FAQ-Upd-009: UA-7231M OS and Firmware v1.5.6.4 Recovery Procedure (via MicroSD Card)

ICP DAS UA series products provide an OS recovery mechanism that allows users to restore the operating system and firmware to their factory default state.

Note: This FAQ applies to the UA-7231M. It describes how to recover the UA-7231M OS and firmware to version 1.5.6.4 using the OS recovery image.

When is OS recovery needed?
Perform OS recovery if the device experiences system issues, needs to be restored to a clean factory state, or requires reinstallation of OS and firmware v.1.5.6.4.

Warning: This procedure is an OS recovery, not an online upgrade. All project configuration data, and user files stored on the UA-7231M will be permanently erased. So, back up your project files before proceeding.

Preparation: Required Hardware and Software

Before starting this procedure, prepare the following hardware and software.

Type	Item	Purpose / Notes
Hardware	**UA-7231M Device**	Target device for recovery
	MicroSD Card (included with UA-7231M)	Used directly as the OS burning media
	PC / Notebook (Windows)	Used for OS burning, MicroSD card formatting, and web access
	MicroSD Card Reader or Adapter	Most newer PCs/NBs do not have a built-in card reader
	Ethernet Cable ×1	Direct connection between the UA LAN1 port and PC/NB
	Power Supply (12 ~ 48 VDC)	Provides power to the UA-7231M
Software	**UA-7231M OS recovery imgc Image File**	OS recovery image file. Download from: https://www.icpdas.com/en/download/show.php?num=9383&nation=US&kind1=&model=&kw=UA-7231M
	HDD Raw Copy Tool	OS burning utility. Download from: https://hddguru.com/software/HDD-Raw-Copy-Tool/
	DiskGenius	Used to format the MicroSD card as FAT32. Download from: https://www.diskgenius.com/download.php

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UA-7231M OS and Firmware Recovery Procedure

Recovery Procedure Overview

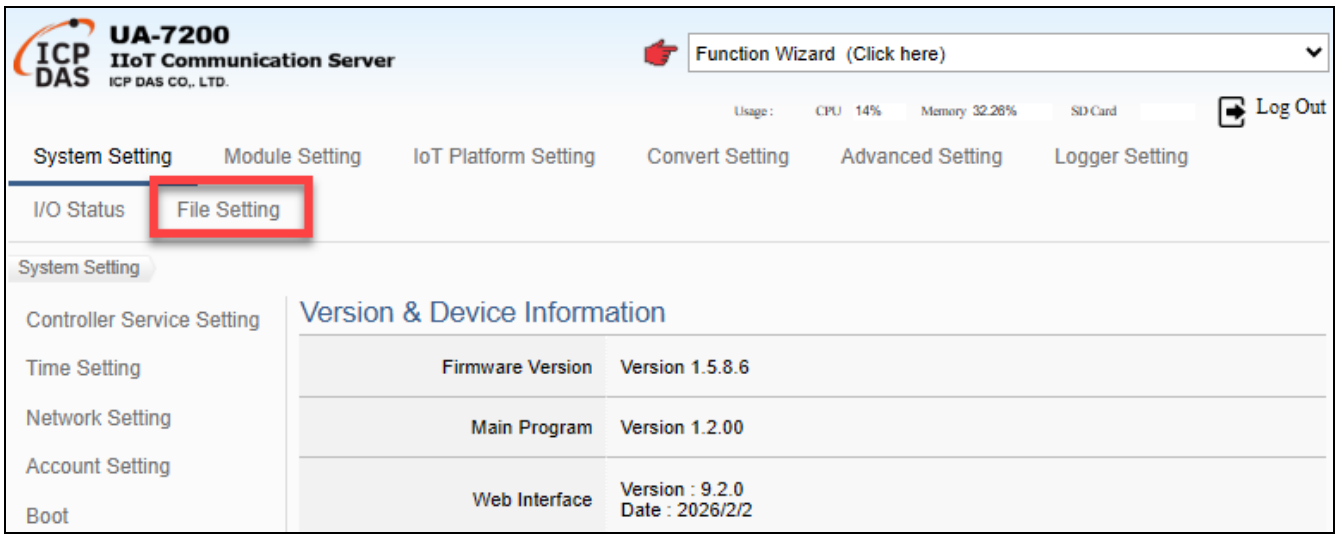
Follow the steps below to complete the recovery process:

