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Additional Documentation

Located in the “/ZLK38AVS/docs” directory on the Raspberry Pi 3 after installation is completed:

- Microsemi_ZLK38AVS_Quickstart.pdf: This Quickstart card
- Microsemi_ZLK38AVS_ProductBrief.pdf: Kit product brief
- Microsemi_ZL38063_ProductBrief.pdf: Microphone Array ASR-assist Audio Processor description
- Microsemi_ZLK38AVS_User_Guide.pdf: Detailed installation steps including creating an Amazon developer account

Support

To learn more about Microsemi and its development kit, visit:

<https://www.microsemi.com/products/audio-processing/audio-processing-partners>

To learn more about Amazon Alexa Voice Service and access the Amazon AVS API reference guide, visit:

<https://developer.amazon.com/alexa-voice-service/>

Microsemi sales offices, including representatives and distributors, are located worldwide.

To find your local representative, go to <http://www.microsemi.com/salescontacts>.

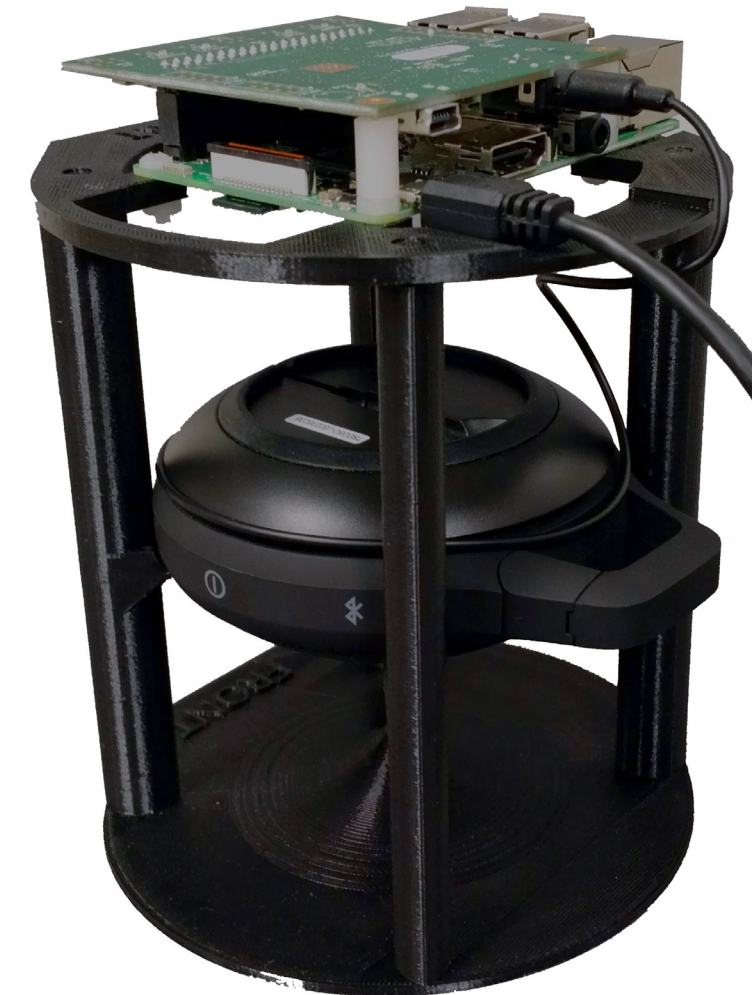
Microsemi AcuEdge™ Development Kit for Amazon AVS ZLK38AVS Quickstart Card

Kit Contents

Quantity	Description
1	ZLE38AVS board
1	Pillar (plastic stand) and hardware assembly
1	This quickstart card

This kit requires additional hardware (not included)

Quantity	Description
1	Raspberry Pi 3 with SD Card (≥8GB) and 5V/2A or greater power supply with Micro-USB cable
1	JBL Clip Portable speaker



Overview

Microsemi AcuEdge™ Development Kit for Amazon AVS is engineered to help you evaluate voice-enabled front-end audio systems for your Alexa-enabled products. This kit features Microsemi's ZL38063 voice processor powered by Microsemi's proprietary AcuEdge™ technology for front-end audio clean-up and Sensory's TrulyHandsFree™ “Alexa” wake-word engine. A two microphone configuration allows you to test applications with 180° or 360° audio pick-up.

Setup Instructions

1. Install the latest Raspbian image on the Raspberry Pi 3

Notes: The following installation was tested with Raspbian Jessie (kernel 4.4.50).
A VNC connection to the Pi is optional but recommended to limit the number of wires.

