

AAEON

EC I2C SMBus

Linux Driver User Guide

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Public	V

13/08, 2025
Version V1.9

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Revision History

Revision Number	Description	Revision Date
V1.9	<ol style="list-style-type: none">1. Verified on Ubuntu 24.04.2/6.11.0-17-generic2. Fix some issues to support Ubuntu 24.04.2	2025/08/13
V1.8	<ol style="list-style-type: none">1. Support Ubuntu 23.10.12. Not supported on Ubuntu with the kernel version below 6.0.	2023/12/05
V1.7	Add known issue	2022/7/13
V1.6	Support Ubuntu 21.04.0	2021/05/19
V1.5	Add setup environment step for CentOS 7.0	2020/06/17
V1.4	Add setup environment step for Debian 8.11	2020/04/06
V1.3	Add setup environment step for Scientific Linux 7.6	2020/02/11
V1.2	Add setup environment step for Ubuntu 18.04.2	2020/01/20
V1.1	Add setup environment step for Debian 9.8	2019/07/22
V1.0	Initial Release	2019/06/27

Chapter 1. Install Operating System (64-bit)

Supported Linux Version

- Ubuntu 24.04.2, Kernel: 6.11.0-17-generic, or above.

Check OS version

```
$ lsb_release -a
```

```
$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:   Ubuntu 24.04.2
Release:      24.04
Codename:     noble
```

Check OS kernel version

```
$ uname -r
```

```
$ uname -r
6.11.0-17-generic
```

Install required packages

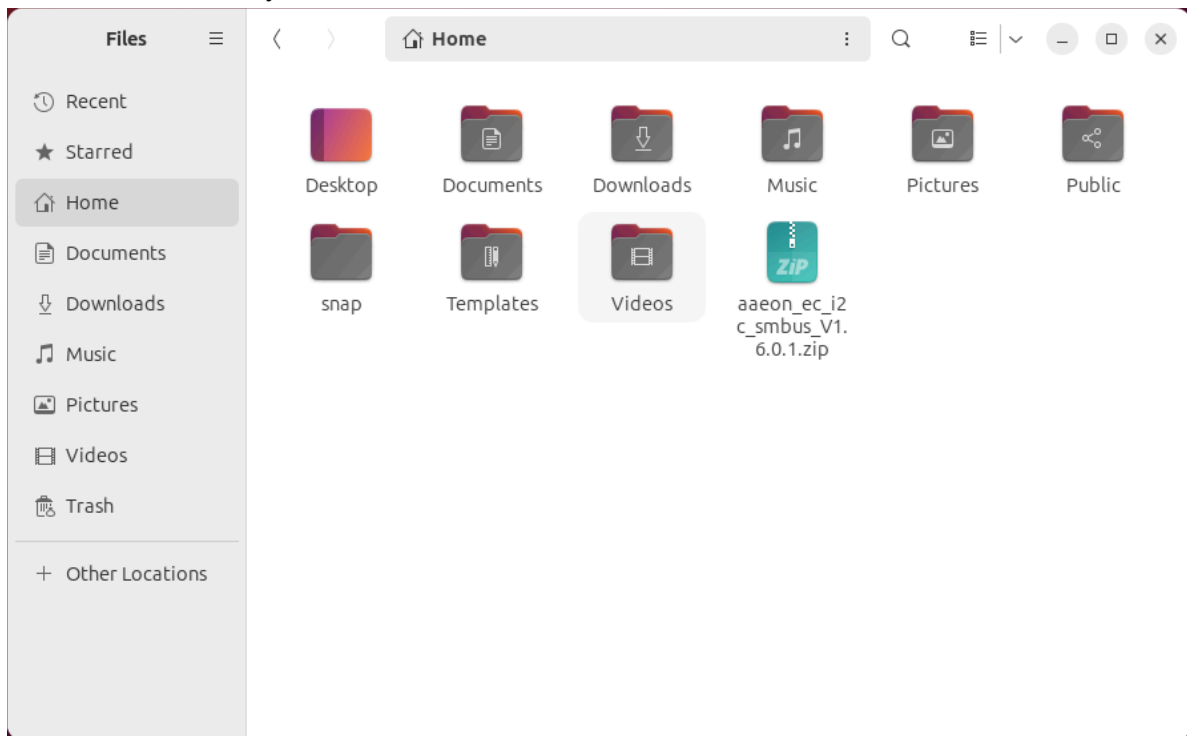
```
$ sudo apt update
```

```
$ sudo apt install -y make gcc zstd
```

```
$ sudo apt install -y make gcc zstd
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
 gcc-multilib autoconf automake libtool flex bison gcc-doc make-doc
The following NEW packages will be installed:
 gcc make zstd
0 upgraded, 3 newly installed, 0 to remove and 48 not upgraded.
Need to get 201 kB of archives.
After this operation, 534 kB of additional disk space will be used.
```

Chapter 2. Install EC I2C SMBus Driver

Please download the driver package file “`aaeon_ec_i2c_smbus_V1.6.0.2.zip`” to the current user’s home directory.



