Bluetooth LE Chip SDK

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Online Version

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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 IoT platform. This custom solution applies to product development with a Bluetooth LE chip SDK.

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 IoT 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 IoT Platform and implement firmware flashing and module authorization.

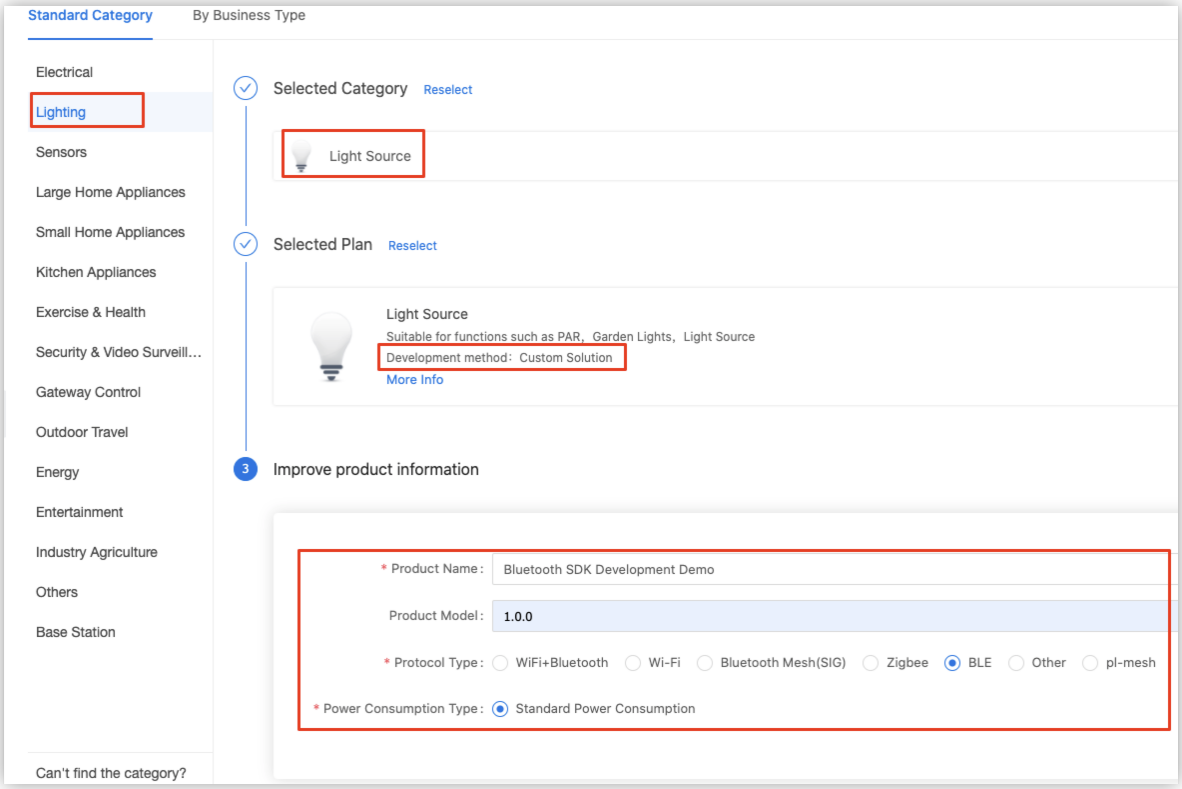
  > **Note**: The **Self-developed Module SDK** mode is available to only the accounts in the whitelist. To add your account to the whitelist and enable this mode, submit a ticket to request technical support.

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:

