

Overview

HPE Synergy 12Gb SAS Connection Module

The HPE Synergy 12Gb SAS Connection Module connects Synergy Compute Modules to in-frame storage resources. In conjunction with the Synergy D3940 Storage Module, the Synergy SAS Connection Module connects composable direct attached storage for up to 10 compute modules in a single frame.

HPE Synergy is a single infrastructure of physical and virtual pools of compute, storage, and fabric resources, and a single management interface that allows IT to instantly assemble and re-assemble resources in any configuration. As the foundation for the New Style of Business infrastructure, HPE Synergy eliminates hardware and operational complexity so IT can precisely deliver infrastructure to applications faster and with greater flexibility.

The HPE Synergy 12Gb SAS Connection Module dynamically creates virtual JBODs for any compute module in the HPE Synergy 12000 Frame, remaps connections, or changes personality, all done with stored profiles. The Connection Module provides in-frame connectivity between Synergy compute modules and up to up to five storage modules. Two Connection Modules can be added to each HPE Synergy 1200 Frame providing redundant paths to the storage modules.

Each 12Gb SAS module provides twelve internal SAS ports each consisting of four 12GB/s SAS channels, ensuring a non-blocking fabric even when connected storage modules are fully populated with solid-state disks (SSDs).



1. UID LED
 - Off-Normal
 - Solid blue-Being identified
 - Blinking blue-Firmware is being updated
2. Module Status LED
 - Off-Not powered up
 - Green-Healthy
 - Blinking amber-Error, there is a problem with the module
3. Handle release
4. Module extraction handle

Overview

At A Glance

- Hot Pluggable 12Gb/s SAS Connection Module for HPE Synergy 12000 Frame
 - Dual Domain direct attached SAS architecture supported with Synergy D3940 Storage Modules containing two (2) I/O adapters
 - Twelve internal blade bay ports each containing 4x 12Gb/s SAS links
 - Managed with HPE Synergy Composer and OneView version 3.0 or later
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Models		
HPE Synergy 12Gb SAS Connection Module Configuration		
Models	HPE Synergy 12Gb SAS Connection Module with 12 Internal Ports	755985-B21

- Notes:** Configuration Rules
1. The HPE Synergy 12Gb SAS Connection Module supports connections between Synergy Compute Modules and the HPE Synergy D3940 Storage Module in the same HPE Synergy 12000 Frame.
 2. Synergy 12Gb SAS Connection Modules are only supported in HPE Synergy 12000 Frame interconnect module bays (ICM bays) 1 and 4.
 3. Two (2) HPE Synergy 12Gb SAS Connection Modules are required in the same HPE Synergy 12000 Frame for redundancy. Single SAS connection module configurations are supported as non-redundant.
 4. If implementing a non-redundant configuration, a SAS connection module placed in ICM bay 1 will connect to storage modules placed in module bays 1, 3 and 5. A SAS connection module placed in ICM bay 4 will connect to storage modules placed in module bays 7, 9 and 11.
 5. A maximum of two (2) HPE Synergy 12Gb SAS Connection Modules are supported per HPE Synergy 12000 Frame, supporting up to five (5) HPE Synergy D3940 SAS Storage Modules per Frame.
 6. When configuring a frame with dual SAS connection modules, dual I/O adapters are required in each HPE Synergy D3940 Storage Module.
 7. Any configurations with either dual I/O adapters in a single storage module or greater than three (3) HPE Synergy D3940 Storage Modules in a single frame must include dual 12Gb SAS Connection modules.
 8. The threshold for requiring a second 12 Gb SAS Connection Module drops to two storage modules in configurations with three or more full height compute modules in the same frame.

Related Options

Notes: Each compute module which is to access the D3940 Storage Module must include a Smart Array P542D controller populated in mezzanine slot 1.

Configure-to-order

HPE Synergy D3940 12Gb SAS CTO Drive Enclosure with 40 SFF (2.5in) Drive Bays	835386-B21
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Build-to-order

**Storage
Module
Options**

HPE Synergy D3940 Redundant I/O Adapter	757323-B21
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Notes: A single I/O adapter is included with each Synergy D3940 Storage Module.
This option is for a second I/O aapter for redundancy. Storage Modules with the second I/O adapter installed require that the Synergy Frame be configured with dual 12 Gb SAS Connection Modules.

**HPE Synergy
Services**

Notes: See [HPE Support Services Central](https://ssc.hpe.com/portal/site/ssc/) for additional services at <https://ssc.hpe.com/portal/site/ssc/>

HPE Synergy Tech Care Services

Deployment/Installation & Start-up Services

HPE Factory Express Synergy Initial Frame Package 4 Service	HA454A1-300
HPE Factory Express Synergy Add-on Frame Package 4 Service	HA454A1-301
HPE Synergy First Frame Startup Service	U8JM3E
HPE Synergy Additional Frame Startup Service	U8JM4E

Service and Support

HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.

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- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

<https://www.hpe.com/services/completecare>

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HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.

<https://www.hpe.com/services/techcare>

Service and Support

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HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

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- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to:

<https://www.hpe.com/services/lifecycle>

For a list of the most frequently purchased services using service credits, see the [HPE Service Credits Menu](#)

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<https://www.hpe.com/services/training>

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

Parts and Materials

HPE will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

How to Purchase Services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at <https://ssc.hpe.com/portal/site/ssc/>

Service and Support

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<https://support.hpe.com/hpesc/public/home/signin>

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- Scale quickly, meet unpredictable demand
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For more information

<http://www.hpe.com/services>

Technical Specifications

General Specifications	Data path	12Gb/s SAS x 12 internal ports connecting Synergy compute and storage resources	
	Dimensions	11.05" x 1.08" x 16.92"	
	Weight	5.9 lbs	
Power and Environmental Specifications	Temperature	Operating	10° to 35°C (50° to 95°F)
		Non-operating	-30° to 60°C (-22° to 140°F)
	Relative Humidity	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing
	Power Requirements	22 Watts (Minimum)	
		32 Watts (Maximum)	
Notes: Operating temperature has an altitude derating of 1.8° F (1° C) per 1,000 ft (304.8 m). No direct sunlight. Upper operating limit is 10,000 ft (3,048 m) or 70Kpa/10.1 psia. Upper non-operating limit is 30,000 ft (9,144 m) or 30.3 KPa/4.4 psia. Storage maximum humidity of 95% is based on a maximum temperature of 113° F (45° C). Altitude maximum for storage is 70 KPa.			
Notes: For detailed environmental and other installation requirements, please see the "HPE Site Planning Guide" at http://www.hpe.com/support			



Summary of Changes

Date	Version History	Action	Description of Change
08-Jan-2024	Version 6	Changed	Service and Support section was updated
15-Nov-2021	From Version 5	Changed	Service and Support Pointnext Tech Care and Complete Care information updated
18-Nov-2016	From Version 3 to 4	Changed	Service and Support section was updated.
05-Aug-2016	From Version 2 to 3	Changed	Overview, Models, Related Options, and Technical Specifications sections were updated. URL 's updated to hpe.com.
31-March-2016	From Version 1 to 2	Changed	Overview andTechnical Specifications sections were updated.
		Added	SKUs added in Overview section: 759557-B21, 835386-B21, 755984-B21, 757323-B21., H0XZ4E, H0XZ6E, H0XZ7E, H0XZ9E, HA454A1-300, HA454A1-301 , U8JM3E, U8JM4E.
1-Dec-2015	Version 1	Created	New QuickSpecs

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