Overview

HPE Smart Array SR Gen10 Controllers
for HPE ProLiant DL, ML and Apollo Servers

The HPE Smart Array SR Gen10 Controllers for the ProLiant DL and ML Gen10 Servers and Apollo Gen10 Servers, supporting 12Gb/s SAS and PCIe 3.0, are ideal for maximizing performance while supporting advanced RAID levels with up to 4 GB flash-backed write cache (FBWC). These controllers operate in Mixed Mode which combines RAID and HBA/JBOD operations simultaneously. The Smart Array SR Gen10 controller portfolio is able to support up to 24 internally attached drives on a single controller allowing connection to SAS or SATA drives without having to use the SAS Expander card. The Smart Array SR Gen10 Controllers also offer encryption for data-at-rest on any drive with HPE Smart Array SR Secure Encryption. The HPE Smart Array SR Gen10 controller portfolio provides enterprise-class storage performance, reliability, security and efficiency needed to address your evolving data storage needs.

HPE Smart Array P408i-a SR Gen10 Ctrlr (804331-B21 & 869081-B21)

HPE Smart Array P408i-p SR Gen10 Ctrlr (830824-B21)

HPE Smart Array P816i-a SR Gen10 Ctrlr (804338-B21 & 869083-B21)

HPE Smart Array E208i-a SR Gen10 Ctrlr (804326-B21 & 869079-B21)

HPE Smart Array E208i-p SR Gen10 Ctrlr (804394-B21)

HPE Smart Array E208e-p SR Gen10 Ctrlr (804398-B21)

HPE Smart Array P408e-p SR Gen10 Ctrlr (804405-B21)

Standard Features

Models

2	HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4GB Cache/SmartCache) 12G SAS Modular Controller	804338-B21
2	HPE Smart Array P816i-a SR Gen10 (16 Int Lanes/4GB Cache/SmartCache) 12G SAS Modular LH Controller	869083-B21
2	HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular Controller	804331-B21
2	HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular LH Controller	869081-B21
3	HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS PCIe Plug-in Controller	830824-B21
3	HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller	804405-B21
4	HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21
4	HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804394-B21
5	HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular LH Controller	869079-B21
5	HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular Controller	804326-B21

Notes: An HPE Smart Storage energy pack is required with Performance RAID controllers. See below for energy pack options.

Standard Features

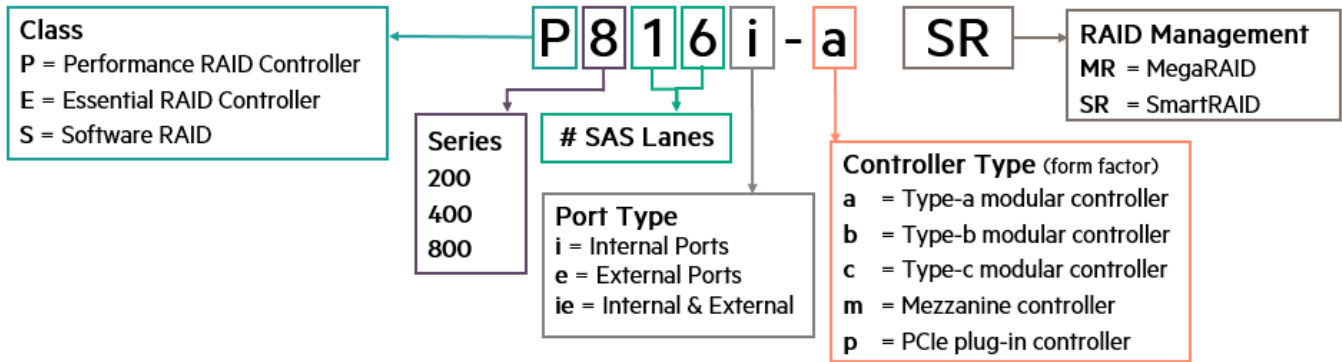| Compatibility						
Server Support Table						
SKU	804326-B21	869079-B21	804394-B21	804398-B21	804405-B21	804331-B21
Description	HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular Controller	HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular LH Controller	HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller	HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller	HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular Controller
HPE Apollo 2000-XL170r Gen10			✓	✓	✓	
HPE Apollo 2000-XL190r Gen10			✓	✓	✓	
HPE Apollo 4510-XL450 Gen10	✓		✓	✓	✓	✓
HPE Apollo 6000-XL230k Gen10			✓	✓		
HPE Apollo 6500-XL270D Gen10						✓
HPE DL325 Gen10		✓		✓	✓	
HPE ProLiant DL360 Gen10	✓	✓	✓	✓	✓	✓
HPE ProLiant DL380 Gen10	✓		✓	✓	✓	✓
HPE ProLiant DL385 Gen10	✓		✓	✓	✓	✓
HPE ProLiant DL560 Gen10		✓	✓	✓	✓	
HPE ProLiant DL580 Gen10			✓	✓	✓	
HPE ProLiant Microserver Gen10			✓			
HPE ProLiant ML110 Gen10			✓	✓	✓	
HPE ProLiant ML350 Gen10	✓		✓	✓	✓	✓

