



HID DOWNLOAD GUI GUIDE

5th Nov. 2010

Application note - Revision History				
Version	Content	Pages	Author	Author
2.5	Initial document	9	Jezy	2009-12-25
2.6	Improve the pix file download speed	10	Reed	2010-05-09
2.7	Improve the stability of download and interface switch	12	Hanwang	2010-11-05



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Abstract

The document describes the function of USB-HID Download GUI for Pixcir touch panel solution, steps and instructions. Firstly, the architecture of GUI is given. Next, we will introduce the steps of GUI operation. Finally, the results demonstrate that our method is feasible.



1. GUI

1.1 Introduction

User can use the GUI to update firmware through USB CDC interface after Pixcir CDC driver is installed on the Windows PC.

The main functions as following:

1. Communication with touch screen through HID or CDC port . And, it can auto-detect HID device and CDC device.
2. Switch device port between HID and CDC .
3. Calibrate the touch screen and read firmware version via HID interface.
4. Update firmware code through USB CDC port.
5. Get data in normal mode and debug mode.
6. Switch to ISP download mode via CDC serial port.

The GUI can run on Windows XP, Vista and Windows 7 operation system.

1.2 GUI Architecture

The figure 1 illustrates the function architecture of GUI. There are two parts: HID mode and CDC(COM) mode. The touch screen is integrated both USB-HID interface and COM interface. The main structure:

1. Switch between USB-HID mode and COM Mode.
2. In USB HID mode, there will be 2 sub-function as following:
 - Read MCU firmware version automatically.
 - Calibrate touch screen.
3. In COM mode, there will be 2 sub-function groups as following:
 - Update the MCU flash with downloading PIX files.
 - Debug function : Read X-Y-coordinate and offset message, calibrate touch screen, switch to ISP download mode.

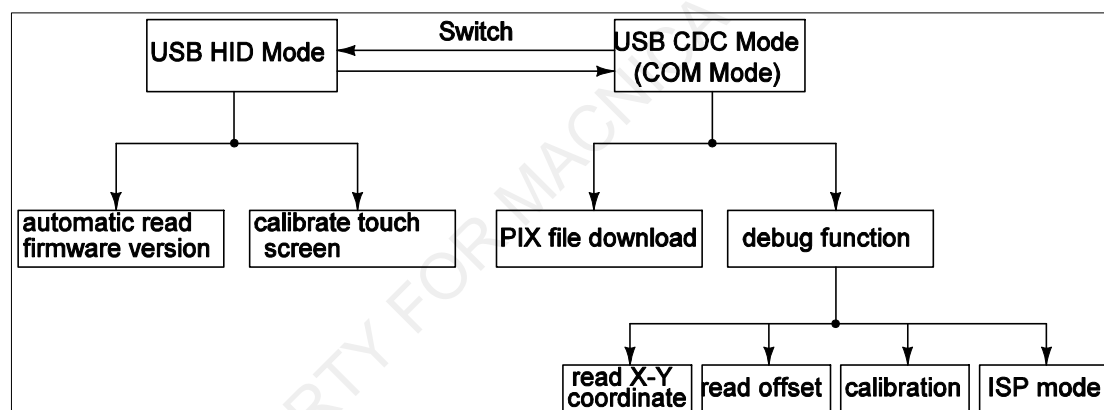


Figure 1. The architecture of GUI



1.3 Development Tools

The development environment is Visual C++6.0. Use C++ to develop it. If you want to develop GUI, please install Visual C++6.0. After finishing compiling, *.exe file can be obtained.

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2. Instructions

2.1 Operation steps in USB HID mode

First, user need to connect the touch screen device to PC, then open the USB_download_GUI_v2.7.exe (For vista and windows7 O/S, user need to open the GUI with ADMINISTRATOR) .

1. Set the device VID and PID on the GUI or in config.ini.
2. Click "SETTING" button.

User will find "SETTING" button right side light is changed from red to green, it means GUI has connected to the touch screen, and the touch screen is in USB HID mode. GUI also show the MCU firmware version automatically. Please check in figure 2.

