



# QSAN XCubeNAS Series

Breaking Through the I/O bottleneck with  
Thunderbolt™ 3 Connectivity

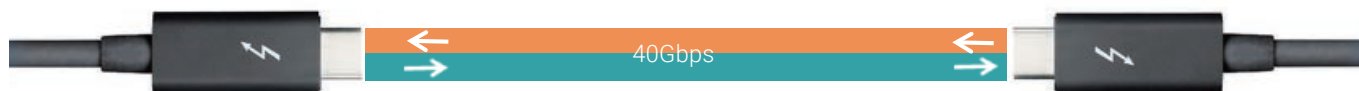


# The Next Generation Thunderbolt™ 3 Solution to QSAN XCubeNAS

QSAN is proud to be providing the latest Thunderbolt™ 3 adapter card (XN-TB302) as an option for our XCubeNAS series NAS. You can create lightning throughput and reliable connectivity between QSAN NAS storage systems and a work station, MacBook or iMac directly with the QSAN Thunderbolt™ 3 solution.

In addition to the lightning throughput, the Thunderbolt™ 3 ports can directly be attached to the QSAN XCubeNAS series NAS products for expanding client's data storage capacity or hook up as an external device for fast data backup to the QSAN NAS. Thunderbolt™ 3 is not only a reliable data transmission tunnel but also provides more than a 100% increase in bandwidth than the 2nd generation.

Theoretically the Thunderbolt™ 3 solution is up to eight times faster than USB 3.0. So a QSAN NAS with a Thunderbolt™ 3 adapter is an ideal solution for throughput demanding applications such as video editing and production, music production, digital photography editing, high speed external device data backup to NAS...etc.

