

# Chelsio T7 and S7 based Product Selection Guide



## Single DPU/Smart-NIC chip with concurrent Multi-Protocol Offload Operation

Smart NICs								
Chelsio P/N	S7250	S7450	S7450-OCP	S72200	S72200-OCP	S7210-BT	S7410-BT-OCP	S71400
Ports	2x1/10/25/50G SFP56	4x1/10/25/50G SFP56		2x1/10/25/40/50/100/200G QSFP56		2x1/10GBase-T	4x1/10GBase-T	1x400G (or 4x1/10/25/50/100, or 2x200) QSFP56-DD
Type	SmartNIC							
Form Factor	Low Profile (HHHL)		OCP3-TSFF	Low Profile (HHHL)	OCP3-TSFF	Low Profile (HHHL)	OCP3-TSFF	Low Profile (HHHL)
Concurrent Conn.	2K							
PCI Express	Gen5x8	Gen5x16	Gen5x16	Gen5x16	Gen5x16	Gen5x16	Gen5x8	Gen5x16
Power (Typical)	11W	17W	17W	30W	30W	13W	20W	31W
Replaces	T6225-CR	T540-LP-CR	T6225-OCP3	T62100-LP-CR	T62100-SO-OCP3	T520-BT	-	-

Storage Adapters / DPU Cards							
Chelsio P/N	T72200	T72200-FH	T7450	T72200-DPU	T72200-FH-DPU	T7450-DPU	T71200-iNIC-SDK
Ports	2x1/10/25/40/50/100/200G (or 4x100) QSFP56		4x1/10/25/50G SFP56	2x1/10/25/40/50/100/200G (or 4x100) QSFP56		4x1/10/25/50G SFP56	1x40/100/200G or 1x200G QSFP56 + FPGA (300k user LUTs)
Type	Storage Adapters			DPU			
Form Factor	Low Profile (HHHL)	Half Size (FHHL)	Low Profile (HHHL)	Low Profile (HHHL)	Half Size (FHHL)	Low Profile (HHHL)	Half Size (FHHL)
Concurrent Conn.	64K	128K	2K	64K	128K	64K	-
On-Adapter Memory	8 GB	16 GB	8 GB	8 GB	16 GB	8 GB	8 GB
ARM Cores	-	8	-	8	8	8	-
PCI Express	Gen5x16	Gen5x16	Gen5x16	Gen5x16	Gen5x16	Gen5x16	Gen5x16
Power (Typical)	31W	39W	22W	38W	46W	25W	31W
Replaces	T62100-LP-CR	T62100-CR	T540-LP-CR	-	-	-	-
Other	-	-	-	-	8 GB eMMC	-	-

Specialty		
Chelsio P/N	T7-Server	
Ports	4x1/10/25/50G (or 1x200G) (QSFP56), Micro-ATX	<ul style="list-style-type: none"> <li>Fully RoHS Compliant</li> <li>Operating Temp: -40° C to 85° C or -40° F to 185° F</li> <li>Operating Humidity: 5 to 95%</li> <li>Airflow: 200 lf/m</li> </ul>
Form Factor	3U	<p><b>RC:</b> Root Complex  <b>EP:</b> End Point  <b>DPU:</b> T7ASIC + ARM + RC  <b>FH:</b> Full Height</p>
Concurrent Conn.	128K	
On-Adapter Memory	64 GB RDIMM	
ARM Cores	8	
Power (Typical)	56W - 123W	
Number of Slots	2 (PCIe Gen5 x8)	<p><b>Features</b></p> <p>Low Latency L2 NIC; TCP/IP Offload Engine (TOE); RDMA (iWARP and RoCEv2) Offload; iSCSI and iSER Offload; NVMe-oF (iWARP and RoCEv2) Offload; NVMe/TCP Offload; SPDK NVMe and iSCSI Targets Offload; QUIC and CMB Offload; NVMe Virtualization/Emulation; ARMv8 A72 cores (1.5 GHz); Dual-Channel 4800MT/s DDR5; PCIe 4.0 Switch with 2 x8 / 4 x4 / 8 x2 ports; Concurrent RC+EP (NVMe-NVMe Bridge); External FPGA in data/control path; Crypto Co-processor TLS/IPsec Offload; Crypto Inline TLS/IPsec for all Offloads; Erasure Code and RAID5/RAID6 offload; Compression and Decompression; Dedupe Offload; QUIC Co-processor/Inline mode; True Random Number Generator; Inband Telemetry; SM2, RSA, ECC, ECDH, ECDSA, DSA, and DH; Secure Boot and Firmware Update; Hardware Root of Trust support; SR-IOV / Virtualization / Virt-IO; EVB, VEPA, Flex10, VNTag; DPDK / PacketDirect / Netmap; OVS / OpenFlow Offload; NVGRE / VxLAN/ Geneve; Media StreamEngine; Traffic Management, DCB, PFC, CEE; Packet Classification and NAT Offload; Timestamps and PTP; Multi / Single adapter Failover; Windows SMB Direct, Storage Replica, Storage Spaces Direct, Client RDMA</p>
Other	4 x USB2, 512GB M.2, 8 GB eMMC, 10/100 RJ45 Mgmt	

