| Category | Contents |
|---|---|
| Keywords | CANDTU, cloud data platform |
| Abstract | This document describes the operation instructions for CANDTU to access the cloud data platform. |

## Revision History

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| V0.01 | June 1, 2018 | Created |
| V1.00 | July 2, 2018 | 1. Updated document specifications.<br>2. Updated part of the document. |
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# Contents

**ZLG**

# 1. CANDTU Cloud Data Platform

## 1.1  Introduction

The CANDTU cloud data platform is a cloud data platform independently developed by ZLG Electronics, which has functions such as remote equipment management, equipment configuration, and real-time data forwarding. After the device is wirelessly connected to the cloud data platform through 4G, add the device cloud ID to the cloud data platform (WEB) to manage the device remotely. The cloud data platform also supports real-time forwarding of CAN and GPS data. You can receive data in real time through ZCANPRO software, or develop applications with ZLGCAN secondary development function library, which eliminates the work of building a server, so as to quickly build user applications.

## 1.2  Functions

- Manage devices remotely. Remotely view the device status, configure the device, and control the device;

- Support CAN and GPS data real-time forwarding. Receive and send CAN data by using ZCANPRO software;

- Web display cloud platform, which allows you to easily manage devices on the PC and mobile terminals.

- Data forwarding provides secondary development interface functions;

- Support OTA remote firmware upgrade;

- Currently supported device models are CANDTU-200UWGR, CANDTU-200UWG, and CANDTU-200UWGR-B.

## 2. Quick User Guide

### 2.1  Upgrading the Device Firmware

Before connecting the device to the cloud platform, update the device firmware (firmware of version V3.00 or later) to support the cloud access function. There are two ways to upgrade the device firmware: online upgrade and SD card upgrade. This following describes two firmware upgrade methods.

### 2.1.1  Online Upgrade

1. Configuration tool installation. After the upgrade is successful, the "Firmware verification is successful, waiting for the device to restart automatically to complete the update..." message is displayed. After the device restarts, the "Device Information" option in the configuration tool returns to the blue state, and the device information can be viewed.

2. Power on the device, and connect the device to the computer with a USB cable.

3. Run the configuration tool, and select the corresponding device model, as shown in Figure 2.1. If the device is connected successfully, the [Device Information] option in the configuration tool changes from gray to blue, and you can view the current device information by clicking "Device Information". Otherwise, the connection fails.



Figure 2.1 Connecting the device

4. Select "Firmware Upgrade" in the option bar on the left side of the configuration tool. Select "Browse" on the main interface of the configuration tool to find and start the firmware to be upgraded, as shown in Figure 2.2.
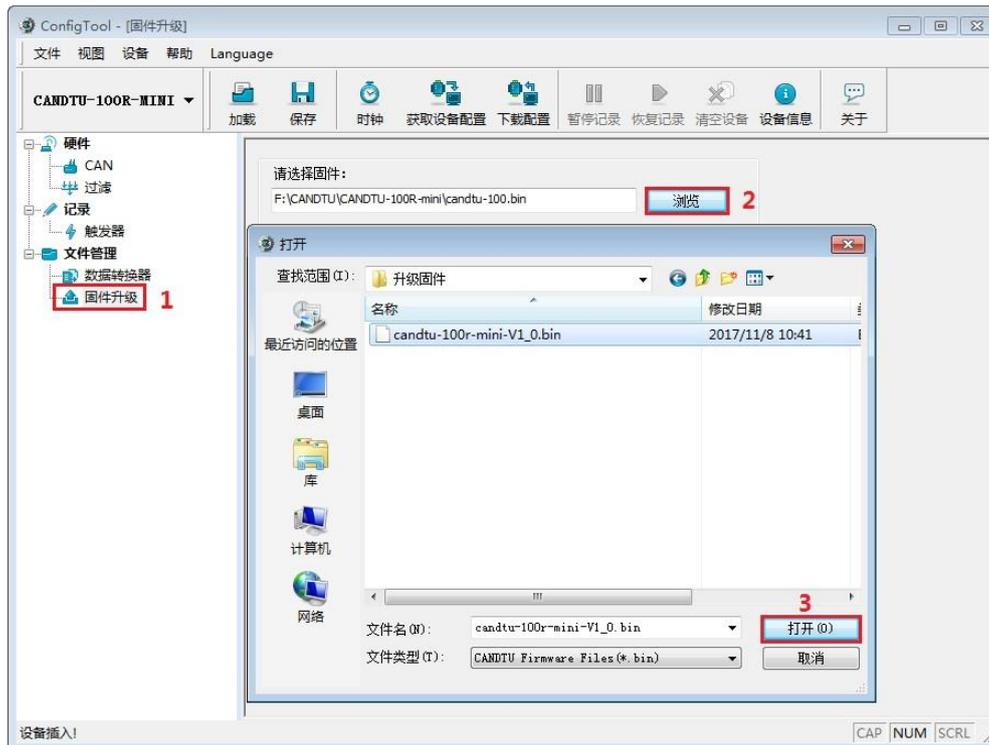
Figure 2.2 Selecting firmware

5. Click the [Upgrade] button, and wait until the upgrade is complete.



Figure 2.3 Starting the upgrade

After the upgrade is successful, the "Firmware verification is successful, waiting for the device to restart automatically to complete the update..." message is displayed. After the device restarts, the "Device Information" option in the configuration tool returns to the blue state, and the device information can be viewed. Check whether the device has been successfully upgraded to the specified version through "Firmware Version" in the device information, as shown in Figure 2.4.