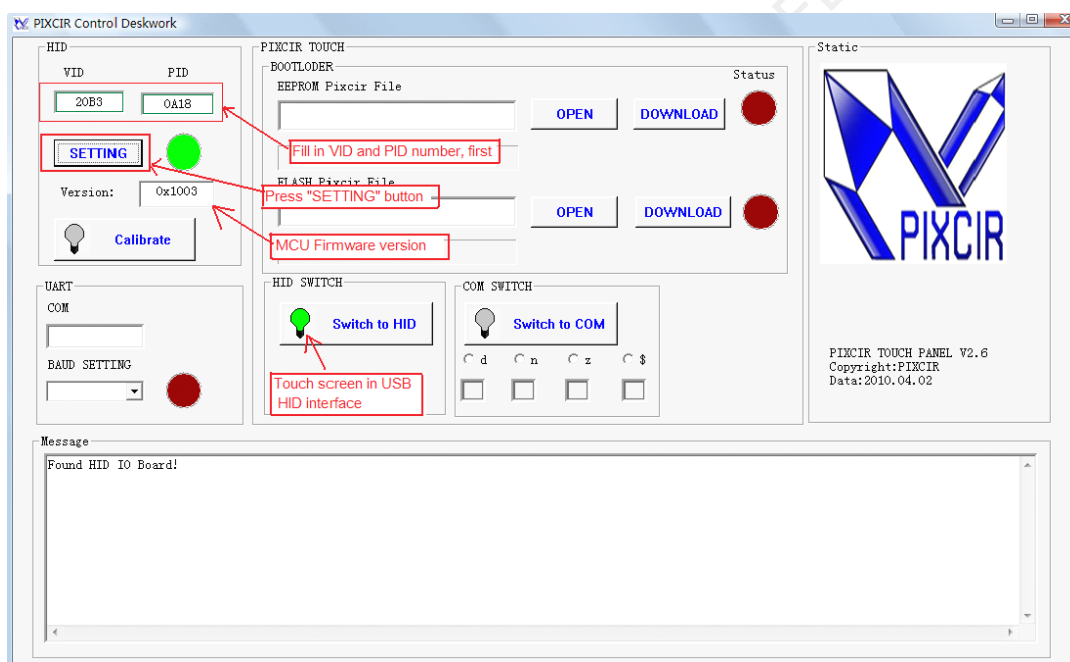


Figure 2 :USB HID Mode

If you press "Calibrate" button when touch screen in USB HID mode, GUI will send calibration command to touch screen, and user need to make sure touch screen clean (no finger touch, no water on the touch screen) while calibrating. The calibration will need about 1~2 second (different touch panel size will has different result). Calibration light will change to green if successfully. Please check figure3 in the below.



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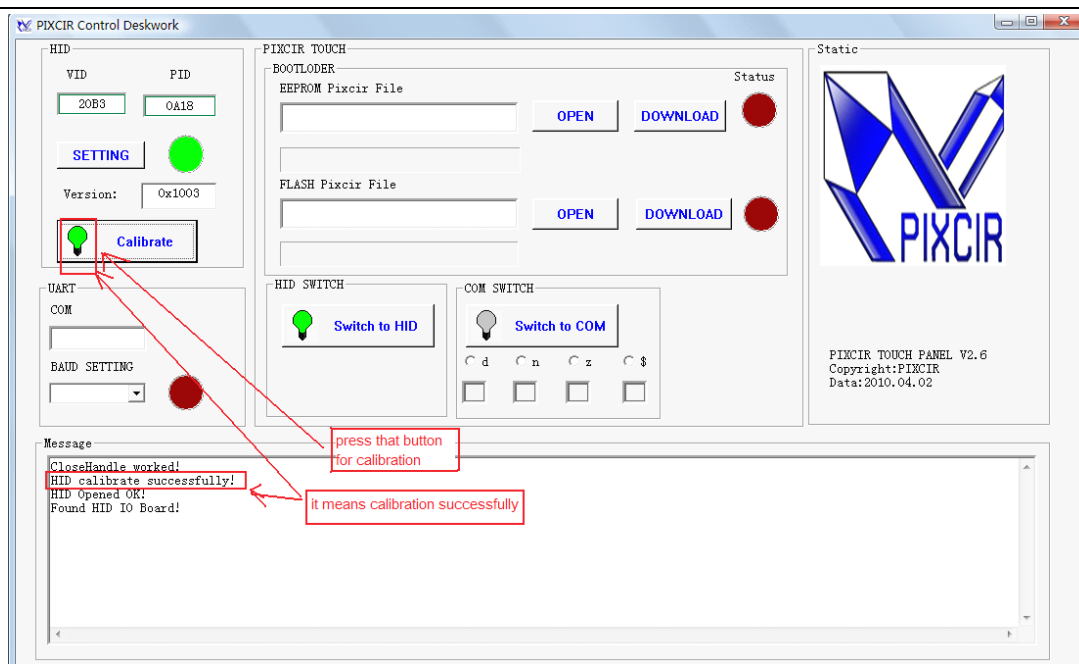


