

### FEATURES

- Narrow-band power line communications IC**
- Integrates physical layer, data link layer, and networking layer**
- Application layer**
  - Supports DL/T 645-1997 or -2007 data protocol (specific to China), as well as a pass-through option
- Networking layer**
  - Automatic baud rate negotiation
  - Dynamic routing
- Data link layer**
  - CRC error checking
  - Network key for data security
- Physical layer**
  - FSK modulation
  - Up to 800 bps on a single-phase
- Single 3.3 V supply, low power (140 mW typical)**
- Package and temperature range**
  - 40-lead, 6 mm × 6 mm LFCSP
  - Fully specified for -40°C to +85°C operation

### APPLICATIONS

Power line modems for AMR/AMI systems

### GENERAL DESCRIPTION

The [ADE8157](#)<sup>1</sup> is a complete digital baseband processor IC that includes a physical layer (PHY), data link layer (DLL), and networking layer (NL). The [ADE8157](#) includes a high performance receive path analog-to-digital converter (ADC) to reduce the external component count. An on-chip digital modulator creates the transmit signal for an external field effect transistor (FET) driver. The [ADE8157](#) can communicate directly with an energy meter over the on-chip UART. The [ADE8157](#) slave modem IC is designed to work with the [ADE8167](#) master modem IC for a complete power line communication system.

In an advanced metering infrastructure (AMI) system, the [ADE8157](#) IC provides the essential functions of a slave modem, which enables energy meters to communicate over the power line. Each slave modem operates as a node in a mesh network. The mesh network is under the control of a single master modem. The [ADE8167](#) IC provides the foundation for a master PLC modem.

### FUNCTIONAL BLOCK DIAGRAM

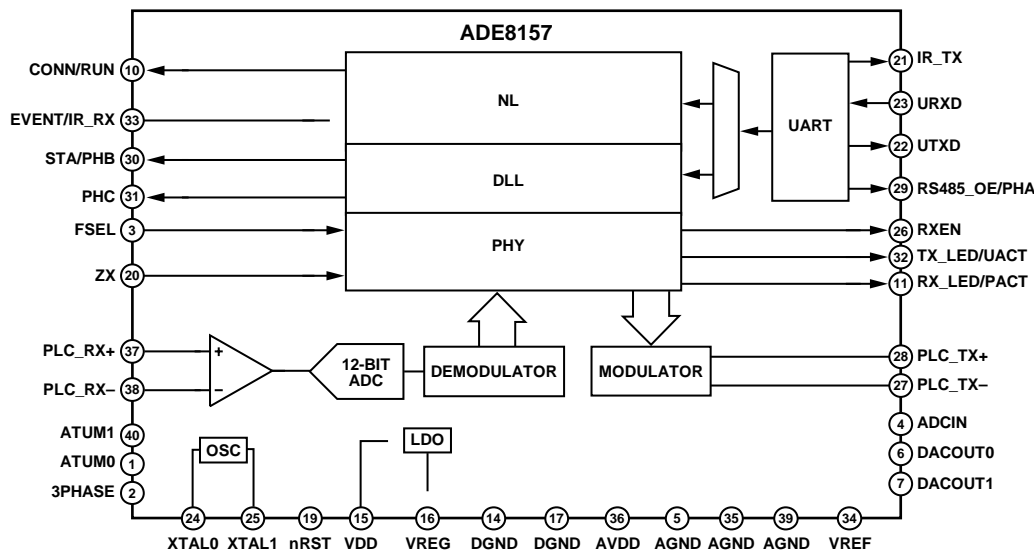


Figure 1.

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For more information about the ADE8157 slave modem IC, contact your local [Analog Devices, Inc., sales office](#).

<sup>1</sup> U.S. patents pending.

#### Rev. SpB

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