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SBS Technologies, Inc.

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IP-Universal Serial

IndustryPack Module With Two EIA-232/422/485 High Speed Multiprotocol Serial Ports

Application Information

The IP-Universal Serial IndustryPack module implements two EIA-232/422/485 high speed multiprotocol serial ports, each with a full set of handshake and clock signals. Protocols include SDLC, HDLC, BiSync, NRZ, NRZI, and Biphase.

The IP-Universal Serial incorporates the Zilog Z16C30 Universal Multi-Protocol Serial Controller (USC) which includes four 32 byte FIFO buffers. The two channels within the USC are completely independent. Each channel has a baud rate generator, a digital phase-locked loop, a vector register, an interrupt controller, and a protocol controller. Additional capabilities include 16 and 32-bit CRC generation and checking, one to eight bits per character, one address/data bit, MIL STD 1553B protocol support, sync stripping, preamble generation, and digital phase-locked loop circuits for clock recovery.

The IP-Universal Serial includes an on board 3.6864 MHz oscillator to provide all of the standard baud rates. A separate location is provided on the IndustryPack for a user-supplied oscillator to allow non-standard baud rates. The I/O interface provides four external clock lines to permit full duplex synchronous operation on both channels. The interface includes an external transmit or receive clock on one channel.

Independent interrupt vectors and controls are provided for each IP-Universal Serial channel.

The RS-232, RS-422, and RS-485 compatible interface circuit facilitates interfacing with a wide variety of equipment. To support RS-485 operation, the RS-422 transmit data (TxD) line of both channels is equipped with an RS-422 transceiver. Under software control this pair of lines can be either transmit data or receive data.

Features

- Two EIA-232/422/485 ports on a single-wide IndustryPack
- FIFOs on all receivers and transmitters
- Muliprotocol support including SDLC, HDLC, BiSync, NRZ, NRZI, and Biphase
- Support for RXD+, RXD-, TXD+, TXD-, RTS+, RTS-, CTS+, CTS-, DSR/DCD+, DSR/DCD-, DTR+, DTR-, GND
- RXC/TXC+ and RXC/TXC- available for one channel only.
- Transmit clock can be input or output.
- Data rates up to 4 Mbps synchronous with external clock

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Specifications

Form Factor	Single-wide Type I IndustryPack
IndustryPack Interface	Complies with ANSI/VITA-4
Number of Serial Ports	Two
Signals Supported	RXD+, RXD-, TXD+, TXD-, RTS+, RTS-, CTS+, CTS-, DSR/DCD+, DSR/DCD-, DTR+, DTR-, GND. RXC/TXC+ and RXC/TXC- available for one channel only.
General-Purpose Inputs	None
Termination	Socketted resistor packs
UART	Z16C30
Crystal	3.6864 MHz
Baud Rates	50 to 115.2 kbps from supplied crystal Up to 2 Mbps async with external clock Up to 4 Mbps sync with external clock on 8 MHz IndustryPack bus
Stop Bits	Programmable in 1/16 bit increments from 0 to 2
Receiver FIFO	32 characters per port
Transmitter FIFO	32 characters per port
Timers	None
ESD Protection	None
Interrupts	Maskable, vectored
Dimensions	1.8 inches x 3.9 inches
Weight	0.04 kg (0.1 lb)
Power Requirements (no load)	+5 VDC, 340 mA typ +12 VDC, 60 mA typ -12 VDC, 70 mA typ
Environmental	Operating temperature: -0 to +70°C Humidity: 5 to 95% non-condensing Storage: –40 to +85°C

Compatability

This IndustryPack has no compatible transition modules. Standard serial pin assignments are achieved via cable sets supplied in the engineering kits.

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Ordering Information

IP-UNIV-SERIAL	IndustryPack with two EIA-232/422/485 high speed multiprotocol serial ports
EKIP50-UNIV-SER	Engineering kit for IP-Universal Serial if mounted on a carrier with 50-pin ribbon cable header front panel I/O connectors. Contains: Six foot ribbon cable to two DB25 female (C-IP50F-2D25F) Six foot 50 conductor ribbon cable (C-IP50F-IP50F-6) Fifty screw terminal block with ribbon header (IP-TERM) *(More items as below)*
EKHD50-UNIV-SER	Engineering kit for IP-Universal Serial if mounted on a carrier with HD50 front panel I/O connectors. Contains: Two foot cable HD50 male two DB25 male (C-HD50M-2D25M) Six foot cable HD50 male to HD50 male (C-HD50M-HD50M) Fifty screw terminal block with HD50 female (IP-TERM-HD50) *(More items as below)*
EKCM50-UNIV-SER	Engineering kit for IP-Universal Serial if mounted on a carrier with Champ50 front panel I/O connectors. Contains: Six foot ribbon cable to two DB25 female (C-IP50F-2D25F) Three foot Champ50 male to ribbon cable (C-CM50M-IP50M) Six foot Champ50 male to HD50 male cable (C-HD50M-CM50M) Fifty screw terminal block with HD50 female (IP-TERM-HD50) *(More items as below)*
All IP-Universal Serial engineering kits include:	Printed hardware use manual Null modem adaptor (NULL-MODEM) Bill of materials Board schematics Assembly diagram Zilog Z16C30 user manual and product specification Floppy disk containing: PC program for aiding register configuration

Associated Products

IP-MP-SERIAL	IndustryPack with two EIA-232/422/485 high speed multiprotocol serial ports
IP-COMM302	68302-based intelligent high-speed three channel multiprotocol IndustryPack
IP-COMM360	68360-based intelligent high-speed four channel multiprotocol IndustryPack
C-IP50F-2D25F	Six foot, 50 conductor ribbon cable to two DB25 males
C-IP50F-IP50F-3	Three foot 50 conductor ribbon cable
C-IP50F-IP50F-6	Six foot 50 conductor ribbon cable
C-CM50M-IP50M	Three foot Champ50 male to ribbon cable
C-IP50F-HD50M-2	Six foot ribbon header to HD50 male cable
C-HD50M-HD50M	Six foot HD50 male to HD50 male cable
C-HD50M-CM50M	Six foot Champ50 male to HD50 male cable
C-HD50M-2D25M	Two foot cable HD50 male two DB25 male
IP-TERM	50 screw terminal block with ribbon cable connector
IP-TERM-HD50	50 screw terminal block with HD50 female connector
NULL-MODEM	DB25 null modem adaptor

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