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## **Disclaimer of Product and Services**

The information offered in this instruction manual is intended as a guide only. At all times, Datavideo Technologies will try to give correct, complete and suitable information. However, Datavideo Technologies cannot exclude that some information in this manual, from time to time, may not be correct or may be incomplete. This manual may contain typing errors, omissions or incorrect information. Datavideo Technologies always recommend that you double check the information in this document for accuracy before making any purchase decision or using the product. Datavideo Technologies is not responsible for any omissions or errors, or for any subsequent loss or damage caused by using the information contained within this manual. Further advice on the content of this manual or on the product can be obtained by contacting your local Datavideo Office or dealer.

## **FCC Compliance Statement**

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

## **Warnings and Precautions**

1. Read all of these warnings and save them for later reference.
2. Follow all warnings and instructions marked on this unit.
3. Unplug this unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this unit in or near water.
5. Do not place this unit on an unstable cart, stand, or table. The unit may fall, causing serious damage.
6. Slots and openings on the cabinet top, back, and bottom are provided for ventilation. To ensure safe and reliable operation of this unit, and to protect it from overheating, do not block or cover these openings. Do not place this unit on a bed, sofa, rug, or similar surface, as the ventilation openings on the bottom of the cabinet will be blocked. This unit should never be placed near or over a heat register or radiator. This unit should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should only be operated from the type of power source indicated on the marking label of the AC adapter. If you are not sure of the type of power available, consult your Datavideo dealer or your local power company.
8. Do not allow anything to rest on the power cord. Do not locate this unit where the power cord will be walked on, rolled over, or otherwise stressed.
9. If an extension cord must be used with this unit, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord's rating.

10. Make sure that the total amperes of all the units that are plugged into a single wall outlet do not exceed 15 amperes.
11. Never push objects of any kind into this unit through the cabinet ventilation slots, as they may touch dangerous voltage points or short out parts that could result in risk of fire or electric shock. Never spill liquid of any kind onto or into this unit.
12. Except as specifically explained elsewhere in this manual, do not attempt to service this product yourself. Opening or removing covers that are marked “Do Not Remove” may expose you to dangerous voltage points or other risks, and will void your warranty. Refer all service issues to qualified service personnel.
13. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:
  - a. When the power cord is damaged or frayed;
  - b. When liquid has spilled into the unit;
  - c. When the product has been exposed to rain or water;
  - d. When the product does not operate normally under normal operating conditions. Adjust only those controls that are covered by the operating instructions in this manual; improper adjustment of other controls may result in damage to the unit and may often require extensive work by a qualified technician to restore the unit to normal operation;
  - e. When the product has been dropped or the cabinet has been damaged;
  - f. When the product exhibits a distinct change in performance, indicating a need for service.

## **Warranty**

### ***Standard Warranty***

- Datavideo equipment are guaranteed against any manufacturing defects for one year from the date of purchase.
- The original purchase invoice or other documentary evidence should be supplied at the time of any request for repair under warranty.
- The product warranty period begins on the purchase date. If the purchase date is unknown, the product warranty period begins on the thirtieth day after shipment from a Datavideo office.

- All non-Datavideo manufactured products (product without Datavideo logo) have only one year warranty from the date of purchase.
- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered under warranty.
- Viruses and malware infections on the computer systems are not covered under warranty.
- Any errors that are caused by unauthorized third-party software installations, which are not required by our computer systems, are not covered under warranty.
- All mail or transportation costs including insurance are at the expense of the owner.
- All other claims of any nature are not covered.
- All accessories including headphones, cables, and batteries are not covered under warranty.
- Warranty only valid in the country or region of purchase.
- Your statutory rights are not affected.

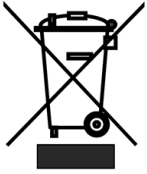
### ***Three Year Warranty***

- All Datavideo products purchased after July 1st, 2017 are qualified for a free two years extension to the standard warranty, providing the product is registered with Datavideo within 30 days of purchase.



