



### P425G8TS81 TimeSync Card STS3

#### 8 Ports 25/10 Gigabit Ethernet Grand Master TimeSync PCIe GEN4 Server Adapter

##### Product Description

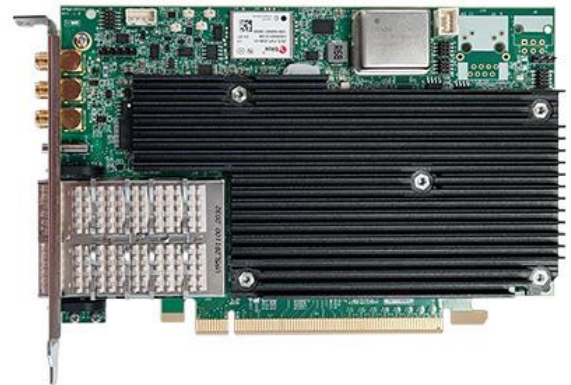
Silicom's P425G8TS81 TimeSync Card STS3 25/10 Gigabit Ethernet PCI Express Grand Master TimeSync server adapter adds TimeSync/GM ability to server /mobile DU systems.

The Silicom P425G8TS81 TimeSync Card STS3 NIC is based on Intel E810 NIC controllers and Microchip / servo PLL.

Silicom's STS3 Support 8 port of 25G/10G capabilities to synchronize host system with external clock source using 1PPS and 10MHz. The STS3 TimeSync server adapter support both 1588v2/PTP and SyncE for high clock accuracy in Master and Slave mode. STS3 design is meeting O-RAN requirements for LLS-C1, LLS-C2 and LLS-C3, modes of operations with both Boundary and Transparent clocks.

Silicom STS line card for 4G and 5G NIC enable real-time data transmission with high timing accuracy at the lowest cost to power 5G DRAN and CRAN edge deployments:

- Support 1588/PTP over IPv4 / IPV6, IEEE1588v2
- Support SyncE /ITU-T G.8262
- T-BC/T-TSC Boundary Clock and TSC Slave Clock /G.8273.2
- T-GM Grand Master /G.8273.1 per G.8275.1 PTP Profile
- PRTC Primary Reference Time Clock Class B/G.8272
- T-TC Transparent Clock /G.8273.3
- 1588 Software Stack and Servo Software in x86



##### Key Features

###### GM/TimeSync:

- Supports Grand Master clock per G.8275.1 Class-A PRTC/T-GM
- Supports Boundary Clock (BC) OC (Master / Slave)
- PTP over IPv4 / IPV6 (IEEE-1588v2) / SyncE
- One step and two step clock modes operation for PTP Master
- 10Mhz and 1PPS programmable output
- Full HW and SW GM/TimeSync solution based on industry leading DPPLL, Servo stack and PTP1588
- Incorporates accurate OCXO

- Incorporates Global Navigation Satellite System (GNSS) receiver
- Packet and physical-layer frequency, phase and Grand Master GM/TimeSynchronization
- Enable 5G/Class C wireless application

#### LAN and Virtualization Features:

- SR-IOV (Single Root I/O Virtualization): up to 256 Virtual Functions
- Partially Programmable Pipeline and Advanced Traffic Steering
- Intel® Ethernet Flow Director – 8000 On-Die perfect match filters
- 1536 queues/Physical Function (PF), >64 RSS/PF and 256 VMDq/PF

## Technical Information

General Technical Specifications: 8 Ports: Silicom Grand Master GM/TimeSync	
<b>Profile: IEEE-1588 (2008) ( Annex-J.3 Delay Request-Respond Default Profile:</b>	Ordinary Clock – Server Ordinary Clock- Client (including slave only OC) Boundary Clock
<b>Profile: IEEE-1588 (2008) ( Annex-J.4 Peer-to-Peer:</b>	Ordinary Clock – Server Ordinary Clock- Client (including slave only OC) Boundary Clock
<b>Profile: ITU-T G.8265.1 Telecom Profile for Frequency Synchronization:</b>	Telecom Grandmaster Telecom Slave
<b>Profile: ITU-T G.8275.1 PTP Telecom Profile for Phase with Full timing Support:</b>	Telecom Grandmaster (T-GM) Telecom Boundary Clock (T-BC) Telecom Time Slave Clock (T-TSC)
<b>Profile: ITU-T G.8275.2 PTP Telecom Profile for Phase with Partial timing Support:</b>	Telecom Grandmaster (T-GM) Assisted / Partial Telecom Boundary Clock (T-BC) Assisted / Partial Telecom Time Slave Clock (T-TSC)
<b>Device Types:</b>	Ordinary Clock Boundary Clock
<b>References Selection:</b>	Default BMCA (Best Master Clock Algorithm) Alternate BMCA based on ITU G.781 – Synchronization layer functions for frequency synchronization based on the physical layer
<b>Transport Mappings:</b>	PTP/UDP/IPv4 Annex D PTP/UDP/IPv6 Annex E PTP/Ethernet Annex F
<b>NIC TS (Time Stamp) granularity:</b>	1ns
General Technical Specifications: STS3/ 8 Ports: P425G8TS81-XR	
<b>Interface Standard:</b>	PCI-Express Base Specification Revision 4.0 (16 GTs)
<b>Board Size:</b>	Single slot Standard height add-in card: 167.64mm X 111,15 mm(6.6"X 4.376")