Standard Features

Server Support Table

Description	HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular LH Controller — **869081-B21**	HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS PCIe Plug-in Controller — **830824-B21**	HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4GB Cache/SmartCache) 12G SAS Modular Controller — **804338-B21**	HPE Smart Array P816i-a SR Gen10 (16 Int Lanes/4GB Cache/SmartCache) 12G SAS Modular LH Controller — **869083-B21**
HPE Apollo 2000-XL170r Gen10		✓		
HPE Apollo 2000-XL190r Gen10		✓		
HPE Apollo 4510-XL450 Gen10		✓		
HPE Apollo 6000-XL230k Gen10		✓		
HPE Apollo 6500-XL270D Gen10		✓	✓	
HPE ProLiant DL325 Gen10	✓			✓
HPE ProLiant DL360 Gen10	✓	✓	✓	✓
HPE ProLiant DL380 Gen10		✓	✓	
HPE ProLiant DL385 Gen10		✓	✓	
HPE ProLiant DL560 Gen10	✓	✓		✓
HPE ProLiant DL580 Gen10		✓		
HPE ProLiant Microserver Gen10				
HPE ProLiant ML110 Gen10		✓		
HPE ProLiant ML350 Gen10		✓	✓	

Naming Framework   The Gen10 controller naming framework is illustrated below to help simplify controller identification.

Standard Features

Class							RAID Management

Class
P = Performance RAID Controller
E = Essential RAID Controller
S = Software RAID

`P 8 1 6 i - a SR`

Series
200
400
800

 # SAS Lanes

Port Type
i = Internal Ports
e = External Ports
ie = Internal & External

Controller Type (form factor)
a = Type-a modular controller
b = Type-b modular controller
c = Type-c modular controller
m = Mezzanine controller
p = PCIe plug-in controller

RAID Management
MR = MegaRAID
SR = SmartRAID

Warranty
The warranty for this device is 3 years parts only.
Warranty Upgrade Options

- Response - Upgrade on-site response from next business day to same day 4 hours.
- Coverage - Extend hours of coverage from 9 hours x 5 days to 24 hours x 7 days.
- Duration - Select duration of coverage for a period of 1, 3, or 5 years.
- Warranty upgrade options can come in the form of HPE Pointnext operational, which are sold at the HPE System level to which this product attaches.

XXXXXX**-X21** is SKU designation formed by a common six digit part number and a **-X21** suffix that identifies a SKU that is available across multiple server family lines. Refer to the table below to find the SKU suffix that applies to the specific server product line this option can be ordered with.