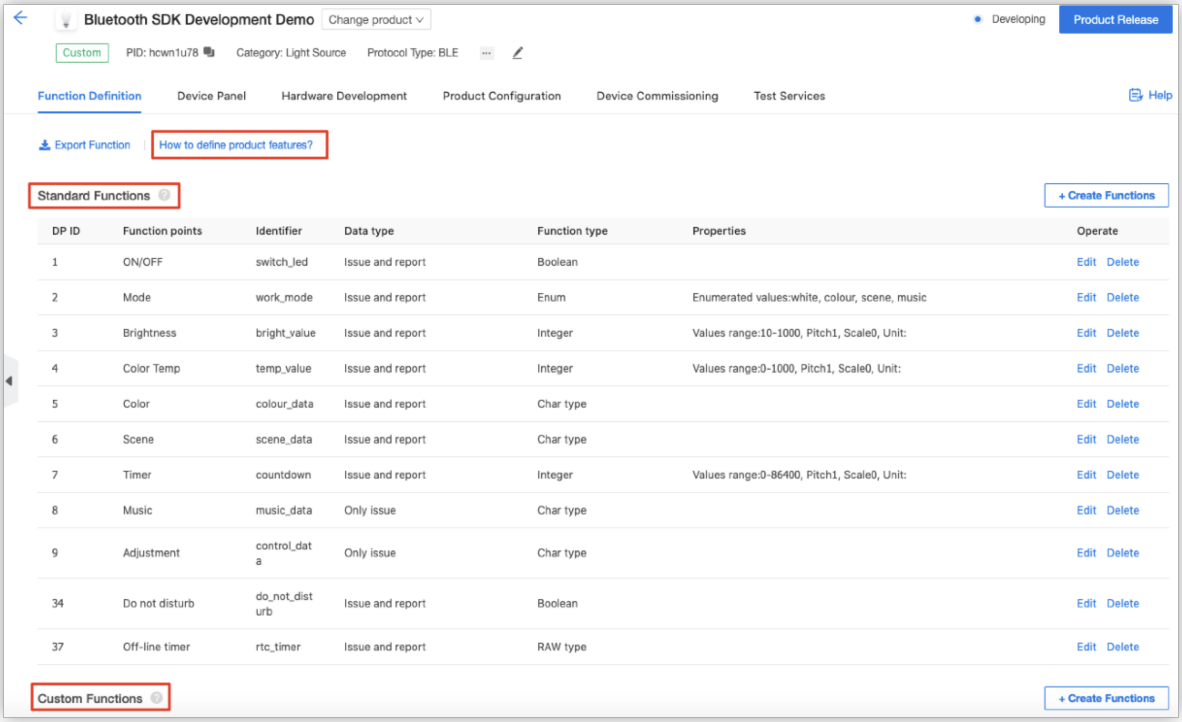
2.1 Step 1: Create a product

1. Log in to the Tuya IoT 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.

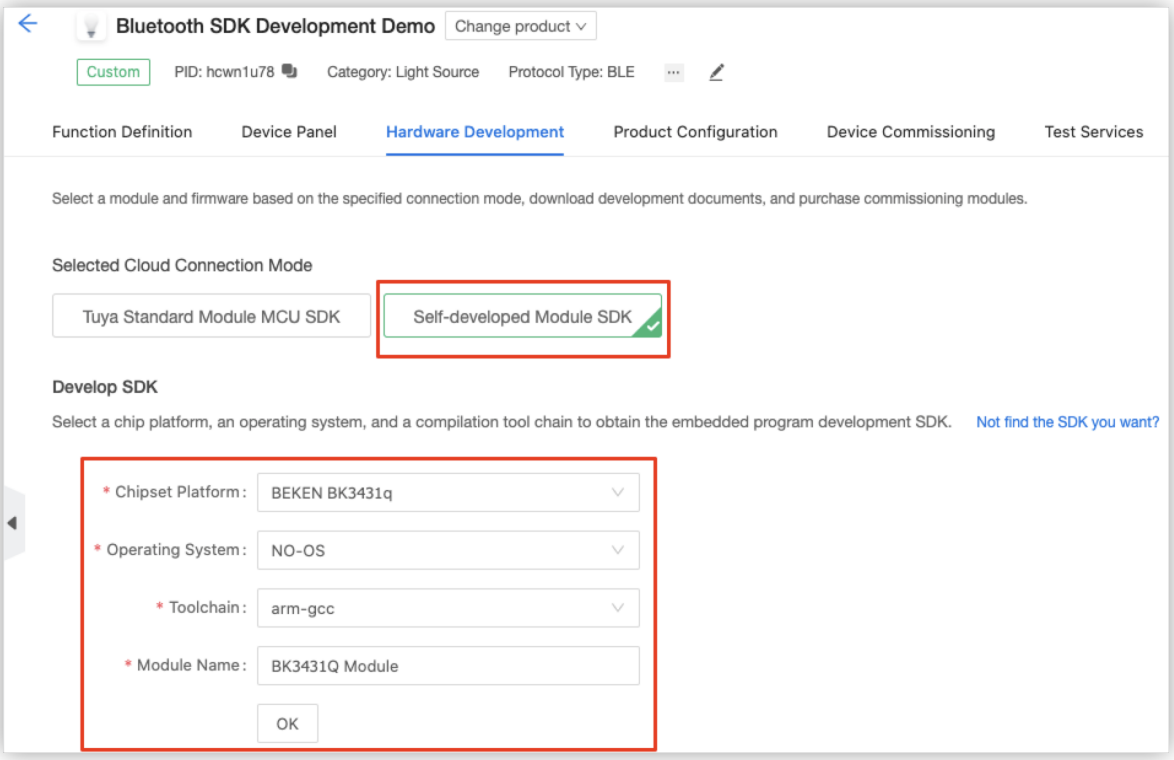
   For more information, see Function Definition.

