

Nuvoton N681387

Single Programmable Extended CODEC/SLCC

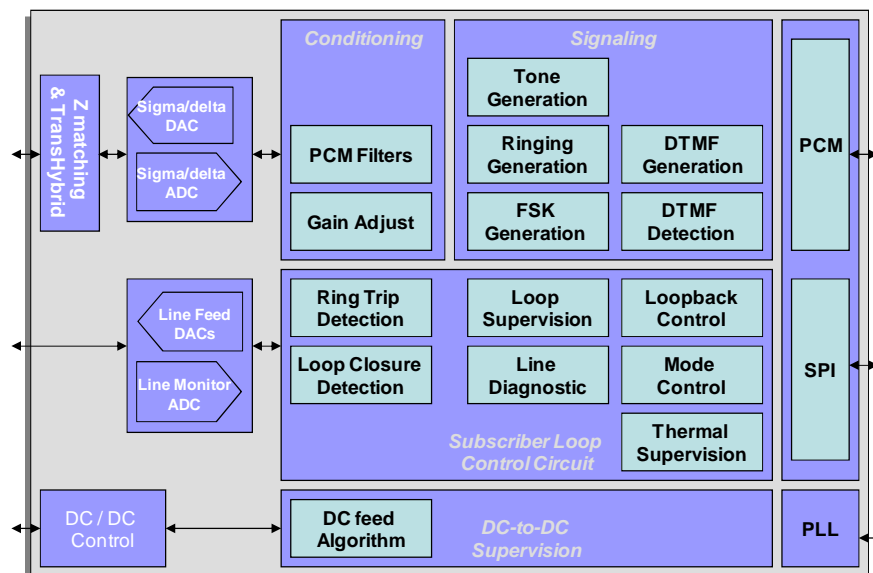
The N681387 implements a single channel FXS telephone line interface optimized for short loop applications. It integrates SLCC (Subscriber Line Control Circuit) functionality with a programmable CODEC and a DC-to-DC controller. In conjunction with external circuitry, the SLCC supports internal ringing up to 90 V_{PK} (5 REN at 4 kft), ideal for customer premise equipment (CPE). The CODEC can be configured for μ -law/A-law or 16-bit linear PCM encoding and supports a comprehensive set of signaling capabilities required to supervise and control both telephone lines. These include tone generation (including ring tones), DTMF generation and detection as well as FSK generation. An on-chip pulse width modulation (PWM) driver allows the control of DC-to-DC conversion for the line. Programmable impedance and transhybrid balancing allow for worldwide deployment. Wideband operation with 16kHz sampling rate.

APPLICATIONS

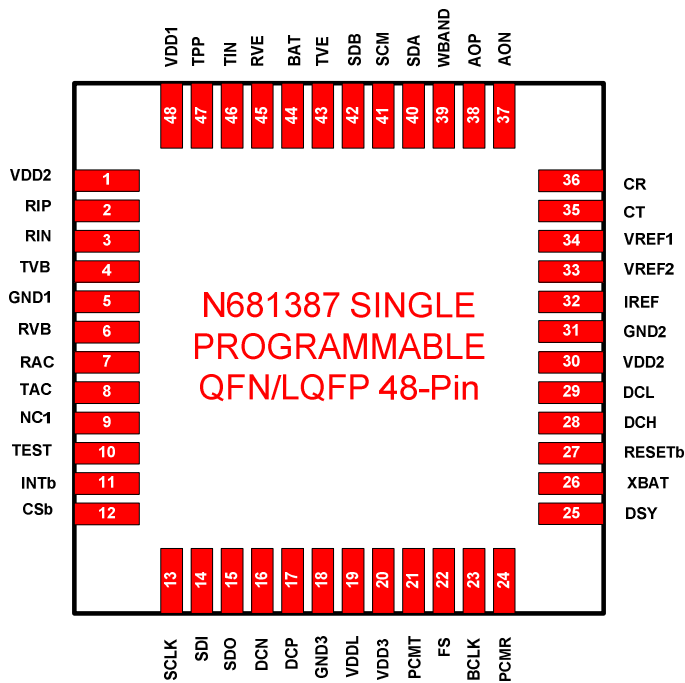
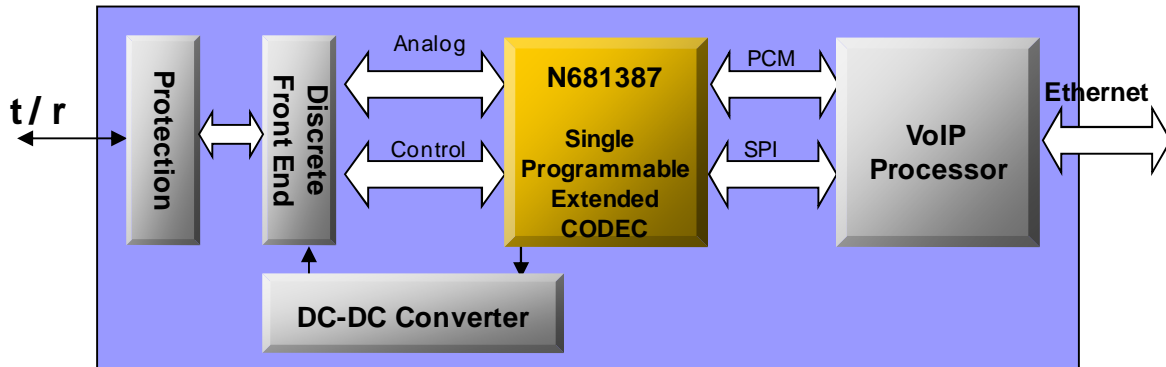
- Analog Telephone Adapter (ATA)
- Voice-enabled DSL Modems
- Voice-enabled Cable Modems
- Residential VoIP Gateways / Routers
- Integrated Access Devices (IAD)
- Fiber to the Premise/Home (FTTP/H)
- Optical Network Terminals (ONT) for EPON, GPON, GEAPON
- Set Top Boxes
- Wireless Local Loop

FEATURES

- Performs complete BORSCHT functions for a single channel on a single device
- Internal balanced ringing up to 90V_{PK} (5REN up to 4kft)
- Integrated Power Management
 - Integrated DC-DC controller regulates battery voltage to minimize power dissipation in all operating modes
 - Battery voltage switched between up to three external sources
- 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 detects
 - Low power idle state
- Programmable signal generation
 - DTMF generation and detection
 - Enhanced Caller ID (FSK) generation (Type I and Type II)
 - Tone generation (up to four simultaneous)
 - G.711 μ -Law/A-Law / 16-bit linear PCM audio
- Loop test and diagnostics support
 - Integrated loopback modes
 - On-chip temperature sensor
 - Enhanced GR-909 Support
- PCM and SPI bus digital interfaces
 - PCM Master and Slave modes supported
- On-chip PLL for flexible clocking options including 2MHz
- Sampling Rate: 16 kHz / 8 kHz
- Small Footprint Packages: LQFP-48, QFN-48



Application Example: Analog Telephone Adapter (ATA) supporting 1 voice port



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

N681387 ORDERING INFORMATION

Part Number	Package	Notes
N681387DG	LQFP-48	ROHS Pb-Free
N681387YG	QFN-48	ROHS Pb-Free

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Note: For the latest details on the N681387, please refer to Nuvoton America's web site at: <http://www.nuvoton-usa.com>