Overview

The HP 10GbE Pass-Thru Module for c-Class BladeSystem provides direct low latency, 1:1 non-switched, non-blocking connections between 10G/1G Ethernet ports on blade servers and external Ethernet switches.

The HP 10GbE Pass-Thru Module delivers 16 internal auto-negotiating downlinks that support both 10G KR and 1G blade server ports. The downlinks are directly connected to 16 SFP+ uplinks supporting 10G SFP+ optical transceivers, 10G SFP+ Direct Attached Cables and 1G SFP optical and RJ45 transceivers.

Designed to fit into a single I/O bay of the c-Class enclosure, the 10Gb Ethernet Pass-Thru Module should be installed in pairs to provide redundant uplink paths to your network.

Figure 1 Pass-Thru Module Front Bezel

1. UID LED  
2. Health LED  
3. Ethernet Port LEDs  
4. Reset Button  
5. Mini-USB RS232 Serial Management Port  
6. Ports 1-16 support SFP and SFP+ transceiver modules and Direct Attach Cables (DAC)

At A Glance

Performance:

- Wire speed performance on all sixteen 1Gb / 10 Gb ports
- Low latency
- Auto speed negotiation

Management:

- Port speed and Port Up / Down control via onboard administrator (OA)
## Standard Features
### Models

10GbE Pass-Thru Module for c-Class BladeSystem

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### Compatibility

<table>
<thead>
<tr>
<th>HP ProLiant Servers</th>
<th>HP BladeSystem c-Class c7000 Enclosure with Onboard Administrator</th>
<th>HP BladeSystem c-Class c3000 Enclosure with Onboard Administrator</th>
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<tbody>
<tr>
<td>HP ProLiant BL495c</td>
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<tr>
<td>HP ProLiant BL2x220</td>
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<td>HP ProLiant BL685</td>
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<td>HP ProLiant BL260</td>
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ProLiant BL c-Class Server Blade Enclosures

| HP NC532m Dual Port 10GbE Multifunction Server Adapter |
| HP NC325m PCI Express Quad Port Gigabit Server Adapter |
| HP NC326m PCI Express Dual Port Multifunction Gigabit Server Adapter |
| HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter |
| HP NC360m Dual Port 1GbE BL-c Adapter |
| HP NC364m Quad Port 1GbE BL-c Adapter |
| HP NC382m PCI Express Dual Port Multifunction Gigabit Server Adapter |
| HP QMH4062 1GbE iSCSI Adapter for HP BladeSystem c-Class |

### Integrated Network Interfaces and mezzanine cards

- HP NC532m Dual Port 10GbE Multifunction Server Adapter
- HP NC325m PCI Express Quad Port Gigabit Server Adapter
- HP NC326m PCI Express Dual Port Multifunction Gigabit Server Adapter
- HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter
- HP NC360m Dual Port 1GbE BL-c Adapter
- HP NC364m Quad Port 1GbE BL-c Adapter
- HP NC382m PCI Express Dual Port Multifunction Gigabit Server Adapter
- HP QMH4062 1GbE iSCSI Adapter for HP BladeSystem c-Class

### Cabling and Transceivers

<table>
<thead>
<tr>
<th>SFP+ Direct attached cables</th>
<th>1 Meter</th>
<th>- p/n 487654-001</th>
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<tbody>
<tr>
<td></td>
<td>3 Meter</td>
<td>- p/n 487657-001</td>
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<tr>
<td></td>
<td>5 Meter</td>
<td>- p/n 537965-001</td>
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<tr>
<td></td>
<td>7 Meter</td>
<td>- p/n 487660-001</td>
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</table>

<table>
<thead>
<tr>
<th>Transceivers</th>
<th>10Gb SR SFP+</th>
<th>- p/n 455883-B21</th>
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<tbody>
<tr>
<td></td>
<td>10Gb LR SFP+</td>
<td>- p/n 455886-B21</td>
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<tr>
<td></td>
<td>10Gb LRM SFP+</td>
<td>- p/n 455889-B21</td>
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<tr>
<td></td>
<td>1Gb SFP RJ45</td>
<td>- p/n 453154-B21</td>
</tr>
<tr>
<td></td>
<td>1Gb SFP SX</td>
<td>- p/n 453151-B21</td>
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</tbody>
</table>
Standard Features

Service and Support

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

The HP 10GbE Pass-Thru Module for c-Class BladeSystem Limited Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support.

