

KHN1122

Analog Front End IC

■ GENERAL DESCRIPTION

The KHN1122 is a highly integrated analog front-end IC (AFE) for the home networking applications such as G.hn, HomePNA or Powerline communication. Data rates up to 200MSPS are supported in both Rx and Tx path. The on-chip PLL multiplier and synthesizer provide all the required clock signals from a single crystal or clock source.

The functional block diagram of the 1122 is shown below. The device can be configurable for either SISO (single channel configuration) or MIMO (2 channel configuration).

The Tx signal path consists of a x2 low-pass interpolation filter, 12-bit 400MSPS DAC1, 10-bit 200MSPS DAC2 and 2 line drivers (IAMP_1/2). For SISO, the TX path is using the DAC1 with 400MSPS.

The Rx signal path consists of a programmable gain amplifier (PGA), a 400MSPS ADC (2x 200MSPS ADCs for MIMO) and a decimation filter to generate a 200MSPS digital output word (100MSPS digital output word for MIMO).

■ FEATURES

- Home Networking Analog Front End IC covering full spec G.hn
- Up to 200MSPS data rate
- Configurable MIMO or SISO solution

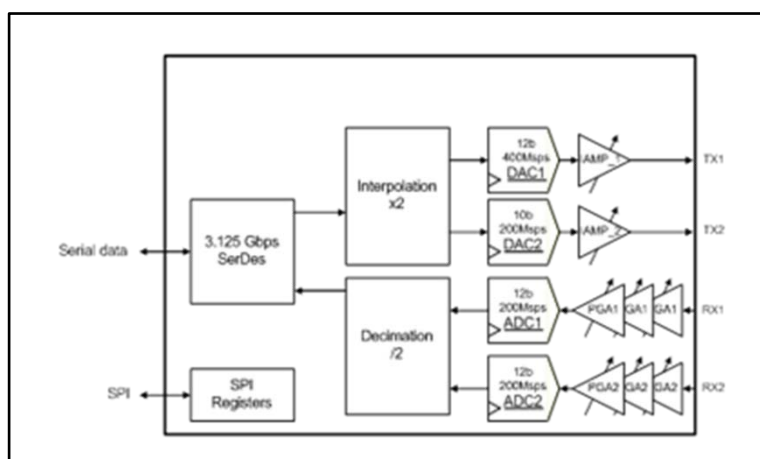
Tx path

- 12bit 400MSPS DAC for SISO
 - 12/10bit 200MSPS DAC for MIMO
 - x2 interpolation filter
- Integrated 160mA line driver with 39.8dB gain control

Rx path

- 12bit 400MSPS ADC for SISO
- 2x 12bit 200MSPS ADC for MIMO
- / 2 decimation filter
- -18 dB to +42dB low-noise PGA
- LPF with 90MHz cut-off frequency
- Internal clock multiplier (PLL)
- High speed serial interface JESD204 3.125Gbps
- 88 Quad Flat No-Lead package (QFN)
- Industrial Temp range (-40 ~+85°C)

■ BLOCK DIAGRAM



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