# BCM957508-P1200G

## Single-Port 200 Gb/s QSFP56 Ethernet PCI Express 4.0 x16 Network Interface Card

## General Description

The Broadcom BCM957508-P1200G is a single-port 200 Gb/s PCI Express 4.0 x16 Network Interface Card that supports QSFP56/QSFP28/QSFP+ optical modules and copper direct-attach cables. The card uses the Broadcom BCM57508 200GbE MAC controller with an integrated single-channel 200GbE SFI transceiver.

## Features

- Single-port pluggable media interface, which is compatible with a QSFP56/QSFP28/QSFP+ optical transceiver or a copper direct-attach cable.
- Industry's most secure PCIe adapter solution leveraging Broadcom's BroadSAFE® technology
- Multi-Host Support: Dual-Host x8 mode[1].
- Fully compliant with the SFF-8402 standard.
- x16 PCI Express 4.0 compliant.
- SR-IOV with up to 1k virtual functions (VFs).
- Function-Level Reset (FLR) support.
- TruFlow™ flow processing engine.
- Virtual Network Termination – VXLAN, NVGRE, Geneve, GRE encap/decap.
- vSwitch Acceleration.
- Tunnel-aware stateless offloads.
- DCB support – PFC, ETS, QCN, DCBx.
- RDMA over Converged Ethernet (RoCE)
- Network Controller Sideband Interface (NC-SI)[1].
- SMBus 2.0.
- MCTP over SMBus.
- Jumbo frames up to 9 KB.
- Advanced congestion avoidance.
- Multiqueue, NetQueue, and VMQ.
- IPv4 and IPv6 offloads.
- TCP, UDP, and IP checksum offloads.
- Large send offload (LSO).
- Large receive offload (LRO).

- TCP segmentation offload (TSO).
- Receive-side scaling (RSS).
- Transmit-side scaling (TSS).
- VLAN insertion/removal.
- Interrupt coalescing.
- Network boot—PXE, UEFI.
- iSCSI boot.
- MSI and MSI-X.
- FRU support.

## Applications

Single-port 200-Gigabit QSFP56 Ethernet Network Interface Card for data centers or cloud computing.

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1. Contact Broadcom for additional details.