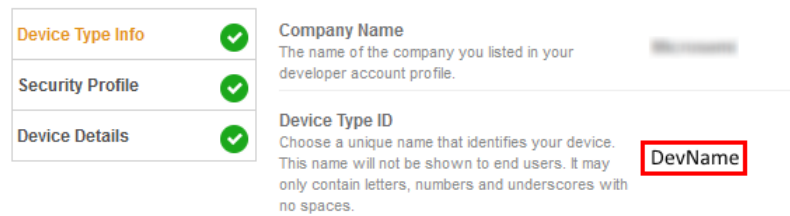
2. Assemble the kit

- The 3.5mm jack from the speaker should be plugged into the ZLE38AVS board. Set the speaker to maximum volume.
- The 5V USB power should be plugged to the Raspberry Pi's Micro-USB port. This will back-power the ZLE38AVS board. A 2A power supply is recommended.
- Additional cables may be needed to connect to the Raspberry Pi (Ethernet if not using Wi-Fi, HDMI and peripherals if not using VNC)

3. Create or log in to an Amazon developer account: <http://developer.amazon.com>

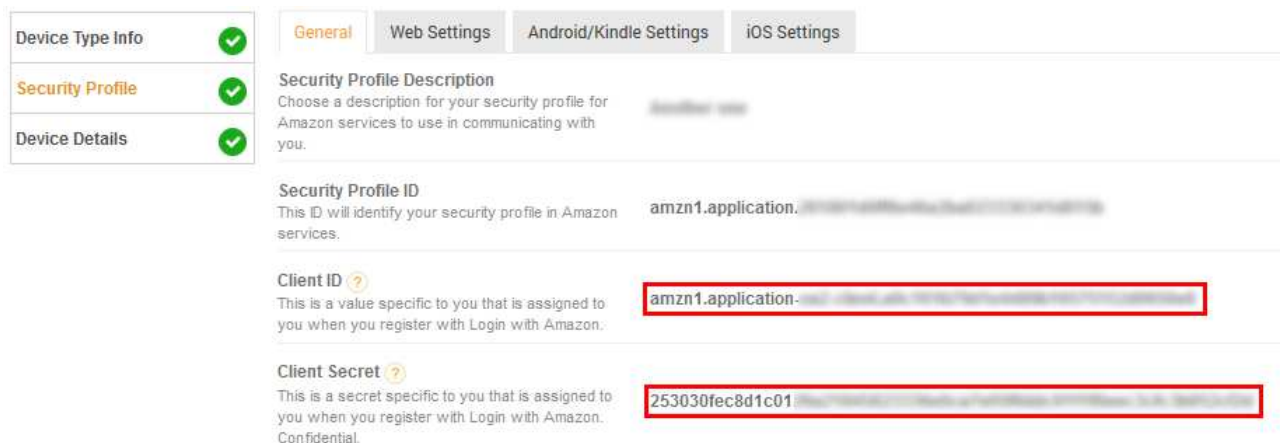
During software installation, you will be requested to enter data from the Amazon developer account, so please make note of the following:

- Device ID (labeled Device Type ID below):



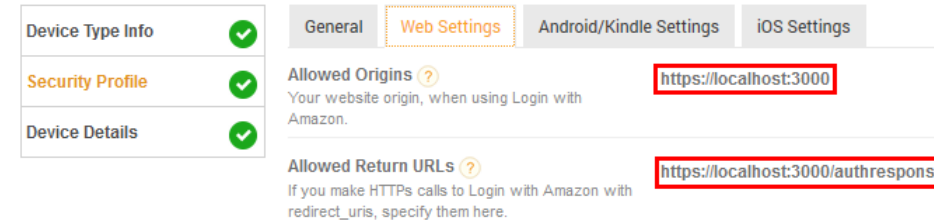
The screenshot shows the 'Device Type Info' section of the Amazon Developer console. The 'Device Type ID' field is highlighted with a red box and contains the text 'DevName'. The field description states: 'Choose a unique name that identifies your device. This name will not be shown to end users. It may only contain letters, numbers and underscores with no spaces.'

- Client ID and Client Secret



The screenshot shows the 'Web Settings' tab of the Amazon Developer console. The 'Client ID' and 'Client Secret' fields are highlighted with red boxes. The Client ID is 'amzn1.application-...' and the Client Secret is '253030fec8d1c01'. The Client Secret field is marked as 'Confidential'.

Ensure that the following URLs are correct:



The screenshot shows the 'Web Settings' tab of the Amazon Developer console. The 'Allowed Origins' field is highlighted with a red box and contains 'https://localhost:3000'. The 'Allowed Return URLs' field is also highlighted with a red box and contains 'https://localhost:3000/authresponse'.

Software Installation

- Open a console on the Raspberry Pi.
- Clone the Microsemi ZLK38AVS GitHub repository on the Raspberry Pi:
`git clone https://github.com/MicrosemiVoiceProcessing/ZLK38AVS`
- CD into the above created folder and start the installation process:
`make all`

Notes: The installation process will automatically download the requested package and compile them. Depending on your Internet speed, the installation may take from 30 minutes to an hour.

At some points during the installation, you will be asked to enter the Amazon Device ID, Client ID, and Client Secret described in Step 3 of the Setup Instructions and answer additional questions.

- Once the installation is complete, restart the Raspberry Pi.

Alexa Service Startup

- Open a console on the Raspberry Pi.
- CD into the ZLK38AVS directory created during software installation and start the Alexa service:
`make start_alex`

Note: Three terminal windows and an Alexa GUI will start.

- A pop-up window will eventually prompt you to open a web browser in order to log into your Amazon developer account. The web browser might tell you “Your connection is not private”, select Advanced and Proceed. Log in, then when the web page displays “device tokens ready”, close the web browser and click OK.
- Alexa is now ready, try speaking: “Alexa, what time is it?”