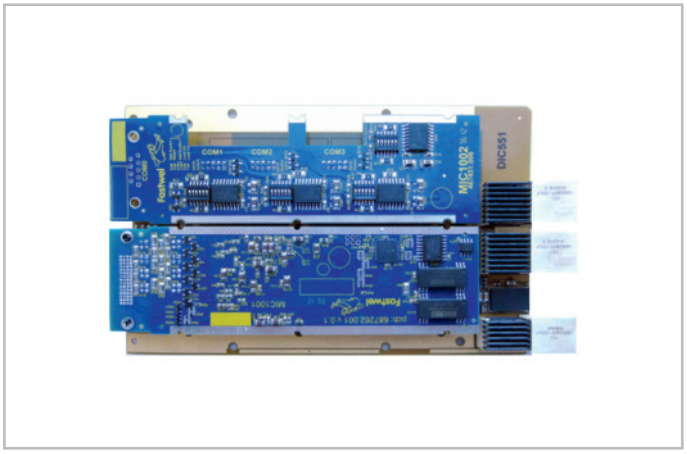
DIC 551
3U CompactPCI Serial Mezzanine Carrier Module



Features

- System Bus PCIe x1;
- Support of up to 2 single size mezzanine boards and 1 double size mezzanine board
- "Hot swap" of modules
- Availability of rear output of signals form the module
- Developer kit on the basis of M551T for the development of proprietary mezzanine boards;
- Operating temperature range: –40…+85°C
- Relative humidity: up to 95% at +25°C

Overview

3U CompactPCI Serial Mezzanine Carrier Module.

Universal digital and analog I/O module for operation on CompactPCI® Serial bus. Module's functionality is determined by the installed mezzanine boards. DIC 551 is designed for the use in real-time control systems, manufacturing control and data acquisition systems etc.

The mezzanine carrier is implemented in CompactPCI® Serial 4HP 3U PCIe x1 standard and makes it possible to place formats of Eurocard type and formats with conductive cooling. Two mezzanine boards can be installed on the carrier and provides possibility of rear or front output of signals from mezzanine.

Mezzanine is a functionally complete board, providing analog or digital I/O. Mezzanine version is independent of the PC system bus used, mezzanine's interaction with the carrier board is carried out with the use of "simple" serial and parallel communication channels (SPI, SPORT, UART etc.). Interaction of the "simple" communication channels and system bus is carried out by the carrier board.

Technical Specifications

General Information

- PCIe x1 system bus;
- Support of up to 2 single size mezzanine boards and 1 double size mezzanine board
- Support of the following mezzanine operation interfaces (per one mezzanine board):
  - UART (16550A) – 4 pcs;
  - Wishbone Bus – 1 pcs;
  - Serial port (SPI) – 4 pcs;
  - Serial port (SPORT) – 2 pcs;
  - Parallel 16 bit port – 2 pcs;
  - Timer – 3 pcs.
- Mezzanine power control system with current protection
- Power efficiency mode with power interruption from mezzanines
- DMA support during operation with serial ports
- "Hot Swap" of modules
- Integrated high-stability quartz-crystal oscillator

Connected Mezzanine Modules

- MIC1001 – analog I/O mezzanine with galvanic isolation
- 32x single wire or 16x differential voltage or current input channels with group galvanic isolation
- 16-bit analog to digital converter
- Conversion time of analog-to-digital converter is 4 µs/channel
- Input voltages range: ±10V, 0-10V
- Input current range: 0-20 mA
- Programmed amplification coefficients of input signals: 1, 2, 4, 8, 16
- 4x single wire output voltage channels
- 16-bit, digital-to-analog converter
- Digital-to-analog converter setting time: 6 µs
- Programmable adjustment of the conversion of output signals: ±10V, ±5V, ±2.5V, 0-10V, 0-5V
- FIFO buffer for 2048 words
- ESD protection
- 7x digital I/Os
- Galvanic isolation 750\1000V
- MIC1002 – 4x port mezzanine RS-232\485\422 with galvanic isolation:
- 4x channel-by-channel isolated and hardware-based reconfigurable serial ports
- 9-pin RS-232 full port
- RS-485 port: half duplex and full duplex operation mode
- Terminator connection during operation in RS-485\422 mode
- ESD protection
- Galvanic isolation: 750\1000V
- MIC1003 – digital I/O mezzanine for 48 lines with group galvanic isolation
- 48x I/O channels with individual direction adjustment;
- Input/output compatible with 5V
- ESD protection
- Galvanic Isolation 750\1000V
- RS-232 (only Rx, Tx) over any channel
- Interruptions during data changes at input
- Measuring frequency up to 2 MHz over any channel
- MIC1004 – 4x port mezzanine with current loop interface (radial interface with serial communication) with galvanic isolation
- 4x channel-by-channel isolated and hardware-based reconfigurable serial ports
- Support of 2x and 4x wire lines
- Support of master-slave operation mode
- Galvanic isolation: 750\1000V
- ESD protection
- M551T – test mezzanine

Additional Features

- Availability of conductive heat removal according to the PICMG CPCI-S.0 R1.0 standard
- Rear output of signals from the module
- Developer's kit based on M551T designed for the development of proprietary mezzanines

System bus

- CompactPCI Serial 1.1

Power supply

- DC voltage: +12V ±5%
- Current consumption (without external devices): TBD mA
- Insulating voltage (for mezzanines) 750V

