# ProSLIC® Voice Solutions

SLIC AND CODEC SOLUTIONS FOR SHORT, MEDIUM AND LONG LOOP APPLICATIONS

DESCRIPTION

The ProSLIC family of products provides complete analog telephone interfaces ideal for customer premise equipment (CPE), enterprise and central office applications. These highly-integrated circuits offer global compliance using a single hardware design and bill-of-materials while reducing the PCB size and cost per channel. Fully programmable parameters such as two-wire ac impedance, ring amplitude, ring waveshape and dc linefeed characteristics are provided via a programmable DSP based architecture that provides the flexibility and performance necessary to address the most demanding customers and service providers. These combined SLIC and codec solutions integrate a comprehensive set of telephony features including DTMF generation/decoding, FSK caller ID generation, GR-909 loop diagnostics, pulse metering and battery switching control. Select models include an integrated dc-dc controller that continuously adapts to the line voltage to minimize thermal dissipation and maximize power efficiency. All devices are powered using a single 3.3 V supply and can be controlled using a standard PCM/SPI or GCI digital interface.

ProSLIC BLOCK DIAGRAM
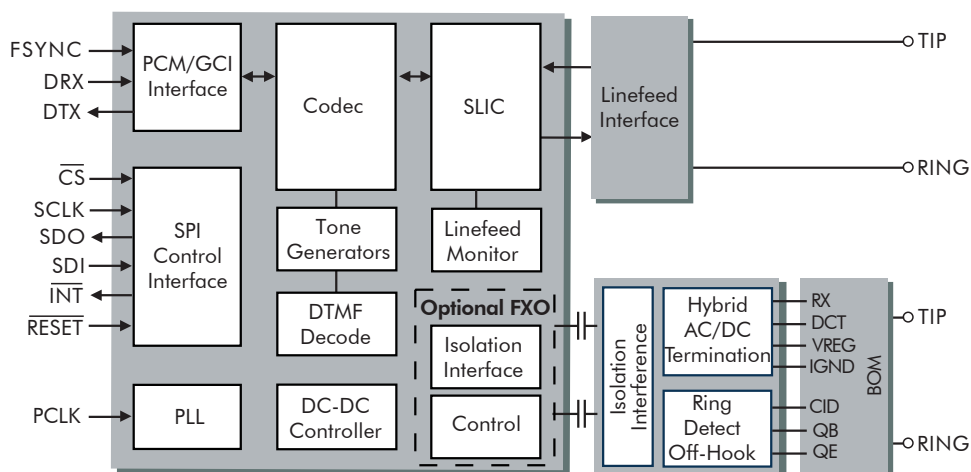
FEATURES

- Performs all BORSCHT functions (battery, test overvoltage, ringing, supervision, coding, hybrid)
- Software programmable parameters for global compliance with one hardware solution
  - 2 wire ac impedance and transhybrid balance
  - Ringing amplitude, frequency, cadence and waveform
  - DC linefeed characteristics
  - Ring trip/loop closure thresholds and filtering
  - In-field programmable
- Available wideband audio codecs
- Adaptive battery voltage generation using integrated dc-dc controller
- Comprehensive remote diagnostics
- Powered using a single 3.3 V supply
- Configurable PCM/SPI and GCI digital interface
- Available integrated DAA system side for FXO

BENEFITS

- Global compliance with single hardware design
- Easily configured to support a wide range of customer requirements
- Reduced size and cost per channel

APPLICATIONS

- Cable gateways (EMTA)
- DSL gateways (IAD)
- FTTH optical network terminals (ONT)
- WiMax voice terminals
- Wireless Fixed Terminals (WFT)
- Analog Terminal Adapters (ATA)
- Computer telephony
- Central office and DLS/MSAN line cards
- PBX, IP-PBX and key telephone systems

SOLUTIONS GUIDE

HIGHLY INTEGRATED
SINGLE, DUAL AND QUAD
SLIC AND CODEC SOLUTIONS

SILICON LABS

HIGHLY INTEGRATED SLIC, CODEC AND BATTERY SUPPLY

Globally Compliant

The ProSLIC can be easily configured to country-specific requirements such as ac impedance, ring frequency, ring cadence and ring waveform using a single hardware design and bill-of-materials.

Flexible

The device's highly programmable feature set provides the flexibility to optimize performance across the broadest range of customer applications. All SLIC and codec parameters are 100% configurable using software programmable registers. Silicon Labs' API accelerates and simplifies code development with a ready-made set of functions common to the ProSLIC family.

