



Barcelona uCPE

Intel® Xeon® D-2100 Processor Based Modular Universal CPE: Verified Intel® Select Solution for uCPE

Product Description

Silicom's Barcelona series uCPE based on the Intel® Xeon® D-2100 Processor represents a collaboration with Intel® to produce a fully verified Intel® Select Solution for uCPE.



The Barcelona series replaces traditional purpose-built CPE hardware with a virtualized modular approach, while pushing Network Function Virtualization (NFV) computing to the network edge. The ability to mix-and-match I/O and management options allows each Barcelona series uCPE installation to be customized to site-specific connectivity requirements, maximizing flexibility and reducing hardware cost.

Leveraging Silicom's proven line of high-performance PCIe server adapters with up to 100 Gbps Ethernet connectivity and flexible, customizable, high-bandwidth FPGA accelerator/offload solutions, the Barcelona series can address any combination of I/O connectivity requirements. With up to 16 Intel® Xeon® D processor cores, configurable amounts of memory, NVMe SSDs, and Intel® QuickAssist Technology (Intel® QAT) acceleration, the Barcelona series can easily handle the traffic flowing through high-performance I/O options.

Key Features

- Verified Intel® Select Solution for uCPE.
- Modular architecture consolidates multiple functions into a single box, reducing footprint, power, and complexity.
- Mix-and-match LAN, WAN, management, and compute modules allow uCPE features to be tailored to unique customer needs and site-specific connectivity requirements.
- Compliant with OCP uCPE 2.1 specifications.
- Silicom's micro-BMC (µBMC) options provide secure remote management, software/firmware update, and phone home zero touch provisioning.

Technical Specifications - Intel® ISS SKU Options

“Base” Configuration	“Base” Configuration	“Plus” Configuration	Notes
Processor SKU	Intel® Xeon® D-2123IT 4-core @ 2.2 GHz	Intel® Xeon® D-2177NT 14-core @ 1.9 GHz	
Intel® QuickAssist Technology (Intel® QAT)	–	High	
DDR4 Memory	32 GB	64 GB	
Storage	Intel® Solid State Drive Data Center 256 GB M.2 SATA (6 Gbps)	Intel® Solid State Drive Data Center S3110 512 GB M.2 SATA (6 Gbps)	
Management Slot	I/O passthrough	I/O passthrough	1
Network Module Slot 0	4x 1G RJ-45 (i350) 2x 10G SFP+	4x 1G RJ-45 (i350) 2x 10G SFP+	
Network Module Slot 1	4x 1G RJ-45 (i350) 2x 10G SFP+	4x 1G RJ-45 (i350) 2x 10G SFP+	
PCIe Standard Slot	–	–	
PCIe Low-Profile Slot	–	–	
Operating System	Ubuntu 16.04.3 (kernel 4.4.0-116-generic)	Ubuntu 16.04.3 (kernel 4.4.0-116-generic)	

Technical Specifications – Silicom Standard SKU Configuration Options

Feature	Midrange	Performance	Notes
Processor SKU	Intel® Xeon® D-2146NT 8-core @ 2.3 GHz	Intel® Xeon® D-2187NT 16-core @ 2.0 GHz	2
Intel® QuickAssist Technology (Intel® QAT)	Medium	High	
DDR4 Memory	32 GB	64 GB	2
Storage	128 GB M.2 NVMe (16 Gbps)	256 GB M.2 NVMe (16 Gbps)	2
Management Slot	I/O passthrough	I/O passthrough	1
Network Module Slot 0	4x 1G RJ-45 (i350) 2x 10G SFP+	4x 1G RJ-45 (i350) 2x 10G SFP+	2
Network Module Slot 1	4x 1G RJ-45 (i350) 2x 10G SFP+	4x 1G RJ-45 (i350) 2x 10G SFP+	2
PCIe Standard Slot	Configurable	Configurable	3
PCIe Low-Profile Slot	Configurable	Configurable	3
Operating System	Fedora Server x64 Linux	Fedora Server x64 Linux	2
Temperature	Operating: 0 to +40 C Storage: -40 to +65 C	Operating: 0 to +40 C Storage: -40 to +65 C	

