EAI-I500
Getting Started Guide for AWS IoT Greengrass

Table of Contents

1   Document information

1.1   Document revision history

Version	Date	Description
1.0	2025-07-31	Initial release

1.2   Applicable operating systems for this guide

- **Device OS:** Ubuntu 22.04 LTS
- **Host OS**: Ubuntu 22.04 LTS (for development)

2   Overview

The EAI-I500 is an AI inference system designed for retail applications. Built with Intel® Core™ Ultra processors (Meteor Lake-H/U), it provides efficient AI processing capabilities with support for Hailo-8™ AI Accelerator. This guide provides instructions to set up AWS IoT Greengrass V2 on the EAI-I500 device.

3   Hardware description

3.1   Datasheet

For detailed specifications, visit: www.lannerinc.com/products/edge-ai-appliances/eai-i500

3.2   Standard kit contents

- 1x EAI-I500 AI Inference System
- 1x 4-Pin Terminal Block
- 1x Adapter 120W 24V
- 1x 2-Pin Terminal Block for Power

3.3   User provided items

- Ethernet cable
- Monitor and DP cable (for initial setup)
- USB keyboard (for initial setup)

3.4   3rd party purchasable items

- LTE/5G module (optional)
- Wi-Fi 6/6E module (optional)
- SIM card (for cellular connectivity)
- DDR5 SODIMM memory modules

3.5   Additional hardware references

For more information about the EAI-I500 hardware, please visit:

- Lanner Electronics Support
- EAI-I500 User Manual

4   Set up your development environment

4.1   Tools installation (IDEs, Toolchains, SDKs)

The EAI-I500 supports both Ubuntu and Windows. For AWS IoT Greengrass deployment, Ubuntu is recommended. No additional development environment setup is required for basic Greengrass deployment.

For custom development, refer to the EAI-I500 User Manual.

5 Set up device hardware

5.1 Hardware Setup Overview

- Connect 24V DC power to the 2-pin terminal block
- Connect Ethernet cable to one of the LAN ports
- Connect monitor via DisplayPort and USB keyboard (for initial setup)

5.2 Front Panel Components

- **USB Ports**: 1x USB 2.0, 1x USB 3.0, 2x USB 3.2 Type-A
- **Power Button**: System power on/off
- **Reset Button**: System reset
- **Remote Power Switch:** 2-pin terminal block for remote control
- **Status LEDs**: Power and system status indicators

5.3 Rear Panel Components

- **Ethernet Ports:** 3x 2.5GbE RJ45 (LAN 1/2/3), 1x 1GbE RJ45 (LAN 4)
- **Serial Ports:** 2x DB9 RS232/422/485 (Console only supported on COM1)
- **Display Ports:** 2x DP 1.2
- **Digital I/O:** 4x DI and 4x DO
- **Audio:** Mic-in and Line-out jacks
- **Power Input:** 2-pin terminal block for 24V DC
- **SIM Slots:** 1x Nano-SIM, 1x eSIM

5.4 Initial Hardware Setup

1. **Connect Power**:

   o Connect the included 120W 24V DC adapter to the 2-pin terminal block
   o Ensure proper polarity (marked on the device)

2. **Network Connection**:

   o Connect an Ethernet cable to any of the four LAN ports
   o LAN 1/2/3 support 2.5GbE, LAN 4 supports 1GbE

3. **Console Access** (for debugging):

   o Connect a monitor via DisplayPort
   o Connect a USB keyboard

4. **Optional Modules Installation**:

- o   For Wi-Fi 6/6E: Install module in M.2 2230 E-Key slot
- o   For LTE/5G: Install module in M.2 3042/3052 B-Key slot
- o   Install appropriate antennas in the antenna holes

5.5   LED Indicators

LED	Color	Status	Description
Power	Green	On	System powered on
Power	Off	Off	System powered off
Status	Various	On/Blinking	System operational status

6   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.

7   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

7.1   Build a Linux image with AWS IoT Greengrass prerequisites

Install Java 11 on the EAI-I500:

```bash
sudo apt update

sudo apt install -y default-jdk
```

8   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. For development environments, you can use the option "Use long-term credentials from an IAM User". 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](#)

9   Create a "Hello World" component

9.1   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.

9.2   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.

9.3   Deploy your component

Follow the instructions online at [Deploy your component](#) to deploy and verify that your component is running.

10 Troubleshooting

10.1 GPU Access for Greengrass Components

To enable GPU access for Greengrass components on the Jetson platform:

```bash
# Add ggc_user to video group
sudo usermod -aG video ggc_user
# Restart Greengrass service
sudo systemctl restart greengrass.service
```

10.2 Check Greengrass Service Status

```bash
sudo systemctl status greengrass.service
```

10.3 View Greengrass Logs

```bash
sudo journalctl -u greengrass.service -f
```

If you have any questions, please contact us at support@lannerinc.com.

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