[Deprecated] Bluetooth LE Chip SDK

Version: 20240612

Online Version

Contents

Bluetooth Low Energy (Bluetooth LE) chip SDK development is a common SDK development method for various Bluetooth LE smart products. This topic describes how to implement custom Bluetooth LE chip SDK development on the Tuya Developer Platform. This custom solution applies to product development with a Bluetooth LE chip SDK.

This series of topics is about the TuyaOS Bluetooth Chip SDK, and they were no longer updated as of August 24, 2021. If you want to see the updated content, please refer to Bluetooth Device Access of TuyaOS.

1 Description

Bluetooth LE chip SDK development supports the following cloud connection modes: **Tuya Standard Module MCU SDK** and **Self-developed Module SDK**. These modes support the following features:

- **Tuya Standard Module MCU SDK**

  In this mode, network modules are used for SDK development. For more information, see Network Modules. Tuya production systems can be used to produce this type of module. You can upload your production firmware to the Tuya Developer Platform. Tuya flashes the firmware to the required module and authorizes the module. Then, you can use this module in the Bluetooth LE chip SDK development.

- **Self-developed Module SDK**

  In this mode, the modules cannot be produced by Tuya production systems. You must purchase chips and tokens on the Tuya Developer Platform and implement firmware flashing and module authorization.

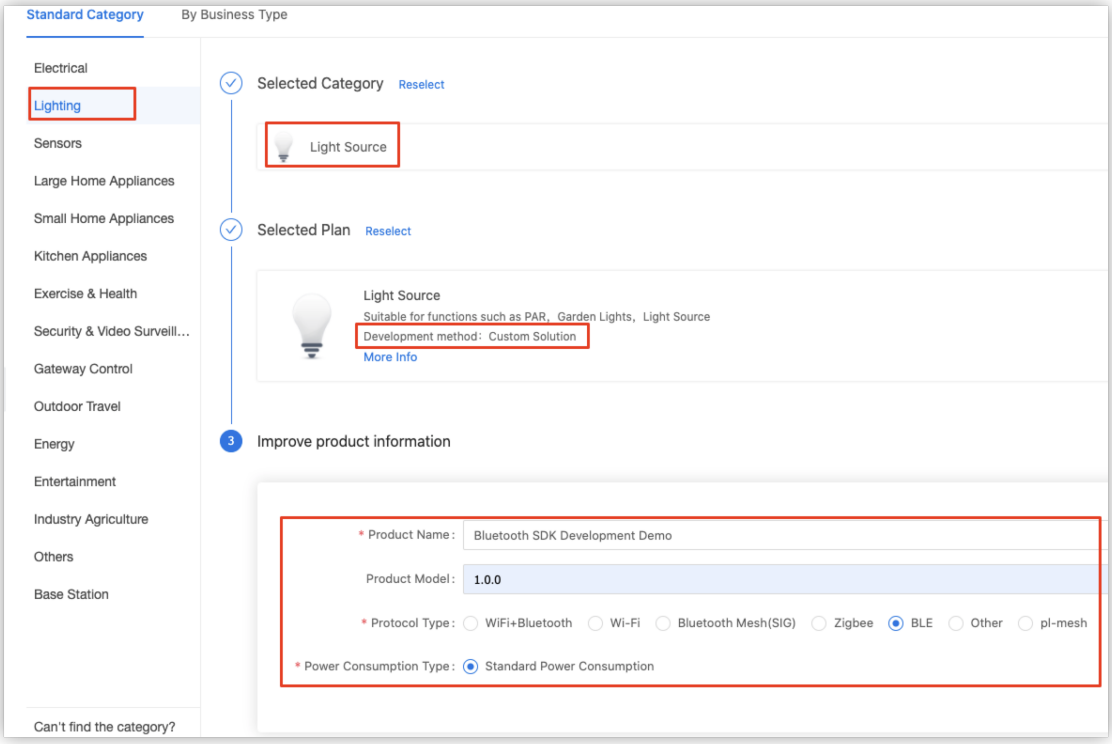
  > **Note**: The **Self-developed Module SDK** mode is available to only the accounts in the whitelist. To add your account to the whitelist and enable this mode, submit a ticket to request technical support.