Figure 3 :Touch screen calibration in USB HID Mode

Support USB hot-plug function. User can keep the GUI open, user can disconnect touch screen device from PC ,then connect touch screen device again. GUI will connect to the device automatically if user has setted the device VID/PID.

User also can click "Switch to COM" , then switch touch screen device to USB CDC (COM) mode when in USB HID mode. "Switch to COM " button light will be changed to green if switch successfully. Please find it in the figure4.

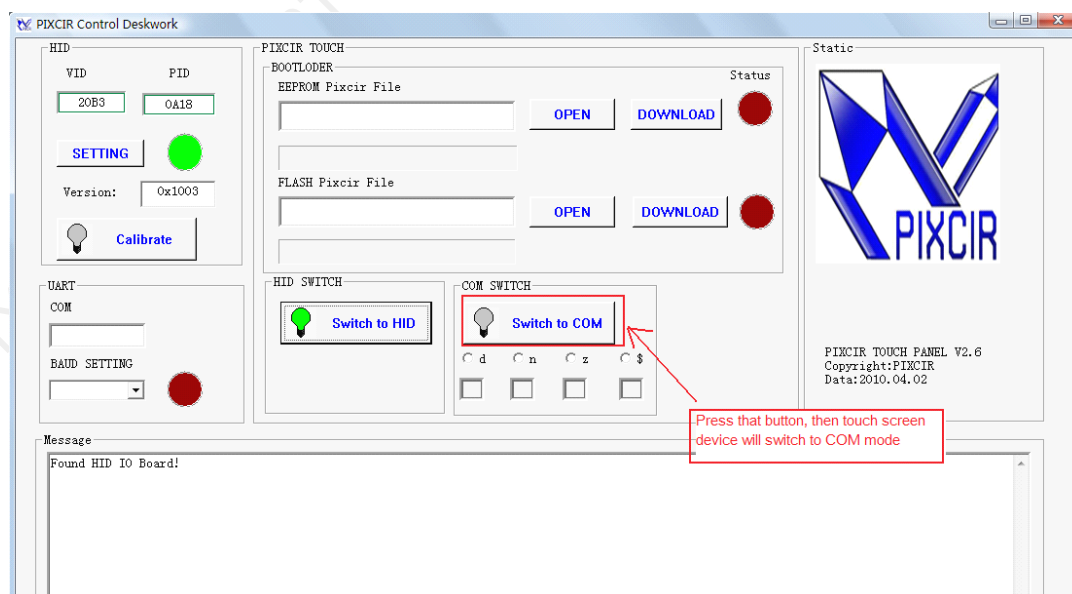


Figure 4 :Switch to COM Mode



2.2 Operation Steps in USB CDC(COM) mode

2.2.1 USB CDC Driver Install

USB CDC interface need driver support. So, user need install the manbo_driver.inf driver in user's PC after switching the touch screen to the USB CDC (COM) interface, . User check the O/S Device managment to find a new device, then update the device driver(manbo_driver.inf) from the USB download GUI file. It is only need to install one time at the first.

2.2.2 Operation Steps in the COM mode

1. PIX file download

■ MCU EEPROM Update

If user need to update the MCU EEPROM vaules, then user need to choose "EEROM Pixcir File" block . User should press "Open" button to link a .eep.pix file which need download to MCU EEPROM. Please find it in figure5.