Operating conditions

- Operating temperature range: from –40°C to +85°C
- Relative humidity: up to 95% at +25°C
- Storage temperature range: from –40°C up to +85°C

Storage temperature

- From –40° C up to +85°C

MTBF

- No less than: TBD hours

Conformal coating

Dimensions

- 160 × 100 × 20 mm

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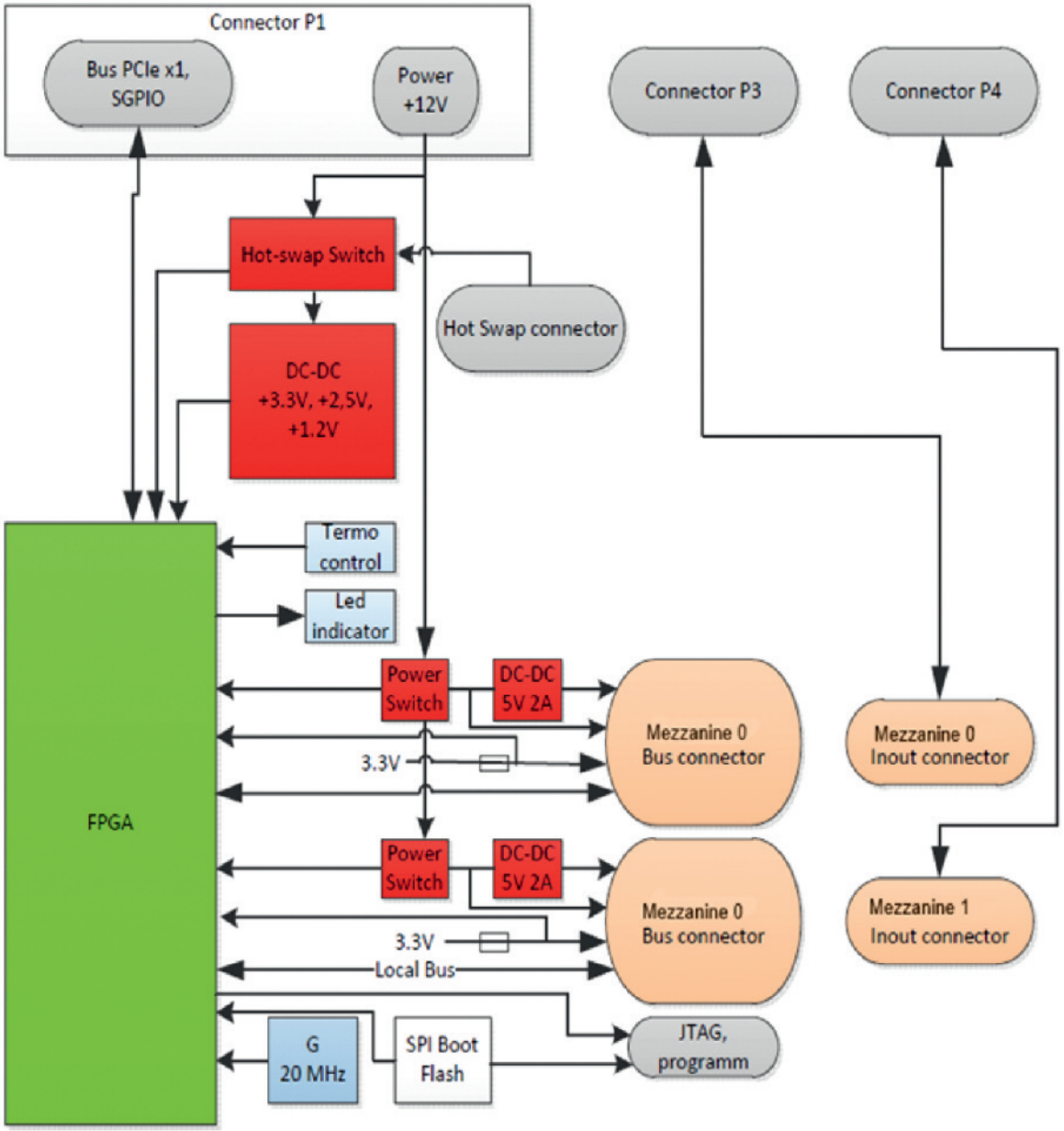
Block Diagram



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Ordering Information

DIC551 Configuration

DIC551 - 01 MIC1003-01

Versions

01	3U DIC551 mezzanine carrier module with front output
02	4U DIC551mezzanine module with the rear output and conductive heat removal

Mezzanine available

MIC1001-01	Analog I/O mezzanine with the front I/O
MIC1001-02	Analog I/O mezzanine board with the rear I/O
MIC1002-01	Mezzanine of RS-485/422/232 interfaces with the front I/O
MIC1002-02	Mezzanine of RS-485/422/232 interfaces with the rear I/O
MIC1003-01	Digital I/O mezzanine with the front I/O
MIC1003-02	Digital I/O mezzanine with the rear I/O
MIC1004-01	Mezzanine of the current loop interfaces with the front I/O
MIC1004-02	Mezzanine of the current loop interfaces with the rear I/O

Delivery checklist

DIC551 delivery checklist contains:

1. DIC551 Mezzanine Carrier Module with the preinstalled MIC10xx mezzanines
2. Antistatic packaging (bag) – 1pcs
3. Consumer packaging (cardboard box) – 1pcs.

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