-B21	**-H21**	**-K21**
COMPUTE Server Line	**SPECIALIZED COMPUTE Server Line**	**STORAGE Line**
HPE Cloudline CL2100/CL2200/CL2800/CL3100/CL4100/CL5200/CL5800 Servers	HPE Apollo 35/40/70 Systems	HPE Apollo 4200 Gen9/Gen10 Servers
HPE Composable Cloud for ProLiant DL	HPE Apollo 2000/6000 Servers	HPE Apollo 4200 Gen10 LFF Server for BlueData Software
HPE ProLiant BL460c/BL660c Servers	HPE XL170r/XL190r/XL270d (Apollo 6500) Gen10 Server for BlueData Software	HPE Apollo 4510 Gen10 System
HPE ProLiant DL20/DL160/DL180 Servers	HPE Converged System 300/500/700/750	HPE D2220sb/D2500sb Storage Blade
HPE ProLiant DL325/DL360/DL380/DL385/DL560/DL580 Servers	HPE Edgeline Systems and Servers	HPE D3000/D6020/D8000 Disk Enclosures
HPE ProLiant DX360/DX380 Servers	HPE Integrity BL860c i6/BL870c i6/BL890c i6 Server Blades	HPE Scalable Object Storage with Scality RING
HPE ProLiant MicroServer	HPE Integrity MC990 X Server	HPE SimpliVity 2600
HPE ProLiant for Microsoft Azure Stack	HPE Integrity rx2800 i6 Server	HPE SimpliVity 325/380 Gen10
HPE ProLiant ML30/ML110/ML350 Servers	HPE Integrity Superdome	HPE Storage File Controllers
HPE Synergy 480/660 Systems	HPE SGI 8600 System	HPE StoreEasy 1460/1560/1650/1660/1860
HPE ProLiant DX170r/DX190r, DX2000 Servers	HPE Solutions for SAP HANA (TDI)	
HPE ProLiant DX560 Gen10 server		Disclaimer: This may not be a complete listing of applicable servers
HPE ProLiant DX4200 Gen10 server		

Standard Features

Standard Features Table for Performance RAID Controllers

Product	P408i-a SR	P816i-a SR	P408i-p SR	P408e-p SR
SKU	804331-B21 & 869081-B21	804338-B21 & 869083-B21	830824-B21	804405-B21
Form factor: Type-a modular controller	✓	✓		
Form factor: Standard PCIe plug-in controller			✓	✓
Internal SAS lanes	8	16	8	
External SAS lanes				8
Ports/Connectors	2 (mini-SAS)	4 (mini-SAS)	2 (mini-SAS)	2 (mini-SAS HD)
Cache size (FBWC)	2 GB	4 GB	2 GB	4 GB
Read ahead caching	✓	✓	✓	✓
Write-back caching	✓	✓	✓	✓
Storage protocol: 12G SAS	✓	✓	✓	✓
Storage protocol: 6G SATA	✓	✓	✓	✓
I/O slot: PCI Express 3.0	x8 link	x8 link	x8 link	x8 link
Maximum physical drives (up to)	238	238	238	238
Maximum logical drives	64	64	64	64
RAID:0/1/5/6/10/50/60/ 1TP/10TP	✓	✓	✓	✓
Mixed Mode (RAID & HBA/JBOD)	✓	✓	✓	✓
Boot mode: UEFI	✓	✓	✓	✓
Boot mode: Legacy	✓	✓	✓	✓
SSD Accelerator	Smart Path	Smart Path	Smart Path	Smart Path
HPE Smart Array SR Secure Encryption (license)	Optional	Optional	Optional	Optional
SSD Caching	Optional (SmartCache)	Enabled (SmartCache)	Optional (SmartCache)	Optional (SmartCache)
FIPS 140-2 Level 1	✓	✓	✓	✓
HPE OneView Support	✓	✓	✓	✓
Kit contents	Controller, documentation information card, warranty statement, and battery required card.	Controller, documentation information card, warranty statement, and battery required card.	Controller, documentation information card, warranty statement, battery required card, controller backup power cable, and low-profile bracket.	Controller, documentation information card, warranty statement, battery required card, controller backup power cable, and low-profile bracket.