1. **Back Up the Project File**
2. **Create the OS Recovery SD Card**
3. **Recover the OS on the UA-7231M**
4. **Verify the UA-7231M IP Address and Log In**
5. **Restore the Previously Backed-Up Project File**

1. Back Up the Project File

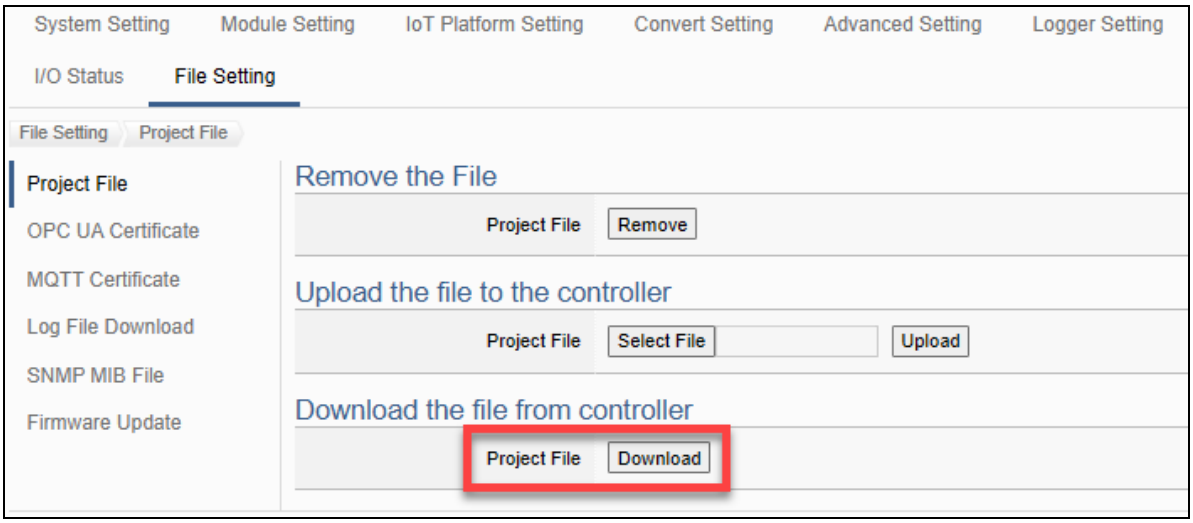
The recovery procedure will rewrite the underlying operating system. If there is a project in the UA-7231M controller, please backup and save the project before the OS recovery process.

Log in to the UA web UI, click the [File Setting] function.



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Click the [**Download**] button shown below, and save the project file to the folder you want. (This backup file will be used for restoration in step 5.)



2. Create the OS Recovery SD Card

(For download links of the required files and software, please see the aforementioned "Preparation: Required Hardware and Software" list.)