- Certain parts with limited lifetime expectancy such as LCD panels, DVD drives, Hard Drive, Solid State Drive, SD Card, USB Thumb Drive, Lighting, Camera module, PCIe Card are covered for 1 year.
- The three-year warranty must be registered on Datavideo's official website or with your local Datavideo office or one of its authorized distributors within 30 days of purchase.

# Disposal



## **For EU Customers only - WEEE Marking**

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

# 1. Product Overview

The Datavideo AD-10 is a low cost and easy-to-use audio delay box which is designed for achieving audio and video synchronization. The AD-10 provides a 3.5mm audio input interface which is suitable for the output of the popular MP3 format music which is used by smartphones.

The Datavideo AD-10 provides great compatibilities including switchable +40dB/-20dB selection for switching between the condenser microphone and dynamic microphone and the audio gain control function.

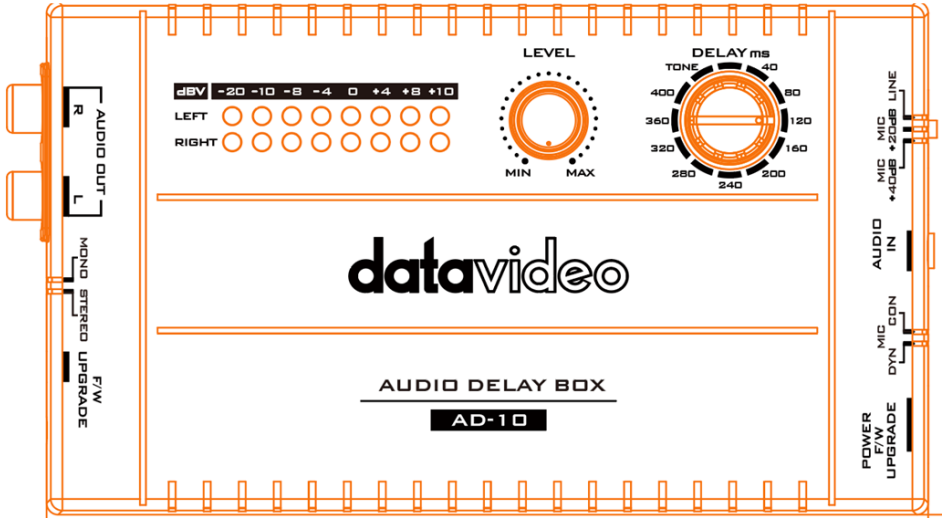
AD-10's ruggedized design allows you to install it easily. Moreover, it can be powered by a standard 5V USB power bank.



## 1.1 Features

- Supports Audio and Video Synchronization.
- Supports maximum delay time up to 400ms.
- Can be powered by an external USB interface power bank
- Supports audio level control function.
- Switchable for Microphone input or Audio Line input
- Switchable Condenser / Dynamic Microphone
- Supports Stereo RCA output connectors for wide compatibility
- Supports Simple Controls and LED Indicators
- Compact and lightweight design



## 2. Front Panel



	<p><b>Audio Delay Time Adjustment Knob</b></p> <p>This knob provides you 10 segments for adjusting the audio delay time from 40ms to 400ms. Moreover, it also provides TONE function for you to output a 1K TONE signal to be the test signal.</p>
	<p><b>Audio Level Adjustment Knob</b></p> <p>This knob allows you to adjust the volume level of the input audio.</p>



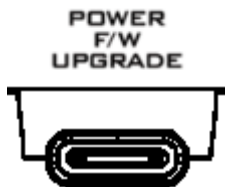
### Audio Meters

LED style meters measure the audio volume at the Main Program Audio Output.

