

# Nuvoton N682386

## Dual Programmable Extended CODEC/SLCC

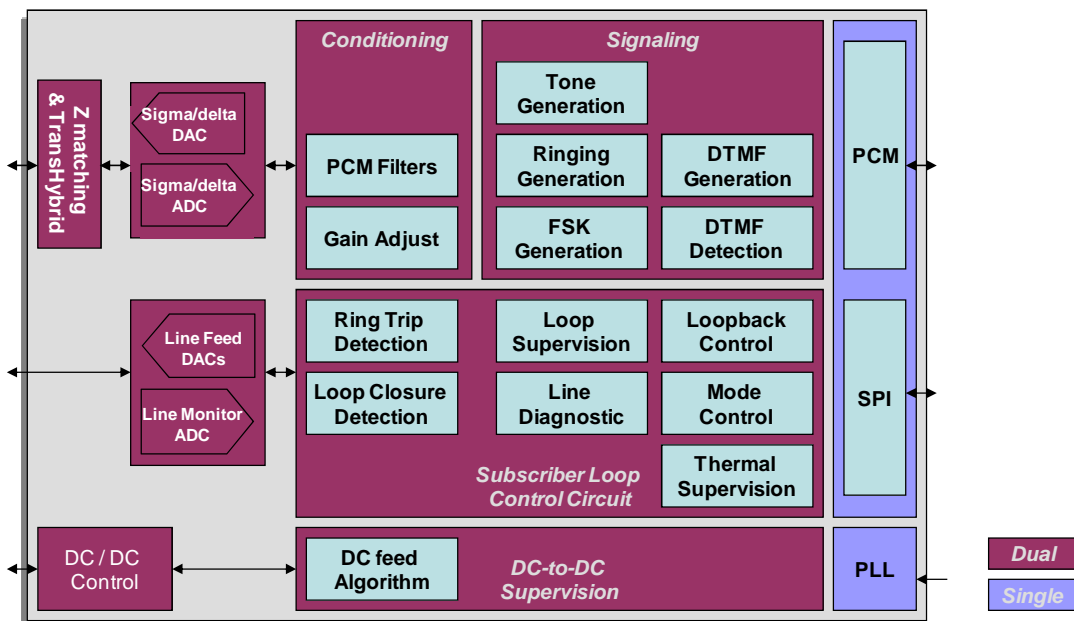
The N682386 implements a dual channel FXS telephone line interface optimized for short loop applications. It integrates dual SLCC (Subscriber Line Control Circuit) functionality with a dual channel programmable CODEC and a dual DC-to-DC controller. In conjunction with external circuitry, the SLIC supports internal ringing up to 90V<sub>PK</sub> (5REN at 4kft), ideal for customer premise equipment (CPE). The CODEC can be configured for  $\mu$ -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 dual pulse width modulation (PWM) driver allows the control of DC-to-DC conversion for each line. Programmable impedance and transhybrid balancing allow for worldwide deployment.

### APPLICATIONS

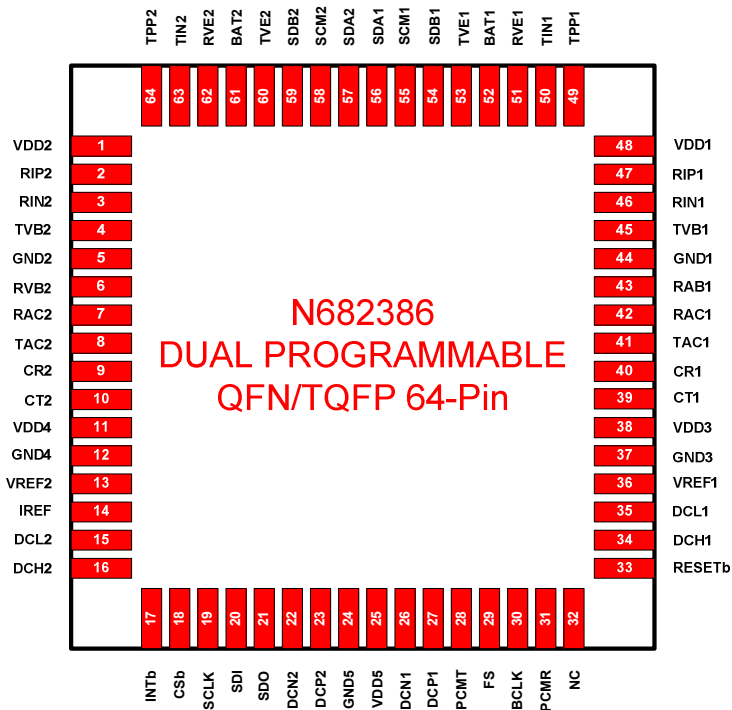
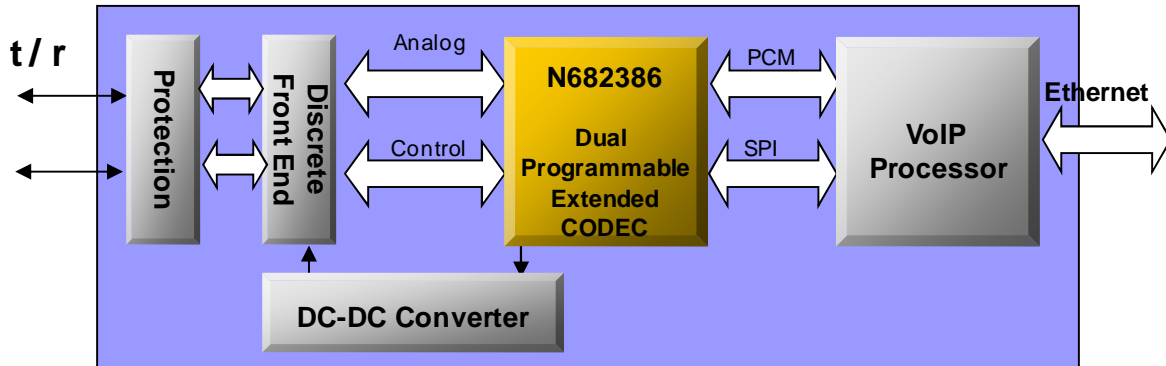
- Analog Telephone Adapter (ATA)
- Voice-enabled DSL Modems
- Voice-enabled Cable Modems
- Residential VoIP Gateways / Routers
- Integrated Access Devices (IAD)
- Fiber to the Premise/Home (FTTP/H)
- Optical Network Terminals (ONT) for EPON, GPON, GEAPON
- Set Top Boxes
- Wireless Local Loop

### FEATURES

- Performs complete BORSCHT functions for two channels on a single device
- Internal balanced ringing up to 90V<sub>PK</sub> (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  $\mu$ -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 1MHz / 2MHz
- Sampling Rate: 8 kHz
- Small Footprint Packages: TQFP-64, QFN-64



### Application Example: Analog Telephone Adapter (ATA) supporting 2 voice ports



### 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

### N682386 ORDERING INFORMATION

Part Number	Package	Notes
N682386MG	TQFP-64	RoHS Pb-Free

**Note:** For more details on the N682386, please refer to Nuvoton America's web site at: <http://www.nuvoton-usa.com>

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