

CAN / Wireless LAN Bridge CDS-2150 Installation Guide

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Thank you for purchasing CAN/Wireless LAN Bridge CDS-2150 (hereafter CDS-2150). This Installation Guide shows the setup procedure of CDS-2150 to monitor CAN data.

CDS-2150 and Accessory

Make sure that the following items are included.

- CDS-2150
- Warranty
- Installation guide (this guide)
- GPL inquiry sheet

CDS-2150 Manual

CDS-2150 Manual is released on silex website.

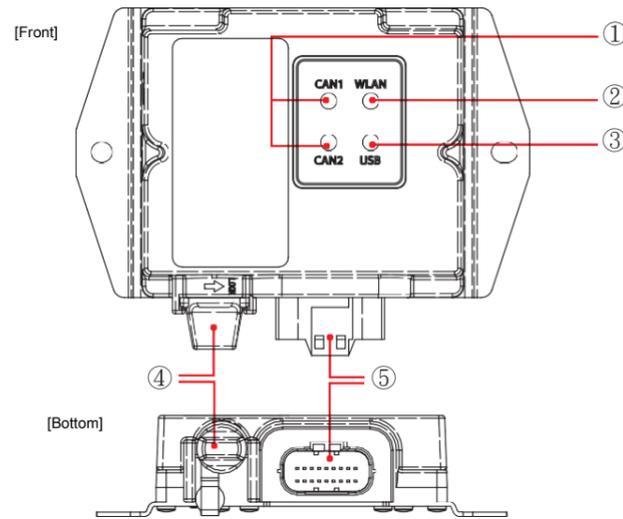
1. Start a web browser and open silex website.
URL: <https://www.silextechnology.com/resources>
2. Select the product name of CDS-2150 from the pull-down
3. Download the CDS-2150 manual.

Specifications

Waterproof	JIS D 0203 D2
Dustproof	JIS D 0207 F2
Rated voltage	10VDC to 32VDC
Rated electricity	0.7A (max)
CAN spec	CAN 2.0B Active (× 2ch) ISO11898 High Speed (max. 1Mbit/s) Baud rate 125,000 / 250,000 / 500,000 / 1,000,000
USB sec	USB OTG 2.0 Host mode : Access USB memory(FAT32) Function mode: Connect PC with USB Remote NDIS
Serial spec	RS-422A / 485
LED	4 LEDs on the front of CDS-2150 :CAN1LED (Green) CAN 2 LED (Green) WLAN LED (Green/Red) USB LED (Green/Red)

Operating environmental condition	Temperature : -30°C to +65°C Humidity: 20% to 95%RH (No condensation)
Storage environmental condition	Temperature: -40°C to +85°C (Do not exceed 1000 hours at +65°C or more or 500 hours at +75°C or more) Humidity: 20% to 95%RH (No condensation)

Names and Functions



(1) CAN1 LED CAN2 LED	Green: CAN communication is operating properly. Flashing green: (two times per sec): Sending/Receiving CAN data. Flashing green: (five times per sec): CAN communication error occurred. Off: CAN device error occurred.
(2) WLAN LED	Green: Access Point mode (Connecting with a station device) Flashing green: Access Point mode (Not connected with a station device) Orange: Station mode (Connecting with an access point) Flashing orange: Station mode (Not connected with an access point) Red: CDS-2150 is booting up/shutting down/facing the abnormal state of wireless connection. Off: The wireless connection stops.
(3) USB LED	Green: Connecting USB memory. Flashing green (two times per sec): Data is transferring to USB memory. Red: Detected USB overcurrent. Orange: Connecting USB function (RNDIS). Off: Not connected.
(4) USB Connector	Micro-B USB Automatically recognizes the function mode or the host mode for connected devices under USB OTG. - When a PC (USB host) is connected CDS-2150 runs in the function mode. CDS-2150 connects to the PC through a micro USB converted cable. The PC can access CDS-2150 under USB Remote NDIS. - When a USB memory is connected CDS-2150 runs in the host mode. USB memory (FAT32) can be connected with the micro USB converted cable. * There are no waterproof and dustproof features when the USB connector is used.
(5) CAN Connector	18-pin waterproof connector (Power/CAN/I/O). CAN cable is connected.

CAN Connector PIN Allocation

Pin	Name	Pin	Name
1	CAN1_H	10	CAN2_H
2	CAN1_L	11	CAN2_L
3	SIO_GND	12	TRXD_R *1
4	BATT *2	13	TRXD_L *1
5	KEY *2	14	TRXD_H
6	DIN1	15	TXD_L
7	DIN2	16	TXD_H
8	RESERVED *3	17	GND
9	DOUT	18	GND

*1 Termination processing is done when TRXD_R and TRXD_L connection are made.
*2 The enclosure is not a fireproofing enclosure. We recommend 2A to 3A rated fuse to be inserted to the power line although the safety standard does not require it. *3 Needs to be open.

Trademark

- Microsoft and Windows are the registered trademarks of US Microsoft Corporation in US and other countries.
- Other company names and product names are the trademarks or the registered marks of each company.

Features

CDS-2150 has the following features to meet users' environments and systems in a flexible manner.