Figure 2.4 Viewing the firmware version

### 2.1.2 SD Card Upgrade

The CANDTU product upgrades the device firmware by using the SD card as follows:

1)   Save the firmware file to the SD card. The firmware file name must be: candtu_app.bin. The storage path must be in the root directory of the SD card, as shown in Figure 2.5.
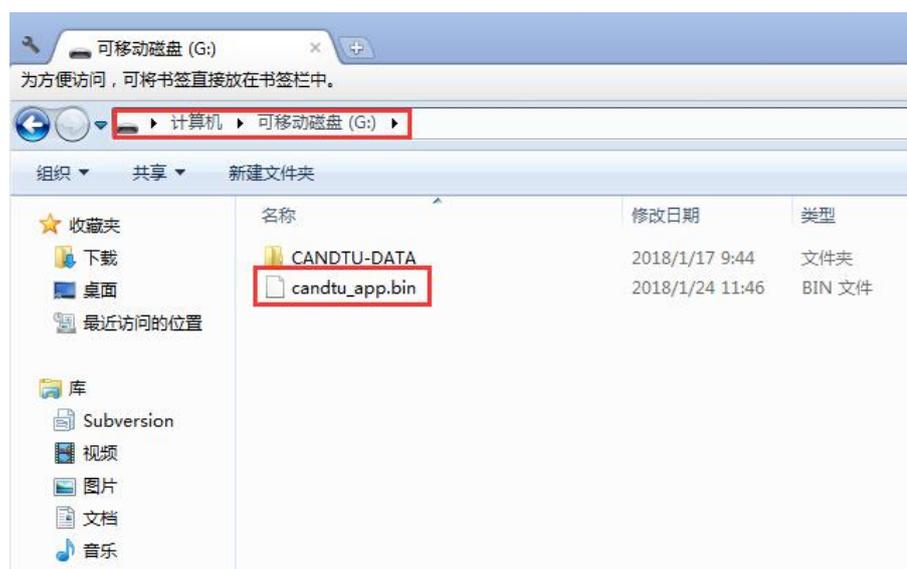


Figure 2.5 Firmware save path

2)   Insert the SD card into the device, press and hold the Trigger button on the device, and power on the device. At this time, you will hear the buzzer sound for three consecutive times, indicating that the device has entered the upgrade mode. Release the Trigger button.

3)   Wait until the upgrade is complete. If you hear the buzzer sound for two consecutive times in the recording state, the upgrade is successful, and the device automatically restarts and enters the working state. If you hear continuous beeps, the upgrade fails.

### 2.1.3 SD Card Upgrade Exception Handling

If the upgrade fails, perform troubleshooting as follows. Known causes and solutions for upgrade failures:

1) The storage directory of the upgraded firmware is incorrect. Solution: Change the firmware storage location to the root directory of the SD card.

2) The file name of the upgrade firmware is incorrect. Solution: Change the file name of the firmware to candtu_app.bin.

3) The SD card format is incorrect, and the device cannot identify the SD card properly. The solution is as follows:

i. As shown in Figure 2.6, use the computer to format the SD card to FAT32 format. When choosing a file system, select "FAT32".

ii. After inserting the SD card into the device, start the device properly. After the device works properly, remove the SD card. At this point, the SD card is already in FAT32 format.



Figure 2.6 Formatting options

4) The upgrade firmware is damaged or the firmware does not match; solution: Obtain the firmware of the corresponding model.

If the fault persists, please contact our staff. Sorry for the inconvenience caused.

## 2.2 Adding a Device to the Cloud Platform

When using the CANDTU cloud data platform, add the device to the cloud platform first. This section describes how to add devices to the cloud platform when using the CANDTU cloud data platform for the first time.

Adding a device to the cloud platform is divided into two steps. First, enable the function of connecting the device to the cloud platform. Then, after the device is connected, add the device cloud ID to the cloud platform. The following describes the two steps.

### 2.2.1 Enabling the Connection of the Device to the Cloud Platform

1. Obtain the CANDTU configuration tool (V2.31 or later) from the official website of ZLG Electronics, and install the configuration tool.

2. After the configuration tool is installed, connect the device to the PC via USB, and select the corresponding device model.

3. As shown in Figure 2.7, click [Cloud Service Configuration] in the lower left corner, select [Enable Cloud Service], click the CAN channel [Enable Data Upload] button, and click Download Configuration to update the device configurations. The device will be connected to the cloud platform.
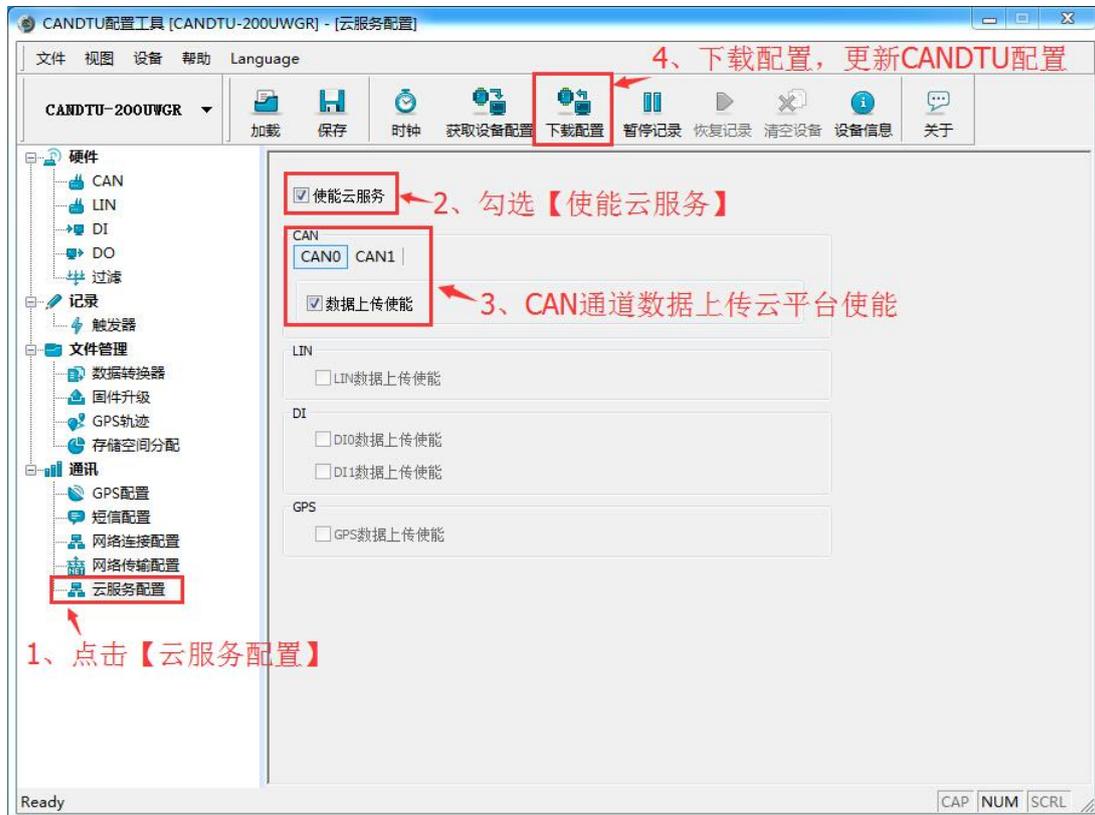


