BROADCOM

Selection Guide

PCI Express® Switches for Data Center and Cloud Platforms

Worldwide Leader in PCIe® Switching Technology

The new PEX89000 PCIe Gen 5.0 series of switches, built with Broadcom's industry-leading 32GT/s PCIe SerDes, delivers a drastic improvement in power-per-Gigabyte of data transfer over previous generations, and consumes less than half the power of Gen 5.0 switch alternatives. For the same bandwidth, this 9th generation Broadcom PCIe Gen 5.0 switch architecture requires less than half the power of prior generations of Broadcom PCIe Gen 4.0 switches.

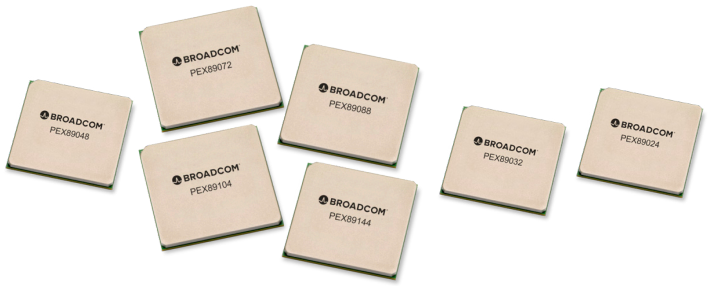
Broadcom PCIe switches substantially reduce the inherent latency and power usage caused by components required to convert host PCIe data for other protocols. Broadcom offers a Software Development Kit (SDK) that has a large array of functions that enable designers to bring-out and debug their products quickly and also help implement solutions that relieve host CPU in traffic and I/O management. Broadcom PCIe switches are ideal for Hyperscale Compute, AI/ML, Servers, Storage and I/O systems for a variety of applications in Cloud and Data Centers, Communication and Control systems, Medical/Imaging, FLASH Arrays and Security Appliances.

PEX89000 Series featuring PCIe Gen 5.0 ExpressFabric Technology

PCIe Gen5 r1.0 Family

PCI EXPRESS

Part Number	Description	Lanes	Ports	Latency (ns)	Serial HPC	NT Ports	SSC Clks	Shared I/O	DPC/Read Tracking	Embedded CPU	SRIS, SRNS, CIKS	MSI-X	Power Typ. (W)	Pkg. (mm)	Life Cycle
SS26-0B00-00	PEX89144 Switch	144	72	115	✓	8	✓	✓	✓	Dual Core ARM A15	✓	✓	49	47.5x47.5	Active
SS24-0B00-00	PEX89104 Switch	104	52	115	✓	8	✓	✓	✓	Dual Core ARM A15	✓	✓	38	42.5x42.5	Active
SS23-0B00-00	PEX89088 Switch	88	44	115	✓	8	✓	✓	✓	Dual Core ARM A15	✓	✓	33	42.5x42.5	Active
SS22-0B00-00	PEX89072 Switch	72	36	115	✓	8	✓	✓	✓	Dual Core ARM A15	✓	✓	29	37.5x37.5	Active
SS29-0A00-00	PEX89048 Switch	48	48	115	✓	4	✓	✓	✓	Dual Core ARM A15	✓	✓	23.7	29x29	Active
SS28-0A00-00	PEX89032 Switch	32	32	115	✓	4	✓	✓	✓	Dual Core ARM A15	✓	✓	17.2	29x29	Active
SS27-0A00-00	PEX89024 Switch	24	24	115	✓	4	✓	✓	✓	Dual Core ARM A15	✓	✓	14	29x29	Active



