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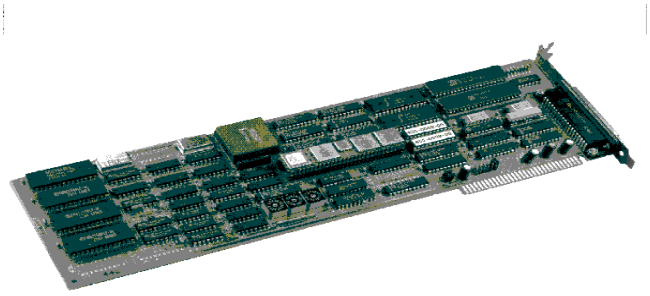
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DD-43000P1-300

ARINC-573/717 Interface Card



Description

The ARINC 573/717 interface card is full length ISA-bus designed specifically to interface with the ARINC-573 and ARINC-717 data buses commonly associated with Flight Data Recorders (FDR), Flight Data Acquisition Units (FDAU), and Quick Access Recorders (QAR). This card contains both transmitters and receivers, and can be used as a data source for testing recording devices, or can be used as data receiver for testing data acquisition units. This card is well suited to all types of ground support work, such as research and development, manufacturing test, and service test. When mounted in a ruggedized portable computer, it also can be used for on-board data acquisition.

Especially important is this cards ability to support the new higher data rates (greater than 64 words per second) now mandated by the FAA and other regulatory agencies. Data rates are programmable up to 1024 words per second.

FEATURES

- ***4 Programmable Transmit Channels***
- ***4 Programmable Receive Channels***
- ***All Channels support Harvard Biphase, Bipolar, and RS422***
- ***Programmable Data Rates (64, 128, 256, 512, and 1024 WPS)***
- ***256k bytes of dual port Data RAM***
- ***On-board 68332 Microprocessor***
- ***Programmer's Toolbox Windows DLL supplied***

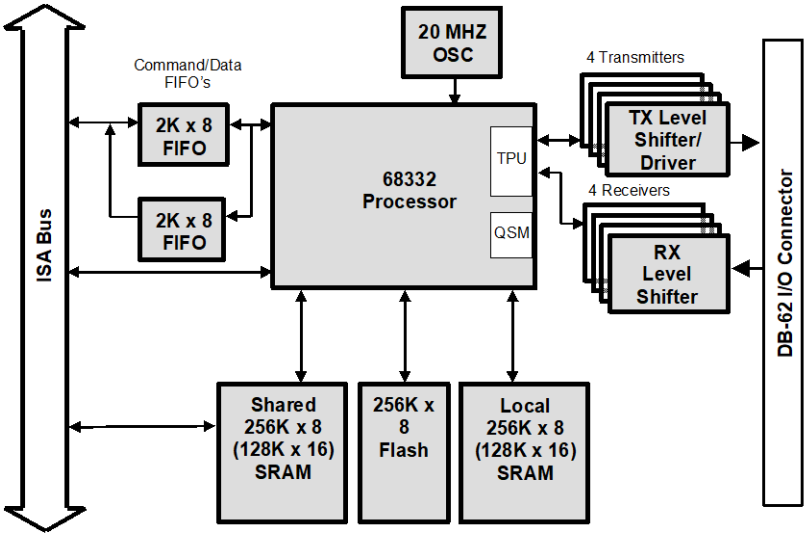


FIGURE 1. CARD FUNCTIONAL BLOCK DIAGRAM

ARINC-573/717 TRANSMITTERS

Each card has four programmable transmit channels. These channels are independently settable, and can be used simultaneously. Bi-phase, Bipolar, or RS422 modes of operation are available under software control. For any of these three modes of operation, the data rates are programmable to 64, 128, 256, 512, or 1024 words per second.

Transmissions can be in the standard “four subframes per frame” data format, as well as superframe data format. The user can specify how many frames are in each superframe when using superframes.

Transmit channels can also be configured under software control to produce canned test data. In this case, the data is automatically generated by the card, and transmitted on the bus. The test data is automatically varied during the transmission to simulate changing data on a bus.

ARINC-573/717 RECEIVERS

The card contains four programmable receive channels. These channels are also independently settable, and can be used simultaneously. Bi-phase, Bipolar, or RS422 modes of operation are available under software control. For any of these three modes of operation, the data rates are programmable to 64, 128, 256, 512, or 1024 words per second.

DATA MEMORY

The card contains 256Kbytes of dual-port RAM that is used to store the data to be transmitted and received data. This large memory allows the host PC to service the card at a convenient pace, rather than having to fill or clear the input or output buffers as soon as data is available. This helps guarantee real time performance on all of the buses, despite the non-realtime nature of the host PC running the Windows operating system.

The transmitter buffers can be set up as single or double buffers. Double buffers allow the card to be transmitting data from one buffer while the host PC is loading new data to the other buffer. This feature provides a mechanism that allows each word to be updated dynamically once per subframe.

ON-BOARD MICROPROCESSOR

The 68332 microprocessor offloads much of the ARINC-573/717 data processing from the host PC. Because the 68332 runs autonomously from the host PC, real-time performance is guaranteed, even at the fastest data rates.

FLASH-BASED FIRMWARE

The firmware in the DD-43000P1-300 is stored in non-volatile Flash memory. This allows the card to retain its programming between power cycles, but also allows for quick and easy field updating of the firmware if needed.

TABLE 1. GENERAL SPECIFICATIONS

Specifications

Physical

Card Size: 4.4” X 14.0” (Full length AT Size)

Connector: 8-bit ISA

Environmental

Operating Temperature:	0 to 50° C at no more than 95% relative humidity, non-condensing
Storage Temperature:	-30° to 50° C at no more than 99% relative humidity, non-condensing

Electrical

Connectors: DB-62 high-density receptacle

Operating Voltage:	+/- 5VDC and +/-12 VDC
Operating Current:	400 mA @ 5 VDC 110 mA @ -5 VDC 130 mA @ +12 VDC 120 mA @ -12 VDC
I/O Protection:	All channels protected to 30VDC

Protocols Supported:

Harvard Bi-Phase -	(64, 128, 256, 512, and 1024 WPS)
BiPolar -	64, 128, 256, 512, and 1024 WPS)
RS422 -	programmable baud rate

SOFTWARE

The card is supplied with a Programmer's Toolbox Windows DLL. This library contains 32 functions for controlling the card, and allows the user to write application programs without having to know the low-level details of the card architecture and operation.

DOCUMENTATION

Detailed installation instructions and user documentation come with all DDC products.

OPTIONAL SOFTWARE

The DD-43000S0-300 is an optional software package that is compatible with the DD-43000P1-300 interface card. This optional software provides a Windows based databus analyzer for ARINC-573 and ARINC-717 data. Please refer to the DD-43000S0-300 datasheet for more details.

ACCESSORIES

The card is provided with the Programmer's Toolbox software, an external loopback connector assembly (useful for diagnostics), a mating connector kit, and a User's Manual at no additional cost.

SUPPORT

Data Device Corporation is committed to providing unsurpassed customer support. All hardware has a two-year limited warranty, and software has a 90 day limited warranty. During this warranty period, all software updates are free.

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