**QUICK START GUIDE**

# Apollo4 Family Voice-on-SPOT®(VoS®)

Ultra-Low Power Apollo SoC Family

A-SOCAP4-QSGA01EN v1.1

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# Revision History

| Revision | Date | Description |
|---|---|---|
| 1.0 | November 21, 2022 | Initial release |
| 1.1 | March 29, 2023 | ▪ Removed references to Vesper<br>▪ Updated applicable document file names<br>▪ Changed references to "Light" with "Lite" |

# Reference Documents

| Document ID | Description |
|---|---|
| A-SOCA4B-UGGA01EN | Apollo4 Family Voice-on-SPOT User's Guide |

# Table of Contents

# Apollo4 Family Voice-on-SPOT Evaluation Kit
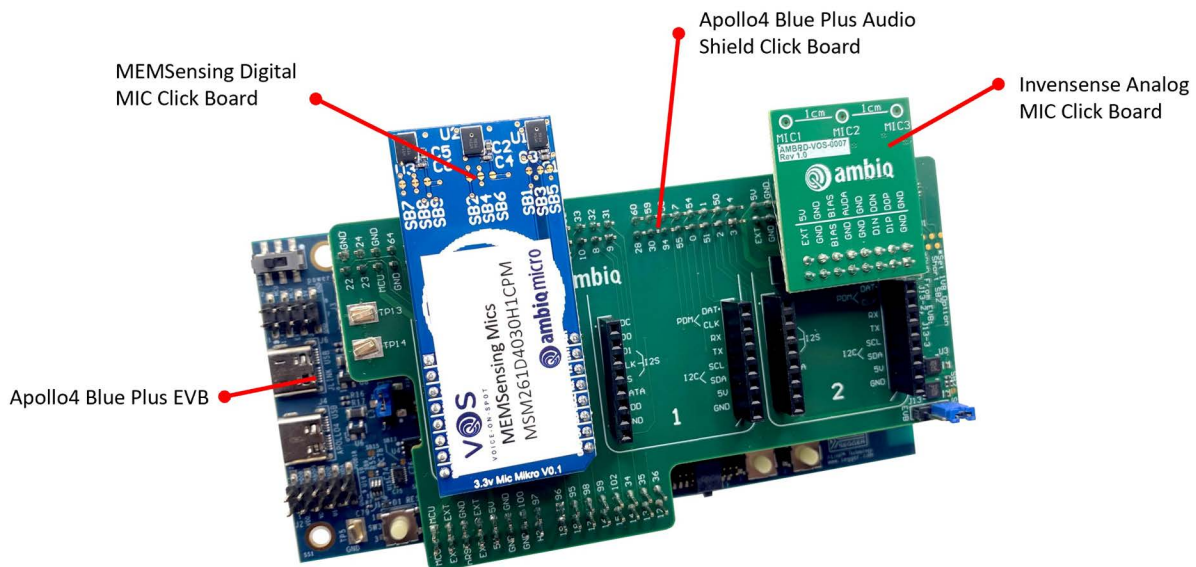
## 1.1      Hardware

The VoS evaluation kit is comprised of an Apollo4 EVB from the below list.
- Apollo4 Plus EVB
- Apollo4 Blue Plus EVB

And an Apollo4 Audio Kit that includes the below Mikrobus click board.
- Apollo4 Blue Plus Audio Shield Click Board
- MEMSensing Digital MIC Click Board
- Invensense Analog MIC Click Board

Figure 1-1: Ambiq Apollo4 Blue Plus Voice-on-SPOT Evaluation Kit

## 1.2      Software

- Ambiq VoS SDK: **AmbiqVoS_R4.x.x.zip**
- Ambiq VoS SDK add-ons
  - DSP Concepts TalkTo package: **AmbiqVoS_R4.x.x_TalkTo.zip**
  - Sensory Truly Hands Free (THF) package: **AmbiqVoS_R4.x.x_THF.zip**
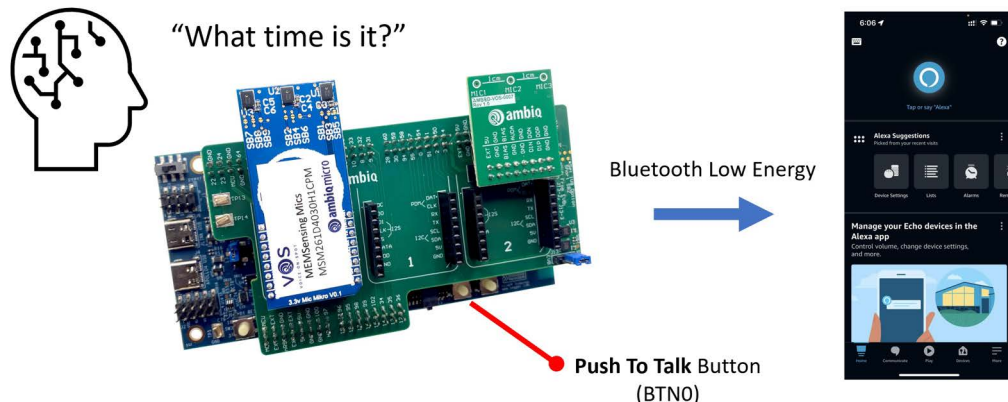
# Alexa Voice Service Demo