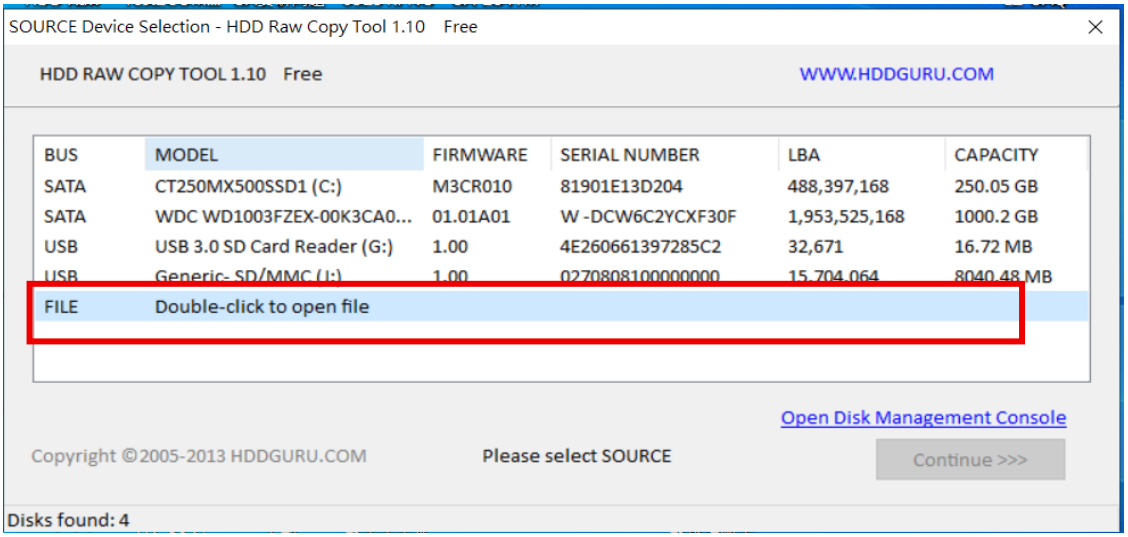
(1) Power off the UA-7231M, then remove the MicroSD card of the UA-7231M. (the location of the MicroSD card is as shown below)
Then insert the MicroSD card into the card reader on your PC/NB.



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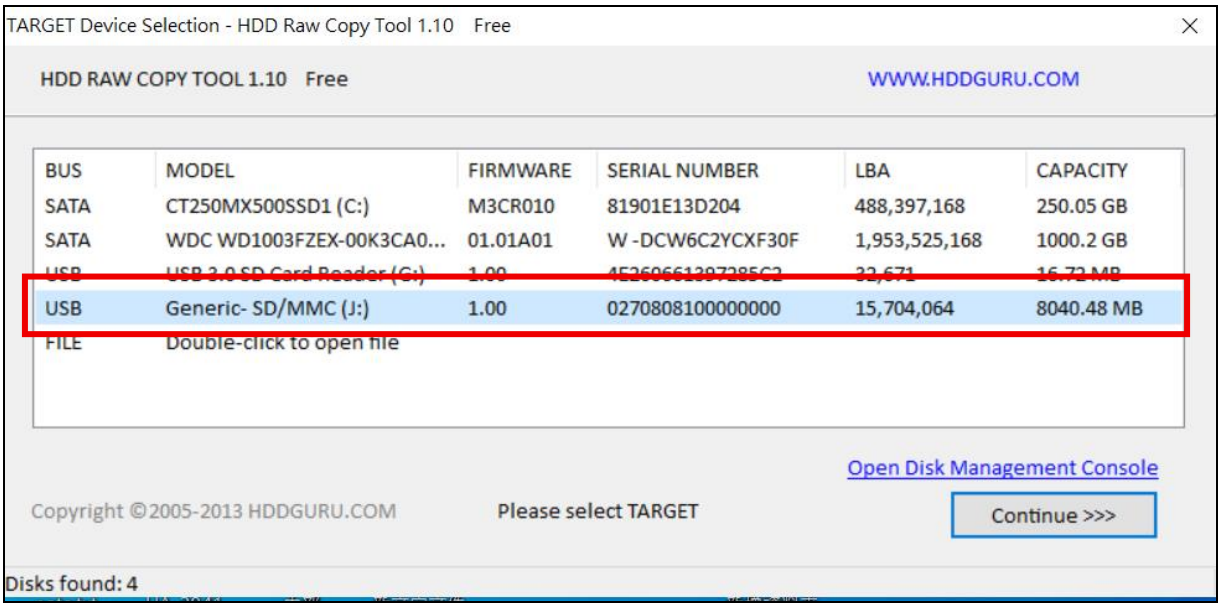
(2) Run the software tool: HDD-Raw-Copy-Tool

- In the “Please select **SOURCE**” window (shows on the bottom).
- Click the **“FILE”** item (the last option) at the bottom. The screen displays as follows.
- Select the downloaded recovery image file.
- Click the “Continue” button.