2 Procedure

The **Tuya Standard Module MCU SDK** and **Self-developed Module SDK** modes follow similar development steps. To implement the **Self-developed Module SDK** mode, perform the following steps:

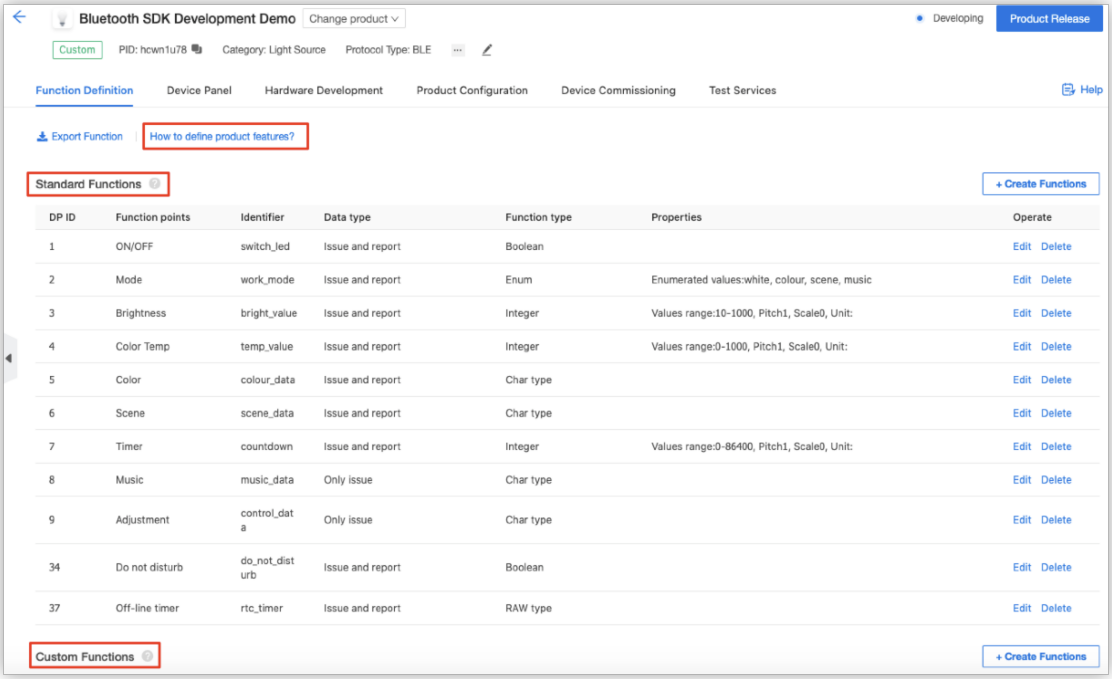
2.1 Step 1: Create a product

1. Log in to the Tuya Developer Platform, select the preferred category, set **Development method** to **Custom Solution**, and then enter the required product information. For more information, see Create Products.



2. Set data points (DPs) based on the required product functions. The DPs are classified into standard DPs and custom DPs. You can select the DPs to meet your business requirements.

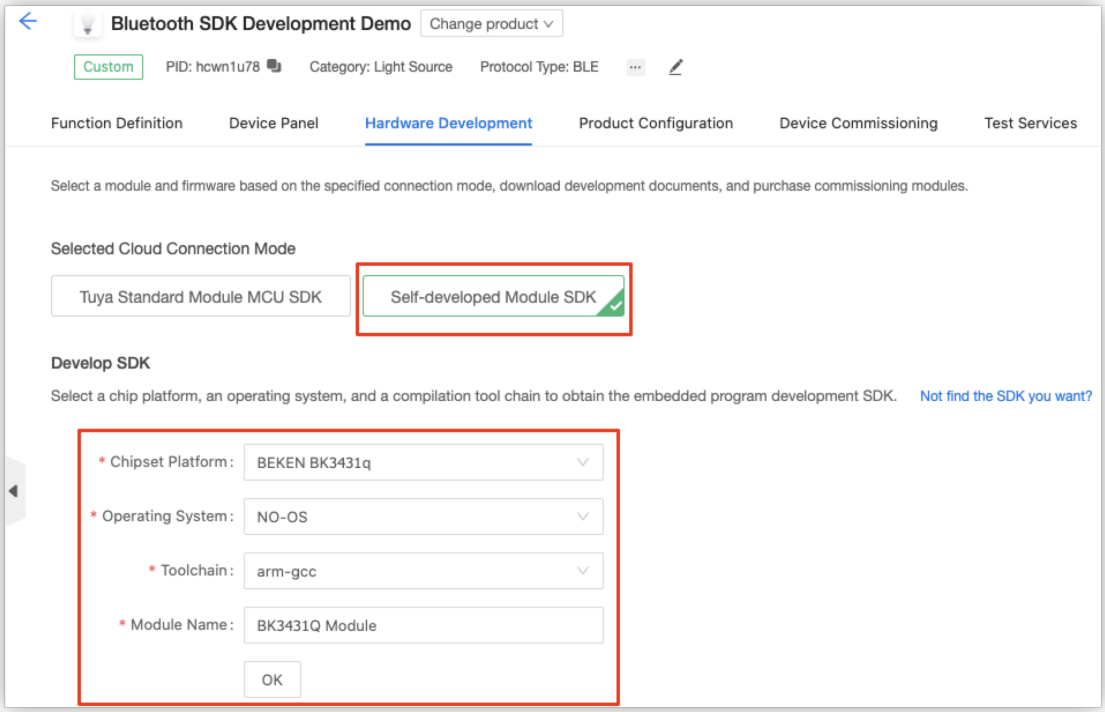
   For more information, see Function Definition.

