

# QLA2350/2352 Data Sheet

## 2-Gb Fibre Channel to PCI-X Host Bus Adapters



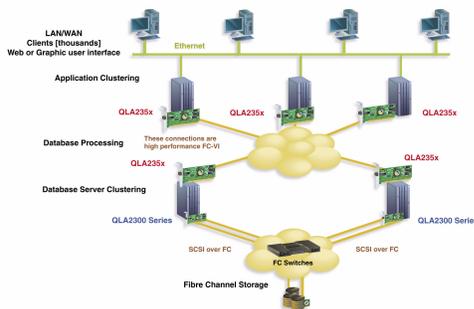
Traditionally, Ethernet and TCP/IP protocols are implemented in multi-tier, clustered environments. However, this implementation inherently includes high overhead and latency. Consequently, this implementation cannot meet the high performance demanded in today's fast paced, real-time environments. With the introduction of Fibre Channel (FC) and Virtual Interface (VI) architecture technology in multi-tiered, clustered environments, the jump to the next level of performance is here.

Designed as the optimum interconnect for Windows 2000 Datacenter cluster environments, QLogic's Enterprise Class QLA2350 and QLA2352 2-Gb FC to 133-MHz PCI-X host bus adapters (HBAs) with VI support offer the price/performance advantages of FC as well as the benefits of VI architecture, an open, standards based messaging protocol. The QLA2350 (single channel) and the QLA2352 (independent dual channels) enable scalability, availability, and reliability at a significant cost savings compared to more expensive proprietary clustering technologies.

In a collaborative effort, Microsoft® and QLogic have created the ideal solution for Database cluster environments running Windows 2000 Advanced Server or Datacenter Server with Microsoft SQL Server 2000 and the QLA2350 and QLA2352 with VI.

### Features

- 1024 VI connections per port
- 512-MB concurrent memory registration for RDMA per port
- User defined memory registration for send/receive (limited only by host memory size)
- Support for SCSI, IP, and VI protocols
- Reduced interrupt operation (RIO) and zero interrupt operation (ZIO) operation modes
- Configurable MTU up to 256 KB
- Easy detection of activities through an LED panel
- FC HBA Manager utility that allows you to:
  - Configure VI (host and HBA)
  - Change host/HBA VI parameters
  - Perform HBA persistent binding
  - Set NVRAM parameters
  - Change NVAM setting functionality
  - Perform VI diagnostics:
    - Peer-to-Peer
    - Link statistics



| Host Bus Interface Specifications |  |
|-----------------------------------|--|
| Speed                             | 64-bit, 133-MHz PCI-X  |
| Voltage                           | 3.3 V and 5.0 V buses supported  |
| Compliance                        | Conforms to <i>PCI Local Bus Specification</i> rev. 2.2, and the <i>PCI-X Addendum</i> rev. 1.0a, <i>PCI Hot Plug Specification</i> 1.0, <i>PCI Bus Power Management Interface Specification</i> rev 1.1   |
| Fibre Channel Specifications      |  |
| Speed                             | 200 MBps maximum at half-duplex, 400 MBps maximum at full-duplex   |
| Compliance                        | <i>Second Generation FC Generic Services Definition</i> (FC-GS-2), <i>Third Generation FC Generic Services Definition</i> (FC-GS-3), <i>Fibre Channel-Physical and Signaling Interface</i> (FC-PH), <i>SCSI-3 Fibre Channel Protocol</i> (SCSI-FCP), <i>Fibre Channel-Arbitrated Loop-2</i> (FC-AL-2), <i>Fibre Channel-Private Loop Direct Attach Technical Report</i> (FC-PLDA), <i>RFC 2625 IP and APR Over Fibre Channel</i> , <i>Fibre Channel Framing and Signaling</i> (FC-FS), <i>Fibre Channel-Virtual Interface Architecture Mapping</i> (FC-VI) |
| Topology                          | FC-AL, FC-AL-2, point to point, switched fabric (FL_Port and F_Port)   |
| Class of service                  | Class 3 Fibre Channel service  |
| Protocol                          | SCSI-FCP, IP, FC-TAPE, FC-VI   |
| Buffer credits                    | For 512-byte frame size, 9 credits issued. For 2K-byte frame size, 3 credits issued.   |
| HBA Physical Specifications       |  |
| Ports                             | One (QLA2350)<br>Two (QLA2352)   |
| Media                             | Multimode optic  |
| Optics                            | Short wave laser   |
| Form factor                       | Low-profile MD2: 16.93 cm×5.15 cm (6.7"×2.5")  |
| Bracket size                      | Standard size  |
| Connectors                        | LC-style connector that supports non-OFC, multimode fibre optic cabling using a small form factor optical transceiver module   |
| Power consumption                 | ~ 6.5 watts (QLA2350)<br>~ 7.5 watts (QLA2352)   |
| HBA Environment                   |  |
| Airflow                           | 0 lf/m   |
| Temperature                       | Operating: 0°C/32°F to 55°C/131°F. Storage: -20°C/-4°F to 70°C/158°F   |
| Humidity                          | Relative (noncondensing): 10% to 90%, Storage: 5% to 95%   |
| Distance                          | 1 Gbps: 500 meters 50/125 µm fiber, 300 meters 62.5/125 µm fiber<br>2 Gbps: 300 meters 50/125 µm fiber, 150 meters 62.5/125 µm fiber   |
| Cable                             | 50/125µm multimode fiber, 62.5/125 µm multimode fiber  |
| Agency Approvals—Product Safety   |  |
| US/ Canada                        | UL, cUL<br>UL60950<br>CSA C22.2 No.60950<br>Class 1 Laser Product per DHHS 21CFR (J)   |
| Europe                            | 73/23/ECC Low Voltage Directive:<br>TUV:<br>EN60950: 1992+A1,2,3,4,11<br>EN60825-1: 1994+A11<br>EN60825-2: 1994  |
| Agency Approvals—EMI and EMC      |  |
| US                                | FCC Part 15, Class B   |
| Canada                            | Industry Canada ICES-003, Class B  |
| Europe                            | 89/336/EEC EMC Directive <b>CE Mark:</b><br>EN55022: 1998/CISPR22:1997 Class B<br>EN55024: 1998<br>EN61000-3-2:1995<br>EN61000-3-3:1994  |
| Japan                             | VCCI, Class B  |
| Taiwan                            | CNS 13438 Class B  |
| New Zealand/AS/NZS                | 3548 Class B   |
| Australia                         |  |
| Korea                             | MIC  |
| Tools and Utilities               |  |
| Management tools                  | FC HBA Manager   |
| Operating systems                 | Windows 2000   |
| Device utilities                  | Configuration utility resident with the BIOS   |
| Boot support                      | Solaris SPARC: FCode; Intel x86: BIOS (32-bit), EFI (64-bit)   |
| Ordering Information              |  |
| QLA2350                           | Ships to OEMs in an individually packed box with a standard size bracket.  |
| QLA2350-BK                        | Ships to OEMs in a bulk pack box in quantities of 20, 50, or 100 with standard size brackets.  |
| QLA2350-CK                        | Ships to authorized distributors and resellers in an individually packed box with a standard size bracket and the FC HBA Manager CD.   |
| QLA2352                           | Ships to OEMs in an individually packed box with a standard size bracket.  |
| QLA2352-BK                        | Ships to OEMs in a bulk pack box in quantities of 20, 50, or 100 with standard size brackets.  |
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