nuvoTon

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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 µ-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.

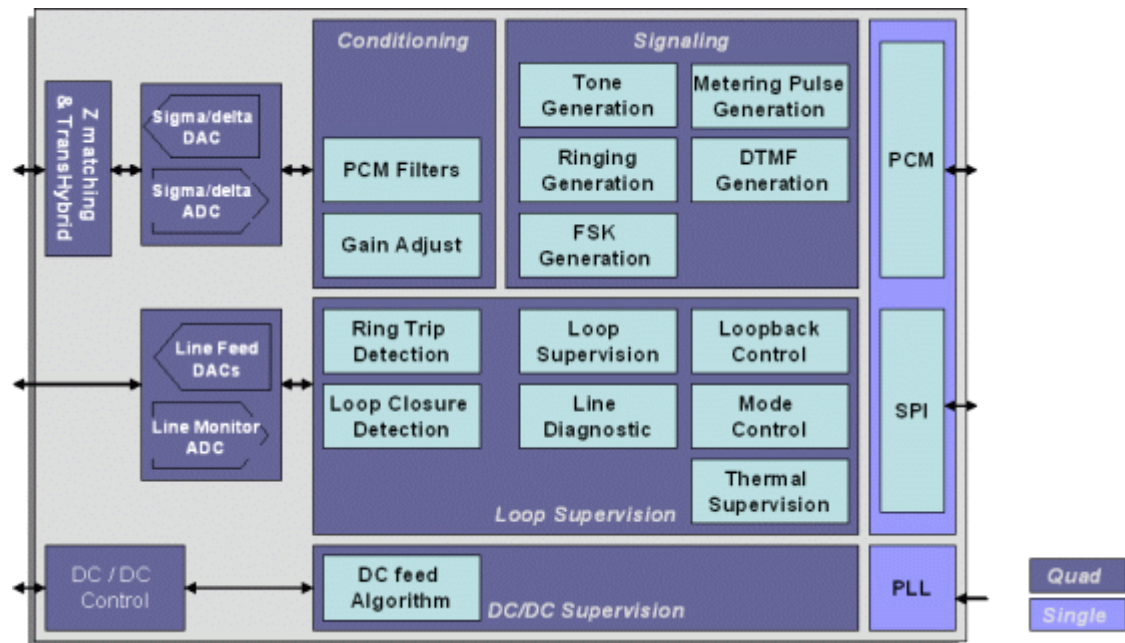For additional technical documentation, please **Contact Sales**.

All packages available in Pb-free

Block Diagram

Related Li

Block Diagram
Key Features
Benefits/Applic
Application Dia
Product Brief
Request Datas
Product Selecti
How To Buy

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 I a
- Tone generation (up to four simultaneous)
- G.711 µ-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
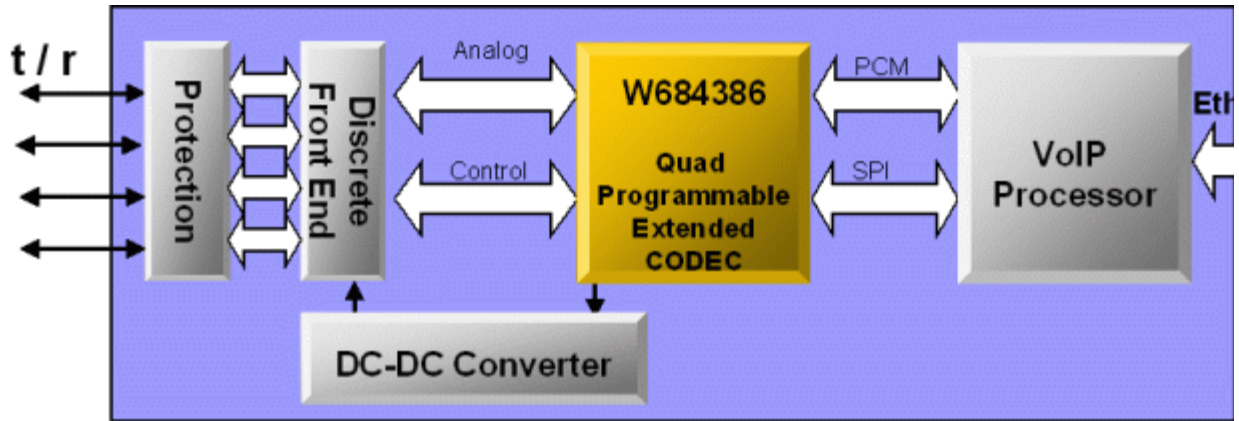
2.000 MHz BCLK operation

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	Packag
W684386FG	Pb-Free, qual channel FXS telephone line interface, µ-law/A-law or 16-bit linear PCM	QFP-1