Open a command prompt terminal window.

Unpack the .zip file:

```
$ unzip aaeon_ec_i2c_smbus_V1.6.0.2.zip
Archive: aaeon_ec_i2c_smbus_V1.6.0.2.zip
  creating: aaeon_ec_i2c_smbus_V1.6.0.2/
 inflating: aaeon_ec_i2c_smbus_V1.6.0.2/AAEON I2C Linux Driver Release Notes.pdf
  creating: aaeon_ec_i2c_smbus_V1.6.0.2/driver/
 inflating: aaeon_ec_i2c_smbus_V1.6.0.2/driver/i2c-dev.h inflating:
 aaeon_ec_i2c_smbus_V1.6.0.2/driver/i2c.h inflating:
 aaeon_ec_i2c_smbus_V1.6.0.2/driver/Makefile inflating:
 aaeon_ec_i2c_smbus_V1.6.0.2/driver/sbshc.c inflating:
 aaeon_ec_i2c_smbus_V1.6.0.2/driver/sbshc.h inflating:
 aaeon_ec_i2c_smbus_V1.6.0.2/EC I2C SMBus Driver User Guide.pdf inflating:
 aaeon_ec_i2c_smbus_V1.6.0.2/install.sh inflating:
 aaeon_ec_i2c_smbus_V1.6.0.2/Makefile
```

Go to the `aaeon_ec_i2c_smbus_<version>` directory:

```
$ cd aaeon_ec_i2c_smbus_V1.6.0.2/
```

Quick Install

1. Execute the script `install.sh` to install ec i2c device driver

```
$ chmod +x ./install.sh
$ sudo ./install.sh
```

```
$ chmod +x install.sh
$ sudo ./install.sh
-----
Install AAEON ACPI EC SMBus Driver.
-----
Build the module
Driver Name: sbshc
Check old driver and unload it.
rmmod sbshc
Update driver.
Completed.
System will be reboot after 5 seconds...
```

Chapter 3. I2C tool

Install i2c-tools

Get the EC I2C index via i2c-tools

```
$ sudo apt-get install i2c-tools  
$ sudo i2cdetect -l
```

The following example shows the SMBus EC adapter ACPI SMBus HC is i2c-1. The I2C bus number may be different in other platforms.

```
$ sudo i2cdetect -l  
i2c-3  i2c    i915 gmbus dpc      I2C adapter  
i2c-1  smbus  SMBus EC adapter ACPI SMBus HC      SMBus adapter  
i2c-8  i2c    Synopsys DesignWare I2C adapter I2C adapter  
i2c-6  i2c    DPDDC-B      I2C adapter  
i2c-4  i2c    i915 gmbus misc    I2C adapter  
i2c-2  i2c    i915 gmbus dpb     I2C adapter  
i2c-0  smbus  SMBus I801 adapter at f040 SMBus adapter  
i2c-9  i2c    Synopsys DesignWare I2C adapter I2C adapter  
i2c-7  i2c    Synopsys DesignWare I2C adapter I2C adapter  
i2c-5  i2c    DPDDC-A      I2C adapter
```

Test Write/Read function

Use `i2cset` and `i2cget` to test the write/read function.

Usage of `i2cset`:

```
i2cset -y <I2C bus number> <slave address> <offset> <value>
```

Usage of `i2cget`:

```
i2cget -y <I2C bus number> <slave address> <offset>
```

In the following example, I2C bus is 1.

Set 0xee to Bus:1 slave address:0x68 offset:0x08

```
$ sudo i2cset -y 1 0x68 0x08 0xee
```

Get from Bus:1 slave address:0x68 offset:0x08

```
$ sudo i2cget -y 1 0x68 0x08
```

```
$ sudo i2cset -y 1 0x68 0x08 0xee
$ sudo i2cget -y 1 0x68 0x08
0xee
```