Standard Features

Standard Features Table for Essential RAID Controllers			
Product	E208i-a SR	E208i-p SR	E208e-p SR
SKU	804326-B21 869079-B21	804394-B21	804398-B21
Form factor: Type-a modular controller	✓		
Form factor: Standard plug-in controller		✓	✓
Internal lanes	8	8	
External lanes			8
Ports/Connectors	2 (mini-SAS)	2 (mini-SAS)	2 (mini-SAS HD)
Cache size (FBWC)			
Read ahead caching			
Write-back caching			
Storage protocol: 12G SAS	✓	✓	✓
Storage protocol: 6G SATA	✓	✓	✓
I/O slot: PCI Express 3.0	x8 link	x8 link	x8 link
Maximum physical drives (up to)	238	238	238
Maximum logical drives	64	64	64
RAID: 0/1/5/10	✓	✓	✓
Mixed mode (RAID & HBA)	✓	✓	✓
Boot mode: UEFI	✓	✓	✓
Boot mode: Legacy	✓	✓	✓
SSD Accelerator	Smart Path	Smart Path	Smart Path
HPE Smart Array SR Secure Encryption (license)	Optional	Optional	Optional
SSD Caching			
FIPS 140-2 Level 1			
HPE OneView Support	✓	✓	✓
Kit contents	controller, documentation information card, and warranty statement	Controller, documentation information card, warranty statement, and low-profile bracket	Controller, documentation information card, warranty statement, and low-profile bracket

Compatibility

Operating System Support

Microsoft Windows Server
Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)
VMware ESXi
Canonical Ubuntu*
CentOS*
ClearOS*
Notes: HPE Smart Array controllers are supported by the server operating system. Please also see the server operating system compatibility. For more information on HPE's server operating systems and virtualization software, please visit:
http://www.hpe.com/info/ossupport

Storage Management Software Suite

HPE Smart Array SR Gen10 Controllers
HPE Smart Storage Administrator (SSA) GUI
HPE Smart Storage Administrator (SSA) CLI
HPE Smart Storage Administrator (SSA) Scripting
HPE Intelligent Provisioning
UEFI System Utilities (storage configuration)
UEFI Storage RESTful

HPE Smart Array MR Gen10 Controllers
HPE MR Storage Administrator
HPE StorCLI
UEFI System Utilities (storage configuration)
Notes: For additional information see the HPE Smart Array SR Gen10 Configuration Guide at:
http://www.hpe.com/info/SmartArrayGen10-docs

Disk Enclosure Support

E208e-p SR Gen10 Controller (804398-B21)
HPE D3610 Disk Enclosure
HPE D3710 Disk Enclosure
HPE D6020 Disk Enclosure
HPE MSA 1040 SAN Storage
HPE MSA 1050 SAN Storage
HPE MSA 2040 SAN Storage
HPE MSA 2050 SAN Storage

P408e-p SR Gen10 Controller (804405-B21)
HPE D3610 Disk Enclosure
HPE D3710 Disk Enclosure
HPE D6020 Disk Enclosure

Compatibility

Additional Information
HPE Smart Array SR Gen10 Controllers

For additional information on the features for HPE Smart Array SR Gen10 Controllers, please see the HPE Smart Array SR Gen10 User Guide, HPE Smart Array SR Gen10 Configuration Guide, and HPE Smart Array SR Secure Encryption Installation and User Guide at: **http://www.hpe.com/info/SmartArrayGen10-docs**

Service and Support

HPE Pointnext - Service and Support

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms

HPE GreenLake brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world.
- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

Managed services to run your IT operations

HPE GreenLake Management Services provides services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

Recommended Services

HPE Pointnext Tech Care.

HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care 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 Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care 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

HPE Pointnext Complete Care

HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care provides:
- A complete coverage approach -- edge to cloud
- An assigned HPE team
- 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

HPE Education Services

Service and Support

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. **http://www.hpe.com/ww/learn**

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.