Audio Volume(dBV)	-20		-10		-8		-4		0		4		8		10	
LED Color	G		G		G		G		G		Y		Y		R	
Range (dBV)	-20	-12	-11	-9.5	-8.5	-6.5	-5.5	-3	-2	1	2	5.5	6.5	8	9+	

G: Green Y: Yellow R:Red

## 3. Right Panel



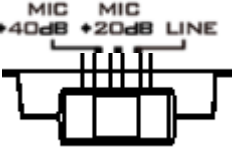


### POWER F/W UPGRADE (POWER/F/W UPGRADE) POWER



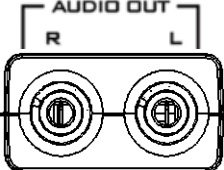
This USB Type-C interface allows you to connect to a 5V USB external power bank for powering the AD-10. Once the external power bank is connected, the power of the AD-10 is turned on.

### F/W UPGRADE

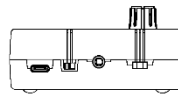
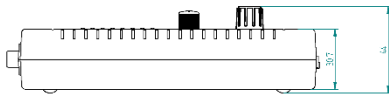
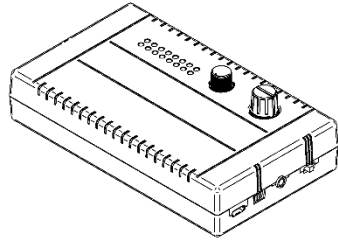
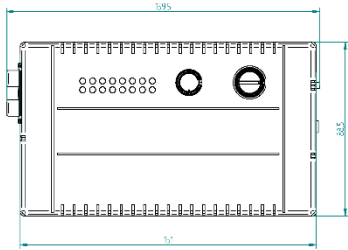
According to the difference of the USB interface for your laptop, please use a USB Type A to USB Type C adapter cable or a USB Type C to USB Type C cable to connect from your laptop to your AD-10. After that, you can use a special firmware update tool for updating the firmware of the AD-10.

	<p><b>MIC DYN/CON</b></p> <p>This adjustable switch allows you to switch between the dynamic microphone or the condenser microphone.</p>
	<p><b>AUDIO IN</b></p> <p>This AUDIO IN interface allows you to connect to a 3.5mm condenser microphone/dynamic microphone or other Line in audio input sources</p>
	<p><b>MIC +40dB/MIC +20dB/LINE</b></p> <p>When you use a microphone, this switch allows you to select MIC +40dB or MIC 20dB. When you use an external LINE IN audio source, please select LINE.</p>

## 4. Left Panel

 <p>The icon shows a rectangular button with a circle in the center, labeled "F/W UPGRADE" above it.</p>	<p><b>F/W UPGRADE</b></p> <p>Before starting the firmware update procedure, please press and hold this button and then connect the USB Type-C cable from your laptop to the [POWER F/W UPGRADE] USB Type-C interface which is located on the right panel of the AD-10. After the connection is done, please release the [F/W UPGRADE button]. After that, please use the [EP Console] firmware update tool for updating the firmware of the AD-10.</p>
 <p>The icon shows a rectangular switch with a sliding mechanism, labeled "MONO STEREO" above it.</p>	<p><b>MONO/STEREO</b></p> <p>This switch allows you to select the output audio source to be mono or stereo.</p>
 <p>The icon shows two circular RCA audio output ports, labeled "R" and "L" above them, under the heading "AUDIO OUT".</p>	<p><b>AUDIO OUT R/L</b></p> <p>The AD-10 provides two unbalanced stereo RCA audio output interfaces.</p>

# 5. Dimensions



## 6. Specifications

<b>Model Name</b>	<b>AD-10</b>
<b>Product Name</b>	
<b>Audio Input</b>	1 x 3.5mm Jack Socket Tip: Mic/Line (Left)、 Ring: Mic/Line (Right)、 Sleeve: GND 16K ohms, Max Line Input Level: +10dBV
<b>Audio Output</b>	2 x unbalanced stereo audio, RCA sockets 600ohm, MAX=+10dBV
<b>Audio Output Switch</b>	Stereo/Mono
<b>MIC Gain / LINE Switch</b>	MIC+40dB/ MIC+20dB/ LINE
<b>Input Level Gain</b>	Knob (Off to18dB gain)
<b>Audio Output LED Indicator</b>	2 Rows (Left/ Right)
<b>Audio Delay</b>	Knob(0 to 400ms)
<b>Firmware Update / Power In</b>	USB Type C (5V/1A)
<b>Supported MIC power</b>	DC 3V
<b>Audio Specification</b>	
<b>Audio Delay</b>	Up to 400ms
<b>Sample Rate</b>	48 KHz
<b>Line Input</b>	
<b>Bandwidth</b>	20Hz~20KHz < +/- 3dB
<b>S/N Ratio</b>	> 80 dB @1KHz,0dB
<b>T.H.D.</b>	< 0.01% @1KHz,0dB

