



CUnet (MKY43) USB Unit

CU-43USB

Product Manual

Introduction

Thank you for purchasing StepTechnica product.

- Please check the bundled items.

This product consists of the following contents. Please be sure to check before you use.


If you discover damaged or missing items, contact your retailer.


- USB terminal (CU-43USB) 1
- CU-43USB Annex Guide 1
- MicroUSB cable 1


- Safety precautions

For safe use of this product, please be sure to observe the content that is described in this document.

This document provides safety information using the following symbols to prevent accidents resulting in injury or death and the destruction of equipment and resources. These are serious matters related to safety. Understand the meanings to operate the equipment safely.

| | |
|--|--|
|  DANGER | DANGER indicates an imminently hazardous situation which, if not avoided, may result in death or serious injury. |
| Do not use the product where it is exposed to flammable or corrosive gas. Doing so may result in an explosion, fire, electric shock, or failure. | |

| | |
|--|---|
|  CAUTION | WARNING indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury. |
| Installation and connection of this product must be done by engineer with electrical knowledge. | |
| Before installation and replacement, always turn off the power of this product. If not, it can cause fires and electric shock. | |
| Please use this product in a range of specifications and conditions stipulated in this document. If not, it can cause fires and electric shock. | |
| Please do not use this product in an area where water and chemicals may contact. It can cause fires and electric shock. | |
| If an error occurs, please immediately turn off the power. After removing the cause, please power on again. If not, it can cause fires and electric shock. | |
| This product is not designed for use in critical applications, such as life support (Nuclear and radiation related equipment, railway equipment, aviation equipment, marine equipment, medical equipment etc) systems. | |

| | |
|--|--|
|  WARNING | CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage. |
| Do not strike or bend this product. It can cause malfunction, overheat, failure or breakage. | |
| Do not touch the terminal contacts of connectors with your hands. It can cause malfunction, overheat or failure. | |
| If the terminal contacts are accidentally touched, clean the contacts with industrial alcohol. | |
| Make sure that your PC can supply ample power to this product. Insufficiently energized products could cause malfunction, overheat, or failure. | |
| The specifications of this product are subject to change without prior notice for enhancement and quality improvement. | |
| Please do not attempt to disassemble, repair and modify this product. We assume no responsibility for the losses, damages or problems resulting from any attempt to do so. | |
| Regardless of the foregoing statements, StepTechnica is not liable for any damages whatsoever (including damages for loss of business profits) arising out of the use or inability to use this product including software. | |

- Related manuals

For the use of this product, also refer to the following documents in which describe CUnet communication.
For software development, please refer to the CU-43USB Software Manual.

- CUnet Introduction Guide
- CUnet Technical Guide
- Let's Try CUnet
- MKY43 User's Manual

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Revision History

| Date | Version | Content | Note |
|----------|---------|----------------------------------|------|
| AUG 2018 | 1.0E | Issued the first edition | |
| APR 2020 | 1.1E | Added Windows 10 as supported OS | |
| | | | |

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Chapter 1 Product outline

CU-43USB is a device which connects a PC and CUnet network.

CU-43USB provides more efficient use of MKY43 with library for Windows supported by StepTechnica.

This product is applied to evaluate CUnet system or develop CUnet slave.

This product is bus-powered USB device.

Chapter 2 Names and functions of each part

This chapter describes the names and functions of each part.

2.1 Names and functions

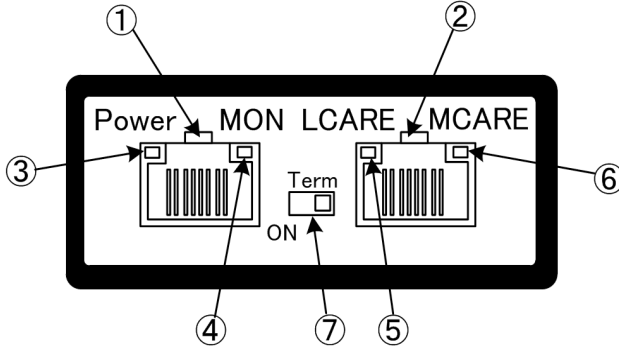


Fig.2-1 External view (front)

