

MULTI-PROTOCOL INTERFACE BOARD

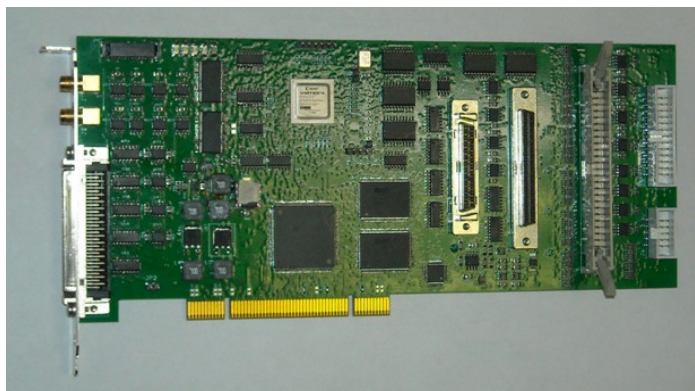
MPI-A200

Features

Multi-protocol serial interface
Re-programmable on-the-fly
No-stop execution
Most commercial protocols available
PCI interface

Applications

Custom protocol implementation
Test equipments
EGSEs



The MPI Board is designed to implement, in a single board, many different protocols currently employed in space and commercial applications. The MPI Board is equipped with a complete set of different hardware interfaces and contains a Xilinx XC4VLX15 FPGA. Since the MPI-A200 board is reprogrammable on-the-fly, many different functions and tests can be accomplished without stopping execution.

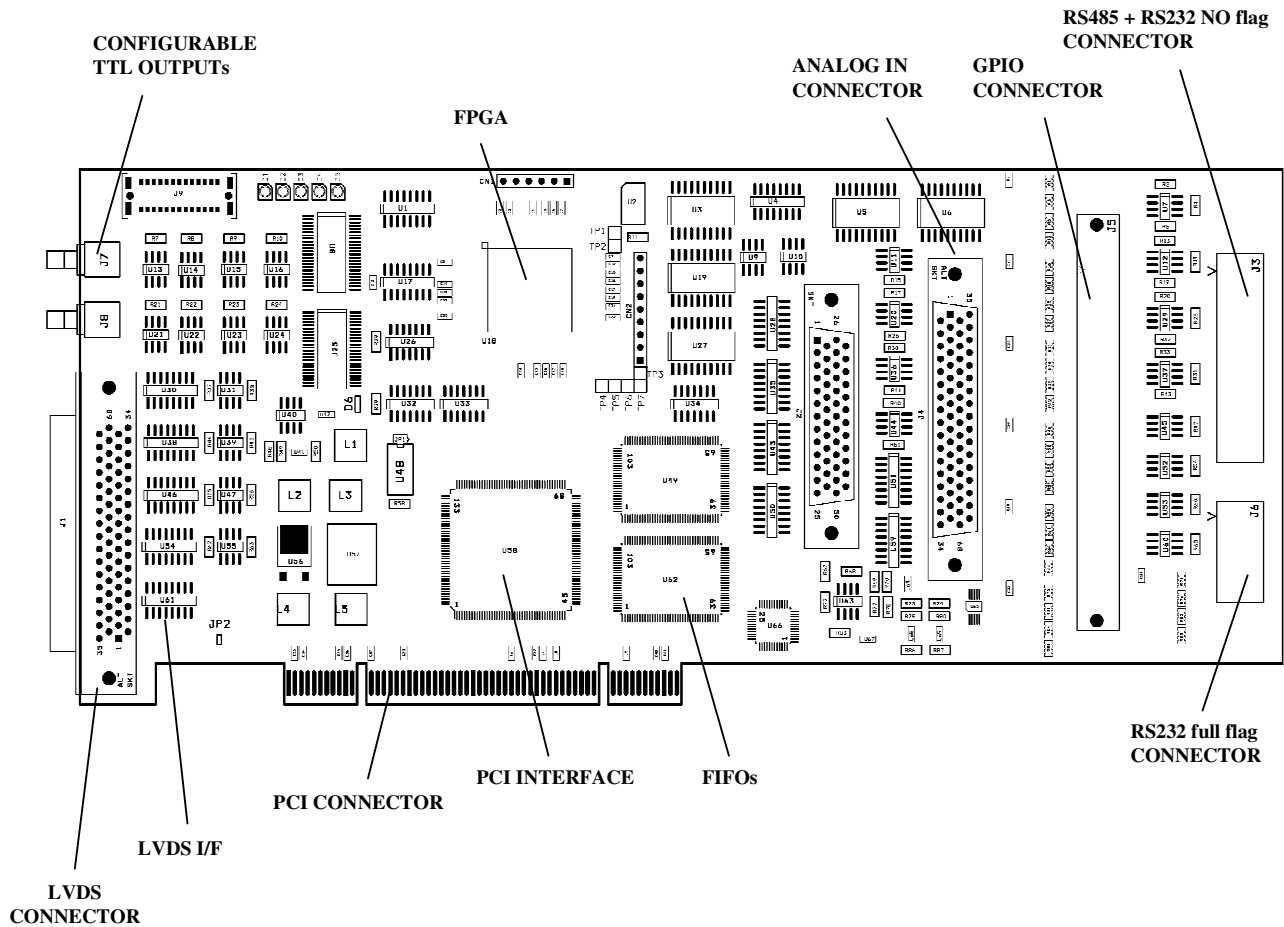
The MPI-A200 Board is equipped with:

