# ANALOG DEVICES

# Narrow-Band Power-Line Communications Master Modem IC with Networking Stack

## ADE8165

#### FEATURES

Narrow-band power-line communications IC
Integrates PHY through networking layer
Simple host interface
Application layer
Supports DL/T 645-1997 or -2007 China-specific protocol
as well as passthrough option
Networking layer
Master/slave architecture
Designed to work with ADE8155 slave PLC modem ICs
Supports
Dynamic routing
Automatic discovery of authenticated devices
Logical address management
Data link layer
Automatic baud rate negotiation
Up to 63-byte packet support
Physical layer
CPFSK modulation
Choice of two frequency bands
Carrier frequencies: 105.5 kHz and 118.7 kHz
Carrier frequencies: 74.9 kHz and 84.2 kHz
Up to 800 bps on a 1-phase network and 2400 bps on a
3-phase network
Zero-crossing synchronized receive/transmit
6-byte physical address for logical address assignment

Communication interface UART Option to use DL/T 645-1997 or -2007 China-specific application layer interface Package and temperature range 40-lead 6 mm × 6 mm LFCSP Fully specified for –40°C to +85°C operation

#### **GENERAL DESCRIPTION**

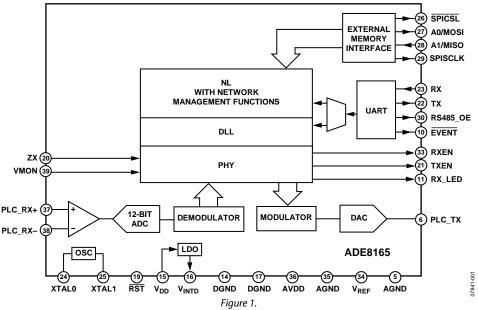
The ADE8165<sup>1</sup> incorporates a high performance ADC and DAC to create a very robust CPFSK power-line communications IC complete with networking functionality. The ADE8165 master modem IC is designed to work with the ADE8155 slave modem IC for a complete power-line communication system.

In an advanced metering infrastructure (AMI) scenario, the ADE8155 slave modem IC is used to connect the energy meter to the power line. Then the ADE8165 master PLC modem is used near the transformer to communicate with multiple meters on one phase. The power-line communication is independent on each phase; therefore, three ADE8165 master PLC modem ICs are used in a PLC module within the concentrator to read meters on all three phases.

A UART communication interface is supported.

For more information on the ADE8165, contact your local sales office at Analog Devices, Inc.

<sup>1</sup> US patents pending.



#### FUNCTIONAL BLOCK DIAGRAM

#### Rev. Sp0

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## ADE8165

## NOTES



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