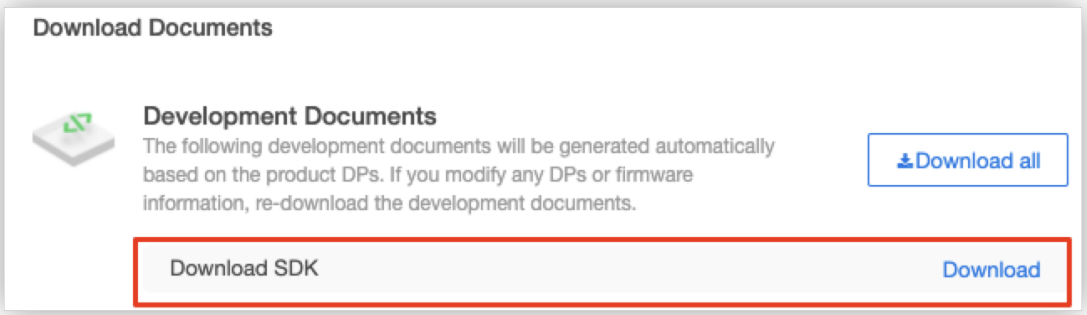


2.2 Step 2: Download documents

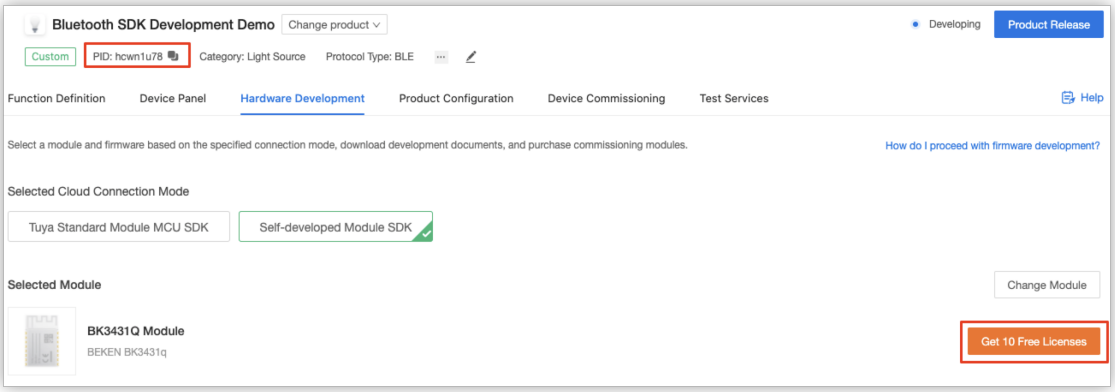
1. In the **Hardware Development** step, specify **Self-developed Module SDK** as the cloud connection mode, set the SDK development parameters, and then download the required SDK and demo.

