

## MAMOS – UPGRADE OF ANALYSER'S FIRMWARE

Service manual

Version: 1.2 12/2022

# madur ELECTRONICS

## **1. PROCEDURE OF FIRMWARE UPGRADE - CPU**

1. Turn OFF the analyser and disconnect from mains

2. Open the analyser's casing – remove 6x blanks and unscrew 6x Pozidriv PZ2 screws.



3. On the CPU board  $\rightarrow$  install jumper – short-circuit the two top pins.

4. Turn ON the analyser. Analyser will start in programming mode. Display will show "Waiting for CPU..."

5. Download WSD program from Analog Devices and install it on your PC:



WSD 7.0.5

6. Press Configuration button

- 7. Select the communication port (the one you use to communicate with mamos via PC). Connect PC ↔ mamos using USB cable.
- 8. Select *Erase the CODE ONLY* option (otherwise all mamos settings will be lost)
- 9. Confirm settings by hitting OK

▶ Windows Serial Downloader for ADuC8xx MicroConverters ×
ANALOG MicroConverter DEVICES Windows Serial Downloader
Configuration Reset Download Run
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10. Press Download button to select a file with firmware - mamos3.hex

Firmware must match the analyser's hardware configuration – loading inappropriate hex file can (in the best case scenario) disable analyser. Please consult every firmware update with madur technical support: service@madur.com

11. Upgrade process is shown with progress bar

Windows Se	Serial Downloader for ADuC8xx MicroConverters	×
	ANALOG MicroConverter DEVICES Windows Serial Downloader	
Config	figuration Reset Download Run	
<connect></connect>	Erase Download Verify Bootload Secure Run Complete	
Comms Part Crystal &Baud Er. Dwmlod Md. XMit Size Code File Data File	: //./COM4,9600 baud.ok Bootload : : Erase Data : : 11059200 Hz Run Adr. : 0.00% Verify : : Security : : Success : FAILED :	
Stage Operation	: : Resetting the target device (2)	
Status	: Pailed to connect to the ADuC8xx after 2 attempts	
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Config	inguration Reset Download Run	
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Comms Part Crystal Baud Er. Dwnlod Md. QMit Size Code File Data File	: //./COM4,115200 baud,ok Bootload : false : AbuC847 V2.1.3 Erase Data : false : 12582912 Hz Run Adr. : : 0.00% Verify : false : Code Only Security : None : 8 Success : SUCCESS : M:konstrukcja\C31\mamos3\CPU\v16.4.x\mamos3.hex :	
Stage	: Downloading bytes to code flash	

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	Window Serial Downloader for ADuC&x MicroConverters	×
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12. After upgrade program will report the status	Connect Erase Download Verify Bootload Secure Run <compl< td=""><td>.ete&gt;</td></compl<>	.ete>
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	Stage : Changing back to original baudrate	
	Operation : Opening //./CON4 Status : Success	
13. Turn the analyser OFF		

14. Remove the jumper (3) and turn the device ON

## 2. PROCEDURE OF FIRMWARE UPGRADE – DISPLAY

1. Turn OFF the analyser and disconnect from mains

3. To perform Display upgrade special cable is needed:

element)

Silicon Labs USB Debbuger (DEBUGADPTR1-USB)
Madur adapter cable (in the picture on the right, the upper

2. Open the analyser's casing – remove 6x blanks and unscrew 6x Pozidriv PZ2 screws.



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#### 5. Download Silicon Labs Flash Utility

6. Select USB Debug Adapter

- 7. Check "Power target..." option
- 8. Press Connect

#### Silicon Labs Flash Utility

icon Laboratories Flash Utility	;
Set Memory   Flash Erase Connect/Disconnect   Downloa	Multi-device JTAG Programming d Hex File/Go/Stop   Get Memory
C JTAG © C2	
Debug Adapter	
COM Port: COM1 Adapter	Inter EC3005AC3E4
Baud Rate: 115200	ower target after disconnect Note: Toolstick devices do not support the power option.
	Enumerate USB
Disable Dialogs on Connect and Disc	onnect Connect
Programming DLL Version:	4.85.00
EC2 Serial Adapter Firmware Version:	
USB Debug Adapter Firmware Version:	40
USBHID.DLL Version	1.9.1.0
Device Name:	
Device Revision:	2
	Anuluj

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9. Program confirms it has been connected

Set Memory Connect/Disconnect	Flash Erase	Multi-device JTA File/Go/Stop	G Programming Get Memory
Debug Interface	C2		,
Debug Adapter			
C EC2 Serial Adapter	USB De	ebug Adapter	
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Baud Rate: 115200	FlashUtil	disconne evices do option.	not
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EC2 Serial Adapter Firmwa	are Version:		
USB Debug Adapter Firmv	vare Version: 40		
USBHID.DLL Version	1.9.1	1.0	
Device Name:			
Device Revision:	2		
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<ol> <li>Select tab: Download Hex File/Go/Stop</li> <li>Select hex file (usually called Disp4x20.hex)</li> <li>Check option Erase all code</li> <li>Press Download</li> </ol>	User manual          Silicon Laboratories Flash Utility       ×         Set Memory       Flash Erase       Multi-device JTAG Programming         Connect/Disconnect       Download Hex File/Go/Stop       Get Memory         Download Filename       Download       Verify Download         Go       Text file start address (HEX)       Browse       Verify Download         Disable Dialogs on Download       ✓       Erase all Code Space before download       Lock Code Space after download	maMoS
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14. Firmware is loading

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15. Program is successfully loaded	Silicon Laboratories Flash Utility	xe JTAG Programming Get Memory Download Go Sum:0x1566 OK

Close flashing program
 Disconnect Silicon Labs debugger
 Put back the analyser.
 Turn the analyser ON