

# Analog line card solution for CO, IAD and SOHO equipment

Cost-effective analog line card solutions offer an outstanding combination of low dissipation and small footprint

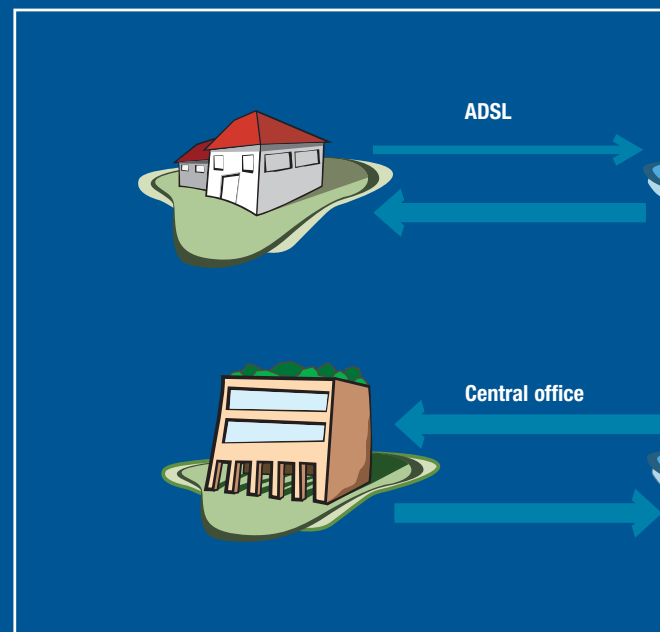


May 2005

In today's world of high-speed digital communications, the traditional analog phone line still plays an important role, providing reliable, inexpensive voice communication at a very low cost through legacy networks where bandwidth is severely limited and noise often a problem. Serving both the central office and customer premises end of this market, **STMicroelectronics** builds on decades of experience in telecom products and optimized power IC technologies to deliver line card solutions that address the key needs of these markets.

## Target applications for ST's SLICs and CODECs

For central offices, the need to add new services in existing facilities increases the pressure on space and on power consumption, making small size and low dissipation extremely important in line cards. If more lines can be squeezed onto a single board, then all the lines in the office can be served using less floor space, freeing up more for new digital equipment. In small and home offices, the emergence of new products like home gateways and Voice-over-IP access devices has created new markets for line card chipsets outside the central office. In this field, too, STMicroelectronics applies advanced technology and design knowhow to deliver chipsets that are programmable to meet a wide range of standards, enabling use in many regional markets. The same chipsets also address the needs of wireless local loop equipment.



### Central office/PABX applications

STMicroelectronics provides a new line card product generation for this traditional application; two different chipsets are provided to meet different requirements.

#### STLC5046 + STLC3080

Low-cost, space saving, low-power of highly-integrated solution that allows to development a line card exceeding international standard requirements with a high number of channels per board.

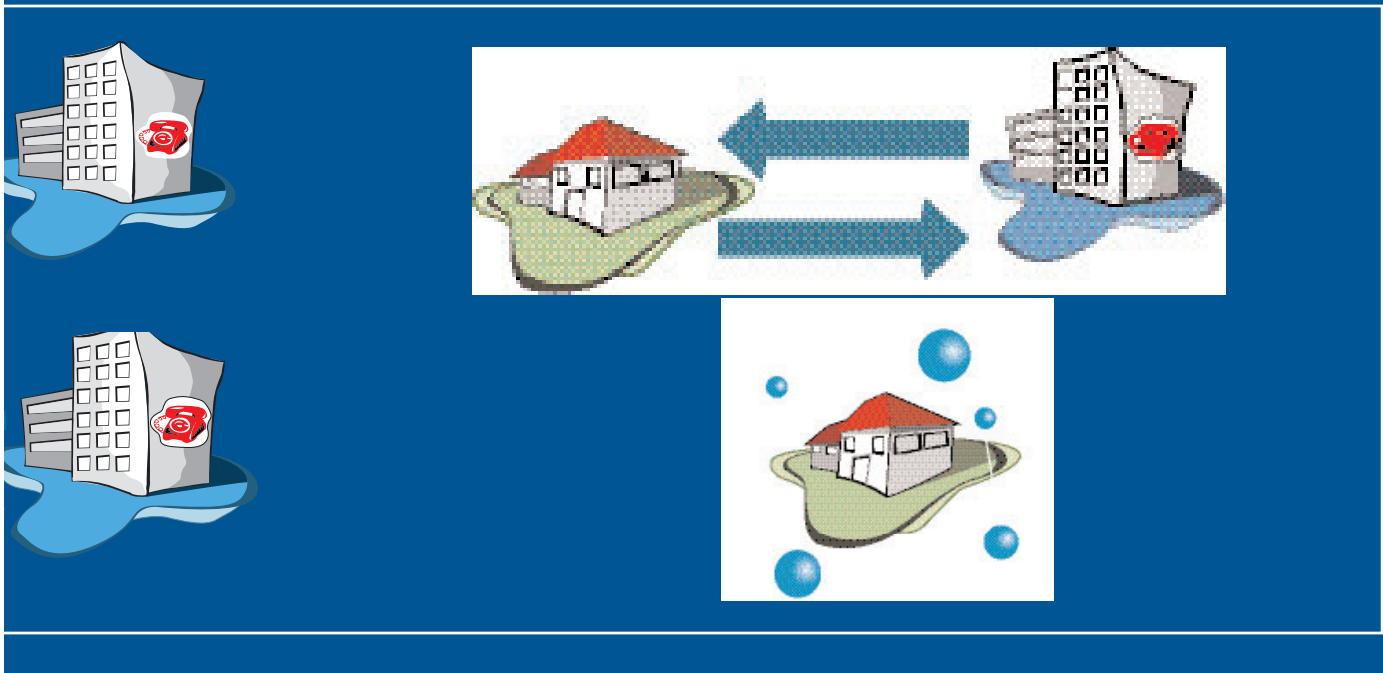
- The STLC5046 is a semi-programmable four-channel CODEC that provides standard CODEC functionality. It's a single 3.3V supply device that also integrates a SLIC control interface to simplify line card design. In a TQFP64 package, the solution provides programmable gains and time slot assignment. In cases where the controller is not present on the line card, the device can be used also in pin strap mode.