Learn more **http://www.hpe.com/support/hpesc**

HPE's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.

*HPE Support Center Mobile App is subject to local availability

Service and Support

Parts and Materials

Hewlett Packard Enterprise 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 QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Related Services

HPE Server Hardware Installation

Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf

HPE Installation and Startup Service

provides for the installation and startup of HPE technology including BladeSystems, C-Class enclosure, HPE ProLiant c-Class and Integrity server blades, storage blades, SAN switch blades, HPE Virtual Connect modules (Ethernet and Fibre Channel), Ethernet network interconnects, and InfiniBand, as well as the installation of one supported operating system type (Windows® or Linux).

Notes: The Smart Array controller is covered under the HPE Service Contract applied to the HPE ProLiant Server. No separate HPE support services need to be purchased.

- Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS batteries over 12KVA. See the specific high value options that require additional support **HERE**

Additional Service Information	**http://www.hpe.com/services**

Related Options

HPE Smart Array SR SmartCache

HPE Smart Array SR SmartCache (Single Key/Single Server) LTU   D7S26A

Single-Server License
Used to purchase a license for one server.
Contains one license per server, a printed license entitlement certificate, end user license agreement, and license key installation card **delivered via physical shipment**. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HPE Software Technical Support Services.

HPE Smart Array SR SmartCache (Single Key/Multiple Servers) LTU   D7S27A

Flexible-Quantity License
Used to purchase multiple licenses with a single activation key.
Contains license(s) for a customer defined quantity of servers, a license entitlement certificate for the quantity of licenses purchased, end user license agreement, and license key installation card **delivered via physical shipment**. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HPE Software Technical Support Services.

HPE Smart Array SR SmartCache (Single Key/Multiple Servers) E-LTU   D7S27AAE

Flexible-Quantity Electronic License
Used to purchase multiple licenses with a single activation key.
Contains license(s) for a customer defined quantity of servers, a license entitlement certificate for the quantity of licenses purchased, end user license agreement, and license key installation information **delivered via e-mail**. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HPE Software Technical Support Services.

Notes: For more information please visit: **http://www.hpe.com/servers/smartcache**

HPE Smart Array SR Secure Encryption

HPE Smart Array SR Secure Encryption (Data at Rest Encryption/per Server Entitlement) E-LTU   Q2F26AAE

Notes: HPE Smart Array SR Secure Encryption licensing is based on the number of servers requiring encryption for direct attached storage.

   Notes: For more information visit: **http://www.hpe.com/servers/secureencryption** or see the HPE Smart Array SR Secure Encryption Installation and User Guide at: **http://www.hpe.com/info/SmartArrayGen10-docs**.

HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit   P01366-B21
HPE 96W Smart Storage Lithium-ion Battery with 260mm Cable Kit   P01367-B21

Notes: Smart Array Gen10 controllers are supported by the HPE Smart Storage Battery. This battery supports multiple devices and is sold separately.
Notes: See server QuickSpecs for compatibility.

Related Options

HPE Smart Storage Hybrid Capacitor

HPE Smart Storage Hybrid Capacitor with 145mm Cable Kit   P02377-B21

HPE Smart Storage Hybrid Capacitor with 260mm Cable Kit   P02381-B21

Notes: The HPE Smart Storage Hybrid Capacitor is only supported on Gen10 servers or later.
Before installing the HPE Smart Storage Hybrid Capacitor, verify that the system BIOS meets the minimum firmware requirements to support the hybrid capacitor module.

Summary of Changes

Date	Version History	Action	Description of Change
15-Nov-2021	Version 6	Changed	Service and Support Section was updated
07-Oct-2019	Version 5	Changed	Standard Features Section was updated
15-Jul-2019	Version 4	Added	Standard Features section was updated
02-Apr-2019	Version 3	Changed	Related Options & Compatibility Sections were updated
01-Oct-2018	Version 2	Changed	Overview were revised.
04-Sep-2018	Version 1	New	New QuickSpecs

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