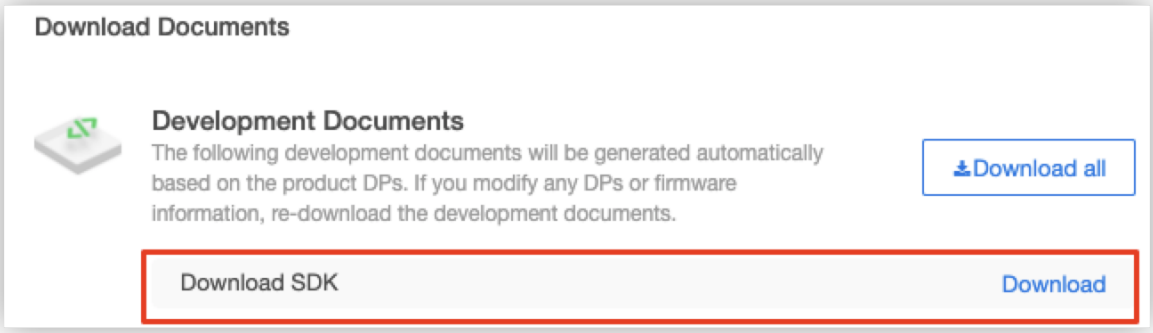


2.2 Step 2: Download documents

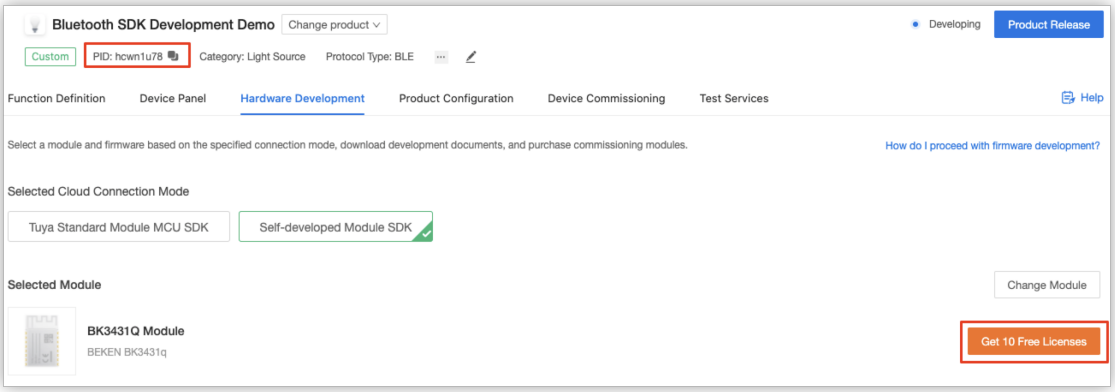
1. In the **Hardware Development** step, specify **Self-developed Module SDK** as the cloud connection mode, set the SDK development parameters, and then download the required SDK and demo.

