



SERVICE BULLETIN			
Note No.	SVC-FSB-0025		
Release Date			
Contact	ngceoservice@ngc.com		

# eDrive AIM Microcontroller Programming Guide

### Summary

This technical note describes the programming procedure for the eDrive AIM Microcontroller.

# **Materials and Equipment**

- A #2 Philips screwdriver
- A PC running Windows XP or later with COM port or USB port
- Analog Devices USB-EA-CONVZ Dongle and USB Cable
- Analog Devices MicroConverter Windows Serial Downloader Software (WSD)
- A Version Description Document and data package provided by NGCEO

Contact NGCEO for assistance in obtaining any of these items.

## **Programming Instructions**

- 1. Remove all 22 screws around the perimeter of the eDrive top cover.
- 2. Remove the top cover by lifting it gently off the chassis.
- 3. Download the Version Description Document package and all files to your computer.
- 4. Connect the Analog Devices USB-EA-CONVZ Dongle and USB cable to your PC.
- 5. Connect the white 2-pin connector to the AIM J1 connector.





Note No.	SVC-FSB-0025
Release Date	
Contact	ngceoservice@ngc.com

Figure 1-1: Analog Devices USB-EA Dongle connected to AMJ 1 connector.

- 6. Run the Analog Devices MicroConverter WSD software.
- 7. Select Configuration.

Windows Serial Downloader for ADuC8xx MicroConverters					
Confi	guration <u>R</u> eset <u>D</u> ownload Ryn				
<connect></connect>	<connect> Erase Download Verify Bootload Secure Run Complete</connect>				
Comms Part Crystal &Baud Er. Dwnlod Md. XMit Size Code File Data File Stage	: //./COM8,9600 baud,ok Bootload : false : ADuC841 V2.1.7 Erase Data : false : 20000000 Hz Rum Adr. : 0.008 Verify : false : Code Only Security : None : 8 Success : SUCCESS : C:\eDrive_sw\aim v3.2.0\obj\aim.hex :				
Operation : Resetting the target device (2) Status : Reset OK! ADuC841 device detected					

Figure 1-2: Startup Screen for the MicroConverter WSD

- 8. Under the **Port** field, select the proper COM port.
  - a. To discover the proper COM port, first unplug the USB-EA dongle.
  - b. Open your computer's **Device Manager** and view the list of available Com ports.
  - c. Plugging the USB-EA dongle back into the computer should reveal a new Com port in the **Ports** field.



Figure 1-3: Configuration Screen in MicroConverter WSD

- 9. In the Crystal Frequency field, Other crystal should be selected.
- 10. Set the frequency to 20 MHz.
- 11. In the Code and Data Flash/EE Memory field, the Erase Mode should be set to Erase the CODE ONLY.
- 12. Under the **Download Files** field, ensure that **Prompt me for the files when downloading** is checked.
- 13. Select OK.
- 14. The home screen will appear again. Select **Reset**. The status should read **Reset OK!** ADUC841 Device Detected!
- 15. Select Download.
- 16. Browse to the AIM\_x.y.z..hex file included in the data package from NGCEO.
- 17. Select Open. The loading will begin.

ROP GRUMMAN	SERVICE BULLETIN	
	Note No.	SVC-FSB-0025
	Release Date	
	Contact	ngceoservice@ngc.com
Windows Serial Downloader for ADuC8xx MicroCom	verters X	
	croConverter	
Windowo Soria	Downloador	
windows Seria	Downloader	
<u>C</u> onfiguration <u>R</u> eset	Download Run	
Connect Erase <download> Verify Bo</download>	otload Secure Run Complete	
Comms : //./COM8,9600 baud,ok B Part : ADuC841 V2.1.7 E	ootload : false rase Data : false	
Crystal : 20000000 Hz R	un Adr. :	
<pre>%Baud Er. : 0.00% V Dwnlod Md. : Code Only S</pre>	erify : false ecurity : None	
XMit Size : 8 S	uccess : SUCCESS	
Code File : C:\eDrive_sw\aim v3.2.0\obj\ Data File :	aim.hex	
Stage : Downloading bytes to code fl	ash	
Operation : Downloading using quick prot	ocol	
Status :		
Figure 1-4: Downlo	ading the .hex file	_

18. When the process has completed, the status will read OK!

#### 19. Close the WSD software

- 20. Remove the USB-EA dongle from the computer and the AIM board.
- 21. Turn the eDrive on to initiate the reloading of the firmware.
- 22. To verify that the firmware has installed correctly, select the following functions on the eDrive user menu: Utility Functions → Systems Status → Channel 1.
- 23. Ensure that the firmware listed matches the number specified in the Version Description Document provided by NGCEO.
- 24. Turn the eDrive off.
- 25. Remount the cover to the chassis.
- 26. Reinstall the 22 screws to secure the cover.