

# **NexStar MX Series**

## NST-225MX-S3

## 2.5" SATA to USB3.0 Dual Bay RAID Enclosure

**User Manual** 



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## **Package Contents**

Dual 2.5" SATA 6 Gb/s to USB 3.0 HDD/SSD RAID Enclosure

- 1) NexStar MX main unit
- 2) USB 3.0 Cable
- 3) Power Adapter
- 4) User's Manual
- 5) Quick Installation Guide
- 6) Installation Screws
- 7) Software CD

## Introduction

Vantec NexStar<sup>®</sup> MX 2.5" Dual Bay External HDD Enclosure with USB 3.0 interface is a small and simple way to expand and protect your data anywhere. This compact form factor design can houses two small hard drive or Solid State Drive with Individual/JBOD/RAID0/RAID1 mode capability and can travel with it. This RAID in a box simplifies the configuration and at the same time provides maximum storage for your precious family photos, music, video, and games. The sturdy drive cage protects your hard drive while the aluminum case effectively draws away the heat; the front vents and the rear fan keep your hard drive(s) cool and improve performance. The Vantec NexStar<sup>®</sup> MX 2.5" is a high performance, high capacity, and durable portable storage solution and lets you store your personal data in an enclosure with style!



### **Front View**

**Rear View** 

- A. Fan
- B. USB 3.0 Port
- C. Power Switch
- D. Power Socket
- E. Power LED
- F. HDD1 LED
- G. HDD2 LED

## Hard Drive Installation Guide

1. Remove the 4 screws shown.



2. Slide out the enclosure cover.



3. Insert the Second (lower) HDD/SSD in to the lower bay and push all the way in for the SATA interface on the tray to make full contact with the drive interface. The screw hole on the drive should align with the tray screw hole.



4. Insert the HDD/SSD into the top bay and push horizontally for both the SATA interface on the tray and drive to be fully inserted. The screw hole on the drive should align with the tray screw hole.



5. Secure both HDD/SSD with the 4 screws on each side of the Tray.



6. Set the RAID Mode Switch to the correct setting according to RAID SW definition table below.



IMPORTANT: If your drive have existing data AND you like to use it as Normal mode (Individual mode), set the switch to Normal Mode and DO NOT PRESS THE RESET BUTTON IN THE NEXT STEP (SKIP STEP #7).

#### Note:

- ightarrow When you press the RESET button, it will cause a RAID mode change.
- ☆ HDD formatting is required whenever RAID mode changes. If you have important data on the drive, STOP, backup your data before you continue.
- $\stackrel{\scriptstyle }{\curvearrowright}$  Make sure the enclosure is powered on before changing RAID mode.

Mode	<b>Operation Mode Description</b>						
Normal	<b>Normal</b> - Write each HDD independently						
(individual)	Just a Bunch of Disk - It concatenates two disks to a						
JBOD	single drive. Capacity equals to the sum of two disks.						
RAID 0	<b>Stripe</b> - Write data evenly across both disks Capacity is double of the smaller HDD						
RAID 1	Mirror - Create a mirror of data on both disks Capacity equals to that of the smaller HDD						

#### **RAID SW Definition**



2 - ON







7. This Step will set the RAID mode. Connect the power cable to the enclosure and the ac adapter to your power outlet. While pressing the reset button, turn ON the power switch and continue to hold the reset button for another 10-15 seconds while the drive spin up and set the mode change. After 15 seconds later, you can release the reset button and the mode change is done. The Green HDD LED will continue to flash and the Red Power LED will be ON. You can now turn off the unit and continue with the next step.



8. Slide the cover back on to the Tray and secure using the 4 Screws.



9. You can now start using your enclosure. If you need to initialize, partition and format the drive, please refer to Chapter on **Hard Drive Formatting Guide**.

## **RAID Mode Selection**





**RAID 0 (Stripe):** It's a combination of two physical partitions where the data is striped between them. It presents the best data speed but no data redundancy. Both HDDs allots the loading evenly. In short, RAID 0 stands for faster transmission.



