

ART

AAF Recovery Tool – V 3.7* AV 7000/AV 700

**A detailed overview of the ART features,
Quick-Installation-Guide for the maxiubootloader
and installation guide for AAF E2 images (Flash and USB)**



PART III

Rev 1.0, May 2010

*V 3.7 is current released version



The most important at the beginning....

Acknowledgements (in alphabetical order)

To **Andy-1** and the AAF crew for operating and maintaining a fantastic board!

To **Black_64**, who provides a lot of tools (not only for Atevio) and was not tired to answer my (sometimes silly) questions about ART. Finally for reviewing this document.

Special thanks to **Maic**, who supports creating this manual by providing an AV7000 for testing. So I could keep my family box still running without stress ☺.

To **SoLaLa**, who delivers not only the uboot and bootloaders. He provides a lot of information about bootloader installation, flashing the box and also reviews this document.

To all **users** of the board who will help with their feedbacks, issues and solutions to keep the board alive at an actual knowledge level.

Thank you!



This manual is for use with AV 7000 (TwinTuner) and AV 700 (Single Tuner)
 All tasks are common for both receivers. If you use this manual for AV 700 make sure that you use the correct software version.
 Currently ART is available for AV 7000 and AV 700. The versions are only for use with the corresponding receiver!

All screenshots, commands and log files shown in this manual are referring to an Atevio AV7000.
 They are may be created using different and older versions.

The AV7000 is identical with following other brands:

Reseller	Model	Reseller ID	Country
Fortis	FS-9000	20 00 00 00	Korea
Rebox	RE.9000HD	20 01 00 00	Belgium
Octagon	SF-1018	20 02 00 00	Germany
HDBox	FS 9300 HD	20 03 00 00	Czech Republic
UltraPlus	F-9000HD	20 05 00 00	New Zealand
Openbox	S8 HD PVR	20 06 00 00	Ukraine
Tiviar	F1 HD PVR	20 07 00 00	Switzerland/USA
ICECRYPT	S4000HDPVR	20 08 00 00	Great Britain
Atevio	AV 7000 HD	20 09 00 00	Germany
Skyway	Diamond	20 13 00 00	Russia

The AV700 is identical with following other brands:

Reseller	Model	Reseller ID	Country
Fortis	HS-9510 HD PVR	20 00 03 00	Korea
Rebox	RE.4000HD PVR	20 01 03 00	Belgium
Octagon	SF-1008	20 02 03 00	Germany
HDBox	FS 9100 HD	20 03 03 00	Czech Republic
UltraPlus	980 HD	20 05 03 00	New Zealand
Openbox	S5 HD PVR	20 06 03 02	Ukraine
Tiviar	S1 eco HD PVR	20 07 03 00	Switzerland/USA
Optibox	Koala HD	20 15 03 00	?
Atevio	AV 700	20 09 03 00	Germany
Skyway	Classic	20 13 03 00	Russia

The tables are may be not complete!
 Information about identical clone boxes are found at
<http://www.aaf-board.com/wbb2/index.php> and other sites in the internet.



Important Note:

This software may be affects the functions and warranty of your HDTV SAT receiver!

Neither AAF Board nor any other person is responsible if anything works not as expected – except YOU!

**The software is shared voluntary and non-commercial!
If you don't agree with this don't use this software!**

Use at your own risk!



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Document revision history:

Release 1.0 – April 30th 2010 – Document created.

Please report any bugs or typos to the AAF Board or send a PN to FSC830!

This document is written by FSC830



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Overview

For better ease of use and readability this manual is divided in several parts.

PART I:

Basic informations about ART, required hard- and software and recommended connection settings are found here.

Contains also a “**Quick-Installation-Guide**” for the maxiubootloader, a guide for installing an **E2 USB Image** using the “**AAF Maxiboot Installer**” (AMI) and installing an **E2 Flash Image**.

PART II:

Describes every single pane of ART in a very detailed way.

This section should be read carefully if any issues during the maxiubootloader installation are occurring to your system.

Also recommended for interested users who want to know some more details what ART can do.

PART III:

Explains how to install the maxiubootloader using USB or TFTP method.

Some hints about troubleshooting.



Requirements

Required hardware:

Laptop or PC with MS Windows XP, MS Vista or MS Windows 7 and a serial connector (native COM Port (preferred) or USB2COM adaptor)

Microsoft .NET Framework (at least V3.5) must be installed!

A null-modem cable (not just a serial cable)

Network equipment for connecting the receiver and the computer. This might could be a single cross-over LAN cable or at least two patch cables, and a switch or router.

At least one USB stick for E2 images or bootloader installation

Required software:

AAF Recovery Tool "ART" for your receiver.*

AAF maxiboot installer "AMI".*

An Enigma2 image, flash or USB version depends which type of E2 image you like to install.*

A terminal software (i.e. Hyperterminal, Putty, Teraterm) for logging and debugging.

Note: Putty is not able to transfer files. In some cases files need to be transferred using the KERMIT protocol. Ensure that the terminal software you are using supports KERMIT transfer.

Using ART the receiver and the computer must be connected with serial and LAN interface!

When using AMI only a LAN connection is required.

This manual covers not detailed information how to setup a network.
Basic network knowledge is recommended.

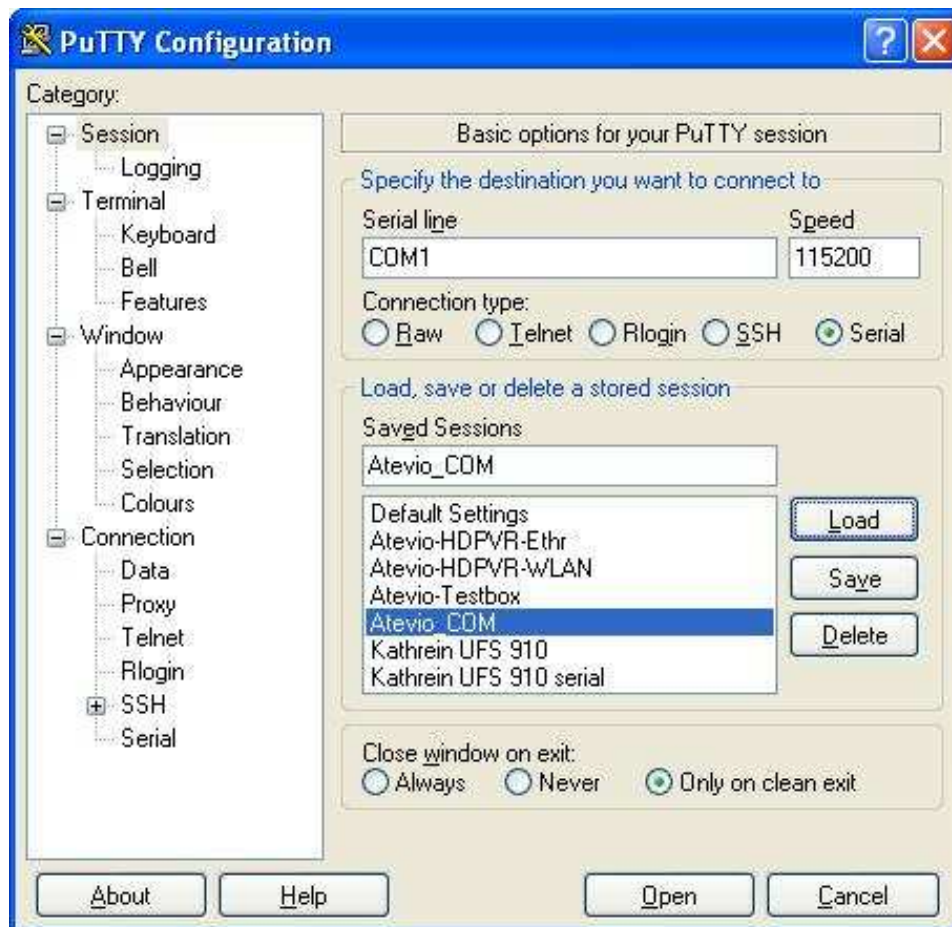
*) Please refer always to the AAF-board for current releases of the software!

Connecting computer and receiver

Serial connection:

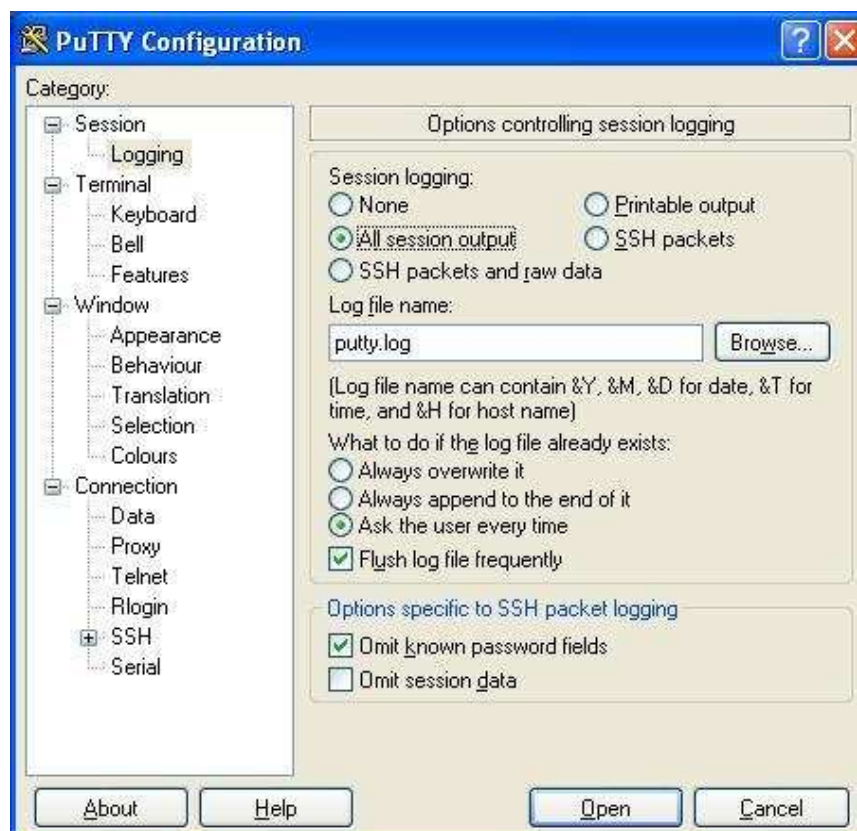
Settings for the serial connection are 115200,8,n,1,n

