OMNINAS - Your Personal Cloud

The Shuttle OMNINAS KD21 is a two-bay network-attached storage (NAS) which is designed to become your hub of multimedia content - letting you easily store and share documents and multimedia files. Thanks to the further improved GHz-processor, KD21 delivers swift transfer speeds and makes sure you have your files always with you - be it on the go on Android or iOS-based devices or basically from any place in the world.

OMNINAS

Dual-bay NAS
KD21   **100 MB/s**

Feature Highlights

Application	• Budget-friendly NAS Server for Small Office, Workgroups and Home Use
Design	• Elegant design with solid 2.5mm aluminium for better heat dissipation • Dimensions: ca. 17 x 9 x 22.5 cm = 3.4 litres
Low noise	• Ultra-quiet operation - the fan is activated automatically only under heavy load/temperature
RAID 1 Hot Swap	• Two storage bays, supports 2.5"/3.5" drives • Support 2x 4 TB hard disks (or larger) • Supports reliable RAID 1 mirroring with hot-swap
Performance	• Superior R/W performance: up to 100/70 MB/s [1]
Power-Saving	• Power saving: only 9.6 W in standby and 19 W in normal operation (idle)
Connectors	• SD card reader (Auto-Copy & share function) • 2x USB 3.0 (Auto-Copy & share function) • 1x USB 2.0 • Gigabit LAN (RJ45) supports WOL and 802.3az
Anywhere Access	• Accessible from local network under Windows, Mac OS X or Linux • Accessible via Internet (Notebooks, PCs) • Accessible from iOS and Android mobile devices (smart phones or tablets)
Functions	• Samba Server (SMB file sharing) • Supports DLNA/iTunes media server for audio/video streaming • Scheduled Backup: NAS to USB, NAS to NAS • Scheduled BT downloads without PC • Printer Server, FTP Server (with SSL/TLS) • Online Firmware Update, On/Off Scheduler
Software	• ONMINAS Finder (Windows & Mac) • Acronis True Image Personal

Shuttle Order No.: NAS-KD21001
Images for illustration purpose only.

