## Software Update

After the initial programming (done by the manufacturer) only two subroutines can be updated - **Bootloader** and **Operation System**. Each of them is updated through the previous subroutine (located on a lower level). Respectively the **Bootloader** should be updated through the **Firmware Loader**, and core operating system **OS** should be updated through the **Bootloader**.



Note that each update **Bootloader** ALWAYS destroys the installed operating system. So after each update of the Bootloader, you should always install the **Operating System**, whether a newer version or the same that was installed until the update of the **Bootloader**.



**WARNING!** The process of updating of the **Bootloader** and the **OS** should NOT be interrupted. This can cause damage to the device and it had to be returned to the manufacturer for reprogramming!

## **Update of the Bootloader**

Bootloader is updatable through the subroutine Firmware Loader. Firmware Loader only works via PC connection. The connection is made through a serial interface (RS232) and the computer needs to have hardware serial port or have USB-> RS232 serial cable.



PC COM port (RS232)



USB to SERIAL (RS232) cable



Picture and circuit diagram of the serial cable required for connection between a computer and a sampler.

To upgrade the Bootloader from the computer you need to have the software Hyper Terminal, and it can be configured as follows:

1 - HyperTerminal		
	COM1 Properties   Port Settings   Bits per second:   Data bits:   8   Parity:   None   Stop bits:   1   Flow control:   Restore Defaults   OK Cancel	
Disconnected Auto detect	Auto detect SCROLL CAPS NUM Capture Print echo	



Then you should start the sampler in a special way to start the subroutine Firmware Loader, which helps to upgrade Bootloader. For this purpose, during power-up you have to press and hold simultaneously the buttons MENU and ENTER on the front panel of the sampler.

If Firmware Loader was launched successfully on a computer screen you should see a message similar to the one shown below:

IAP - HyperTerminal	80
ile Edit View Call Transfer Help	
DEBUG: Power Fault Detect	
= (C) COPYRIGHT 2011 Computer Sound Studio – *Juzisound* = = Juzisound Firmware Loader	=====
=	=
Option bytes: 0x1FFFF804:[000104 Valid ] 0x1FFFF806:[0002 Dusplay[EA DOGS102 ] Contrast[000050 ] JackPIN[NO ] Amp[ Download firmware to device flash memory Execute the user program	55 ] NO ] : 1 : 2
nected 00:01:48 ANSI 115200 8-N-1 SCROLL CAPS NUM Capture Print echo	

On the screen of the sampler you can see the version of the Firmware Loader.



Then you need to press the key [1] Windows PC keyboard. This selects the loading function from the menu of Hyper Terminal "**Download firmware to device flash memory**". Once the function is selected, on the sampler should light the lamp EDIT, rather than Hyper Terminal you have to select "**Transfer**" and "**Send File ...**". On the computer screen should appear a window for selecting the file to be sent to the sampler and to select the protocol for file transfer. For a file, you should select the BIN file with the new version of the **Bootloader**, and for the protocol type from the drop down menu you should select the type **Ymodem**.

Folder: D:3MyL Filename:	ataNAH Projects\Sampler	
Simpler BOOTL	.OADER 2.4.bin	Browse
Protocol:		
Ymodem		Y

After selecting the file type and the protocol, you should press [Send] which starts loading of the **Bootloader**. On the computer screen should shows up another window that shows the status and progress of the loading. On the screen of the sampler will shows a message "**Loading ...**" and progress indicator that also shows the progress of the update. During loading the uppermost lamp L1 of the front panel of the sampler flashes.

Sending:	D:\MyData\IAR Projects\Sampler - TotalBass\project\EWARMv5\Rele					
Packet:	167	Error checking:	CRC	File size:	502K	
Retries:	0	Total retries:	0	Files:	1 of 1	
Last error:						
File:			164K of 502K			
	00:00:26	Bemaining	00:00:53	Throughput:	64590 bps	

If the loading of the Bootloader is successful, on the computer screen in the window of Hyper Terminal should display a message similar to the following:

Programming OK! Name: Sampler BOOTLOADER 2.4.bin Size: 514048 Bytes

If you see the message "Programming OK", this means that the loading was successful. In all other cases, you will have a different error message, which describes in detail the type of error that occurred.