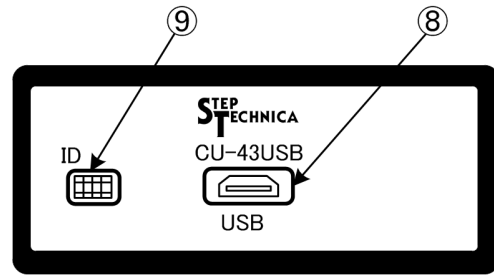


Fig.2-2 External view (back)

Table 2-1 Names and meanings of each part

| No. | Name | Type | Content | | | | | | | | | | | | | | | |
|--------|----------|-----------|--|--------|---|---|------|-----|-----|------|----|-----|------|-----|----|------|----|----|
| 1 | CU_A | Connector | CUnet communication connector (Refer to "2.2.1 CUnet communication connectors") | | | | | | | | | | | | | | | |
| 2 | CU_B | Connector | CUnet communication connector (Refer to "2.2.1 CUnet communication connectors") | | | | | | | | | | | | | | | |
| 3 | Power(G) | LED | During power supply, a green LED is lit. | | | | | | | | | | | | | | | |
| 4 | MON(G) | LED | While CUnet communication is active, a green LED is lit. | | | | | | | | | | | | | | | |
| 5 | LCARE(O) | LED | When CUnet communication error occurs once, an orange LED is lit. | | | | | | | | | | | | | | | |
| 6 | MCARE(R) | LED | A red LED is lit when CUnet communication errors have occurred three times consecutively at the same slave. | | | | | | | | | | | | | | | |
| 7 | Term | Switch | CUnet interface can be connected to a termination resistor of 100 Ω by turning on this switch.(Factory-setting is OFF state.) | | | | | | | | | | | | | | | |
| 8 | USB | Connector | USB connector for PC | | | | | | | | | | | | | | | |
| 9 | Option | Switch | <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>ID</p> </div> <div> <p>ID for identification of the CU-43USB devices.</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Switch</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td>ID=0</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>ID=1</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>ID=2</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>ID=3</td> <td>ON</td> <td>ON</td> </tr> </tbody> </table> <p style="text-align: right;">(Factory-setting is ID=0)</p> </div> </div> <p>3 and 4 are unused switches. Always set these switches OFF.</p> | Switch | 1 | 2 | ID=0 | OFF | OFF | ID=1 | ON | OFF | ID=2 | OFF | ON | ID=3 | ON | ON |
| Switch | 1 | 2 | | | | | | | | | | | | | | | | |
| ID=0 | OFF | OFF | | | | | | | | | | | | | | | | |
| ID=1 | ON | OFF | | | | | | | | | | | | | | | | |
| ID=2 | OFF | ON | | | | | | | | | | | | | | | | |
| ID=3 | ON | ON | | | | | | | | | | | | | | | | |

2.2 Connectors

2.2.1 CUnet communication connector

Table 2-2 CUnet communication connector pin assignment

| Pin number | Signal name |
|------------|-------------|
| 1 | NC |
| 2 | NC |
| 3 | NC |
| 4 | TRX- |
| 5 | TRX+ |
| 6 | NC |
| 7 | NC |
| 8 | Case Shield |

Note: CU_A and CU_B are the same pinout.

Caution: If Term switch is ON, this product will be the termination.
In this case, please do not connect the cable to the CU_B connector.
Please connect the cable only to CU_A connector.
If this product is not the termination, set the Term switch OFF, connect both CU_A and CU_B connectors as well.

Chapter 3 Software setup

This chapter describes the software setup required to use this product.

Please download "Setup Disk" for CU-43USB from our website's 'Download' page in advance.

URL: <https://www.steptecnica.com/en/download/index.html>

This software requires the following operating systems.

- Windows 10 (64bit / 32bit)
- Windows 8.1 (64bit / 32bit)
- Windows 8 (64bit / 32bit)
- Windows 7 (64bit / 32bit)

