

**Brickcom**

開発マニュアル  
ITM-1261

2021. v1



# Requirements

## ■ Hardware

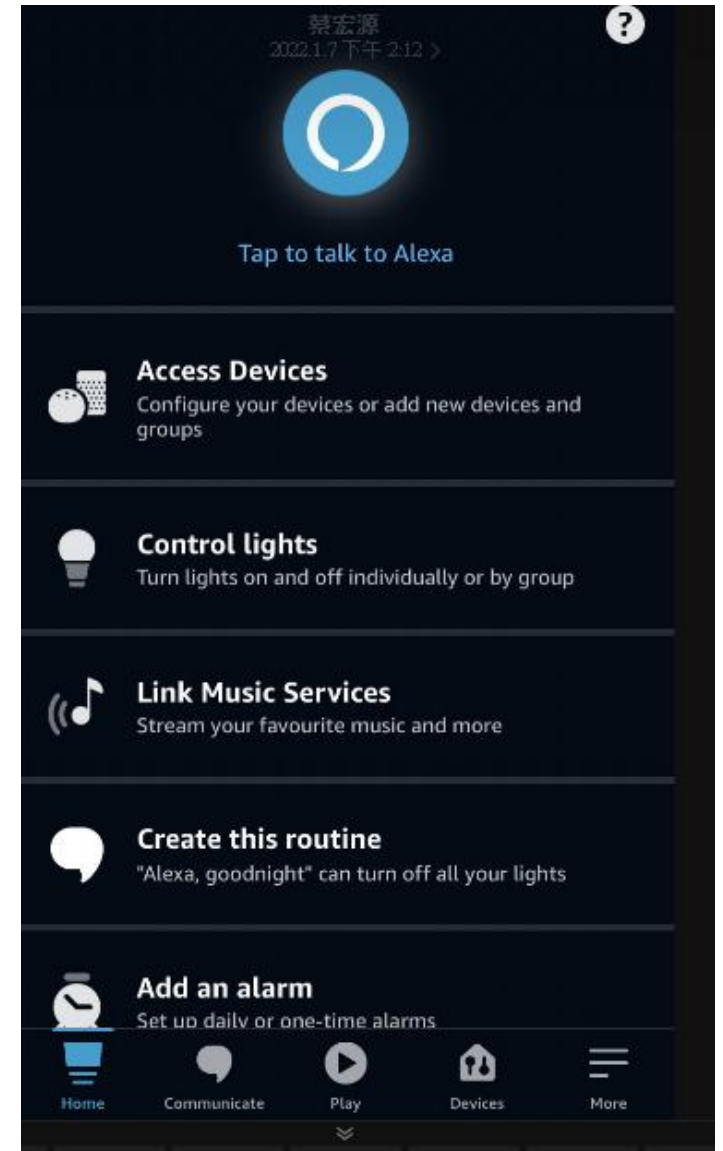
- IOTTECH ITM-1261モジュール
- MCU ファームアップグレードモジュール (NuTiny-N76E003)
- UART to USB モジュール ([USB CP2102](#))
- 2.4G に対応のWi-Fi ルーター
- スマホ (Amazon Alexaをインストール )
- デュポン ワイヤ

## ■ Software/Drivers

- Keil MDK 5.26
- 最新 Nu-Link Keil drivers
- Python-3.8 開発環境, see [Python download](#)
- Java SE 8 or later. [Java SE Downloads](#)

# Prepare Amazon account

- アマゾン開発のアカウントを登録.
  - [Get an Amazon developer account](#)
  - スマホ APP : Amazon Alexa APP
- スマホとdev は同じアカウントが必要。



# Hardware Connect (WIFI モジュール debug)

- デュポン ワイヤでITM-1261と CP2102に接続する
- 下記の図のように : TX to RX , TX to RX , GND to GND, 3V3 to VDD

ACK module



CP2102 console



# Hardware Connect (Nuvoton MCU debug)

- デュポン ワイヤでITM-1261と CP2102に接続する [\(USB CP2102\)](#)
- 下記の図のように : TX to RX, TX to RX, GND to GND, 3V3 to VDD

ACK module



CP2102 console





# Hardware Connect (ITM-1261ファームを更新)

- Connect to Nuvoton debug board ( NuTiny-N76E003 )
- Connect to the pins to load firmware into MCU :  
VCC/DAT/CLK/RST/GND/TX to RX/RX to TX