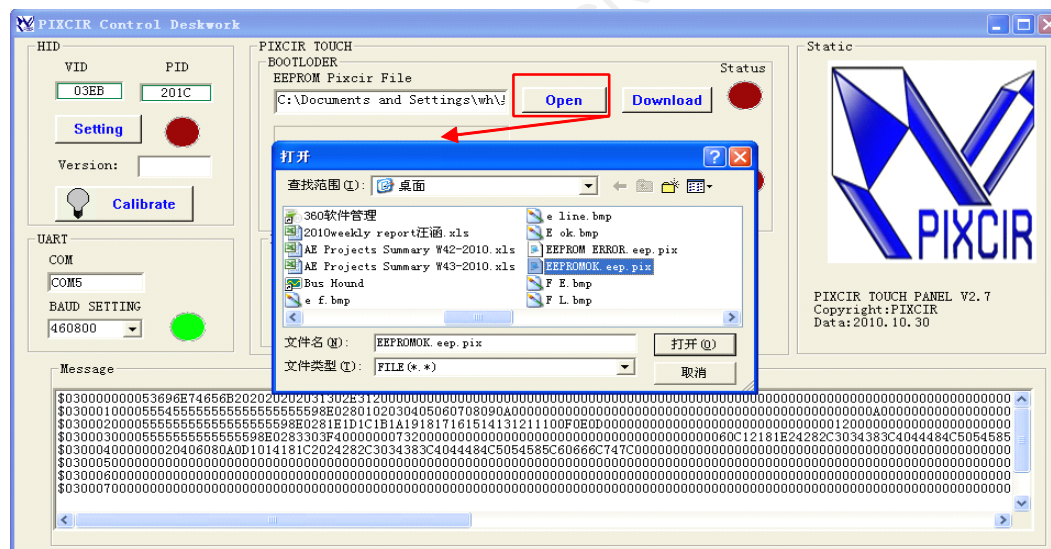


Figure 5 :Open the .eep.pix file

Press "DOWNLOAD" button after linking .eep.pix file correctly. The "status" light will be changed to green if download successfully. Please find it in figure6.



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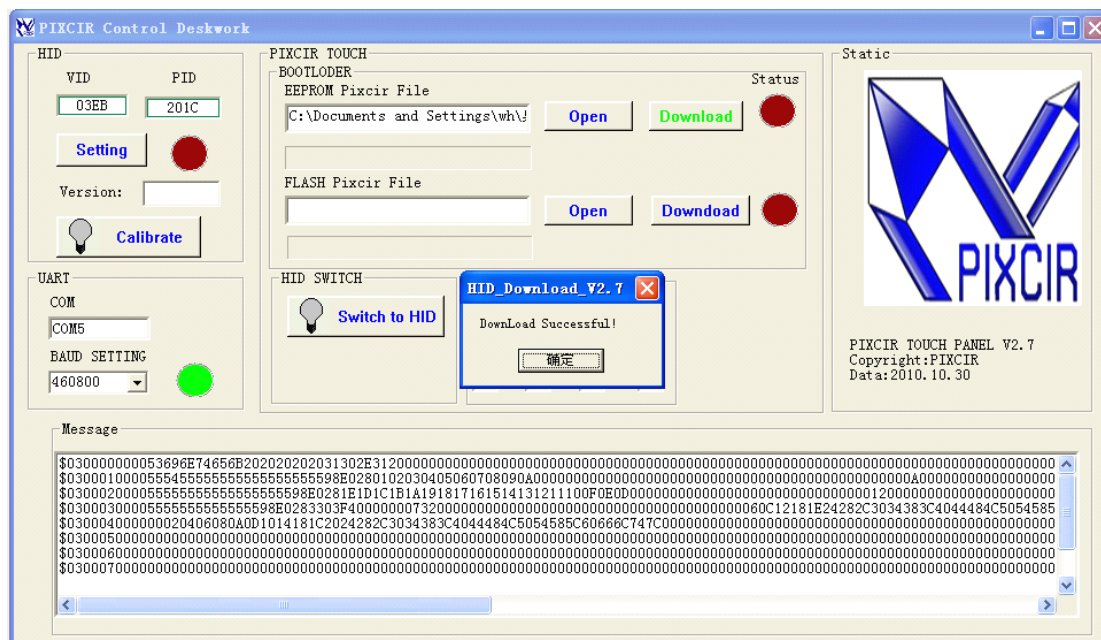


Figure6. Download the .eep.pix file successfully

If you find the message "Download Failed", such as Figure 7 and Figure 8, that mean .eep.pix file or the communication has some errors. You need to download the file again.