- AMCC S5935Q PCI Bus Controller (Match Maker)
- Xilinx XC4VLX15, with 60 MHz master clock frequency
- 2 FIFO buffers, each 32K X 32, type IDT72V3693, with level shifter LVC164245
- 16 IN, 16 OUT independent LVDS serial lines
- 8 Analog IN channels, configurable single-ended or differential with 8 dedicated digital I/O
- 48 GPIO digital lines
- 12 IN, 14 OUT RS485 serial lines, 15Mbaud
- 4 no HW flagging + 1 full HW flagging RS232 serial lines
- 2 auxiliary, configurable TTL outputs for oscilloscope monitoring

The on-board FPGA is configurable through the PCI interface, therefore:

- it is not necessary to turn off power
- no EPROMs or external programming pods
- the operation of the Board can be changed on-the-fly during the test sequence

The Board layout (component side) is shown in the following Figure:



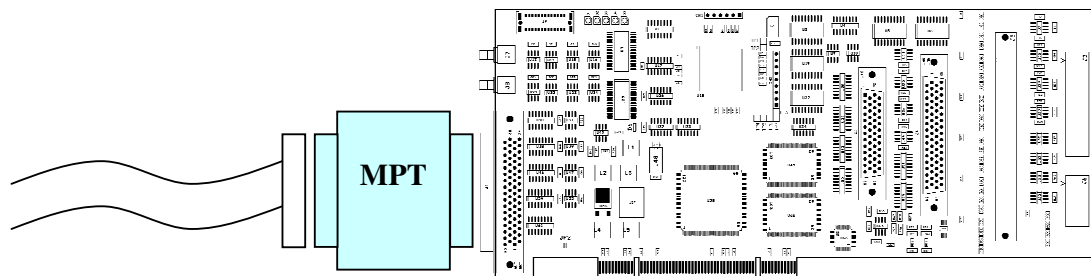
The firmware package developed for the MPI Board supports most common Space Industry's protocols, such as:

- CCSDS
- OBDH485
- MAP
- SCTMTC
- DS16
- SERIAL LINKS
- etc.

Accessories

The electrical standard of the 24 I/O signals of the MPI Board is LVDS. Nevertheless, any different electrical standard can be used by means of the active conversion interface MPT (MPI interface tool).

The MPT plug shall be mounted between the front connector of the MPI Board and the external cable/wiring:



The MPT interface is available in the following models:

- MPT-A000: conversion LVDS <--> RS422
- MPT-A010: conversion LVDS <--> RS485
- MPT-A020: conversion LVDS <--> single-ended CMOS

Other configurations available on request.