

YED

Firmware upgrade procedure for YED products incorporating STM32 processors.



Form : YED/STM32/FLASHLOAD

Revision : 1.2

Approved : G. Brownett

Unit Name:	N/A
Unit Number:	N/A
Description:	Firmware upgrade procedure for YED products incorporating STM32 processors.
Document Issue:	1.2
Date:	21/01/2019

Revision History

Date	Changes Made	Doc Issue	S/W Version	Initials
25-Jan-14	First draft	A	-	GB
16-Nov-14	Updated with drawing for D-25 RS232 cable harness wiring diagram.	1.0	-	GB
27-Nov-18	USB/A429-R4/T4 firmware update instructions added.	1.1	-	GB
21-Jan-19	Extra details added for the USB/A429-4Rx/4Tx.	1.2	-	GB

YED Avionics Limited, Park House, 10, Park Street, Bristol. BS1 5HX.

This document is the property of YED Ltd (YEDL) and may not be copied nor communicated to a third party without the written permission of YEDL. © YED Limited 2014

Table of Contents

1	INTRODUCTION.....	3
1.1	UPDATING DATA PROTOCOL CONVERTERS.....	3
1.2	UPDATING THE USB/A429-4Rx/4Tx ADAPTER.....	3
2	WIRING DETAILS FOR PROTOCOL CONVERTERS.....	4
3	UPDATING FIRMWARE ON DATA PROTOCOL CONVERTERS.....	5
4	UPDATING FIRMWARE FOR THE USB/A429-4Rx/4Tx ADAPTER	6
5	RUNNING THE BOOTLOADER FIRMWARE UPDATE UTILITY	7

1 Introduction

The [Bootloader Firmware Update Utility](#) will run on a PC and will allow the reprogramming of the STM32F103 processor firmware with new firmware e-mailed or downloaded from our website. This feature alleviates the necessity of a customer having to return their hardware to YED in order to have the firmware updated or modified under contract.

1.1 Updating Data Protocol Converters

For updating the firmware on Data Protocol Converters, this download utility requires the use of an RS232 serial port on the host PC and this can include any suitable USB Serial port adapter.

A suitable serial cable must also be available in order to program the new firmware. If you do not have this cable then the wiring details are shown later in this manual. You will need either a D15 or D25 connector dependent upon the type of connector on your product and a D9 plug for the PC. The wiring details are described in a later section of this manual.

Go to [section 3](#) for instructions on how to update your USB/A429/4Rx/4Tx adapter.

