



# SCC

## ZiLOG's Family of Serial Communication Controllers

### ZiLOG Sets the standards for SCCs

For over 20 years ZiLOG has set the standard for Serial Communication Controllers. Based on the industry acclaimed SCC core, ZiLOG offers a wide variety of Serial Communication Controllers to meet your application requirements.

### Reduces the need for external logic

ZiLOG SCCs offer low power consumption, higher performance, and superior noise immunity. The many on-chip features offered in ZiLOG SCCs help dramatically to reduce the need for external logic and code development found in most of the competition.

### 8-bit Solutions

The standard serial and integrated communications controller, Z85C30, allows you to easily implement a fully integrated solution for many networking applications. The enhanced dual and mono SCCs, the Z80230, Z85230 and the Z85233, include many features that make programming easy. These parts also reduce CPU overhead, allowing the programmer to select packet handling response and improve cycle access recovery time.

### 8-bit Features include:

- Dual full-duplex channels (Z80230/Z85C30/Z85230)
- Single full-duplex channel (Z85233)
- Ability to accommodate a crystal oscillator, baud rate generator, and digital phase-locked loop on each channel
- Processing speeds up to 5Mbps
- Multi-protocol format (async, monosync, bisync, SDLC/HDLC, SDLC/HDLC loop)
- Encodes in the follow modes: NRZI, FM0, FM1 and Manchester
- CRC-16 or CRC-CCITT error detection
- 4-byte Transmit FIFO/8-byte Receive FIFO (Z80230/Z85230/Z85233)
- 1-byte transmit FIFO/3-byte receive FIFO (Z85C30)

### 16-bit Solutions

The standard and integrated universal serial controllers, Z16C30 and the Z16C32 offer 16-bit performance, with processing speeds up to 20 Mbps.

### 16-bit Features include:

- Single (Z16C32) and dual (Z16C30) full-duplex channels
- Accommodates two baud rate generators and one digital phase-locked loop
- Processing speeds up to 10Mbps (Z16C30) and 20Mbps (Z16C32)
- Multi-protocol format (async, monosync, slaved monosync, bisync, isochronous, nine-bit, SDLC/HDLC, SDLC/HDLC loop)

*(additional 16-bit features on back)*



*Additional 16-bit features*

- Encodes in the following modes: NRZ, NRZI-Mark, NRZI-Space, Bi-Phase-Mark (FM1), Bi-Phase-Space (FM0), Bi-Phase-Level (Manchester), Differential Bi-Phase-Level
- CRC-32, CRC-16 and CRC-CCITT
- 32-byte Transmit FIFO/32-byte Receive FIFO
- 2 DMA control signals per channel (Z16C30)
- Transmit and receive DMA controllers with single buffer, pipelined, array and linked-list modes (Z16C32)
- 16-Bit Transfers
- Two transmit and two receive DMA channels (Z16C35 only)

| Serial Family | Channels    | DMA Controllers | Bus Interface              | MHz      | Part number | Package | Pins | Op. Temp. (°C) |
|---------------|-------------|-----------------|----------------------------|----------|-------------|---------|------|----------------|
| SCC           | 2           | 0               | Multiplex                  | 8        | Z80C3008PSC | DIP     | 40   | 0 +70          |
|               |             |                 |                            |          | Z80C3008VSC | PLCC    | 44   | 0 +70          |
|               |             |                 |                            | 10       | Z80C3010PSC | DIP     | 40   | 0 +70          |
|               |             |                 |                            |          | Z80C3010VSC | PLCC    | 44   | 0 +70          |
|               |             |                 | Nonmultiplex               | 8        | Z85C3008PEC | DIP     | 40   | -40 +105       |
|               |             |                 |                            |          | Z85C3008PSC | DIP     | 40   | 0 +70          |
|               |             |                 |                            |          | Z85C3008VEC | PLCC    | 44   | -40 +105       |
|               |             |                 |                            |          | Z85C3008VSC | PLCC    | 44   | 0 +70          |
|               |             |                 |                            | 10       | Z85C3010PEC | DIP     | 40   | -40 +105       |
|               |             |                 |                            |          | Z85C3010PSC | DIP     | 40   | 0 +70          |
|               |             |                 |                            |          | Z85C3010VEC | PLCC    | 44   | -40 +105       |
|               |             |                 |                            |          | Z85C3010VSC | PLCC    | 44   | 0 +70          |
| 16            | Z85C3016PSC | DIP             | 40                         | 0 +70    |             |         |      |                |
|               | Z85C3016VSC | PLCC            | 44                         | 0 +70    |             |         |      |                |
| ESCC          | 2           | 0               | Multiplex                  | 10       | Z8023010PSC | DIP     | 40   | 0 +70          |
|               |             |                 |                            |          | Z8023010VSC | PLCC    | 44   | 0 +70          |
|               |             |                 |                            | 16       | Z8023016PSC | DIP     | 40   | 0 +70          |
|               |             |                 |                            |          | Z8023016VSC | PLCC    | 44   | 0 +70          |
|               |             |                 | Nonmultiplex               | 8        | Z8523008PSC | DIP     | 40   | 0 +70          |
|               |             |                 |                            |          | Z8523008VEC | PLCC    | 44   | -40 +105       |
|               |             |                 |                            |          | Z8523008VSC | PLCC    | 44   | 0 +70          |
|               |             |                 |                            | 10       | Z8523010PEC | DIP     | 40   | -40 +105       |
|               |             |                 |                            |          | Z8523010PSC | DIP     | 40   | 0 +70          |
|               |             |                 |                            |          | Z8523010VEC | PLCC    | 44   | -40 +105       |
|               |             |                 |                            | 16       | Z8523016VSC | PLCC    | 44   | 0 +70          |
|               |             |                 |                            |          | Z8523016PEC | DIP     | 40   | -40 +105       |
| 20            | Z8523016PSC | DIP             | 40                         | 0 +70    |             |         |      |                |
|               | Z8523016VEC | PLCC            | 44                         | -40 +105 |             |         |      |                |
| EMSCC         | 1           | 0               | Nonmultiplex               | 10       | Z8523310FSC | PQFP    | 44   | 0 +70          |
|               |             |                 |                            |          | Z8523310VSC | PLCC    | 44   | 0 +70          |
|               |             |                 |                            |          | Z8523316VSC | PLCC    | 44   | 0 +70          |
| USC           | 2           | 0               | Multiplex and nonmultiplex | 10       | Z16C3010AEC | LQFP    | 100  | -40 +105       |
|               |             |                 |                            |          | Z16C3010ASC | LQFP    | 100  | 0 +70          |
|               |             |                 |                            |          | Z16C3010VEC | PLCC    | 68   | -40 +105       |
| IUSC          | 1           | 2               | Multiplex and nonmultiplex | 20       | Z16C3220FSC | PQFP    | 80   | 0 +70          |
|               |             |                 |                            |          | Z16C3220VSC | PLCC    | 68   | 0 +70          |
| ISCC          | 2           | 2               | Multiplex and nonmultiplex | 10       | Z16C3510VSC | PLCC    | 68   | 0 +70          |
|               |             |                 |                            | 16       | Z16C3516VSC | PLCC    | 68   | 0 +70          |