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## Quad Pro-X Programmable Extended CODEC/SLCC

The W684386, implements a quad channel FXS telephone line interface optimized for short loop applications. It integrates SLCC (Subscriber Line Control Circuit) functionality with a quad programmable CODEC and a quad DC-to-DC controllers. The SLCC supports internal ringing up to 90 VPK (5 REN at 4k ft) ideal for Customer Premise Equipment (CPE). The CODEC can be configured for  $\mu$ -law, A-law or 16-bit linear PCM encoding. It also supports a comprehensive set of signaling capabilities required to supervise and control the telephone lines. These include tone generation, ring tones, DTMF generation as well as FSK and metering pulse generation. An on-chip Pulse Width Modulation (PWM) driver allows control of a per channel DC-to-DC converter or a centralized transformer-based DC-to-DC converter. Programmable impedance and trans-hybrid balancing allow for worldwide deployment.

For additional technical documentation, please [Contact Sales](#).

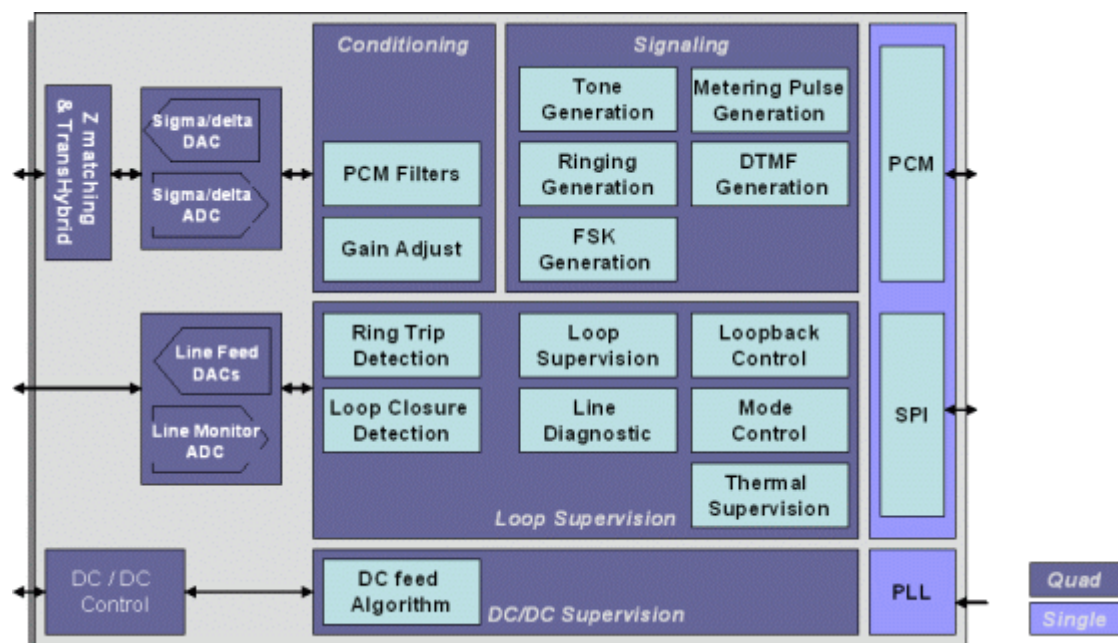


***All packages available in Pb-free***

[Block Diagram](#)

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### Key Features

- Performs complete BORSCHT functions for four channels on a single device
- Internal balanced and unbalanced ringing up to 90 VPK (5 REN up to 4 kft)
- Integrated Power Management options
  - Integrated per channel DC-to-DC controller
  - Centralized Transformer DC-to-DC controller
  - Programmable External Battery Switching
- Programmable linefeed characteristics
  - Ringing frequency, amplitude, cadence
  - Trapezoidal and sinusoidal waveforms
  - Two-wire AC impedance, transhybrid balance
  - Constant current feed (20 to 41mA)
  - Ring trip and loop closure thresholds
  - Ground Key Detect
  - External ringing relay and ring trip support
  - Soft Polarity Reversal

- Programmable signal generation
  - DTMF generation
  - Metering pulse generation (12/16kHz)
  - Enhanced Caller ID (FSK) generation (Type 1 & 2)
  - Tone generation (up to four simultaneous)
  - G.711  $\mu$ -Law/A-Law / 16-bit linear PCM audio
  - Programmable audio path gains
- Loop test and diagnostics support
  - Integrated loopback modes
  - Realtime linefeed monitor
  - On-chip temperature sensor
  - PCM and SPI bus digital interfaces
  - PCM Master and Slave modes supported
- On-chip PLL for flexible clocking options including 1.2.000 MHz BCLK operation
- 3.3V operation

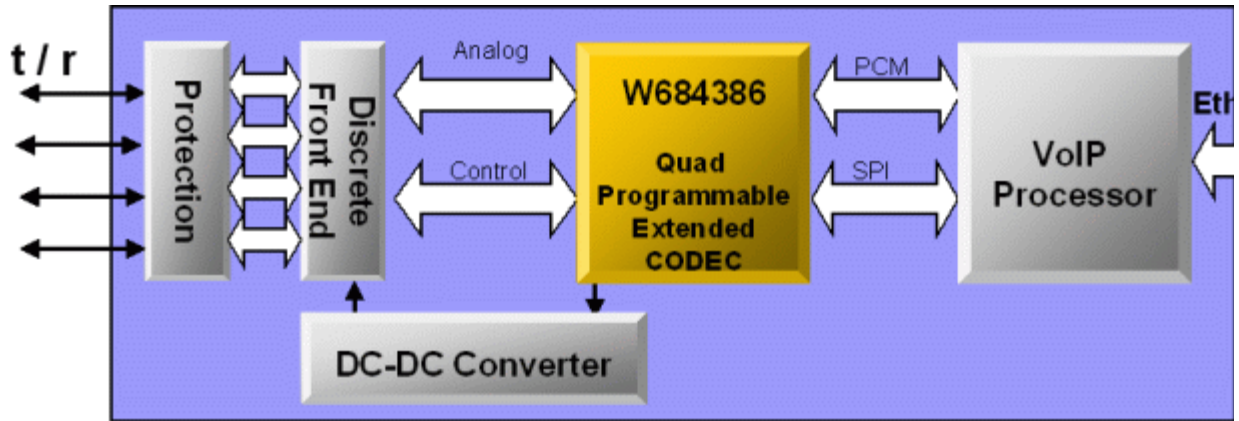
### Benefits

- High integration reduces overall system BOM and footprint
- Low power consumption for battery-backup and other power sensitive applications
- High programmability reduces real-time software overhead
- Extensive line sensing enables diagnostics support

### Applications

- Analog Telephone Adapter
- Voice enabled DSL Modems
- Voice enabled Cable Modems
- Residential VoIP Gateways / Routers
- Integrated Access Devices
- Fiber to the Premise/Home (FTTP/H)
- Optical Network Terminals (ONT)
- Set Top Boxes
- Wireless Local Loop, PBX, ISDN NT1/TA

Application Diagram



Product Selection Guide

Part Number	Description	Package
<b>W684386FG</b>	Pb-Free, qual channel FXS telephone line interface, $\mu$ -law/A-law or 16-bit linear PCM	QFP-1

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