TerraMaster F5-221

Network Attached Storage Server

Datasheet

TerraMaster F5-221 is a 5-Bay NAS for Small Business and Personal Cloud Storage.

Small, Light, and Powerful

TerraMaster's F5-221 5-bay NAS unit comes with an Intel dual-core processor, a frequency of up to 2.0 GHz, a read speed reaching 215 MB/s, and a write speed reaching up to 212 MB/s. These devices are compatible with both AES hardware encryption and 4K HD video transcoding, making the F5-221 an ideal candidate for home multimedia entertainment and small office applications.

Multiple Layers of Data Security

The F5-221 device relies on the following five data security layers:
1. Automatic scheduled backup
2. Btrfs file system and snapshot
3. RAID 1 array security
4. AES hardware folder encryption and network transport encryption
5. Cloud drive data backup

Enhance the Safety of your Data with a Next-Generation File System

Superior storage technology and optimised snapshot technology are the cornerstones of the Btrfs file system, which is what TerraMaster's F5-221 5-bay NAS unit relies on for advanced data protection, prevention of data corruption, and minimal maintenance expenses. Use of this file system promotes high data integrity, all the while promoting flexibility and efficiency in the areas of data protection and data recovery.

Optimised snapshot technology generates 512 snapshots for every shared folder, and up to 8,192 overall system snapshots. In this way, users can benefit from flexible, storage-saving data protection.

Since data recovery takes place at the file or folder level, businesses can also benefit from enhanced flexibility and efficient data recovery.

4K Ultra HD Video Transcoding

Compatible with the DLNA protocol, third-party's multimedia servers enable users to stream 4K media content from TNAS to multimedia playback devices. The device offers 4K H.264 live transcoding, along with the opportunity to convert and playback 4K video on computers, smartphones, and media players that lack native support for HD formats.

A Private Space in the Cloud

TNAS offers users the opportunity to establish a personal cloud drive that satisfies their remote access needs. Rights of access can be tailored for your colleagues, relatives, or friends, and with support for two-way sync cloud drive, enjoying the benefits of convenient cloud life has never been easier.

TNAS.online for Simple Remote Access

TNAS.online spares you from setting up DDNS, complicated network settings, and further port forwarding rules when trying to access files on TNAS through the Internet. At no additional expense, the service provides a secure, modifiable URL that you can use to engage with audio and video content, along with other work files, on your Internet-enabled device.

Striving to Satisfy Small Businesses

Small businesses benefit from the opportunity to conveniently build file storage servers, mail servers, web servers, FTP servers, MySQL databases, CRM systems, Node.js, and Java virtual machines, as well as a host of other commercial applications.

State-of-the-Art TOS 4.1.X Operating System

With the most recent version of the TOS operating system, TOS 4.1.X, you can back up your data, manage your file server, and optimise your sharing services in an intuitive, simple, and user-friendly way. The operating system includes a complex of application software, with rich application content, potent multimedia services, and numerous ways to back up your data.

Smart Mobile App

With the TNAS mobile app, quickly access your TNAS device and its multimedia data without restrictions, all simply through your iOS or Android system.

Panel Illustration:

SN	Item	Item
①	Hard drive tray	3.5" SATA HDD; 2.5" SATA HDD; 2.5" SATA SSD
②	Hard drive indicator	Red: Hard drive failure Green: Normal operation status Green (flickering): Reading/writing data Off: No hard drive detected
③	Network indicator	Green: Network connection is normal Off: Network disconnected
④	Power switch/Power indicator	On: Power on Off: Power off

Rear Cover Illustration:

SN	Item	Description
⑤	Power interface	DC 12V power input NOTE: Do not use a third-party power adaptor.
⑥	Network interface	1000M/100M bps network interface
⑦	USB 3.0 host (×2)	Use to connect USB storage device or USB wireless adaptor
⑧	HDMI interface	For displaying the software codes or commands, not for video playing.

Specifications:

Hardware	
Processor	
Processor Model	Intel® Celeron® J3355
Processor Architecture	X.86 64-bit
Processor Frequency	Dual Core 2.0GHz (Max burst up to 2.5GHz)
Hardware Encryption Engine	√
Hardware Transcoding Engine	H.265 (HEVC), MPEG-4 Part 2, MPEG-2, VC-1; maximum resolution: 4K (4096 x 2160); maximum frame rate per second (FPS): 30
Memory	
System Memory	2GB
Pre-installed Memory module	/
Total Memory Slot Number	1
Maximum Supported Memory	10 GB (2GB + 8 GB)
Note	TerraMaster reserves the right to replace memory modules with the same or higher frequency based on supplier's product life cycle status. Rest assured that the compatibility and stability have been strictly verified with the same benchmark to ensure identical performance.
Storage	
Disk Slot Number	5
Compatible Drive types	3.5" SATA HDD
	2.5" SATA HDD
	2.5" SATA SSD
Maximum Internal Raw Storage Capacity	80TB (16TB x 5) (Capacity may vary by RAID types)
Max Single Volume	108TB
Drive Hot Swap	√
Note	. Hard drive vendors will release their latest models of hard drives, and Maximum internal raw storage capacity may be adjusted accordingly. . The maximum single volume size is not directly related to the maximum raw capacity.
File System	
Internal Drive	EXT4,BTRFS
External Drive	EXT3, EXT4, NTFS, FAT32, HFS+
External Ports	
RJ-45 1GbE Network Jack	2