**Figure 1:  BCM957508-P1200G Network Interface Card**



**NOTE:**    The surface markings of the component and/or the labels may not reflect the received product. Broadcom reserves the right to change any component on the printed circuit board with the same functionality.
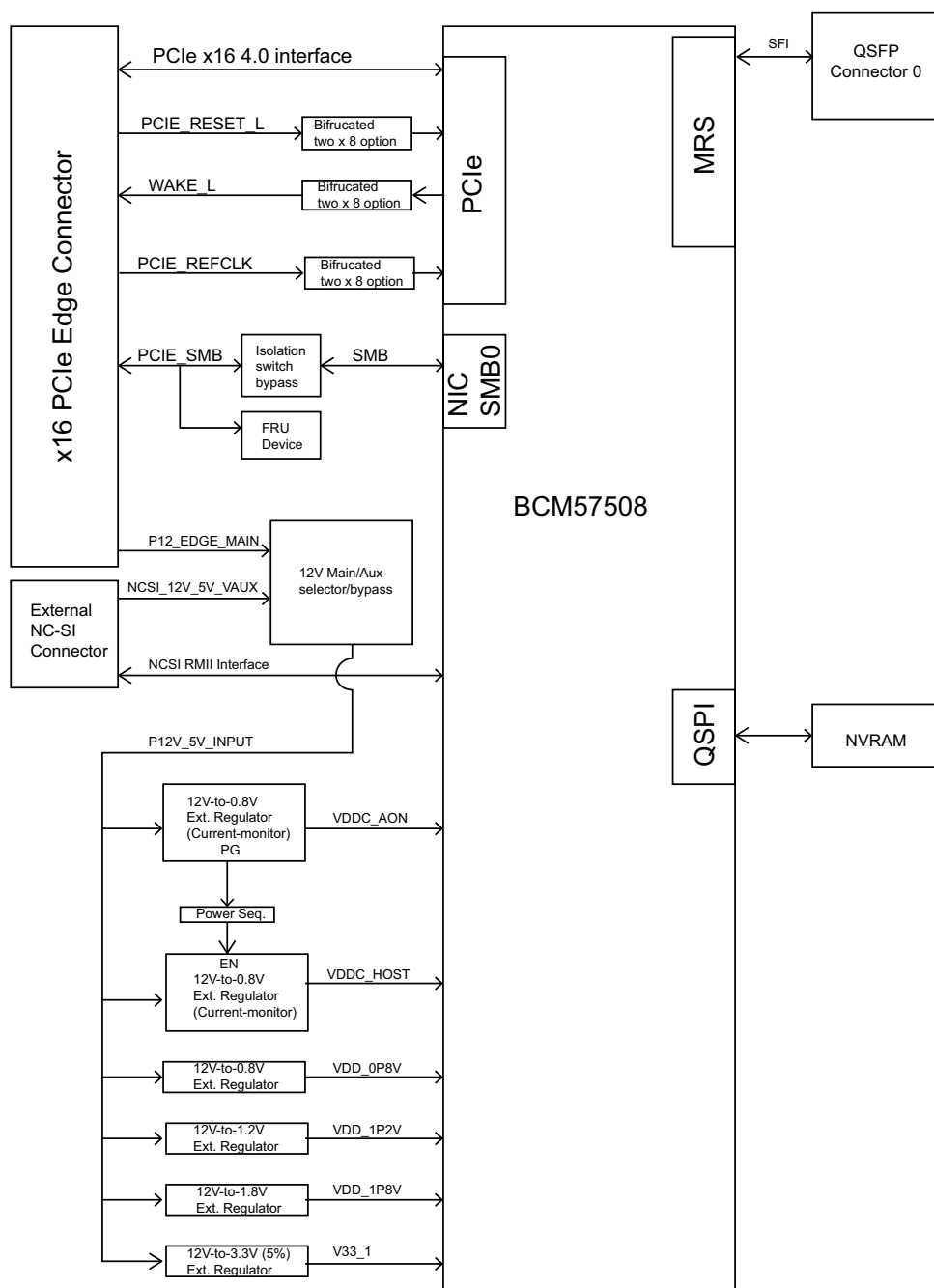
# Table of Contents

# 1 Functional Description

This section provides the functional description of the BCM957508-P1200G Network Interface Card.

## 1.1 Block Diagram

Figure 2 shows the main functional blocks on the BCM957508-P1200G Network Interface Card.

**Figure 2:  BCM957508-P1200G Block Diagram**

## 1.2 Host Interface Connector

The BCM957508-P1200G NIC is a PCI Express 4.0 x16 add-in card with standard-height bracket. The card edge connector complies with the PCI Express 4.0 x16 standard pinout for add-in cards.

## 1.3 BCM57508 Ethernet Controller

The BCM57508 Ethernet controller is configured as single-port 200 Gb/s interface to the line side and x16 PCI Express v4.0 interface to the system host.

## 1.4 PCI Express Interface

PCIe is a high-bandwidth serial bus providing a low pin-count interface as an alternative to parallel PCI. It is part of the host interface connector. The BCM57508 complies with the PCI Express Base Specification Revision 4.0, and supports a 16-lane PCIe 4.0 interface via the host interface connector.

## 1.5 SMBus Interface

The BCM57508 Ethernet Controller SMB0 interface supports serial communications between BCM57508 and the system. The interface allows the Ethernet controller to act as a SMBus primary or a secondary device.

## 1.6 Non-Volatile RAM

The BCM57508 Ethernet controller requires a non-volatile serial flash memory (NVRAM) to store the device firmware, PCI configuration space settings (for example, device ID, vendor ID), MAC address, and so on. After power-up, the firmware is downloaded into the device memory and executed by the on-chip processor.

## 1.7 Heat Sink

The passive heat sink is attached to the Ethernet controller using four spring-loaded push pins that are inserted into four mounting holes.

## 1.8 Power Supplies

All power is derived from the network adapter card host interface connector 12V and 3.3V supply which feeds the onboard regulators that provide the necessary power to the various components on the card. The network adapter card has six switching voltage regulators that power the card's VDDC_AON, VDDC_HOST, +0.8V, +1.2V, +1.8V, and +3.3V loads.