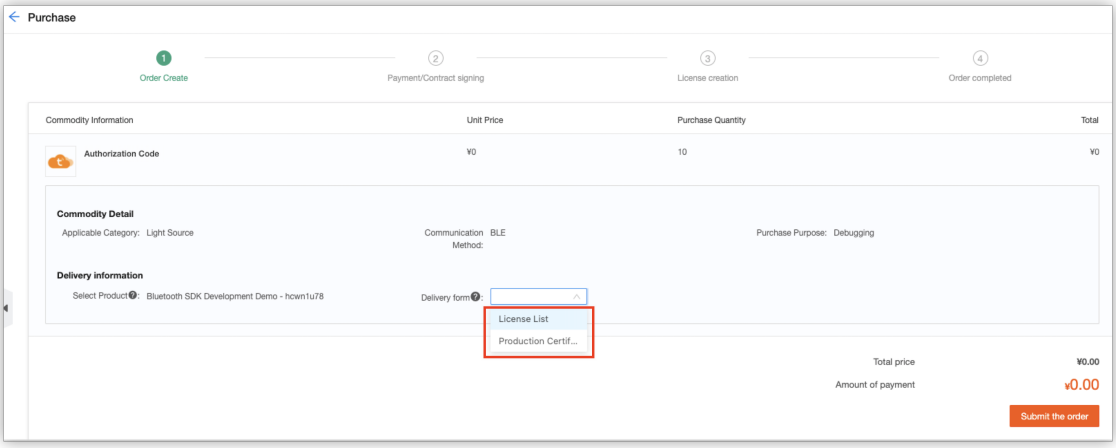
   > **Note**: The **Tuya Standard Module MCU SDK** mode is in the beta stage. To enable this mode, submit a ticket to request technical support.





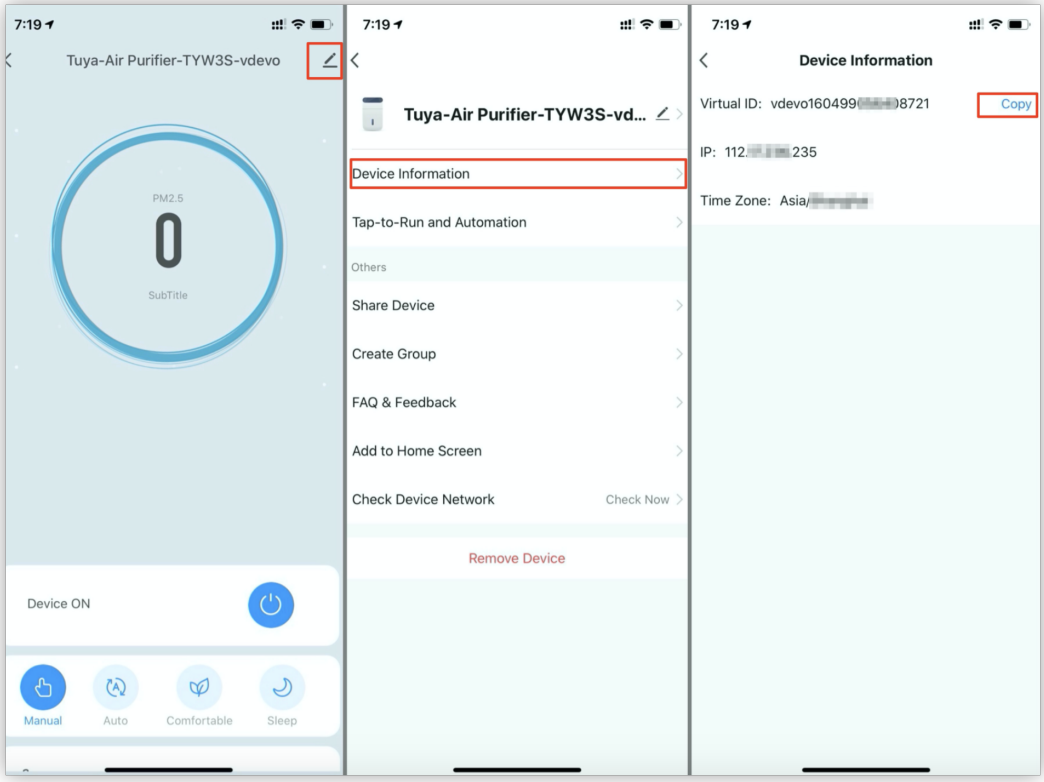
2. Apply for the authorization code for testing and debugging. Select the delivery form that supports the specified flashing method. In this example, the BK3431Q module is used. Click **Get 10 Free Licenses** to open the **Purchase** wizard and choose **License List** from the **Delivery form** drop-down 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.

