Product Setup Sheet

7/7/2021

HDWGxxxXZSTA
Toshiba N300 NAS Internal Hard Drive (Retail Packaging)

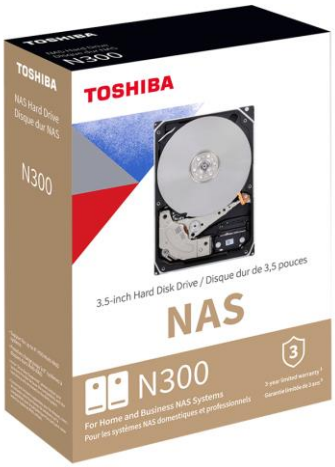
Description
Capacity to Grow. Reliability to Stay Ahead. Toshiba's N300 3.5-inch NAS internal hard drive is designed to meet the reliability, performance, endurance, and scalability requirements of 24/7 network attached storage application for personal, home office and small business use. The N300 delivers up to 16TB[1] of storage capacity and provides up to 1,200,000 hour MTTF[8] and designed for 24/7 power-on operation[11]. This drive features rotational vibration (RV) sensors which automatically detect and compensate for transient vibrations to deliver consistent performance in multi-bay storage enclosures. With support for up to 8 drive bays[6] in a multi-RAID NAS design, the N300 is highly scalable to the users' NAS configurations as their data storage needs evolve. The N300 NAS HDD line of high-reliability drives have a high workload rating of up to 180TB/year[5] and are optimized for use in NAS environments where large amounts of data need to be efficiently stored and accessed daily. Use for[2]: • 1- to 8-bay NAS • Desktop RAID and servers • Multimedia server storage Whether you're hosting a cloud, sharing files between workgroups or powering a high-traffic 24/7 network, Toshiba's N300 NAS hard drive is designed for and delivers the high reliability and performance that home and SOHO NAS users demand. For over 40 years Toshiba has been developing and manufacturing hard drives. Like all Toshiba products, the N300 3.5" NAS internal hard drive is designed from the ground up with your needs in mind, then tested again and again for reliability. That's why it comes with a solid three-year standard limited warranty[7] that gives you peace of mind. For more information on Toshiba's entire line of consumer storage solutions visit http://storage.toshiba.com/consumer-hdd

Product Features[3]

- **Built for demanding NAS environments**
  - Supports multi-RAID systems with up to 8 bays[6].
  - Designed for 24/7 operation[11] with workloads up to 180TB/year[5].
- **Rotational Vibration Compensation Technology**
  - Integrated RV sensors help ensure high reliability against shock and vibrations by detecting and minimizing rotational vibration effects in multi-bay NAS system.
- **Toshiba Cache Technology**
  - On-board cache algorithm and buffer management optimize cache allocation between read and write cycles for improved real-time drive performance.
- **High Performance during intensive operations**
  - Up to 512MB data buffer ensures high performance and fast read speed during data intensive operation.
  - Fast data transfer speed up to 274 MB/s[4] provides quick access to essential content.
- **Data Protection Technologies**
  - Ramp loading technology reduces wear to the recording head and media for improved drive reliability.
  - Error Recovery Control technology minimizes critical downtime for multi-RAID environment by optimizing data error recovery time.
- **Drive Stabilization Technology***
  - Secured motor shaft at both ends helps reduce system-induced vibrations, stabilizing the platters for improved tracking accuracy and performance during read and write operations.
- **High Durability and Heat Prevention**
  - Adjust seek speed automatically to reduce heat buildup during high temperature operation.
- **Peace of Mind**
  - High reliability with MTTF[8] up to 1.2 million hours
  - 3-Year standard limited warranty[7]

** Drive Stabilization Technology is not available for the HDWG440 / HDWG460 / HDWG480 models*

Product Specifications[3]	Product Image

General Specifications[3] (see detailed specs in the table below)
• Capacity[1]: 4TB/6TB/8TB/10TB/12TB/14TB/16TB
• Interface: Serial ATA 3.0 (SATA)
• Interface speed: Up to 6 Gb/s
• Form Factor[10]: 3.5 inch
• Recording Technology: CMR
• Rotational Speed: 7200 RPM
• Cache size:
  ○ 4TB/6TB/8TB/10TB/12TB: 256 MB
  ○ 14TB/16TB: 512 MB
• MTTF[8]:
  ○ 4TB/6TB/8TB/10TB/12TB: up to 1,000,000 hours
  ○ 14TB/16TB: up to 1,200,000 hours
• Workloads[5]: up to 180TB/year
• Drive Bays Supported[6]: up to 8
 	
Content
• Toshiba N300 NAS Internal Hard Drive
 	
 
 	
Retail package image example
 	
 
 	
Image does not represent actual product.
	