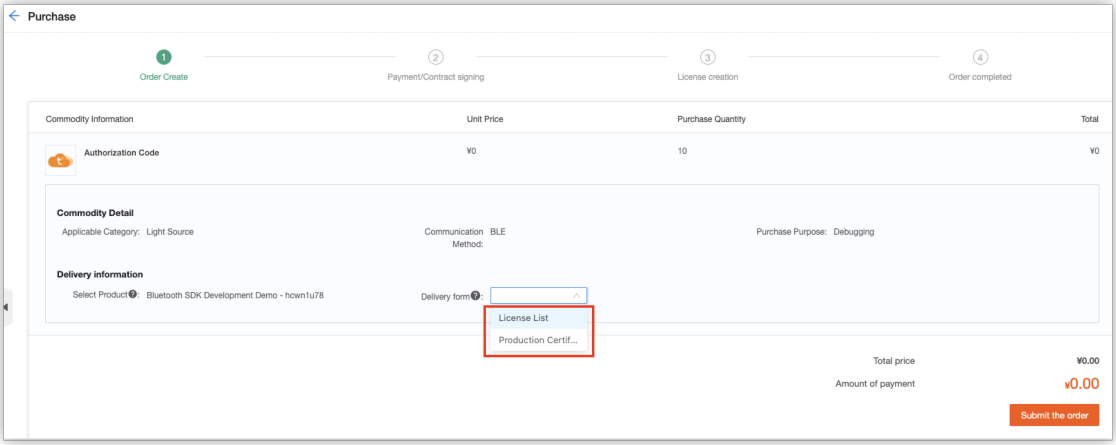
> **Note**: The **Tuya Standard Module MCU SDK** mode is in the beta stage. To enable this mode, submit a ticket to request technical support.





2. Apply for the authorization code for testing and debugging. Select the delivery form that supports the specified flashing method. In this example, the BK3431Q module is used. Click **Get 10 Free Licenses** to open the **Purchase** wizard and choose **License List** from the **Delivery form** drop-down list. A license list is the authorization plaintext and used to flash firmware for BK343X chips. A production certificate is an independent authorization token and applies to authorization for Tuya modules and host software.





2.3 Step 3: Debug the SDK

1. The downloaded SDK contains the app demo that can guide your SDK development. For more information, see Bluetooth LE SDK Demo Overview.
2. During the debugging, troubleshoot issues based on device logs. Tuya provides the following logs to support your debugging:
   - Local logs: the logs that are generated on local devices. For more information, see the SDK development documentation.
   - Cloud logs: the logs of communication between devices and the cloud. To query the logs, in the left-side navigation pane of the Tuya Developer Platform, choose **Product** > **Device Logs** to go to the **Log query** page,

and enter the virtual device ID that is found on your app.