Figure 2.7 Enable the cloud service

4. After enabling the cloud service, click [Device Information] to view [Cloud Connection Status]. When the device is connected for the first time, wait until the [Cloud Connection Status] is displayed as [Connected] , and add the device to the cloud platform. Figure 2.8 shows the device information interface.

Figure 2.8 Device Information

5. After the device is connected to the cloud platform, copy [Cloud SN] in [Device Information] (that is, the cloud ID, which is used when adding devices on the web interface of the cloud platform).

### 2.2.2  Adding a Device to the Cloud Platform

1. In the web browser, enter the cloud platform URL https://can.zlgcloud.com/index.html to display the cloud platform interface, as shown in Figure 2.9.



Figure 2.9 Login

2. When you use the cloud platform for the first time, register an account. Click [Free Registration] on the login interface to complete the user registration. After successful registration, enter the account and password on the login interface to display the cloud platform interface, as shown in Figure 2.10.
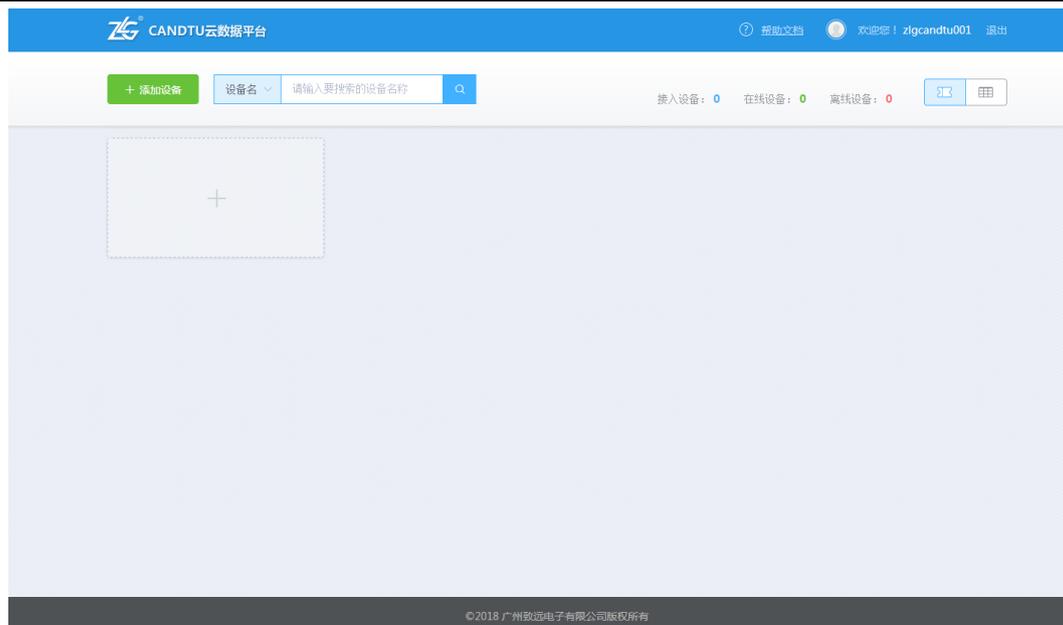
Figure 2.10 Displaying a device

3. As shown in Figure 2.11, click the "+" card on the cloud platform interface, and enter the cloud ID copied from the CANDTU configuration tool in [Add Device], and click [OK] to add the device.



Figure 2.11 Adding a device

4. After adding a device, you can see its status on the interface, as shown in Figure 2.12.

Figure 2.12 Added device

The device is added. On the web interface, you can see that there is one more device card on the device. The card displays the current SD card record status, device name, and device model.

In addition to displaying by device card, the device management interface supports list display. As shown in Figure 2.13, click the icon in the upper right corner to switch to [List Display] or [Card Display].



Figure 2.13 Device list display

## 2.3 Managing Devices on the Cloud Platform

This section describes the main operation guides for managing devices on the cloud platform, so that users can quickly use the cloud platform. For operation instructions of the cloud platform, see Chapter 3.

### 2.3.1 Adding and Removing a Device

For details about how to add devices, see Adding a Device to the Cloud Platform.