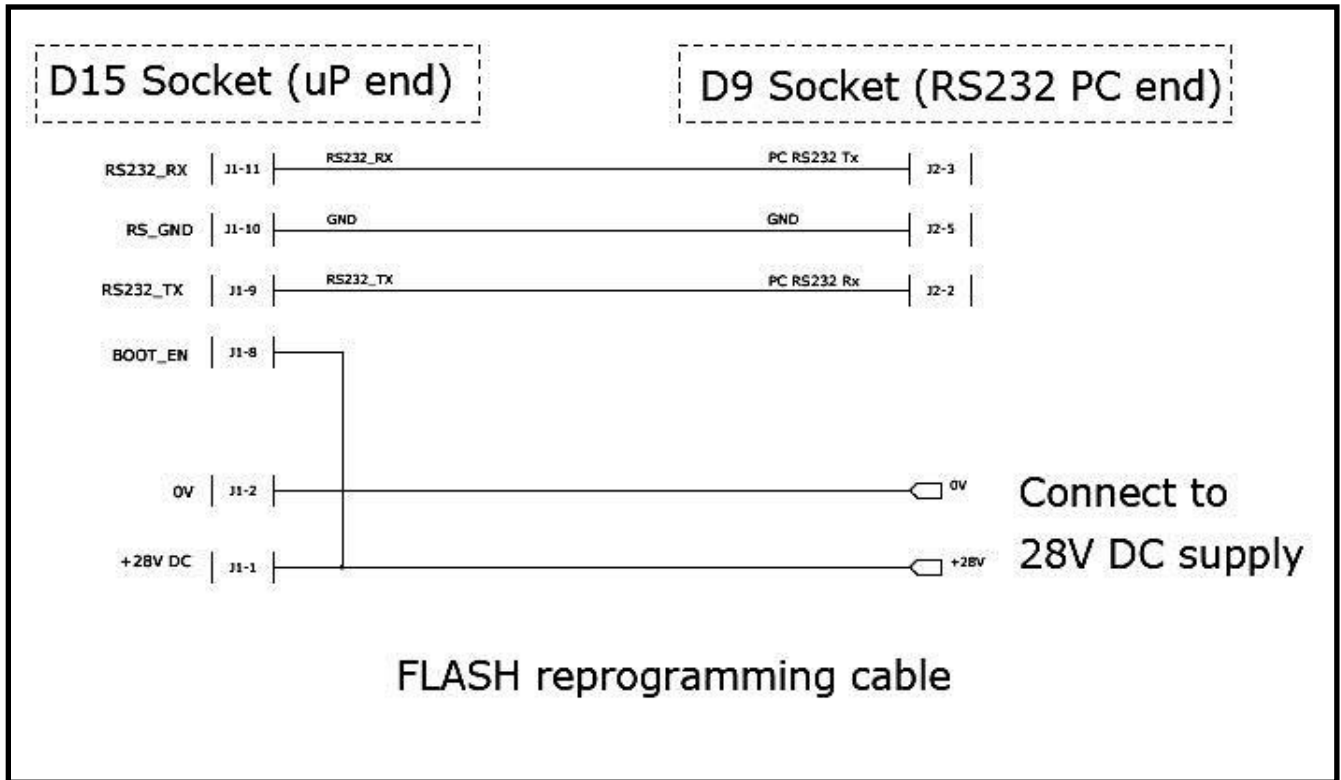
1.2 Updating the USB/A429-4Rx/4Tx adapter

For the USB/A429-4Rx/4Tx adapter use the supplied USB cable and connect the adapter to the PC instead of using RS232.

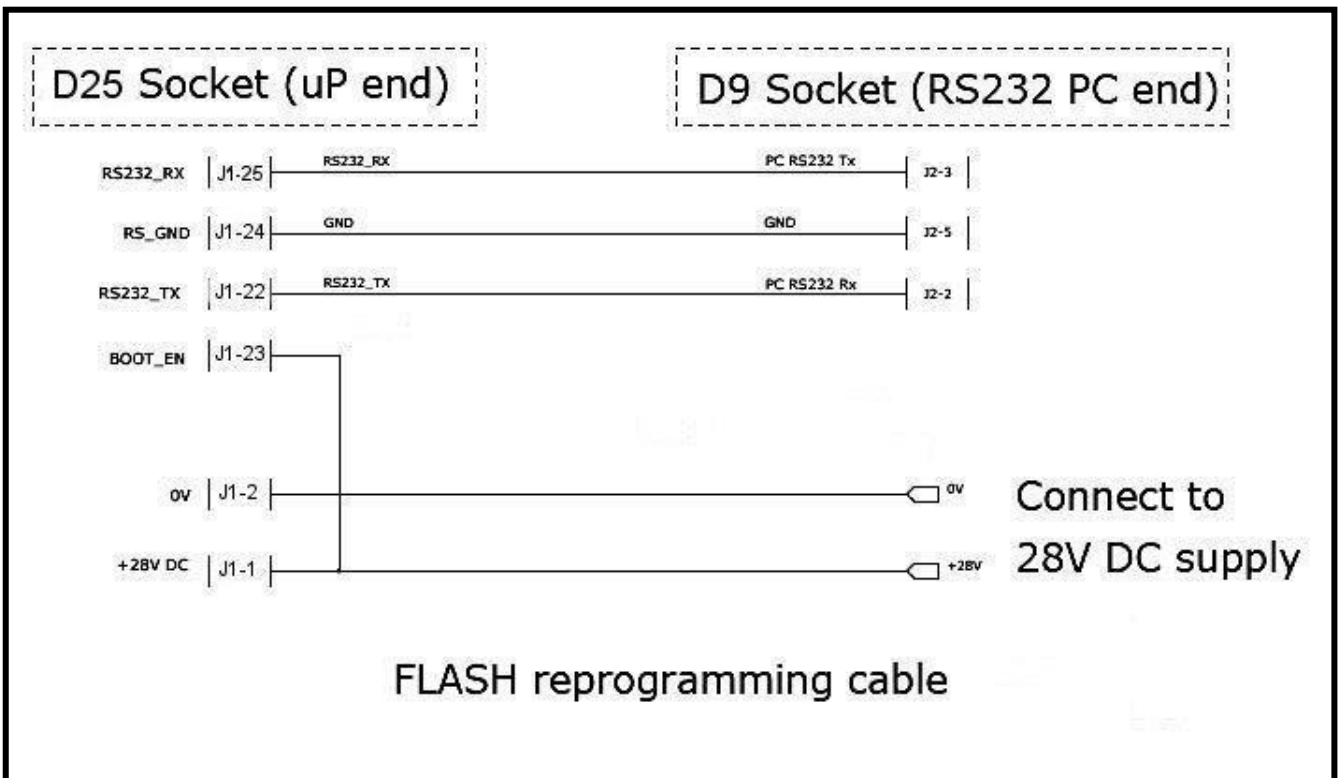
Go to [section 4](#) for instructions on how to update your USB/A429/4Rx/4Tx adapter.