# Chelsio ASIC, Software and Support Guide



## Data Processing Unit ASICs

T7 is a highly integrated, hyper-virtualized 1/10/25/40/50/100/200/400GbE Data Processing Unit (DPU) ASIC with full offload support of a complete Unified Wire solution.

### Ordering Information:

**T7ASIC:** All port configurations, All offloads, All features, 8 ARM Cores, 31mm FCBGA. Chips will ship only in multiples of MOQ.

**N7ASIC:** 4x1/10/25/50/100G or 2x40/100/200G or 1x400G, Base offloads, W host or Card memory, NVMe-PDU, 31mm FCBGA. Chips will ship only in multiples of MOQ.

**E7ASIC:** PCIe Gen3x16 only, 4x25 and 1x100GbE only, 4 ARM Cores, Base offloads only, 31mm FCBGA. Chips will ship only in multiples of MOQ.

**S74ASIC:** 4x1/10/25/50/100G or 2x40/100/200, Base offloads, Crypto, 2k Cached connections, Memory-free, 21mm FCBGA. Chips will ship only in multiples of MOQ.

**S72ASIC:** 2x1/10/25/40/50/100G, Base offloads (TOE, RDMA, iSCSI, FCoE), 2k Cached connections, Memory-free, 21mm FCBGA. Chips will ship only in multiples of MOQ.

## Accessories

### Passive Twinaxial Cables

TAPCABLE-3M (3M 10G SFP+)  
TAPCABLE28-3M (3M 25G SFP28)  
TAPCABLE56-3M (3M 50G SFP56)  
QTAPCABLE-3M (3M 40G QSFP+)  
QTAPCABLE28-2M (2M 100G QSFP28)  
QTAPCABLE56-3M (3M 200G QSFP56)  
QTAPCABLEDD-3M (3M 400G QSFP-DD)

OCTTAPCABLE-3M (3M 40G to 4x10G)  
OCTTAPCABLE56-3M (3M 200G to 4x50G)  
OCTTAPCABLEDD-3M (3M 400G to 4x100G)

### Optical Transceivers and Cables

SM1G-SR-BT (1000BASE-T RJ45 SFP+)  
SM10G-SR-BT (1/10GBASE-T RJ45 SFP+)  
SM10G-SR (10G Short Reach SFP+)  
SM10G-LR (10G Long Reach SFP+)  
SM25G-SR (25G Short Reach SFP28)  
SM25G-LR (25G Long Reach SFP28)  
SM40G-SR (40G Short Reach QSFP+)  
SM40G-LR (40G Long Reach QSFP+)  
SM50G-SR (50G Short Reach SFP56)  
SM50G-LR (50G Long Reach SFP56)

SM100G-SR (100G Short Reach QSFP28)  
SM100G-LR (100G Long Reach QSFP28)  
SM200G-SR (200G Short Reach QSFP56)  
SM200G-LR (200G Long Reach QSFP56)  
SM400G-SR (400G Short Reach QSFP-DD)

AOC-SFP56-CABLE-3M (3M 50G Active Optical Cable)  
AOC-QDD-200-CABLE-3M (3M 200G Active Optical Cable)  
AOC-QDD-400-CABLE-3M (3M 400G Active Optical Cable)

