



### APPLICATIONS

- **Short/Medium Loop:** approximately 2000 ft. of 26 AWG, and 5 REN loads
- **Voice over IP/DSL – Integrated Access Devices, Smart Residential Gateways, Home Gateway/Router**
- **Cable Telephony – NIU, Set-Top Box, Home Side Box, Cable Modem, Cable PC**
- **Fiber–Fiber In The Loop (FITL), Fiber to the Home (FTTH)**
- **Wireless Local Loop, Intelligent PBX, ISDN NT1/TA**

### FEATURES

- **Built-in boost switching power supply tracks line voltage minimizing power dissipation**
  - Only +3.3 V and +12 V (nominal) required
  - Wide range of input voltages (+8 V to +40 V) supported
- **Minimal external discrete components**
- **44-pin eTQFP package**
- **Ringing**
  - 70 Vpk into 5REN
  - 90 Vpk capable
  - Sinusoidal or trapezoidal capability
  - DC offset support
  - Common differential interface for both channels
- **World Wide Programmability:**
  - Two-wire AC impedance
  - Dual Current Limit
  - Loop closure and ring trip thresholds
- **Five SLIC States, including:**
  - Low power Standby state
  - Reverse Polarity

### DESCRIPTION

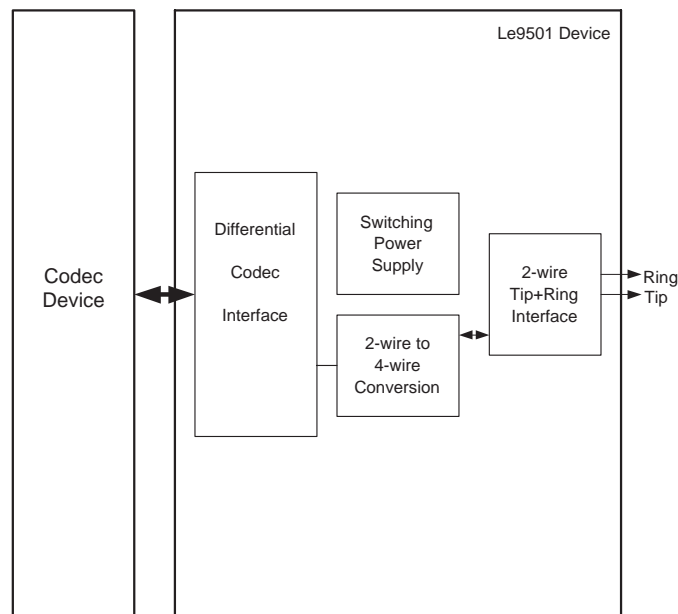
The Zarlink VE950 series is comprised of both single- and dual-channel low cost 3.3-V (5-V tolerable) ringing Subscriber-Line Interface Circuits (SLICs) that combine with minimal external components to create a two-wire twisted-pair telephone interface.

The VE950 series SLICs include five versions with various features supporting short- to medium-loop requirements. All VE950 series SLICs have a standard differential ringing interface compatible with a wide variety for voice codecs and broadband processors in the industry.

The Zarlink Le9501 device from the Zarlink VoiceEdge™ VE950 series has enhanced and optimized features to directly address the requirements of Voice over Broadband applications. Its goal is to reduce system level costs, space, and power through higher levels of integration, and to reduce the total cost of ownership by offering better quality of service. The Le9501 device provides a totally configurable solution to the BORSCHT functions. The resulting system is less complex, smaller, and denser, yet cost effective with minimal external components.

The Le9501 device requires only two power supplies: +3.3 VDC and nominally +12 VDC. The latter power supply can range from +8 VDC to +40 VDC, depending on the application. A single TTL-level clock source drives an external transistor which controls the ramp voltage that in turn feeds the switching regulator. Five programmable states are available: Active, Reverse Polarity, Ringing, Standby, and Disconnect. The DC feed, two-wire AC input impedance, hook-switch threshold, and ring trip threshold are programmable via external discrete components. Binary fault detection is provided upon application of fault conditions or thermal overload.

### BLOCK DIAGRAM



FEATURES	BENEFITS
• Integrated Ringing SLIC device	• Creates cost savings at both a system and a chip level.
• Wide compatibility	• Interfaces with a wide variety of codecs and DSP engines.
• 70 Vpk into 5REN; 90 Vpk capable	• Increases Ringing loop length to meet and exceed voice over broadband design specifications.
• Built-in boost switching power supply tracks line voltage minimizing power dissipation	• Reduces power consumption, thereby increasing battery back-up time and allowing for smaller batteries.
• World wide programmability	• One hardware platform enables worldwide design and distribution through software selectable configurations.
	• Minimizes design complexity.

## Related Literature

- 081208 Le9501 RSLIC Device Data Sheet\*
- 081189 Le9500 RSLIC Device Data Sheet
- 081007 Le9502 RSLIC Device Data Sheet
- 081013 Layout Considerations for the Le77D11 and Le9502 Devices Application Note

\*Contact your Zarlink Sales Representative to obtain the data sheet.

## Packaging and Availability

The Le9501 device is available in an Exposed 44-pin TQFP green package.

## For More Information:

To find the Zarlink Sales Office nearest you, or to download other documentation, go to:

[www.zarlink.com](http://www.zarlink.com)



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