MCU will continue keep in USB CDC mode after finished the .eep.pix download. You can click "Switich to HID" button to switch the touch screen from USB CDC mode to USB HID mode.

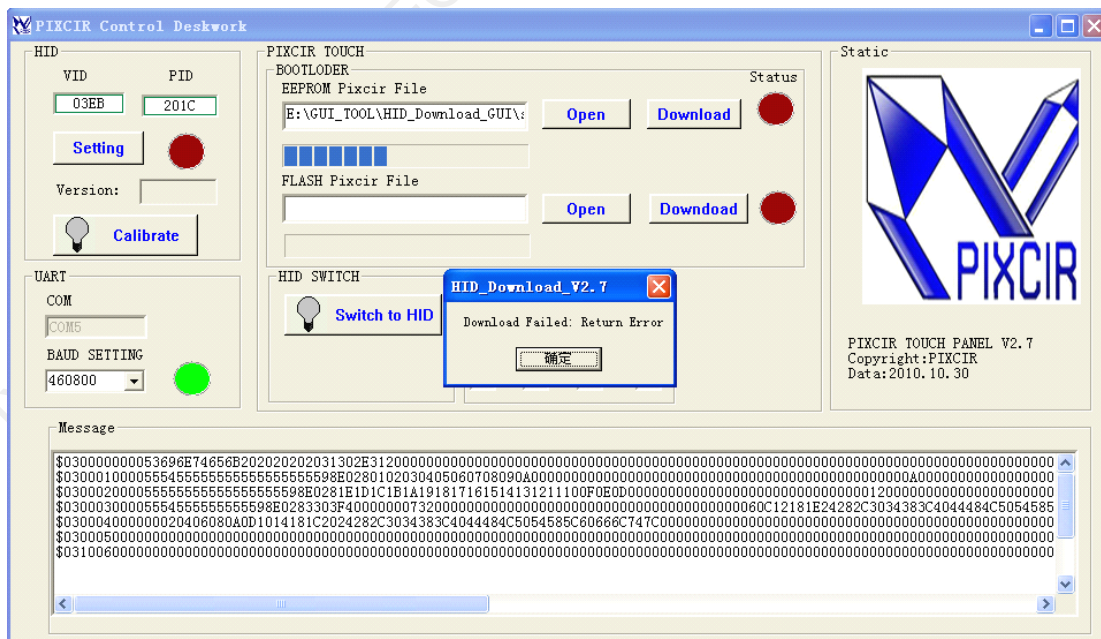


Figure 7. Return Error



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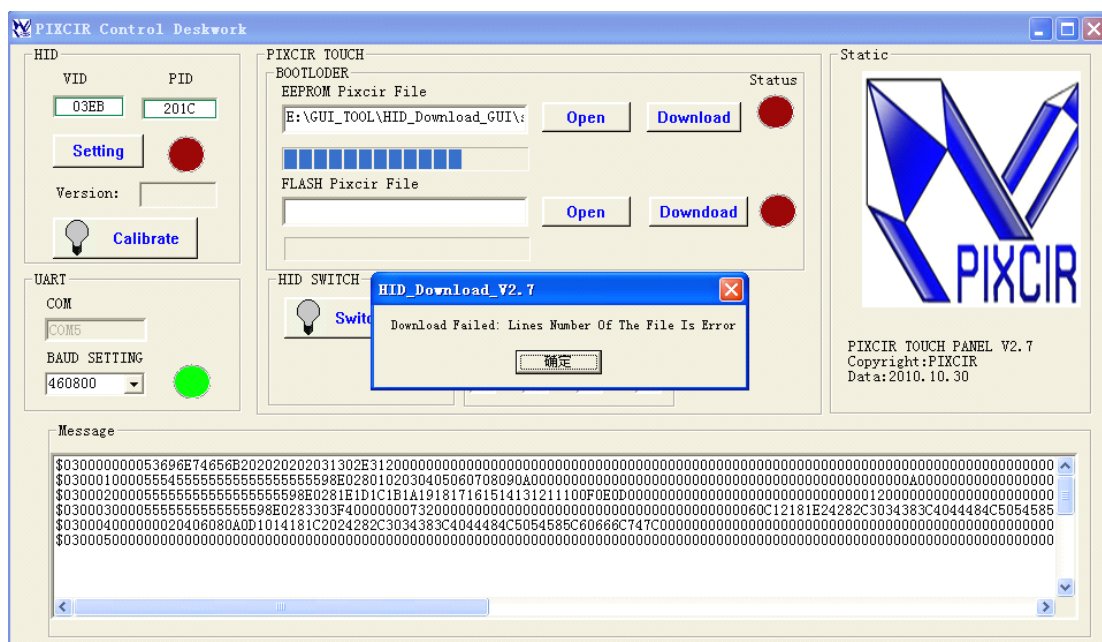