PEX88000 Series featuring PCIe Gen 4.0 ExpressFabric Technology

PCIe Gen4 r1.0 Family

Part Number	Description	Lanes	Ports	Latency (ns)	Serial HPC	NT Ports	SSC Clks	DMA	Shared I/O	DPC/Read Tracking	Embedded CPU	SRIS, SRNS, CIKS	MSI-X	Power Typ. (W)	Pkg. (mm)	Life Cycle
SS02-0B00-00	PEX88096 Switch	98	98	105	all ports	48	4	48	✓	✓	✓	✓	✓	35.78	37.5 x 42.5	Active
SS03-0B00-00	PEX88080 Switch	82	82	105	all ports	40	4	40	✓	✓	✓	✓	✓	30.98	37.5 x 42.5	Active
SS04-0B00-00	PEX88064 Switch	66	66	105	all ports	32	4	32	✓	✓	✓	✓	✓	26.12	37.5 x 42.5	Active
SS05-0B00-00	PEX88048 Switch	50	50	105	all ports	24	4	24	✓	✓	✓	✓	✓	18.81	27 x 24	Active
SS06-0B00-00	PEX88032 Switch	34	34	105	all ports	16	4	16	✓	✓	✓	✓	✓	13.18	27 x 24	Active
SS07-0B00-00	PEX88024 Switch	26	26	110	all ports	12	4	12	✓	✓	✓	✓	✓	11.44	27 x 24	Active
SS08-0B00-00	PEX88T32 Retimer	32	2	105	No	N/A	1	N/A	N/A	✓	N/A	✓	N/A	13.65	27x24	Active

PEX9700 Series featuring ExpressFabric Technology

PCIe Gen3 Device Family / PCI-SIG® Base Spec. r3.0

Part Number	Description	Lanes	Ports	Latency (ns)	HPC	TWC Ports	SSC	Dedicated x1 mCPU Port	Shared I/O	DPC/DPC	Read Tracking	SRIS	MSI-X	Power Typ. (W)	Pkg. (mm)	Life Cycle
SS14-0B00-00	PEX9797 Switch	97	25	150	6	24	24	✓	✓	✓	✓	✓	✓	23.9	35x35	Active
SS15-0B00-00	PEX9781 Switch	81	21	150	5	20	20	✓	✓	✓	✓	✓	✓	21.5	35x35	Active
SS16-0B00-00	PEX9765 Switch	65	17	150	4	16	16	✓	✓	✓	✓	✓	✓	15.9	35x35	Active
SS17-0B00-00	PEX9749 Switch	49	13	150	4	12	12	✓	✓	✓	✓	✓	✓	13.5	27x27	Active
SS18-0B00-00	PEX9733 Switch	33	9	150	2	8	8	✓	✓	✓	✓	✓	✓	7.9	27x27	Active
SS19-0B00-00	PEX9716 Switch	16	5	154	1	4	4	_	✓	✓	✓	✓	✓	4.0	19x19	Active
SS20-0B00-00	PEX9712 Switch	12	5	158	1	4	4	_	✓	✓	✓	✓	✓	3.5	19x19	Active

* Acronym Guide: DMA = Direct Memory Access; HPC = Hot-Plug Controllers; TWC = Tunneled Window Connection (Multi-Host Communication); SSC = Spread Spectrum Clock Isolation; MSI-X = Message Signaled Interrupts; SRIS = Separate Refclk Independent SSC Architecture; DPC = Downstream Port Containment; eDPC = Enhanced DPC; Temperature range = 0 to +70 (°C)

ExpressLane™ Switches (PCIe Gen3)

Part Number	Lanes	Ports	Latency (ns)	Multi-Root/ Multi-Host	Multicast or Dual-cast	ACS/ ARI*	NT*	DMA*	HPC*	VCs*	SSC*	Power Typ. (W)	Temp. (C°)	Package Size (mm²)	Life Cycle
PEX8796	96	24	150	4	MC	Yes	2	—	6	1	24	18.6	-40 +85	35x35	Active
PEX8780	80	20	150	4	MC	Yes	2	—	5	1	20	16.6	-40 +85	35x35	Active
PEX8764	64	16	150	4	MC	Yes	2	—	4	1	16	12.4	-40 +85	35x35	Active
PEX8750	48	12	150	3	MC	Yes	2	—	4	1	12	10.3	-40 +85	27x27	Active
PEX8749	48	18	150	6	MC	Yes	2	4	3	2	12	7.3	0 +70	27x27	Active
PEX8748	48	12	150	6	MC	Yes	1	—	3	1	—	7.3	0 +70	27x27	Active
PEX8747	48	5	150	—	MC	Yes	—	—	—	1	—	7.3	0 +70	19x21	Active
PEX8734	32	8	150	2	MC	Yes	2	—	2	1	8	6.2	-40 +85	27x27	Active
PEX8733	32	18	150	4	MC	Yes	2	4	3	2	8	6.4	0 +70	27x27	Active
PEX8732	32	8	150	4	MC	Yes	1	—	3	1	—	5.8	0 +70	27x27	Active
PEX8725	24	10	156	4	MC	Yes	2	4	3	2	6	5.4	0 +70	19x19	Active
PEX8724	24	6	156	4	MC	Yes	1	—	3	1	—	5.4	0 +70	19x19	Active
PEX8718	16	5	162	1	MC	Yes	1	—	1	1	4	2.9	-40 +85	19x19	Active
PEX8717	16	10	162	2	MC	Yes	2	4	3	2	4	4.9	0 +70	19x19	Active
PEX8716	16	4	162	2	MC	Yes	1	—	3	1	—	4.3	0 +70	19x19	New designs use 8718
PEX8714	12	5	162	1	MC	Yes	1	—	1	1	4	2.7	-40 +85	19x19	Active
PEX8713	12	10	162	2	MC	Yes	2	4	3	2	3	4.7	0 +70	19x19	Active
PEX8712	12	3	162	2	MC	Yes	1	—	3	1	—	4.1	0 +70	19x19	New designs use 8714

