FDDI to Ethernet Router

The FDDI to Ethernet Router interconnects Fibre Distributed Data Interface (FDDI) and Ethernet Local Area Networks (LANs). It also provides for host access to the FDDI and Ethernet network segments for communication and management purposes.

The standard mode of operation is a full unicast / multicast router, using both static (pre-configured) and dynamic routing tables to determine traffic routing. The FDDI to Ethernet Router can also run in hidden mode, where it acts as a pseudo-bridge using proxy ARP to bridge the networks.

Remote configuration and management is supported in all modes. SNMP, TFTP and other services are available on both networks.

Features

- low data latency between heterogeneous network segments
- high data throughput between heterogeneous network segments
- available in various formfactors (3U CompactPCI, 6U CompactPCI, VME, VPX, PC/104, PCI, etc.)
- Ethernet segment operates as standard up to Gigabit Ethernet (10 Gigabit Ethernet optional)
- Gigabit Ethernet segment offers reliable link failover using Reliable Link Management Technology (RLMT)
- FDDI segment offers dual attachment [DAS] for intrinsic reliable link failover (single attachment version [SAS] optional) at the MAC layer
- available in air-cooled and conduction-cooled versions
- available with fibre and copper I/O
- available with various I/O connector options: ST and SC for fibre media, RJ-45 and PMC Jn4 for copper media
- compatible with 10BASE-T and 100BASE-T if using copper I/O
- lower cost option using host carrier card onboard Ethernet ports
- optimised mechanical housing assemblies also available

Figure 1 : 6U CPCI Air-Cooled FDDI to Gigabit Ethernet Router
FDDI to Ethernet Router

Specifications

Mechanical Construction
- 6U cPCI, VME, VPX: dual slot PMC host carrier card with two PMC daughter cards
- 3U cPCI: cPCI host with two PMC carrier cards with PMC daughter cards
- PC/104: PC/104 host SBC with two PCI-104 cards
- PCI: PCI motherboard with two PCI cards

Thermal Management
- forced-air cooling or conduction cooling

Backplane Type
- various options (3U cPCI, 6U cPCI, VME, VPX, PC/104, 32-bit PCI, 64-bit PCI, etc.)

Power Requirements
- Typical: 5 V @ 4.5 A, 3.3 V @ 2.5 A, +12 V @ 0.05 A, -12 V @ 0.05 A

I/O Interface
- FDDI: multimode fibre; ST or SC connector
  - copper UTP; RJ-45 or backplane
- Gigabit Ethernet: multimode fibre; SFF/LC connector
  - copper UTP; RJ-45 or backplane

Visual Indicators
- FDDI: ring disconnected, Port A status and Port B status
  - channel activity, Channel A activity and Channel B activity
- Gigabit Ethernet: link-up, Link A up and Link B up

Acoustic Noise
- zero

MTTR
- < 1 hour onboard

Software
- embedded Linux operating system

Characteristics

Physical
- Length x Width x Height
  - 235 mm x 175 mm x 25 mm
- Mass
  - 750 g ± 50 g

Performance Specifications

Latency
- 350 µs (small network, low network load or synchronous bandwidth allocation)
- 3 500 µs (typical network, real-world network load or 30% to 40%, asynchronous bandwidth only)

Throughput
- 95 Mbit/s (small network, low network load or synchronous bandwidth allocation)
- 90 Mbit/s (typical network, real-world network load or 30% to 40%, asynchronous bandwidth only)
FDDI to Ethernet Router

Environmental Specifications

<table>
<thead>
<tr>
<th>Grade</th>
<th>Commercial</th>
<th>Industrial</th>
<th>Ruggedised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Operating</td>
<td>0 C to +55 C</td>
<td>-15 C to +75 C</td>
<td>-40 C to +85 C</td>
</tr>
<tr>
<td>- Storage</td>
<td>-50 C to +85 C</td>
<td>-50 C to +85 C</td>
<td>-60 C to +125 C</td>
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<tr>
<td>Relative Humidity</td>
<td>10% to 90%</td>
<td>5% to 90%</td>
<td>0% to 95%</td>
</tr>
<tr>
<td>Shock</td>
<td></td>
<td>60 g for 5 ms, ½ sine</td>
<td>i.a.w. MIL-STD-810F Method 516.5 Procedure I</td>
</tr>
<tr>
<td>Vibration</td>
<td></td>
<td>5 g (peak) 10 Hz to 100 Hz</td>
<td>i.a.w. MIL-STD-810F Method 516.5 Procedure II</td>
</tr>
<tr>
<td>EMC</td>
<td></td>
<td>RE, CE, RS, CS i.a.w. MIL-STD-461C for military equipment</td>
<td></td>
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</tbody>
</table>

Reliability

<table>
<thead>
<tr>
<th>MTBF</th>
<th>Commercial and Industrial Grades</th>
<th>Ground Benign, Controlled, 25 C</th>
<th>40 000 hours</th>
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<tbody>
<tr>
<td>Ruggedised Grade</td>
<td>Ground Benign, Controlled, 25 C</td>
<td>Ground, Mobile, 45 C</td>
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<tr>
<td>Ruggedised Grade</td>
<td>Naval, Sheltered, 40 C</td>
<td>Airborne, Inhabited Cargo, 55 C</td>
<td>8 600 hours</td>
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<tr>
<td>Ruggedised Grade</td>
<td>Ground Benign, Controlled, 25 C</td>
<td>Ground, Mobile, 45 C</td>
<td>11 900 hours</td>
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</table>

Part Designations

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<th>Part Designation</th>
<th>Grade</th>
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<tr>
<td>CCII/FDDIGENETR/xxxx/COM</td>
<td>Commercial</td>
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<tr>
<td>CCII/FDDIGENETR/xxxx/IND</td>
<td>Industrial</td>
</tr>
<tr>
<td>CCII/FDDIGENETR/xxxx/RGD</td>
<td>Ruggedised</td>
</tr>
</tbody>
</table>

Note: The four digit code (xxxx) in the part number denotes customer-selected formfactor option

3U cPCI  CPC3
6U cPCI  CPC6
6U VME   VME6
6U VPX   VPX6
PC/104   P104
32-bit PCI PC13
64-bit PCI PC16