smartphones and other portable, rechargeable battery-operated devices
- Access points, routers, gateways

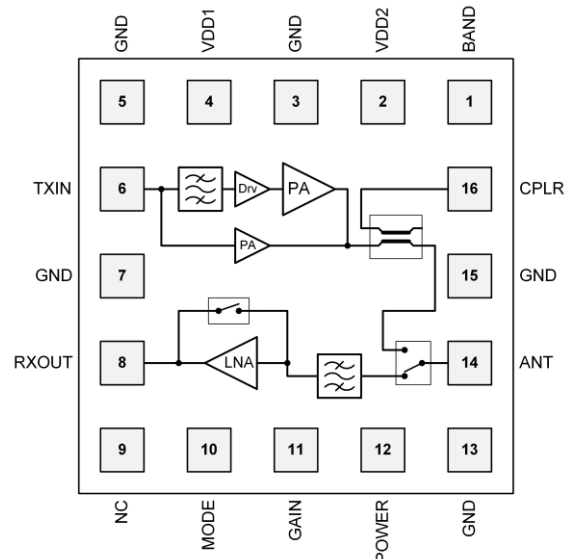
Features

- Single Wi-Fi 6E/7 front-end module
- PA with superior linear output power and best-in-class power efficiency for Wi-Fi 7 high data rate applications
- LNA with bypass mode and industry leading current consumption
- High power, mid power, and ultra-low power modes
- Fully integrated CMOS SOI single die IC
- 16-pin LGA 2 mm x 2 mm or bare die with Cu pillars for flip chip assembly
- Directional coupler output
- Integrated RF filters offer superior interferer immunity

Key Specifications

- 5150 – 7125 MHz
- Single 3.85V supply voltage
- Pout = +16.5 dBm MCS13 EHT320 -45 dB DEVM
- Pout = +17 dBm MCS11 HE160 -43 dB DEVM
- Pout = +18.5 dBm MCS11 HE80 -40 dB DEVM
- Pout = +19.5 dBm MCS9 VHT80 -34 dB DEVM
- Pout = +23 dBm 6 Mbps 802.11a
- Transmit gain = 28 dB
- Current consumption:
235 mA at 18 dBm output power
- Noise Figure (including on-chip filter) = 2 dB
- Receive gain = 16.5 dB

Functional Block Diagram



Pin description follows on the next page.

Description

The QuantalRF QWX27105 is a highly integrated single 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 linearity, a low loss single-pole, double-throw (SPDT) switch and an LNA.

The QWX27105 is equipped with on-chip filters enhancing coexistence performance. IoT devices are supported via the ultra-low power mode.

All RF ports are matched on-chip to 50 ohms. Combined with the on-chip filtering, it minimizes the external components and application layout area.

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

Pin Configuration and Description

Pin No.	Label	Description
1	BAND	Control signal for PA band selection
2, 4	VDD2	3.85V supply
3, 5, 7, 13, 15	GND	Ground
6	TXIN	RF PA input port
8	RXOUT	RF LNA output port
9	NC	No connect
10	MODE	Control signal, see truth table in the datasheet.
11	GAIN	Control signal, see truth table in the datasheet.
12	POWER	Control signal, see truth table in the datasheet.
14	ANT	Bidirectional antenna port, matched to 50Ω
16	CPLR	TXRF coupler output port

Handling Precautions

Proper caution must be exercised to prevent electrostatic (ESD) damage.

Parameter	Rating	Condition
HBM	2000 V	Human body model contact discharge per ANSI/ESDA/JEDEC JS-001-2014
CDM	500 V	Charged device model contact discharge per ANSI/ESDA/JEDEC JS-002-2014

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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