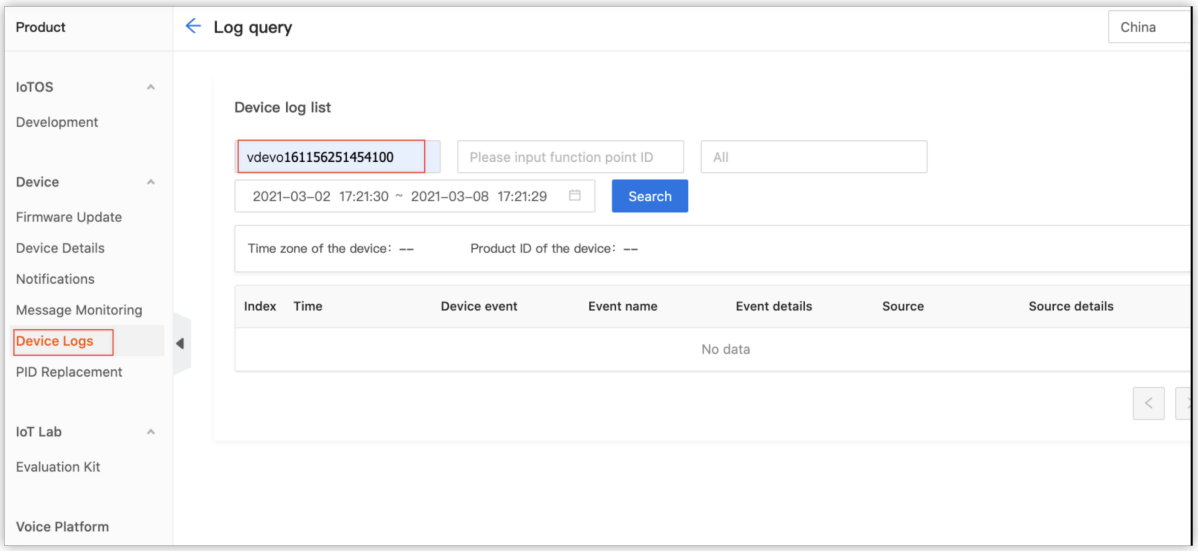




2.3 Step 3: Debug the SDK

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 IoT Platform, choose **Product** > **Device Logs** to go to the **Log query** page, and enter the virtual device ID that is found on your app.