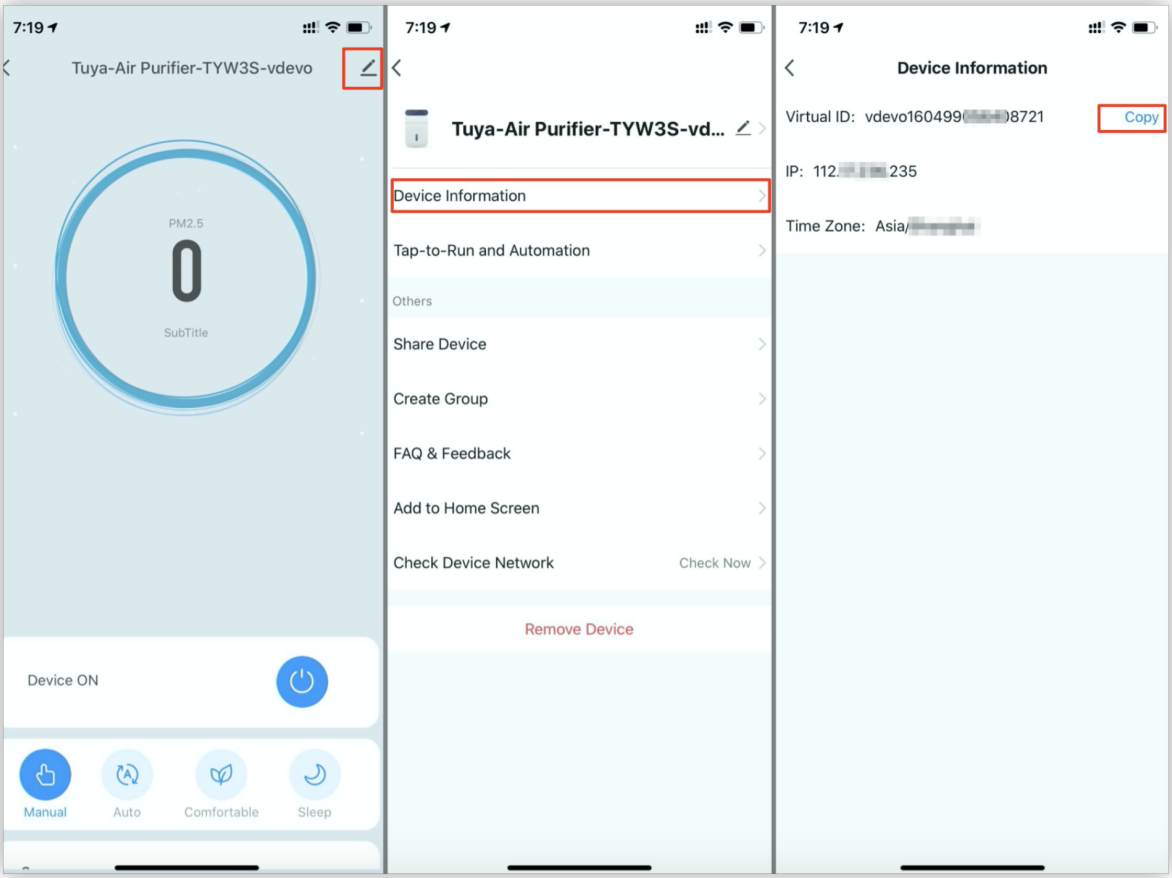


Figure 1: Virtual device ID

