ams

Application Note

AS72xx

How to Flash AS72xx Firmware using Firmware Update GUI

Content Guide

1. General Description

AS72xx devices (including Smart Lighting Manager AS722x/AS721x devices and Spectral Sensing AS726x devices) require a flash memory to work with and the memory holds AS72xx firmware. This file briefly discusses how to update the firmware with AS72xx Firmware Update GUI v5.x.x

2. Installation

The ActiveState Tcl is required to run the Update software. The free community edition of ActiveState Tcl is provided within the evaluation kit. Please install it from the USB Stick provided by ams evaluation kit. Please install it as an administrator. Also it is one time installation.

3. Operation

After the installation, click "ams_ASxx_Firmware_Update.tbc" file provided with the kit to launch the Update software. In case of incorrect displays or moved menus (compatibility problem!), please stop the Update software. Start "Tcl – Installation directory \ bin \ wish86.exe, select the parameters "/ Properties / Compatibility" by clicking the right mouse key, select "Override high DPI scaling behavior" and "In Scaling performed by: System". Then click ok and start the update software again
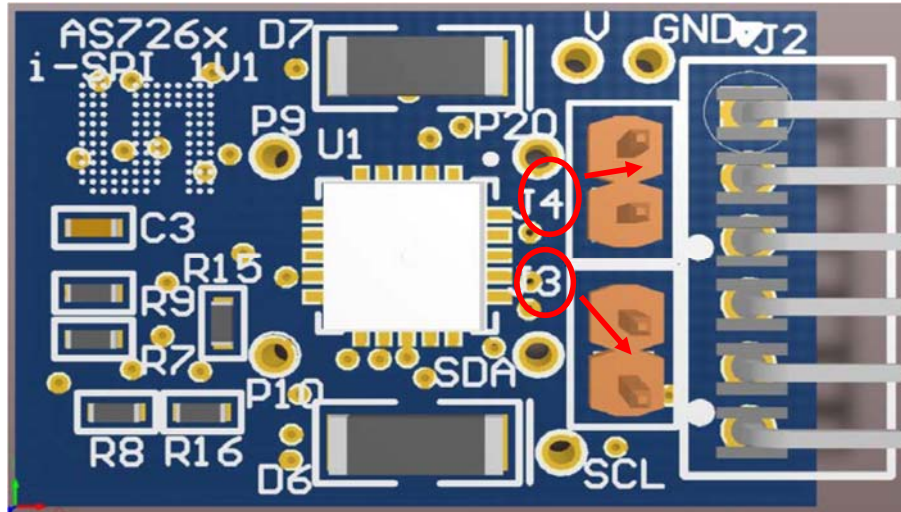
4. Firmware updating using AS72xx Firmware Update GUI

The Firmware update with this GUI works only in UART mode. It is important to switch the AS72xx device to UART mode. Smart lighting manager device AS722x and AS721x normally works in UART mode as well as the AS7265x test board for spectral sensing. An overview about the test systems and firmware in relation to the update methodology is given in Figure 3 on page 6.

The AS726x-iSPI design consists of AS726x device with associated flash memory, LED circuit, and a jumper configuration header for UART/I²C interface selection. Evaluation boards of Spectral Sensing AS726x device except for AS7265 are operated in I²C mode.

For I²C devices, it is important to change the mode of communication to UART by configuring the jumper header to UART interface selection. UART interface selection done by opening the J3 header and closing the J4 header.

Figure 1: PCB top view showing the Jumpers in AS726x devices

Once the UART interface for AS72xx board configured, open the AS72xx Firmware Update GUI by double clicking the "ams_ASxx_Firmware_Update.tcl" file. Get the latest 56KB "*.bin" file from ams for the specific AS72xx device.
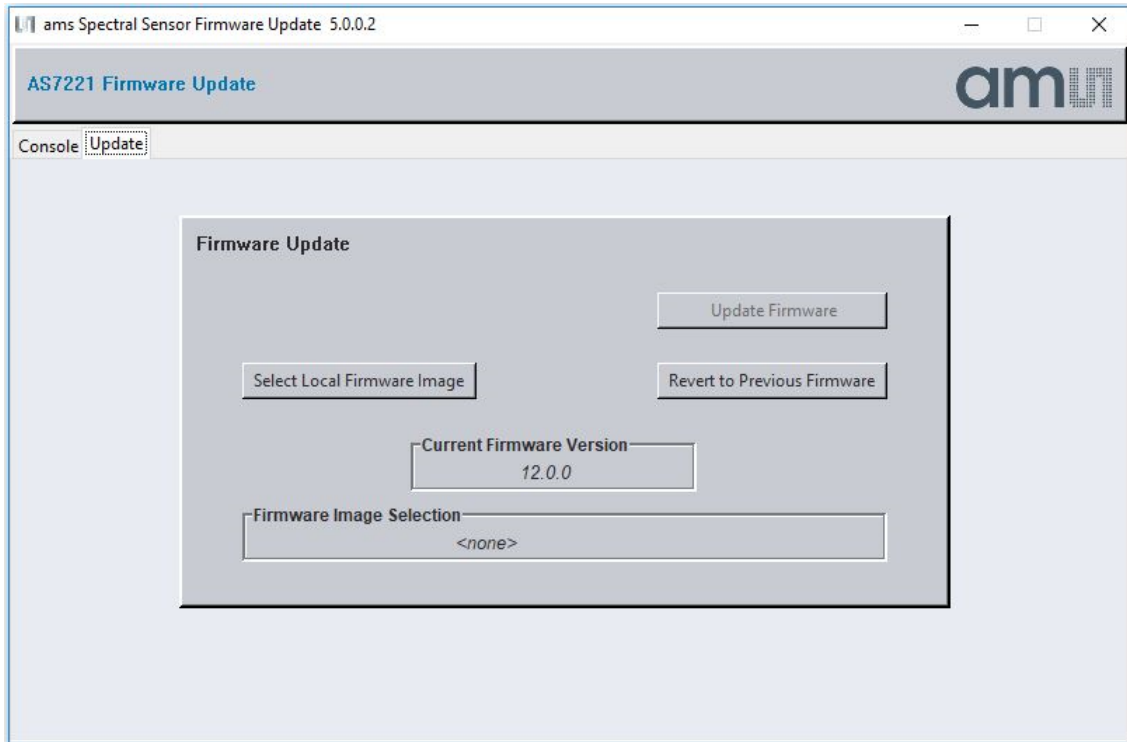
The option for the selecting the COM Port as shown in figure 2 will generate, select Com Port for the exact device and press "Open".