Example with Putty



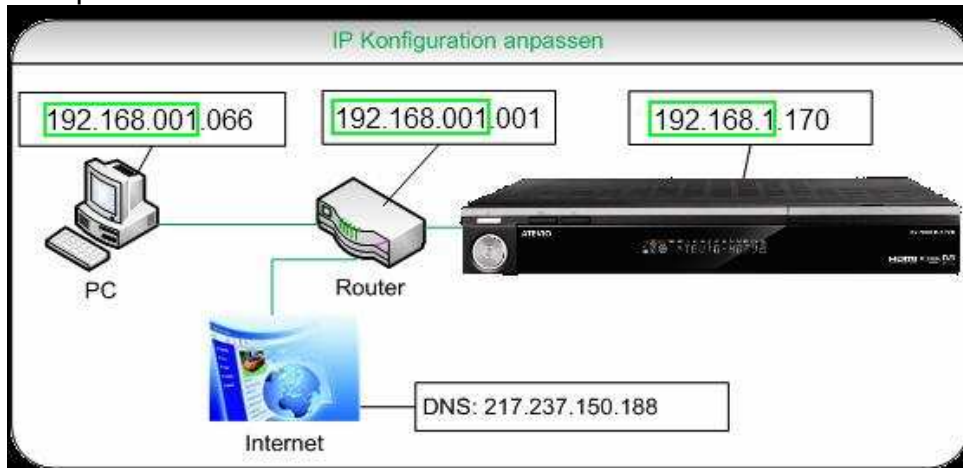


Putty allows you to log all sessions output



Network connection

Computer and receiver are connected via a router:



Entries in the Settings pane for ART:

IP-Adress: 192.168.1.170
 Gateway: 192.168.1.1
 Server-IP: 192.168.1.66
 Submask: 255.255.255.0

The DNS entry at your router depends on your provider!

Computer and receiver are connected via a crosswired LAN cable (or a switch):



Note: if the pc uses a 1GB/s LAN interface a normal patch cable can be used.

Entries in the Settings pane for ART:

IP-Adress: 192.168.1.170
 Gateway: 192.168.1.66
 Server-IP: 192.168.1.66
 Submask: 255.255.255.0



Testing the connection:

Start your terminal program and connect to the receiver, then start the receiver. Type several times the enter or space key to interrupt the boot.

You should get an output like this:

A screenshot of a PuTTY terminal window titled 'COM1 - PuTTY'. The background is yellow. The text displayed is: 'U-Boot 1.1.2 (Jul 3 2009 - 12:01:20) - st2.0-14', 'rTs 01FrTs', and 'STi710x>' followed by a green cursor bar.

```
COM1 - PuTTY
U-Boot 1.1.2 (Jul 3 2009 - 12:01:20) - st2.0-14
rTs 01FrTs
STi710x>
```

(Picture shows the original bootloader)

Typing printenv shows the settings (extract).

A screenshot of a PuTTY terminal window titled 'COM1 - PuTTY'. The background is yellow. The text displayed shows the output of the 'printenv' command, listing various boot parameters such as bootdelay, baudrate, board, targetname, bootcmd, hwnfconf, nfs_server, ipconf, and bootargs.

```
COM1 - PuTTY
STi710x> readenv
Unknown command 'readenv' - try 'help'
STi710x> printenv
bootdelay=0
baudrate=115200
board=stb7100ref_27
targetname=muso
bootcmd=bootm a0300000
hwnfconf=set nwhwnet device:eth0,hwaddr:$ethaddr
nfs_serverconf=set nfs_server nfsroot=$serverip
ipconf=set ipaddrcfg ip=$ipaddr
cramfsbootargs=run hwnfconf;run ipconf;set bootargs console=ttyAS1,115200 root=/dev/mtdblock3
rcfg::192.168.10.1:255.255.255.0:hmp7109::off nwhwconf=$nwhwnet bigphysarea=4060 stmmaceth=m
e:16 loglevel=0
idebootargs=run hwnfconf;set bootargs console=ttyAS1,115200 root=/dev/sda1 nwhwconf=$nwhwnet
msglvl:0,watchdog:4000,rxsize:16
nfsbootargs=run hwnfconf;run nfs_serverconf;run ipconf;set bootargs console=ttyAS1,115200 root
```

Note:

During all flashing and testing for this manual the receiver and computer have been connected directly with a patch cable (computer is equipped with 1GB/s interface) and serial connection.



Where do you want to go from here?

Follow the links!

[I like to install the maxiuboot asap!](#)

[I want to know more about ART!](#)

[The art of flashing ...](#)

[What is ARTTT ?](#)

The test environment

All task performed for this manual has been done with the following equipment:



1. Atevio AV 7000
2. Null-Modem-Cable
3. Laptop, MS Windows XP Pro XP3
4. Laptop, MS Windows Vista SP1
5. LAN – patch cable (both laptops are equipped with an 1GB/s interface)
6. Several USB-sticks for flashing and images

Not shown: the TV and the HDMI cable.

The receiver was always direct connected to one of the laptops.

Both laptops meet the [requirements](#) as listed.

The Vista laptop #4 is the authors companies laptop. Some changes could not be done due to the companies policy settings (i.e. the Windows firewall could not be disabled).

That's way most of the tasks have been performed using laptop #3



If you encounter any problems with ART in a more complex environment (i.e. if you are using routers/bridges or switches) for network connectivity, try to simplify your environment.

Use a crossover LAN-cable (for computers with 10/100MB/s interface) or a patch cable (if computer is equipped with a 10/100/1000MB/s interface) and connect the receiver directly to the computer.

If ART is running and all tasks can be performed the problem is in your infrastructure!

Strictly recommended:

Disable all your firewall settings, disabling the antivirus software does may be not solve faulty connections. You may be forced to deinstall the antivirus software (see Troubleshooting section)

In this part of the manual we will show you some tasks beside of ART for flashing your receiver and troubleshooting.

This part is “**experimental nature**”, so that means, it may be not contents every possible issue.

Also may be not all possible ways to flash a receiver are discussed in details. We restrict this to reliable and reproducible methods.

The intention of this manual is to reduce problems when using ART and not to increase them ☺.

It is also a collection of currently known issues.

We try to keep this part up to date, therefore your feedback, issues and solutions are appreciated.

If you cant find a solution or hint for your problem, please ask in the AAF-board for more information/support!



The art of flashing...(without ART) ☺

If, for what reasons ever, you do not like to use ART for flashing the bootloader or if ART is not able to connect to the receiver, you can use the following methods:

Flashing using an USB device

If no network connection is possible, you can flash the bootloader without being connected to a network.

Copy the bootloader file to a FAT32 formatted USB stick. Don't use a FAT16 formatted stick!

REMOVE all other USB devices from your Atevio 700/7000!

Plug in the USB stick into an USB port (front or rear) and start the receiver.

Use your terminal program to interrupt the boot procedure.

After boot process is stopped, enter the following commands at the bootloader console:

usb reset

fatload usb 0:1 a4000000 ubootflasherHDbox.img

bootm a4000000

The new bootloader will be installed, a reboot is done automatically after the installation.

Note:

Use only the ubootflasherHDbox.img files (or the ubootflasherOrg.img for flashing the bootloader) provided in the AAF board to ensure that the bootloader is installed in a safe way.

The next screenshot shows the flash process. Note that there is an **original bootloader** and a maxiubootloader is installed.

Don't forget to set the bootargs afterwards!

COM1 - PuTTY

```

STi710x> usb reset
(Re)start USB...
USB: scanning bus for devices... 3 USB Device(s) found
      scanning bus for storage devices... 1 Storage Device(s) found
STi710x> fatload usb 0:1 a4000000 ubootflasherHDbbox.img
Loading ubootflasherHDbbox.img
.....
150000 Bytes read
STi710x> bootm a4000000
*DRAM: 128 MB
testpoint
Flash: 32 MB
*** Warning - bad CRC, using default environment

In: serial
Out: serial
Err: serial
Init frontprocessor -..
flashing now... stay tuned :-)
checksum = 60fe9fb 60fe9fb
test image ok
. done
Un-Protected 1 sectors

. done
Erased 1 sectors
Copy to Flash... .done
*

Board: STb7200-HDBOX [29-bit mode]

U-Boot 1.3.1 (Mar 19 2010 - 11:20:09) - stm23-0032
---created by TDT for general purpose---

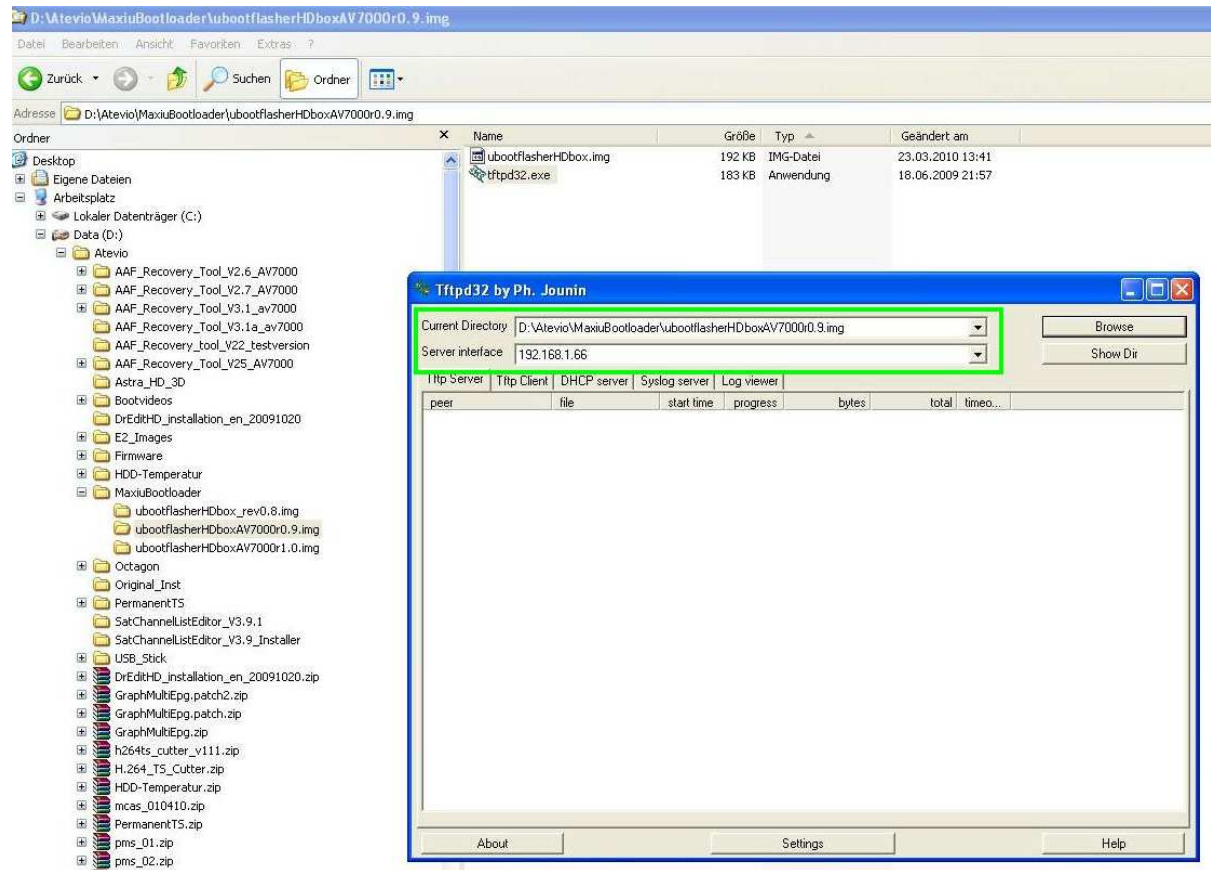
DRAM: 128 MB
Flash: 32 MB
*** Warning - bad CRC, using default environment

In: serial
  
```



Flashing bootloader using TFTP

Download the freeware program TFTP32 if you are using a Microsoft Windows OS. Install the program and run the exe file.