**RAID 1 (Mirror):** It allows the device to automatically copy data to both HDDs. It stores all data in duplication to both drives to protect against data loss out of drive failure. If one drive fails, the Mirrored volume is still usable, but it is in a vulnerable state since the other mirrored hard drive is inaccessible. When the offline drive resumes online, the appliance begins the rebuild process immediately to restore data redundancy. Host access takes precedence in rebuild process. If you continue using the Mirror volume during the rebuild, the rebuild process will take a longer time to complete, and the host data transfer performance will also be impacted.



**JBOD (BIG or LARGE):** It concatenates a series of physical HDDs as a single large volume; HDD 1 and 2 are combined into a storage capacity that is equal to the sum of both HDDs.



## Resources

#### The section contains information that will help answer questions about this product.

### Drive mapping for HDD LED / RAID AP / PCB

LED	JMicron HW RAID Manager	Physical Location on PCB printout
HDD 1	P0 port	CON1
HDD 2	P1 port	CON2



### <u>LED – Normal Status</u>

Situation			LED status					
Situat	lon		HDD1	HDD2	Power			
PC in Sleep Mode S3/S	4/S5		OFF	OFF	RED			
USB, HDD1 & 2 connec	ted		ON	ON	GREEN			
Normal	HDD1 acce	SS	Flashing	ON	GREEN			
(Individual)	HDD2 acce	ISS	ON	Flashing	GREEN			
RAID 0 (Strip)			Flashing	Flashing	GREEN			
	Data Access		Flashing Flashing		GREEN			
RAID 1 (Mirror)	Dobuild	Online	Both, Flashing until f	inished	GREEN			
	Rebuild	Offline	Both, Flashing until f	inished	GREEN			
JBOD (Big) HDD1 access HDD2 access		SS	Flashing	ON	GREEN			
		ISS	ON Flashing		GREEN			
MODE change (USB connected to system)		Flashing Flashing		GREEN				

### <u>LED – ERROR Status</u>

Γ

Normal Mode	(Indivic	lual)										
	Operation			Activities								
Operations	PWR	USB	HDD	HDD	System	HDD1	HDD2	LED	LED	LED	FAN	Comments
		Linked	#1	#2	Power	Power	Power	HDD1	HDD2	PWR		
HDD1 Error	ON	Linked	Error	Read	ON	OFF	ON	Flash at	Flash	Green	ON	HDD1 error, spin
				Write				fix				down, LED Flash at
								0.5Hz				fixed 0.5Hz
HDD2 Error	ON	Linked	Read	Error	ON	ON	OFF	Flash	Flash at	Green	ON	HDD2 error, spin
			Write						fix			down, LED Flash at
									0.5Hz			fixed 0.5Hz
		L		L		L					1	
RAID 0 Mode (	Strip)											
			Operatio	n				Activi	ties			
Operations	PWR	USB	HDD	HDD	System	HDD1	HDD2	LED	LED	LED	FAN	Comments
		Linked	#1	#2	Power	Power	Power	HDD1	HDD2	PWR		
HDD1 Error	ON	Linked	Error	D/C	ON	OFF	OFF	Flash at	Flash	Green	OFF	HDD1 error, both
Sector Error								fix				HDD spin down, LED
HDD Failure								0.5Hz				Flash at fixed 0.5Hz
HDD2 Error	ON	Linked	D/C	Error	ON	OFF	OFF	Flash	Flash at	Green	OFF	HDD2 error, both
Sector Error									fix			HDD spin down LED
HDD Failure									0.5Hz			Flash at fixed 0.5Hz
JBOD Mode (B	IG)		<b>.</b>									
Onenetiene	DIA/D	LICD	Uperatio		Guatana	11001	11002	Activi			-	Commente
Operations	PWK	Linked	#1	ноо #2	Power	Power	Power				FAIN	comments
HDD1 Error	ON	Linked	Error	D/C	ON	OFF	ON	Flash at		Green	ON	HDD1 error & spin
HDD Failure								fix				down
								0.5Hz				
HDD2 Error	ON	Linked	D/C	Error	ON	ON	OFF		Flash at	Green	ON	HDD2 error & spin
HDD Failure									fix			down
									0.5Hz			
	1	I	I	I	1	I	I	I	I	I	1	