Shuttle OMNINAS KD21 – Overview
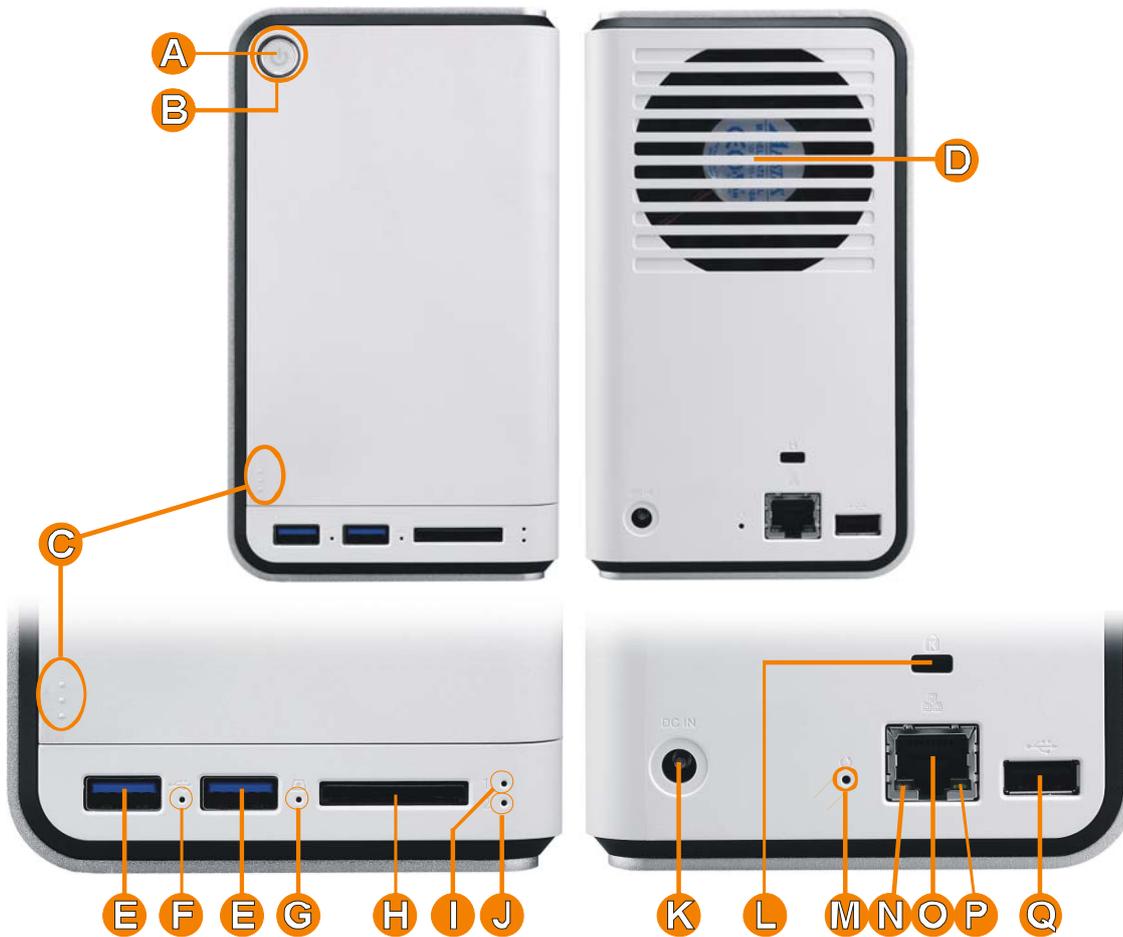
|	
A	Power Button
B	Status LED
C	Press here to open the front door
D	70 mm smart fan
E	2x USB 3.0 connectors
F	USB 3.0 status LED
G	SD card reader status LED
H	SD card reader
I	Hard disk 1 status LED
J	Hard disk 2 status LED
K	DC input power jack
L	K-Lock security slot (hole)
M	Reset button (hole)
N	Gigabit LAN speed indicator LED
O	Gigabit LAN port (RJ45)
P	Gigabit LAN activity indicator LED
Q	USB 2.0 connector
R	Solid 2.5 mm aluminium cover
S	Hot Swap button 2 (RAID 1 only)
T	Hot Swap button 1 (RAID 1 only)
U	Bay cover (front door)
V	Hard disk tray 2
W	Hard disk tray 1 (open)

Shuttle OMNINAS KD21 – Applications

Internet (WAN)
Access your Home Cloud with your smartphone, tablet PC, notebook or stationary PC via the internet.

Local Network (LAN)
Access your data, media files, backups and even your USB printer through your local network. Share your external hard disk and auto-copy your photos from the SD card.