The easiest way to use the program is to copy the exe file and the ubootloader file into the same directory.

In the TFTP32 window **browse** to the selected directory. If your computer uses more than one **IP address** ensure that the correct **IP address** is selected in the TFTP32 window.

Note: You must not run ART and TFTP32 at the same time!

Running the tftp command at the bootloader console, you can't control which tftpd service will be connected. Most likely your installation will fail!



Start your terminal program and the receiver.
Stop the receivers boot process by typing the enter or space key several times.

You are now at the bootloaders console prompt.

Type in the following two commands:

tftp a4000000 ubootflasherHDbox.img

bootm a4000000

(using tftp the crc command is obsolete!)

The ubootflasher is installed, the box reboots automatically!

```
COM1 - PuTTY
HDBOX> tftp a4000000 ubootflasherHDbox.img
Using MAC Address 00:1D:EC:00:12:34
STMAC: RTL8020/1 found
STMAC: 100Mbps full duplex link detected
TFTP from server 192.168.1.66; our IP address is 192.168.1.170
Filename 'ubootflasherHDbox.img'.
Load address: 0xa4000000
Loading: #####
done
Bytes transferred = 196608 (30000 hex)
HDBOX> crc a4000000 30000
CRC32 for a4000000 ... a402ffff ==> 66e618de
HDBOX> bootm a4000000
## Booting image at a4000000 ...
Image Name:   atevio ubootflasher
Image Type:   SuperH Linux Standalone Program (gzip compressed)
Data Size:    38413 Bytes = 37.5 kB
Load Address: 84601000
Entry Point:  84601000
Verifying Checksum ... OK
Uncompressing Standalone Application ... OK
*DRAM: 128 MB
testpoint
Flash: 32 MB
In: serial
Out: serial
Err: serial
Init frontprocessor -..
```

Note:

Use only the ubootflasherHDbox.img files (or the ubootflasherOrg.img for flashing the bootloader) provided in the AAF board to ensure that the bootloader is installed in a safe way.

Note also that there is already a **maxiubootloader** installed. The flash procedure is used to perform an upgrade of the bootloader.



Install a bootloader using KERMIT

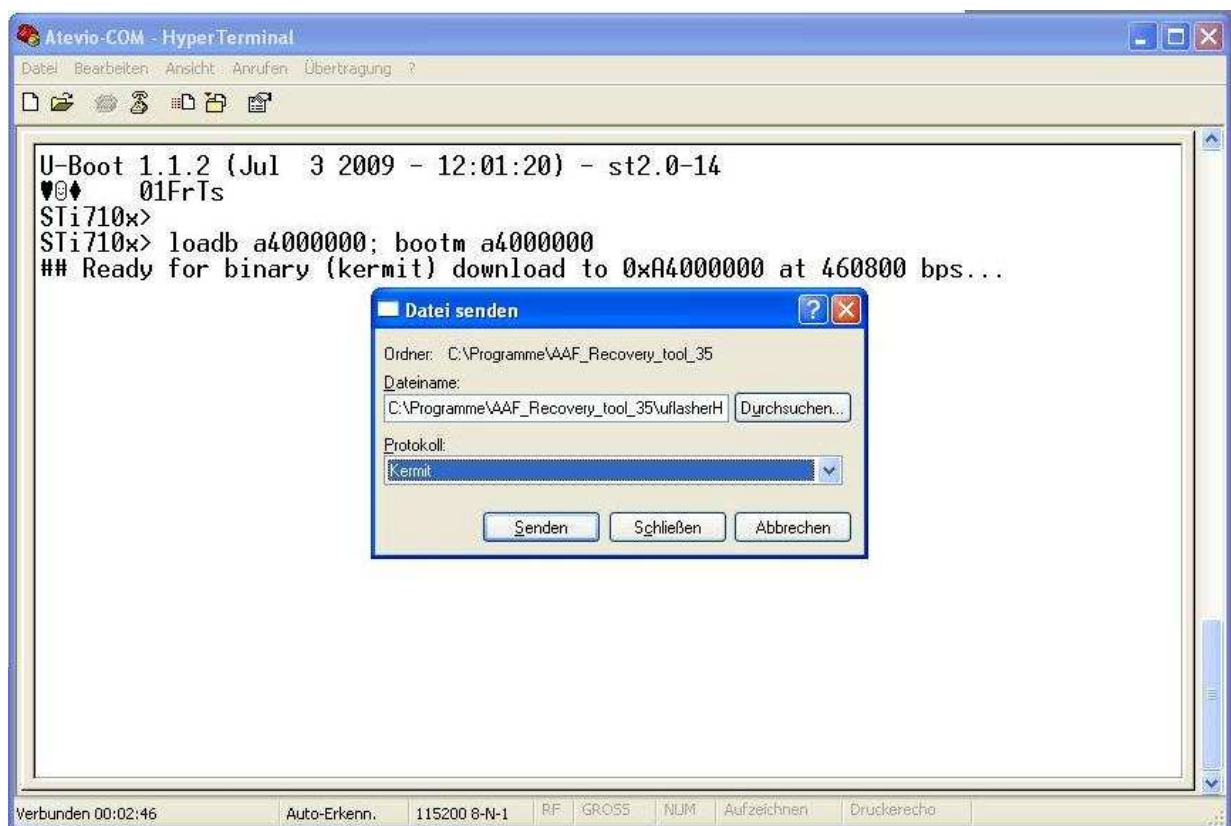
You need a terminal program which supports KERMIT transfer!

Connect computer and receiver using the serial connection, start your receiver and stop the boot process.