RAID 1 Mode (Mirror)												
	Operation											
Operations	PWR	USB	HDD	HDD	System	HDD1	HDD2	LED	LED	LED	FAN	Comments
		Linked	#1	#2	Power	Power	Power	HDD1	HDD2	PWR		
HDD1 Error	ON	Linked	Error	Read	ON	OFF	ON	Flash at	Random	Green	ON	HDD1 error & spin
				Write				fix 0.5Hz	Flash			down
HDD2 Error	ON	Linked	Read	Error	ON	ON	OFF	Random	Flash at	Green	ON	HDD2 error & spin
			Write					Flash	fix 0.5Hz			down
RAID Rebuild	ON	D/C	Old	New		ON	ON	Flashing	Slow	Green	ON	Rebuilding
Source:HDD1								at 3Hz	Flash at			reconstructing
Target:HDD2									0.5Hz			HDD2
RAID Rebuild	ON	D/C	New	Old		ON	ON	Slow	Flashing	Green	ON	Rebuilding
Source:HDD2								Flash at	at 3Hz			reconstructing
Target:HDD1								0.5Hz				HDD1
Rebuild error	ON	D/C	Old	New		ON	ON	Stop	Slow	Green	ON	Rebuilding
Source:HDD1								Flashing	Flash at			reconstructing
Target:HDD2									0.5Hz			HDD2
Rebuild error	ON	D/C	New	Old		ON	ON	Slow	Stop	Green	ON	Rebuilding
Source:HDD2								Flash at	Flashing			reconstructing
Target:HDD1								0.5Hz				HDD1
Rebuild	ON	D/C	Mirror	Mirror		D/C	D/C	0.5Hz	0.5Hz	Green	D/C	Rebuilding
Completed			ed	ed								Completed

#### **Important Note!**

- All HDDs must be re-initialize, partition and formatted on every mode change operation.
- All new HDDs must be initialize, partition and formatted in this enclosure when used in this enclosure for the first time, except use of old HDDs under Normal mode\*\*.
- HDD capacity beyond 2TB are support via GPT (GUID) Windows Vista/7/8.1/10, OS X, and Linux.
- Windows<sup>®</sup> XP 32bit OS cannot support capacity over 2TB HDD(s) and cannot be used in this enclosure.

\*\* If the hard drives was from another enclosure formatted differently, this enclosure may not read it correctly.

## Hard Drive Formatting Guide

### Partition a volume under Windows<sup>®</sup> OS

 Right-click on the Computer icon (Windows 7) and select Manage from the drop-down window. If you are using Windows 8.1, press the Windows key and X key on your keyboard at the same time and select Computer Management. From the Computer Management window select Disk Management under Storage to start this process.

🔄 Computer Management					
File Action View Help					
🗢 🔿 🙎 📰 😰	ef 😼				
Computer Management (Local)	Volume	Layout Type	File System	Status	*
System Tools	🖙 (C:)	Simple Basic	NTFS	Healthy (System, Boot, Page File, Active, Crash Dump, Prir	
D Task Scheduler	🖙 (D:)	Simple Basic	NTFS	Healthy (Logical Drive)	E
Event Viewer	🛥 (F:)	Simple Basic	NTFS	Healthy (Primary Partition)	
Big Shared Folders	CAROCK (K:)	Simple Basic	FAT32	Healthy (Primary Partition)	1
Performance	partition1 (G:)	Simple Basic	NTFS	Healthy (Primary Partition)	٣
E De in Manager	•	III		•	
<ul> <li>Storage</li> <li>Disk Management</li> <li>Services and Applications</li> </ul>	Disk 1 Basic 465.76 GB Online	465.76 GB Unallocated			í
	Disk 2     Unknown     2794.52 GB     Not Initialized	2794.52 GB Unallocated			E

 Right-click on the "Unallocated" space and select "New Simple Volume". If this option is not available, the disk was not initialized. You must initialize the disk first before you can continue. Please stop here and go to the section on "Initialize a Disk" to initialize the disk before return to this section on "Partition a volume under Windows OS".