WAN

LAN

OMNINAS

KD21

Router

USB printer

USB

LAN

USB

Camera

Switch

USB 3.0

Card reader

SD card

Ext. HDD
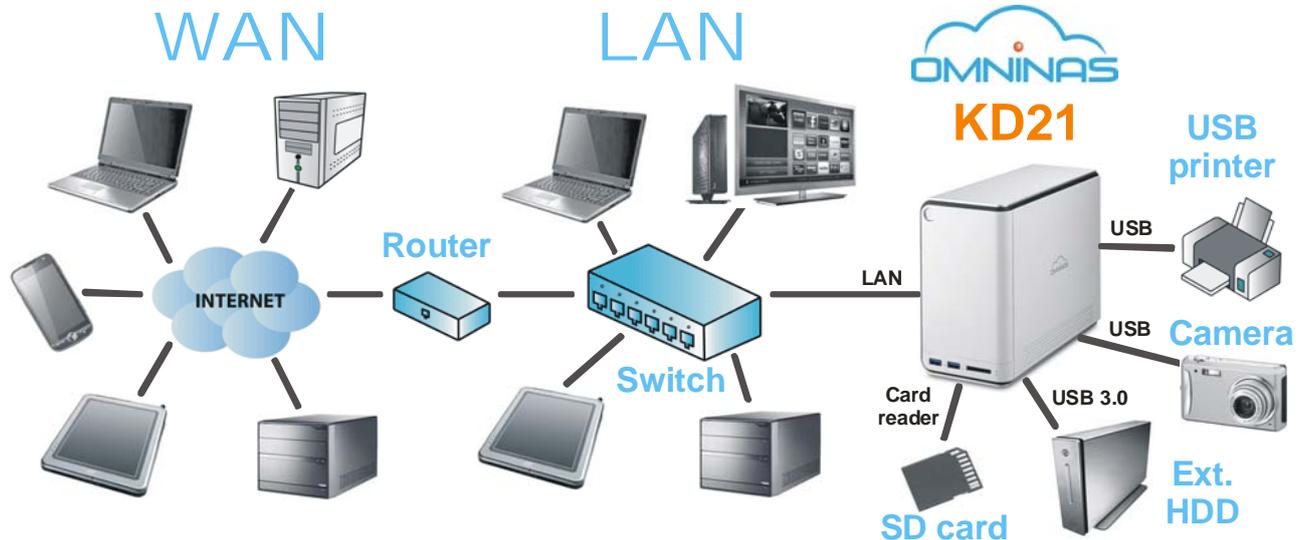
Store and Share the Great Moments in Life
With OMNINAS KD21 you can easily store and share documents, personal movies and music as well as photos. Not only does it support access from personal computers, OMNINAS KD21 makes sure you have your files always with you – basically from any place in the world.

Built-in Twonky Media Server
If you want to stream, rather than just store and share audio and video from your file server, OMNINAS KD21 comes with integrated Twonky media server and allows you to play multimedia files through XBOX, PS3 or media players on TV.

Built-in printer server
With KD21 you can easily share your USB printer with any users in your local network. Simply connect the USB printer to the USB ports at the back panel of KD21, share with the OMNINAS Finder software and you can print from anywhere in the house or office. No need to connect your printer directly to PCs.

Share external hard disks and flash memory
The OMNINAS KD21 is also suitable for connecting external USB hard disks and SD flash memory cards, so that you can also share and save files from any PC in your network.

The built-in card reader autocopies your photos and other data
You can enable the auto copy function on the SD card reader or USB 3.0 port by configuring the Auto Copy settings. Once enabled, you can insert a USB storage drive, a PTP camera via USB or the SD card from your camera and it will automatically copy the contents to the designated folder on the OMNINAS KD21. The process finishes with three audible beeps.

Upload and share files from iPhone®, iPad® and Android devices
In the modern world, nothing is as important as reaching your data from anywhere. By using a simple app, you can manage your NAS, upload to, download and stream all of your media and files from iOS and Android devices on the go.

Shuttle OMNINAS KD21 – Special Product Features

LAN/Disk Performance

up to 100 MB/s
Read

up to 70 MB/s
Write

Superior Performance

The OMNINAS KD21 provides high stability and delivers excellent performance with top read/write speeds of up to 100 MB/s & 70 MB/s while it also allows for up to 256 clients to be connected to the device at the same time. [1]

## Two bays provide various expansion modes

The OMNINAS KD21 supports 3.5" or 2.5" hard disks or SSDs with a maximum capacity of 4 TB (or more) for each drive. The drives are simple to install and configure. Depending on your specific requirements you can choose from several RAID modes:

- **Single disk with expansion capability:** install one disk permanently and you can add a second disk temporarily. You can always remove or replace the second hard drive, similar to as how external hard drives are used.
- **Combine the capacity of two disks with JBOD or RAID 0.** If you are using two identical HDDs, it is recommended to use RAID 0 for optimised performance.
- **RAID 1 (mirroring):** The data is duplicated on two physical disks. In the event of a single disk failure, the complete data is still available on the working disk. KD21 supports hot-swapping and auto-rebuild functionality without having to turn off the NAS.