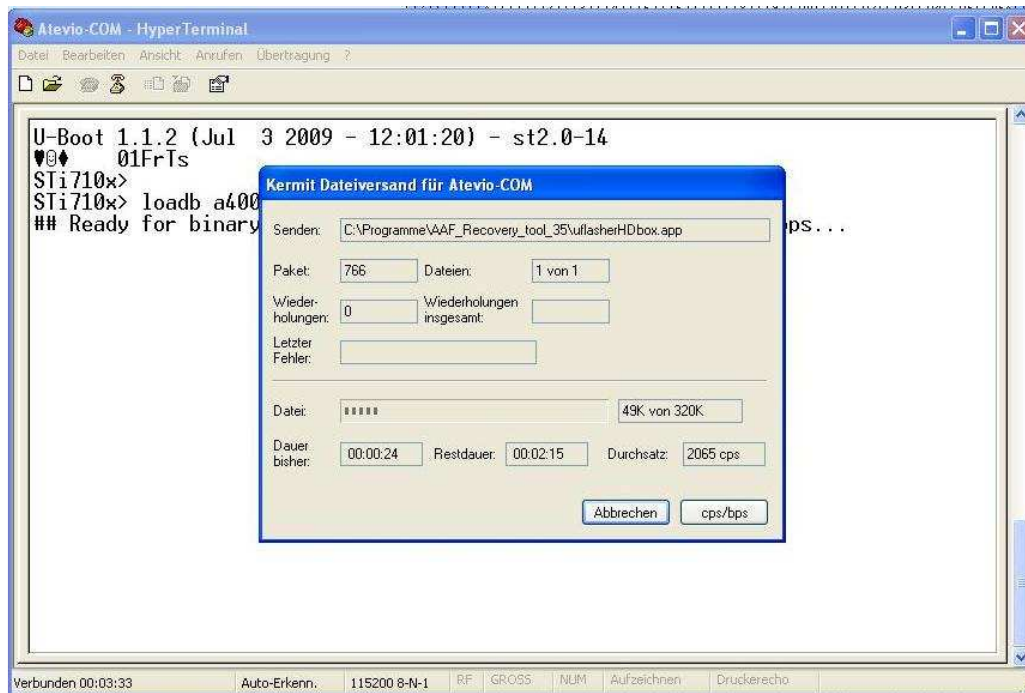
At the console prompt type

loadb a4000000; bootm a4000000

start sending the bootloader file using the KERMIT protocol

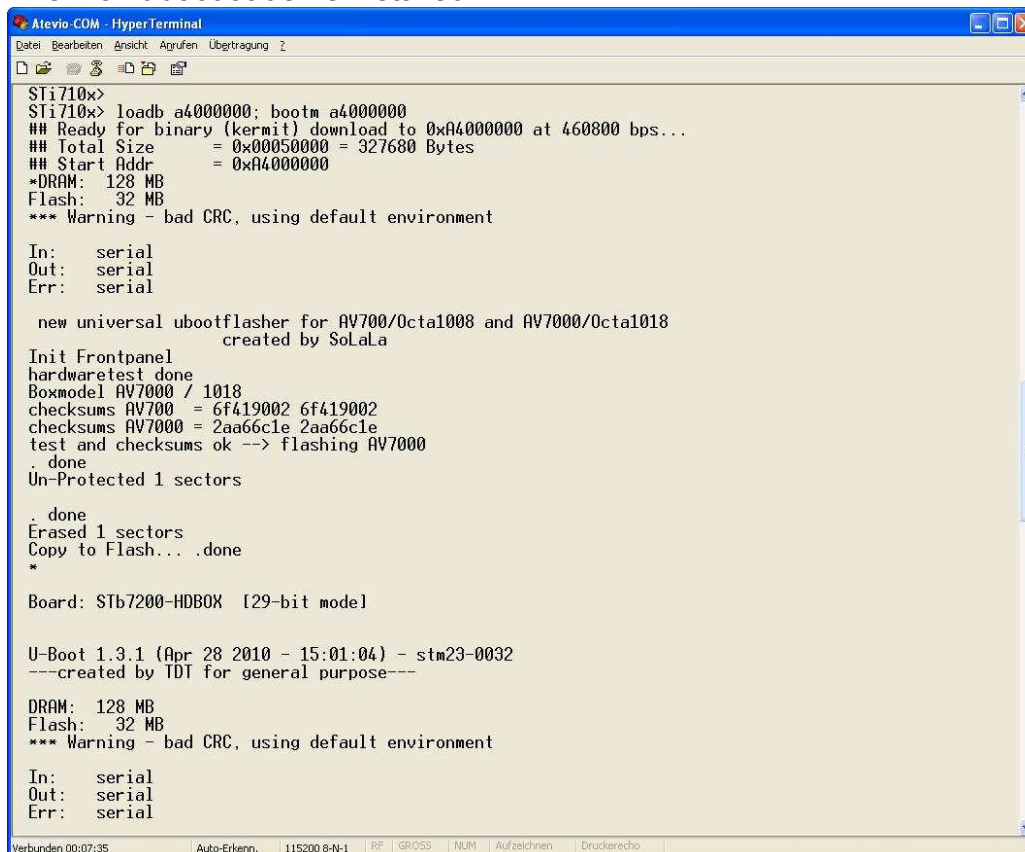


Note: you can only replace the original bootloader with the maxiubootloader, but not vice-versa using KERMIT!



WAIT, do not power off the receiver

After about 5 seconds the receiver starts automatically
The maxiubootloader is installed.



You need to set your bootargs



Important Note:

Remember, no matter if you are using the USB, tftp or KERMIT method and how the files are named (i.e. ubootflasher.app, uflasher.img, maxiubootv08.loader), you are NOT flashing just an image.

The file is an application, developed and provided by SoLaLa. The application ensures that flashing will be done in a safe way.

If you try flashing with a loader file (i.e. created with ***cat /dev/mtdblock0 > loader.img***), you will most likely make your receiver inoperative!

Never try this!!!



Installing a recovery image using an USB device

Copy the file urecoverAT.app in the ART program directory to a FAT32 formatted USB device.

Connect to the ubootloader console using the serial connection.

At the console prompt type the following commands:

usb reset

fatload usb 0:1 a5000000 urecoverAT.app

The image is loaded. When finished, a line "30123456 bytes read" (depends of recovery image version) is displayed.

To continue type:

erase a0300000 a1ffffff

cp.b a5000000 a0300000 1d00000

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ARTTT (Actual Reported Tips, Tricks, Troubleshooting)

First of all: check your program version! From ART 3.1a up a picture of the receiver is shown at the settings pane.

In all versions, the receiver name is shown in the title bar:



The version is also listed in the first line of art_log.txt:

```
25.04.2010 16:52:27 Started AAF Recovery Tool V3.1a (Atevio AV 7000 HD)
25.04.2010 16:52:27 Opening port COM1 settings: 115200,8,N,1
25.04.2010 16:52:27 Send first stop
25.04.2010 16:52:31 Send stop 0
25.04.2010 16:52:31 Connected
```

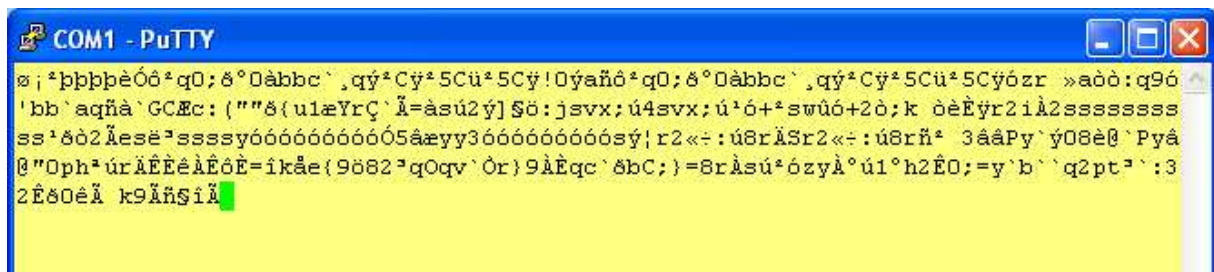
Remember: this collection is may be not complete, your feedback is highly appreciated!

Again: If any issue occurs, try to simplify your environment!



Connectivity problems

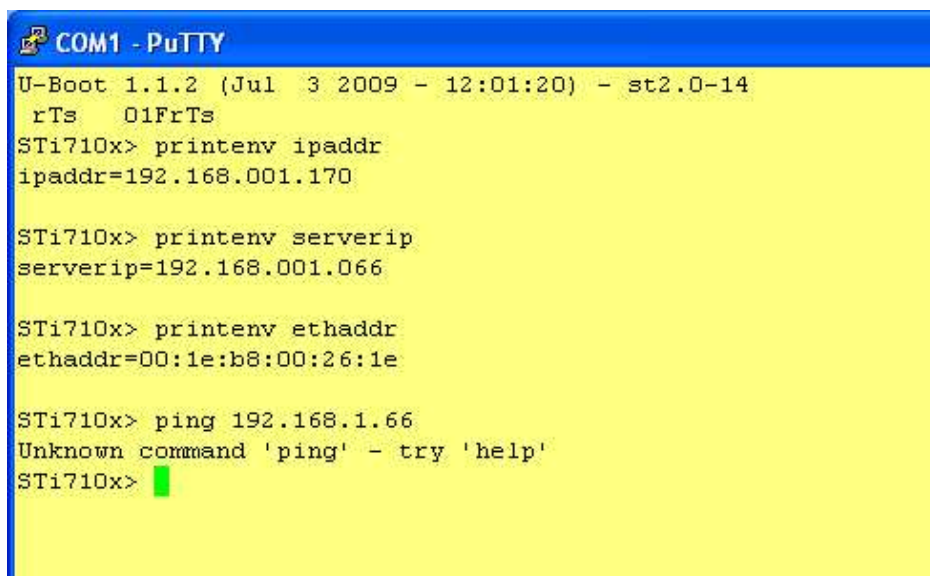
Your serial console looks like this:



Possible issue:

You are using the wrong COM port settings, check the settings and modify them (screenshot above is taken using 38400bps instead of 115200bps)

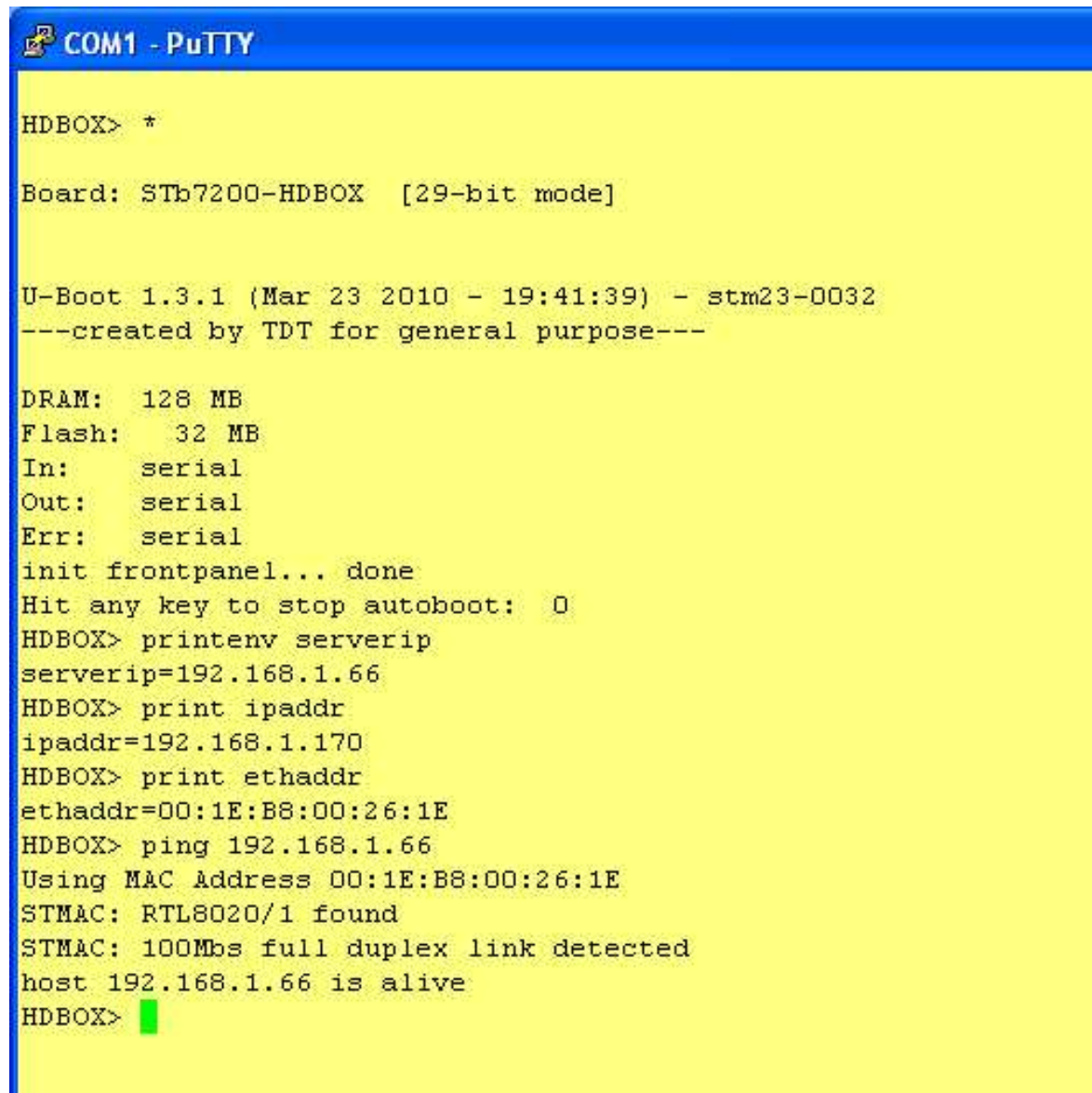
The uboot cant ping my server!



Yes, the original bootloader does not know a “ping” command as clearly seen in the commands response!

It works as designed.