## 1.9 QSFP56 Connector

The BCM957508-P1200G integrates one QSFP56 connector to support 50G PAM-4, 25G NRZ, or 10G NRZ signaling for 200/100/50/40/25/10 Gb/s on the port. QSFP56 is backward compatible with QSFP28 and QSFP+ when appropriate cables and transceivers are used.

# 1.10 LED Functions and Locations

The QSFP56 port supports two LEDs to indicate traffic activities and link speed. The LEDs are visible through the cutout on the bracket as shown in Figure 3.
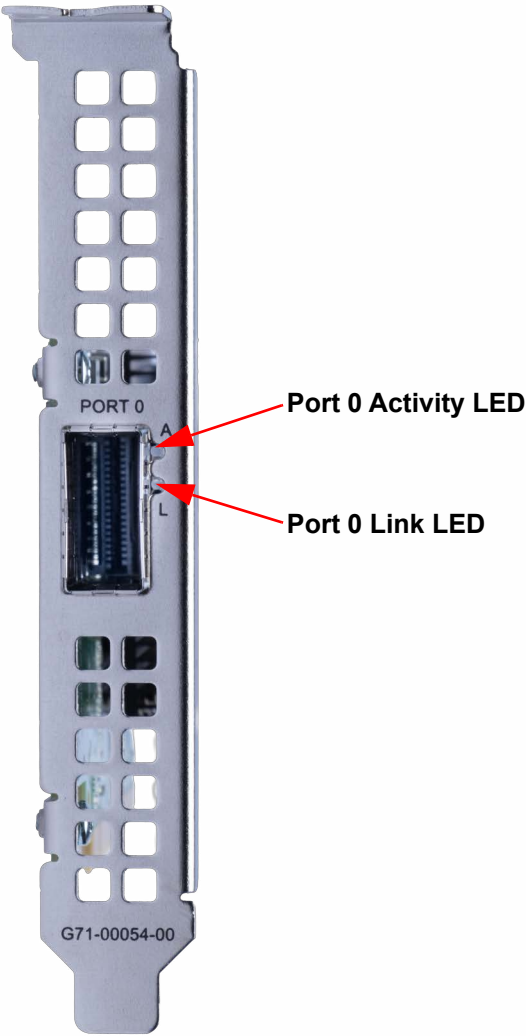
**Figure 3:  Activity and Link LED Locations**



**Table 1:  LED Functions**

| LED Type | Color/Behavior | Note |
|---|---|---|
| Activity | Off | No Activity |
|  | Green (blinking) | Link up (traffic flowing) |
| Link | Off | No Link |
|  | Green | Linked at 200 Gb/s |
|  | Amber | Linked at lower speed |

## 1.11 PCIe Plug-N-Play Identification

Table 2 provides the PCIe PNP IDs for the adapter.

**Table 2: PCIe PNP IDs**

| Field | Value |
|---|---|
| Vendor ID | 0x14E4 |
| Device ID | 0x1750 |
| Sub-Vendor ID | 0x14E4 |
| Sub-Device ID | 0x1200 |

# 2 Board Power and Environmental Specifications

Table 3 provides the adapter power consumption.

**Table 3: Adapter Power Consumption**

| Adapter Power[a] | Passive DAC Cable | Optical Transceiver[b] |
|---|---|---|
| Typical – 50% Ethernet traffic | 16.0W | 21.0W |
| Max – 100% Ethernet traffic | 17.1W | 22.0W |

    a. Power consumption of adapter at 55°C ambient temperature.

    b. Power consumption of adapter is measured using a Broadcom AFBR-89CDHZ power class 3 optical transceiver. The total adapter power may vary with different optical transceivers.

