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SBS Technologies, Inc.

www.sbs.com

IP-1553

IndustryPack Module with Complete Dual-Redundant MIL-STD-1553B Bus Terminal

Application Information

The IP-1553 implements a complete dual-redundant MIL-STD-1553 bus terminal on a single-wide IndustryPack module. Four variants of the product are available: BC/MT/RT, BC/MT/RT with RT latch, RT only, and RT only with RT latch. RT latch capability allows software to set the RT address. 0°C to 70°C operating temperature is standard. Extended operating temperature and 883 B qualified components are available on special order.

Included is an intelligent communications protocol engine, dual transceivers and encoder/decoders, 8K bytes of shared memory, and management logic. The 8 Kbytes of dual-ported RAM— implemented as 4K 16-bit words— provides message space on the IndustryPack.

The IndustryPack is implemented with an advanced communications engine, DDC's fifth generation ACE series hybrid, plus two interface transformers. Support for both direct coupled (short stub) and transformer coupled (long stub) interfacing to the 1553 bus cable is included. The IndustryPack ships with a standard short stub adapter cable. Transformer coupling is the standard shipped configuration. The 16 MHz master clock to drive the 1553 logic is derived from the IndustryPack 8 MHz clock. Contention for the shared memory is handled automatically. Most accesses to the shared memory by the host processor occur at three wait states. If the shared memory is in use, the maximum wait is 2.6 µs, which is handled automatically by the IP-1553 logic.

Seventeen 16-bit operational registers plus 8 test registers and an 8-bit interrupt vector register to control the IP-1553 are provided in the IndustryPack I/O space. 16 bits of interrupt control provide versatile host interface management. All interrupts occur on one level. The 4 Kwords of memory appear in the IndustryPack Memory Space.

A C Language software library from ILC Data Device Corporation is included with the IP-1553. This library includes source code subroutines, a self-test routine, and a simple test/demonstration main program that uses the library and communicates to the IP-1553. The library includes data structures for all internal registers and the memory map. This software is shipped as ASCII files on a PC-AT high density 3.5" diskette.

Features

- Four variants available include BC/MT/RT and RT only
- Available in extended temperature versions
- Implemented with DDC's ACE series hybrids
- Includes seventeen registers, 4 Kwords dual-port RAM and an interrupt vector

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Specifications

Form Factor	Single-wide Type I IndustryPack
Number of Channels	One, dual-redundant
Transformers	Two, DDC29854
LSI	ILC DDC ACE BU-61580, BU-61581, BU-61585, BU-65170, BU-61586, or BU-65171
Modes Supported	BC, RT, MT
Dual-access memory	8 Kbytes
Addressing Modes Supported	I/O, ID, memory, interrupts
Memory Access Time	Three wait states
Dimensions	1.8 inches x 3.9 inches
Weight	0.06 kg (0.14 lb)
Power Requirements	+5 VDC, 95 mA typ, 190 mA max -12 VDC, 130 mA typ, 305 mA max
Environmental	Operating temperature: 0 to +70°C for non –ET -40 to +85°C for –ET version Humidity: 5 to 95% non-condensing Storage: –40 to +85°C

STANAG 3838 Sinusoidal Transceiver (MACAIR) verisons of the IP-1553 products are available by special order. Additional memory (24 Kbytes or 32 Kbytes) is also available. Contact factory for details.

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Ordering Information

IP-1553-STD	IndustryPack MIL-STD-1553B module with BC/MT/RT.
IP-1553-RTL	IndustryPack MIL-STD-1553B module with BC/MT/RT and RT Latch.
IP-1553-RTO	IndustryPack MIL-STD-1553B module with RT only.
IP-1553-RTL-RTO	IndustryPack MIL-STD-1553B module with RT only and RT latch.
IP-1553-STD-ET	IndustryPack MIL-STD-1553B module with BC/MT/RT. Extended temperature version.
IP-1553-RTL-ET	IndustryPack MIL-STD-1553B module with BC/MT/RT and RT Latch. Extended temperature version.
IP-1553-RTO-ET	IndustryPack MIL-STD-1553B module with RT only. Extended temperature version.
IP-1553-RTL-RTO-ET	IndustryPack MIL-STD-1553B module with RT only and RT latch. Extended temperature version.
EKIP50-1553	Engineering kit for IP-1553 if mounted on a carrier with 50-pin ribbon cable header front panel I/O connectors. Contains: Three foot 50 conductor ribbon cable (C-IP50F-IP50F-3) *Other parts, as listed below*
EKHD50-1553	Engineering kit for IP-1553 if mounted on a carrier with HD50 front panel I/O connectors. Contains: Six foot HD50 male to ribbon cable (C-IP50F-HD50M-2) *Other parts, as listed below*
EKCH50-1553	Engineering kit for IP-1553 if mounted on a carrier with Champ50 front panel I/O connectors. Contains: Champ50 male to ribbon male cable (C-CM50M-IP50M) Three foot 50 conductor ribbon cable (C-IP50F-IP50F-3) *Other parts, as listed below*
All IP-1553 engineering kits contain:	Printed hardware user manual IP-1553 transition module (XM-1553) Two Twinax Tee connectors (TWX-TEE) Two 78 Ohm Twinax terminators (TWX-TERM-78) One 15 foot Twinax cable (C-TWX-TWX-1) Floppy disk containing: DDC example C source code Bill of Materials Board Schematics Assembly Diagram DDC 65170/61580 data sheets and user guide Beta BUS29854 transformer data sheet

Associated Products

XM-1553	IP-1553 transition module. Adapts fifty-pin ribbon header to two right-angle Twinax female connectors.
C-IP50F-IP50F-3	Three foot 50 conductor ribbon cable
C-IP50F-IP50F-6	Six foot 50 conductor ribbon cable
C-IP50F-HD50M-2	Six foot HD50 male to ribbon cable
C-CH50-IP50M	Three foot Champ50 male to ribbon male cable
IP-TERM	50 screw terminal block with ribbon cable female connector
IP-TERM-HD50	50 screw terminal block with HD50 female connector
C-TWX-TWX-1	Fifteen foot Twinax cable
TWX-TEE	Twinax tee adaptor
TWX-TERM-78	Twinax 78 Ohm terminator

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