SUMMARY

- MULTIPLE CLOCK SPEEDS
- MULTIPLE PACKAGES
- MULTIPLE PROTOCOLS

TARGET APPLICATIONS

- COMPUTER PERIPHERALS
- INTER-NETWORKING EQUIPMENT
- CENTRAL OFFICE EQUIPMENT
- ROUTERS
- DATA ACQUISITION
- INDUSTRIAL COMMUNICATIONS CONTROL

Zilog Serial Communication Controller Product Family
## Dual channel, multiprotocol data communication peripheral solutions

Overview

The Zilog Serial Communication Controllers (SCC) can support dual channel and multiple protocols that easily interface to 8/16-bit addressable non-multiplexed address/data buses. The SCC can be configured to satisfy a wide variety of serial communications applications. On-chip features include baud rate generators, digital PLLs, and crystal oscillators to reduce external logic. Additional features may include optimized FIFOs to support high speed SDLC transfers using DMS controllers.

The SCC handles asynchronous formats, synchronous byte-oriented protocols and synchronous bit-oriented protocols. The SCC can generate and check CRC codes in any synchronous mode and can be programmed to check data integrity in various modes. The SCC also has facilities for modern controls in both channels. In applications where these controls are not needed, the modern controls can be used for general-purpose I/O.

Zilog SCCs are designed for use in multiple applications for your serial communication needs.

Basic SCC Block Diagram
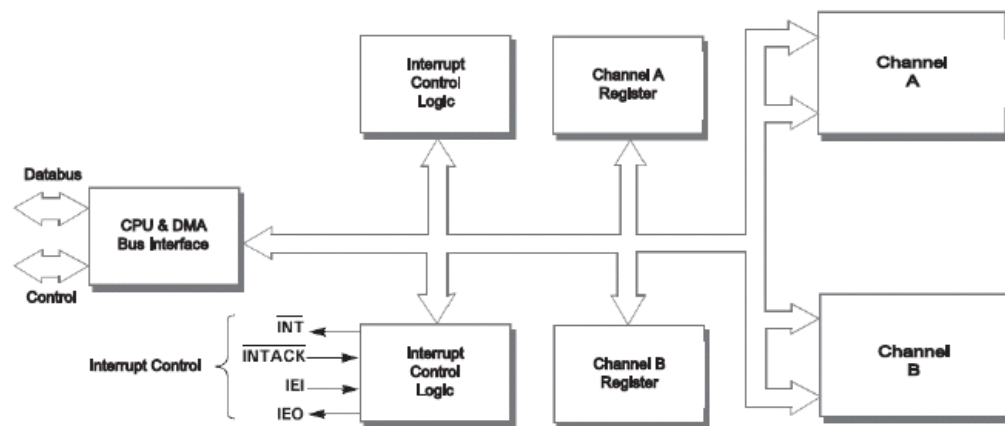
SCC Detailed Feature Set

- Full Duplex Channels
  - Up to 4.1 Mbit/sec
  - Separate Crystal Oscillator
  - Baud Rate Generator
  - Digital Phase-Locked Loop for Clock Recovery

- Encoding Supported
  - NRZ
  - NRZI
  - Manchester
  - FM Data Encoding

- Protocols Supported
  - SDLC/HDLC
  - T1 Digital Trunk

- Clock Speeds: 8, 10, 16 and 20 MHz available

- Synchronous Mode CRC Generation and Checking (CRC-16 or CRC-CCITT)

- Local Loopback and Auto Echo Modes

- Enhanced DMA Support

- Some original NMOS SCC products are still offered; please refer to our website at www.Zilog.com for further product details.

Enhanced Serial Communications Controller (ESCC)

- All of the SCC features as above, plus:

- Improvements that reduce CPU overhead

- Deeper FIFO's: 4-byte transmit, and 8-byte receive FIFO

- SDLC packet handling improvements

- Low voltage version (3.0 to 3.6V) available

Universal Serial Controller (USC) Z16C30

- Two independent, 0 to 10Mbps, full-duplex channels

- 2 BRGs and 1 DPLL per channel

- 32-byte data FIFO's for each receiver and transmitter

- DMA interface with separate request and acknowledge

- Same protocols supported as noted in the SCC feature set

Integrated Universal Serial Controller (IUSC) Z16C32

- Single full-duplex, 0 to 20 Mbps channel

- 2 BRG and 1 DPLL

- 2 full-capacity 20MHz DMA channels, each with 32-bit addressing and 16-bit data transfers

- 32-byte data FIFO's for each receiver and transmitter

- Same protocols supported as noted in the SCC feature set

Ordering Information

Order the SCCs from your local Zilog sales representative by using the part numbers below. For more information, or to download product collateral, please visit us at www.zilog.com.

