32 Channel Transmit Control Board

PRODUCT DESCRIPTION

32 Channel Transmit Controller Board is a 6U VME board available as conduction-cooled as well as air-cooled board. The Transmit Control Board receives data and control signals over Ethernet ports and sends out the analog differential signals to the backplane connector interface.

The board is used in naval application for multiple SONAR systems. The board is a Shop Replaceable Unit (SRU) for sonar HSU.

KEY FEATURES

- Digital to Analog Conversion + Signal Conditioning filters
- Channel synchronisation across all 32 DAC channels with < 30ns accuracy
- Channel synchronisation across multiple cards with < 50ns accuracy
- Sampling rate supported up to 1 Msp
- Dynamic master support for run-time failure recovery
  - One of the slave card becomes master upon failure of master card
  - Ability to work in partially degraded condition
- Remote field upgrade support via Ethernet
- Onboard temperature monitoring

SPECIFICATIONS

FPGAs / Processor

- Xilinx Virtex-5 FX70T FPGA with high-performance PowerPC440 Embedded Processor

Interfaces

- Two Gigabit Ethernet connectors accessible from fascia plate for board management & data
- RS232, JTAG and LED's accessible from fascia plate
- Four MLVDS transceivers
- Rs422 & RS232 signal terminated on backplane
- VME backplane interface

Software / IP

- Linux Operating system on Virtex-5 FPGA

Additional Information

- Onboard temperature sensors to monitor board and FPGA temperatures
MECHANICAL
- Available as conduction-cooled as well as air cooled board
- 6U VME for factor

POWER CONSUMPTION
- The unit consumes 28W
- Input voltage is 3.3V and 5V from VME backplane

ENVIRONMENTAL
- Qualification: Thermal cycling and random vibration
- Temperature range: −10°C and +50°C (Operational)

PART NUMBER(S)
The following variants of this board are available:

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>Variants</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH1021</td>
<td>16 channel Transmit Control board</td>
<td>● 16 input channels&lt;br&gt;● Air cooled board in 3U cPCI form factor</td>
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<tr>
<td>CH1020</td>
<td>32 Channel Transmit Control board, conduction-cooled, detailed in the above datasheet</td>
<td>● 32 input channels&lt;br&gt;● Conduction cooled board in 6U VME form factor</td>
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<tr>
<td>CH1022</td>
<td>32 Channel Transmit Control board, air-cooled</td>
<td>● 32 input channels&lt;br&gt;● Air cooled board in 6U VME form factor</td>
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