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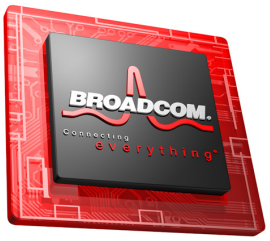
BCM3450 PRODUCT Brief



BCM3450 MOCA™ POWER AMPLIFIER/LOW-NOISE AMPLIFIER

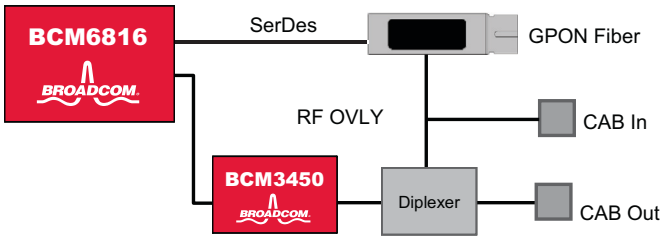
FEATURES

- **Single PA/LNA for MoCA™ networks**
  - Gigabit Passive Optical Network(GPON) to MoCA bridge
  - Home MoCA WAN networks
  - Broadband home router (BHR)
- **PA**
  - Wideband with 30 dB gain range
  - Low Power 1.2W
  - Output Power of 2 dBm (programmable up to 5 dBm)
  - ACPR of 50 dBr @ 30 MHz offset
- **LNA**
  - Wideband with 25 dB gain range
  - Low Power 600 mW
  - Typical noise figure of 8 dB
  - Conversion gain of 21 dB
  - Input return loss of 10 dB
- **High-speed LNA/PA gain control interface**
- **Individual block power-up/power-down capability**
- **Single 3.3V Power Supply**
- **Two-wire Broadcom Serial Control (BSC)**

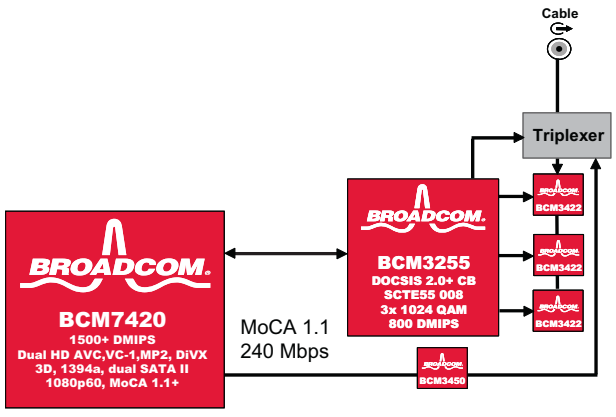
SUMMARY OF BENEFITS

- **Provides power amplification and connection to coaxial MoCA-enabled networks for Broadcom devices with integrated MoCA MAC/PHYs (BCM7420, BCM7410, BCM6816, BCM6819, BCM6829, BCM3320).**
- **Superior 'reach' over in-home cable environments.**
  - Handles loss through multiple splitters
  - Supports long line runs
- **Superior Signal/Noise ratio for reliable performance.**
- **Low power control to meet Energy Star requirements and simplify power supply design.**
- **BSC interface provides flexible programmability.**

BCM3450 Power Amplifier/Low-Noise Amplifier



GPON Bridge Example



Example Home Gateway Solution

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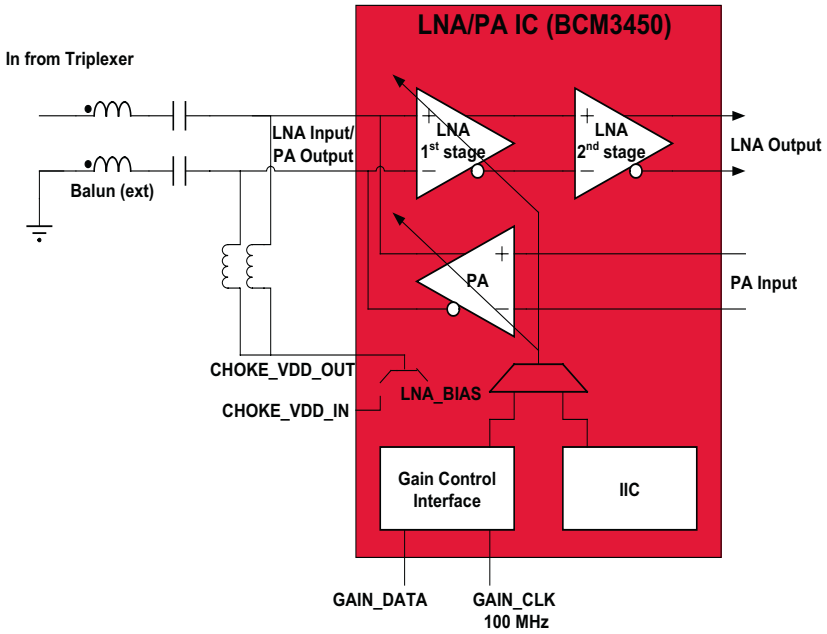
OVERVIEW



BCM3450 Reference Design

The BCM3450 is a highly integrated Low Noise Amplifier (LNA) and power amplifier (PA) designed to substantially reduce the complexity of MoCA™ interfaces found in emerging networked set-top boxes and consumer appliances. No external transmit/receive switching is required. It provides additional consumer benefits by extending in-home "reach" into difficult and diverse home network topologies. The BCM3450 delivers that reach while reducing the required power to do so. The BCM3450 provides similar benefits for Gigabit Passive Optical Networks (GPON)

The wideband PA is capable of delivering output power of 2 dBm with ACPR of 50 dBr at 30 MHz offset. The PA gain is programmable and the range spans 30 dB. The wideband LNA has a noise figure of 8 dB with a conversion gain of 21 dB. The LNA gain is also programmable with a range of 25 dB. The gain of the PA and LNA can be changed through a high-speed serial interface indicated above as the GAIN_DATA and the GAIN_CLK.

The BCM3450 requires a single 3.3V power supply and the power dissipation for the PA and LNA are 1.2W and 0.6W, respectively.

The BCM3450 is used in conjunction with the Broadcom's MoCA MAC/PHY integrated product line. The BCM3450 connects to the coaxial MoCA via a triplexer and external balun to the LNA differential input. The BSC port is used to manage LNA and PA performance parameters and control the power from the MoCA MAC/PHY.

The BCM3450 is optimized to interface with the BCM7420, BCM7410, BCM6816, BCM6819, BCM6829 and BCM3320.

The performance of the BCM3450 meets the MoCA 1.0, 1.1 requirements for both noise figure and linearity.

Ordering Information:

- BCM3450KMLG – commercial environment, lead free package
- BCM3450KML – commercial environment, leaded package
- BCM3450IMLG – industrial environment, lead free package
- BCM3450IML – industrial environment, leaded package

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