* Acronym Guide: ACS = Access Control Service; ARI = Alternative Routing-ID Interpretation; NT = Non-Transparency; DMA = Direct Memory Access channels; HPC = Hot-Plug Controllers; ^^ = Hot-Plug control via I²C; VCs = Virtual Channels; SSC = Spread Spectrum Clock Isolation. PCIe Gen3 devices are recommended for all new designs.

ExpressLane Switches (PCIe Gen2)

Part Number	Lanes	Ports	Latency (ns)	Multi-Root/ Multi-Host	Multicast or Dual-cast	Read Pacing	ACS/ ARI*	NT*	DMA*	HPC*	VCs*	SSC*	Power Typ. (W)	Temp. (C°)	Package Size (mm^2)	Life Cycle
PEX8696	96	24	176	8	MC	Yes	Yes	1	—	4	1	—	10.2	–5 +85	35x35	Active
PEX8680	80	20	176	6	MC	Yes	Yes	1	—	4	1	—	9.0	–5 +85	35x35	Active
PEX8664	64	16	176	5	MC	Yes	Yes	1	—	4	1	—	7.9	–5 +85	35x35	Active
PEX8649	48	12	176	4	MC	Yes	Yes	1	—	3	1	—	6.7	–5 +85	27x27	Active
PEX8648	48	12	140	—	DC	Yes	Yes	1	—	3	1	—	3.5	–40 +85	27x27	Active
PEX8636	36	24	200	8	MC	Yes	Yes	1	—	4	1	—	8.1	–5 +85	35x35	Active
PEX8632	32	12	145	—	DC	Yes	Yes	1	—	3	1	—	2.9	–40 +85	27x27	Active
PEX8624	24	6	145	—	DC	Yes	Yes	1	—	3	1	—	2.6	–40 +85	19x19	Active
PEX8619	16	16	140	—	DC	Yes	Yes	1	4	^^	2	1	2.0	–40 +85	19x19	Active
PEX8618	16	16	140	—	DC	Yes	Yes	1	—	^^	2	1	1.9	–10 +85	19x19	Active
PEX8617	16	4	140	—	DC	Yes	Yes	1	—	^^	2	1	1.9	–40 +85	19x19	Active
PEX8615	12	12	140	—	DC	Yes	Yes	1	4	^^	2	1	1.8	–40 +85	19x19	Active
PEX8614	12	12	140	—	DC	Yes	Yes	1	—	^^	2	1	1.7	–10 +85	19x19	Active
PEX8613	12	3	140	—	DC	Yes	Yes	1	—	^^	2	1	1.7	–40 +85	19x19	Active
PEX8609	8	8	140	—	DC	Yes	Yes	1	4	^^	2	1	1.6	–40 +85	15x15	Active
PEX8608	8	8	140	—	DC	Yes	Yes	1	—	^^	2	1	1.4	–10 +85	15x15	Active
PEX8606	6	6	190	—	DC	Yes	Yes	1	—	^^	2	1	1.3	–40 +85	15x15	Active
PEX8604	4	4	190	—	DC	Yes	Yes	1	—	^^	2	1	1.3	–40 +85	15x15	Active

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PCIe Bridges

ExpressLane PCIe to PCI and PCI-X Bridges / PCI-SIG® Base Spec. r1.0a

Part Number	Lanes	Bus Interface	Reverse Mode	Forward Mode	Power	PCI Masters	GPIO	Package Size (mm^2)	Life Cycle
PEX8114	4	PCIe to PCI-X	✓	✓	2W	4	—	17x17	Active

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BC00-0445EN July 13, 2023