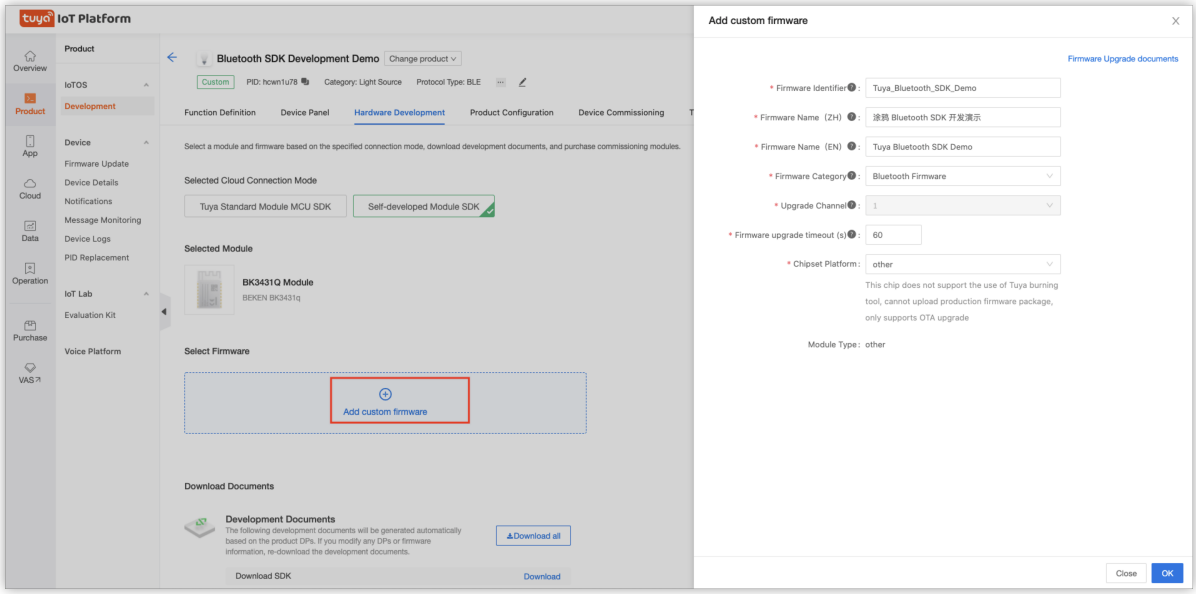


2.4 Step 4: Verify the firmware

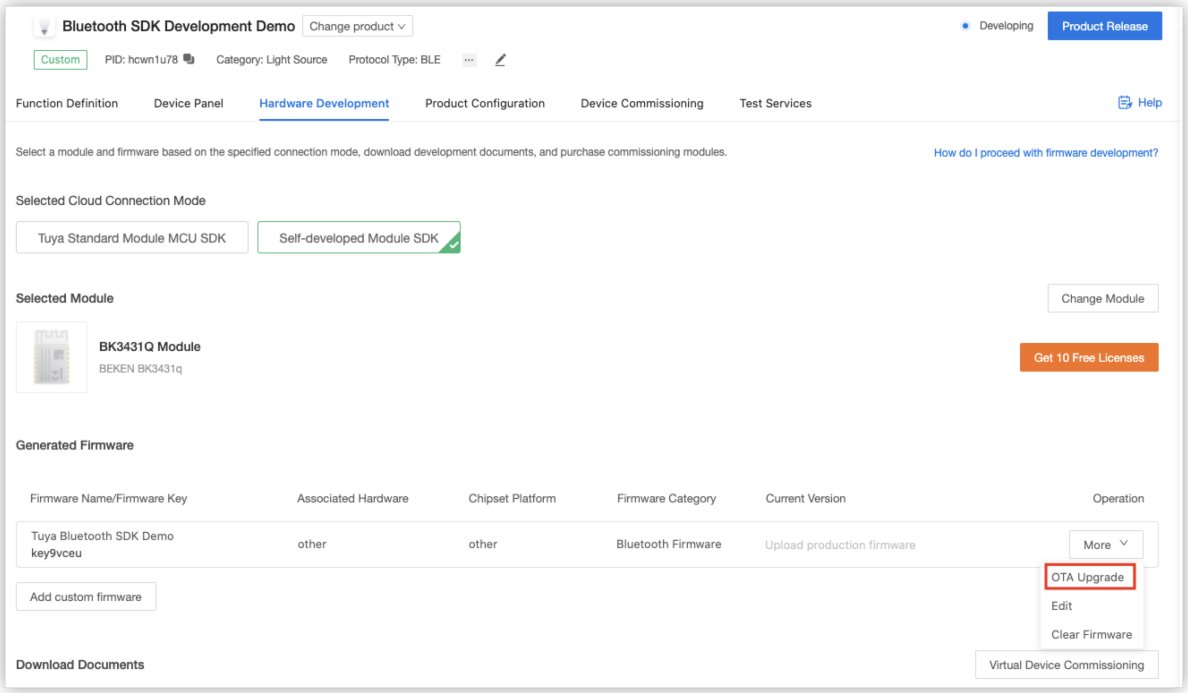
After the firmware that is developed based on the self-developed module SDK passes the functional test, you must upload the firmware to the Tuya IoT Platform and apply

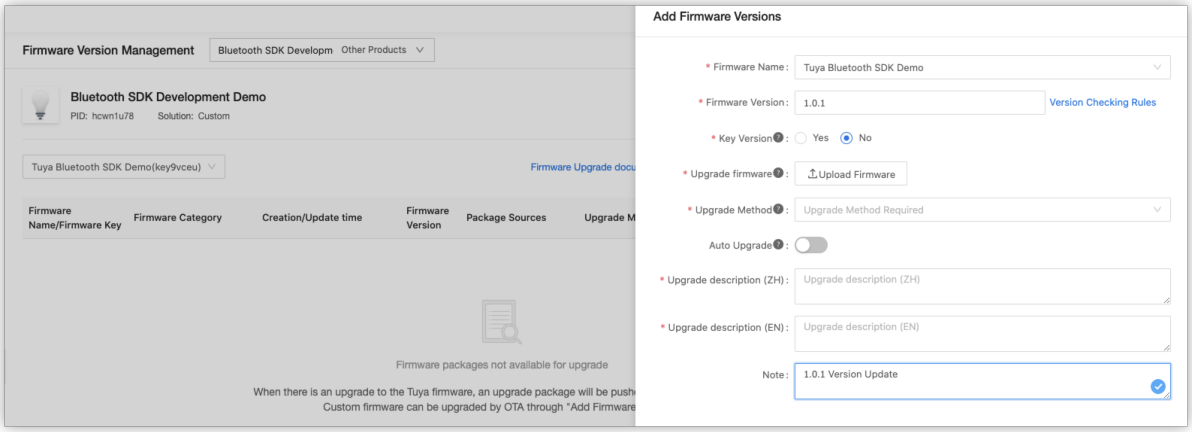
for the mass product authorization code to enable the test service provided by Tuya. Perform the following steps:

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**.



