

TerraMaster F4-212

4-Bay Home Network Storage

Datasheet



F4-212 is equipped with a more powerful ARM V8.2 Cortex-A55 64-bit 1.7GHz quad-core processor, built-in floating point unit (FPU) and NEON SIMD engine, 2 GB DDR4, video DSP hardware acceleration, whilst also boasting more powerful 4K video encoding and decoding capabilities. The F4-212 is adequate for home document backup and providing multimedia entertainment.

New Operating System

F4-212 runs the new operating system TOS 5, which adds more than 50 new functions and 600 improvements compared with the previous generation. The new features meet more business requirements, as well as significantly improving response speed, security, and ease of use.

Home Data Center

The F4-212 supports up to 22 TB of hard drive, and the total capacity can reach 88 TB. It can store 30 million HD photos, 18 million working documents, 40,000 HD movies, and 4 million downloadable music, enabling you to back up the data in Windows PC, MAC computer, mobile phone, HDD enclosure, and network disk to TNAS for centralized management. This adequately protects users from data loss resulting from hardware malfunction or ransomware.

Home Multimedia Center

The F4-212 features powerful 4K video hardware decoding capability, and is compatible with uPnP/DLNA protocol. With TerraMaster's dedicated "Multimedia Server" app or third-party multimedia servers (Emby, Plex), it can stream videos to a variety of multimedia devices including smart phones, tablets, Roku, Apple TV, Google Chromecast, Amazon Fire TV, and smart TV, delivering users constant, reliable entertainment experiences.

Easy to swap hard drives

The F4-212 features a tool-free hard drive tray design that allows for easy installation and removal of hard drives without tools. Furthermore, the F4-212 incorporates a brand new Push-lock unique design from TerraMaster, which automatically locks the hard drive tray when you insert the hard drive, preventing the hard drive from falling out or disconnecting. As a result, installing a hard drive takes less than 10 seconds, providing great convenience for

users who frequently swap hard drives to exchange data.

Flexible Storage Space Management

TRAIID is the abbreviation of TerraMaster RAID. TRAIID is a flexible disk array management tool developed by TerraMaster. It has features such as the automatic combination of disk space, hard disk failure redundancy protection, and automatic capacity expansion. All these functions do not require manual configuration by the user, and the system will automatically complete the configuration according to the properties of the hard disk. TRAIID provides users with an optimized, flexible and elastic disk array management solution, especially suitable for new users who are not proficient in how to configure a disk array.

Across-Platform File Services

The F4-212 supports all mainstream file services: SMB, NFS, SFTP/FTP, AFP, iSCSI, WebDAV; and is provided with multiple permission management of users, user groups, and folder, meeting across-platform file services in various network environments.

Advanced File Systems

Both EXT 4 and Btrfs file systems are supported, with the Btrfs file system introducing advanced storage and Snapshot technology to prevent data damage and reduce maintenance costs. As well as improving data integrity, this also provides flexible and efficient data protection and recovery tools.

No Fear of Ransomware Attacks

The TerraMaster File System Snapshot (TFSS) is a data protection tool founded upon on file system developed by TerraMaster. The TFSS takes snapshots of an entire file system by exploiting advantages of the features of the BTRFS file system, as such all the data on your TNAS device will be protected. In case of an accident, one just simply clicks the snapshot list

to recover the data in an instant, without the risk of human error or ransomware attacks.

Rich Backup Solutions

TOS can protect valuable data using visual user interfaces and trustworthy storage solutions thanks to its integration with multiple backup applications that can address backup needs in an array of circumstances.

Time Machine Backup: Allows macOS users to back up data on MAC computers, manage folder storage quotas, and selectively restore data based on the previous version of the backed up data as per timeline.

TerraMaster File System Snapshot (TFSS): TFSS takes snapshots of entire file system of a TNAS device by reaping the benefits of the features of the file system, so as to avoid data loss caused by misoperations or ransomware attacks.

TFM Backup: With TFM Backup, one can easily back up shared folders in TNAS or to a wide range of various local storage locations or even to a remotely mounted folder.

CloudSync: This backs up or synchronizes TNAS data with the cloud drive, which not only improves the availability of cloud data, but also provides several offsite backup versions, thus safeguarding the security of your data.

Snapshot: It is possible to take continuous snapshots of your folders or iSCSI LUNs by enabling the snapshot schedule with the advanced storage technology and optimized snapshot technology available via the BTRFS file system. When problems arise, the system can roll back to points-in-time and restore to the last backup, thereby ensuring that your data is well protected.

Duple Backup: In order to provide several offsite backup versions, Duple Backup provides advanced data protection by backing up files in TNAS to another remote TNAS, file server, or cloud drive.

