DevTools Mobile App
User Guide

SUMMARY: This document provides instructions on how to operate the Atmosic DevTools Mobile Apps for Android and iOS.

Atmosic™

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Acronyms and Abbreviations

Acronyms	Definition
EVK	Evaluation Kit
SDK	Software Development Kit

1.   Overview

This document provides instructions on how to operate the Atmosic DevTools Mobile Apps, which are intended to be used with Atmosic-based EVKs, reference designs, and customer products. Not all devices will support all the features in the Apps. Refer to the latest Atmosic DevTools release notes for a list of supported reference design boards.

2.   Hardware and Software Requirements

2.1   Supported EVK

There are multiple versions of the ATM2/ATM3/ATM33/ATM34 EVKs based on the specific device and package configuration. See Table 1.

EVK	SoC Package	SoC Part Number	Kit Part Number
Evaluation Kit for ATM2202	40-pin 5x5 mm QFN	ATM2202SR	ATMEVK-M2202-02
Evaluation Kit for ATM2221	64-pin 6x6 mm DR_QFN	ATM2221SR	ATMEVK-M2221-02
Evaluation Kit for ATM2251	37L WLCP	ATM2251SR	ATMEVK-M2251-01
Evaluation Kit for ATM3201	40-pin 5x5 mm QFN	ATM3201SR	ATMEVK-M3201-02
Evaluation Kit for ATM3202	40-pin 5x5 mm QFN	ATM3202SR	ATMEVK-M3202-02
Evaluation Kit for ATM3221	64-pin 6x6 mm DR_QFN	ATM3221SR	ATMEVK-M3221-02
Evaluation Kit for ATM3325	40-pin 5x5 mm QFN	ATM3325-5DCAQK	ATMEVK-3325-QK
Evaluation Kit for ATM3325 with Extended Storage	40-pin 5x5 mm QFN	ATM3325-5LCAQK	ATMEVK-3325-LQK
Evaluation Kit for ATM3325 WLCSP	49L WLCSP	ATM3325-5DCACM	ATMEVK-3325-CM
Evaluation Kit for ATM3330	56-pin 7x7 mm QFN	ATM3330-5DCAQN	ATMEVK-3330-QN
Evaluation Kit for ATM3330e	56-pin 7x7 mm QFN	ATM3330E-5DCAQN	ATMEVK-3330E-QN
Evaluation Kit for ATM3430e	56-pin 7x7 mm QFN	ATM3430E-5YCAQN	ATMEVK-3430e-YQN-5

Evaluation Kit for ATM3405 BGA	93-ball 4x4 mm BGA	ATM3405-5YCABV	ATMEVK-3405-YBV-5
Evaluation Kit for ATM3405 QFN	40-pin 5x5 mm QFN	ATM3405-5WCAQK ATM3405-5PCAQK	ATMEVK-3405-WQK-5 ATMEVK-3405-PQK-5

Table 1 - Supported ATM2/ATM3/ATM33/ATM34 SoCs and EVKs
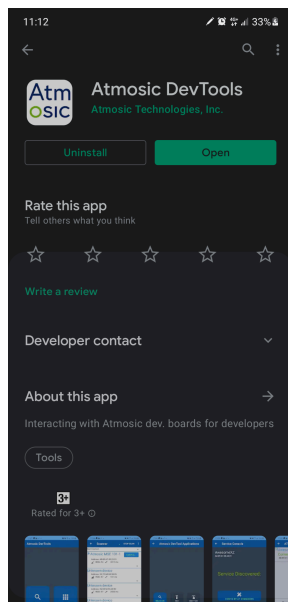
2.2   Supported SDK

The Atmosic SDK 5.5.0 or later, PV Beacon reference design (ATMBCN-3202-SS or ATMBCN-3202-NS) can be used with the DevTools App to demonstrate the usage.
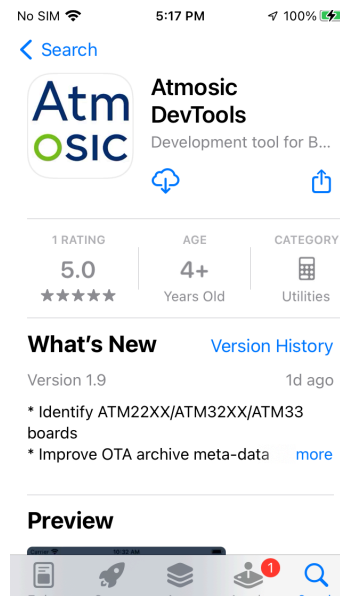
3.   DevTools Apps Usage

3.1   Installation

Download and install the Atmosic DevTools App for Android or iOS from Google Play or Apple's App Store, respectively.

See Figure 1.

