

## Description

The F0109 is a dual-path 650MHz to 1GHz High Gain / Ultra-Low Noise Amplifier used in receiver applications.

The F0109 LNA is operated as a *balanced amplifier* where the inputs and outputs are combined via external 90° couplers and provides 18dB of gain with 0.55dB noise figure and 41dBm OIP3 performance. The device uses a single 5V supply and 120mA typical of total  $I_{CC}$ .

The F0109 is packaged in a 4 x 4 mm, 16-pin VFQFPN with 50Ω single-ended RF input and output impedances for ease of integration into the signal path.

## Competitive Advantage

- Ultra-low noise performance of 0.55dB over wide bandwidths improves receiver sensitivity
- High gain and linearity

## Typical Applications

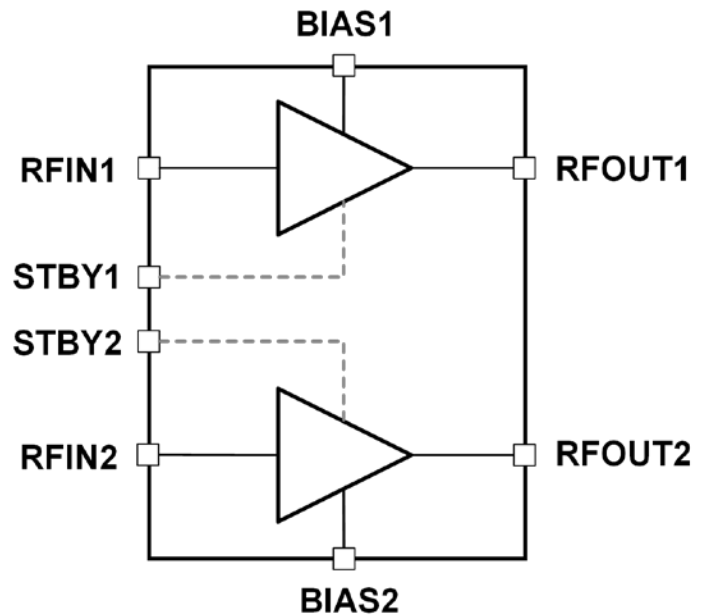
- 3G, 4G, 5G wireless infrastructure
- Public safety infrastructure
- General Purpose RF

## Features

- 650MHz to 1GHz operating range
- 18dB typical Gain at 850MHz
- 0.55dB typical NF at 850MHz
- 41dBm typical OIP3 at 850MHz
- 50Ω single-ended input/output impedances
- +5V power supply
- $I_{CC} = 60\text{mA}$  per channel
- Independent channel standby modes for power savings
- 1.8V Logic standby control
- Operating temperature ( $T_{EP}$ ) range:  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$
- 4 x 4 mm, 16-VFQFPN package

## Block Diagram

Figure 1. Block Diagram



## Ordering Information

Orderable Part Number	Package	MSL Rating	Shipping Packaging	Temperature
F0109NBTI	4mm x 4mm x 0.75mm 16 pin QFN	1	Tray	-40° to +105°C
F0109NBTI8	4mm x 4mm x 0.75mm 16 pin QFN	1	Tape and Reel	-40° to +105°C
F0109EVB	Evaluation Board			

## Revision History

Revision Date	Description of Change
April 27, 2020	Initial release.

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