(3) Select the target device.

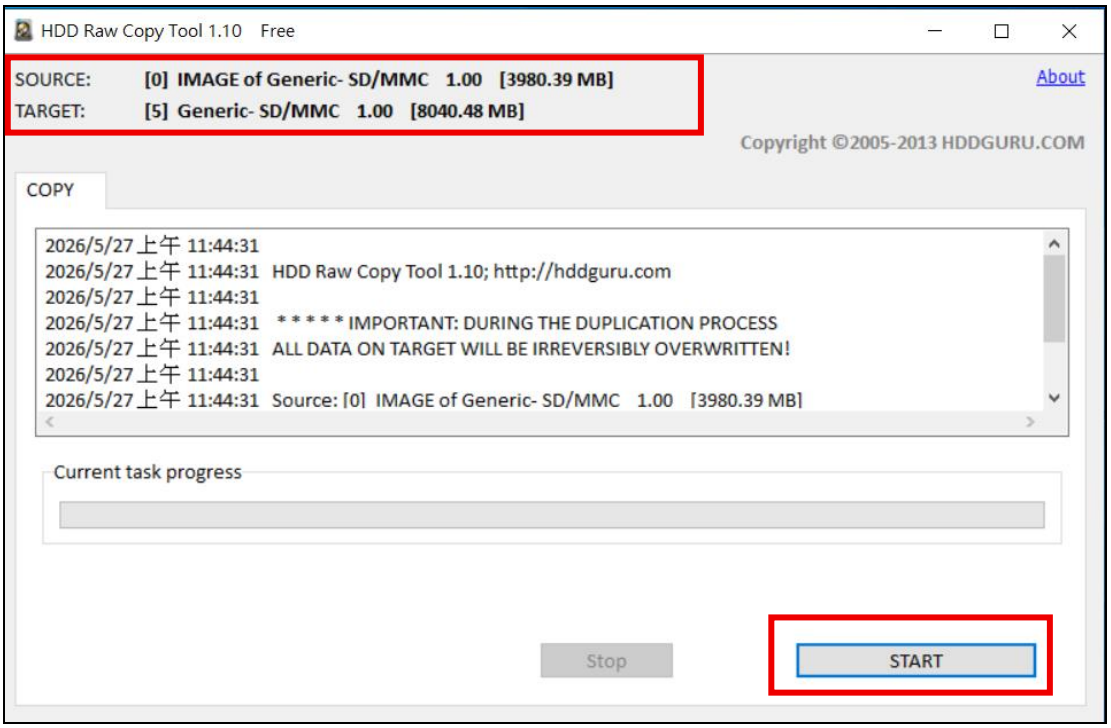
- In the “Please select **TARGET**” window (shows on the bottom).
- Select the MicroSD card device (ex: “**USB**” item here).
  [WARNING: Ensure you select the correct MicroSD card reader]
- Click “Continue” button. The screen displays as follows.