- The STLC3080 is a fully-featured, single-chip SLIC characterized by a very low power consumption. It performs TTX injection and filtering, impedance synthesis, echo cancelling and programmable DC characteristic, current limitation and off hook threshold. The solution comes in a TQFP44 package, thanks to its limited external components, providing an extremely space, efficient solution. Requiring only  $V_{bat}$  and +5V, the device also integrates a finite state machine that can be activated in order to easily implement a controllerless line card.

#### STLC5048 + STLC3080

The STLC5048 and STLC3080 combine to provide a low-cost, space saving, low-power, highly-integrated and fully software programmable solution that allows the development of a line card exceeding international standard requirements with a high number of channels

# Office and customer premises solutions



per board. The capability to set through software programming for both AC and DC line parameters makes this the optimum solution to be easily adapted to different country requirements. This solution is the best approach for customers that target different markets with the same hardware.

- The STLC5048 is a fully software programmable, DSP based, four-channel CODEC that provides the standard CODEC functionality of the STLC5046 plus impedance synthesis, echo canceling and frequency response. In a TQFP64 package, it's a single 3.3V supply solution that also allows programming of the SLICDC current limitation and off hook threshold of the STLC3080. A dual PCM port is available.

- The STLC3080 in a kit with the STLC5048 provides an extremely space efficient solution thanks to the further reduced number of external components.

## Short loop applications

Thanks to new techniques of voice transport like VoIP and VoDSL, short loop applications are becoming more and more interesting for traditional devices like SLICs and CODECs. For this reason, STMicroelectronics is fully committed to providing new solutions for these applications. Within this segment, we can differentiate multi-line applications like integrated access device (IAD) or VoIP systems for the SOHO (small office home office) market and single/dual line application like Wireless local loop (WLL) and VoIP systems for residential markets (home access gateway).

## Wireless local loop application

### STLC3075/STLC3055N

The STLC3075/3055N is a technology porting of the STLC3055 product family in the new BCD3S 90V process. Designed specifically for short loop applications, the STLC3075 product family uses an integrated DC/DC converter and operates on a single 4.5 to 12.0V supply. It includes integrated ringing ( $>45V$  rms), metering pulse generation, on-hook transmission and a parallel control interface at 3.3V logic level. Automatic recognition of flyback and buckboost configuration means the user is free to chose either N-channel or P-channel power MOS transistor. Pin-to-pin compatible with the previous generation (STLC3055), this new product family allows easy replacement of the current application with a high cost reduction. The package for both devices is TQFP44.

## Multi-line application

### STLC5048 + STLC30R80

A low-cost, space saving, low-power, highly-integrated and fully software programmable solution that allows to match different country requirements with a single hardware implementation.

- The STLC5048 is a fully SW programmable, DSP based, four-channel CODEC that provides the standard CODEC functions plus impedance synthesis, echo canceling and frequency response. In a TQFP64 package, it's a single 3.3V supply device that also allows programming of the SLIC, DC current limitation and off hook threshold in a kit with the STLC30R80.
- The STLC30R80 is a fully-featured single chip SLIC able to generate a trapezoidal ringing waveform. It performs TTX injection and filtering and programmable DC characteristics. In a TQFP44 package, it requires only  $V_{bat}$  and +5V.



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