Building a Convenient and Safer Private Cloud

With TNAS.online service of TerraMaster, one can easily access files from TNAS over the Internet without setting additional port forwarding rules, DDNS, or other complex network

settings. One can assign different access right to relatives or friends to share one's enjoyment at no extra cost. Free CloudSync supports the two-way synchronization function of Baidu Cloud, Google Drive, Dropbox, Amazon S3, OneDrive, NextCloud, Pcloud, Backblaze B2 and many other cloud drives, This permits one to easily open the data channel between your private cloud and public cloud drive, and enjoy the convenience of cloud life.

More Flexible Mobile Access

One can access the TNAS device anytime and anywhere on any iOS or Android mobile client, which enables one to browse files, back up albums and share photos as and when one pleases. The TerraMaster mobile client is even equipped with a mobile administrator for easy remote management of your TNAS at home, further improving the flexibility of use.

Improved Desktop Assistant

For convenience, the desktop client specially developed by TerraMaster for Windows and MAC can help one quickly find devices in the network, create a quick access connection, browse files through a single click, and get technical support in a rapid manner. Furthermore, it entails data synchronization and backup, making it a sufficient tool to assist computer users.

Simple & Fast System Installation

To ensure simple usage, TerraMaster provides a hands-on online tutorials and videos, with a specially designed "Default mode" to set all configurations to optimal home mode, so all the steps can be completed after the first initial system installation in just a few minutes.

Rich Multimedia Applications

TerraMaster App Center provides a variety of tools free of charge, including Aria2, qBittorrent, and Transmission, allowing you to manage the document transmission and video

download at a high speed in a convenient manner. Various multimedia applications including Multimedia Server, Plex, Emby, Terra Photos, iTunes Server are supported making it more feasible to manage, share and play family movies, photos and music.

AI Album Management

Terra Photos has an AI image recognition engine, which can recognize faces and objects in photos, and automatically form photo albums of "People" and "Objects" with similarly appearing people and objects. Meanwhile, it can also classify photos via location automatically. One can quickly find photos taken in various locations in the "Location Album", which reflects a more intuitive and fluent photo management and sharing experience.

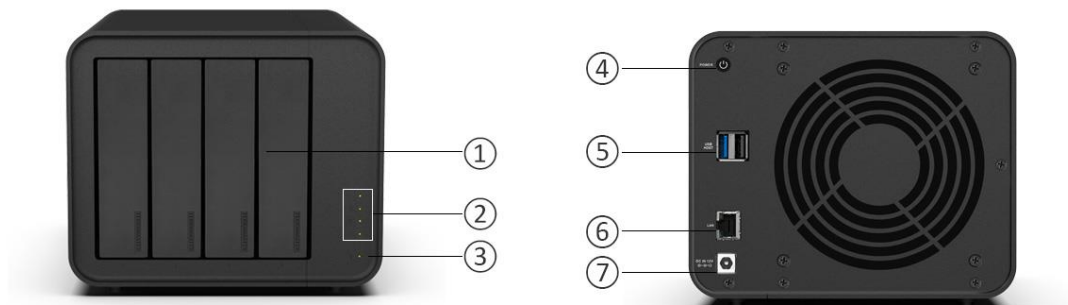
Docker Brings Greater Possibilities

TerraMaster's Docker Manager integrates Docker Hub, the world's largest free container image repository, making it easier for you to find and share container images. Docker Manager provides an intuitive graphical user interface. One can directly download images in Docker Manager, to manage and maintain containers in operation.

Worry-free After-sales Service

TerraMaster implements its unique after-sales service policy that "provides replacements within 2 years" and offers worry-free quality assurance through real-time online customer service, a professional technical forum, an online user guide, a technical service mailbox, and remote troubleshooting.

Panel Illustration:



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

Rear Cover Illustration:

SN	Item	Description
⑤	USB host (×2)	Use to connect USB storage device or USB wireless adaptor
⑥	Network interface	1000M/100M bps network interface
⑦	Power interface	DC 12V input

Specifications:

Processor	
Processor Model	Realtek 1619B
Processor Architecture	ARM V8.2 Cortex-A55 64-bit
Processor Frequency	Quad Core 1.7 GHz
CPU Single-Core Score	/
Hardware Encryption Engine	√
Hardware Transcoding Engine	/
Memory	
System Memory	2 GB
Pre-installed Memory module	/
Total Memory Slot Number	/
Maximum Supported Memory	2 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	4
Compatible Drive types	3.5" SATA HDD
	2.5" SATA HDD
	2.5" SATA SSD
2280 M.2 NVMe Slot Number	/
Maximum Internal Raw Storage Capacity	88 TB (22 TB x4) (Capacity may vary by RAID types)
Drive Hot Swap	√
Note	<ul style="list-style-type: none"> 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	Btrfs, EXT4
External Drive	EXT3, EXT4, NTFS, FAT32, HFS+
External Ports	
RJ-45 1GbE Network Jack	1
RJ-45 2.5GbE Network Jack	/
RJ-45 10GbE Network Jack	/
SFP+ 10GbE Network Jack	/
USB3.0 Host Port	1
USB2.0 Host Port	1

