

# Am7950

Subscriber Line Interface Circuit

PRELIMINARY

## DISTINCTIVE CHARACTERISTICS

- Programmable line-feed impedance
- Programmable loop detect threshold
- Line feed characteristics independent of battery variations
- On-chip switching regulator for low power dissipation
- Low standby power
- Two-wire impedance set by single external impedance

## GENERAL DESCRIPTION

The Am7950 Subscriber Line Interface Circuit (SLIC) performs the telephone line interface functions required in both Central Office and PABX environments. The full range of signal transmission, battery feed, and loop supervision functions are performed. Signal transmission performance is compatible with North American and CCITT recommendations. Overvoltage protection and ringing are provided by means of external networks.

The signal transmission functions include both 2-to-4-wire and 4-to-2-wire conversion. The 2-wire termination impedance is programmable with a single external impedance, which may be complex. The companion AMD SLAC (Subscriber Line Audio Processing Circuit) has a digital balancing filter that provides the trans-hybrid loss function. If the SLAC is not used, most codec/filter sets provide an uncommitted op amp which may be used for this purpose.

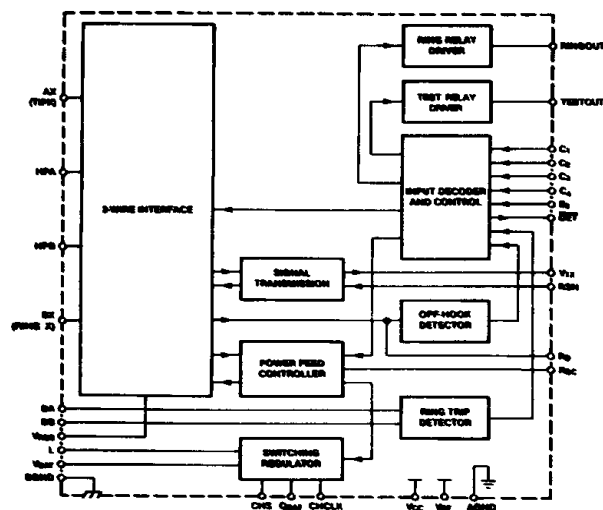
The battery-feed architecture makes the DC-feed resistance programmable with external resistors. Furthermore, the open-circuit feed voltage and the feed resistance are independent of battery variations. Loop currents up to 70 mA are recommended, although higher loop currents are possible.

A Polarity Reversal function is provided which transposes the normal voltage sense of the A(TIP) and B(RING) leads with a controlled transition time. All transmission functions continue normally following the transition. A disable mode limits loop current and cuts power dissipation while allowing the full complement of supervisory functions to be utilized. The output amplifiers are powered by an internal switching regulator in order to also reduce power consumption.

The supervisory functions of off-hook detection and ring trip detection are read through a single, TTL-compatible output. To eliminate noise induced errors, the off-hook detector signal may be filtered, and has a threshold adjusted by means of external components. Additional supervisory functions put the A(TIP) lead into an open-circuit or high-impedance state suitable for application in ground-start systems. Similarly, both the A(TIP) and B(RING) leads may be open circuited to clear relays, recover from line faults, or turn off out-of-service lines. Two relay drivers are provided for the test and Ring relay functions.

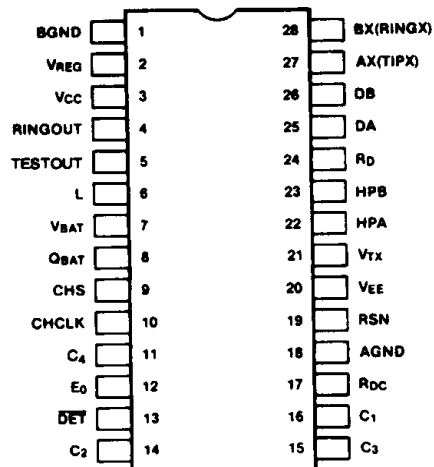
The SLIC's user-programmable states are controlled by a 4-bit TTL-compatible digital code. These control inputs are designed to easily interface to popular single-chip microcomputers such as the AMD Am8051.

## BLOCK DIAGRAM



BD005491

## CONNECTION DIAGRAM



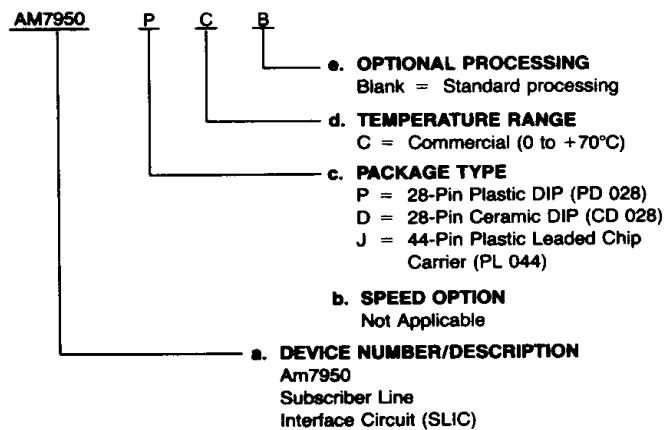
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## ORDERING INFORMATION

### Standard Products

AMD products are available in several packages and operating ranges. The order number (Valid Combination) is formed by a combination of:

- a. Device Number
- b. Speed Option (if applicable)
- c. Package Type
- d. Temperature Range
- e. Optional Processing



### Valid Combinations

AM7950	DC
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### Valid Combinations

Valid Combinations list configurations planned to be supported in volume for this device. Consult the local AMD sales office to confirm availability of specific valid combinations, to check on newly released combinations, and to obtain additional data on AMD's standard military grade products.