Advantech AIMB-788
Getting Started Guide for AWS IoT Greengrass

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1 Document information

1.1 Document revision history

Date	Version	Description
2023/4/14	0.8	Initial draft
2023/4/18	1.0	Revision
2023/4/24	1.1	Revision

1.2 Applicable operating systems for this guide

This guide is applied to the AIMB-788 motherboard with an Intel processor and an operating system to run AWS Greengrass.

2 Overview

Advantech's AIMB-788 motherboard is an Intel® Q670E board for industrial applications that require high-performance computing. The motherboard supports 12th/13th generation Intel® Core™ i9/i7/i5/i3 processors and DDR4 3200 memory up to 128 GB. AIMB-788 delivers cost-effective integrated graphics with 1 GB max shared memory when installed with 2 GB or more system memory.

AIMB-788 is equipped with one PCIe x16, one PCIe x8, three PCIe x4, and two PCI slots. Its triple display interfaces allow users to simultaneously connect monitors to the onboard DP, HDMI, and VGA ports. In addition, AIMB-788 provides dual Gigabit

Ethernet LAN via dedicated PCIe x1 bus. This offers up to 500 MB/s bandwidth and eliminates network bottlenecks.
By using the Intel® Q670E chipset, the AIMB-788 offers a variety of features such as M.2 2280 M-key socket (PCIe Gen 3 x4 bandwidth), four onboard SATA 3.0 interfaces (bandwidth = 600 MB/s) with software RAID (0, 1, 5, 10), two USB 3.2 Gen 2 ports, four USB 3.2 Gen 1 port, eight USB 2.0 ports, and HD Audio.
Advantech's AIMB-788 also adopts Advantech WISE-iBMC out-of-band management solution for remote power control, boot-up sequence change, BIOS POST code status, and one-key system recovery via NIC port, LAN2, while OS is abnormal.

3 Hardware description

3.1 Datasheet

AIMB-788 Datasheet (advantech.com)

3.2 Standard kit contents

- 1 x AIMB-788 motherboard
- 1 x AIMB-788 startup manual
- 2 x Serial ATA HDD data cables
- 1 x I/O port bracket

For more details, please visit: AIMB-788 - LGA1700 12th Generation Intel® Core™ i9/i7/i5/i3 ATX Motherboard with DP/HDMI/VGA, DDR4, USB 3.2, M.2 - Advantech

4 Set up device hardware

Please refer to the AIMB-788 User Manual from the link below:
AIMB-788_User_Manual_Ed.1 .pdf (advantech.com)

5 About AWS IoT Greengrass

To learn more about AWS IoT Greengrass, see How AWS IoT Greengrass works and What's new in AWS IoT Greengrass Version 2.

6 Greengrass prerequisites

Refer to the online documentation detailing the Prerequisites needed for AWS IoT Greengrass. Follow the instructions in the following sections:

Step 1: Set up an AWS account
Step 2: Set up your environment

7 Install AWS IoT Greengrass

Follow the online guide to *Install with automatic provisioning*. Refer to the instructions in the following steps:

- Set up the device environment
- Provide AWS credentials to the device. You can use the option "Use long-term credentials from an IAM User" for development environments. An example of how to do this is shown below:

```
export AWS_ACCESS_KEY_ID=<the access key id for your user>
export AWS_SECRET_ACCESS_KEY=<the secret access key for your user>
```

- Download the AWS IoT Greengrass Core software
- Install the AWS IoT Greengrass Core software

8 Create a “Hello World” component

8.1 Create the component on your edge device

Follow the instructions online under the section Develop and test a component on your device to create a simple component on your device.

8.2 Upload the “Hello World” component

Follow the instructions online at Create your component in the AWS IoT Greengrass service to upload your component to the cloud, where it can be deployed to other devices as needed.

8.3 Deploy your component

Follow the instructions online at Deploy your component to deploy and verify that your component is running.

9 Troubleshooting

For more information, refer to the online documentation *Troubleshooting Greengrass v2*.