ACK module



Nuvoton debug board



USB to PC

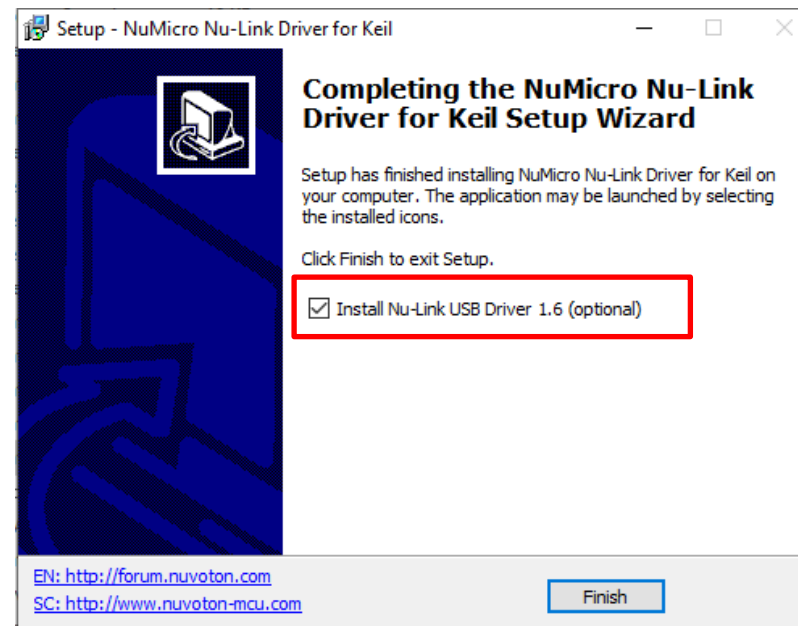


# Software Preparation

- PythonとJavaをインストールする
  - [Python download](#)
  - [Java download](#)
  - PythonとJavaを PATH (environment) variableに追加する.
- 開発を始まる
  - [ACK Device SDK 4](#).ダウンロード
  - <ACK\_Device\_SDK\_4>\user\platformで[Github code](#) フォークする

# Driver Installation

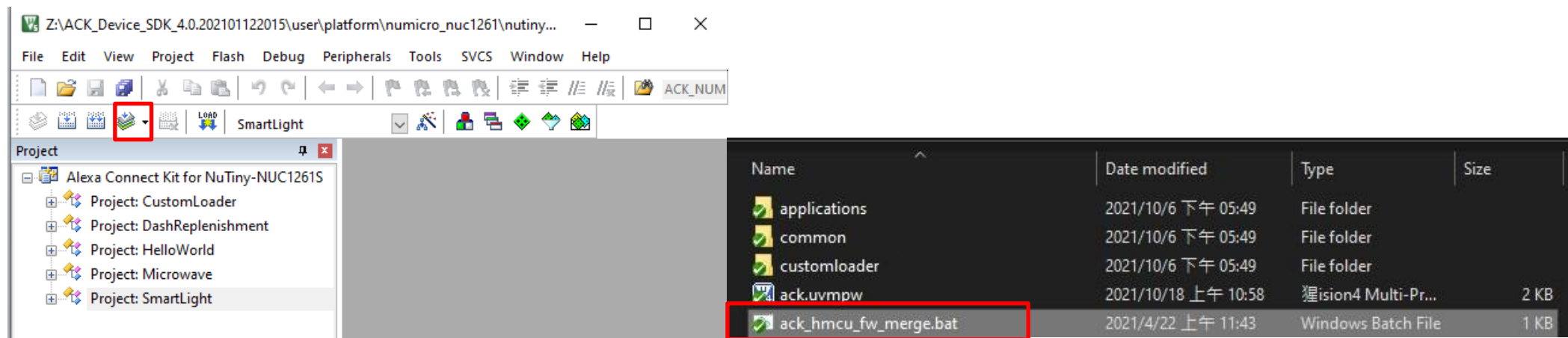
- Window platformで“Nu-Link Driver for Keil”をインストール
  - [Nu-Link Driver for Keil](#)ダウンロード
  - Nuvoton のインストールwizard従ってutilities for keil をインストール.
  - MDK-ARM debugger and Nuvoton virtual COM(VCOM) の機能のため、 Nu-Link USB Driverのインストールが必要.





# Build Steps

- MDK 5.26でack.uvmpw Keil multiple project fileを行う。  
Path: <Path-to-ACK\_Device\_SDK>\user\platform\numicro\_nuc1261\nutiny-nuc1261s\ack.uvmpw
- “Batch rebuild” を押し、exampl を build する
- “ack\_hmcu\_fw\_merge.bat”を執行、 customer\_loader と example をmergeし、hex fileを生成する



# ACK HMCU Firmware Installation

The image displays three screenshots of the Nuvoton NuMicro ICP Programming Tool 3.03 interface, illustrating the steps for firmware installation.

**Left Screenshot (Main Window):** The "Select Target Chip:" dropdown menu is highlighted with a red circle, showing "NUC126 Series" selected.

