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# Freecom SilverStore 2-Drive NAS Hardware Documentation

NAS Freecom SilverStore NAS is based on the Marvell Feroceon of SoC 88F6282 the rev the A1 running at 1000Mhz frequency, the name on the motherboard HNC-N2 LE.



- CPU: Marvell 88F6282 (ARMADA 300) @1.6GHz
- Stock bootloader is locked to boot only Stock OS by checking signature.
- MB has place for soldering second RAM IC

### THE BOARD INCLUDES:

- one chip RAM 128 MB Download now (the Samsung [K4B1G1646G](#) , there is a place in the second pinout)
- NAND flash 128MB (the Samsung [K9F1G08U0D](#) )
- USB 3.0 controller D720200F1
- Ethernet controller the Marvell 88E1318
- Fan Controller ADT7473



### Search



```
USB 0: host mode
PEX 0: PCI Express Root Complex Interface
PEX interface detected Link X1
PEX 1: interface detected no Link.
Net:  egiga0 [PRIME]
Hit any key to stop autoboot:  0

Saving Environment to NAND...
Erasing redundant Nand... 0x000c0000 0x000c0000
Writing to redundant Nand... Erasing Nand...Writing t
```

### **BOOTLOADER ENVIRONMENT**

```
Marvell>> printenv
baudrate=115200
loads_echo=0
ipaddr=10.4.52.165
serverip=10.4.52.7
rootpath=/srv/ubuntu
netmask=255.255.255.0
run_diag=yes
MALLOC_len=1
ethprime=egiga0
bootargs_root=root=/dev/ram0 rootfstype=cramfs init
bootargs_end=:::DB88FXX81:eth0:none
image_name=uImage
standalone=fsload 0x2000000 $(image_name);setenv bc
lcd0_enable=0
lcd0_params=640x480-16@60
ethaddr=00:50:43:12:29:32
ethmtu=1500
mvNetConfig=mv_net_config=(00:11:88:0f:62:81,0:1:2:
usb0Mode=host
nandEcc=1bit
netretry=no
rcvrrip=169.254.100.100
loadaddr=0x02000000
autoload=no
image_multi=yes
uboot_ver=v0.0.9
mfgtest_state=final_tested_ok
mfgmodel=HNC-N2
ethact=egiga0
stdin=serial
stdout=serial
stderr=serial
mainlineLinux=no
enaMonExt=no
enaCpuStream=no
enaWrAllo=no
pexMode=RC
disL2Cache=no
setL2CacheWT=yes
disL2Prefetch=yes
enaICPref=yes
enaDCPref=yes
sata_dma_mode=yes
netbsd_en=no
vxworks_en=no
console=console=ttyS0,115200 mtdparts=nand_mtd:0x00
0x00380000@0x00360000(uimage),0x076e0000@0x006e0000
bootcmd_f=nand reset; nand read.e 0x800000 0x001000
bootcmd=nand reset; nand read.e 0x800000 0x00100000
nand read.e 0x40000 0x00380000 0x0027d400; check_cr
bootm 0x40000; bootdelay=3
disaMvPnp=no
enaAutoRecovery=yes
pcieTune=no
pcieTune1=no
bootcmd=""
```

Environment size: 1411/131067 bytes

### **SECTIONS IN THE NAND-FLASH:**

- uboot 0x0-0xA0000
- param 0xA0000-0xE0000
- preroot 0xE0000-0x360000
- rootfs 0x6E0000-0x7DC0000
- misc 0x7DC0000-0x8000000

The environment variable bootcmd bootloader each time you start the device is initialized to the factory state (special thanks to the manufacturer), which greatly complicates the launch of a custom operating system on the device. It contains the following commands:

```
nand reset; nand read.e 0x800000 0x00100000 0x00195
nand read.e 0x40000 0x00380000 0x00380800; check_cr
setenv bootargs $ (console) $ ( bootargs_root); bo
```

As I gpt into the device section preroot, its image is not separate and proprietary utility refuses to restore it, he decided, just in case sdampit NAS loader, it may be useful to someone to revive a bricked device.

Dump Loader can be downloaded [here](#).

To start the device must be killed to connect to its serial console via USB-UART cable and use the utility kwboot, you can download it [here](#). Next, run the utility command:

```
sudo ./kwboot -p -t /dev/ttyUSB0 -b ./SilverStore_
```

And then push the device power button.

## References

- [Translated from](#)
- [Wikidevi Freecom 2 NAS Page](#)
- [Booting Kirkwood devices](#)
- [U-Boot replacement and Firmware hacking](#)

## Other Marvell Kirkwood based devices

- [Netgear ReadyNAS NV, NV2](#)
- [Zyxel NSA 325](#)

## Generic Documentation

- [Marvell Kirkwood 88f6282 SOC](#)
- [U-Boot Boot Loader](#)

**Attachments:** 3 Attachments by [Mauro Mozzarelli](#) ...