DP-OBC-1011

Rugged cPCI MIL Communication Module

KEY FEATURES AND BENEFITS

• 2 Nodes of MIL-STD-1553B configurable as BC/RT/MT
• 2 Transmit and 4 Receive channels of ARINC 429 protocol
• 10/100 Mbps fast Ethernet port
• RS422/RS232 serial communication channels
• 8 Channels of opto-isolated digital inputs
• 8 Channels of differential digital outputs
• 2 Channels of isolated differential maskable interrupts
• Standard 3U cPCI module
• Low power consumption and dissipation
• Conduction cooled thermal management
• Wedge lock arrangements to meet shocks and vibrations
• Compact and rugged design for on-board applications
• Operating platform: VxWorks/RT Linux
• Ideal for Military and Space requirements

APPLICATIONS

• Avionics & Missile borne subsystems
• Flight control and guidance
• Weapons management

DESCRIPTION

DP-OBC-1011 is the latest rugged 3U cPCI based I/O module that offers generic communication I/Os required for on-board applications.

COMMUNICATION PROTOCOLS

DP-OBC-1011 includes three RS422 and one RS232 serial communication ports. It also features 2 nodes of MIL-STD-1553B and 4 ARINC 429 compatible receivers and 2 transmitters. In order to meet general purpose I/O requirements, differential digital input, interrupt and output channels are also provided.

RUGGED ENVIRONMENT

DP-OBC-1011 addresses rugged military and on board applications with conduction cooling that extends the operating temperature range to meet severe environments. Usage of stiffeners and wedge lock arrangements increases its immunity to shocks and vibrations. Conformal coating further enhances its capability to handle high humidity conditions.

This module is specifically designed for limited space applications by using a reduced 3U form factor. At the same time, the board can be populated on a standard 3U slot by using mechanical adaptors.

SOFTWARE SUPPORT

The module is supplied complete with device drivers in Windows 2000 and RT Linux. Please contact factory for support in any other operating system such as VxWorks, QNX, INTime, Lynx, Greenhills Integrity, etc.
## SPECIFICATIONS

### RS422 INTERFACE
- **RS422 driver**
  - No of channels: 3
  - Differential Output: 2 to 5V
  - Common mode output: 2.5V
  - Driver current: 25mA
  - Baud rate: Upto 32.8 Kbps
- **Opto isolated differential receiver**
  - No of channels: 3
  - Differential input: 2 to 3V
  - Input current: 10mA (min)
  - Isolation voltage: 100Vdc

### DIGITAL OUTPUTS
- **Differential driver**
  - No of channels: 8
  - Differential output: 2 to 5V
  - Common mode output: 2.5V
  - Drive current: 25mA

### DIGITAL INTERRUPTS
- **Opto-isolated differential receiver**
  - No of Channels: 2
  - Input voltage (high): 2 to 3V
  - Input voltage (low): 0 to 0.4V
  - Input current: 10mA (min)
  - Reverse voltage: -12V (max)
  - Isolation voltage: 100Vdc

### DIGITAL INPUTS
- **Opto-isolated differential receiver**
  - No of Channels: 8
  - Input voltage (high): 2 to 3V
  - Input voltage (low): 0 to 0.4V
  - Input current: 10mA (min)
  - Reverse voltage: -12V (max)
  - Isolation voltage: 100Vdc

### 1553 INTERFACE
- **BU-65864 (DDC enhanced mini ACE Chip)**
  - No of channels: 2
  - Terminal types: BC/MT/RT
  - Data rate: 1MHz
  - Coupling: Transformer / Direct

### ARINC INTERFACE
- **RS232 driver**
  - No of Channel: 1
  - Output Voltage Range: ±5.4V
  - Driver current: 10mA
  - Baud Rate: Up to 112Kbps
- **Rs232 receiver**
  - No of Channel: 1
  - Input Voltage Range: ±12V

### ETHERNET
- **No of ports**: 1 (10/100 BaseT)
- **Transfer rate**: 10/100 Mbps

### POWER REQUIREMENT
- **Input**: 5Vdc, 3.3Vdc, ±15Vdc

### CONNECTORS
- **Backplane**: cPCI Interface
- **Field Interface**: 100 pin I/O connector

### MECHANICAL
- **100 mm x 140 mm x 2 mm**
  - (with ruggedizer)
  - Rugged version only

### ORDERING INFORMATION
- **DP OBC 1011**
  - 6 - Rugged version

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**Factory options specified based on applications**
- 6 - Rugged version
BLOCK DIAGRAM OF DP-OBC-1011

- cPCI - BACKPLANE
- PCI/PCI Bridge 2050
- PCI BUS
- PCI 9030
- ETHERNET CONTROLLER WITH INTEGRATED PHY
- 1553B CHANNEL 2
- 1553B CHANNEL 1
- UART
- RS232 TRANSCIEVER
- RS422 TRANSCIEVER
- ARINC Transmitter
- ARINC Receiver
- Digital Inputs
- Digital Outputs
- Digital Interrupts
- I/O CONNECTOR