Figure 2: COM Port selection for devices

A window of Firmware Update GUI as show in figure 3 will pop up.

Figure 3: COM Port selection for devices

Navigate to the "Update" tab and select "Select Local Firmware Image" to select respective devices firmware AS72xx_update.bin file from the location where files are saved. Once after selecting, the "Firmware Image Selection" will show the file directory path. Clicking "Update Firmware" will start updating the firmware. The user can notice the progress of flashing update in percentage.

For the Smart lighting manager device AS722x, alternatively, after selecting the .bin file in update page by using "Select Local Firmware Image" navigate to the Console page and type the AT command "ATPASSWD=1234" and press enter. Navigate back to update page and pressing "Update Firmware" will start updating the firmware. The user can notice the progress of flashing update in percentage.

Once the flashing 100 % update is finished, GUI notifies update is successful and it will restart automatically to the COM Port selection.

Again, select the specific device Com Port and press "Open" to reopen the Firmware update GUI and notice that "Current Firmware Version" updated to the version of uploaded firmware.

5. First Time Flash Programing and updates

It is not possible to use this GUI to flash the device for the first time. For this, get the latest "*.bin" file from *ams* for the specific AS72xx device and use the SPI Programming setup FlashCatUSB device[1]. The GUI supports a firmware update from version 2.x.x and above to any higher versions.

Note:

It is important for AS726x device (except for AS7265) to configure to UART mode of communication before starting the GUI and to reconfigure the communication back to corresponding I²C mode of communication.

Figure 3 describes the firmware version in a sensor device and their possible ways of firmware updates based on the firmware present in the device.

Figure 3: Sensor devices and their supported mode of firmware update

Sensor Name	FlashCatUSB programmer tool	Firmware Update GUI (UART Communication)	Sensor Test Software[2]
AS7261	All version (*.bin 512 or 256KB)	v2.x.x – v12.x.x (*.bin 56KB)	V12.x.x(*bin 56KB)
AS7262	All version (*.bin 512 or 256KB)	v2.x.x – v12.x.x (*.bin 56KB)	V12.x.x(*bin 56KB)
AS7263	All version (*.bin 512 or 256KB)	v2.x.x – v12.x.x (*.bin 56KB)	V2.x.x(*bin 56KB)
AS7265 generation 1	All versions till v10.x.x (*.bin 512 or 256KB)	V1.2.8 – v10.x.x (*.bin 56KB) OR use the special xxx_moonlight.bin	V1.2.8 – v10.x.x (*.bin 56KB) OR use the special xxx_moonlight.bin
AS7265 generation 2[3]	AS7265_Complete_moonlight.bin Greater than or equal to v11.x.x supported	At least one time flashing with FlashCatUSB V11.x.x or higher, then it will support update with v11.x.x or higher in this method	At least one time flashing with FlashCatUSB v11.x.x or higher, then it will support update with v11.x.x or higher in this method
AS7221	All version (*bin 256 KB)	V4.0.x – v11.x.x (*.bin 56KB)	V4.0.x – v11.x.x (*.bin 56KB)

---

[1] See application note „AS72xx How to Program Firmware with FlashCatUSB"
[2] AS726x iSPI software v3.3.x for spectral sensor and Dashboard v4.2.x for AS7265x and AS72xx smart lighting manager sensors
[3] Change in the pinning of AS7265, Please refer release-notes.txt of AS7265 for details

6. Contact Information

For further information and requests, e-mail us at:

ams_sales@ams.com

For sales offices, distributors and representatives, please visit:

www.ams.com/contact

Headquarters

ams AG

Tobelbader Strasse 30

8141 Premstaetten

Austria, Europe

Tel: +43 (0) 3136 500 0

Website: www.ams.com

7. Copyrights & Disclaimer

Copyright ams AG, Tobelbader Strasse 30, 8141 Premstaetten, Austria-Europe. Trademarks Registered. All rights reserved. The material herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner.

Information in this document is believed to be accurate and reliable. However, ams AG does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information.

Applications that are described herein are for illustrative purposes only. ams AG makes no representation or warranty that such applications will be appropriate for the specified use without further testing or modification. ams AG takes no responsibility for the design, operation and testing of the applications and end-products as well as assistance with the applications or end-product designs when using ams AG products. ams AG is not liable for the suitability and fit of ams AG products in applications and end-products planned.

ams AG shall not be liable to recipient or any third party for any damages, including but not limited to personal injury, property damage, loss of profits, loss of use, interruption of business or indirect, special, incidental or consequential damages, of any kind, in connection with or arising out of the furnishing, performance or use of the technical data or applications described herein. No obligation or liability to recipient or any third party shall arise or flow out of ams AG rendering of technical or other services.

ams AG reserves the right to change information in this document at any time and without notice.