

ELAD DUO-ART HF/50MHz amplifier



FIRMWARE AND SOFTWARE UPDATE

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Revision History

Revision	Date	Description
Rev 1.0	06/2018	Document creation.
Rev 1.1	06/2018	Updated pictures.
Rev 1.2	06/2018	Updated introduction.
Rev 1.3	07/2018	Updated introduction.
Rev 1.4	01/2019	Updated introduction.
Rev 1.5	04/2019	Updated procedures.

Introduction

This document describes how to update the firmware and the software of the DUO-ART. The firmware manages the internal circuitry, the software manages the user interface (display and buttons).

TO FACILITATE THE PROCEDURE, PLEASE UPDATE THE FIRMWARE FIRST, THEN UPDATE THE SOFTWARE.

Please find	here :
- the	latest firmware : a HEX file with the version written in the filename,
exa	mple : "DuoArt_FWv1_2.hex";
- the	release status document : a PDF document that indicates which ones are the latest
ava	ilable versions, example : "ELAD DUO-ART - Release Status EN - 2019_03_22.pdf".

1 Firmware Update

Download the latest firmware version from the ELAD website.

In order to update the firmware, you need to install the Flash Magic software. This program is available here: <u>http://www.flashmagictool.com/</u>

Before starting the firmware update, it is recommended to disable all antivirus programs in order to avoid any inconvenience.

1.1 Enable Update

Before perform the firmware update it is necessary to enable it. Follow the steps below :

- turn on the DUO-ART with the main power switch located on the rear panel and then press the power button located on the front panel,
- wait for the Main Window to be displayed,
- once done, press the **SET** button, scroll the menu using **UP DOWN** until you find the menu 93 "Firmware Update",

92 - SERVICE	Soft	Software Update (UI)	
93 - SERVICE	Firr	Firmware Update	
94 - SERVICE	Turr	n Off Hardware	OFF
ВАСК	UP	DOWN	ENTER

- enter it using **ENTER** ,
- press + or to change from OFF to ON,
- press **ENTER** to validate and verify that a confirmation is displayed.

1.2 Perform Update

Connect the AUX USB port of the DUO-ART to a USB port of your computer. Identify the USB port number : open the windows "Device Manager" and expand the "Ports (COM &LPT)" node. The AUX USB port is listed as "USB Serial Port".



In this case the USB port number is COM66.



ELAD DUO-ART

Then run Flash Magic and set the following parameters.

In the "Step 1 – Communication" section:

- Select LPC1766,
- COM Port: the USB COM port,
- Baud Rate: 230400,
- Interface: None (ISP).

In the "Step 2 – Erase" section:

• Check "Erase all Flash+Code Rd Prot".

In the "Step 3 – Hex File" section:

• Click on Browse and select the update ".hex" file.

In the "Step 4 – Options" section:

• Check "Verify after programming.

Se Flash Magic - NON PRODUCTION USE ONLY	/ X					
File ISP Options Tools Help						
🛅 🗔 🔍 🗿 🐗 🖌 🌉 🔈 😻 🔯	😮 😂					
Step 1 - Communications	Step 2 - Erase					
Select LPC1766	Erase block 0 (0x000000-0x000FFF)					
Flash Bank: 📃 👻	Erase block 2 (0x002000-0x002FFF)					
COM Port: COM 66 🗸	Erase block 3 (0x003000-0x003FFF) Erase block 4 (0x004000-0x004FFF)					
Baud Rate: 230400 👻	Erase block 5 (0x005000-0x005FFF)					
Interface: None (ISP)	Erase all Flash+Lode Rd Prot Erase blocks used by Firmware					
Oscillator (MHz):)					
Step 3 - Firmware						
Modified: Unknown	more info					
Step 4 - Options	Step 5 - Start!					
Verify after programming Patch Settings	Start					
Gen block checksums						
Execute						
Activate Flash Bank						
Microcontrollers from NXP Semiconductors Main web	page at:					
www.nxp.com/microcontrollers	•					
	0					

Check the communication with the DUO-ART clicking on "ISP" and then on "Read Device Signature". If the communication with the DUO-ART is working, a new window with some device information is opened.