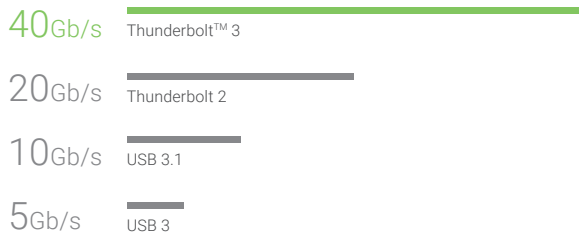


Thunderbolt™ 3

## XCubeNAS Thunderbolt™ 3 Applications



## High-Performance : Breaking The I/O Throughput

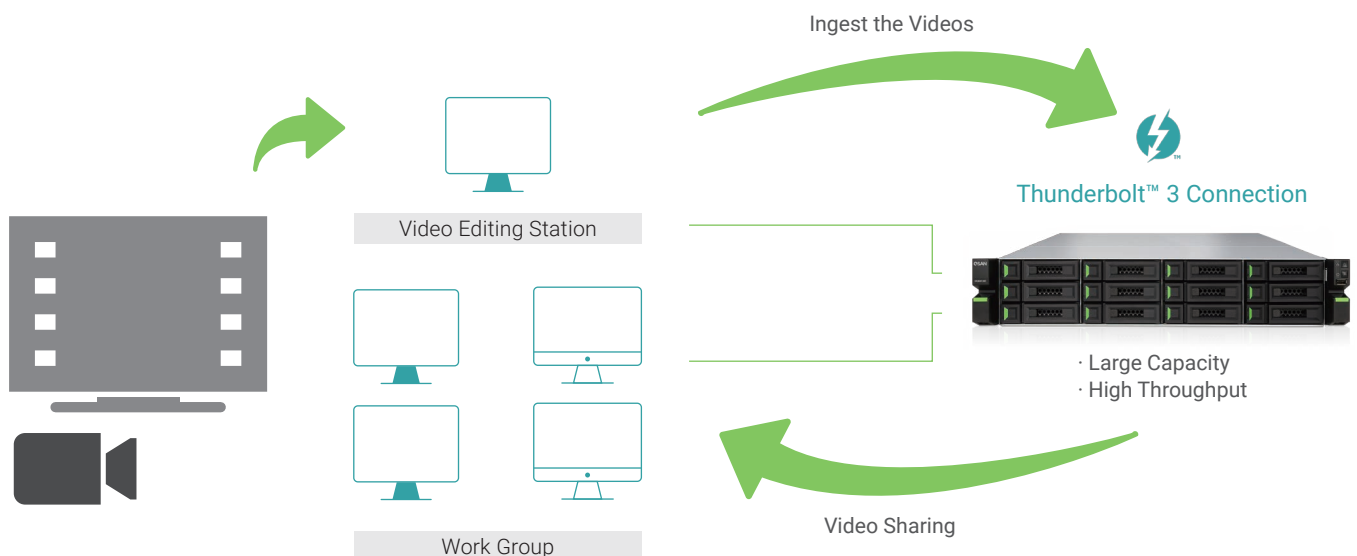


With next generation Thunderbolt™ 3 technology, you can connect a Thunderbolt™ 3 device to an XCubeNAS directly with a 40Gb/s data transmission rate. XCubeNAS with Thunderbolt™ 3 is capable of transferring high resolution video smoothly and handling relative workloads with ease. Copy a 4.7GB DVD video will on average take under a minute.

Type	CD 700MB	DVD 4.7GB	Blue-ray 25GB
Thunderbolt™ 3 (40Gb/s)	0.14	0.95	5
Thunderbolt 2 (20Gb/s)	0.28	1.88	10
Thunderbolt (10Gb/s)	0.56	3.76	20
USB 3.1 (10 Gb/s)	0.56	3.76	20
USB 3.0 (5 Gb/s)	1.12	7.52	40
FireWire 800 (800Mb/s)	7	47	250
USB 2.0 (480Mb/s)	11.66	78.33	416.66

