# ANALOG DEVICES

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

# ADE8155

## 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 ADE8165 master PLC modem ICs,
  which support
    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 ADE8155 incorporates a high performance ADC and DAC to create a very robust CPFSK power-line communications IC complete with networking functionality. The ADE8155 slave modem IC is designed to work with the ADE8165 master 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 ADE8155, contact your local sales office at Analog Devices, Inc.*
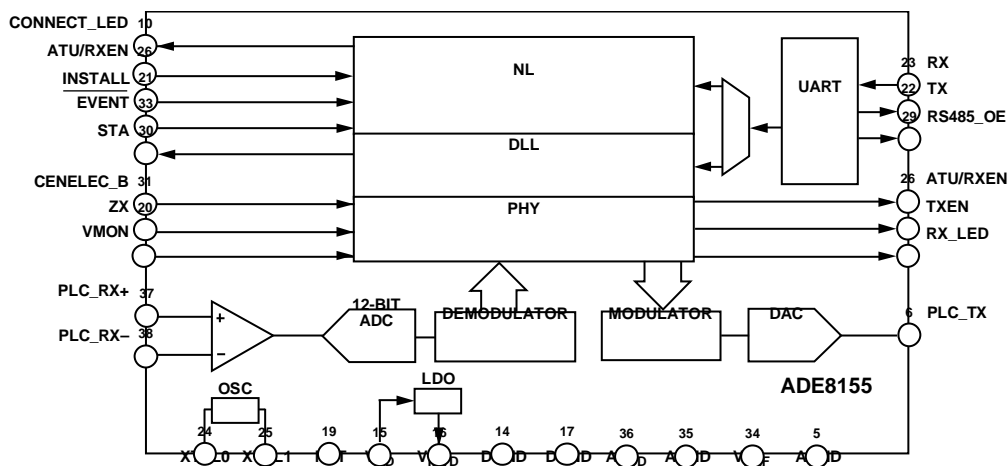
## FUNCTIONAL BLOCK DIAGRAM



*Figure 1.*

NOTES

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