**Table 4: Adapter Environmental Specifications**

| Airflow | Ambient Temperature | Passive DAC Cable | Optical Transceiver[a] |
|---|---|---|---|
| Hot Aisle | 55°C | 225 LFM | 420 LFM |
| Storage Humidity | Relative Humidity Range (Non-condensing) maximum 90% at 35°C | | |
| Storage Temperature | –40°C to 70°C | | |
| Operating Temperature | 0°C to 55°C | | |

    a. Airflow requirements are measured using a Broadcom AFBR-89CDHZ (power class 3, commercial temp [70°C]) optical transceivers. Check the airflow requirements of the selected optical transceivers to ensure adequate cooling to the optical transceivers.

# 3 Package Weight

Table 5 shows the BCM957508-P1200G package weight with the standard-profile bracket installed by default (excluding the optical module).

**Table 5: Package Weight**

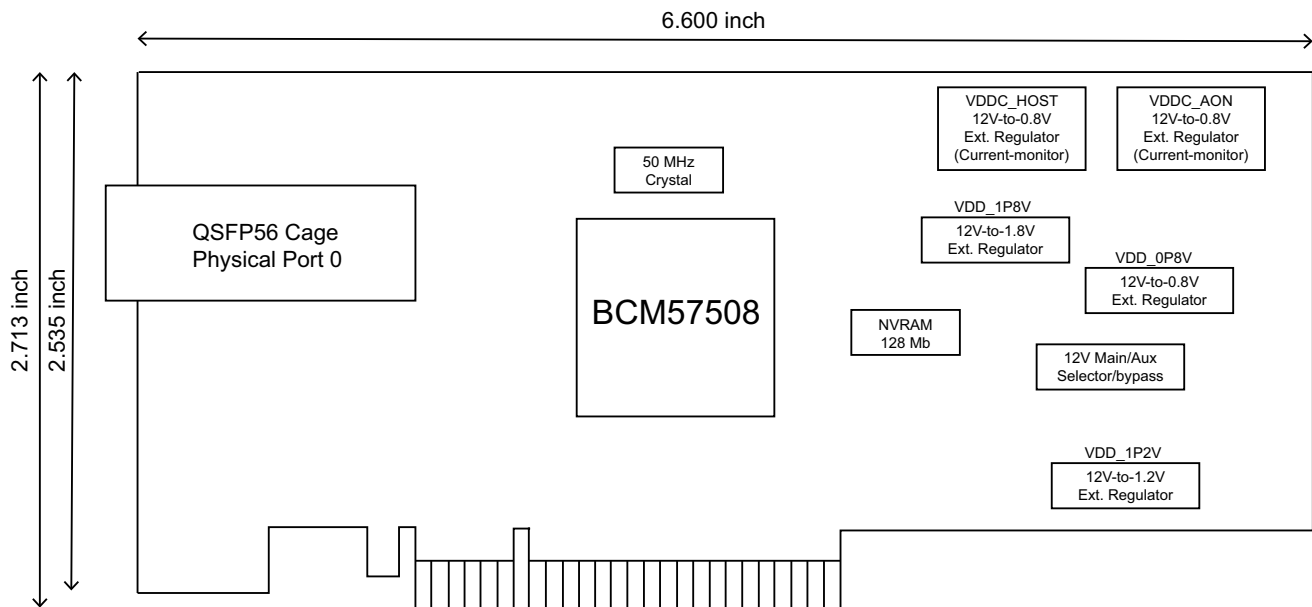| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| BCM957508-P1200G weight | g | 145 | gram |

# 4 Physical Specifications

This section outlines the mechanical aspects of the BCM957508-P1200G network interface card as well as the environmental specifications.

