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Release Date: 4/18/2023

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Document Revision History

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>4/18/2023</td>
<td>1.0</td>
<td>Initial release.</td>
</tr>
</tbody>
</table>
Contents

1 Overview ............................................................................................................................................... 5

2 Hardware Description .......................................................................................................................... 5
   2.1 Data Sheet .................................................................................................................................. 5
   2.2 Standard Kit Contents ........................................................................................................... 5
   2.3 User Provided Items ............................................................................................................... 5
   2.4 3rd Party Purchasable Items .................................................................................................. 6
   2.5 Additional Hardware References .......................................................................................... 6

3 Setting up your Development Environment .......................................................................................... 6
   3.1 Installation Tools .................................................................................................................... 6
   3.2 Other Software Required to Develop and Debug Applications for the Device .............. 6
   3.3 Other Prerequisites ............................................................................................................. 6
   3.4 Additional Software References .......................................................................................... 6

4 Setting Up your Hardware ..................................................................................................................... 7
   4.1 Accessing the System ........................................................................................................... 11
   4.2 Removing the Bottom Cover ............................................................................................. 11
   4.3 Installing Memory ................................................................................................................ 12
      SO-DIMM Installation ...................................................................................................................... 12
      SO-DIMM Removal ...................................................................................................................... 12

5 Solid State Storage ............................................................................................................................ 13
   Installing an M.2 Card .................................................................................................................... 14

6 Driver Installation ............................................................................................................................. 14

7 Setting up your AWS Account and Permissions ................................................................................... 15

8 Create Resources in AWS IoT ........................................................................................................... 15

9 Provisioning the Device with Credentials ......................................................................................... 15

10 Building and Running the Demo ....................................................................................................... 15

11 Debugging and Troubleshooting .................................................................................................... 15

Contacting Supermicro ......................................................................................................................... 17
1 Overview
The Supermicro SuperServer E100-12T is a compact edge server comprised of the CSE-E101 chassis and the X12STN-H-WOHS motherboard with Intel® Core™ i7-1185GRE processors to support a wide range of performance requirements and use-cases.

It is specifically suited for applications such as IoT Edge computing, IoT gateway, Smart Building, machine automation, digital signage, and medical/healthcare.

2 Hardware Description

2.1 Data Sheet
Datasheet link:

E100-12T-H | IoT | Products | Super Micro Computer, Inc.

Quick Start Guide:


2.2 Standard Kit Contents
Unit consists of the SYS-E100-12T-H (a single-piece device, motherboard with CPU/chassis are assembled).

The AC Power adapter MCP-250-10137-0N with AC cable is also included.

It is recommended to order the system with DRAM and SSD pre-installed.

For purchase requests, please follow the web link and click “Get pricing”


2.3 User Provided Items
- Keyboard, mouse, monitor and related cable (HMDI, USB-A or USB-C)
- Network connection via RJ45 ethernet cable

If not pre-installed, the user also needs to provide and install DRAM and SSD storage (please refer the datasheet and quick start guide for tested material lists).

2.4 3rd Party Purchasable Items
N/A

2.5 Additional Hardware References

3 Setting up your Development Environment

3.1 Installation Tools
1. AWS SDK
   The AWS SDK helps take the complexity out of coding by providing APIs for many AWS services including AWS IoT Core. All AWS SDKs are enabled for IoT Core. The single, downloadable package includes the code library, code samples, and documentation.

2. AWS IoT Device SDK
   The AWS IoT Device SDK helps you to easily and quickly connect your hardware device or your mobile device to AWS IoT Core. It offers enhanced features so that you can seamlessly interact with the device gateway and the device shadow that will enable you to quick start your development. The Device SDK supports a variety types of devices, from basic to industrial hardware devices.

3. The AWS IoT Device Client is a free, open-source, and modular device-side reference implementation. It allows you to easily connect your devices to AWS IoT Core, and access AWS IoT Device Management and AWS IoT Device Defender features by default. It is written in C++ and can be compiled and installed on Embedded Linux-based IoT devices.

4. To get started on your device, download the AWS IoT Device Client source code from GitHub and learn more using the readme.