* Computer Management					
File Action View Help	68				
Computer Management (Local)  System Tools  Difference  Bigging Scheduler  Bigging Schered Folders  Difference  Schered Folders  Difference  Difference	Volume (C:) (D:) (F:) CAROCK (K:) partition1 (G:)	Layout Type Simple Basic Simple Basic Simple Basic Simple Basic Simple Basic ""	File System NTFS NTFS FAT32 NTFS	Status Healthy (System, Boot, Page File, Active, Crash Dump, Pri Healthy (Logical Drive) Healthy (Primary Partition) Healthy (Primary Partition) Healthy (Primary Partition)	
Booker Manager     Storage     Book Management     Services and Applications	Disk 1 Basic 465.76 GB Online	465.76 GB Unallocated	<	New Simple Volume New Spanned Volume	•
	Disk 2 Unknown 2794.52 GB Not Initialized	2794.52 GB Unallocated		Properties	

3. Click "Next" to start the New Simple Volume Wizard.



4. Specify the partition size. If you are not sure, by default the partition occupies the entire volume. Click "Next".

Specify Volume Size Oncose a volume size that is betwee	en the maximum and minimum sizes.
Maxmum dak space in MB.	476537 P
Simple volume size in MB:	000000 [2]
	< Back Next > Cancel

5. Assign a drive letter. If you are not sure, the system will automatically assign the next

available drive letter, click "Next".

ew Simple Volume Wizard	ta tanan kan tan ita da 🗾
Assign Drive Letter or Path For easier access, you can assign a drive letter o	r drive path to your partition.
Assign the following drive latter.	н -
O Mount in the following empty NTFS folder	
	Вюнаа
Do not assign a drive letter or drive path	
	$\sim$
luin luin	<back (next="">) Cancel</back>

6. Change the Volume name; if you are not sure, by default the system will assign a volume, you can change it later. Click "Next" to start the formatting.

To store data on this partition, yo	u must format it first.		
Choose whether you want to form	nat this volume, and if so	, what settings you	want to use.
Do not format this volume			
Format this volume with the	e following settings:		
File system:	NTFS	•	
Allocation unit size:	Default	•	
Volume label:	New Volume		
Perform a quick form	at		
Enable file and folde	r compression		

7. Review the file system settings and click "Finish" to create the logical partition.



#### **Initialize a Disk**

1. New disk need to be initialize before they can be used. Here are the steps for initializing a new disk before you can create a volume to format the drive.



2. Right-click on the "Not Initialized" box.

Computer Management (Local)	Volume	Layout	Type	File System	Status		
a 👔 System Tools	🖙 (C:)	Simple	Basic	NTFS	Healthy (System, Boot, Page File, Active, Crash Dump, Prin		
Task Scheduler	G (D;)	Simple	Basic	NTFS	Healthy (Logical Drive)		
Event Viewer	(F:)	Simple	Basic	NTFS	Healthy (Primary Partition)		
D Ball Shared Folders	CAROCK (K-)	Simple	Basic	FAT32	Healthy (Primary Partition)		
D (O) Performance	CarNew Volume (	Simple	Basic	NIES	Healthy (Primary Partition)		
Device Manager	<u> </u>		m	_			
a 🔠 Storage	-						
Disk Management	Disk 1						
Services and Applications	465.76 GB	New Volume (H:)					
	Online	Healthy (Primary Partition)					
	~						
	Disk 2						
(	Unknown		00-0				
1	Z794.52 GB	Initialize	Dick				
	NO: PIMAL2et		- Lotan				
	$\sim$	Offline		-			
	Canter 2						
	Basic	Properti	es				
	1397.26 GB	Help					

#### 3. Select "Initialize Disk".

Computer Management (Local)	Volume	Layout Type File System	Status
a 👔 System Tools	(C)	Simple Basic NTFS	Healthy (System, Boot, Page File, Active, Crash Dump, Pr
D P Task Scheduler	(D:)	Simple Basic NTFS	Healthy (Logical Drive)
Event Viewer	G (F)	Simple Basic NTFS	Healthy (Primary Partition)
b at Shared Folders	CAROCK (K:)	Simple Basic FAT32	Healthy (Primary Partition)
p 1 Performance	Lin New Volume (	Simple Basic NTFS	Healthy (Primary Partition)
Device Manager	*	11	
# 🔠 Storage	CONSISTER 1		
Disk Management	Disk 1		
Services and Applications	Basic USE 7C CD	New Volume (H:)	
	Galias	465.76 GB NTFS	
	Stilling.	Healthy (Primary Parubon)	
		-	
	SEDIAL 2		
	Unknown		
	2794.52 GB		
	Not Initialized	Initialize Disk	
		Offline	
	CODisk 3	Properties	
	Basic	repones	
	1397.26 GB	Help	
	Online	T NT NEW YORK	

4. Windows 7/8.1 provides options for "MBR" or "GPT". Please select "MBR" if your drive capacity is less than 2TB. If the capacity is over 2TB, please select "GPT". And select "OK".