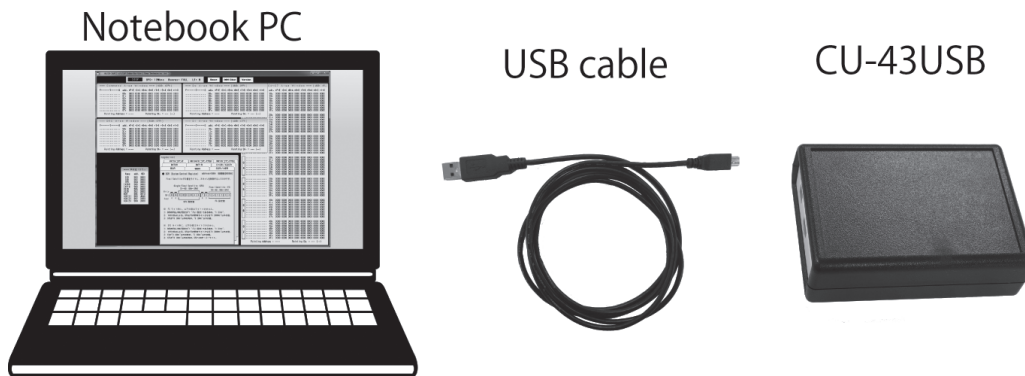
3.1 File structure

File structure of "Setup Disk" is the following.

| | |
|---|---------------------------------------|
| CU-43USB_V100 | |
| | |
| +---- STD-CU43USB_V1.0J.pdf | This document |
| +---- STD-CU43USB-SW_V1.0J.pdf | Software specification |
| +---- DLL_Ver.1.0.0 | DLL folder |
| + ---- x86 | Library folder for 32bitOS |
| ---- cu43usb.dll | Dynamic library for 32bitOS |
| ---- cu43usb.lib | Static library for 32bitOS |
| ---- cu43usb.h | Header files of the library function |
| + ---- x64 | Library folder for 64bitOS |
| ---- cu43usb.dll | Dynamic library for 64bitOS |
| ---- cu43usb.lib | Static library for 64bitOS |
| ---- cu43usb.h | Header files of the library function |
| | |
| +---- Driver_Ver.1.0.0 | Driver folder |
| ---- cu43usb.cat | Catalog file |
| ---- cu43usb.inf | System definition file |
| ---- dpinst_x86.exe | Driver installation file for 32bitOS |
| ---- dpinst_x64.exe | Driver installation file for 64bitOS |
| ---- dpinst.xml | Setting file for dpinst |
| ---- 43usb.bmp | Image file for dpinst |
| ---- CUNET.ico | Icon file for dpinst |
| +----CUeditor43J for CU-43USB_Ver.1.0.0 | Editor software folder |
| ----setup.exe | Installation file for editor software |
| ---- CUeditor43J.CAB | Cabinet file for installation |
| ---- SETUP.LST | LST file for installation |

3.2 How to connect to PC

Connect the PC and CU-43USB using MicroUSB cable.










3.3 How to install driver software

This section describes the driver installation procedure.

In this document, how to install the driver on 64-bit version of Windows 7 is illustrated.

1. Power on the PC, start Windows, please login with an administrator account such as Administrator.
2. Select "Driver_Ver.1.0.0\dpinst_x64.exe", and run.

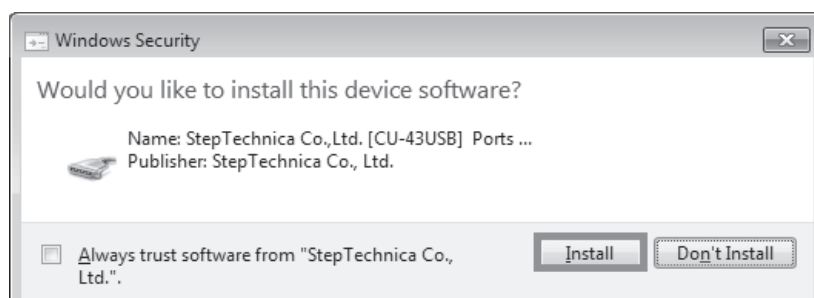
| | | |
|--|-------------------|----------|
|  43usb.bmp | Bitmap image | 291 KB |
|  cu43usb.cat | Security Catalog | 8 KB |
|  cu43usb.inf | Setup Information | 2 KB |
|  CUNET.ico | Icon | 6 KB |
|  dpinst.xml | XML Document | 2 KB |
|  dpinst_x64.exe | Application | 1,016 KB |
|  dpinst_x86.exe | Application | 894 KB |