But the maxiuboot can ping?



```
COM1 - PuTTY

HDBOX> *

Board: STb7200-HDBOX [29-bit mode]

U-Boot 1.3.1 (Mar 23 2010 - 19:41:39) - stm23-0032
---created by TDT for general purpose---

DRAM: 128 MB
Flash: 32 MB
In: serial
Out: serial
Err: serial
init frontpanel... done
Hit any key to stop autoboot: 0
HDBOX> printenv serverip
serverip=192.168.1.66
HDBOX> print ipaddr
ipaddr=192.168.1.170
HDBOX> print ethaddr
ethaddr=00:1E:B8:00:26:1E
HDBOX> ping 192.168.1.66
Using MAC Address 00:1E:B8:00:26:1E
STMAC: RTL8020/1 found
STMAC: 100Mbps full duplex link detected
host 192.168.1.66 is alive
HDBOX> █
```

Yes, the maxiubootloader is able to ping a host/gateway!



But I cant ping the receiver uboot console

```
C:\>ping 192.168.1.170

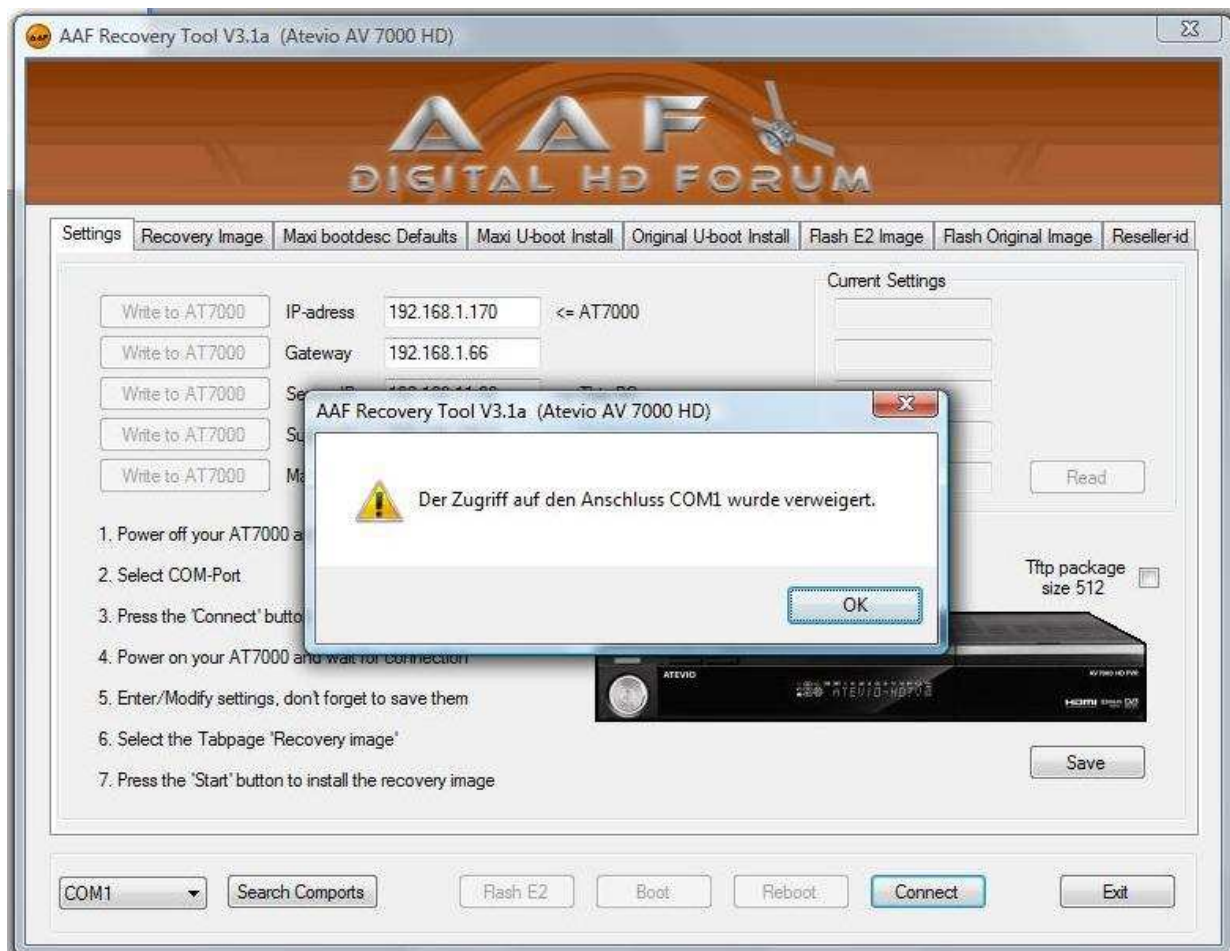
Ping wird ausgeführt für 192.168.1.170 mit 32 Bytes Daten:

Zeitüberschreitung der Anforderung.
Zeitüberschreitung der Anforderung.
Zeitüberschreitung der Anforderung.
Zeitüberschreitung der Anforderung.

Ping-Statistik für 192.168.1.170:
    Pakete: Gesendet = 4, Empfangen = 0, Verloren = 4 (100% Verlust),
C:\>
```

This is also correct, the bootloaders (original as well as maxiuboot) will not respond to ping requests.

ART cant connect the serial port!?



There is another program in the background blocking the COM port (mostly your terminal program)



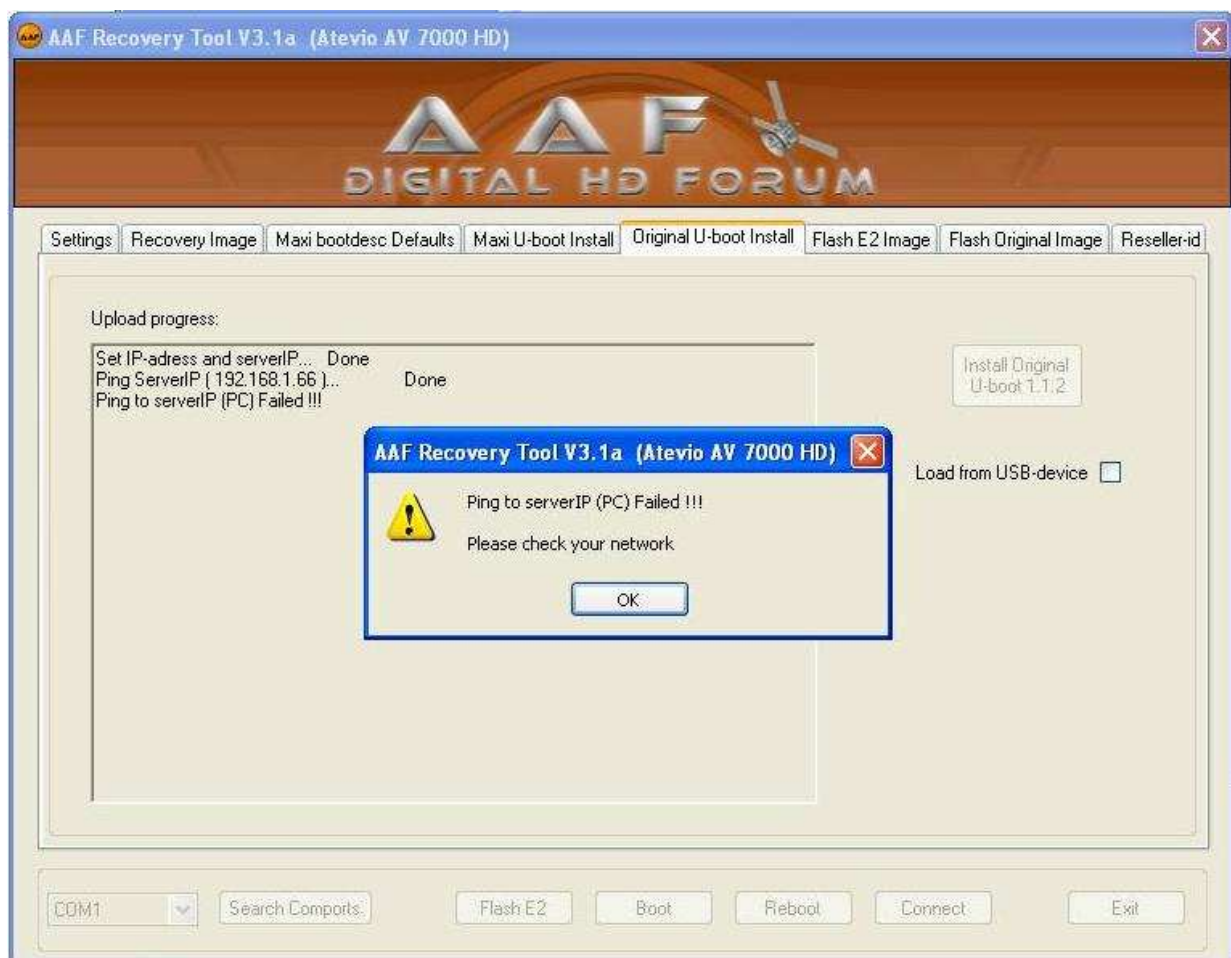
ART cant stop the boot process of the receiver!

Use following sequence: start ART – start receiver – click connect
or use prodedure as described in the section [Testing the connection](#).

I am able to use the serial connection, but ART cant flash the maxiuboot or an image?
Most commen reason: your firewall is enabled or the LAN settings (computer or receiver) are not matching!