## Support

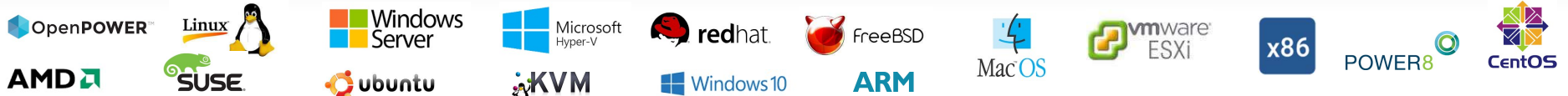
The standard warranty period for Chelsio hardware products is three years from date of purchase. To contact support, call Chelsio at 408-962-3600, submit a support request via [www.chelsio.com](http://www.chelsio.com) or email support at [support@chelsio.com](mailto:support@chelsio.com). Drivers for Chelsio adapters are available at [service.chelsio.com](http://service.chelsio.com).

### Support Plan:

**SUPPORT-GOLD:** 80 hours or 1-year extended technical support (whichever occurs first): 24-hr response/replacement.

**SUPPORT-SILVER:** 16 hours extended technical support: 72-hr response.

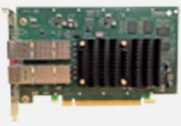







## Supported Platforms, Operating Systems and Hypervisors



# Chelsio Unified Wire T6 and T5 Product Selection Guide



## Single Adapter with concurrent Multi-Protocol Operation

T6 ASIC based Ethernet Adapters / USS 4.0					
					
Chelsio P/N	T62100-CR	T62100-LP-CR	T62100-SO-CR	T62100-SO-OCP3	
Ports	2x40/50/100G				
Connector Type	QSFP28				
Host Interface	PCIe Gen3 x16				
Form Factor	Half Size	Low Profile		OCP3-SFF	
Concurr. Conn.	32k		-		
Power (Typical)	22W	19W	16W	16W	
Airflow	200 LFM (Linear Feet Per minute)				
Adapter Type	Unified Wire		Server Offload		
T6/T5 ASIC based Ethernet Adapters					
					
Chelsio P/N	T6225-CR	T6225-SO-CR	T540-LP-CR	T520-CR	T520-SO-CR
Ports	2x10/25G		4x1/10G	2x1/10G	2x1/10G
Connector Type	SFP28		SFP+	SFP+ Cage	
Host Interface	PCIe Gen3 x8				
Form Factor	Low Profile				
Concurr. Conn.	32K	256	32K		
Power (Typical)	13W	10W	11W	12W	9W
Airflow	200 LFM (Linear Feet Per minute)				
Adapter Type	Unified Wire	CNA	Unified Wire		Server Offload
Adapter Types and Supported Functions:					
Server Offload	L2 NIC, Filtering, PXE Boot, Crypto Offload (Co-processor) <sup>1</sup>				
CNA	Server Offload Functions, iSCSI Init HW Offload, iSER Init HW Offload, NVMe-oF/iWARP Init HW Offload, NVMe/TCP Init HW Offload, FCoE Init, S2D iWARP HW Offload, iWARP RDMA Offload				
Unified Wire (UWire)	Server Offload & CNA functions, Storage Targets Offload, FCoE Init HW Offload, Media Streaming Offload, TCP & UDP Offloads, Traffic Management, Hash Filtering, Unified Boot, Crypto Offload <sup>1</sup>				

### Features

Windows Server 2016 / 2019 / 2022  
 Windows Storage Spaces Direct (S2D)  
 Windows Azure Stack Private Cloud  
 Windows Network Direct  
 Windows SMB Direct, Client RDMA  
 Windows Storage Replica (SR)  
 Windows d.VMMQ  
 Low Latency L2 NIC  
 TCP/IP Offload Engine (TOE)  
 iWARP RDMA Offload  
 Inline TLS/SSL, DTLS, IPsec Offload<sup>1,2</sup>  
 NGINX Offload<sup>1,2</sup>  
 Co-processor TLS/SSL, IPsec Offload<sup>1</sup>  
 NFS/iWARP & NFS/TCP Offload  
 iSCSI Offload (Initiator and Target)  
 iSER Offload (Initiator and Target)  
 FCoE HW Offload (Initiator)  
 NVMe-oF/iWARP (Initiator and Target)  
 NVMe/TCP Offload (Initiator and Target)  
 NVMe JBOF (Just a Bunch of Flash)  
 SPDK NVMe/TCP Offload Target  
 Wire Direct Low Latency Suite  
 SR-IOV / Virtualization  
 DPDK / PacketDirect / Netmap  
 OVS / OpenFlow Offload  
 NVGRE / VxLAN/ Geneve  
 Media StreamEngine<sup>2</sup>  
 Traffic Management / DCB  
 Packet Classification, Sniffer & Tracer  
 Multi / Single adapter Failover