2 Wiring details for Protocol Converters

D15 Socket Serial Cable connections



D25 Socket Serial Cable connections



3 Updating firmware on Data Protocol Converters

Once you have this cable available, follow this sequence:-

1. Connect the D15/D25 socket to the unit which requires the upgrade.
2. Connect the D9 plug to the PC RS232 port.
3. Connect a 28V DC supply to the two flying leads, 0V and +28v as shown in the diagram. Once power is applied, the unit will enter the FLASH reprogram mode.
4. Start the “STMicroelectronics flash loader.exe” utility and continue with the process described in [section 5](#).

4 Updating firmware for the USB/A429-4Rx/4Tx Adapter

Follow the procedure below to update the firmware on the USB/A429-R4/T4 adapter.

1. Connect the “ARINC 429 adapter interface cable”, shown below, to the USB/A429-4Rx/4Tx adapter.
2. Using a spare D25 plug connect pin 24 to pin 25.
Plug this connector into the end of the D25 socket on the “ARINC 429 adapter interface cable”.
3. Using the supplied USB cable connect the USB/A429-4Rx/4Tx adapter and your PC.
4. Start the “STMicroelectronics flash loader.exe” utility and continue with the process described in [section 5](#).



ARINC 429 adapter interface cable

5 Running the Bootloader Firmware Update Utility

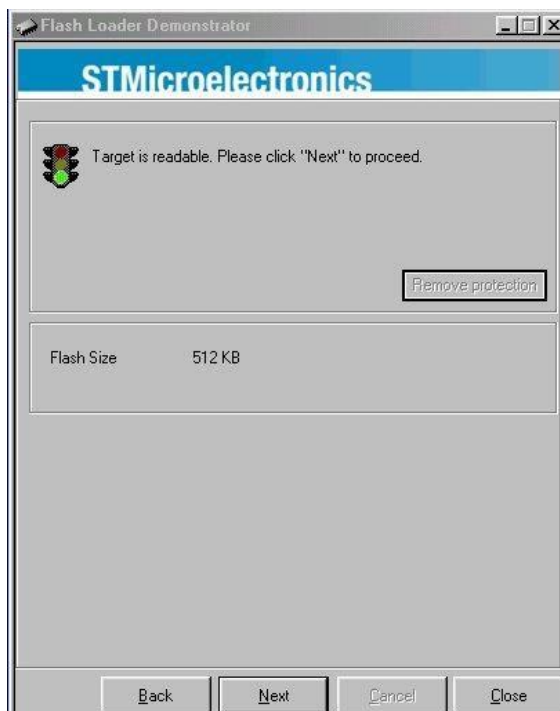
After making the relevant connection for your Protocol Converter or USB/A429-4Rx/4Tx adapter, execute the [Bootloader Firmware Update Utility](#).