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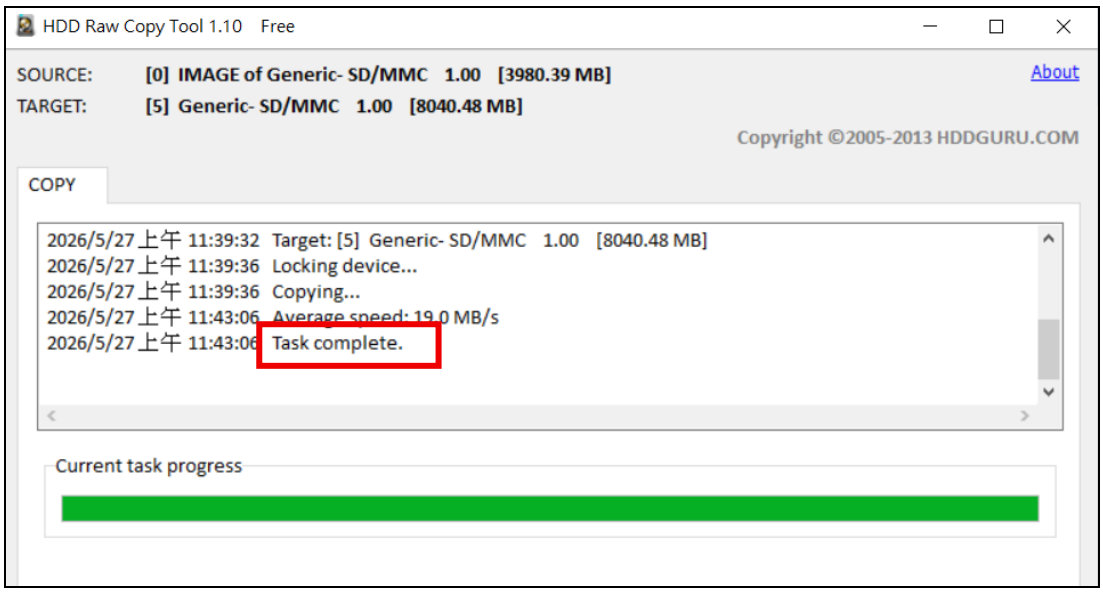
(4) Verify Settings and Start Writing.

- Check the red box information: the first item shows the source image size; and the second item shows the target device and capacity.
- If the information is correct, click the “START” button.
- Click the “Yes” to begin writing the downloaded image file into the microSD card.



(5) Complete Recovery SD Card Creation.

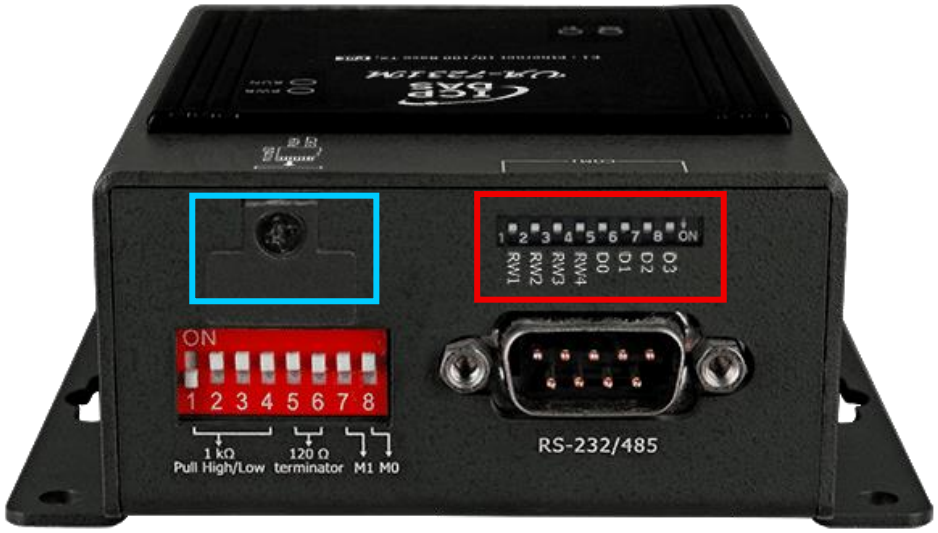
When the "Task complete" message appears, the recovery image has been successfully written to the MicroSD card.



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3. Recover the OS on the UA-7231M

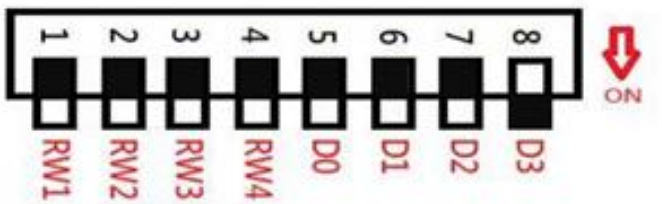
(1) Set the DIP switch to “SD Card Boot” mode (See the **Red box** as shown below).