As shown in Figure 2.14, click ✕ in the upper right corner of the card on the device card interface, or click 🗑 in the device list bar. In the deletion confirmation dialog box, click [OK] to delete the device.
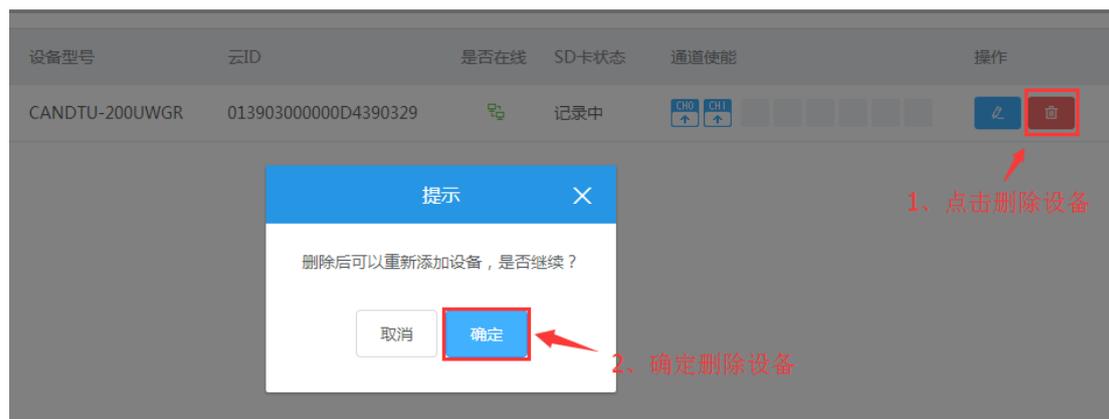
Figure 2.14 Deleting a device

### 2.3.2  Viewing the Device Online Status

As shown in Figure 2.15, on the device management interface, observe whether the corresponding device in the device card or device list is grayed out, so as to know whether the device is online. If the device is online, you can operate the device; if the device is offline, the device status displays the last online status.



Figure 2.15 Multi-device display

### 2.3.3  Viewing the Device Status

Click the device card or the 🖉 icon in the list bar. On the current device interface, view the current device status, as shown in the following figure.
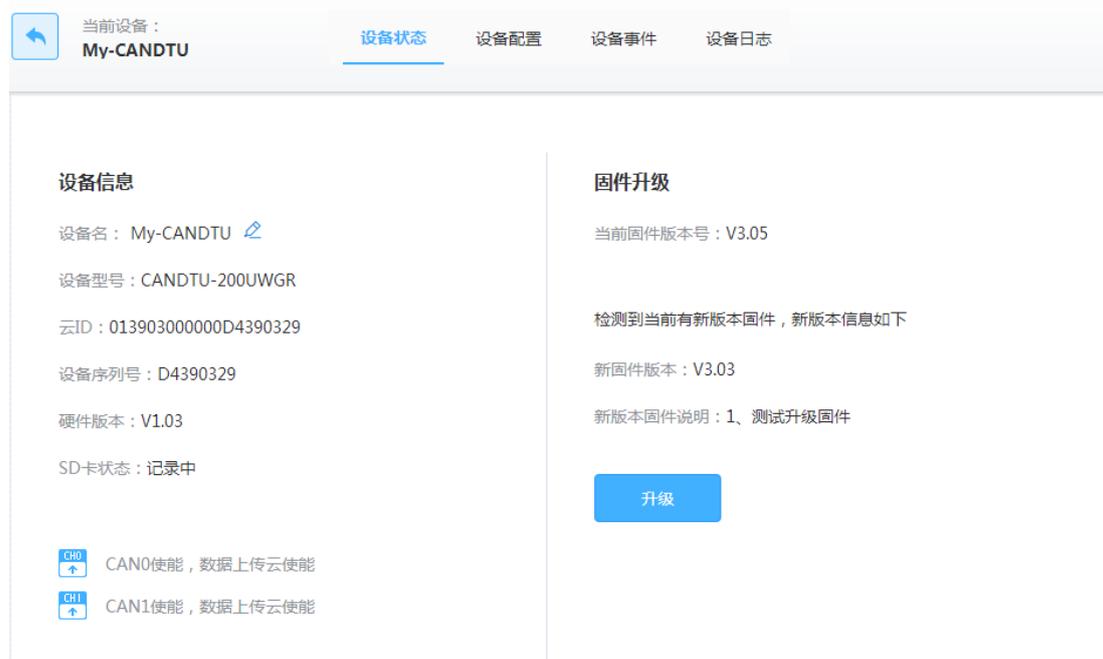
Figure 2.16 Device status

In the device status information, view the device information and the SD card recording status of the current device. Click ✐ on the right of [Device Name] to modify the device name and save it to the device.

### 2.3.4 Configuring a Device



Figure 2.17 Device configuration

In the configuration function of the cloud platform, all configuration items are consistent with the CANDTU configuration tool. As shown in the figure, on the device interface, click [Device Configuration] to view the current device configuration. Edit each configuration item and click the [Save] button to remotely configure the device.

Each configuration item is consistent with the CANDTU configuration tool. See configuration tool.

Through [Import] and [Export], after exporting the current device configuration, import the same configuration to the new device, so that the configuration of multiple devices can be the same.

### 2.3.5 Controlling a Device

The cloud platform can remotely control operations such as starting and stopping recording, clearing device data, and synchronizing the device time. Click the corresponding button in the upper right corner of the device interface to remotely control the device.

▷ : Start recording. If the current device has started recording, this button is displayed

as ⏸ . Click this button to stop recording.

🕒 : Synchronize the current time to the device.

🧹 : Clear the device data. This operation clears the data recorded in the device. Be cautious with the operation.

Note: You need to enter a password because starting/stopping recording and clearing the device will directly affect the device status and data.

### 2.3.6 Device Events

Click [Device Event] to view the alarm/error status of the current device.

The current alarm status is:

- SD card storage is full: When the device records and the SD card data record is full, the device will report this alarm to the cloud platform.

Current error states:

- CAN bus error

  When there is an error in the CAN channel, the device will report the error of the specified CAN channel to the cloud platform.