Atmosic DevTools App for Android   Atmosic DevTools App for iOS

Figure 1 - Atmosic DevTools Apps

3.2   Search Nearby Bluetooth LE Devices

After installing and launching the Apps, there are two entries for finding the Bluetooth LE devices nearby, as shown in Figure 2.
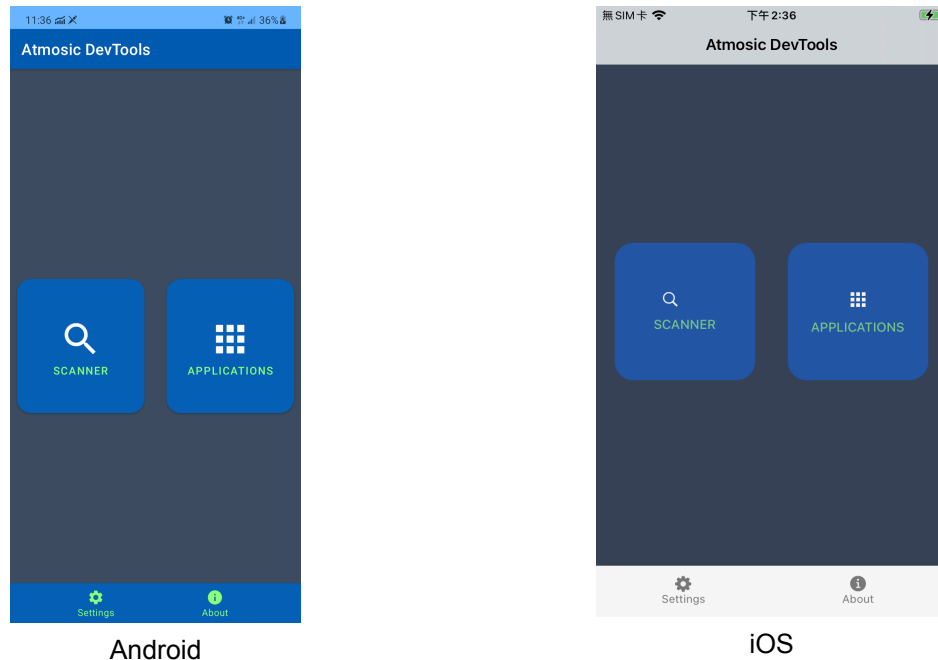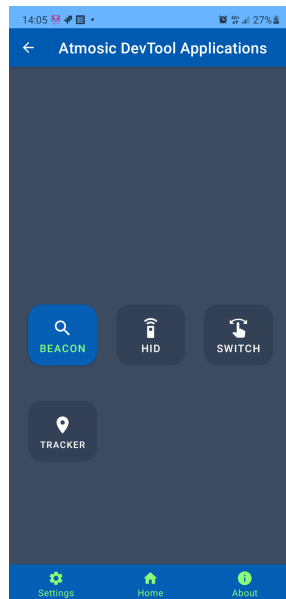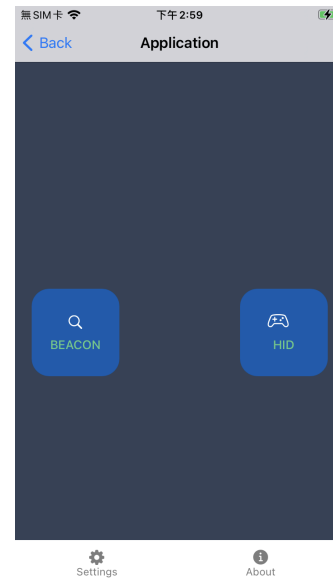

Android   iOS

Figure 2 - Search Nearby Bluetooth LE Devices by Classification

Enter the `SCANNER` page to find all Bluetooth LE devices nearby without filtering the device applications.

Enter the `APPLICATIONS` page to find and filter only Atmosic devices advertising special packets for classifying the applications from different firmware (FW) configurations, as shown in Figure 3. These features are supported by Atmosic EVKs running Software Development Kit (SDK) version 5.5.0 or later.
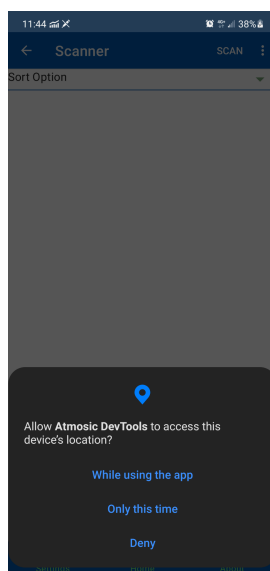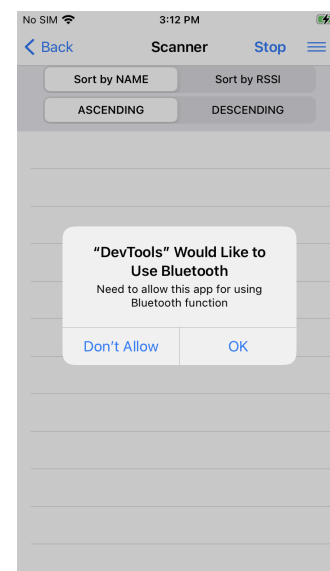
Android

iOS

Figure 3 - Atmosic FW Applications

When entering the SCANNER page for the first time, the OS will ask for permission to access the device's location to discover the devices nearby, as shown in Figure 4.

Android
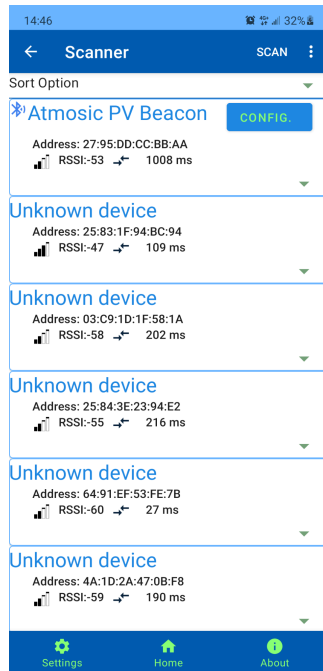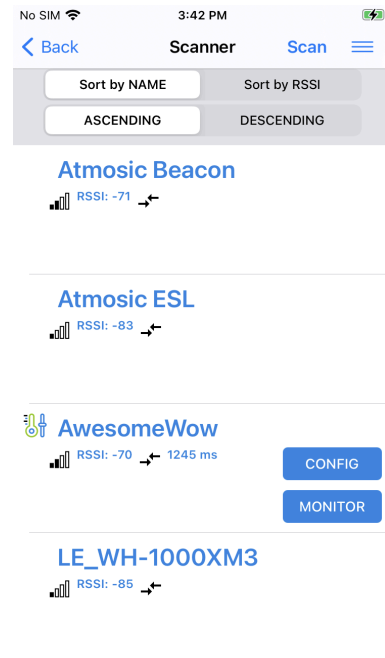
iOS