Section 10 - NON PRODUCTION USE C		sh Benk: Erase block 1 (UXUU1UUU-UXUU1)	CEE)
File ISP Options Tools Help		OM Device Signature	<u>×</u>)
Blank Check	1 🕜 😂	Manufacturer ID: 0x	
Step Read Security	Step 2 - Erase	nte Device ID 1: 0x	
Read Device Signature	Erase block 0.(0x000000-0x000EEE)	scil Device ID 2: 0x	
Boot Vector and Status Byte	Erase block 1 (0x001000-0x001FFF)	Device ID: 0x 26013F33	
Flash 🔍 Display Memory	Erase block 2 (0x002000-0x002FFF)		
CO 📋 Erase Flash	Erase block 4 (0x004000-0x004FFF)	ax F	
Bau Erase Flash Pages	Erase block 5 (0x005000-0x005FFF)	Serial Number: 185335324 1397565140 1323834993 4110417920	0
Int 🍩 Verify	Erase all Flash+Lode Rd Prot Frase blocks used by Hex File	20 4	_
Dec Execute		/eri	- (*
Reset		Till Control of the second sec	
> Go			
Step 😵 Start Bootloader			
Read Clocks	hey Browse		
Device Configuration	more info		
Cyclic Redundancy Check			
Step V Read MISR	Step 5 - Start!		
Ve Serial Number	Start		
Fill Enable Softice			
Ex Undate Rootloader			
Technical online atticles about 8051 and XA pro	arentoing		
r comicar or mine arricles about 0001 and A4 pit	granning		
www.esacademy.com/faq/docs	_ ►		
	0		

If the communication is working it is possible to proceed with the firmware update. Click on "close" on the "Device Signature" window. In the Flash Magic main window, click on "Start" to begin the programming.



Flash Magic will now proceed to program the firmware.

🚓 Flash Magic - NON PRODUCTION USE ONLY - Using 230400 ba 💶 💷 💻 🌉								
File ISP Options Tools Help								
🔁 🖬 🔍 🛢 🐗 🗸 분 🔊 🔍 💽	😮 😂							
Step 1 - Communications	Step 2 - Erase							
Select LPC1766 Flash Bank: • COM Port: COM 66 • Baud Rate: 230400 • Interface: None (ISP) • Oscillator (MHz):	Erase block 0 (0x000000-0x000FFF) Erase block 1 (0x001000-0x001FFF) Erase block 2 (0x002000-0x002FFF) Erase block 3 (0x003000-0x003FFF) Erase block 5 (0x005000-0x004FFF) Erase block 5 (0x005000-0x00405FFF) Erase block 5 (0x005000-0x00405FFF) Erase block s used by Firmware							
Step 3 - Firmware File: C:\Users\utente\Desktop\duo_arcs_v0_55.hex Modified: Friday, April 6, 2018, 3:08:30 PM								
Step 4 - Options Step 5 - Start! ✓ Verify after programming Patch Settings Fill unused Flash Cancel Gen block checksums Cancel								
Execute Activate Flash Bank Your Training or Consulting Partner: Embedded Systems Academy								
www.esacademy.com								
Programming device (0x00031800)	0							

Then, Flash Magic performs the programming verification.

Flash Magic - NON PRODUCTION USE ONLY	' - Using 230400 ba 💶 💷 🗙					
File ISP Options Tools Help						
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Step 1 - Communications	Step 2 - Erase					
Select LPC1766 Flash Bank:	Erase block 0 (0x000000-0x000FFF) Erase block 1 (0x001000-0x001FFF) Erase block 2 (0x002000-0x002FFF) Erase block 2 (0x0023000-0x002FFF)					
COM Port: COM 66 🗸 👻	Erase block 4 (0x004000-0x004FFF)					
Baud Rate: 230400 👻	Erase block 5 (0x005000-0x005FFF)					
Interface: None (ISP) 👻	Erase blocks used by Firmware					
Oscillator (MHz):						
Step 3 - Firmware File: C:\Users\utente\Desktop\duo_arcs_v0_55.hex Browse						
Modified: Friday, April 6, 2018, 3:06:30 PM more info Step 4 - Options Step 5 - Start!						
Verify after programming Fill unused Flash Gen block checksums Execute Activate Flash Bank	Cancel					
Your Training or Consulting Partner: Embedded Syste	ms Academy					
www.esacademu.com						
Verifying (0x00002C00)						
	/					

Wait until the end of the process, it should result like the picture bellow.