3. User Account Control dialog box will show up. Select "Yes".

4. Driver installation window is displayed. Select "Next".



5. Windows Security dialog box will show up. Select "Install".



6. Select "Finish".



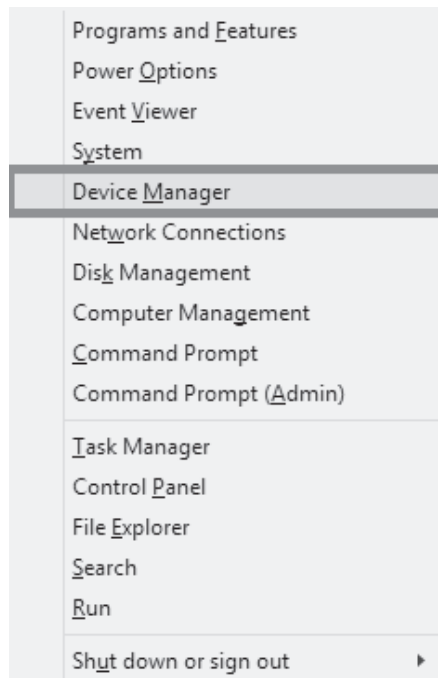
3.4 How to check the connection of CU-43USB

Start the "Device Manager". Make sure that "CU-43USB" is identified.

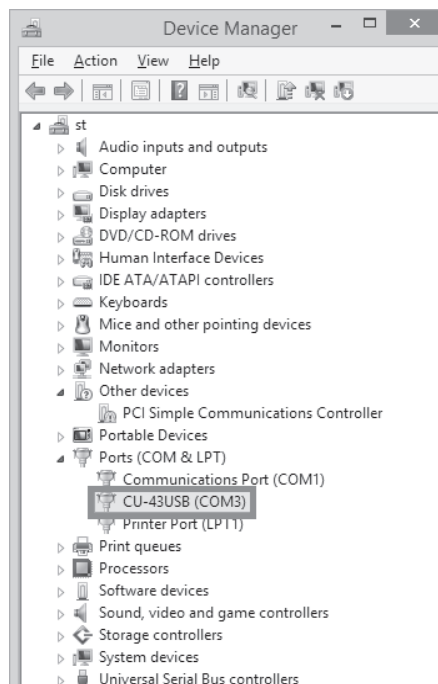
How to open device manager is depending on PC system environment.

●How to open device manager in Windows8 / 8.1

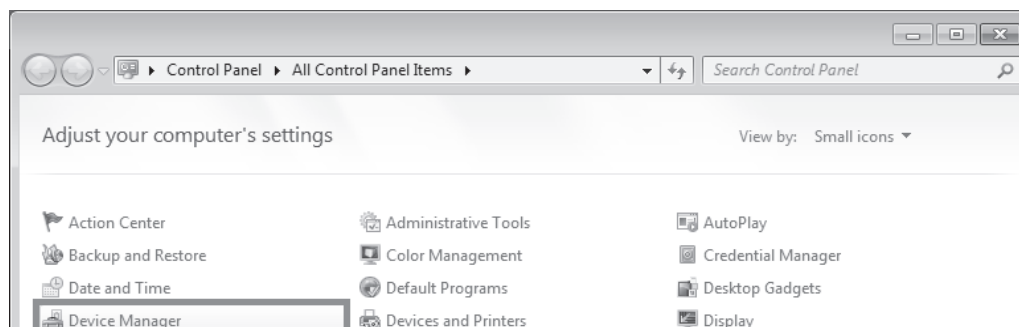
1. Hold down the "Windows" key and press the [X] key, then select "Device Manager" from the context menu.



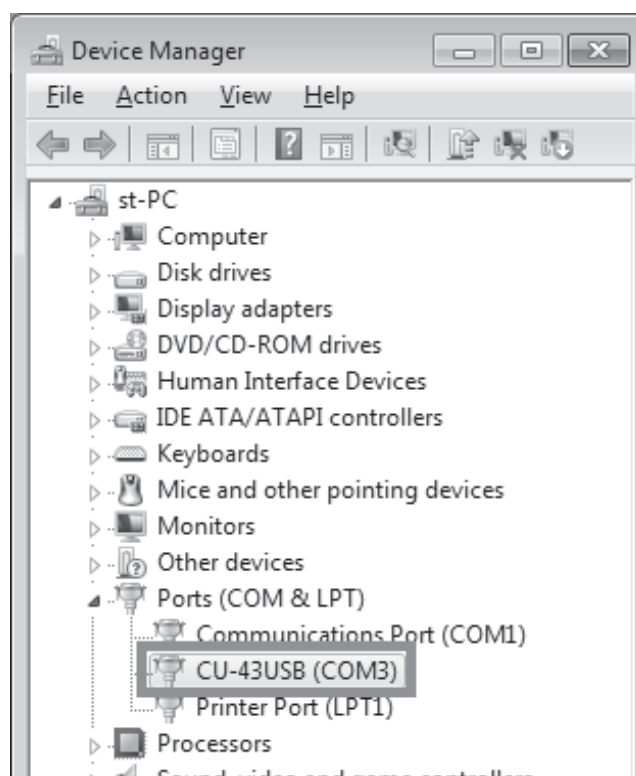
2. Device Manager window shows up. List is displayed by double-clicking on the "Ports & COM & LPT". Make sure that there is a "CU-43USB" in the list.