Figure 4 - Grant Permission to Access Location

After granting permission, clicking the `SCAN` button in the upper-right corner will trigger device discovery. The devices discovered will be listed in the list view as shown in Figure 5. Clicking on the device item will lead to another page for connecting to the device and listing available services.
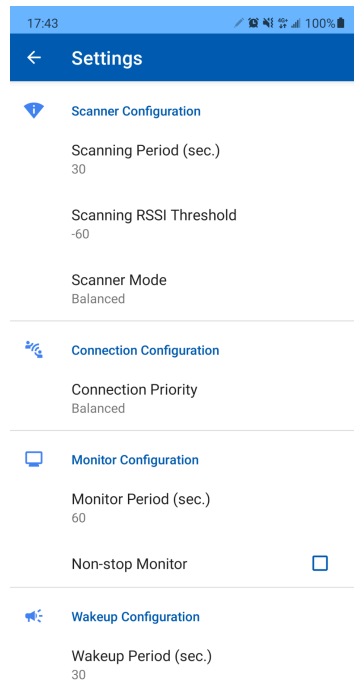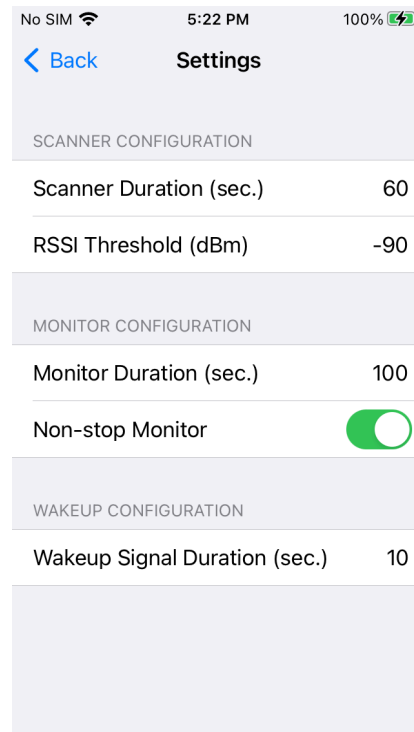

Android

iOS

Figure 5 - Show Discovered Devices

If desired devices are not listed, go to the `Settings` to change the scanning RSSI threshold and scanning period as shown in Figure 6, then repeat the process.
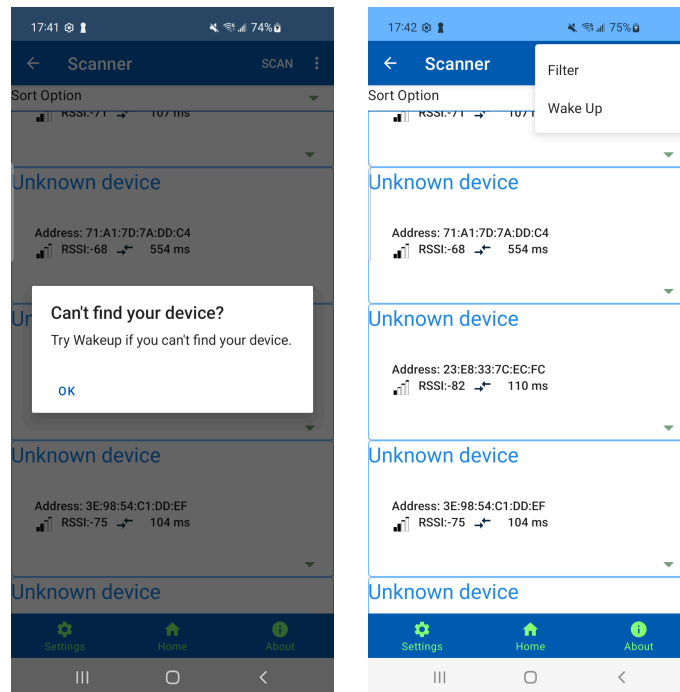
Android

iOS

*Figure 6 - Scanner Configuration*

3.3 Wake Up Nearby Wakeup Receivers

To experiment with the wake-up feature with the Atmosic ATM2/3/33/34 EVKs configured with Wakeup Receivers, you may find the Wake Up option in the menu bar on the `Scanner` page to generate signals to wake up the configured devices nearby, as shown in Figure 7.

For details about how to configure the Wakeup Receivers, please refer to the `On Demand Wakeup Application Note`.