ORDERING NOTES

- **FOR TEMPERATURE RANGES:**
  - STANDARD (STD) = 0°c TO 70°c
  - EXTENDED (EXT) = 40° TO 100°c

Part Number	Speed (MHz)	Addressable Bus Size	Full Duplex Channels	Tx FIFO (Bytes)	Rx FIFO (Bytes)	Temperature Range	Pin & Package
Z16C3010AEG	10	16-Bit	2	32	32	Std/Ext	100-Pin LQFP
Z16C3010ASG	10	16-Bit	2	32	32	Std	100-Pin LQFP
Z16C3010VEG	10	16-Bit	2	32	32	Std/Ext	68-Pin PLCC
Z16C3010VSG	10	16-Bit	2	32	32	Std	68-Pin PLCC
Z16C3220FSG	20	16-Bit	1	32	32	Std	80-Pin QFP
Z16C3220VSG	20	16-Bit	1	32	32	Std	68-Pin PLCC
Z16C3510VSG	10	16-Bit	2	1	3	Std	68-Pin PLCC
Z16C3516VSG	16	8-Bit	2	1	3	Std	68-Pin PLCC
Z8023010VSG	10	8-Bit	2	4	8	Std	44-Pin PLCC
Z8023016PSG	16	8-Bit	2	4	8	Std	40-Pin PDIP
Z8023016VSG	16	8-Bit	2	4	8	Std	44-Pin PLCC
Z80C3008PSG	8	8-Bit	2	1	3	Std	40-Pin PDIP
Z80C3008VSG	8	8-Bit	2	1	3	Std	44-Pin PLCC
Z80C3010PSG	10	8-Bit	2	1	3	Std	40-Pin PDIP
Z80C3010VSG	10	8-Bit	2	1	3	Std	44-Pin PLCC
Z8523008PEG	8	8-Bit	2	4	8	Std/Ext	40-Pin PDIP
Z8523008PSG	8	8-Bit	2	4	8	Std	40-Pin PDIP
Z8523008VEG	8	8-Bit	2	4	8	Std/Ext	44-Pin PLCC
Z8523008VSG	8	8-Bit	2	4	8	Std	44-Pin PLCC
Z8523010PEG	8	8-Bit	2	4	8	Std/Ext	40-Pin PDIP
Z8523010PSG	8	8-Bit	2	4	8	Std	40-Pin PDIP
Z8523010VEG	10	8-Bit	2	4	8	Std/Ext	44-Pin PLCC
Z8523010VSG	10	8-Bit	2	4	8	Std	44-Pin PLCC
Z8523016PEG	16	8-Bit	2	4	8	Std/Ext	40-Pin PDIP
Z8523016PSG	16	8-Bit	2	4	8	Std	40-Pin PDIP
Z8523016VEG	16	8-Bit	2	4	8	Std/Ext	44-Pin PLCC
Z8523016VSG	16	8-Bit	2	4	8	Std	44-Pin PLCC
Z8523020PSG	20	8-Bit	2	4	8	Std	40-Pin PDIP
Z8523020VSG	20	8-Bit	2	4	8	Std	44-Pin PLCC
Z8523310ASG	10	8-Bit	1	4	8	Std	44-Pin LQFP
Z8523310VSG	10	8-Bit	1	4	8	Std	44-Pin PLCC
Z8523316ASG	16	8-Bit	1	4	8	Std	44-Pin LQFP
Z8523316VSG	16	8-Bit	1	4	8	Std	44-Pin PLCC
Z8523320ASG	20	8-Bit	1	4	8	Std	44-Pin LQFP
Z85C3008PEG	8	8-Bit	2	1	3	Std/Ext	40-Pin PDIP
Z85C3008PSG	8	8-Bit	2	1	3	Std	40-Pin PDIP
Z85C3008VEG	8	8-Bit	2	1	3	Std/Ext	44-Pin PLCC
Z85C3008VSG	8	8-Bit	2	1	3	Std	44-Pin PLCC
Z85C3010PEG	10	8-Bit	2	1	3	Std/Ext	40-Pin PDIP
Z85C3010PSG	10	8-Bit	2	1	3	Std	40-Pin PDIP
Z85C3010VEG	10	8-Bit	2	1	3	Std/Ext	44-Pin PLCC
Z85C3010VSG	10	8-Bit	2	1	3	Std	44-Pin PLCC
Z85C3016PSG	16	8-Bit	2	1	3	Std	40-Pin PDIP
Z85C3016VSG	16	8-Bit	2	1	3	Std	44-Pin PLCC
Z8523L08VSG	8	8-Bit	2	4	8	Std	44-Pin PLCC
Z8523L08VEG	8	8-Bit	2	4	8	Std/Ext	44-Pin PLCC
Z8523L10VSG	10	8-Bit	2	4	8	Std	44-Pin PLCC
Z8523L10VEG	10	8-Bit	2	4	8	Std/Ext	44-Pin PLCC
Z8523L16VSG	16	8-Bit	2	4	8	Std	44-Pin PLCC
Z8523L16VEG	16	8-Bit	2	4	8	Std/Ext	44-Pin PLCC

Documentation

For a complete listing of all available application notes, data sheets, user manuals and sample libraries, please visit us at www.zilog.com.

Document Number	Description
PS0117	Serial Communications Controller Product Specification
AN0096	Z180™ Interfaced with the SCC at 10 MHz Application Note
DS0079	Z16C30 Product Specification
UM0094	Z16C30 Universal Serial Controller User Manual
PS97USC0200	Z16C32 Product Specification
UM0140	Z16C32 Integrated Universal Serial Controller User Manual
DC2515	Z16C35 Product Specification
UM0110	Z16C35 Integrated Universal Serial Controller User Manual
UM0109	Z80C30/Z85C30/Z80230/Z85230/Z85233 SCC/ESCC User Manual
PS0053	Z80230/85230/L Product Specification
DC 4058-03	Z85233 Product Specification

Warning: DO NOT USE IN LIFE SUPPORT

LIFE SUPPORT POLICY

ZILOG'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE PRESIDENT AND GENERAL COUNSEL OF ZILOG CORPORATION.

As used herein

Life support devices or systems are devices which (a) are intended for surgical implant into the body, or (b) support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in a significant injury to the user. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system or to affect its safety or effectiveness.

Document Disclaimer

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