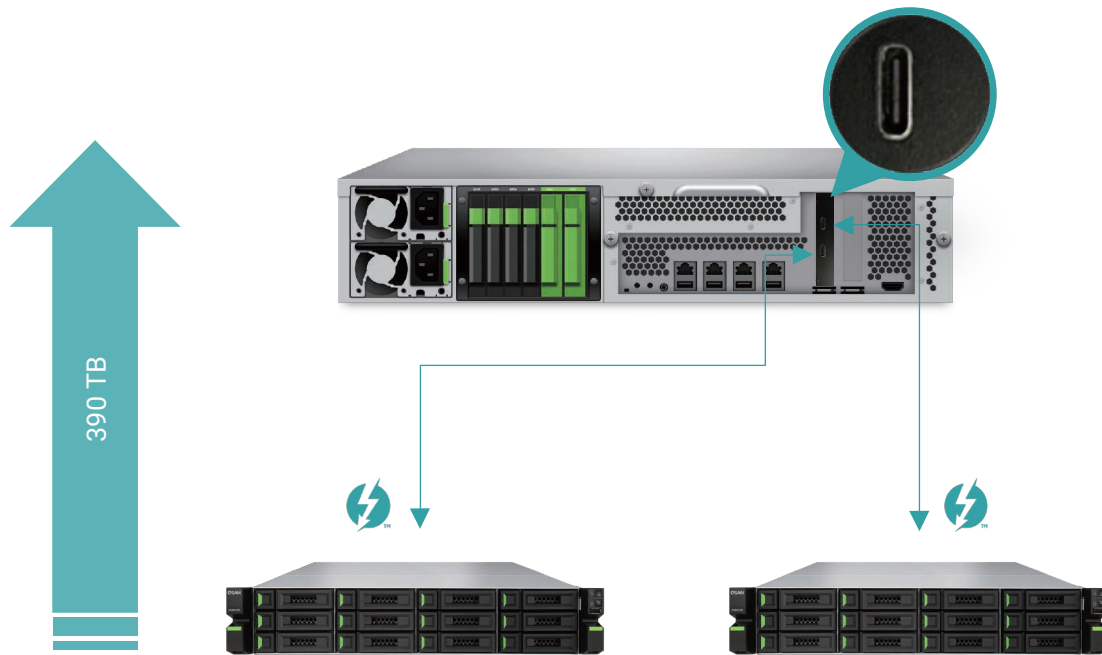
## High-Efficient : 4K Video Editing

The XCubeNAS fulfils storage and video editing needs with high-speed Thunderbolt™ 3. Digital videos can be quickly stored and edited on the XCubeNAS via a stable transmission tunnel without dropping a single frame. So you can are able to achieve blazingly fast transfer speeds to your workstation at up to 40 Gb/s speed with a single cable connection. That's more than enough bandwidth to handle the highest resolution video formats including Ultra HD and 4K, or even the highly demanding stereoscopic 3D files.



## High Capacity : Scale-Up Solution

The XCubeNAS provides a massive scale-up capability by connecting other XCubeNAS with the thunderbolt technology. It can support up to whopping 54 disk drives or up to 390 TB of raw storage space by using 10TB HDD drives.



### Maximum Raw Storage Capacity

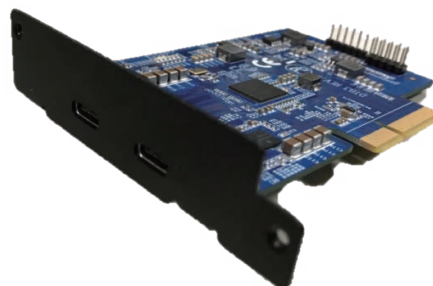
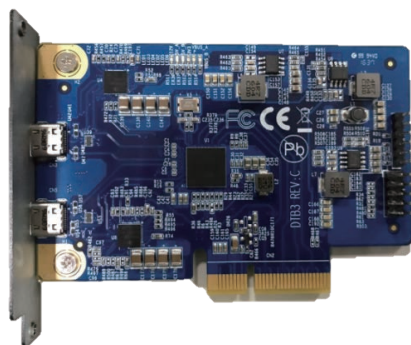
NAS Models	Enclosure Front Factor	Max. No. of Expansion Units	Max. No. of Hard Drives	Max. Raw Capacity	
				LFF 8TB SFF 2TB(SATA) SFF 1TB(PCIe)	LFF 10TB SFF 2TB(SATA) SFF 1TB(PCIe)
XN8012R XN7012R XN5012R	Rackmount 2U12 ( LFF 12 + SFF 6 )	2	18+18*2=54	318 TB	390 TB
XN8008R XN7008R XN5008R	Rackmount 2U8 ( LFF 8 + SFF 6 )	2	14+14*2=42	222 TB	270 TB
XN 7008T XN 5008T	Tower 8+1 bay ( LFF 8 + SFF 1 )	2	9+9*2=27	198 TB	246 TB
XN7006T XN5006T	Tower 6+1 bay ( LFF 6 + SFF 1 )	2	7+7*2=21	150 TB	186 TB
XN7004R XN5004R	Rackmount 1U4 ( LFF 4 + SFF 2 )	2	6+6*2=18	108 TB	132 TB
XN 7004T XN 5004T	Tower 4+1 bay ( LFF 4 + SFF 1 )	2	5+5*2=15	102 TB	126 TB

## Highly Expandability : Enlarge Your MAC's Capacity

With storage in modern computers at a premium, running out of storage seems like an every day issue. With the XCubeNAS when you are out of storage space, simply connect it to your MAC via the Thunderbolt port. It will then provide extra space in a secure and high performance environment. Moreover, Choosing stable Thunderbolt interface to share your MAC's data to another workstation by separating the XCubeNAS from your MAC and attach to the workstation. Using the Thunderbolt connectivity also allows flexibility. To share work between desktops, simply disconnect the cable from your machine, and attach it to another.