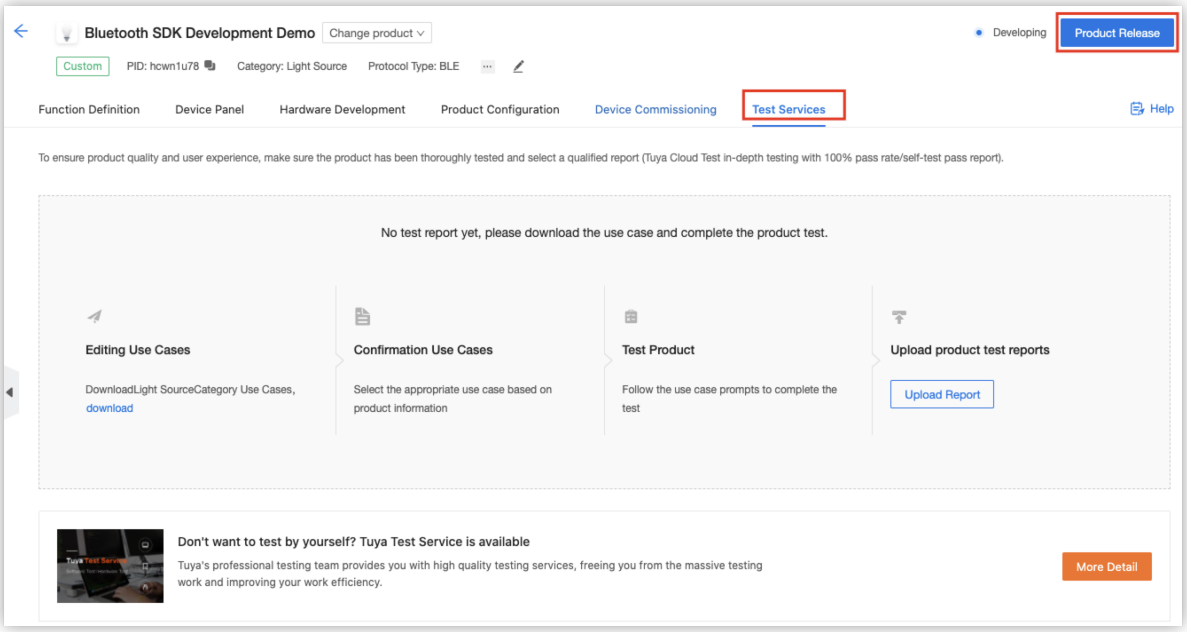
2. In the **Generated Firmware** section, select the **OTA Upgrade** operation. In the **Add Firmware Versions** pane, enter the required firmware version information, upload the built firmware, and then click **Confirm**. For more information, see Update Firmware.





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.


Bluetooth SDK Development Demo
Change product
Developing
Product Release
Custom
PID: hcwn1u78
Category: Light Source
Protocol Type: BLE
Function Definition
Device Panel
Hardware Development
Product Configuration
Device Commissioning
Test Services
Help
To ensure product quality and user experience, make sure the product has been thoroughly tested and select a qualified report (Tuya Cloud Test in-depth testing with 100% pass rate/self-test pass report).
No test report yet, please download the use case and complete the product test.
Editing Use Cases
DownloadLight SourceCategory Use Cases, download
Confirmation Use Cases
Select the appropriate use case based on product information
Test Product
Follow the use case prompts to complete the test
Upload product test reports
Upload Report
Don't want to test by yourself? Tuya Test Service is available
Tuya's professional testing team provides you with high quality testing services, freeing you from the massive testing work and improving your work efficiency.
More Detail

3 References

- Sandwich Evaluation Kits
- Demo Center
- Update Firmware