**Middle Screenshot (Main Window):** The "Load File" section is highlighted with a red circle. The "APROM" file is loaded from "Z:\ACK\_Device\_SDK\_4.0.202101122015\user\platform\numicro\_nuc1261\nutiny-nuc1261s\Merged\_Sme" with a size of 58.9K Bytes and checksum of 6872. The "Config Bits" section shows "Config 0: 0xFFFFFFFF" and "Config 1: 0x000FFFFF". The "Programming" section at the bottom has "APROM" and "Config" checked, with a red circle around the "Start" button.

**Right Screenshot (Chip Settings):** The "Boot Options" section is highlighted with a red circle, showing "APROM with IAP" selected. The "PF[4:3] Multi-function Options" section shows "Work as External 4~24MHz Crystal Pin" selected. The "Data Flash Options" section shows "Data Flash" unchecked. The "Config Value" section shows "Config 0: 0xFFFFFFFF" and "Config 1: 0x000FFFFF". The "OK" button is highlighted with a red circle.

Red arrows indicate the flow from the "Start" button in the middle screenshot to the "OK" button in the right screenshot.

# ack\_hmcu\_fw\_merge.bat

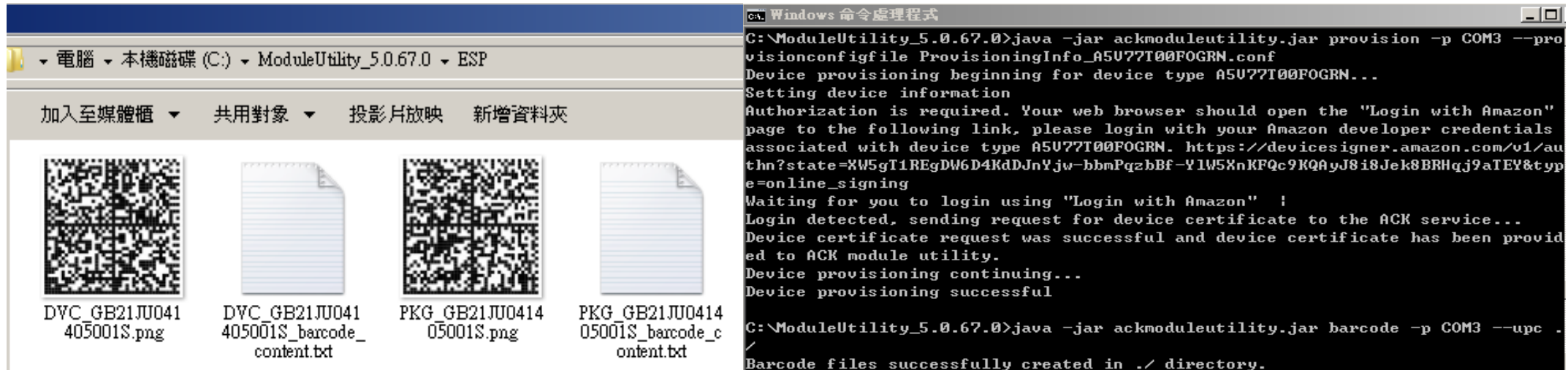
- そのscriptで、merged ACKとMCUのファームをmerge用なutilityです。

Name	Date modified	Type	Size
applications	2021/10/6 下午 05:49	File folder	
common	2021/10/6 下午 05:49	File folder	
customloader	2021/10/6 下午 05:49	File folder	
ack.uvmpw	2021/10/18 上午 10:58	Revision4 Multi-Pr...	2 KB
ack_hmcu_fw_merge.bat	2021/4/22 上午 11:43	Windows Batch File	1 KB

Merged_DashReplenishment.hex	2021/4/26 下午 07:28	HEX File	112 KB
Merged_HelloWorld.hex	2021/4/26 下午 07:28	HEX File	127 KB
Merged_Microwave.hex	2021/4/26 下午 07:28	HEX File	156 KB
Merged_SmartLight.hex	2021/4/26 下午 07:28	HEX File	157 KB