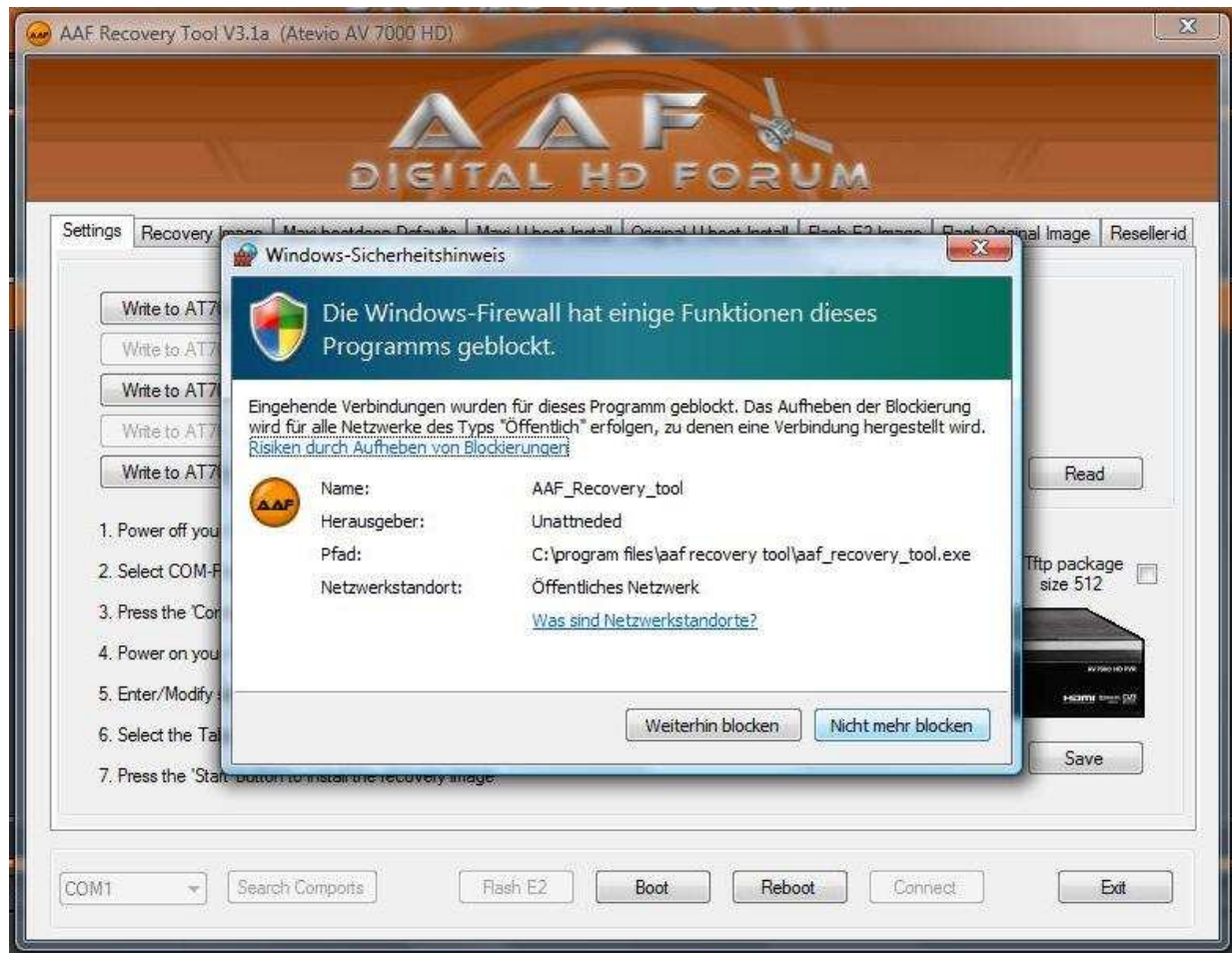
The following pages will shown some of these issues.

ART shows:





Strictly recommended: disable your firewall!



ART will not work reliable with the firewall enabled!

Here is a typical log file of a session started with enabled firewall! During installation the firewall is disabled and continues successfully.

STMAC: 100Mbps full duplex link detected
host xxx.xxx.xxx.xxx is alive

20.03.2010 01:55:11

HDBOX> tftp a4000000 ubootflasher

20.03.2010 01:55:11

Using MAC Address 00:01:02:03:04:05

STMAC: RTL8020/1 found

STMAC: 100Mbps full duplex link detected

TFTP from server xxx.xxx.xxx.xxx; our IP address is xxx.xxx.xxx.xxx

Filename 'ubootflasher'.

20.03.2010 01:55:16 T

20.03.2010 01:55:21 T

20.03.2010 01:55:26 T firewall is active

20.03.2010 01:55:31 T (T = Timeout)

20.03.2010 01:55:36 T

20.03.2010 01:55:41 T

20.03.2010 01:55:46 T



```
20.03.2010 01:55:51 T
20.03.2010 01:55:56 T firewall is disabled...
20.03.2010 01:55:56 Sourceport: 1507
20.03.2010 01:55:56 Filesize: 196608 - crc32: 6A73D742
20.03.2010 01:55:56 Memory CRC32: 6A73D742
20.03.2010 01:55:56 Send Block Again 1 size: 1468/ 196608 - Sourceport: 1507
20.03.2010 01:55:56 #
20.03.2010 01:55:56 #
20.03.2010 01:55:57 #
20.03.2010 01:55:57 #
20.03.2010 01:55:57 #
20.03.2010 01:55:58 #
20.03.2010 01:55:58 #
20.03.2010 01:55:58 #
20.03.2010 01:55:59 #
20.03.2010 01:55:59 #
20.03.2010 01:55:59 #
20.03.2010 01:56:00 #
20.03.2010 01:56:00 #
20.03.2010 01:56:00 #
20.03.2010 01:56:01 #
20.03.2010 01:56:01 Send ACK 134 - 0086
20.03.2010 01:56:01 Using Port: 1507
20.03.2010 01:56:01 Close listenTrace1
20.03.2010 01:56:01

20.03.2010 01:56:01
done
Bytes transferred = 196608 (30000 hex)
HDBOX> crc a4000000 30000

20.03.2010 01:56:01 CRC32 for a4000000 ... a402ffff ==> 6a73d742

20.03.2010 01:56:01
HDBOX> bootm a4000000

20.03.2010 01:56:01
## Booting image at a4000000 ...
```




Compare the computer and the receiver environment.
For Windows use the “ipconfig” or “ipconfig /all” command.

```
Ethernetadapter Bluetooth Network:
    Medienstatus. . . . . : Es besteht keine Verbindung
Ethernetadapter LAN-Verbindung:
    Verbindungsspezifisches DNS-Suffix:
    IP-Adresse. . . . . : 192.168.1.66
    Subnetzmaske. . . . . : 255.255.255.0
    Standardgateway . . . . . :
Ethernetadapter WLAN-Verbindung:
    Medienstatus. . . . . : Es besteht keine Verbindung
C:\>
```

The bootloader :

```
Board: STb7200-HDBOX [29-bit mode]

U-Boot 1.3.1 (Mar 19 2010 - 11:20:09) - stm23-0032
---created by TDT for general purpose---

DRAM: 128 MB
Flash: 32 MB
*** Warning - bad CRC, using default environment

In: serial
Out: serial
Err: serial
Init frontprocessor .
packet done but wrong f9- restart

packet done but wrong f9- restart
-.
Hit any key to stop autoboot: 0
HDBOX> tftp a4000000 ubootflasherHDbbox.img
Using MAC Address 00:1D:EC:00:12:34
STMAC: RTL8020/1 found
STMAC: 100Mbps full duplex link detected
TFTP from server 192.168.178.10; our IP address is 192.168.178.77
Filename 'ubootflasherHDbbox.img'.
Load address: 0xa4000000
Loading: T T T
Abort
HDBOX>
```

The IP ranges does not match, also, you did not save the environment after flashing,
The bootloader uses its default settings”!
Note the “Loading :T T T” is typical for a timeout issue!



So the solution is to **write** the bootargs!

The screenshot shows a PuTTY terminal window titled 'COM1 - PuTTY' with the following U-Boot bootargs configuration:

```
bootcmd=bootmenu $menutimeout $default
menutimeout=2000
ipaddr=192.168.178.77
serverip=192.168.178.10
gatewayip=192.168.178.1
netmask=255.255.255.0
ethaddr=00:1d:ec:00:12:34
bootdesc_0=---flash---
bootcmd_0=run hwnfconf;run ipconf; run bootargs 0;bootm a0300000
bootargs_0=setenv bootargs console=ttyAS1,115200 root=/dev/mtdblock3 rootfstype=squashfs ip=$netcfg nwhwconf=$nwhwnet b1
gphysarea=4060 stmmaceth=msglvl:0,watchdog:4000,rxsize:16 loglevel=0
stdin=serial
stdout=serial
stderr=serial

Environment size: 648/65532 bytes
HDBOX> set ipaddr 192.168.1.170
HDBOX> set serverip 192.168.1.66
HDBOX> set gatewayip 192.168.1.66
HDBOX> printenv
bootdelay=1
baudrate=115200
autoload=n
board=mb411
hwnfconf=set nwhwnet device:eth0,hwaddr:$ethaddr
ipconf=set netcfg $ipaddr:$serverip:$gatewayip:$netmask
bootcmd=bootmenu $menutimeout $default
menutimeout=2000
netmask=255.255.255.0
ethaddr=00:1d:ec:00:12:34
bootdesc_0=---flash---
bootcmd_0=run hwnfconf;run ipconf; run bootargs 0;bootm a0300000
bootargs_0=setenv bootargs console=ttyAS1,115200 root=/dev/mtdblock3
gphysarea=4060 stmmaceth=msglvl:0,watchdog:4000,rxsize:16 loglevel=0
stdin=serial
stdout=serial
stderr=serial
ipaddr=192.168.1.170
serverip=192.168.1.66
gatewayip=192.168.1.66

Environment size: 644/65532 bytes
HDBOX> tftp a4000000 ubootflasherHDbbox.img
Using MAC Address 00:1D:EC:00:12:34
STMAC: RTL8020/1 found
STMAC: 100Mbps full duplex link detected
TFTP from server 192.168.1.66: our IP address is 192.168.178.77
Filename 'ubootflasherHDbbox.img'.
Load address: 0xa4000000
Loading: T T T
```

Overlaid on the terminal is a 'Tftpd32 by Ph. Jounin' window showing four file transfer attempts of 'ubootflasherHDbbox.img' to '192...'. Each attempt shows a file size of 196608 and 0 Bytes sent. A 'Log viewer' tab is also visible.

But also after **writing** the bootargs installation **fails**!?

Printenv clearly reports the **correct settings**, why installation **fails**?