USB 3.0 Port	2
USB 2.0 Port	/
COM	/
HDMI	1
VGA	/
PCIe Slots	/
Appearance	
Size (H*W*D)	227 x 225x 136 mm
Packaging Size (H*W*D)	300 x 275 x 186 mm
Weight	Net Weight: 2.35Kg Gross Weight: 3.53Kg
Others	
System Fan	80 mm x 80 mm x25mm 2 pcs
Fan Mode	Smart, High speed, Middle speed, Low speed
Noise Level	19.8dB(A)
Power Supply	90W
AC Input Voltage	100V - 240V AC
Current Frequency	50/60 Hz, single frequency
Power Consumption	26.6W
	4.0W (hard drive dormancy)
Limited warranty	2 years
Certificate	FCC, CE, CCC, KC
Environment	RoHS, WEEE
Temperature	
Working Temperature	5°C ~ 40°C (40°F ~ 104°F)
Storage Temperature	-20°C ~ 60°C (-5°F ~ 140°F)
Relative Humidity	5% ~ 95% RH
Package Contents	
	Host unit (x1)
	Power cord (x1)
	RJ-45 network cable (x1)
	Quick Installation Guide (x1)
	Limited Warranty Note(x1)
	Screws(a few)
	Power adapter (x1)

TOS Features	
OS Supported	
Supported Client OS	Windows OS, Mac OS, Linux OS
Supported Web Browsers	Google Chrome 48, Microsoft Internet Explorer 9, Mozilla Firefox 30,Apple Safari 4.5 or later version; Microsoft Edge is not recommened.
Supported mobile OS	Ios 8.2, Android 5.0 or later version
Storage Management	
Supported RAID Types	Single, JBOD, RAID 0, RAID 1，RAID 5，RAID 6
Maximum Internal Volume Number	256
Maximum iSCSI Target	128
Maximum iSCSI LUN	256
Volume Expansion with Larger HDDs	RAID 1,RAID5,RAID 6,RAID10
Volume Expansion by Adding a HDD	/
RAID Migration	√
SSD Cache	√
Hot Spare	√
SSD TRIM	√
Hard Drive S.M.A.R.T.	√
Seagate IHM	√
NVRAM write cache(BBU-protected)	/
WORM(Write Once Read Many)	/
Shared Folder Snapshot	√
LUN Snapshot	/
Storage QoS For Shared Folder	/
File Services	
File Protocol	SAMBA/AFP/NFS/FTP/WebDAV
Maximum Concurrent SAMBA/AFP/FTP Connections	200
Windows Access Control List (ACL) Integration	√
NFS Kerberos Authentication	√
Account & Shared Folder	
Maximum local user's account number	512
Maximum local group number	256
Maximum shared folders number	256
Maximum shared folders syncing tasks	8
Backup	

Rsync Server	√
Rsync Backup	√
Schedule Backup	√
USB Device Backup	√
Cloud Sync	√
Time Machine Server	√
File System Gluster	/
Networking	
TCP/IP	IPv4
Protocols	CIFS/SAMBA, NFS, FTP, TFTP, HTTPS, SSH, iSCSI, SNMP, SMTP
Link Aggregation	/
DLNA Compliance	√
VPN Client	√
VPN Server	√
Proxy lient	√
Proxy Server	/
UPnP/Bonjour Discovery	√
TNAS.online Remote Access	√
DDNS	√
Access Right Management	
Batch users creation	/
Import/Export users	/
User Quota Managerment	√
Local user access control for CIFS/SAMBA and FTP	√
Domain Authentication	
Microsoft Active Directory	√
LDAP Client	√
LDAP Server	√
SSO	√
Security	
Firewall Protection	√
Account Auto-block Protection	√
AES Volume and Shared Folder Encryption	√
Importable SSL certificate	√
Instant Alert via email, SMS, Beep	√

Power Managerment	
Automatic Power On After Power Recovery	√
Scheduled Power On/Off	√
Wakeup On LAN	/
UPS Supported	√
Administration	
Multi-window, Multi-task System Management	√
Custom Desktop	√
Control Panel	√
Resource Monitor	√
Syslog	√
OS UI Language	English, German, French, Spanish, Italian, Magyar, Chinese, Japanese, Korean
Applications	
Application Center	√
Mail Server	√
Web Server	√
Clam Antivirus	√
Download	√
Multi Media Server	√
Docker	√
Plex Media Server	√
Snapshot	√

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