Android
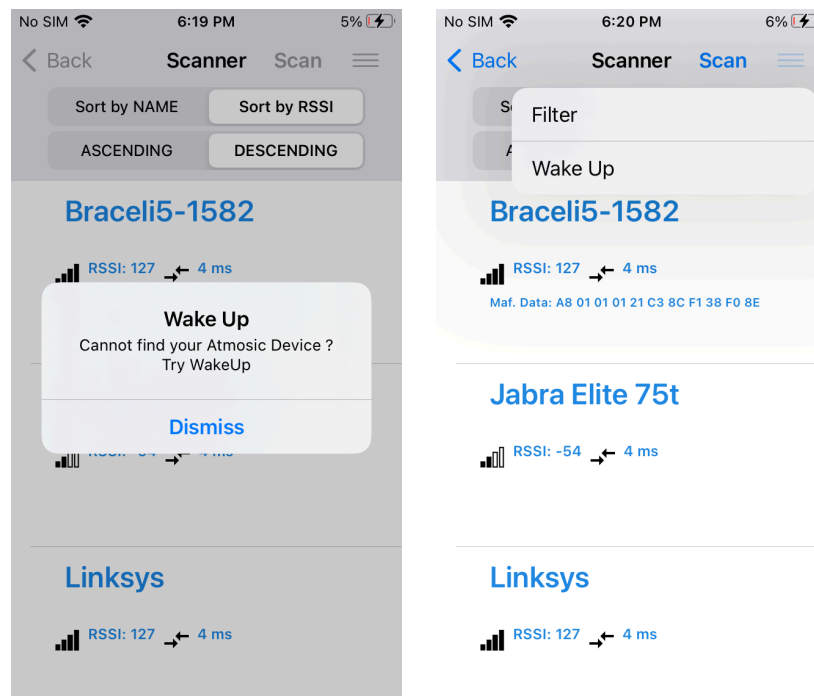
iOS

Figure 7 - Wake Up Nearby Wakeup Receivers

3.4 Check Available Services

After clicking a device item from the list view of the `Scanner` page, the `Service Console` page will connect to the device and list available services. The page will only display the Atmosic supported services; other services from other vendors will not be displayed, even if they're connected with the Apps, unless enabled by the vendors. Currently, the App supports three services: AT Command Configuration, Over the Air (OTA) Firmware Update, and Blinky. A firmware example with two services is shown in Figure 8. For additional information and to learn how to install these services, please refer to the `AT Command User Guide or OTA Update User Guide.`
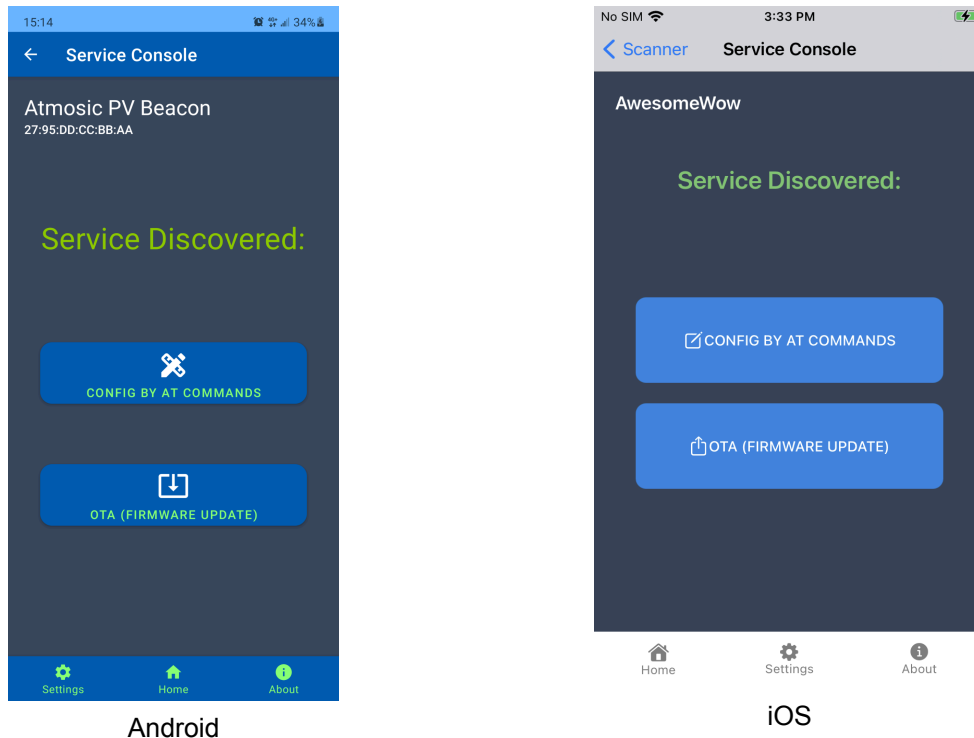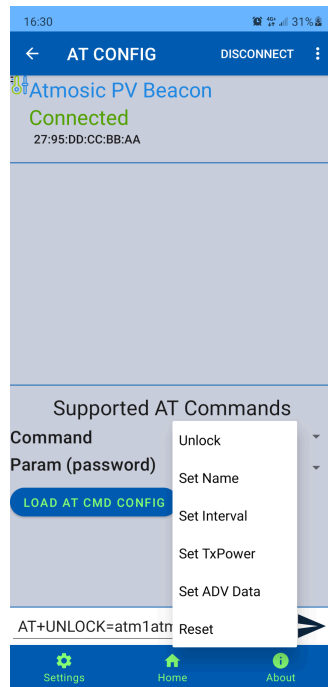

Android   iOS

Figure 8 - Show Discovered Services

3.5 AT Command Configuration

Some of the parameters can be tuned and changed from the Apps without modifying the FW code and re-flashing the device. Supported configurations can be selected via the Command box shown in Figure 9.

In order to configure and apply the changes, send the `Unlock` command first so that FW will unlock for accepting incoming configuration. After making any changes, send the `Reset` command to boot the FW with the new configuration as shown in Figure 10.
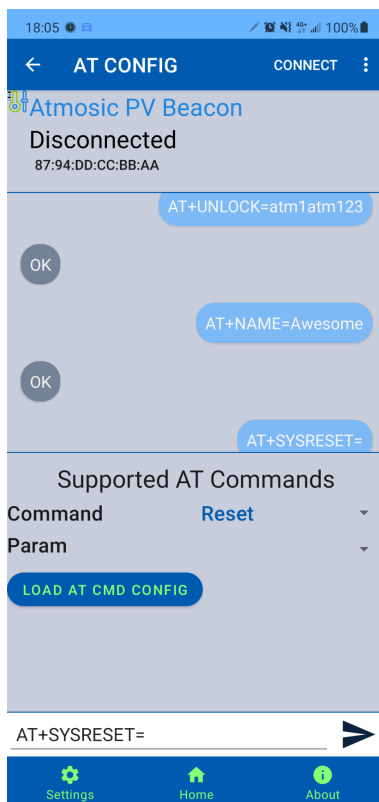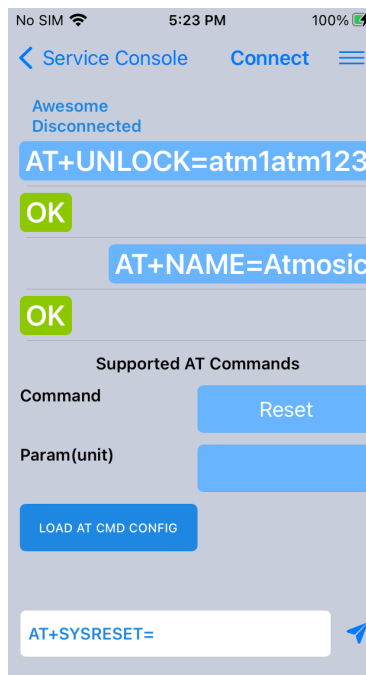
Android
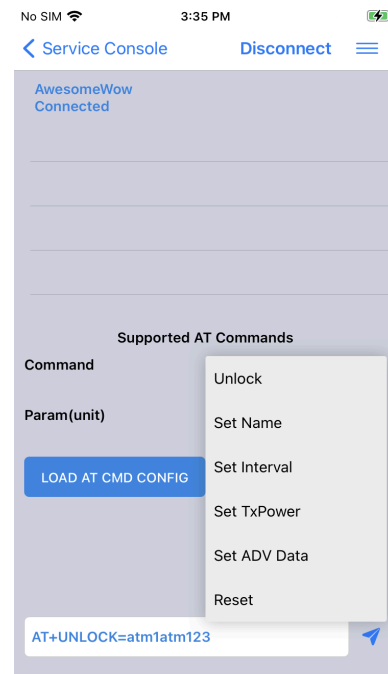
iOS