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMware-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP Care Pack services for the c7000 and c3000 Enclosure cover the enclosure, power supplies and fans. HP qualified rack options are covered by these services when installed within the same rack. HP Supported Ethernet devices covered include the Ethernet Pass-Through Module, Fibre Channel Pass-Through Module, Cisco Catalyst 3020 Blade Switch and GbE2c Ethernet Blade Switch.

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/hps/carepack

NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: http://www.hp.com/hps

NOTE: Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html
Related Options
Service and Support Offerings

NOTE: The HP Care Pack service part numbers below for ProLiant BL c-Class server blades, cover the server blade and all HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the server.

Hardware Services On-site Service
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic UE458E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE459E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE460E

NOTE: HP Care Pack services for the c7000 and c3000 Enclosures cover the enclosure, power supplies and fans. HP qualified rack options are covered by these services when installed within the same rack. HP supported c-Class enclosure devices including pass thru, Ethernet interconnect and virtual connect modules are also covered by the c7000 and c3000 enclosures Care Pack services.

NOTE: SAN/Fabric switches for the HP c-Class BladeSystem are not covered under the c7000 and c3000 enclosures Care Packs. SAN/Fabric Switch Care Pack service level support should always be uplifted to match existing storage or server service level.

Hardware Support Services On-site Service
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic UE477E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE478E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE479E
6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic UE480E

Installation & Start-up Services
Hp BladeSystem c-Class Infrastructure Installation and Startup Service, Electronic UE602E
HP BladeSystem Enhanced Network Installation and Startup Service, Electronic UE603E
ProLiant BL c-Class Blade Server Hardware Installation, Electronic UE493E
ProLiant BL c-Class Enclosure and Server Blade Hardware Installation, Electronic UE494E

NOTE: For more information, customer/resellers can contact http://www.hp.com/services/bladesystemservices
# Technical Specifications

## Shipping Dimensions
- **Length**: 290 mm (11.42 in.)
- **Width**: 368 mm (14.49 in.)
- **Height**: 60 mm (2.36 in.)

## Shipping Weight
- 2.1 Kg (4.6 lbs)

## Product Specifications
### Hardware
- **Performance**
  - 320 Gbps external port bandwidth per module
  - Line rate 10Gb full-wire speed performance
  - Auto-negotiation and auto-sensing with full-duplex support

### Connectors and Cabling
- **Connector**: 16 SFP+ Modules
  - Mini-USB Management
- **Network Transfer Rate**
  - 1 Gbps Port: 2,000 Mbps
  - 10 Gbps port: 20,000 Mbps

### Indicators
- **UID LED**
  - Blue light on — module is activated.
  - Blue light off — module is deactivated.
- **Health LED**
  - Off — The pass-thru module is powered off.
  - Green — The pass-thru module is powered up, and all ports match
  - Amber — An issue exists, such as a port mismatch
- **Ethernet port**
  - Green — Link is 10G
  - Flashing green — 10G link activity is detected
  - Amber — Link is 1G
  - Flashing amber — 1G link activity is detected.
  - Flashing alternately green and amber — A link mismatch condition exists.

## Dimensions
- **Length**: 10.5 in (267.7 mm)
- **Width**: 7.5 in (192.79 mm)
- **Height**: 1.1 in (27.94 mm)

## Weight
- 1.6 Kg (3.97 lbs.)

## Environmental Ranges
- **Temperature Range**
  - Operating: 50° to 95° F (10° to 35° C)
  - Non-operating: -40° to 158° F (-40° to 70° C)

## Power Specification
- **Power Requirements**: 12VDC: 6.3A, 68W maximum
Technical Specifications

Safety and Compliance

Safety Certifications
- TUV to UL 60950-1, and CAN/CSA C22.2 No. 60950-1 and to EN 60950-1
- CE Marking
- RoHS 6/6 compliant

Electromagnetic Emissions Certifications
- FCC Part 15 Class A
- EN 55022: 1998 (CISPR22)
- EN 55024: 1998 (CISPR24)
- VCCI Class A
- AS/NZS 3548 Class A CE
- CNS 13438 Class A MIC
- MIC