The first screen after executing the utility will be as shown:-

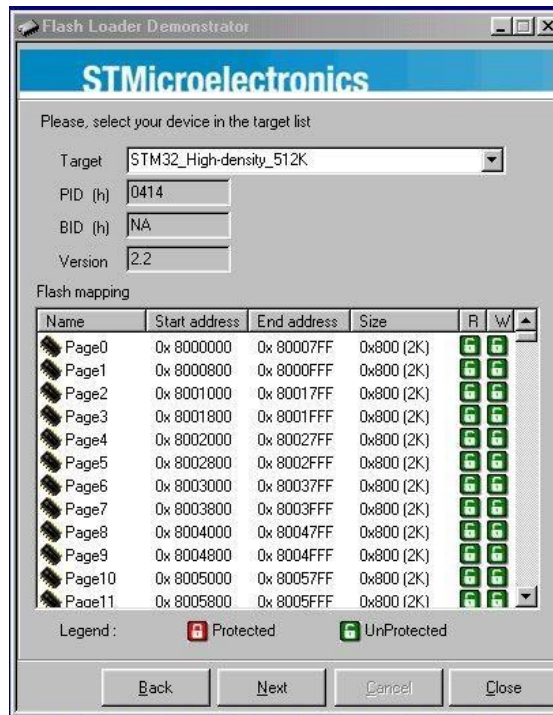


Select an available COM Port. Leave all other settings as they are above.

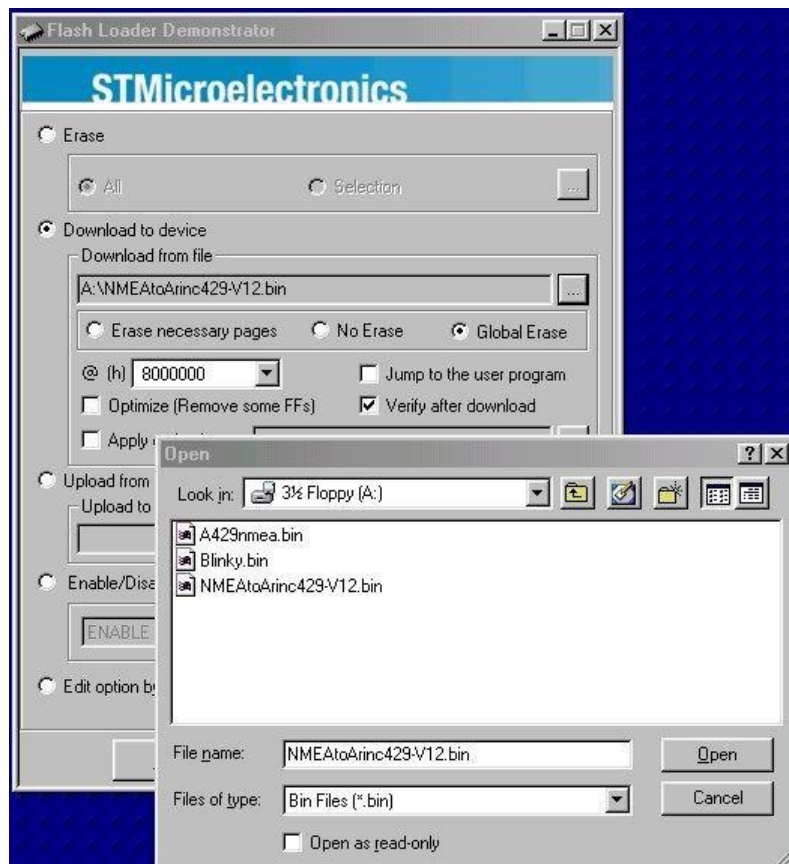
Click <Next> to continue. The next screen will then be presented:-



Press <Next> to continue.