Remember: after setting/modifying the bootargs you need to save the environment and to reboot the receiver to set the modifications active!

```
Using MAC Address 00:1D:EC:00:12:34
STMAC: RTL8020/1 found
STMAC: 100Mbps full duplex link detected
TFTP from server 192.168.1.66; our IP address is 192.168.178.7
Filename 'ubootflasherHDbox.img'.
Load address: 0xa4000000
Loading: T T T T
Abort
HDBOX> saveenv
Unknown command 'saveenv' - try 'help'
HDBOX> save
Saving Environment to Flash...
. done
Un-Protected 1 sectors
Erasing Flash...
. done
Erased 1 sectors
Writing to Flash... .done
. done
Protected 1 sectors
HDBOX> printenv
bootdelay=1
```

Saving the environment

COM1 - PuTTY

```

*

Board: STb7200-HDBOX [29-bit mode]

U-Boot 1.3.1 (Mar 19 2010 - 11:20:09) - stm23-0032
---created by TDT for general purpose---

DRAM: 128 MB
Flash: 32 MB
In: serial
Out: serial
Err: serial
Init frontprocessor .
packet done but wrong f9- restart

packet done but wrong f9- restart
-.
Hit any key to stop autoboot: 0
HDBOX> printenv
bootdelay=1
baudrate=115200
autoload=n
board=mb411
hwnfconf=set nwhwnet device:eth0,hwaddr:$ethaddr
ipconf=set netcfg $ipaddr:$serverip:$gatewayip:$netmask
bootcmd=bootmenu $menutimeout $default
menutimeout=2000
netmask=255.255.255.0
ethaddr=00:1d:ec:00:12:34
bootdesc_0=---flash---
bootcmd_0=run hwnfconf;run ipconf; run bootargs_0;bootm a0300000
bootargs_0=setenv bootargs console=ttyAS1,115200 root=/dev/mtdblock
gphysarea=4060 stmmaceth=msglvl:0,watchdog:4000,rxsize:16 loglevel=
ipaddr=192.168.1.170
serverip=192.168.1.66
gatewayip=192.168.1.66
stdin=serial
stdout=serial
stderr=serial

Environment size: 644/65532 bytes
HDBOX>
  
```

After rebooting...

COM1 - PuTTY

```

HDBOX> tftp a4000000 ubootflasherHDbox.img
Using MAC Address 00:1D:EC:00:12:34
STMAC: RTL8020/1 found
STMAC: 100Mbps full duplex link detected
TFTP from server 192.168.1.66; our IP address is 192.168.1.170
Filename 'ubootflasherHDbox.img'.
Load address: 0xa4000000
Loading: #####
done
Bytes transferred = 196608 (30000 hex)
HDBOX> crc a4000000 30000
CRC32 for a4000000 ... a402ffff ==> 66e618de
HDBOX> bootm a4000000
## Booting image at a4000000 ...
   Image Name:   atevio ubootflasher
   Image Type:   SuperH Linux Standalone Program (gzip compressed)
   Data Size:    38413 Bytes = 37.5 kB
   Load Address: 84601000
   Entry Point:  84601000
   Verifying Checksum ... OK
   Uncompressing Standalone Application ... OK
*DRAM:  128 MB
testpoint
Flash:   32 MB
  
```

...the installation was successful!



I cant load an image from the USB device!

```
COM1 - PuTTY
*
Board: STb7200-HDBOX [29-bit mode]

U-Boot 1.3.1 (Mar 23 2010 - 19:41:39) - stm23-0032
---created by TDT for general purpose---

DRAM: 128 MB
Flash: 32 MB
In: serial
Out: serial
Err: serial
Frontpanel got PowerOn reset...
init frontpanel... done
Hit any key to stop autoboot: 0
HDBOX>
HDBOX>
HDBOX> usb reset
USB: scanning bus for devices... 2 USB Device(s) found
      scanning bus for storage devices... 0 Storage Device(s) found
HDBOX> fatload usb 0:1 a4000000 ubootflasherHBbox.img
** Can't read from device 0 **

** Unable to use usb 0:1 for fatload **
HDBOX> █
```

Your USB stick is NOT formatted with FAT32 or it is not recognized by the receiver (above screenshot is taken with a FAT16 formatted device)
See also line above: "0 Storage Devices found!"



Bootloader versions

How can I identify which bootloader version I use?

Best choice is checking the timestamp of the bootloader at the console!

Rev 0.5

```
U-Boot 1.3.1 (Jan 31 2010 - 21:11:03) - stm23-0032
---created by TDT for general purpose---
```

Rev 0.7

```
U-Boot 1.3.1 (Feb 13 2010 - 14:11:39) - stm23-0032
---created by TDT for general purpose---
```

Rev 0.8

```
U-Boot 1.3.1 (Mar 19 2010 - 11:20:09) - stm23-0032
---created by TDT for general purpose---
```

Rev 0.9

```
U-Boot 1.3.1 (Mar 23 2010 - 12:17:47) - stm23-0032
---created by TDT for general purpose---
```

Rev 1..0

```
U-Boot 1.3.1 (Mar 23 2010 - 19:41:39) - stm23-0032
---created by TDT for general purpose---
```

Rev 1.1

```
U-Boot 1.3.1 (Apr 28 2010 - 15:01:04) - stm23-0032
---created by TDT for general purpose---
```


Miscellaneous Errors

When writing the bootargs an error message pops up:



You did not install MS NET Framework V3.5!
Install the software and try again!

I disabled my firewalls, antivirus software, connected directly to the receiver, but I still get no connection?

Difficult to pinpoint whats causing the problem.
It is reported at least twice that disabling GData Antivirus does not fix a connection issue.
Even with deactivated services the ports are still blocked!
The software needs to be completely deinstalled, than ART was able to connect.

All seems to be OK, but after flashing the receiver does not start anymore?

Check if you disconnected the serial cable at the receiver. If not, disconnect it!



ART can connect the receiver, but I cant flash a bootloader or an image, ART reports always CRC errors.

The art_log.txt looks like this (extract)

```
HDBOX> tftp a4000000 uflasherHDbbox.app
25.03.2010 20:50:56 Using MAC Address XXXXXXXXXXXX
STMAC: RTL8020/1 found
STMAC: 100Mbps full duplex link detected
TFTP from server 192.168.0.10; our IP address is 192.168.0.30
Filename 'uflasherHDbbox.app'.
25.03.2010 20:50:56 Load address: 0xa4000000
25.03.2010 20:50:56 Sourceport: 2017
25.03.2010 20:50:56 Filesize: 196608 - crc32: 31360F49
25.03.2010 20:50:56 Memory CRC32: 31360F49
25.03.2010 20:50:56 Send Block Again 1 size: 1468/ 196608 - Sourceport: 2017
25.03.2010 20:50:56 ##
25.03.2010 20:50:57 #
25.03.2010 20:50:57 Send ACK 134 - 0086
25.03.2010 20:50:57 Using Port: 2017
25.03.2010 20:50:57 Close listenTrace1
25.03.2010 20:50:57 ##
25.03.2010 20:50:57 done
Bytes transferred = 196608 (30000 hex)
HDBOX> crc a4000000 30000
25.03.2010 20:50:57 CRC32 for a4000000 ... a402ffff ==> 392723ed
25.03.2010 20:50:59 CRC check Failed !!! crc: '392723ED' - Must be: '31360F49'
25.03.2010 20:50:59
25.03.2010 20:50:59
HDBOX> md a4000000 100
```

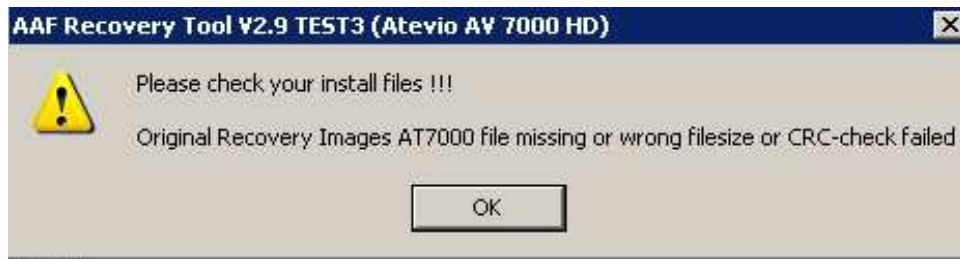
Try the installation again using the 512byte option.



The 512byte option forces the tftp package size set to 512byte to ensure transfer!



ART reports a wrong or missing file when I start the program?



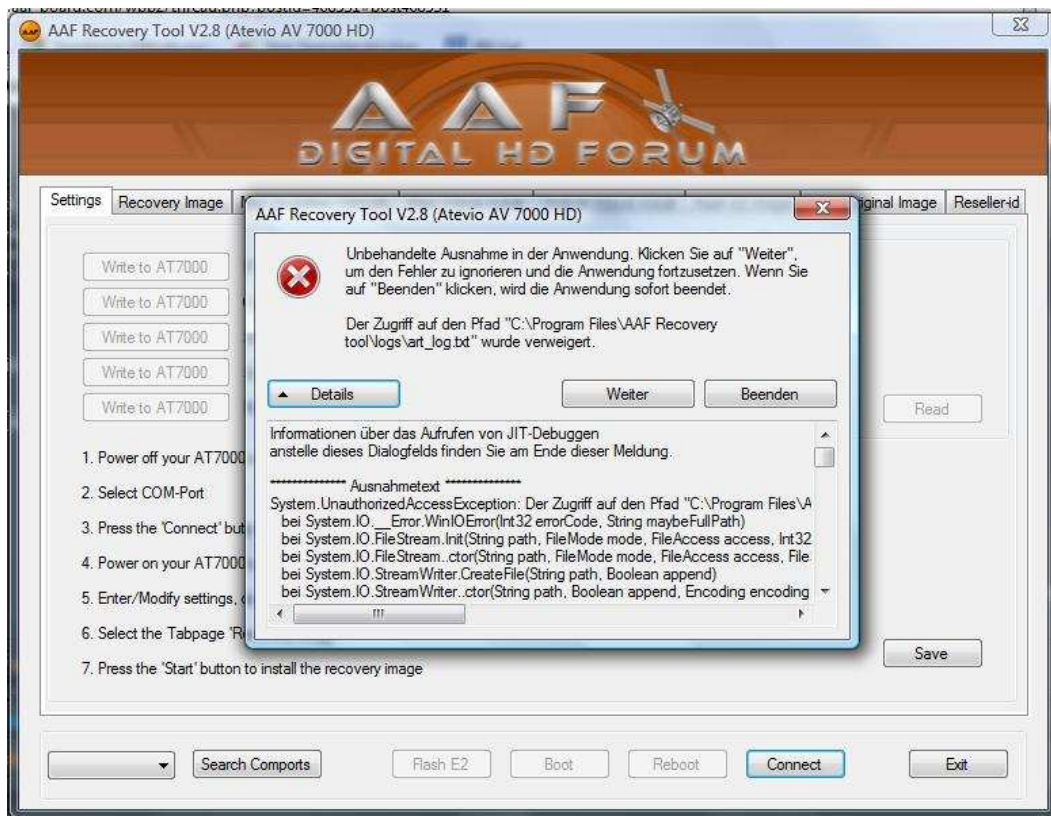
This is also reported in the art_log.txt file:

```
25.03.2010 20:47:36 Started AAF Recovery Tool V2.9 TEST3 (Atevio AV 7000 HD)
25.03.2010 20:47:36 Original Recovery Images AT7000 file missing or wrong filesize or CRC-check failed
25.03.2010 20:47:55 Opening port COM3 settings: 115200,8,N,1
25.03.2010 20:47:55 Send first stop
25.03.2010 20:47:59 Send stop 0
25.03.2010 20:47:59 Connected
```

The file urecoverAT.app in the ART program dir does not match the internal checksum!