<sup>1</sup> Supported only on T6 family of adapters

<sup>2</sup> Not supported by SO (Server Offload) adapters

**LP:** Low Profile **SO:** Server Offload

# Chelsio ASIC, Software and Support Guide



## Unified Storage Server (USS)

Unified Storage Server is a powerful software platform for building high-performance storage systems. Key features include support for SMB, NFSv3, SFTP, iSCSI Offload, NVMe/TCP Offload, and NVMe-oF over iWARP. It also supports Remote Mirroring, Backup, iSCSI Scaling, Nested RAID, Easy Management features, Bandwidth Management, Extensive Self-test, Stress test, and Remote Test capabilities. It is optimized for 10/25/40/50/100GbE clients with High throughput, High IOPs, and Low latency requirements. Unified Storage Server integrates with the USS storage stack, providing Dynamic Storage Provisioning with thin-provisioned volumes, snapshots, and volume cloning. Free 30-day USS trial available from [www.chelsio.com](http://www.chelsio.com).



### Ordering Information:

**USS-4.0:** SAN, NAS, iSCSI, NVMe-oF, Storage Management, Nested RAID. Max Capacity: Unlimited.

## Unified Wire & Server Offload Controller ASICs

T6 is a highly integrated, hyper-virtualized 1/10/25/40/50/100GbE controller ASIC with full offload support of a complete Unified Wire solution comprising L2 NIC, TOE, iWARP RDMA, iSCSI, FCoE, NVGRE, VxLAN, Filtering, Traffic Analytics, Management, OVS Offload, DCB, NVMe-oF, NVMe/TCP, NVMe/TOE and TLS/SSL, DTLS, IPsec, SMB 3.X crypto Offload.

### Ordering Information:

**T6ASIC2100:** T6 Unified Wire Engine, 2x1/10/25/40/50/100G ports, full featured.

**T5ASIC40G:** T5 Unified Wire Engine, 2x40G or 4x10G ports, full featured.

## Chelsio Terminator Core IP

Chelsio's Terminator Core IP is a configurable, high performance Ethernet packet processing engine with a full suite of software, suitable for a wide range of SoC network connectivity solutions. Contact [sales@chelsio.com](mailto:sales@chelsio.com) for more information.

## Accessories

### Twinaxial Cables

TAPCABLE3M (3M 10G Passive)  
TAPCABLE28-3M (3M 25G Passive)

QTAPCABLE3M (3M 40G QSFP+ Passive, 30 AWG)  
OCTTAPCABLE3M (3M QSFP+ to 4xSFP+ Passive)

QTAPCABLE28-2M (2M 100G QSFP28 Passive)

### Optical Cables

QSRCABLE10M (10M Short Reach for 40G and 100G)

### Optical Transceivers

SM10G-SR (10G Short Reach SFP+)  
SM10G-LR (10G Long Reach SFP+)  
SM25G-SR (25G Short Reach SFP28)  
SM25G-LR (25G Long Reach SFP28)  
SM40G-SR (40G Short Reach QSFP+)  
SM40G-LR (40G Long Reach QSFP+)  
SM100G-SR (100G Short Reach QSFP28)  
SM100G-LR (100G Long Reach QSFP28)

SM10G-SR-BT (1/10GBASE-T RJ45 SFP+)  
SM1G-SR-BT (1000BASE-T RJ45 SFP+)

## Support

The standard warranty period for Chelsio hardware products is three years from date of purchase. To contact support, call Chelsio at 408-962-3600, submit a support request via [www.chelsio.com](http://www.chelsio.com) or email support at [support@chelsio.com](mailto:support@chelsio.com). Drivers for Chelsio adapters are available at [service.chelsio.com](http://service.chelsio.com)

### Support Plan:

**SUPPORT-GOLD:** 40 hours extended technical support: 24-hr response/replacement.

**SUPPORT-SILVER:** 4 hours extended technical support: 24-hr response.

## Supported Platforms, Operating Systems and Hypervisors