“SD Card Boot” mode: Adjust DIP Switch (1~7: OFF，8: ON)

1	2	3	4	5	6	7	8	⇩
OFF	**OFF**	**OFF**	**OFF**	**OFF**	**OFF**	**OFF**		
							ON	**ON**
RW1	RW2	RW3	RW4	D0	D1	D2	D3	





(2) Insert the recovery MicroSD card into the card slot of the UA-7231M. (See the **blue box** as shown above).

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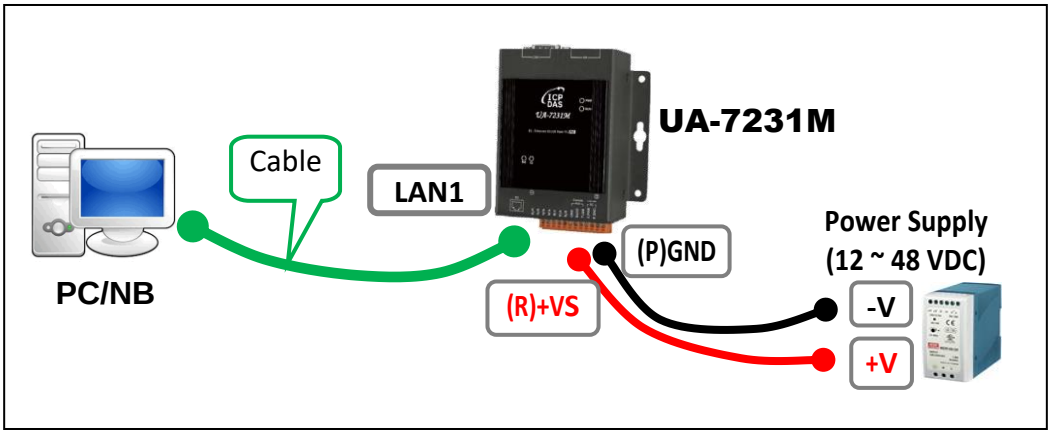
(3) **Connect the UA-7231M's LAN1 ("E1") directly to the PC/NB** using an **Ethernet cable** (as shown in the diagram).

Note:

a. The device need to detect the network after powering on for to correctly reset the IP address.

b. The download operation in step 2 must be completed before this step.

c. If the PC/NB only has a single network port, do the download first, and then switch the Ethernet cable to the UA-7231M.



(4) Power on the UA-7231M to start the OS recovery process.

Warning: Do not power off during the recovery process, otherwise the process will fail.

Interpretation of prompt tones during the Recovery process:

*** One long beep — Indicates that the process started.**
*** Continuous long beeps — Indicates that the recovery completed successfully.**
*** Four short beeps — Indicates recovery failed.**

(5) After a successful process, power off the UA-7231M, and then remove the MicroSD card.

(Warning: If the recovery MicroSD card is not removed, the UA-7231M will repeatedly enter recovery mode during startup.)

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(6) Insert the MicroSD card into a card reader on your PC/NB.

(7) Format the microSD card to FAT32 to ensure the UA-7231M can read it correctly.

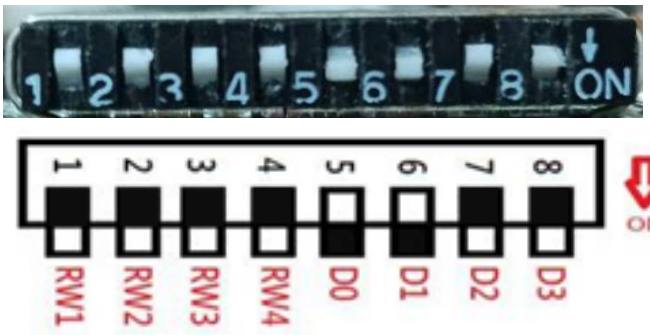
You can use the **DiskGenius** program to handle the formatting.
DiskGenius download link: https://www.diskgenius.com/download.php

(8) Insert the MicroSD card back into the UA-7231M.