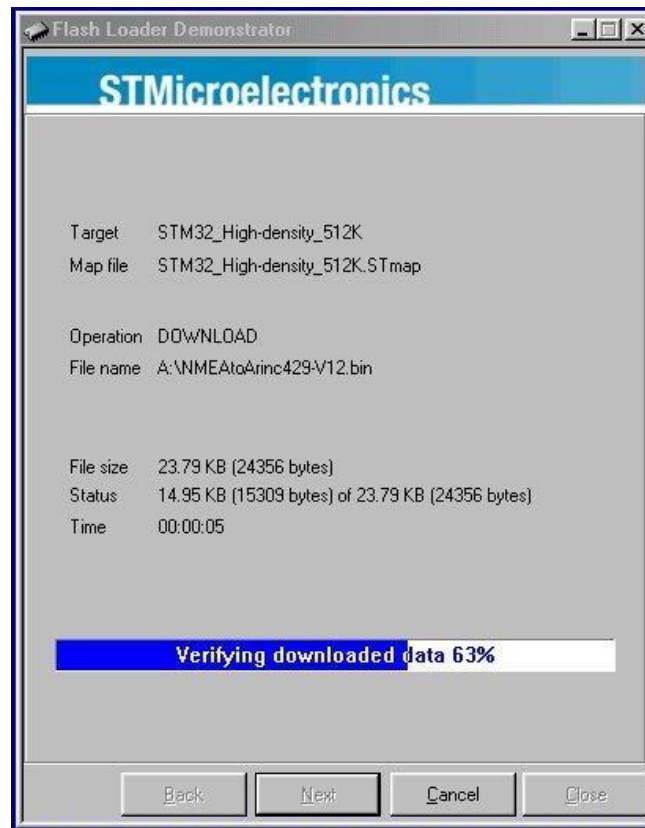
Once again, leave the settings as they are presented and click <Next>.



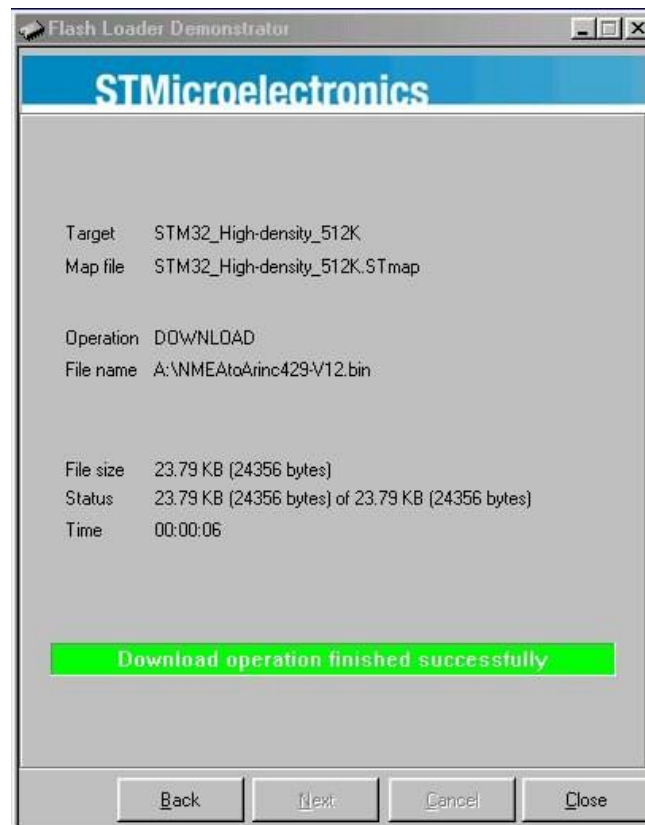
Click the "Download to Device" option and browse to the location of the new file to be used to reprogram the processor and select that file. In our example this is shown above as "NMEAtArinc429V12.bin". Your file name will be the one supplied by email or the one downloaded from our website.

Click <Open> to load the file. Click <Next> to program the new firmware.

During programming the following screen will be shown:-



After successful programming the final screen below will be presented:-



Click <Close> to exit the utility.

The firmware has now been updated.

To complete the process all that is required is: -

1. If you were updating a Protocol Converter, remove the 28v power supply and remove the D15/D25 connector (programming cable).
2. If you were updating the USB/A429-4Rx/4Tx adapter, remove the USB cable. Remove the special D25 plug that has pin 24 linked to pin 25 that you connected to the "ARINC 429 adapter interface cable" in Section 3.

The unit firmware update has now been completed and the unit is ready for use again.

<<<<< END >>>>>