## 2.1    Lite Version

Use the following to try the lite version demo using the MEMSensing Digital MIC Click Board:

> **NOTE:** The lite version supports Push to Talk for user utterance transfer.

1.  Build **vos_ble_lite** example:
    `/boards/apollo4p_blue_xxx_evb/examples/vos/vos_ble_lite`
2.  Make sure the default setting is for DMIC (Slot 0).
3.  Download binary to the Apollo4 Blue Plus EVB using Segger J-Flash Lite or download from IDEs (e.g., IAR, Keil).
4.  Reset and connect with the Alexa app (e.g., iOS, Android).
5.  Open the Alexa app, select **Device**, **Add Device**, then select **Headphones**.
6.  Connect to **VoS-xxx-AMA-xxx**.
7.  Push **BTN0** button on the Apollo4 Blue Plus EVB.
8.  Ask a question or command (e.g., "what time is it?", "what's the weather in NY?")
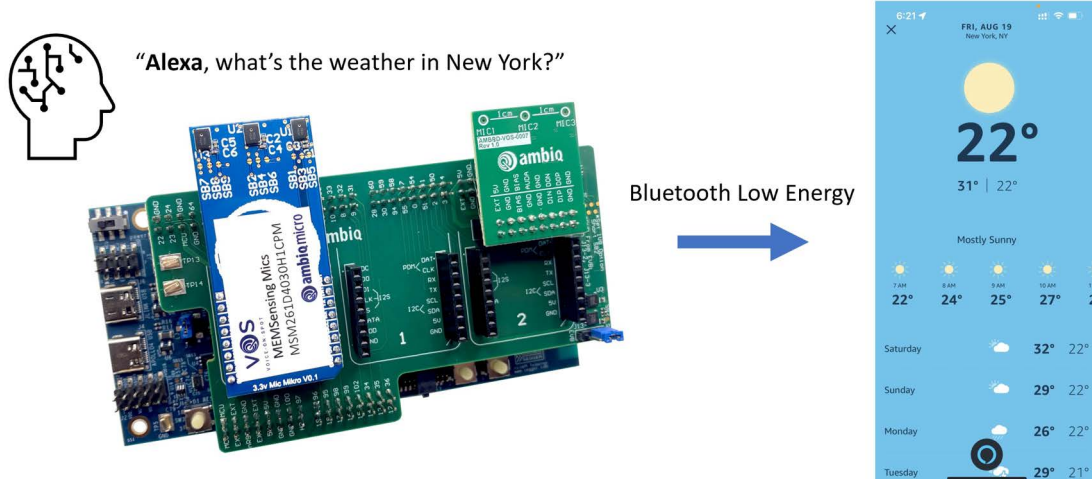
Figure 2-1: Lite Version Demo

## 2.2 Always-on Listening (Wake Word Detection) with Sensory TrulyHandsfree (THF) Engine

Use the following to try the always-on listening (wake word detection) Sensory THF engine demo:

> **NOTE:** In order to support wake word detection, you must have the Sensory THF add-on package.

1. Extract and overwrite files to the VoS SDK root folder.

2. Build **vos_ble_thf** example:

   `/boards/apollo4p_blue_xxx_evb/examples/vos/vos_ble_thf`

3. Make sure the default setting is for DMIC (Slot 0).
4. Download binary to Apollo4 Blue Plus EVB using Segger J-Flash Lite or download from IDEs (e.g., IAR, Keil).
5. Reset and connect with Alexa app (e.g., iOS, Android).
6. Open the Alexa app, select **Device**, **Add Device**, then select **Headphones**.
7. Connect to **VoS-xxx-AMA-xxx**.
8. Ask a question or command (e.g., "**Alexa**, what's the weather in New York?")

Figure 2-2: Always-on Listening (Wake Word Detection) - Sensory THF Engine



For more detailed information on and configuration of the AmbiqVoS SDK, refer to the *Apollo4 Family Voice-on-SPOT User's Guide*.

**ambiq**

A-SOCAP4-QSGA01EN v1.1
March 2023