# Thunderbolt™ 3 Adapter Card Specification



## Hardware Specification

### Thunderbolt™ 3 Adapter

#### Bandwidth

- 40Gb/s

#### Interface

- PCI Express 3.0

#### Port

- Dual Ports

#### Size (L\*W)

- 1040\*688 mm

## PD Controller

#### Brand

- Texas Instruments

#### Model

- TPS65983

## Connector

#### Certification

- Intel approval:  
UT12113-116B2-7H

#### Module

- Type-C

## Compatibility

#### USB

- Type-C, 3.1, 3.0, 2.0

## Power Delivery

#### Internal

- 15W: 5V / 3A

#### External

- 36W: 12V / 3A

## Equipment Specifications

#### Temperature

- Operating: 0°C to 65°C  
(32°F to 149°F)
- Junction: 110°C (230°F)

## Agency Approvals - EMC (Class B)

#### US

- FCC Part 15 Class B

#### Europe

- EN55032
- EN55024
- EN61000-3-2
- EN61000-3-3
- CE EMC DIRECTIVE 2014/30/EU

#### Asia

- RCM: C-Tick
- KCC: Class B
- AS/NZS CISPR22:2009+A1:2010
- BSMI CNS 13438
- VCCI: Class B  
V-3:2015.04+V-4:2012.04

## Host System Supported

### XCubeNAS Series

#### Rackmount

- XN8008R / XN8012R
- XN7004R / XN7008R / XN7012R
- XN5004R / XN5008R / XN5012R

#### Tower

- XN8004T / XN8006T / XN8008T
- XN7004T / XN7006T / XN7008T
- XN5004T / XN5006T / XN5008T

## XCubeNAS Software

### System

#### OS

- QSM 3.0

#### Utility

- XFinder

#### File System

- ZFS

#### Support Protocol

- AFP
- NFS
- CIFS
- FTP
- SFTP
- WebDAV

## Thunderbolt™ 3 Applications

### Media Manage

- Media backup
- 4K-2K video editing

### Direct Attach Storage

- File sharing
- Data backup
- External device backup

### Expansion

- NAS capacity expansion

## Order and Support

### Information

#### Order Number

- XN-TB302

#### Support

- Tel: +886-2-77202118
- Mail: support@qsan.com
- Skype: qsan.support

## Thunderbolt™ NAS

### Thunderbolt™ Solution Ready

Intel® Core™ i5 2.7GHz Quad-Core Processor  
RAM: 8GB DDR4 SO-DIMM (Max 32GB)

TN8000T Series



TN8004T



TN8008T

## XCubeNAS + Thunderbolt™ 3 Adapter Card (XN-TB302)

### Enterprise

Intel® Xeon® E3 3.3GHz Quad-Core Processor  
RAM: 8GB DDR4 U-DIMM ECC (Max 64GB)

XN8000R Series



XN8008R



XN8012R

Intel® Core™ i5 2.7GHz Quad-Core Processor  
RAM: 8GB DDR4 SO-DIMM (Max 32GB)

XN8000T Series



XN8004T



XN8006T



XN8008T



## Thunderbolt™ NAS

### SMB High End

Intel® Core™ i3 3.9GHz Dual-Core Processor  
Rackmount RAM: 8GB DDR4 U-DIMM (Max 64GB)  
Tower RAM: 8GB DDR4 SO-DIMM (Max 32GB)

#### XN7000R Series



XN7004R



XN7008R



XN7012R

#### XN7000T Series



XN7004T



XN7006T



XN7008T

### SMB Middle

Intel® Celeron® 2.9GHz Dual-Core Processor  
Rackmount RAM: 8GB DDR4 U-DIMM n/ECC (Max 64GB)  
Tower RAM: 8GB DDR4 SO-DIMM (Max 32GB)

#### XN5000R Series



XN5004R



XN5008R



XN5012R

#### XN5000T Series



XN5004T



XN5006T



XN5008T





**QSAN Technology, Inc. | Learn more by visiting [www.qsan.com](http://www.qsan.com)**

Address : 4F., No.103, RuiHu Street, NeiHu District, Taipei, Taiwan 114   Email : [sales@qsan.com](mailto:sales@qsan.com)   Telephone : +886-2-7720-2118   Fax : +886-2-7720-0295

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