Figure 8. File Error

■ MCU Flash Value Update

If user need to update the MCU Flash vaules, then user need to choose "FLASH Pixcir File" block . User should press "Open" button to link a .pix file which need download to MCU Flash. Click "DOWNLOAD" button after linking the .pix file correctly. The "status" light will change to green if download successfully. Please find it in figure 9.

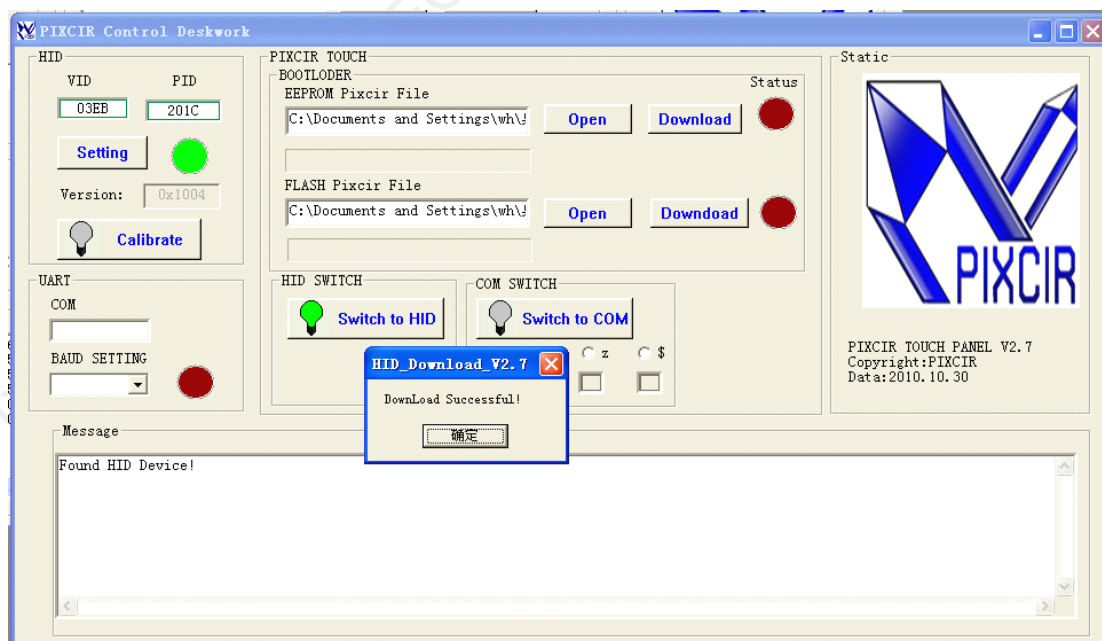


Figure 9. download the .pix file successfully



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If you find the message "Download Failed", such as Figure 10 and Figure 11, that mean the .pix file or the communication has some errors. You need to download the file again.