Figure 9 - Available Configurations
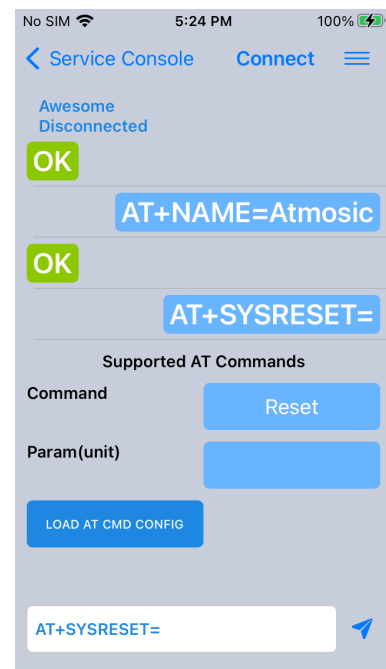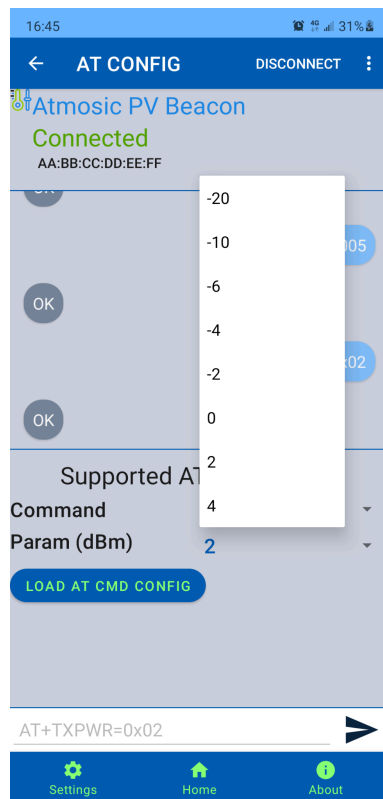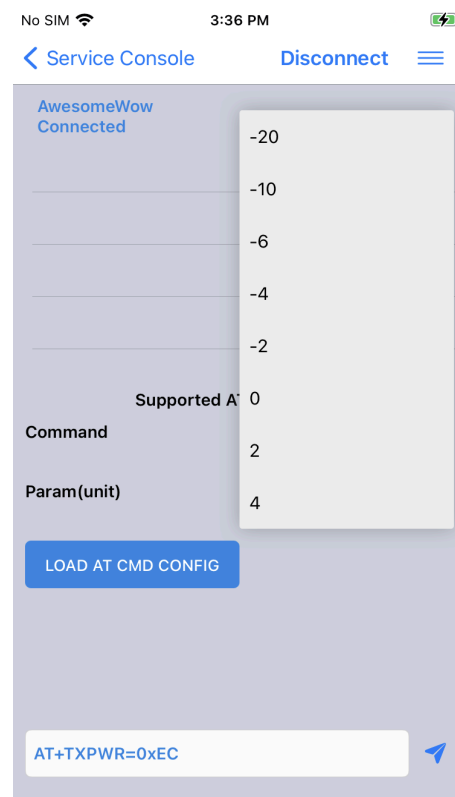

Android

iOS

Figure 10 - Unlock, Tune, and Reset

Setting the name and ADV data with an arbitrary input of 31 characters at maximum. Tx Power tuning is limited to a few selections as shown in <u>Figure 11</u>. For changes to take effect, the `Reset` command must be sent as the last step.

Android   iOS

Figure 11 - Limitation for Tx Power Tuning

The command the user sends is on the right upper-half of the list view, and the connected Bluetooth device's response will be shown on the left side. The bottom text box is for tuning the predefined parameters. The bottom right arrow button is for triggering the message to be sent.

The AT command set can be extended as developers have implemented new commands for the connected Bluetooth device. To be able to experiment with the commands, developers need to create and edit the *.xml file following the format as described below, then load it from the `LOAD AT CMD CONFIG` button.

Add a <entry> tag for describing the new command content, the <command> tag is the AT command header, the <desc> tag is the purpose of the command, the <unit> tag is

for describing the <param>, and can be with an empty value, the <param> tag is the pre-defined parameter for fine-tuning and can be multiple elements under the same <entry> or just empty.

```xml
<?xml version="1.0" encoding="utf-8"?>
<ATCommands>
    <entry>
        <command>AT+UNLOCK=</command>
        <desc>Unlock</desc>
        <unit>(password)</unit>
        <param>atmlatm123</param>
    </entry>
    <entry>
        <command>AT+NAME=</command>
        <desc>Set Name</desc>
        <unit>(Name)</unit>
        <param>Awesome</param>
        <param>Atmosic</param>
    </entry>
    <entry>
        <command>AT+ADVINT=</command>
        <desc>Set Interval</desc>
        <unit>(ms)</unit>
        <param>2000</param>
        <param>4000</param>
    </entry>
    <entry>
        <command>AT+TXPWR=</command>
        <desc>Set TxPower</desc>
        <unit>(dBm)</unit>
        <param>-20</param>
        <param>-10</param>
        <param>-6</param>
        <param>-4</param>
        <param>-2</param>
        <param>0</param>
        <param>2</param>
        <param>4</param>
    </entry>
    <entry>
        <command>AT+ADVDATA=</command>
        <desc>Set ADV Data</desc>
        <unit>(hex)</unit>
        <param></param>
    </entry>
    <entry>
        <command>AT+SYSRESET=</command>
        <desc>Reset</desc>
        <unit></unit>
        <param></param>
    </entry>
</ATCommands>
```