- How to open device manager in Windows7
3. Open "Control Panel" and select "Device Manager".



4. Device Manager will be displayed. List is displayed by double-clicking on the "Ports (COM & LPT)". Make sure that there is a "CU-43USB" in the list.



Chapter 4 Hardware

4.1 General specifications

Table 4-1 General specifications

| | |
|----------------------------------|--|
| Power supply method | MicroUSB bus power |
| Supply voltage fluctuation range | 4.75V to 5.25V |
| Consumption current | 400mA or less |
| Operating frequency | 48MHz (MKY43) |
| Number of concurrent use | 4 (Up to 4 units can be connected to one PC.) |
| Operating temperature | 0°C to 40°C |
| Storage temperature | 0°C to 80°C |
| Operating humidity | 0% to 90% (Without condensation) |
| Atmospheric conditions | Without corrosive gas |
| Size | 66.5(W)× 28(H)× 92(D)mm Not including rubber feet |
| Weight | 100g (typ.) |

4.2 CUnet communication specifications

Table 4-2 CUnet communication specifications

| | |
|-----------------------------|--|
| Communication method | Half-duplex mode |
| Communication configuration | Multi-drop configuration |
| Communication cable | Shielded twisted-pair cable (CAT-5 or greater straight-through cables can be used.) |
| Interfaces | RJ45 (2 pcs), RS485 level, differential type, pulse transformer isolation system. |
| Transfer rate | 12Mbps/6Mbps/3Mbps (Rates can be selected by software program) |
| Termination | Enable / Disable can be selected by switching. |
| Operation indicator | Communication is active : MON LED is lit green Communication is stopped : SCAN LED is lit off |

4.3 Interfaces and PC system requirements

Table4-3 Interfaces and PC system requirements

| | |
|-----------------------|--|
| USB bus specification | USB2.0 / 1.1 |
| USB Interface | MicroUSB ^{*1} |
| Supported OS | Windows 10 (64bit / 32bit) Windows 8.1(64bit / 32bit) Windows 8 (64bit / 32bit) Windows 7 (64bit / 32bit) |
| Accessories | USB cable |
| Provided software | Windows driver Library for Windows CUeditor43J |

*1 Operation is not guaranteed when the product is connected to PC via USB hub.