Flash Magic - NON PRODUCTION USE ON							
File ISP Options Tools Help							
🛅 🗔 🔍 🗿 🍏 🖌 🎩 🔈 💖 🗷	😨 😂						
Step 1 - Communications	Step 2 - Erase						
Select LPC1766 Flash Bank. - COM Port: COM 66 Baud Rate: 230400	Erase block 0 (0x000000-0x000FFF) Erase block 1 (0x001000-0x001FFF) Erase block 2 (0x002000-0x002FFF) Erase block 3 (0x003000-0x002FFF) Erase block 4 (0x003000-0x004FFF) Erase block 5 (0x005000-0x004FFF)						
Interface: None (ISP)	Erase all Flash+Lode Rd Prot Erase blocks used by Firmware						
Oscillator (MHz):							
Step 3 - Firmware							
File: C:\Users\utente\Desktop\duo_arcsv	0_55.hex Browse						
Modified: Friday, April 6, 2018, 3:06:30 Pl	M <u>more info</u>						
Step 4 - Options	Step 5 - Start!						
V Verify after programming Patch Settings Start Fill unused Flash Gen block checksums Execute Activate Flash Bank							
Your Training or Consulting Partner: Embedded Sys	Your Training or Consulting Partner: Embedded Systems Academy						
www.esacademu.com							
Finished	1						

Finally turn off the DUO-ART, wait for a few seconds and turn it on using both the main power switch (on the rear panel) and the power button (on the front panel).

If some problems occur during the firmware update procedure, please contact the ELAD technical assistance.

2 Software Update (UI)

2.1 Set LAN Settings

To perform the software update the DUO-ART must be connected to the internet. To do this follow these steps :

- turn off the DUO-ART,
- connect the DUO-ART to your local LAN; use an Ethernet/LAN cable and connect it on one side to the RJ45 connector of the DUO-ART and from the other side to your router/switch/modem,
- turn on the DUO-ART with the main power switch located on the rear panel and then press the power button located on the front panel,
- wait for the Main Window to be displayed,
- once done, press the **SET** button, scroll the menu using **UP DOWN** until you find the "LAN" menu group, menu number 50 to number 53,

43 - PLOT	Offse	et		0.00dBm
50 - LAN	IP		192.1	68.2.185
51 - LAN	Subr	net	255.	255.255.0
BACK	UP	DOWN		ENTER

- enter a correct value for the IP address,
- enter the correct values for the Subnet, Gateway and DNS.

It is not necessary to repeat the LAN setting at every software update.

2.2 Check LAN Connection

To check the LAN connection, see the string in the upper right corner of the display.

no conn 2018-06-15 08:49:00

means the DUO-ART is not connected to the LAN.

• my-elad 2018-06-15 08:47:42

means the DUO-ART is connected to the LAN.



2.3 Perform Update

To perform the software update follow these steps :

• press the **SET** button to open the menu, scroll it using **UP DOWN** until you find the menu 92 "Software Update (UI)",

91 - SERVI	CE	Rem	ote Service		OFF
92 - SERV	ICE	Software Update (UI)			OFF
93 - SERVI	CE	Firm	ware Update	е	OFF
BACK		UP	DOWN		ENTER

- enter it using **ENTER** ,
- press + or to change from OFF to ON,
- press **ENTER** to validate and start the software update,
- if the software is already updated the following message is displayed,

UI is running last version

• if the update start correctly the following message is displayed,



• finally, the DUO-ART reboots and finishes the software update.

If some problems occur during the software update procedure, please contact the ELAD technical assistance.