3.6 Firmware Upgrade OTA

3.6.1 OTA for Firmware Built with Atmosic Bare Metal SDK

The device can be upgraded with a new firmware archive file (*.atm). Please refer to the `SDK User Guide`, section 4.2, `build_archive` for generating the *.atm file. Place the firmware *.atm file in the mobile phone's user storage first, then on the OTA page, the user can click on `OPEN FILE` to open the system's file browser to select the file from the storage path, as shown in [Figure 12](#).
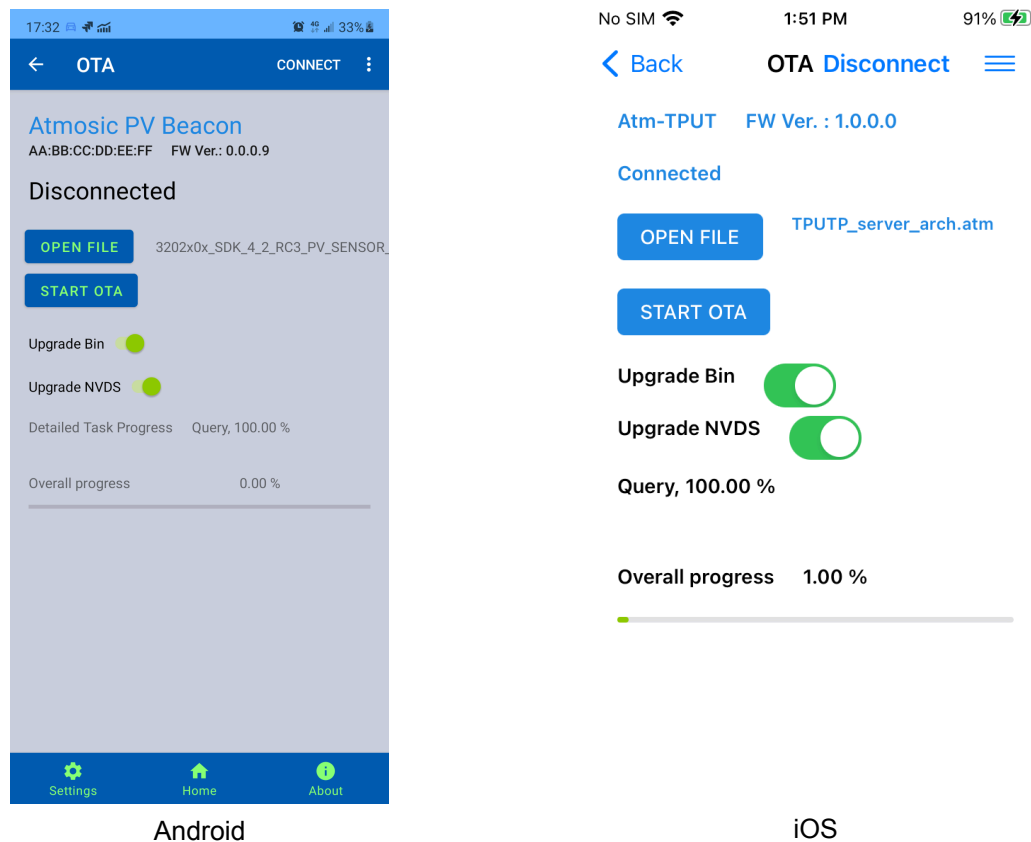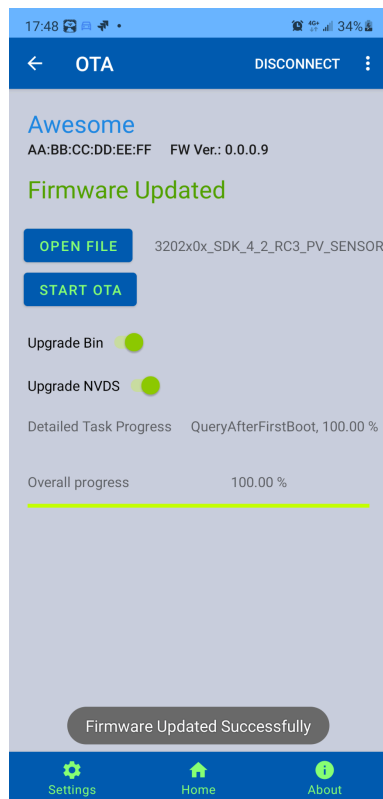

Android   iOS

Figure 12 - Select File on the OTA Page

After selecting the file, clicking `START OTA` will trigger the upgrade process automatically. The progress will be shown at the bottom. The detailed task progress is for the developer to observe the state of the OTA procedure.

Once the upgrade process is completed, a `Firmware Updated Successfully` message will pop up. The FW version on the screen will reflect the new version if a different image is loaded. The Apps will request the FW to reboot in normal mode and get disconnected, as shown in [Figure 13](#).
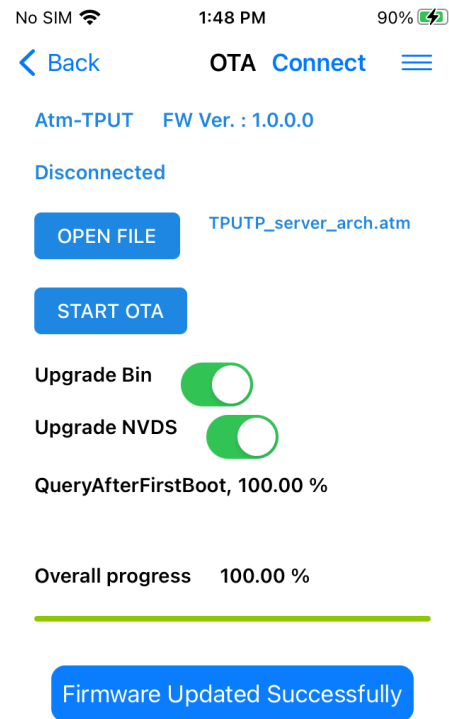
Android   iOS

Figure 13 - Firmware Updated Successfully

3.6.2 OTA for Firmware Built with Zephyr SDK

The DevTools Mobile Apps also provide support for OTA updates on devices running Zephyr RTOS. A Simple Management Protocol (SMP) server can be used to update firmware via Bluetooth Low Energy (BLE). There is an SMP server (smp_svr) sample included in the Zephyr sub-system sample to demonstrate this feature.