4.4 CUnet interface

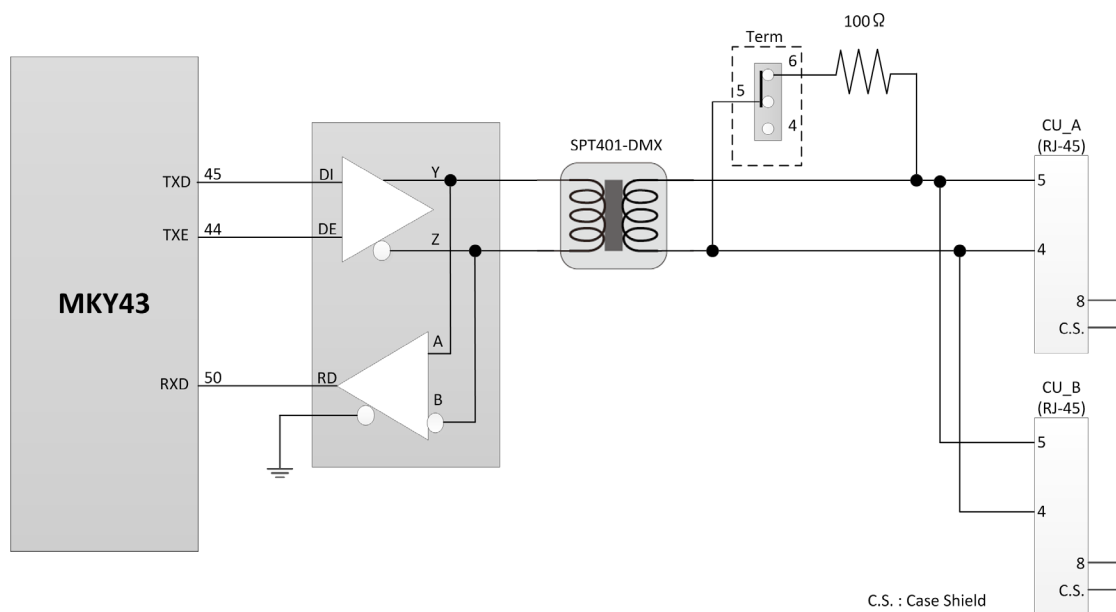


Fig.4-1 CUnet connection diagram

4.5 Dimension drawing

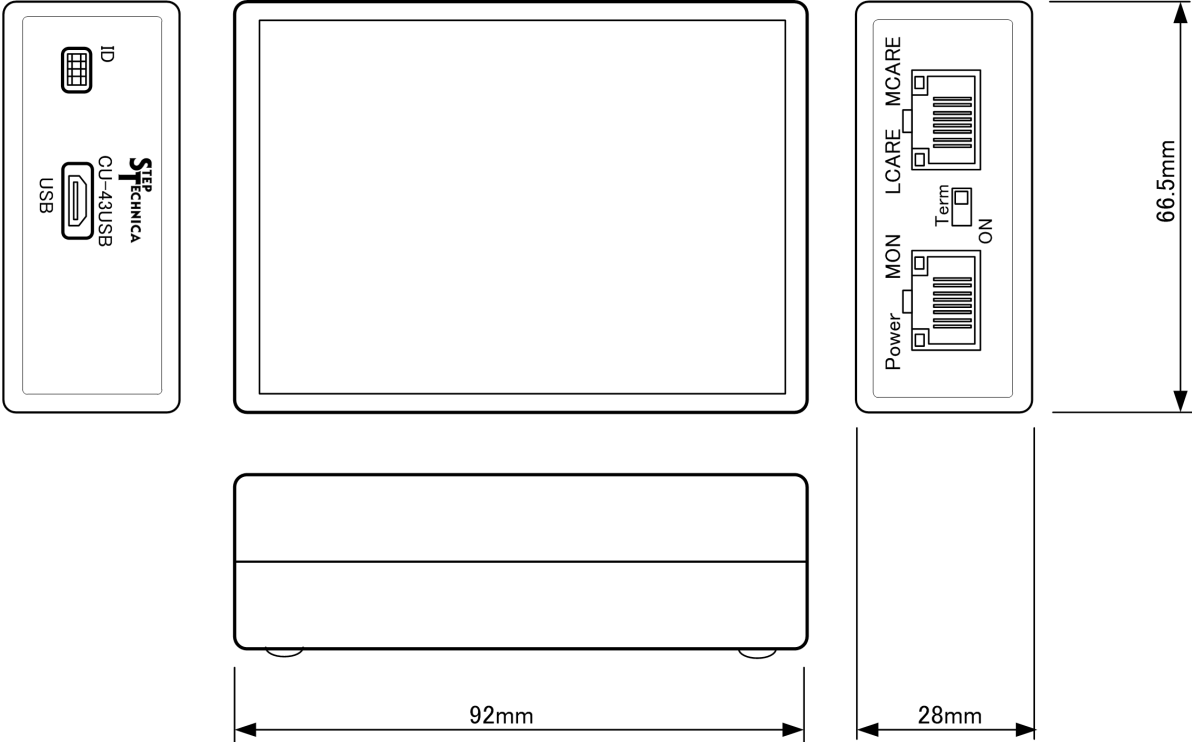


Fig 4-2 Dimension drawing

Notes

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2. Technical information in this document, such as explanations and circuit examples, are just for references to use this product in a proper way.
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CU-43USB

Product Manual

Document No. STD_CU43USB_V1.1E

Issued: April 2020