## 4.1 Board Physical Dimensions

The BCM957508-P1200G board dimensions are shown in Figure 4. The dimensions are in inches with a tolerance of ±0.005 inches.
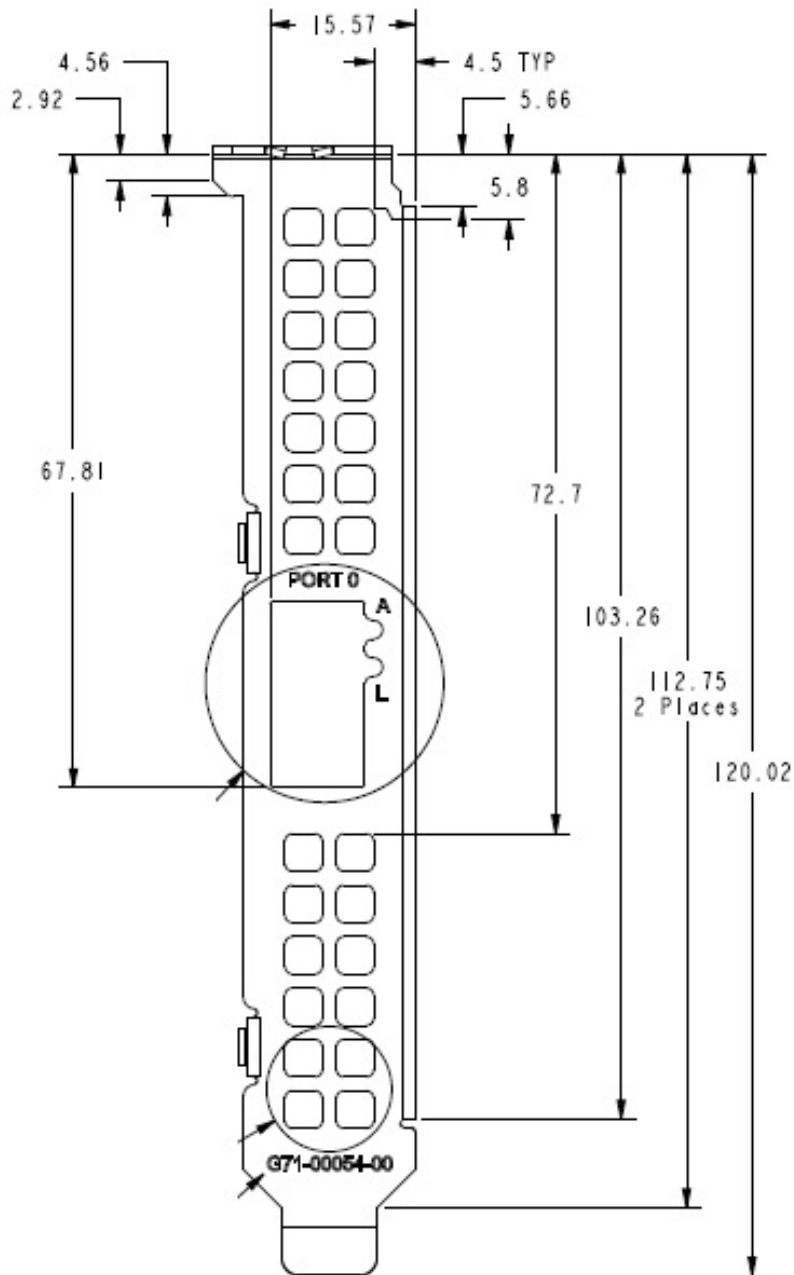
**Figure 4:  Board Physical Dimensions**

## 4.2 Bracket Outlines and Dimensions

The BCM957508-P1200G supports both standard and low-profile brackets.

### 4.2.1 Standard-Profile Bracket Outline and Dimensions

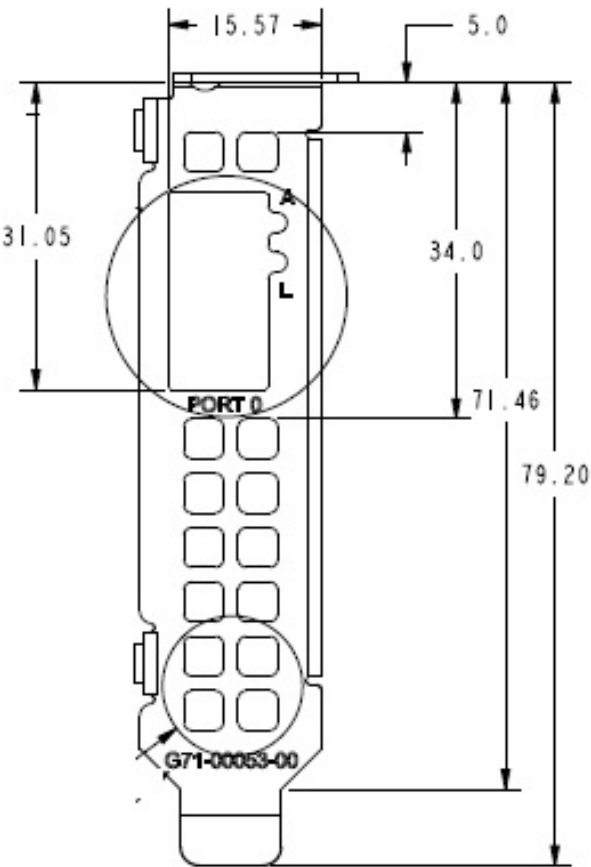The standard-profile bracket outline and physical dimensions (in inches) are shown in Figure 5.