	
	Actual product image example
	(shown in the 10TB model)
	
	 
	
	Actual product image example
	(shown in the 16TB model)
	
	 
	Product image may represent a design model.

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Specification Details[3]

	N300						
Capacity[1]	16 TB	14TB	12 TB	10 TB	8 TB	6 TB	4 TB
Model Number (Retail Packaging)	HDWG31GXZSTA	HDWG31EXZSTA	HDWG21CXZSTA	HDWG11AXZSTA	HDWG480XZSTA	HDWG460XZSTA	HDWG440XZSTA
Basic Specifications							
Interface	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s	SATA 6.0 Gbit/s
Form Factor	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch	3.5-inch
Advanced Format (AF)	yes	yes	yes	yes	yes	yes	no
RoHS Compatible	yes	yes	yes	yes	yes	yes	yes
Features							
Drive Bays Supported	Up To 8	Up To 8	Up To 8	Up To 8	Up To 8	Up To 8	Up To 8
Rotational Vibration (RV) Sensors	yes	yes	yes	yes	yes	yes	yes
Shock Sensors	yes	yes	yes	yes	yes	yes	yes
Drive Stabilization Technology	yes(Dual Tied)	yes(Dual Tied)	yes(Dual Tied)	yes(Dual Tied)	-	-	-
Toshiba Cache Technology	yes	yes	yes	yes	yes	yes	yes
Recording Technology	CMR	CMR	CMR	CMR	CMR	CMR	CMR
Performances							
Rotation Speed [rpm]	7200	7200	7200	7200	7200	7200	7200
Max Data Transfer Speed [MB/s Typ.](Sustained)	274	260	253	248	260	250	232
Cache Size [MB]	512	512	256	256	256	256	256
Reliability							
24x7 Operation	Yes	Yes	Yes	Yers	Yes	Yes	Yes
Workloads (TB/year)	180	180	180	180	180	180	180
MTTF [hours]	1 200 000	1 200 000	1 000 000	1 000 000	1 000 000	1 000 000	1 000 000
Unrecoverable Error Rate	1 per 10^{14}	1 per 10^{14}	1 per 10^{14}	1 per 10^{14}	1 per 10^{15}	1 per 10^{15}	1 per 10^{15}
Load/Unload cycles	300 000	300 000	300 000	300 000	300 000	300 000	300 000
Limited Warranty [years]	3	3	3	3	3	3	3
Power Requirements							
Supply Voltage	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC +10 % / -7 % 12 VDC ±10 %	5 VDC ±5 % 12 VDC ±10 %	5 VDC +10 % / -5 % 12 VDC ±10 %	5 VDC ±5 % 12 VDC ±10 %	5 VDC ±5 % 12 VDC ±10 %	5 VDC ±5 % 12 VDC ±10 %
Power Consumption (Operating) [W]	6.91	6.91	6.49	9.48	8.41	7.72	6.84
Power Consumption (Active Idle) [W]	4.03	4.03	4.28	7.22	5.61	4.93	4.04
Environmental Requirements							
Temperature (Operating) [℃]	0 to 65 (surface)	0 to 65 (surface)	5 to 60 (surface)	0 to 65 (surface)	5 to 65 (surface)	5 to 65 (surface)	5 to 65 (surface)
Temperature (Non-operating) [℃]	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70	-40 to 70
Vibration (Operating) [m/s^2]	7.35 { 0.75 G } (5 to 300 Hz) 2.45 { 0.25 G } (300 to 500 Hz)	7.35 { 0.75 G } (5 to 300 Hz) 2.45 { 0.25 G } (300 to 500 Hz)	7.35 { 0.75 G } (5 to 300 Hz) 2.45 { 0.25 G } (300 to 500 Hz)	7.35 { 0.75 G } (5 to 300 Hz) 2.45 { 0.25 G } (300 to 500 Hz)	7.35 { 0.75 G } (2 to 300 Hz) 4.90 { 0.50 G } (300 to 350 Hz) 2.45 { 0.25 G } (350 to 500 Hz)	7.35 { 0.75 G } (2 to 300 Hz) 4.90 { 0.50 G } (300 to 350 Hz) 2.45 { 0.25 G } (350 to 500 Hz)	7.35 {0.75 G} (2 to 300 Hz) 4.90 {0.50 G} (300 to 350 Hz) 2.45 {0.25 G} (350 to 500 Hz)
Vibration (Non-operating) [m/s^2]	29.4 { 3.0 G } (5 to 500 Hz)	29.4 { 3.0 G } (5 to 500 Hz)	29.4 { 3.0 G } (5 to 500 Hz)	29.4 { 3.0 G } (5 to 500 Hz)	29.4 { 3.0 G } (5 to 500 Hz)	29.4 { 3.0 G } (5 to 500 Hz)	29.4 {3.0 G} (5 to 500 Hz)
Shock (Operating) [m/s^2]	686 { 70 G } (2 ms duration)	686 { 70 G } (2 ms duration)	686 { 70 G } (2 ms duration)	686 { 70 G } (2 ms duration)	686 { 70 G } (2 ms duration)	686 { 70 G } (2 ms duration)	686 {70 G} (2 ms duration)
Shock (Non-operating) [m/s^2]	2450 { 250 G } (2 ms duration)	2450 { 250 G } (2 ms duration)	2450 { 250 G } (2 ms duration)	2450 { 250 G } (2 ms duration)	2450 { 250 G } (2 ms duration)	2450 { 250 G } (2 ms duration)	2450 {250 G} (2 ms duration)
Acoustics(Sound Power) Idle mode [dB]	20	20	20	34	31	31	31
Dimensions							
Height [mm Max.]	26.1	26.1	26.1	26.1	26.1	26.1	26.1
Length [mm Max.]	147.0	147.0	147.0	147.0	147.0	147.0	147.0
Width [mm Max.]	101.85	101.85	101.85	101.85	101.85	101.85	101.85
Weight [g Max.]	720	720	720	770	720	700	693
Bottom holes type*	TYPE1	TYPE1	TYPE1	TYPE1	TYPE2	TYPE2	TYPE2