Disk Manager can acces	sit.
elected disks:	
gnized by all previous ver	sions of
meriman ZLB or disks up	sed on
	elected disks:

5. "Online" message will replace "Not Initialized" message when disk is initialized and ready for disk partitioning and formatting.



### Partition a volume under Linux Ubuntu



1. Click "Disk Utility" on the Desktop

2. Find HDD(s) under **"Peripheral Devices"**, choose the HDD(s) and click **"Format Drive**"



3. Select **"Master Boot Record"** if capacity per HDD does not exceed 2TB. Select **"GUID Partition Table"** if capacity per HDD is over 2TB. Press **"Format**" to proceed.



4. Select **"Create Partition"**, and then slide the bar to draw towards the desired capacity for the HDD(s). Select **"Type"** of format and press **"Create**" to proceed.



NOTE: some formats cannot be used under popular OS i.e.: Windows. Refer to the circled block for details.



5. "New Volume" appears after partitioning completes, select "Mount Volume"

/olumes				
New Volume 160 GB ext4		New Volume 160 GB NTF5		
Usage:	Filesystem	Device:	/dev/sdcl	
Partition Type:	HPFS/NTFS (0x07)	Partition Label:	-	
Partition Flags:	-	Capacity:	160 GB (160,039,240,704 bytes)	
туре:	Ext4 (version 1.0)	Available:	-	
Label	New Volume	Mount Point:	Not Mounted	
Mount Vo	lume	Erase or for	lume mat the volume	
Check Filesystem Check and repair the filesystem		Edit Filesystem Label     Change the label of the filesystem		
Edit Partition Change partition type, label and flags		O Delete Partition Delete the partition		

### 6.Select **"Mount Point"** to access the HDD.

Volumes			
	New Volume 160 GB ext4		New Volume 160 GB NTFS
Usage:	Filesystem	Device:	/dev/sdc1
Partition Type:	HPFS/NTFS (0x07)	Partition Label:	-
Partition Flags:	-	Capacity:	160 GB (160,039,240,704 bytes)
Туре:	Ext4 (version 1.0)	Available:	-
Label:	New Volume	Mount Point:	Mounted at /media/New Volume
Unmount Volume Service View Erase or format the volume View		Iume Vièw files on the volume	
Check Filesystem at Check and repair the filesystem		Change the label of the filesystem	
Edit Partition Change partition type, label and flags		S Delete Partition Delete the partition	

### Partition a volume under Mac<sup>®</sup> OS

1. Right click on the **"Go"** icon and select **"Utilities"** from the drop-down window.



2. Select "Disk Utility"



3. Select **"Partition"** on the top of the window, then select 1 partition from the "**Partition Layout"** 



4. Select "Options" at the bottom of the window.



 Select "GUID Partition Table". Currently, most of the Mac computers are Intel based. To enhance the best compatibility, make sure GUID Partition Table is selected.

Note: For PPC Mac, please select "Apple Partition Map"

000	ST315003 41AS Media	
Verify Into Rorr	Convert Reside Journaling New Image Convert Reside Image	9 <b>10</b>
I 120.03 GB FUJITSU MAC OS Untitled I.5 TB ST315003 4 Untitled 1	Choose a partition scheme appropriate for the way you will use this disk: • CUID Partition Table To use the disk to start up an Intel-based Mac, or to use the disk as a non-startup disk with any Mac with Mac OS X version 10.4 or later. • Apple Partition Map To use the disk to start up a PowerPC-based Mac, or to use the disk as a non-startup disk with any Mac. • Master Boot Record To use the disk to start up DOS and Windows computers, or to use with devices that require a DOS-compatible or Windows-compatible partition. • Default • Cancel • OK	urnaled) ± bed disk, choose a (pop-up menu, set click Apply. eated.
Disk Descr Connectio USB Serial N	ription : ST315003 4 LAS Media an Bus : US8 17ype : External umber : 903/FFFFFFFF Partition Map Scheme : GUID Partition Table Partition Map Scheme : GUID Partition Table	t Apply

6. Select "Apply" to finish formatting a hard drive