Cost Effective

The ProSLIC's complete integration of an analog telephony interface into a single low-voltage CMOS device enables designers to realize an extremely compact solution at an attractive price point. Availability of single, dual and quad channel devices offers the right balance between size and cost per channel.

Integrated Battery Supply

Select devices incorporate an on-chip tracking dc-dc controller that eliminates the need for bulky, expensive high-voltage power supplies. The generated supply continuously adapts to the line conditions to minimize thermal dissipation and maximize power efficiency.

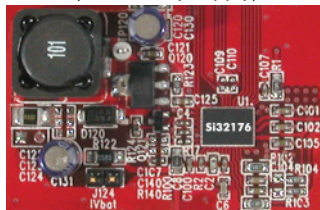## Full Range of Channel Densities
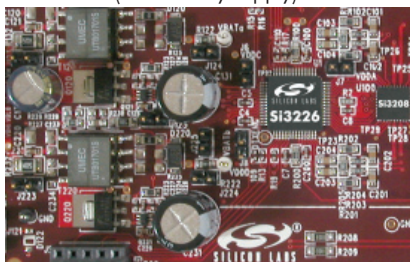
Si3210/5/6 ProSLIC
(with battery supply)
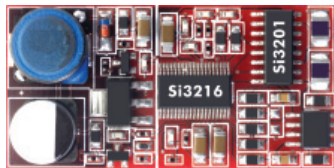
Si32176 ProSLIC
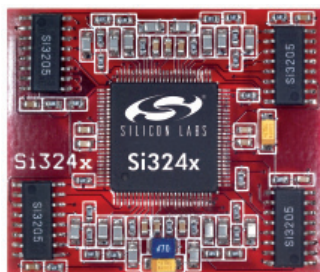(with battery supply)

Si3226/7 Dual ProSLIC
(with battery supply)

Si3241/5 Quad ProSLIC

Single Channel Applications
- DSL IADs, terminal adapters (ATAs), WFTs, etc.
- Short and medium loops (<6 kft, 1.8 km)
- 1–3 voice channels

High Performance Single Channel Apps
- EMTAs, ONTs, IADs, ATAs, WFTs, etc..
- High voltage (-135 V) ringing option
- Patented low power ringing
- Lowest power consumption
- Smallest board area
- GR-909 MLT and self test diagnostics
- Optional FXO using Si32178 (integrated DAA system side) and Si32919 (DAA line side device)
- Short and medium loops (<6 kft, 1.8 km)
- 1–3 voice channels (FXS) with FXO options

Dual Channel Applications
- Cable EMTAs, GPON ONTs, DSL IADs, PBX
- High voltage (-135 V) ringing option
- Patented low power ringing
- Low power consumption
- GR-909 MLT diagnostics
- Short, medium & long loops (<20 kft, 6.1 km)
- 2–8 voice channels

Quad Channel Applications
- CO linecards, PBX, IP-PBX
- Short, medium and long loops (<20 kft/6.1 km)
- >4 voice channels

ProSLIC Product Matrix

	Si3210	Si3215	Si3216	Si32171	Si32176	Si32177	Si32178	Si3226	Si3227	Si3241	Si3245
Number of Channels	single	single	single	single	single	single	single	dual	dual	quad	quad
Integrated SLIC and Codec	•	•	•	•	•	•	•	•	•	•	•
High Voltage Line Feed	Si3201 (100 V)	Si3201 (100 V)	Si3201 (100 V)	Integrated (110 V)	Integrated (110 V)	Integrated (135 V)	Integrated (110 V)	Si3208 (110 V) Si3208 (135 V)		Si3203 (110 V) Si3206 (135 V) Si3205 (150 V)	
On-Chip DC–DC Controller	•	•	•	•	•	•	•	•	•		
Wideband Audio			•		•	•	•	•	•		
Internal Ringing	•	•	•	•	•	•	•	•	•	•	
External Ringing											•
DTMF Decoder	•			•			•	•	•	•	•
Pulse Metering	•			•						•	•
GR-909 Line Diagnostics	•	•	•	•	•	•	•	•	•	•	•
Integrated Test Load				•	•	•	•				
FXO System Side DAA							•				
Silicon Labs API	•	•	•	•	•	•	•	•	•	•	•

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