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Part Set-up Information			
Part Number:	See below	**Product Dimensions:**	4" (W) X 1.03" (H) X 5.79" (L) {101.85 mm (W) X 26.1 mm (H) X 147 mm (L)}
Product name:	Toshiba N300 NAS Internal Hard Drive (Retail packaging)	**Product weight:**	4TB: 1.53 lb {693 g} max 6TB: 1.54 lb {700 g} max 8TB/12TB/14TB/16TB: 1.59 lb {720 g} max 10TB: 1.70 lb {770 g} max
UPC code:	See below	**Package dimensions:**	7.4" (H) x 5.3" (W) x 2.4" (D) {189.0 mm (H) x 136.0 mm (W) x 60.0 mm (D)}
Master carton UPC:	See below	**Package weight:**	2.02 lb {915 g} max
ESUP:	See below	**Packaging Material:**	Retail Box, 300P CCWB+E Flute (White)
Product category:	Internal Storage, NAS Storage, High Reliability Drive, NAS hard drives, Network Attached Storage	**Master carton quantity:**	4 pcs per carton
Warranty[7]:	Three (3) Year Limited Warranty	**Master carton dimensions:**	10.4" x 5.9" x 8.3" {265 mm x 150 mm x 210 mm}
Availability Date	NEW MODELS: 4TB/6TB/8TB/14TB/16TB: August 2021 CURRENT MODELS: 10TB/12TB: Now	**Master carton weight:**	8.63 lb {3914 g} max
Embargo Date:	14 days after availability date	**Units per pallet:**	480 pcs
Country of origin:	Made in Philippines	**Layers per pallet:**	5 layers
Package Contents:	Toshiba N300 NAS Internal Hard Drive	**Units per Layer**	96 pcs
Applications[2]:	• 1- to 8-bay NAS • Desktop RAID and servers • Multimedia server storage	**Minimum Order Qty:**	4 pcs
Replacement:	4TB: HDWG440XZSTA to replace HDWQ140XZSTA 6TB: HDWG460XZSTA to replace HDWG160XZSTA 8TB: HDWG480XZSTA to replace HDWG180XZSTA 14TB: HDWG31EXZSTA to replace HDWG21EXZSTA		
Environmental:	RoHS Compliant[9]		