- Abnormal storage status

  When the device is in the SD card recording state, if the SD card is removed or abnormal, the device will report the error to the cloud platform.

- GPS area alarm.

  When the user configures the device DO or SMS alarm and sets the GPS alarm, the device will report the error to the cloud platform when the device is not within the specified GPS area.

## 2.4 ZCANPRO Host Computer Software

ZCANPRO is the supporting software of CAN/CANFD series products produced by Guangzhou ZLG Electronics Co., Ltd. It can perform operations such as original data sending and receiving, data playback, and high-level protocol analysis. Figure 2.18 shows

the main interface.
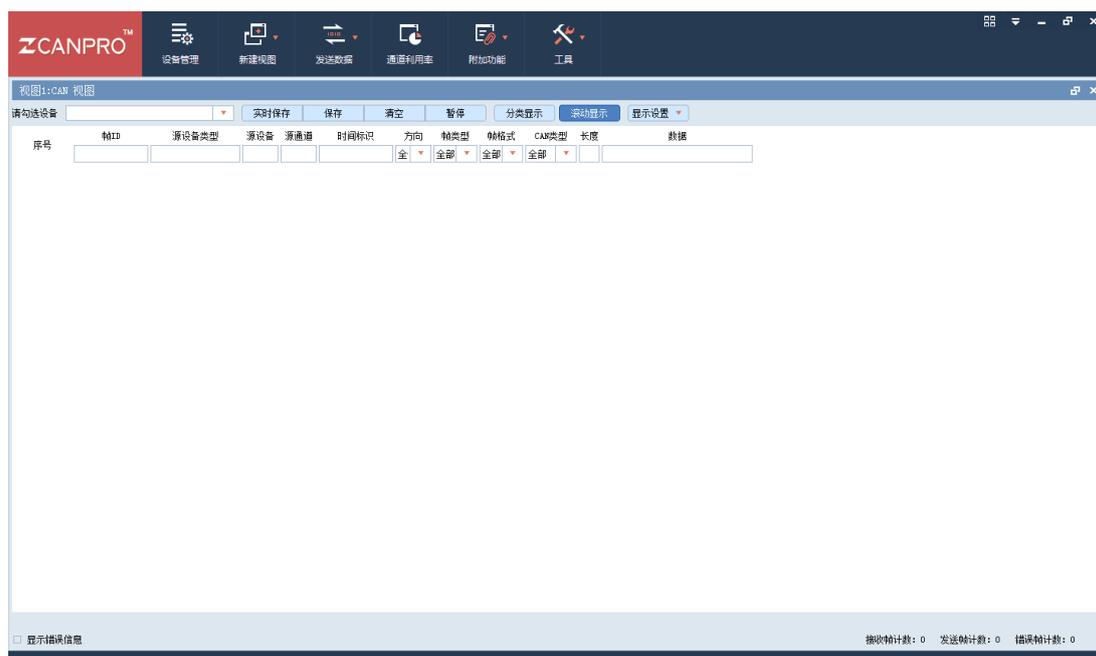


Figure 2.18 Main interface of the ZCANPRO software

After the device is added to the cloud platform, if the specified CAN channel data upload enable has been configured on the configuration tool or the cloud platform, the device will upload the CAN message to the cloud platform after receiving the CAN message.

After the user connects the cloud device on the ZCANPRO, the device data can be forwarded to the ZCANPRO for display. At the same time, CAN messages can be sent to the CAN bus remotely on the ZCANPRO.

This section describes how to use ZCANPRO to send and receive cloud device data.

### 2.4.1 Installing the ZCANPRO Software

Obtain the ZCANPRO software (V2.0.22 or later) from the official website, and install it as prompted.

### 2.4.2 Starting the Cloud Device

Run the ZCANPRO software, and click [Device Management] in the upper left corner. In the pop-up device management interface, click [Cloud Device]. After entering the user name and password on the displayed cloud device interface, click the [Connect] button, as shown in Figure 2.18. After the connection is successful, the device under the current account is displayed on the interface. After selecting the specified device, click the [Open Device] button below, as shown in Figure 2.19.

Figure 2.19 Cloud device login to

ZCANPRO



Figure 2.20 Interface displayed after starting the device

## 2.4.3  Sending and Receiving CAN Data

After the device is successfully opened, if the device receives data, it will be forwarded to

ZCANPRO for display. Figure 2.20 shows the received CAN message displayed on the ZCANPRO interface after the device receives the data.
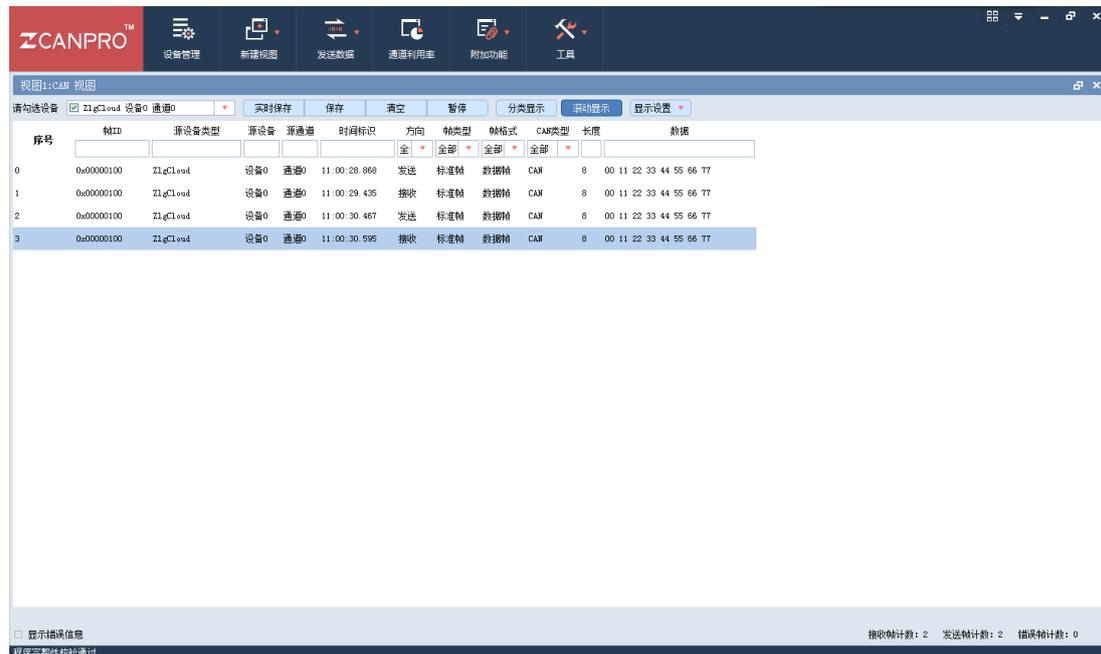