<b>Isolation</b>	> 65dB
<b>Microphone Input</b>	
<b>Bandwidth</b>	20Hz~20KHz < +/- 3dB
<b>S/N Ratio</b>	> 70 dB @1KHz,0dB,+20dB > 60 dB @1KHz,0dB,+40dB
<b>T.H.D.</b>	< 0.03% @1KHz,0dB,+20dB < 0.1% @1KHz,0dB,+40dB
<b>Isolation</b>	> 60dB @+20dB > 50dB @+40dB
<b>General</b>	
<b>Operating Temperature</b>	0°C to 40°C (32°F to 104°F)
<b>Storage Temperature</b>	-20°C to 60°C (-4°F to 140°F)
<b>Humidity</b>	10% to 80% (non-condensing)
<b>Dimension(mm)</b>	151 x 88.5 x 30.7
<b>Weight (kg)</b>	0.18

# Appendix Firmware Update

## Firmware Update Procedure for AD-10

### 1. Introduction

Firmware update is performed by connecting the target AD-10 Audio Delay Box to a USB3.0 based Windows laptop.

This firmware update procedure applies to the following product.

Product Model	AD-10
Product Name	Audio Delay Box

There are two firmware files

- Firmware file x 2: `usb_ad10_rls.H01/usb_ad10_rls.H00`

This document describes how to perform a firmware update on a Windows computer

Screen images from the Windows 10 operating system are used in this document as an example. Images used in this document may differ from the actual screens.

For details on Windows and computer operations, please refer to the instruction manual of your computer.

### 2. Preparation

#### 2.1 System Requirements

A computer that meets the following requirements is necessary to perform the firmware update procedure.

Laptop	A normal laptop which supports a USB 3.0 interface is needed.
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Operation is not guaranteed on all computers that meet the above requirements

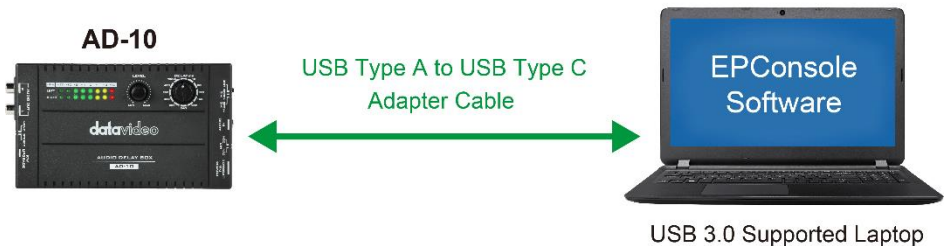


## 2.2 Firmware Update Preparation

The following items are required to perform this firmware update. Please prepare these items in advance before performing the update.

AD-10 x 1	The AD-10 which is needed for updating the firmware.
USB Type-A to USB Type-C adapter cable x 1	The USB Type-C cable for powering and firmware update purposes.
USB 3.0 supported Laptop x 1	The USB 3.0 supported laptop is used for updating the firmware.
EPConsole software	The EPConsole software is used for updating the firmware.
Latest Firmware <ul style="list-style-type: none"><li>● usb_ad10_rls.H01</li><li>● usb_ad10_rls.H00</li></ul>	The latest downloaded firmware files.