COM	/
HDMI	/
VGA	/
PCIe Slots	/
M.2 2280 NVMe Slot	/
Appearance	
Size (H*W*D)	222 x 179 x 154 mm
Packaging Size (H*W*D)	300 x 275 x 186 mm
Weight	Net Weight: 2.0 Kg Gross Weight: 3.1 Kg
Others	
System Fan	120 x 120 x 25mm 1PCS
Fan Mode	Smart, High speed, Middle speed, Low speed
Noise Level	21.0 dB(A) (Using 2 SATA HDDs/SSDs in standby mode; Test environment noise: 17.3dB(A); Test distance: 1m)
Power Supply	72 W
Redundancy Power Supply	/
AC Input Voltage	100V - 240V AC
Current Frequency	50/60 Hz, Single frequency
Power Consumption	33.0 W(Fully loaded Seagate 4TB ST4000VN008 hard drive(s) in read/write state)
	13.0 W (Fully loaded Seagate 4TB ST4000VN008 hard drive(s) in hibernation)
Limited warranty	2 years
Certificate	FCC, CE, CCC, KC
Environment	RoHS, WEEE
Temperature	
Working Temperature	0°C ~ 40°C (32°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)
	Power Adapter(x1)
	RJ-45 network cable (x1)
	Quick Installation Guide (x1)
	Limited Warranty Note(x1)
	Screws(a few)

TOS Features	
OS Supported	
Supported Client OS	Windows OS, Mac OS, Linux OS
Supported Web Browsers	Google Chrome 97.0.xxxx, Mozilla Firefox 9.3, Apple Safari 12.1 ; Microsoft Edge 99.0.xx or later version.
Supported mobile OS	iOS14.0, Android 10.0 or later version
Storage Management	
Supported RAID Types	TRAIID, Single, JBOD, RAID 0, RAID 1
Maximum Internal Volume Number	64
Maximum iSCSI Target	32
Maximum iSCSI LUN	32
Volume Expansion with Larger HDDs	TRAIID, RAID 1
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)	/
Shared Folder Snapshot	√
LUN Snapshot	/
File Services	
File Protocol	SMB/AFP/NFS/FTP/SFTP/WebDAV
Maximum Concurrent SMB/AFP/FTP/SFTP Connections	100
Windows Access Control List (ACL) Integration	√
NFS Kerberos Authentication	√
Account & Shared Folder	
Maximum local user's account number	128
Maximum local group number	128
Maximum shared folders number	128
Maximum shared folders syncing tasks	2
Backup	

Rsync Backup	√
Duple Backup	√
Centralized Backup	/
Snapshot	√
USB Backup	√
Cloud Sync	√
Time Machine Backup	√
File System Snapshot	√
TFM Backup	√
Networking	
TCP/IP	IPv4/IPv6
Protocols	CIFS/SMB, NFS, FTP, SFTP, HTTPS, SSH, iSCSI, SNMP
Link Aggregation	/
DLNA Compliance	√
VPN Client	√
VPN Server	√
Proxy Client	√
Proxy Server	/
UPnP/Bonjour Discovery	√
TNAS.online Remote Access	√
DDNS	√
Access Right Management	
Batch users creation	/
Import/Export users	√
User Quota Management	√
Local user access control for CIFS/SAMBA and FTP	√
Domain Authentication	
AD Domain	√
LDAP Client	√
LDAP Server	/
Security	
Firewall Protection	√
Account Auto-block Protection	√
AES Volume and Shared Folder Encryption	√
Importable SSL certificate	√
Instant Alert via email, Desktop Notification, Beep	√
RSA 2048 Encryption (TOS 5.0)	√
PAM (Pluggable Authentication Modules)	√
OTP Authentication (TOS 5.0)	√

HyperLock File System (TOS 5.0)	√
Power Management	
Power Resume	√
Scheduled Power On/Off	√
Wake up On LAN (WOL)	√
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, Turkish, Portuguese, Russian
Applications	
Application Center	√
iSCSI Target	√
Terra Photos	√
TerraSync	/
Duple Backup	√
CloudSync	√
Centralized Backup	/
USB Backup	√
VPN Server	√
Transmission	√
qBittorent	√
Aria 2	√
Terra Search	/
Deduplication	/
Web Server	√
Clam Antivirus	/
EMBY	√
Multi Media Server	√
Plex Media Server	√
Docker Manager	√
Snapshot	√



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