(9) Change the DIP Switch to the "eMMC Boot" mode (as the image below).

"eMMC Boot" mode: Adjust DIP Switch (5~6: ON, others: OFF).

1	2	3	4	5	6	7	8	⇩
OFF	**OFF**	**OFF**	**OFF**			**OFF**	**OFF**	
				ON	**ON**			**ON**
RW1	RW2	RW3	RW4	D0	D1	D2	D3	



(10) Power on the UA-7231M again to complete the OS recovery procedure.

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4. Verify the UA-7231M IP Address and Log In

After completing the recovery process, you reboot and log in to the UA-7231M UI webpage.

Default IP Address: 192.168.255.1

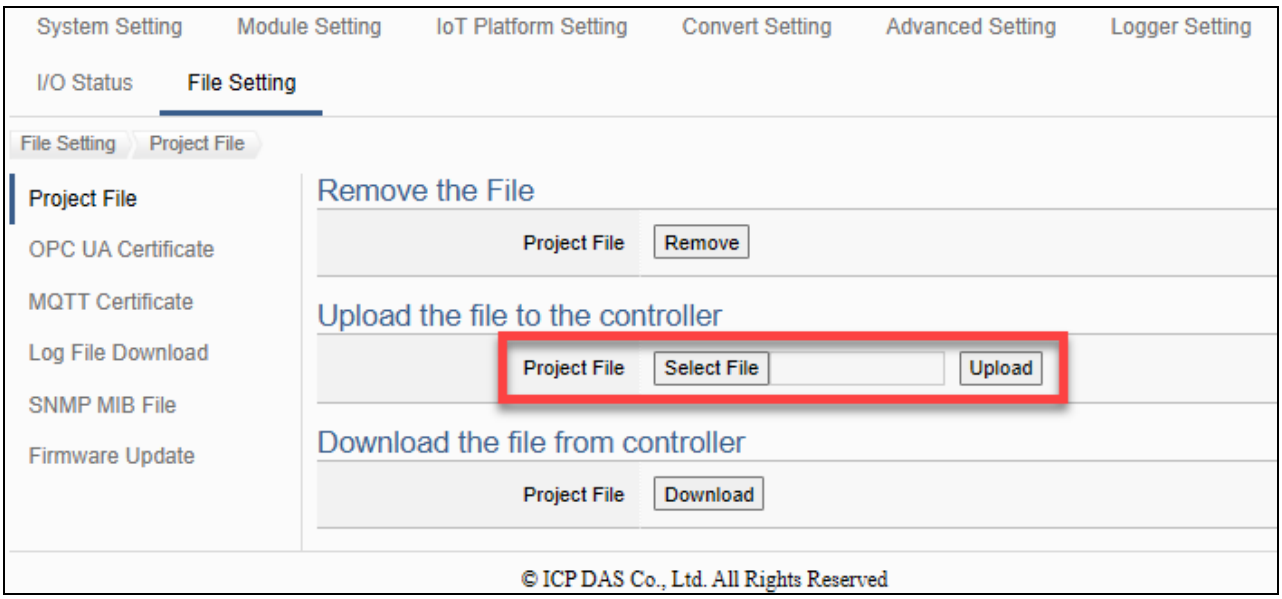
Note: Before logging into the UA Web UI, set the network IP address of your PC/NB to the same subnet as the UA, for example, **192.168.255.**100, with a subnet mask of 255.255.255.0; otherwise, you will be unable to connect to the UA device.

Default Web UI Username: root
Default Web UI Password: root

For advanced management, please refer to the **EZ-UAQ Utility**; see the Utility manual for details:
https://www.icpdas.com/en/download/index.php?nation=US&kind1=&model=&kw=ua-

5. Restore the Previously Backed-Up Project File

Log in to the UA-7200 UI webpage, click the [**File Setting**] page.
Click [**Select File**], select the previously backed up project file, and click [**Upload**].



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