You exchanged this file intentionally or accidentally. Reinstall ART or replace the file with this one ART expects.

I cant run ART with Vista or Windows 7?



Window7 – run the program as administrator!

Rightclick the exe file and choose “Run as Administrator”

Vista .- disable the UAC (User Account Control) and try again.

My USB stick reports a lot of errors, is it defective?

```
COM1 - PuTTY
U-Boot 1.1.2 (Jul  3 2009 - 12:01:20) - st2.0-14
rTs  01FrTs
STi710x>
STi710x> usb reset
(Re)start USB...
USB:  scanning bus for devices... 3 USB Device(s) found
      scanning bus for storage devices... 1 Storage Device(s) found
STi710x> fatload usb 0:1 a400000000 uxxxflasherHDbox.img
reading uxxxflasherHDbox.img

** Unable to read "uxxxflasherHDbox.img" from usb 0:1 **
STi710x> fatload usb 0:1 a400000000 uxxxflasherHDbox.app
reading uxxxflasherHDbox.app
.ERROR: USB-error: DATAOVERRUN: The amount of data returned by the endpoint exceeded
either the size of the maximum data packet allowed
from the endpoint (found in MaximumPacketSize field
of ED) or the remaining buffer size. (8)
ERROR: USB-error: DATAOVERRUN: The amount of data returned by the endpoint exceeded
either the size of the maximum data packet allowed
from the endpoint (found in MaximumPacketSize field
of ED) or the remaining buffer size. (8)
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
ERROR: USB-error: DATAOVERRUN: The amount of data returned by the endpoint exceeded
either the size of the maximum data packet allowed
from the endpoint (found in MaximumPacketSize field
of ED) or the remaining buffer size. (8)
ERROR: USB-error: DATAOVERRUN: The amount of data returned by the endpoint exceeded
either the size of the maximum data packet allowed
from the endpoint (found in MaximumPacketSize field
of ED) or the remaining buffer size. (8)
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
.ERROR: USB-error: DEVICENOTRESPONDING: Device did not respond to token (IN) or did
not provide a handshake (OUT) (5)
ERROR: USB-error: DEVICENOTRESPONDING: Device did not respond to token (IN) or did
not provide a handshake (OUT) (5)
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
.ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
ERROR: CTL:TIMEOUT
```

No, relax, you made a **typo**!

Type in the correct command and all will be fine!

But always be very carefully when typing commands manually!



Important Note:

For updating the original software the default boot option must be set to ---flash---!
If not, the update will not be installed after download and reboot!

I accidentally flashed the wrong bootloader. I have an **AV7000** and flashed it with ART for **AV700** (or vice-versa)

A screenshot of a PuTTY terminal window titled 'COM1 - PuTTY'. The terminal output shows the U-Boot bootloader version 1.1.2, the date and time (Nov 11 2009 - 13:46:17), and the board name (st2.0-14). It then displays 'rTs' and '4FrTs' on separate lines, followed by 'Booting Linux' with a green cursor block at the end.

```
COM1 - PuTTY
U-Boot 1.1.2 (Nov 11 2009 - 13:46:17) - st2.0-14
rTs      4FrTs
Booting Linux█
```

U-Boot 1.1.2 (Nov 11 2009 - 13:46:17) - st2.0-14 = **AV700**

Congratulations, you won the 1st prize....
Currently there is nothing you can do to reanimate your receiver.

The loader need to be flashed again using special JTAG devices...

Ask in the board for help!

For all issues: if you post for help and support in the board, please post the art_log.txt file.

If you like, remove your personal settings (IPs, Mac) but if the issue is related to network, we may be cant see it without these data.

Please edit the file before posting, digging to kb of text is rather painstaking ☺

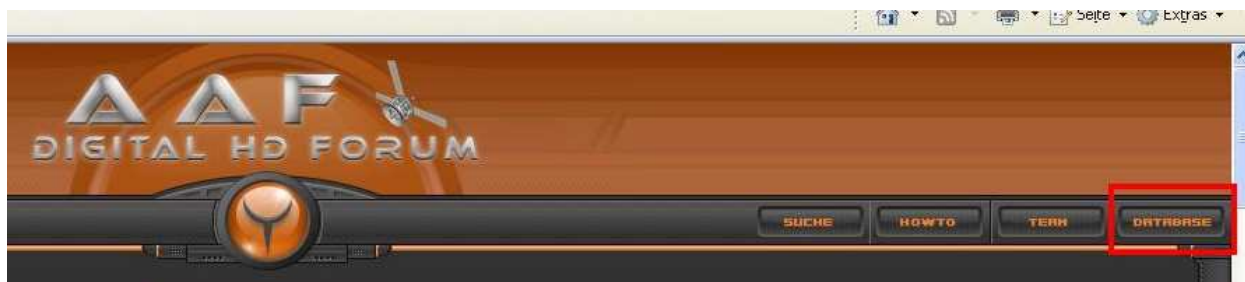
To be continued...



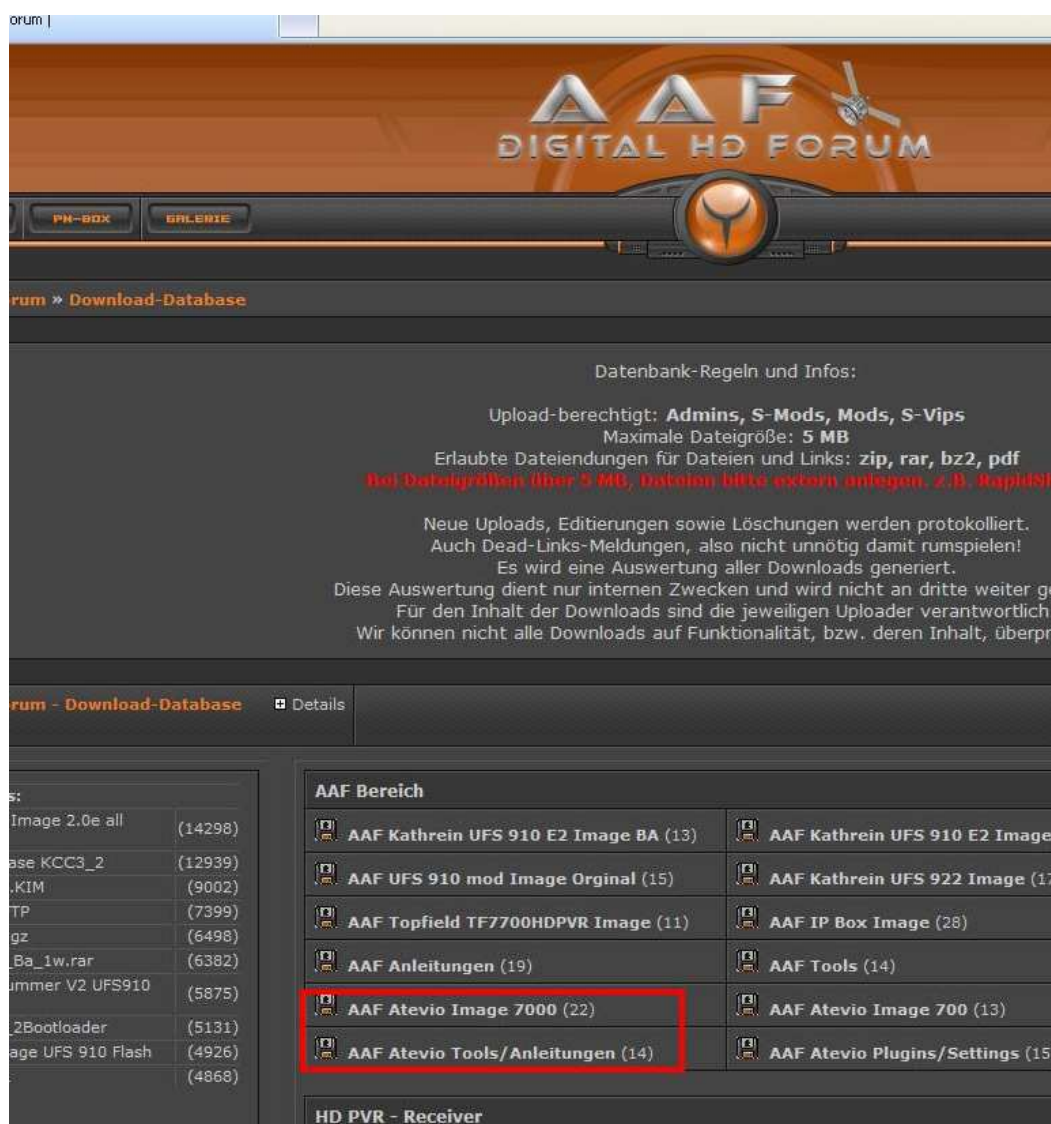
Appendix

Where can you download all these tools and images?

Logon to the AAF board, if you are not registered, you will not have access to the database!



Select the AAF Atevio section





To see all available downloads you need to click the corresponding button

A screenshot of the AAF Digital HD Forum website. The header features the 'AAF Digital HD Forum' logo. Below the header, there is a section titled 'Datenbank-Regeln und Infos:' (Database Rules and Info:). This section contains several lines of text regarding upload permissions, file size limits (5 MB), and allowed file formats (zip, rar, bz2, pdf). It also includes a red warning about file sizes over 5 MB and a note about external hosting services like RapidShare. Further down, there are rules about uploads, dead links, and the responsibility of the uploader. At the bottom of the screenshot, a red rectangular box highlights a button labeled 'Alle Downloads dieser Kategorie' (All Downloads of this Category) under the heading 'AAF Atevio Tools/Anleitung'. Below this button, it says 'Die 10 neuesten Downloads:' (The 10 newest downloads:). The main content area shows details for a download titled 'AAF Recovery Tool Version 3.1a atevio 700', including the uploader's name (andy-1), the upload date (11.04.2010 03:11), and the download date (18.04.2010 22:53). It also provides a brief description of the tool and its approximate size (15,3 MB).



Please download/use PART I of the manual.

Part I contains basic informations about installing the maxiubootloader and installing an E2 image (Flash and USB) to your receiver

Please download/use PART II of the manual.

Part II contains informations about installing the maxiubootloader using USB or TFTP and hints for Troubleshooting.



For future use...