## 2.3 System Connection Diagram



## **2.4 Preparing the Firmware**


### **2.4.1. Download the firmware**

AD-10 Product Page from the Datavideo website:

<https://datavideo.com/product/AD-10>

### **2.4.2. Unzip the firmware**

Please download the firmware into the hard disk of your laptop and then unzip the firmware zip file. After that, you can see the following firmware files for the AD-10.

 usb\_ad10\_rls.H01

 usb\_ad10\_rls.H00

## **2.5 Install the EPConsole Software**

The EPConsole software is the software which is used for the AD-10 firmware update. Please follow the following steps for installing the EPConsole software.

### **2.5.1. Install the EPConsole Software**

Please go to the Koryo EPConsole website

<http://ap.koryo.com.tw/download/EPConsole/publish.htm> and then click the

[Install] button to install the EPConsole software.

**Name:** EPConsole

**Version:** 3.9.9.0

**Publisher:** Koryo

The following prerequisites are required:

- Windows Installer 3.1
- Microsoft .NET Framework 4 (x86 and x64)

If these components are already installed, you can [launch](#) the application now. Otherwise, click the button below to install the prerequisites and run the application.



[ClickOnce and .NET Framework Resources](#)

## **3. Update**

### **3.1 Updating the firmware**

#### **3.1.1. Please press the FW/UPGRADE button from the AD-10**

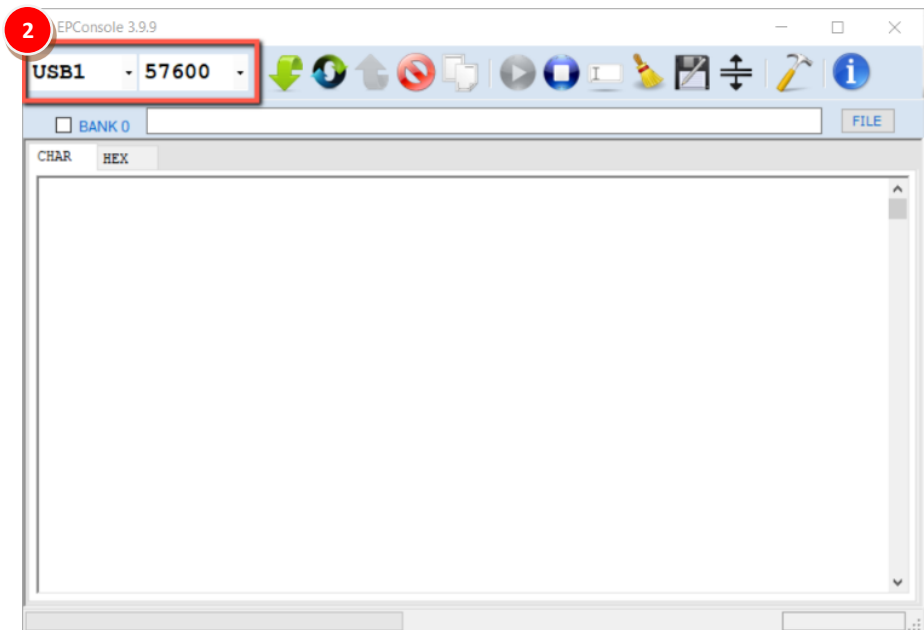
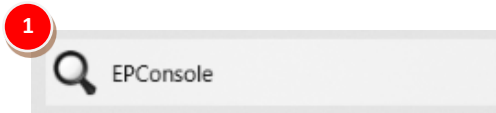
Please press the FW/UPGRADE button from the AD-10 and then connect a USB type-A to USB type-C adapter cable from the USB type-A port of your laptop to the USB type-C port of the AD-10.

#### **3.1.2. Please release the FW/UPGRADE button.**

Please release the FW/UPGRADE button.