**Figure 5: Standard-Profile Bracket Outline and Dimensions**

## 4.2.2 Low-Profile Bracket Outline and Dimensions

The low-profile bracket outline and physical dimensions (in inches) are shown in Figure 6.

**Figure 6: Low-Profile Bracket Outline and Dimensions**

# 5 Regulatory and Safety Approvals

The following sections detail the Regulatory, Safety, Electromagnetic Compatibility (EMC), and Electrostatic Discharge (ESD) standard compliance for the BCM957508-P1200G Network Interface Card.

## 5.1 Regulatory

**Table 6: Regulatory Approvals**

| Item | Applicable Standard | Approval (A)/Certificate (C) |
|------|--------------------|-----------------------------|
| CE/European Union | EN 62368-1:2014/AC:2015 | CB report and certificate |
| UL/USA | IEC IEC 62368-1:2018 | CB report and certificate |

## 5.2 Safety

**Table 7: Safety Approvals**

| Country | Certification Type/Standard | Compliance |
|---------|----------------------------|------------|
| International | CB Scheme<br>ICES 003 – Digital Device<br>UL 1977 (connector safety)<br>UL 796 (PCB wiring safety)<br>UL 94 (flammability of parts) | Yes |

## 5.3 Electromagnetic Compatibility (EMC)

**Table 8: Electromagnetic Compatibility**

| Standard/Country | Certification Type | Compliance |
|------------------|-------------------|------------|
| CE/EU | EN 55032:2015/A11:2020 Class A<br>EN 55035:2017/A11:2020<br>EN 61000-3-2:2014<br>EN 61000-3-3:2013 | CE report and CE DoC |
| FCC/USA | CFR47 Part 15 Subpart B Class A | FCC/IC DoC and EMC report referencing FCC and IC standards |
| IC/Canada | ICES-003 Class A | FCC/IC DoC and report referencing FCC and IC standards |
| ACA/Australia, New Zealand | AS/NZS CISPR 32:2015+AMD1:2020 | ACA certificate |
| BSM/Taiwan | CNS 15936:2016 Class A | BSMI certificate |
| BSMI/Taiwan | CNS 15663 | BSMI certificate/RoHS table |
| MSIP/S. Korea | KN32 Class A<br>KN35 | Korea certificate<br>MSIP mark |
| VCCI/Japan | VCCI-CISPR 32:2016 | Copy of VCCI online certificate |

## 5.4 Electrostatic Discharge (ESD) Compliance

**Table 9: ESD Compliance Summary**

| Standard | Certification Type | Compliance |
|---|---|---|
| EN 55024:2010 (EN 61000-4-2) | Air/Direct discharge | Yes |

## 5.5 FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

### 5.5.1 Information to User

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**NOTE:** Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

# 6 Ordering Information

**Table 10: Ordering Information**

| Part Number | Description |
|---|---|
| BCM957508-P1200G | Single-Port 200 Gb/s QSFP56 Ethernet PCI Express 4.0 x16 Network Interface, Halogen Free |

# Revision History

## 957508-P1200G-DS102; December 23, 2025

**Updated:**

- Figure 1, BCM957508-P1200G Network Interface Card – Updated photo.
- Figure 3, Activity and Link LED Locations – Updated photo.

## 957508-P1200G-DS101; August 28, 2023

**Updated:**

- Added QSFP + to the General Description.
- QSFP56 Connector – Updated section.

## 957508-P1200G-DS100; October 24, 2022

Initial release.

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