2.5mm

Robust aluminium chassis with a clean and modern look

KD21 is built of a 2.5mm thick stylish aluminium housing that not only blends well with home environments, it moreover is of technical benefit - it is also increases the thermal performance of the device.

Fan speed

Full

Middle

Off

Shut down

40 50 60
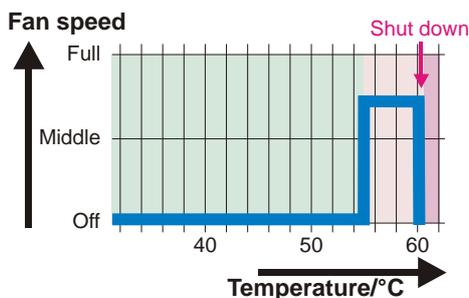
Temperature/°C

Reliable, cool and quiet

With the above in mind, the inside temperature doesn't increase easily. The fan will never turn on when the hard disks' temperature is below the threshold value of 55°C [2]. Should the uncommon case of higher temperatures arise, the large 70mm cooling fan starts spinning at a comfortably low speed to keep the system quiet.

Two built-in Superspeed USB 3.0 ports and Card Reader

The OMNINAS KD21 features two USB 3.0 ports and one USB 2.0 port. USB 3.0 achieves a maximum data rate of up to 5.0Gbps (640 MBytes/sec) which is ten times faster than USB 2.0. USB 3.0 is fully compatible to USB 2.0. All USB ports support external devices like hard disks, flash drives, printers, digital cameras, etc. The memory can be shared across local networks. In addition, the built-in card reader reads your SD cards and shares such data with the NAS swiftly.
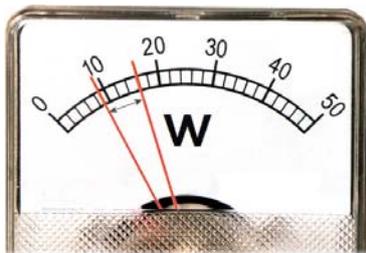
Low power consumption

When using the OMNINAS KD21 in a home environment it likely rests most of the time in suspend mode and the average consumption should be more or less 9,6 W only. Based on this value, the annual consumption would amount to approx. 84 kWh which would mean just 17 Euros on the power bill (based on 20 Euro ct/kWh). Under normal load (idle mode), the KD21 consumes 19 W.

Acronis True Image Backup Software

The OMNINAS KD21 comes bundled with a copy of Acronis True Image Personal Edition software. This utility provides powerful data backup capabilities that support full backups or selected backups of key files, enhanced flexibility and convenience of data backups.

Comparison OMNINAS Series	KD20	KD21
Processor	PLX7821 2x 750 MHz	Marvell 88F6707 1.0 GHz
Memory	256MB DDR2	512MB DDR3
Performance (R/W)	75 / 55 MB/s	100 / 70 MB/s
USB 3.0	1	2
USB 2.0	2	1
Card reader	1	1
Gigabit LAN (RJ45)	1	1
Wake-on-LAN (WOL)	-	Yes
802.3az Energy Efficient Support	-	Yes
FTP Server	-	Yes
PTP (Picture Transfer Prot.)	-	Yes
Simultaneous server services	-	Yes
Acronis Backup Software	since May'13	Yes
Online Firmware Update	-	Yes
2 HDDs in Single Mode	-	Yes
On/Off Scheduling	-	Yes
LED / FAN On/Off Switch	-	Yes
Power (standby / idle)	9 W / 15.5 W	9,6 W / 19 W

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Shuttle OMNINAS KD21 Specifications