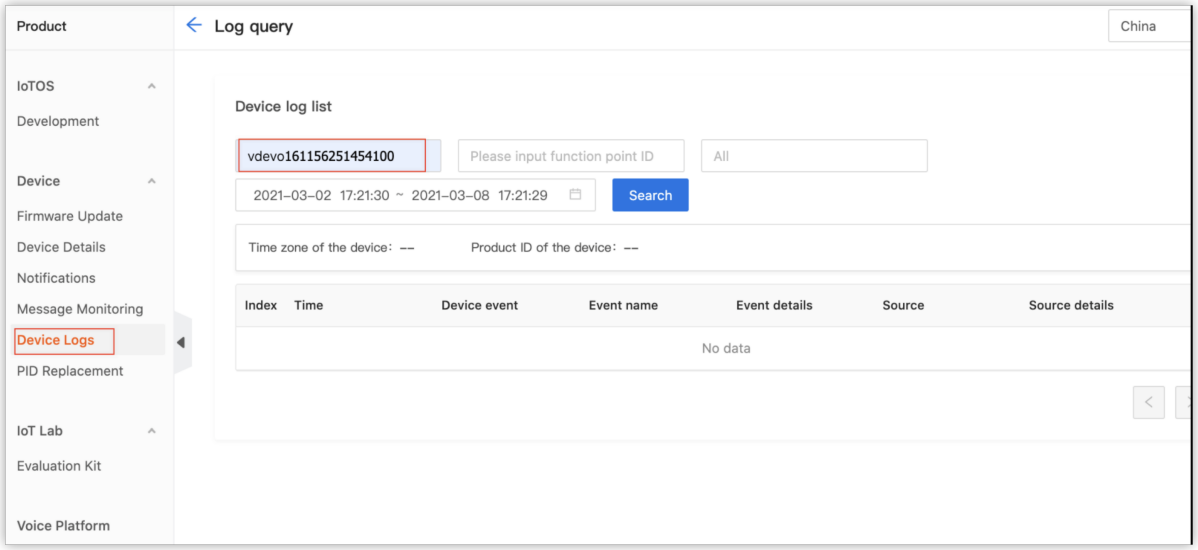
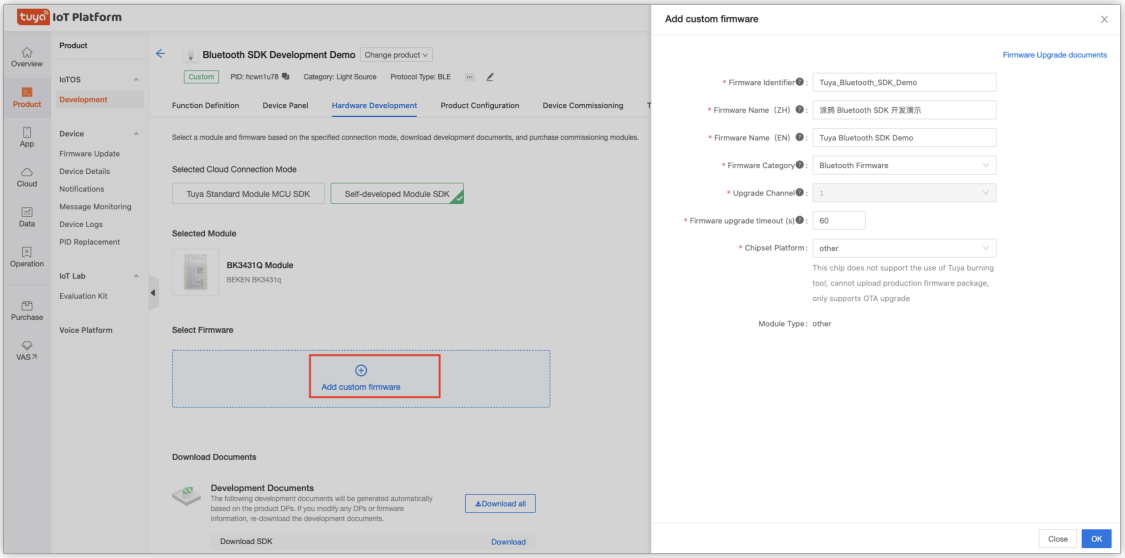