Figure 2.21 ZCANPRO transceiver data

As shown in Figure 2.21, click the [Send Data] button on ZCANPRO. On the data sending interface, select the specified CAN channel to send CAN messages remotely.



Figure 2.22 Data sending

## 3. Cloud Platform Operation Instructions

### 3.1   Registration/Login

To use this platform, register an account and open the website link. The login page is displayed by default. If you have an account, you can directly enter the account password and click Login to enter the platform. If you do not have an account, click Free Registration in the red box area in Figure 3.1 to display the registration page.



Figure 3.1 Login interface

Figure 3.2 shows the registration page. Enter the user name, mobile phone number and other information, click the Get Verification Code button, enter the verification code received by the mobile phone, and click Register to complete the account registration. After the registration is completed, it will automatically enter the main platform.

Figure 3.2 Registration interface

### 3.1.1 Device Cards and Device List Pages

As shown in Figure 3.3, this page mainly provides the main device information, as well as functions such as adding a device, configuring the device entry, and searching for the device.
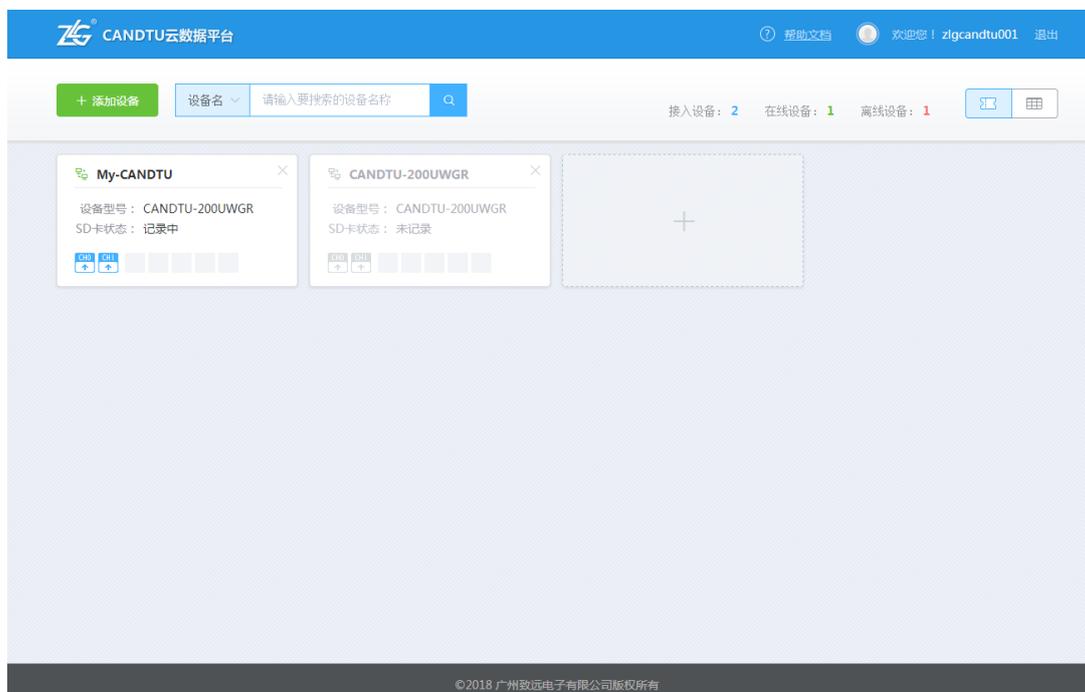


Figure 3.3 Device display

### 3.1.2 Adding a Device



Figure 3.4 Add a device

As shown in Figure 3.4, if there is no device, click the Add Device button on the left side of the navigation area. In the dialog box, enter the cloud ID of the device, and click OK. If there is no error message, the newly added device is displayed as a card in the area below the navigation.

### 3.1.3 Switch the Device Display

If there are many devices, and the card display is not easy to view, click the switch button on the right side of the navigation to switch between the card and the list.
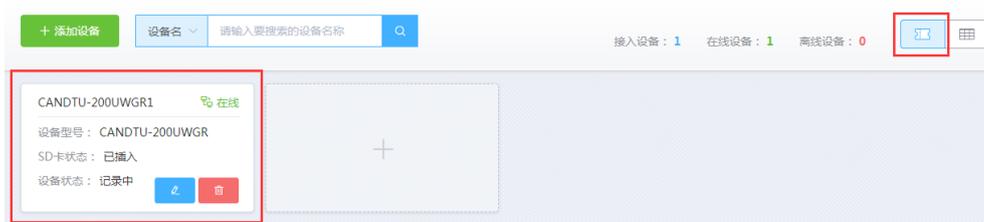


Figure 3.5 Card display



Figure 3.6 List display

### 3.1.4 Searching for Devices
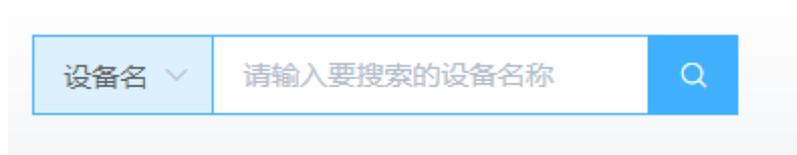


Figure 3.7 Searching for a device

If there are many devices, use this search function to search and display devices under the corresponding conditions. Currently, there are two forms of searching by device name and searching by cloud ID. By default, the device name is searched, and the search mode can be switched by using the drop-down box. After entering the search content,

click the search button on the right to start the search.

