DK9169 Demo Kit Getting Started Guide

Table of Contents

NOTE – all data and credential information you provide will be stored in Dexatek's account, and accessible to Dexatek. If you have any questions or concerns, please reach out to our support team at awspartner@dexatek.com/ +886 2 8698 4245 #828

1 Document Information

The DK-9169 Demo kit is based on the RTL8711AM SoC and designed for IoT System Extended

Revision History (Version, Date, Description of change)
V5.0 2022/05/011

2 Overview

Ameba RTL8711AM is a highly integrated single-chip with low power consumption for IoT (Internet of Things). It combines an Arm® new architecture Arm®v8M KM3 MCU, Wi-Fi and provides a bunch of configurable GPIOs which are configured as digital peripherals for different applications and control usage.

RTL8711AM SoC also integrates internal 2.5MB RAM memory to minimize IoT end product size and reduce your development cost.

Features:
1. Complete IoT solution (low-level development, cloud services, APP)
2. Support AT + application set secondary development
3. Support OTA wireless upgrade
4. Support Bluetooth smart networking,

Application

·IoT

·Home automation

·Sensor networks

·Building automation

·Industrial

·Retail

·Interactive entertainment devices

·Remote control

·Gaming controller

3 Hardware Description

3.1 Data Sheet

https://www.dexatek.com/_files/ugd/c97cac_817c1987ed1b49bea26071756f2888f7.pdf

DK-9169 Demo Kit Spec	
SoC	RTL8711AM
WLAN	WiFi 802.11 b/g/n 2.4
Antenna	Chip Antenna
USB	USB2.0 *1
RAM	2.5MB internal RAM on SoC & 4MB external flash on Dev. Board
Indicator	Function*1(Green) System Power(Blue)
Button	Function Button *1
UART	UART *2
GPIO	GPIO IN*3 + OUT*3
I2C	I2C*1
Power	3.3V / 5V
EVB SIZE	75.69mm 44.83mm

3.2 Standard Kit Contents

DK9169 Demo Kit (D9169 Module + Demo board)

3.3 User provided items

Micro USB Type A power adapter 5V 1A

4 Setup your AWS account and Permissions

Users do NOT need to setup AWS account, user will be using Dexatek's cloud infrastructure. After user purchases Dexatek's device, the user only needs to download the APP and sign up via APP. All the required permissions will be granted to the user, due to the integration between AWS Cognito User Pool and Identity Pool. If the User wants/needs to setup their own environment, user will need to send an email to Dexatek (awspartner@dexatek.com), Dexatek's engineer will contact and support them.

5 Create Resources in AWS IoT

Resources are created when pairing, these are the steps

a. User presses the reset button for 3 seconds on the device, the device becomes "pairing mode"

b. User turns on the "Bluetooth" of their phone,

c. User opens our APP and follows the pairing wizard

d. Once APP receives all the information it needs, then APP sends the payload to a Lambda API called "AddDevice", developed by Dexatek, by making this HTTP POST call("AddDevice"), Lambda API returns an OTP(One-Time Password). Noted: Most of the IoT Resources are created in this step, "AddDevice" API helps to create "IoT Things", "IoT Device Shadow", "Map to the correct thing type" and "create IoT Policy", and users don't need to create manually. Device Certificate has not yet been generated and Device has no IoT Core permission or

connectivity up to this point.

e. APP sends the OTP to the Device via Bluetooth

f. Device makes an HTTP POST call to Lambda API, API named "GenerateCerts" and developed by Dexatek, OTP will be included in the payload, then Lambda API returns an AWS IoT Certificate. IoT certificate is generated in this step, "GenerateCerts" API help to create IoT Certificate, and bind the IoT Certificate to the IoT Policy. Users don't need to worry about the relationship between IoT Policy and Iot Certificate.

g. Device will save the AWS IoT Certificate in the Flash, and use this credential to interact with AWS IoT Core.

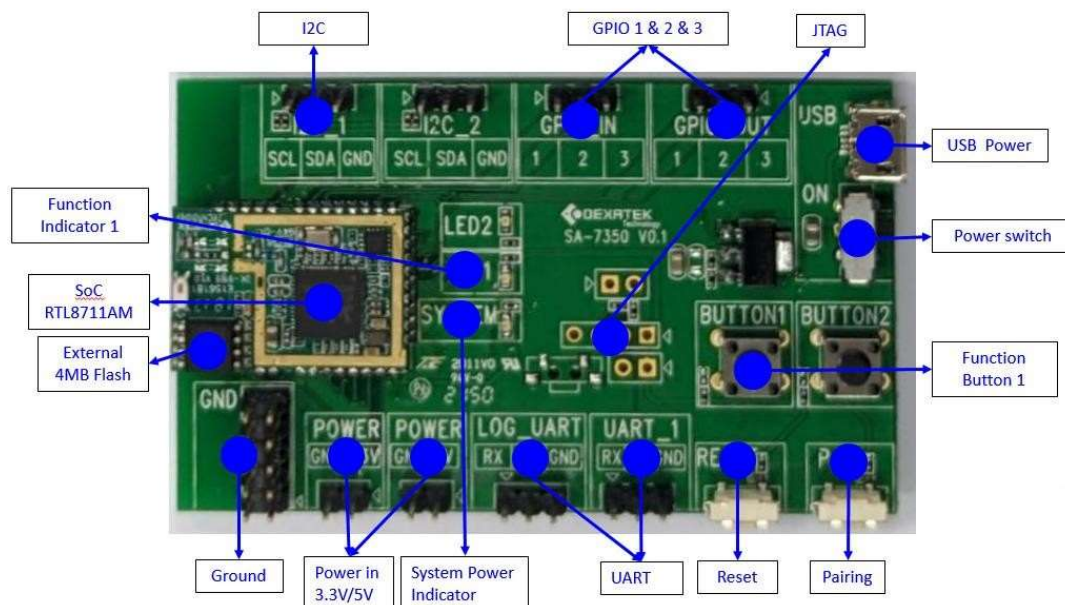Note: The device should have IoT connectivity by now

By doing Step a ~ g, all the required resources will be created by the Lambda API, which is developed by Dexatek

6   Provision the Device with Credentials

Please reference point 5d to 5g.

7 Setup your hardware

1. Connect your IoT device (e.g. sensor….)
2. Plug in the USB Power
3. Turn on the power switch

8 Build the demo

7.1 Download the latest version of the "User Guide for installation of the Demo App at product web page as below link. Follow the steps in the User Guide to download and install the app on the phone.
https://www.dexatek.com/aws-lot-core-dk9169

9 Run the demo

Go to the demo APP main page select the interface your device is connected to

(1) Select "I2C" Tab to read /write I2C data
(2) Select "GPIO" Tab to monitor GPIO is High/Low status
(3) Select "UART" Tab to read / write UART RX & TX data

10 Troubleshooting

1. Check power indicator to make sure power supply is properly connected.
2. Use minimum 1A current power supply to ensure sufficient power
3. Follow point 8 to connected device.
4. Power off and check your device connect to connector as well.

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