SIEMENS

IOM-2 Digital Subscriber Controller (DSC/E) PSB 70C30E

ADVANCE INFORMATION

General Description

The PSB 79C30E Digital Subscriber Controller (DSC) provides the Terminal Equipment access to the ISDN. The PSB 79C30E is compatible with the CCITT I-Series recommendations at the 'S'- reference point allowing the user of the device to design TEs which conform to the international ISDN standards.

The PSB 79C30E provides a 192 kbit/s full duplex digital path between the TE located in the subscriber's premises and the NT or PABX line card over 4-wires. The PSB 79C30E separates the bit stream into the B1- (64 kbit/s), B2- (64 kbit/s) and D- (16 kbit/s) channels. The B channels are routed to different sections of the PSB 79C30E under user control. The D channel is partially processed in the PSB 79C30E and passed to the microprocessor for further processing.

The transmission rate of 192 kbit/s provides a 48-bit frame every 250 µs for framing and maintenance. The frame structure provides for frame synchronization and multiple terminal contention resolution as described in the CCITT I-series recommendations. Both point-to-point and point-to-multipoint connections are supported.

The PSB 79C30E can be used as a voice telephone, a digital data terminal, or a voice and data terminal.

The audio processor in the PSB 79C30E, uses Digital Signal Processing (DSP) to implement the codec and filter functions. The audio processor interfaces to a speaker, an earpiece, and two separate audio inputs. In the receive and transmit paths the user may program gain or alter the frequency response.

A serial port gives the user access to the B-channels of the PSB 79C30E multiplexer. This serial port may be used by data terminals and provides, with additional circuitry, access to the CCITT 'R' reference point.

The PSB 79C30E is controlled via an interrupt driven microprocessor bus interface by an external microprocessor. Using this interface, the microprocessor processes the D-channel information and programs the PSB 79C30E accordingly. This includes programming a multiplexer within the PSB 79C30E to route the B-channels as specified by the D-channel control information. The microprocessor can interrogate and program the PSB 79C30E via its mode, status, and error registers.

Features

- Combines CCITT I.430 S/T interface transceiver, D-channel LAPD processor, and audio processor in a single chip
- Interrupt-driven microprocessor interface
- CMOS technology, TTL compatible
- 'S' 'T' interface transceiver
  Level-1 physical layer controller
  Supports point-to-point, short or extended passive bus configurations
  Multiframe support
- D-channel processing capability
  Flag generation/detection
  CRC generation/checking
  Zero insertion/deletion
  Four 2-byte address detectors
  Random number generation
  16-byte transmit and 32-byte receive FIFOs
- Audio processing capability
  Dual audio inputs
  Earpiece and loudspeaker drivers
  Filter/codec with A/μ-law selection
  Programmable gain and equalization filters
  Programmable sidetone level
  Programmable DTMF, single tone, and ringer tone generation
- IOM-2 interface

- Packages: PSB 79C30E-P: P-DIP-40
  PSB 79C30E-N: PL-CC-44