### 3.1.5 Device Configuration/Information Entry

Device configuration in a card:



Figure 3.8 Entering the device in a card

Device configuration in a list:



Figure 3.9 Device configuration in list form

As shown in Figure 3.9, click the edit button in the red frame area to display the main page of device information.

## 3.2   Device Homepage

The homepage provides four major functions: device status, device configuration, device events, and device logs, as well as three device control function trigger buttons on the right side of the navigation.
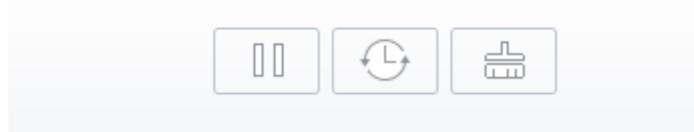


Figure 3.10 Device Control buttons

As shown in Figure 3.10, the functions of these three buttons from left to right are: start and stop, synchronize time, and clear records. Clicking the corresponding button will trigger the corresponding function. Password verification is required to start, stop, and clear records to prevent accidental deletion. In the dialog box, enter the password. The platform will start to verify, and only after passing the corresponding command will it execute.

### 3.2.1 Device Status

Device status contains two modules: device information and firmware upgrades.

1、 Device information

Device information includes device name, cloud ID, device serial number, device hardware version, and device status. You can intuitively understand this information of the device.

2、 Firmware upgrade

The system automatically detects the current firmware version. If the current firmware is not the latest version, an upgrade entry will be provided under Firmware Upgrade. Click the button. In the dialog box, click the file selection button to select the new firmware. Click OK to start uploading the new firmware. The system will then be updated.

## 3.2.2 Device Configuration

The device configuration page is mainly divided into three modules: configuration navigation, operation area, and configuration area, as shown in Figure 3.11:
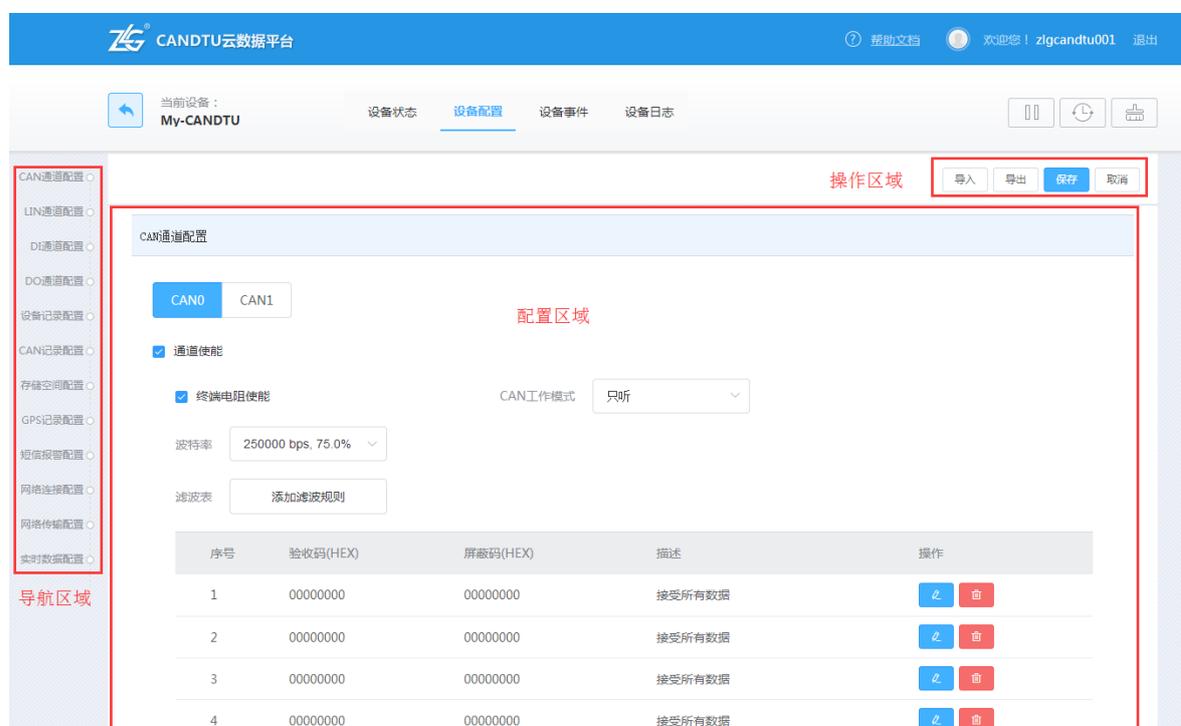


Figure 3.11 Device configuration interface

1. Configuring navigation

The configuration navigator provides quick access to configuration items in the configuration area. After clicking, the configuration area quickly slides to the corresponding module.

2. Configuration area

This area contains the specific content that needs to be configured for each configuration item of the device. You can slide the mouse to the corresponding module, and quickly switch configuration modules through the left-hand configuration navigation.

3. Operation area

The operation area includes: import configuration, export configuration, save configuration, reset configuration.