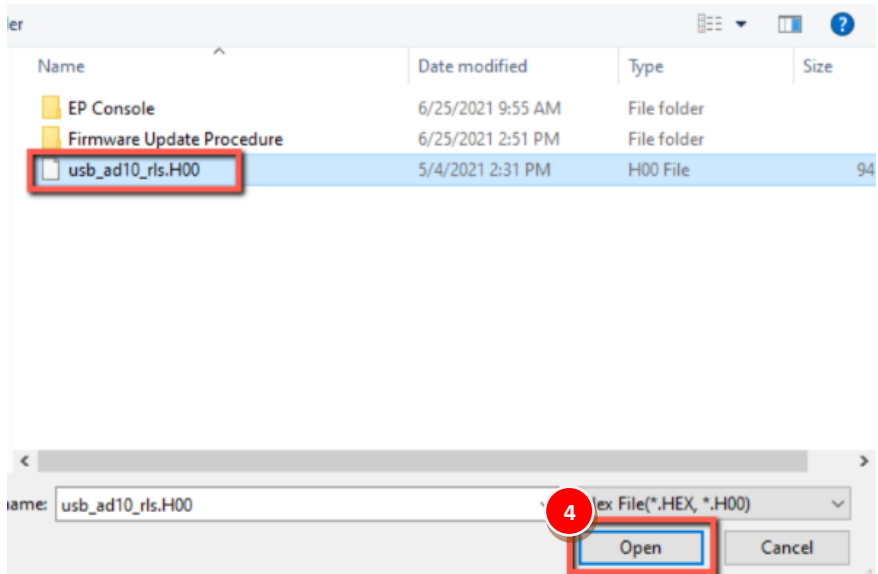
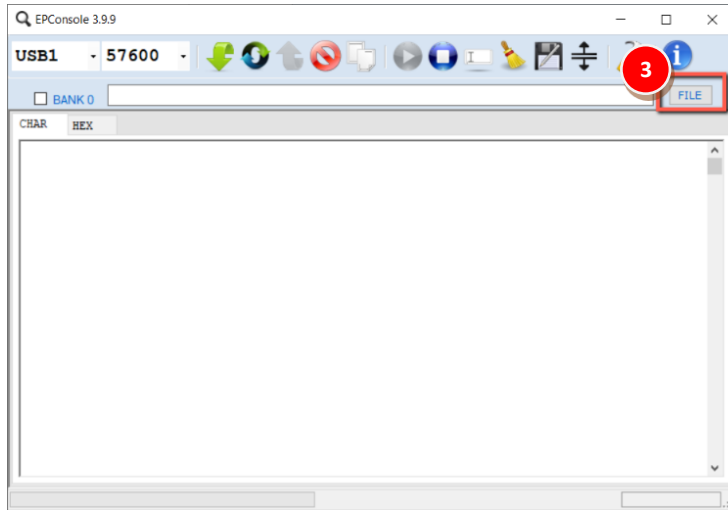
### 3.1.3. Please click the EPConsole icon from the Windows Start Menu of your laptop.

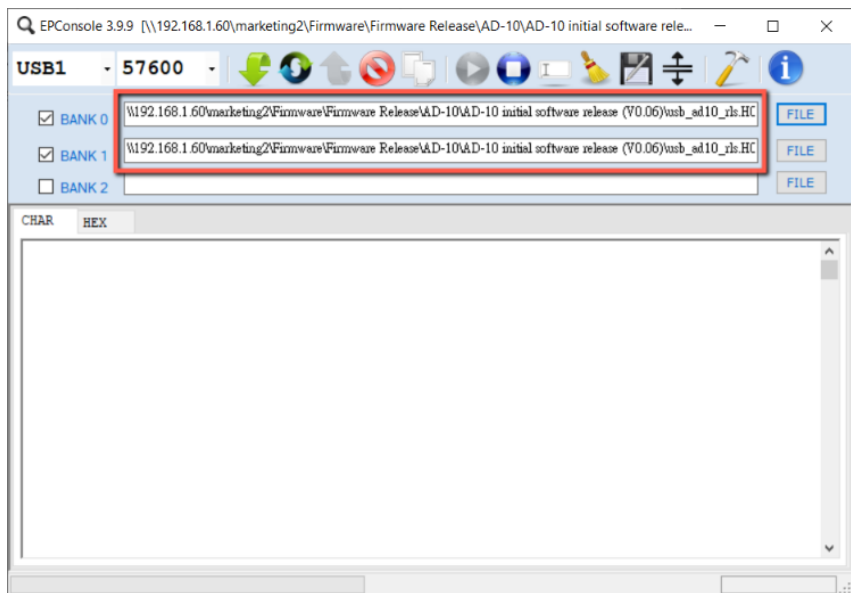
Please click the EPConsole icon from the Windows Start Menu of your laptop to run the EPConsole software and then the USB1, 57600 will be shown.