DevTools currently supports Device Firmware Update (DFU) for a single image on both ATM33 and ATM34 platforms. Multi-image updates with Execute-in-Place (XIP) functionality are exclusively supported on the ATM34. Please refer to the OpenAir SDK documentation for the latest build options.

To operate the OTA update, look for the APPLICATION.atm from the Zephyr environment output build folder of your application. Place the APPLICATION.atm file in the mobile phone's user storage first, then on the OTA page, the user can click on `OPEN FILE` to open the system's file browser to select the file, as shown in [Figure 14](#).

After selecting the file, clicking `START OTA` will trigger the upgrade process automatically. The progress will be shown at the bottom.

Once the upgrade process is completed, a `Firmware Updated Successfully` message will pop up. The FW version on the screen will reflect the new version if a different image is loaded. The reboot time often takes around 35 seconds.
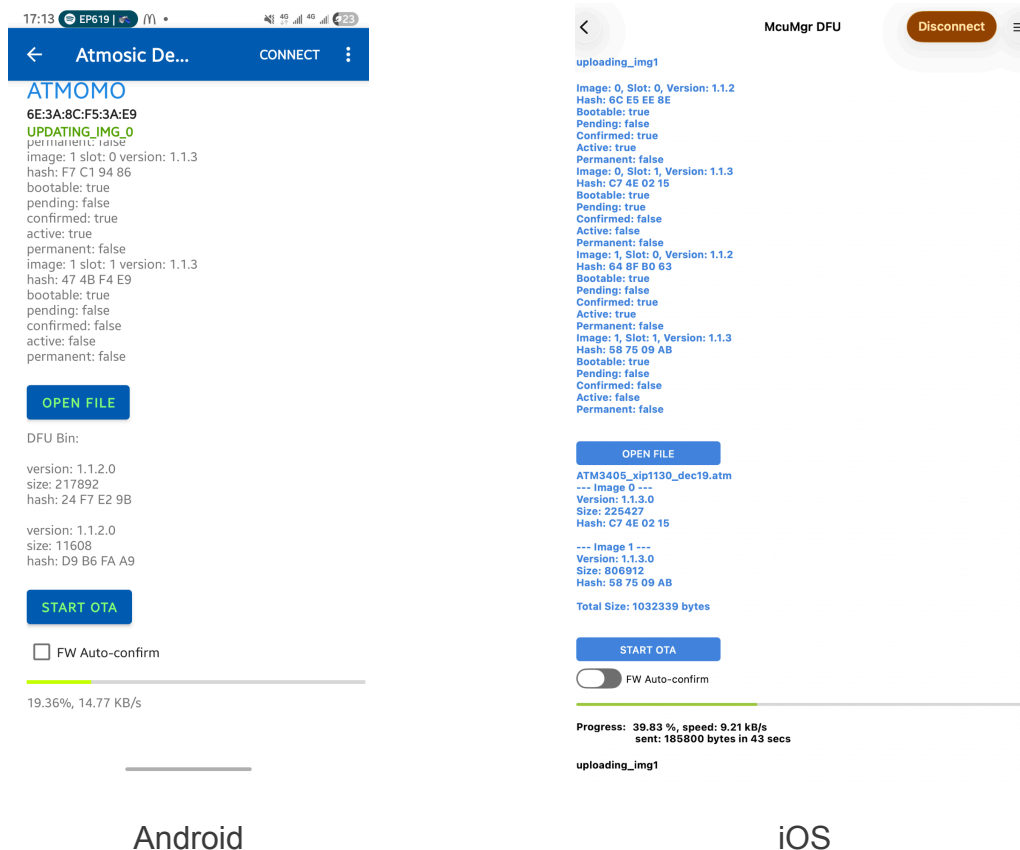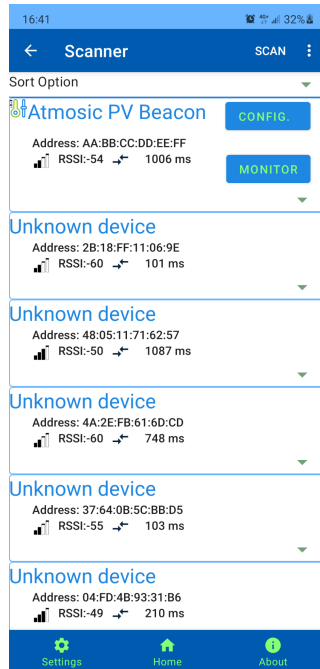

| Android | iOS |

Figure 14 - Zephyr OTA demo

3.7 Monitor Sensor Data Change

The App supports monitoring sensor data present on the device. This feature is illustrated using the PV Beacon reference design board with sensors based on ATM2/ATM3 and BLE Beacon and BLE_attserver examples. Please refer to the PV Beacon User Guide for more information about the board settings.