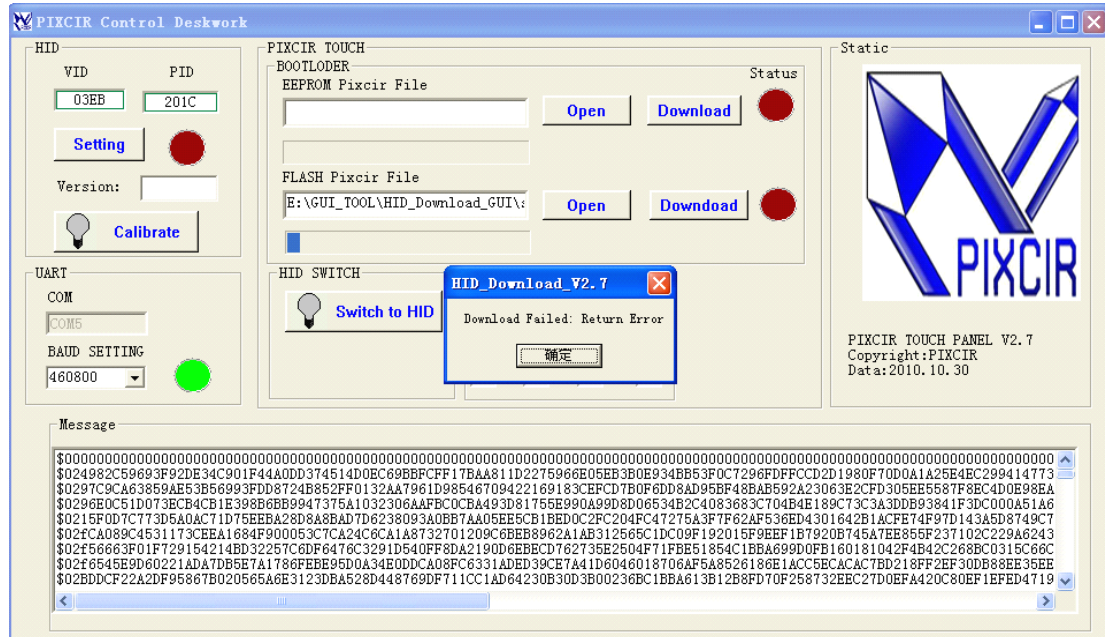


Figure 10. Return Error

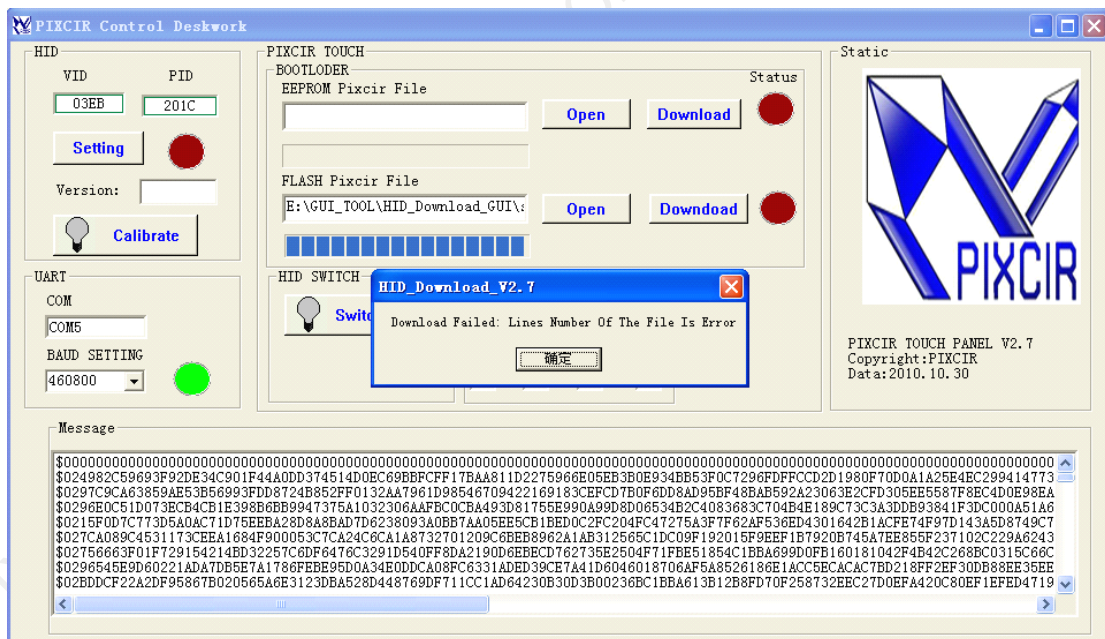


Figure 11. File Error

MCU will switch to USB HID mode automatically after finished the .pix download.

User can click "Switch to COM" button to switch device from USB HID mode to USB CDC mode.



■ Debug Function in USB CDC mode

Press "n" selection to read touch panel X-Y coordinate values, and show them in the message box.

Press "d" selection to read touch panel offset values, and show them in the message box.

Press "z" selection to calibrate touch panel.

Press "\$" selection to switch to ISP download mode.



3 Disclaimer

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