# Product registration (WiFi debug console)

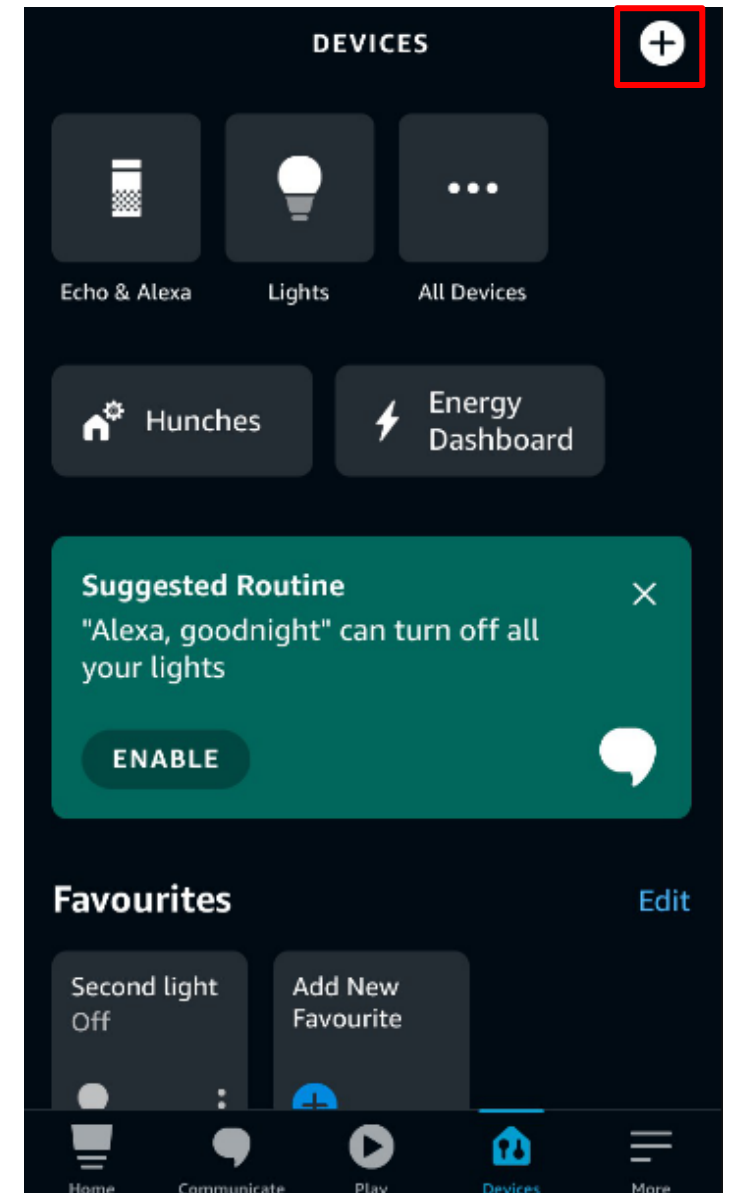
- 新しい製品と製品のQR codeを生成：
  - [create a new virtual product](#) and [download your configuration file](#).
  - WIFI debug console を接続 (page4).
  - [ACK Module Utility](#) をダウンロード、それから、下記のコマンド (JAVA)を行う。
    - 仮装製品をインポート: `java -jar <path>\ackmoduleutility.jar provision -p <port> --provisionconfigfile ProvisioningInfo_[devicetypeid].conf`
    - 製品 QR codeを生成: `java -jar <path>\ackmoduleutility.jar barcode --port <port> --upc ./`



# Test product action

## ■ アプリの操作

- ITM-1261 オンの状態を確認する
- モバイルアプリで、デバイスを選び、それから、右の図に従って新しいデバイスを追加する
- Development Deviceを選び、ackする.それから、QR codeをscanする
- アプリに接続してから、ITM-1261上のLEDをアプリで操作できる



# THANK YOU

BRICKCOM,  
YOUR BEST PARTNER



# About

- Amazon ACK HMCU On NuTiny-NUC1261S
  - [https://raw.githubusercontent.com/OpenNuvoton/ACK-HMCU/master/numicro\\_nuc1261/docs/Amazon%20ACK%20HMCU%20on%20NuTiny-NUC1261S.pdf](https://raw.githubusercontent.com/OpenNuvoton/ACK-HMCU/master/numicro_nuc1261/docs/Amazon%20ACK%20HMCU%20on%20NuTiny-NUC1261S.pdf)
- Prototype Your Product
  - <https://developer.amazon.com/en-US/docs/alexa/ack/steps-to-prototype-a-product.html>

# Download

- Amazon Developer Account
  - <https://developer.amazon.com/en-US/docs/alexa/ack/developer-account.html>
  - <https://developer.amazon.com/alexa/console/ack/>
- Python
  - <https://www.python.org/ftp/python/3.8.6/python-3.8.6-amd64.exe>
- ACK Device
  - <https://developer.amazon.com/alexa/console/ack/resources>
- Github
  - <https://github.com/Brickcom/ACK-HMCU>
- Java
  - <https://www.oracle.com/java/technologies/downloads/>

# Note:

- <path>:File placement. Ex: C:\ModuleUtilit5.0.67.0
- <port>: Com port Name. Ex: COM3
- [devicetypeid]:Virtual product device type ID. Ex: A5V77T00FOGRN

[Return](#)