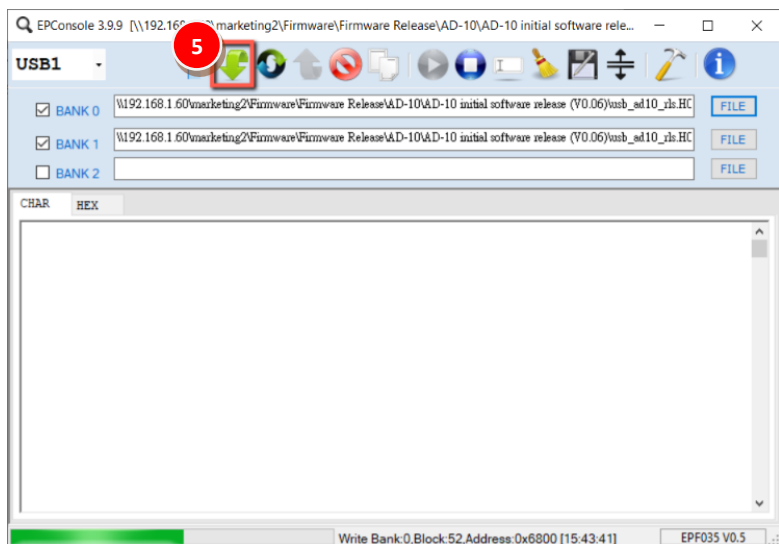
### 3.1.4. Please press the [FILE] button to load the latest firmware files.

Please press the [FILE] button to load the latest firmware files.

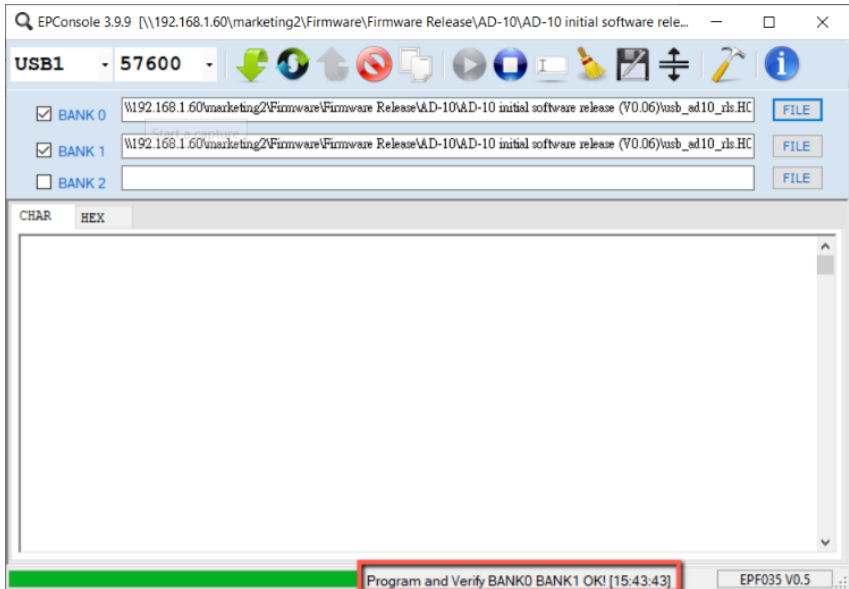




**3.1.5. Please press the [Program MCU] button and then wait until the progress bar reaches 100%.**



**3.1.6. After the progress bar reaches 100%, the [Program and Verify BANK0 BANK1 OK!] will be shown and the firmware update procedure is done successfully.**



# Service and Support