Figure 2: Query device logs

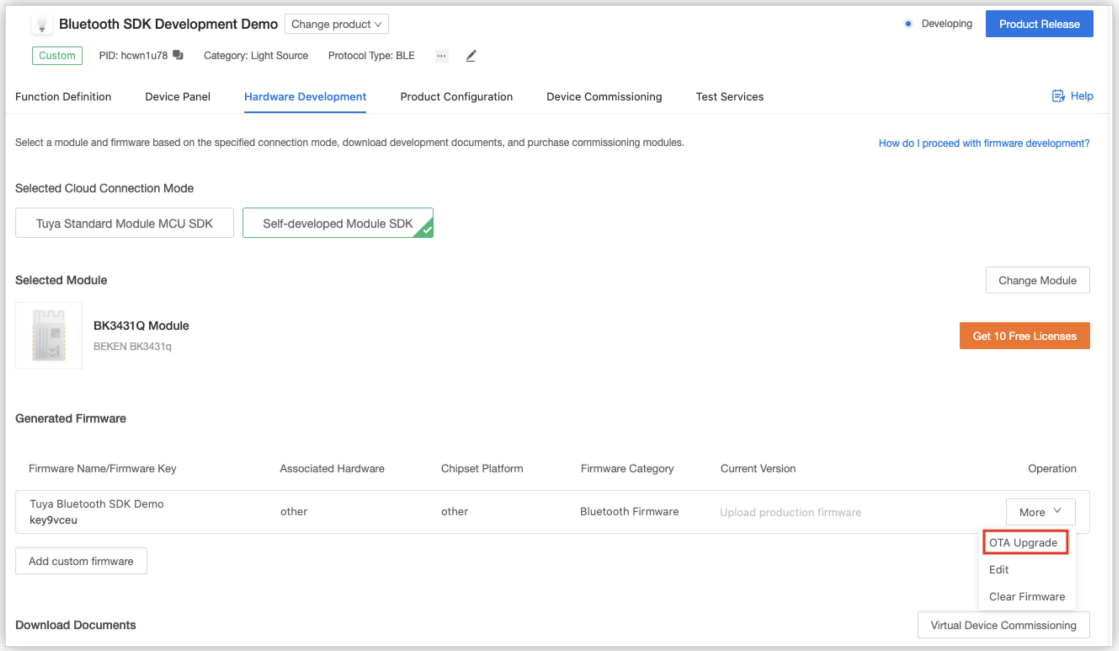
2.4 Step 4: Verify the firmware

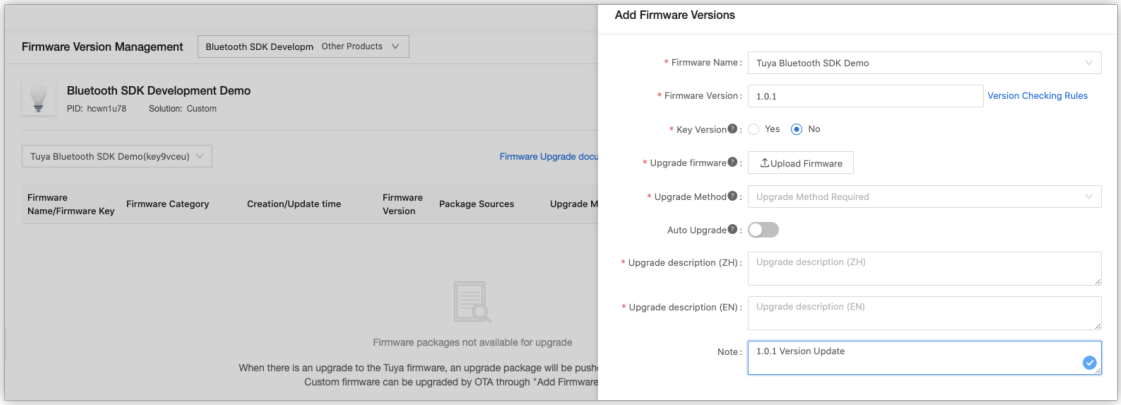
After the firmware that is developed based on the self-developed module SDK passes the functional test, you must upload the firmware to the Tuya Developer Platform and apply for the mass product authorization code to enable the test service provided by Tuya. Perform the following steps:

1. On the **Hardware Development** tab, click **Add custom firmware**. In the pane that appears, enter the firmware information, set **Firmware Identifier** to the name of the built firmware, and then set **Firmware Category** to **Bluetooth Firmware** for a Bluetooth LE product. Then, click **OK**.



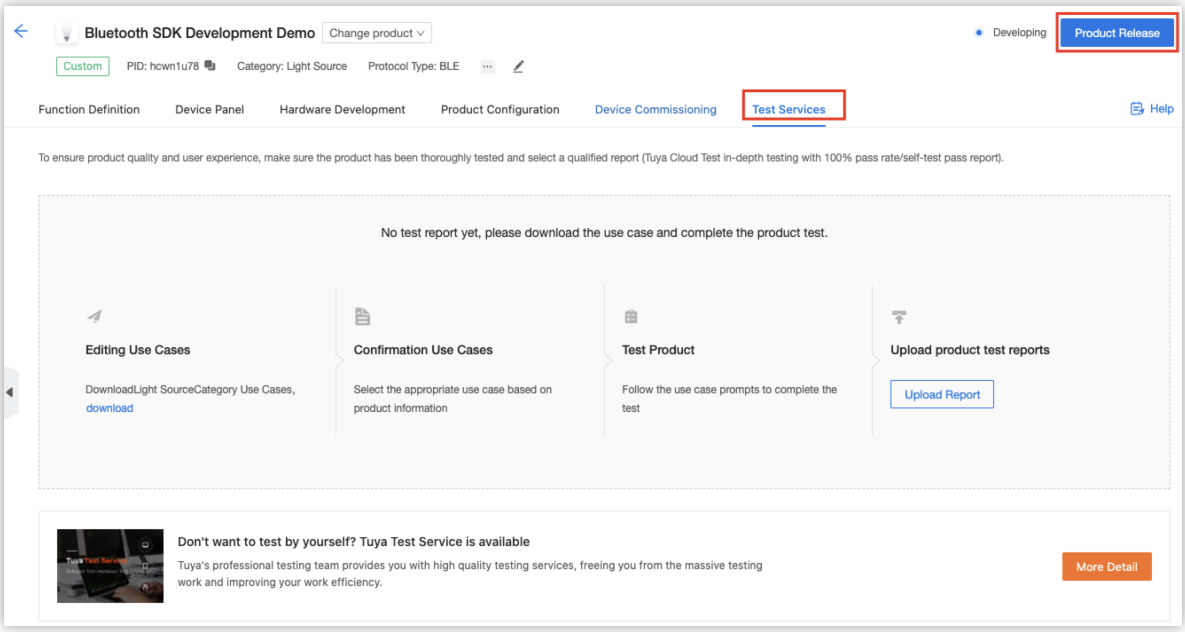
2. In the **Generated Firmware** section, select the **OTA Upgrade** operation. In the **Add Firmware Versions** pane, enter the required firmware version information, upload the built firmware, and then click **Confirm**. For more information, see Update Firmware.





2.5 Step 5: Release the product and enable mass production

Go to the **Test Services** tab, follow the instructions to test the product functions with the Tuya Cloud Test app, upload the test report, and then click **Product Release**. The released product is in the **Developed** state and ready for mass production.



3 References

- Sandwich Evaluation Kits
- Demo Center
- Update Firmware