Input Voltage	AC input PSU: 90 to 264 VAC DC input PSU: -36 to -72 VDC (-48 VDC nominal)	AC input PSU: 90 to 264 VAC DC input PSU: -36 to -72 VDC (-48 VDC nominal)	
Humidity	0 to 90% non-condensing	0 to 90% non-condensing	
Safety	UL/cUL/CB 60950-1 and 62368-1	UL/cUL/CB 60950-1 and 62368-1	
EMC	FCC 47CFR part 15: 2018, subpart B, Class B ICES-003: 2017 Issue 6, Class B VCCI-CISPR 32: 2016, Class B AS/NZS CISPR 32: 2015, Class B EN 55032: 2012 + AC(13), Class B EN 61000-3-2: 2014 EN 61000-3-3: 2013 EN 55024: 2010 + A1(15)	FCC 47CFR part 15: 2018, subpart B, Class B ICES-003: 2017 Issue 6, Class B VCCI-CISPR 32: 2016, Class B AS/NZS CISPR 32: 2015, Class B EN 55032: 2012 + AC(13), Class B EN 61000-3-2: 2014 EN 61000-3-3: 2013 EN 55024: 2010 + A1(15)	
Reliability	MTBF in hours: 144,429.1 (years: 16.5). FR (FIT): 6,923.8. Method: Telcordia Issue 4	MTBF in hours: 144,429.1 (years: 16.5). FR (FIT): 6,923.8. Method: Telcordia Issue 4	

Notes:

1. Silicom micro-BMC (µBMC) management module option coming soon (Q319).
2. Features (processor, memory, I/O, etc.) configurable and customizable at customer request. OEM-specific SKUs, preloaded OS/application images, and custom colors/branding available.
3. See Silicom's proven line of high-performance server adapter options on the Silicom [website product page](#).

Learn More

Intel® Select Solutions for uCPE general information

<https://builders.intel.com/intelselectsolutions>

Technical Order Information

P/N	Description	Notes
80500-0176-G00	Barcelona base development kit	• Intel® Xeon® D-2123IT • 4-core @ 2.2 GHz • No QAT • 32 GB memory • 256 GB SATA SSD (6 Gbps) • Mgmt slot: FPM-PT module (I/O passthrough) • NM slot 0: 4x 1G RJ-45, 2x 10G SFP+ • NM slot 1: 4x 1G RJ-45, 2x 10G SFP+ • PCIe slot: — • PCIe LP slot: — • Ubuntu Linux
80500-0176-G01	Barcelona plus development kit	• Intel® Xeon® D-2177NT • 14-core @ 1.9 GHz • QAT high • 64 GB memory • 512 GB SATA SSD (6 Gbps) • Mgmt slot: FPM-PT module (I/O passthrough) • NM slot 0: 4x 1G RJ-45, 2x 10G SFP+ • NM slot 1: 4x 1G RJ-45, 2x 10G SFP+ • PCIe slot: — • PCIe LP slot: — • Fedora Server Linux

Intel® Xeon® D-2100 Processor SKU Options

SKU	Cores	Speed (GHz)	TDP (W)	Memory Speed (MHz)	QAT
D-2123IT	4	2.2	60	2400	—
D-2142IT	8	1.9	65	2133	—
D-2143IT	8	2.2	65	2133	—
D-2163IT	12	2.1	75	2133	—
D-2173IT	14	1.7	70	2133	—
D-2183IT	16	2.2	100	2400	—
D-2145NT	8	1.9	65	2133	Low
D-2146NT	8	2.3	80	2133	Medium
D-2166NT	12	2.0	85	2133	Medium
D-2177NT	14	1.9	105	2667	High
D-2187NT	16	2.0	110	2667	High