Hardware

Chassis	Robust, stylish 2.5 mm sandblasting aluminium combined with white acrylic PMMA Dimensions: 170 mm (H) x 90 mm (W) x 225 mm (L) = ca. 3.44 litres Weight: 2716g Kensington Security Slot at the back panel (also called a K-Slot or Kensington lock) as a part of an anti-theft system
Storage Bays	Two storage bays (storage drives not included) Supports 6.4 cm (2.5") and 8.9 cm (3.5") drives Easy hard disk installation in two trays Appropriate screws are included Each bay with one hot swap button for RAID 1
Hard disk support and RAID levels	Supports two SATA storage drives each up to 4TB (or more) Maximum total capacity of 8 TB and beyond Supports Hard Disk Drives (HDD) and Solid State Drives (SSD) Supports 6.4 cm (2.5") and 8.9 cm (3.5") drives Raid support: single disk(s) [4], RAID 0, RAID 1 (hot swap), JBOD Supports hard disk spin-down timer Supports check/format disk, SMART information report, disk usage status report Hard disks must support SMART temperature feature with temperature sensor
Network connector and IP setting	1x Gigabit LAN (RJ45, rear) Supports Wake-on-LAN (WOL) [5] Supports IEEE P802.3az Energy Efficient Ethernet (EEE) IP Configuration: Supports Static IP or Auto IP by DHCP server
USB Connectors	2x USB 3.0 (type A, front), supports Auto-Copy function 1x USB 2.0 (type A, rear) All USB ports support external devices like hard disks, flash drives, printers, digital camera and USB hubs. Memory can be shared to local network.
Card Reader	Buillt-in card reader in the front panel Supports SD, SDHC and SDXC flash memory cards Supports Auto-Copy function
Buttones	Main power button with status LED Two Omni Touch Hot Swap buttons (for HDD1, HDD2) Reset button (hole, rear) for admin passwort reset

LED Indicators	Status LED: dual colour (access/error: blue/red), can be turned off HDD1/HDD2 LEDs: dual colour (access/error: blue/red) USB 3.0 LED: single colour (access: blue) Card reader LED: single colour (access: blue) LAN speed LED (10/100 Mbps: green, 1000 Mbps: orange) LAN Activity LED (access/link: blinking green)
CPU, RAM and OS	Processor: Marvell 88F6707 1.0 GHz, ARMv7 compliant SOC DRAM memory size: 512 MB DDR3 Operating system: Embedded Linux
Power Adapter	External 65 W AC/DC power adapter (fanless) Input voltage: 100~240 V AC, 50~60 Hz Automatic AC voltage adjustment Input current: max. 1.6 A (1.0 A) for 100 V (240 V) input voltage Output: 19 V DC, max. 3.42 A DC Connector: 5.5/2.5 mm (outer/inner diameter) Dimensions: 108 mm x 30 mm x 46.5 mm (without cable)
Cooling fan and temperature control	Ultra-quiet 70 mm cooling fan. By default the fan is not activated under normal temperature conditions. The following criteria depicts the system fan behavior dependend on the internal hard disks temperature: up to 54 °C: fan is off 55~61 °C: fan is on 62 °C and above: system shuts down The System also shuts down when the system temperature exceeds 65 °C. [2] Note: the fan can be set to non-stop operating mode, if desired
Accessories	Quick Installation Guide AC Power adapter (65 W) with AC power cord (plug depends on region) Ethernet cable, ca. 150 cm Driver CDROM with NAS finder software (Windows & Mac) and documentation DVD with Acronis True Image Personal Backup Software Screws for hard disk installation

Functionality

Web User Interface	Web User Interface The device settings are made through a web browser on a computer, which is connected to the same local subnet. Many languages are supported: e.g. English, German, French, Spanish, Italian, Dutch, Danish, Chinese, Japanese. The OMNINAS Web Interface is particularly user friendly thanks to its simple structure. The OMNINAS Wizard is your guide during the initial setup.
Finder Software	The OMNINAS Finder Software Tool is used to detect the OMNINAS system in the local network (within the same subnet). It can start the Web User Interface in your default browser and can map/unmap the internal and external storages of the OMNINAS to a drive letter of your PC.

