

### OVERVIEW

Adaptive Networks' PowerConnect™ is the fully-digital next generation of the AN Pro-Line powerline communications chip set providing a cable-free alternative for control and monitoring applications.

PowerConnect™ is a single-chip powerline communications solution. With only an AFE and minimal additional components, PowerConnect™ eliminates the need for dedicated wiring for real-time distributed systems communications while providing as-good-as-wire reliability.

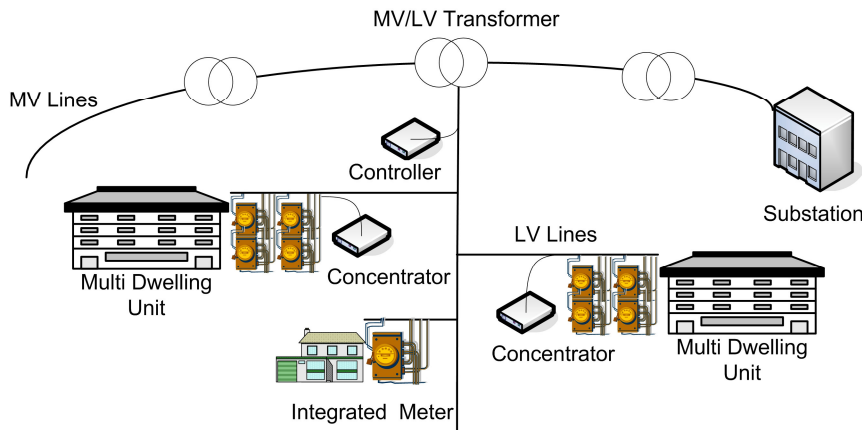
PowerConnect™ is a unique approach utilizing powerline-optimized wideband modulation, digital adaptive equalization, rapid synchronization, error-control coding and powerline optimized token passing protocols. The foundation of this approach is digital equalization permitting dynamic adaptation to the inconsistencies of the powerline.

Delivering up to 19.2 kbps throughput to end-user applications, the PowerConnect™ family is suitable for demanding applications such as

- Control and monitoring
- Industrial automation
- Automatic Meter Reading (AMR)

### FEATURES

- 19.2 kbps application-usable throughput
- Reliable as dedicated wiring, BER < 10<sup>-9</sup>
- Coverage anywhere on one side of a transformer
- Transmission over AC, DC powerlines or noisy media
- Powerline-optimized wideband modulation.
- Rapid synchronization
- Adaptive equalization for adaptation to rapidly changing powerline conditions
- Reliable low latency communication
- Powerline-optimized Forward Error Correction (FEC) and ARQ
- Support for short frames
- Noise-immune token passing
- Support for large node populations
- Field-proven technology
- Robust performance in demanding real-world operating environments
- Single chip integrating PHY, MAC and Link
- Low system cost through few external components





## **SPECIFICATIONS**

### Single Chip

- Digital Powerline Signal Processor combining PHY, MAC and Link

### Network Throughput

- 19.2 kbps

### Raw Data Rate

- 134.4 kbps

### Modulation

- Wideband

### Frequency Band

- Below 525 kHz
- 10 kHz to 450 kHz - Japan MPT
- Country-specific frequency band option

### Data Interface

- UART
- SPI
- CANbus

### BER

- $< 10^{-9}$

### Error Detection

- Two level 16-bit CRC

### Error Recovery

- FEC and ARQ

### Number of Nodes

- 16-bit address space

### Standards

- IEC 61334-5-3
- ISO 10368

### Operating Distance

- One side of a LV transformer, up to 5 km
- On the MV power grid, up to 10 km
- On dedicated power cable, up to 50 km

### Operating Environment

- AC, DC, unpowered

### Line Coupling

- Capacitive
- Inductive

### Status Indicators

- MSR - Master
- NTS - Network Sense

### Operating Temperature Range

- -40°C to 85°C
- -40°C to 125°C extended temperature range

### Part Number

- AN192DPL