The Atmosic PV Beacon reference design is equipped with sensors (Temperature, Humidity, and Accelerometer) that monitor the sensor data periodically. It requires the PV Beacon application to enable the sensors (ens210 and lis3dh) on the reference design board. Once the Apps scan and discover the PV Beacon device, they display the `MONITOR` button along with the `CONFIG` button on the `Scanner` page, as shown in [Figure 15](#).
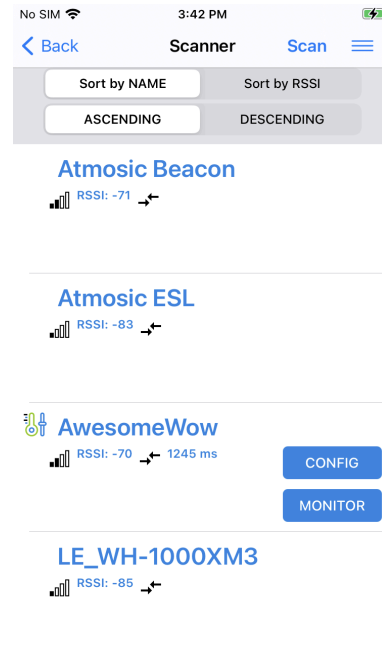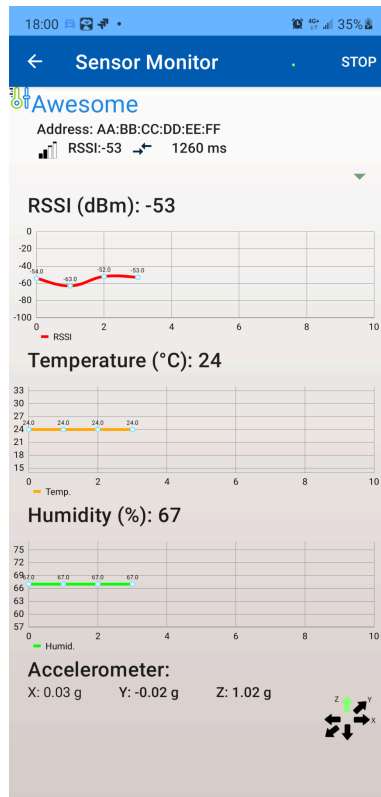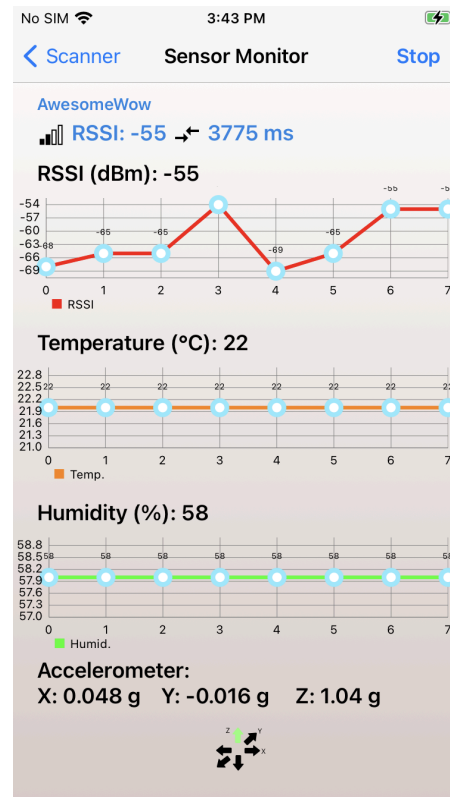

Figure 15 - MONITOR Button Present

Clicking on the `MONITOR` button will load the `Sensor Monitor` page. It displays temperature, humidity, and acceleration data, and plots the changes as shown in [Figure 16](#). Moving the device to a warmer or colder location or changing the orientation, the sensor data will reflect the changes. In addition, it also displays the RSSI value.

Android	iOS

Figure 16 - Plot Sensor Data

3.8 Blinky Demo

The App supports interacting with the LEDs and buttons on the EVK to demo the basic GPIO control as shown in Figure 17. The BLE_att_server example in the Atmosic SDK provides the interaction feature. Toggling the LED 0/1 buttons will turn on/off the respective LEDs on the EVK. Clicking on the clicky buttons on the EVKs will reflect events by popping up messages. Please refer to the user guides of the corresponding EVKs for more information about the board configuration to get the LEDs and buttons to work.
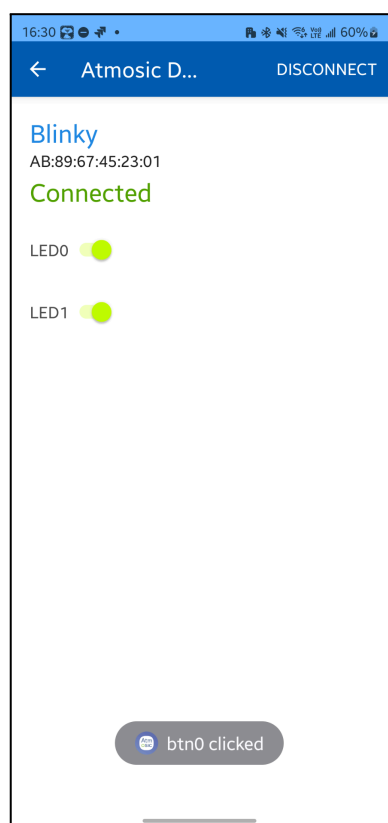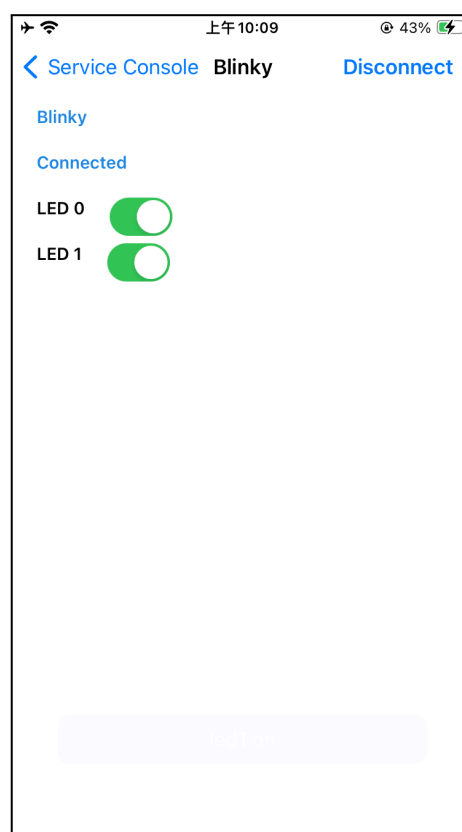
| Android | iOS |

Figure 17 - Blinky Demo

Revision History

Date	Version	Description
Dec 30, 2025	0.72	Updated Supported EVK, OTA for Firmware Built with Zephyr SDK
Jun 21, 2025	0.71	Added section 3.6.1
May 21, 2024	0.70	Added sections 3.8 Blinky Demo and 3.9 ZRC BLE Combo Demo.
August 31, 2023	0.60	Added support for iOS; Table 1 - Supported ATM2/ATM3/ATM33 SoCs and EVKs. Added changed title to DevTools Mobile Apps User Guide
March 7, 2022	0.50	Initial version created.

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Atmosic Technologies | 2130 Gold Street #200 | San Jose, CA 95002
www.atmosic.com