APPs for mobile devices	You can use an App to upload and share files from iOS and Android devices. Just look for the appropriate "OMNINAS" app on one of these websites: Android: https://play.google.com/store/apps/details?id=com.shuttle.omninas2 iOS: http://itunes.apple.com/nz/app/omninas/id543929833
Networking Services	Samba Server (SMB file sharing) with up to 256 share folders and up to 256 users FTP Server (File Transfer Protocol with SSL/TLS support) Apple File Protocol (AFP) Twonky DLNA Media Server iTunes Media Server Printer Server (supports USB printers) BT download (scheduled and without PC) External device sharing (via USB or card reader) NTP support for scheduled time synchronization (RTC integrated) Wake on LAN (WOL)
System Services	Firmware upgrade (online or offline) Time-Zone settings Factory reset function System log report
Backup functions	Quick Auto Copy for external storage USB 3.0, PTP[3] camera or card reader to NAS (Quick Copy) NAS to USB storage backup (scheduled or immediately) NAS to NAS backup (scheduled or immediately) Acronis True Image Personal Backup Software
File Systems	Internal: XFS External: EXT2, EXT3, EXT4, XFS, NTFS, FAT, FAT32
System Require-ments	- Workstation OS: MS Windows XP SP3, Mac OS X 10.4, Apple Safari 3.0, Linux kernel 2.6.x or later - Smart phone OS: iOS 4.2, Android 2.3 or later - Browser: MS Internet Explorer 7.0, Firefox 3.x, Google Chrome, Apple Safari 3.0 or later - Router for Internet connection
Standby Mode	After a certain time of inactivity the system will enter power saving (standby) mode. This time can be set under: Settings - General - Power Saving Time Setting You can select a time from 10 minutes up to 5 hours.
Power on/off functions	Scheduled power on/off - simple configuration for each day of the week Power on after power fail (restores the previous state: on or off) Wake on LAN (WOL) [5]

Reference values and compliance

Transfer Speed [1]	Read data - from NAS to workstation: up to 100 MB/s Write data - from workstation to NAS: up to 70 MB/s Maximum number of concurrent connections: 256
Power Consumption [1]	Power off: 0.35W Power saving mode (suspend): 9.6 W Normal operating (no hard disk access): 19 W
Operating temperatire range	Operating temperature range: 5~40 °C Relative humidity range: 10~90% (non-condensing)
CE Compliance	This device is classed as a technical information equipment (ITE) in class B and is intended for use in living room and office. The CE and WEEE marks approve the conformity by the EU-guidelines: • EMC - guideline 2004/108/EC, Directive on Electromagnetic Compatibility • LVD - guideline 2006/95/EC, Directive on Low Voltage • ErP Lot6 - guideline 2009/125/EC, Directive on ecoconception of Energy related Products • RoHS - guideline 2002/95/EC, Directive on Restriction of Hazardous Substances • WEEE - guideline 2002/96/EC, Directive on The Waste Electrical and Electronic Equipment
Other	• CB (IEC 60950-1:2005 (2nd Edition) • FCC

<u>Footnotes:</u>

[1] depending on the test environment

[2] the threshold temperatures are subject to change by firmware update.
The KD20's threshold temperature refers to the "Current internal temperature" provided by the SMART monitoring system. This temperature may be much higher than the "operating/ambient temperature" that is also mentioned in the hard disk specification. The KD20 only supports hard disks with SMART monitoring system and temperature sensor which all available SATA hard disks should support.

[3] Picture Transfer Protocol (PTP) - allows the transfer of images from digital cameras to computers and other peripheral devices without the need of additional device drivers. Modern digital cameras usually support this protocol.

[4] The single disk expansion function is designed to allow you to create additional storage space without changing your current single disk mode. The second disk is then recognized as "external drive". Please refer chapter "Storage Management" in the manual for further information.

[5] You can enable the Wake on LAN function in Web User Interface: Settings - General - Enable Wake-On-LAN. After Wake on LAN is enabled for your OMNINAS, you can switch off the OMNINAS and turn on over the network by using a WOL (Wake on LAN) application. For proper function, please do not interrupt the power supply from the OMNINAS. You will find the MAC address on the bottom of the OMNINAS device.