3.2 Other Software Required to Develop and Debug Applications for the Device
N/A

3.3 Other Prerequisites
N/A

3.4 Additional Software References
N/A
4 Setting Up your Hardware


Front View

![Front View of SYS-E100-12T-H](image)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna</td>
<td>WiFi antenna</td>
</tr>
<tr>
<td>LAN Ports</td>
<td>2.5GbE LAN ports (Intel I225-IT)</td>
</tr>
<tr>
<td>HDMI Ports</td>
<td>Left port: HDMI 2.0b (4K60Hz), Right port: HDMI 1.4b</td>
</tr>
<tr>
<td>USB Ports</td>
<td>USB 3.2 ports, lower left port is USB C port</td>
</tr>
<tr>
<td>Power Button</td>
<td>System on/off button</td>
</tr>
<tr>
<td>Power LED</td>
<td>Indicates power is being supplied to the system</td>
</tr>
<tr>
<td>HDD LED</td>
<td>Indicates data is being written to the storage drives.</td>
</tr>
</tbody>
</table>
**Rear View**

![Rear View Diagram]

**Figure 1-2. Rear View**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12VDC Input</td>
<td>Power input for system</td>
</tr>
<tr>
<td>GPIO Port</td>
<td>General Purpose Digital Input/Output port</td>
</tr>
<tr>
<td>USB Ports</td>
<td>USB 2.0 ports</td>
</tr>
<tr>
<td>Mic-In</td>
<td>Microphone jack (optional)</td>
</tr>
<tr>
<td>Line-Out</td>
<td>Line out jack for audio (optional)</td>
</tr>
</tbody>
</table>
### Quick Reference Table

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Description</th>
<th>Default Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>JLCDPWR1</td>
<td>LVDS Panel VCC Power Source Selection</td>
<td>Pins 1-3 (3.3V)</td>
</tr>
<tr>
<td>JPME2</td>
<td>CMOS</td>
<td>Pins 1-3</td>
</tr>
<tr>
<td>JPME2</td>
<td>Manufacturing Mode</td>
<td>Pins 4-6 (Normal)</td>
</tr>
<tr>
<td>JPT1</td>
<td>TPM Enable</td>
<td>Pins 1-3 (Enable)</td>
</tr>
<tr>
<td>JPT1</td>
<td>Force Power On</td>
<td>Pins 2-4 (Force power on)</td>
</tr>
<tr>
<td>JSIM1_OPT</td>
<td>SIM Detect Option</td>
<td>Pins 2-4 (Normal)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LED</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED1</td>
<td>Onboard Power LED</td>
<td>Green: System On</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Off: System Off (power cable not connected)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIO FP</td>
<td>Front Panel Audio Header (Mic-In/Line-Out)</td>
</tr>
<tr>
<td>BT1</td>
<td>Battery Connector</td>
</tr>
<tr>
<td>FAN1</td>
<td>System Fan Header</td>
</tr>
<tr>
<td>I-SATA0</td>
<td>SATA 3.0 Port</td>
</tr>
<tr>
<td>JCOM1: COM1/COM2</td>
<td>COM Header (two RS232/RS422/RS485 ports)</td>
</tr>
<tr>
<td>JCOM2: COM3/COM4</td>
<td>COM Header (two RS232 ports)</td>
</tr>
<tr>
<td>JF1</td>
<td>Front Control Panel Header (Power/HDD LED, Reset, Power button)</td>
</tr>
<tr>
<td>JGP1</td>
<td>8-bit General Purpose I/O Header</td>
</tr>
<tr>
<td>JHDMI1</td>
<td>Back Panel HDMI 2.0b Port</td>
</tr>
<tr>
<td>JHDMI2</td>
<td>Back Panel HDMI 1.4b Port</td>
</tr>
<tr>
<td>JMD1</td>
<td>M.2 Slot B-Key 2280/2242/3042 (SATA 3.0 or PCIe / USB 3.1 /USB 2.0)</td>
</tr>
<tr>
<td>JMD2</td>
<td>M.2 Slot E-Key 2230 (PCIe / USB 2.0 / CVNi)</td>
</tr>
<tr>
<td>JMD3</td>
<td>M.2 Slot M-Key 2280/2242 (Gen4 PCIe x4)</td>
</tr>
<tr>
<td>JPH1</td>
<td>4-pin HDD Power Connector</td>
</tr>
<tr>
<td>JPW1</td>
<td>8-pin 12-24V Power Connector</td>
</tr>
<tr>
<td>JSIM1</td>
<td>JSIM1 Nano SIM Card Slot (bottom side)</td>
</tr>
<tr>
<td>JSMBUS1</td>
<td>System Management Bus Header</td>
</tr>
<tr>
<td>JSPKR1</td>
<td>Audio Speaker Output with 3W Amplifier</td>
</tr>
<tr>
<td>LAN1, LAN2</td>
<td>2.5 GbE Ethernet Ports</td>
</tr>
<tr>
<td>LVDS1</td>
<td>Dual Channel 48-bit LVDS Connector</td>
</tr>
<tr>
<td>SRW1 ~ SRW5</td>
<td>M.2 Mounting Holes</td>
</tr>
<tr>
<td>USB0/1</td>
<td>Front Accessible USB 2.0 Headers</td>
</tr>
<tr>
<td>USB2/3</td>
<td>Front Accessible USB 2.0 Headers</td>
</tr>
<tr>
<td>USB5</td>
<td>Front Panel USB 3.1 Type C Port (supports DP1.4a with alt. mode)</td>
</tr>
<tr>
<td>USB4/6/7</td>
<td>Front Panel USB 3.1 Type A Ports</td>
</tr>
</tbody>
</table>
4.1 Accessing the System
The CSE-E101-03 features a removable bottom cover to access the inside of the chassis.