<b>PCI Express Card Type:</b>	x16 Lane, bifurcation
<b>USB Connector:</b>	uUSB
<b>Voltage:</b>	+12V +/-8%, +12VAUX
<b>PCI Connector:</b>	Gold Finger: x16 Lane
<b>Controllers:</b>	2xIntel E810-CAM1
<b>1588/ SyncE PHY:</b>	BCM81385 (8x25G)
<b>OCXO:</b>	OX-2281-EAE-5000-20M000, 2 ppb, A1
<b>DPLL:</b>	1588 / SyncE Microchip ZL30793, Si5315A-C-GM
<b>GNSS:</b>	U-blox, ZED-F9T
<b>Network ports</b>	2xQSFP28/ QSFP
<b>Management port</b>	RJ45
<b>Holder:</b>	Metal Bracket
<b>Power Consumption</b>	Max: calculated: 50[w]
<b>Operating Temperature:</b>	0°C – 45°C (32°F – 113°F)
<b>Storage:</b>	-40°C–65°C (-40°F–149°F)
<b>Regulation:</b>	CE, FCC Class B, ROHS requirements.
<b>LEDs:</b>	Ports 0-3: 4 LEDs Green Link/Act. Ports 4-7: 4 LEDs Green Link/Act.
<b>LEDs location:</b>	Ports 0-3: On Metal Bracket, left to QSFP28 Ports 4-7: On Metal Bracket right to QSFP28
<b>USB HUB</b>	USB2514 – USB hub for 4 downstream ports
<b>FTDI USB TO RS232</b>	USB HS to QUAD UART/MPSSE
<b>QSFP28 25Gigabit Ethernet Technical Specifications Adapters:</b>	
<b>QSFP28 (Small Form Factor Pluggable) supports:</b>	(x4) SFI interfaces supports 25GBase-R PCS and 25 Gigabit PMA in order to connect with QSFP to 25GBase-SR/ LR (MPO)
<b>25GBase-SR QSFP: IEEE Standard / Network topology:</b>	Fiber 25Gigabit Ethernet, 25GBASE-SR (850nm LAN PHY). 25.78125GBd MMF Multi-Mode fiber
<b>25GBase-LR QSFP: IEEE Standard / Network topology:</b>	Fiber 25Gigabit Ethernet, 25GBASE-LR (1310nm LAN PHY) 25.78125GBd (SMF) Single-Mode fiber : 10000m at 9um

QSFP+/ SFP+ 10Gigabit Ethernet Technical Specifications Adapter:	
<b>QSFP /SFP+ (Small Form Factor Pluggable) supports:</b>	SFI interfaces supports 10GBase-R PCS and 10 Gigabit PMA in order to connect with QSFP to 10GBase-SR/ LR (MPO)
<b>10GBase-SR : IEEE Standard / Network topology:</b>	Fiber 10Gigabit Ethernet, 10GBASE-SR (850nm LAN PHY). 10.3125GBd MMF Multi-Mode fiber
<b>10GBase-LR IEEE Standard / Network topology:</b>	Fiber 10Gigabit Ethernet, 10GBASE-LR (1310nm LAN PHY) 10G.3125GBd (SMF) Single-Mode fiber: 10000m at 9um

## Order Information

P/N	Description	Notes
<b>P425G8TS81-XR</b>	2x4 Port QSFP 25/10 Gigabit Ethernet GM/ TimeSync PCI Express Server Adapter	STS3 ,x16 Gen4, bifurcation 2x8 G4, FHHL single slot
<b>P425G8TS81-SR</b>	2x4 Port QSFP 25/10 Gigabit (SR) Ethernet GM/ TimeSync PCI Express Server Adapter	x16 Gen4, bifurcation 2x8 G4, FHHL single slot
<b>TS-MB-F5-200X5</b>	TimeSync SMA MB Kit, Full height,5xSMA,5x200mm cables	
<b>TS-MB-L5-200X5</b>	TimeSync SMA MB Kit, LP,5xSMA, 200mm cables	