Figure 3.12 Device configuration area

## Importing Configurations

The configuration import function can load the previously saved configuration information, which minimizes repeated configuration operations.

Click the Import Configuration button. The dialog box shown in Figure 3.13 is displayed.



Figure 3.13 Import configurations

Select the previously saved configuration file, and click OK to automatically configure the device.

## Exporting Configurations

The configuration export function exports the current configuration information to the local, so that it can be imported to a new device next time. Do not modify the file after exporting; otherwise, an error may occur during import, resulting in configuration failure.

## Saving Configurations

After the device is configured, click the Save Configuration button to configure the device. If there is an incorrect configuration, an error message appears. Correct the incorrect configuration to save the configuration again.

## Resetting Configurations

To give up the current configuration during the configuration and return to the state before configuration, click the Reset Configuration button. The value of each configuration item will return to the state before configuration.

### 3.2.3 Device Events

Device events display some abnormal states generated during the device operation, including alarm state and error state. By default, the alarm state is displayed. You can click switch the status by clicking another state.

1. Alarm state



Figure 3.14 Warning and error message

Each page displays 10 pieces of event information by default. To browse the next page, click the position shown in Figure 3.15 to jump to the next page of data, or you can enter the page number and press Enter on the keyboard to adjust to the corresponding page number:



Figure 3.15 Warning or error pages

To change the quantity of displayed information on the current page, click the following areas to select the displayed quantity:



Figure 3.16 Alarm and error display pages

The alarm status does not require operation, but only supports viewing. The default status is Cleared. This status is only an alarm, which has not caused an error.

2. Error state

Different from the alarm state, whether to deal with the error state requires manual operation, because the prompt is the error state.

If the alarm is cleared offline, you can click "Clear" in the operation area to set the error status to Cleared, as shown in Figure 3.17.
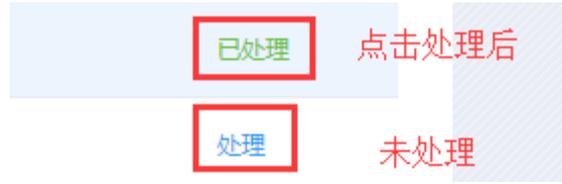
Figure 3.17 Error handling

### 3.2.4  Device Logs

The device log is used to display some information generated during the device operation, state change records, etc. The data generated in all time periods is displayed by default. Each page displays 10 records. The log information of the corresponding time period can be displayed by setting the time interval.

1. Display logs for a certain period of time

As shown in Figure 3.18, click the first red box to select the start time, click the second red box to select the end time, and click Search to display the log information for this time period below.



Figure 3.18 Log date search

2. Search for logs containing a keyword

As shown in Figure 3.19, click the text box in the first red box area, enter a keyword, and click Search to display the log information containing this keyword.



Figure 3.19 Log content search

## 3.3  Personal Center

As shown in Figure 3.20, click the profile photo or nickname in the upper right corner of the platform to open the personal center:



Figure 3.20 Entering Personal Center

Figure 3.21 shows the personal center.
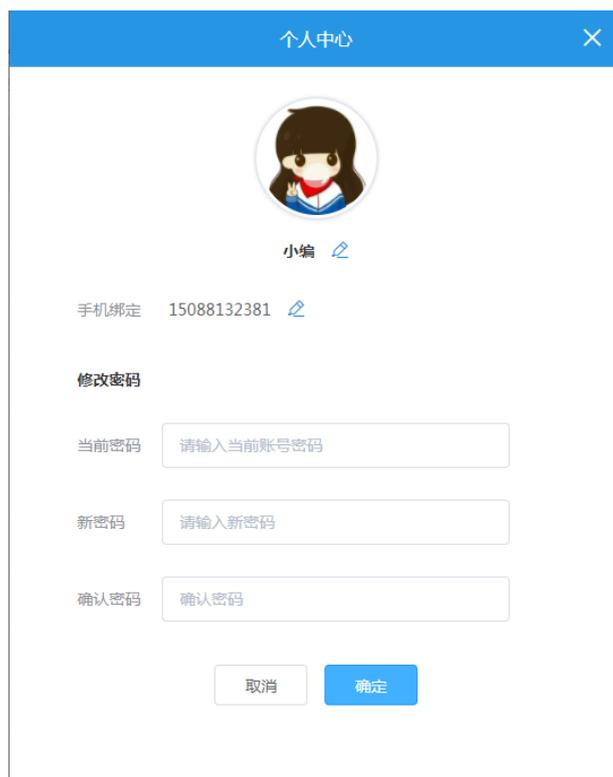
Figure 3.21 Personal Center

### 3.3.1 Changing the Profile Photo

Click the profile photo to select a new one, click the Edit button next to the nickname, enter the nickname, and click √ to change the nickname.

### 3.3.2 Changing the Phone Number

Click the edit button next to the phone number to change the phone number, but you need to enter the verification code received by the new phone number, and click √ to change the phone number.

### 3.3.3 Changing the Password

To change the password, enter the current password, enter the new password, confirm the password (that is, enter the new password again to prevent mistakes), and click OK to change the password.

## 3.4 Logout

As shown in Figure 3.22, click "Logout" on the right side of the platform header. In the confirmation dialog box, click OK to exit the platform.



Figure 3.22 User logout

## 4. Disclaimer

Based on the principle of providing better service for users, Guangzhou ZLG Electronics Co., Ltd. ("ZLG Electronics") will try to present detailed and accurate product information in this manual. However, due to the effectiveness of this manual within a particular period of time, ZLG Electronics does not guarantee the applicability of this document at any time. ZLG Electronics shall reserve the right to update this manual without prior notice. To get the latest version, please visit the official website of ZLG Electronics regularly or contact ZLG Electronics. Thank you!

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