4.2 Removing the Bottom Cover
1. Remove power from the system.
2. Remove the eight screws that hold the cover in place.
3. Lift the cover up and off the chassis.

Caution: Except for short periods of time, do not operate the server without the cover in place. The chassis cover must be in place to prevent misuse.
4.3 Installing Memory

Caution: Exercise extreme care when installing or removing DIMM modules to prevent damage.

SO-DIMM Installation
1. Remove the bottom cover as described in the previous section.
2. Position the SO-DIMM module’s bottom key so it aligns with the receptive point on the slot.
3. Insert the SO-DIMM module vertically at about a 45 degree angle. Press down until the module locks into place.

SO-DIMM Removal
1. Push the side clips at the end of the slot to release the SO-DIMM module.
2. Pull the SO-DIMM module up to remove it from the slot.
5 Solid State Storage

This motherboard supports internally mounted solid state storage cards by means of three M.2 slots. When an M.2 NVMe storage card is installed, an accompanying heatsink (optional) must also be installed to prevent the card from overheating.
Installing an M.2 Card

1. Gently insert the M.2 card into the connector.
2. Use a screw to secure the M.2 card to the standoff.

6 Driver Installation

The Supermicro website contains drivers and utilities for your system at:

https://www.supermicro.com/wdl/driver/

Some of these must be installed, such as the chipset driver.

After accessing the website, go to https://www.supermicro.com/wdl/CDR_Images/ and locate the ISO file for your motherboard. Download this file to a USB flash drive or a DVD. (You may also use a utility to extract the ISO file if preferred.)

Another option is to go to the Supermicro website at http://www.supermicro.com/products/. Find the product page for your motherboard, and "Download the Latest Drivers and Utilities".

Insert the flash drive or disk and the screenshot shown below should appear.

![Driver Installation Screenshot](image)

**Note:** Click the icons showing a hand writing on paper to view the readme files for each item. Click the computer icons to the right of these items to install each item (from top to the bottom) one at a time. After installing each item, you must re-boot the system before moving on to the next item on the list. The bottom icon with a CD on it allows you to view the entire contents.
7 Setting up your AWS Account and Permissions

Refer to the online AWS documentation at Set up your AWS Account. Follow the steps outlined in the sections below to create your account and a user and get started:

- Sign up for an AWS account
- Create a user and grant permissions
- Open the AWS IoT console

Pay special attention to the Notes.

8 Create Resources in AWS IoT

Refer to the online AWS documentation at Create AWS IoT Resources. Follow the steps outlined in these sections to provision resources for your device:

- Create an AWS IoT Policy
- Create a thing object

Pay special attention to the Notes.

9 Provisioning the Device with Credentials

All the required credentials for the device are created after the previous step. You will need to save the certificates and keys files in your device, and they will be used afterwards to connect to AWS IoT Core.

10 Building and Running the Demo

To test device connectivity to AWS IoT Core, please follow the steps outlined here

Use your Windows or Linux PC or Mac as an AWS IoT device - AWS IoT Core (amazon.com).

11 Debugging and Troubleshooting

Please refer to the user manual and FAQ section for your product using the links below

User Manual

FAQ

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