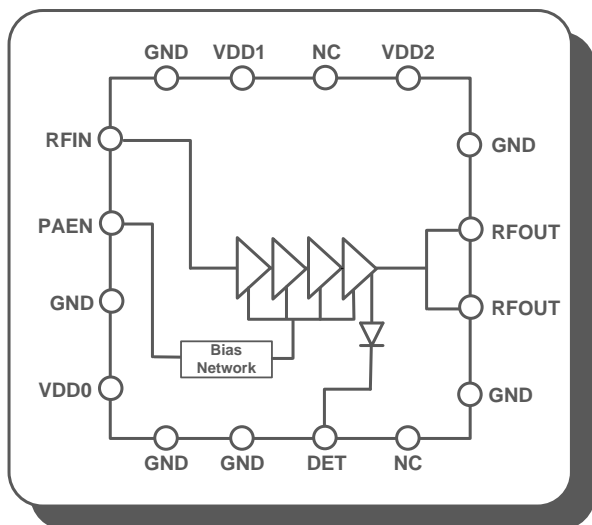


# 2.4GHz CMOS High-Power WLAN Linear Power Amplifier

## Block Diagram



## Description

The RFX242 is a high power, high linearity power amplifier fabricated in pure CMOS. This device is optimized to provide transmit power amplification for IEEE 802.11ac as well as the b/g/n standards operating in the 2.4GHz frequency band.

The RFX242 provides 32dB of power gain and +23dBm linear output power with extremely low EVM of <1.8% for MCS9/HT40, and +26dBm output power with EVM of <3% for MCS7/HT20 signals. It has CMOS logic control, on-chip input impedance matching, as well as integrated RF decoupling of the power supply.

The RFX242 is assembled in a compact 3x3 mm 16-lead QFN package. It requires a minimal number of external components which greatly simplifies RF front-end implementation.

## Applications

- ▶ WLAN AP/Router
- ▶ Outdoor WLAN Hotspot
- ▶ LTE/WiFi Router
- ▶ Set Top Box/Home Gateway
- ▶ Femto Cell
- ▶ Smart Energy/Smart Home Applications
- ▶ Linear 2.4GHz ISM Platforms

| Parameters             | Value         | Conditions                   |
|------------------------|---------------|------------------------------|
| Operating Frequency    | 2.4-2.5 GHz   |                              |
| WLAN 11ac Output Power | +23dBm        | EVM<1.8% (MCS8/HT40), VDD=5V |
| WLAN 11n Output Power  | +26dBm        | EVM<3% (MCS7/HT20), VDD=5V   |
| WLAN 11b Output Power  | +29dBm        | 1Mbps Mask Compliance        |
| Output P1dB            | 32dBm         | VDD=5V                       |
| Small-Signal Gain      | 32dB          |                              |
| Input Return Loss      | 10dB          |                              |
| Current Consumption    | 360mA         | Pout = +23dBm, MCS9/HT40     |
|                        | 470mA         | Pout = +26dBm, MCS7/HT20     |
| Second Harmonics       | -45dBm/MHz    | Pout=+29dBm, 1Mbps CCK       |
| Third Harmonics        | -45dBm/MHz    | Pout=+29dBm, 1Mbps CCK       |
| Pdetect Range          | 100-2000mV    | Min to Max Pout              |
| Supply VCC             | 3.0 – 5.5 VDC | Nominal VDD=5V               |
| Control Signals        | High Enable   | <0.3V Low, >1.2V High        |
| Package                | 16L-QFN       | 3mm x 3mm x 0.55mm           |