Part Number	Capacity[1]	RPM	Cache (MB)	UPC	Master Carton UPC
HDWG440XZSTA	4TB	7200	256	723844000936	10723844000933
HDWG460XZSTA	6TB	7200	256	723844000929	10723844000926
HDWG480XZSTA	8TB	7200	256	723844000912	10723844000919
HDWG11AXZSTA	10TB	7200	256	723844000264	10723844000261
HDWG21CXZSTA	12TB	7200	256	723844000486	10723844000483
HDWG31EXZSTA	14TB	7200	512	723844000981	10723844000988
HDWG31GXZSTA	16TB	7200	512	723844000974	10723844000971

[1] One Gigabyte (1GB) means 10^9 = 1,000,000,000 bytes and One Terabyte (1TB) means 10^{12} = 1,000,000,000,000 bytes using powers of 10. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1GB= 2^{30} = 1,073,741,824 bytes and 1TB = 2^{40} = 1,099,511,627,776 bytes, and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system and other factors.
[2] Compatibility may vary depending on user's hardware configuration and operating system.
[3] Product specifications, configurations, colors, components and features are subject to change without notice.
[4] The maximum sustained data rate and interface speed may be restricted to the response speed of host system and by transmission characteristics. Read and write speed may vary depending on the host device, read and write conditions, and file size
[5] Annual Workload Rating: HDDs keep track of various drive usage such as power on hours, lifetime writes and lifetime reads from the host computer. With this data we calculate an Annualized Workload Rate, under 40 deg. C ambient environments, Annualized Workload Rate = (Lifetime Writes + Lifetime Reads) * (8760 / Lifetime Power On Hours) in case Power On time is 8760h or longer. Otherwise (i.e. Power On time is shorter than 8760h), Annualized Workload Rate = (Lifetime Writes + Lifetime Reads) Each drive is designed to perform up to the Annualized Workload Rate stated, after which the drive may be expected to decline. The Annualized Workload Rate in no way alters the warranty policy for such drive
[6] As for "Drive Bays Supported", please contact your Solutions Provider because the compatibility with the host device will vary based on the system
[7] Limited Warranty (Americas), full terms and conditions available at http://storage.toshiba.com/consumer-hdd/support/warranty-info
[8] MTTF (Mean Time to Failure) is not a guarantee or estimate of product life; it is a statistical value related to mean failure rates for a large number of products which may not accurately reflect actual operation. Actual operating life of the product may be different from the MTTF.
[9] Toshiba Storage & Electronic Devices Solutions Company defines "RoHS-Compatible" products as products that either (i) contain no more than a maximum concentration value of 0.1% by weight in Homogeneous Materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) and of 0.01% by weight in Homogeneous Materials for cadmium; or (ii) fall within any of the application exemptions set forth in the Annex to the RoHS Directive (Directive 2011/65/EC of the European Parliament and of the Council of 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment). "Homogeneous Material" means a material of uniform composition that cannot be mechanically disjointed (meaning separated, in principle, by mechanical actions such as unscrewing, cutting, crushing, grinding and/or abrasive processes) into different materials. Examples of "Homogeneous Materials" would be individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings.
[10] 2.5-inch" and "3.5-inch" mean the form factor of HDDs. They do not indicate drive's physical size.
[11] Drive life may vary depending on usage and workload. See also MTTF and Annual Workload Rating for more detail.
* Location of bottom mounting hole is different from product. For more information, please visit:
https://toshiba.semicon-storage.com/us/storage/support/faq/storage-holes.html

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