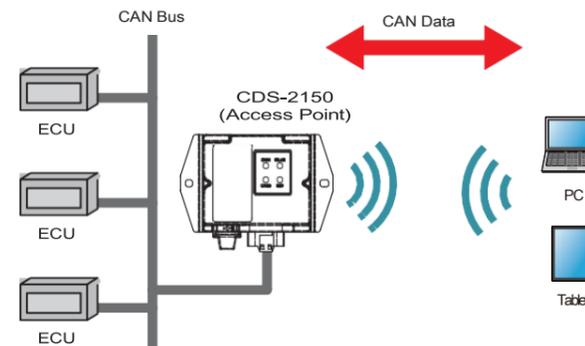
- Converter Server Mode
CAN data can be sent/received transparently over TCP/IP or UDP/IP communication. CDS-2150 can establish communication with an application program using Socket API.
- Ecable Mode
Two CDS-2150s make it possible to establish CAN communication by wirelessly connecting CAN devices which are connected to a different CAN bus.
- IEEE802.11b/g/n (wireless LAN standard)
As CDS-2150 conforms to IEEE802.11b/g/n, various CAN devices can be shared under the wireless environment. Either WPA (PSK) or WPA2 (PSK) can be selected in the wireless setting. WPA supports TKIP/AES/AUTO, while WPA2 supports AES/AUTO as the encryption standard.
- Wireless Access Point and DHCP Server Function
When CDS-2150 works as an access point, DHCP server function is available. When the DHCP server is enabled in the access point mode, CDS-2150 can easily be connected to PC or devices in use.

Example of Use

CDS-2150 can be used as stated below. This installation guide shows how to set up CDS-2150 to monitor data on the CAN bus. See the CDS-2150 Manual how to connect two CAN busses wirelessly

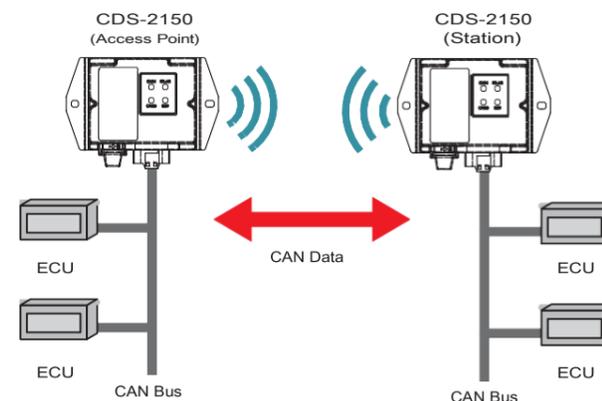
Monitoring Data on CAN Bus

CDS-2150 can connect to CAN bus to monitor CAN data on the CAN bus using a PC or a tablet. Use Converter Server Mode of CAN Bridge function to monitor CAN data on the CAN bus.



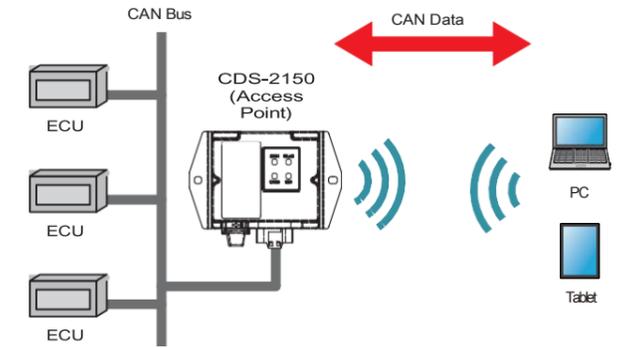
Connecting Two CAN Buses Wirelessly

Two CDS-2150s make it possible to connect CAN buses wirelessly. The CAN bus is connected to each CDS-2150. Use the Ecable Mode of CAN Bridge function to connect two CAN buses wirelessly.



- CAN Data Monitoring -

Set up CDS-2150 to monitor CAN data on the CAN bus with PC or a tablet.



Step1 Set up Preparation

Prepare the following item on your own to set up CDS-2150

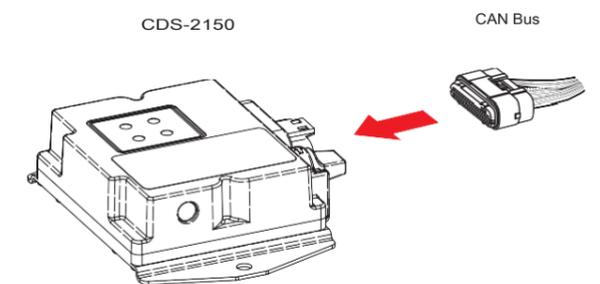
■ PC for Set Up

A user can use a web browser to configure or update CDS-2150 settings. Prepare a PC which can connect to a wireless LAN to use a web browser.

Wireless Standard	IEEE802.11b/g/n
Authentication Method	WPA-PSK (TKIP/AES/AUTO) WPA2-PSK(AES/AUTO)
Web Browser	Internet Explorer 10 or later

Step2 CDS-2150 Installation

Install CDS-2150 and plug CAN bus to the CAN connector. CDS-2150 starts after the power is supplied from the CAN bus.



Go to **Step3 (back side)**

Step3

CDS-2150 Set Up

Connect the setting PC to CDS-2150 wirelessly, and then set the wireless LAN environment and the Converter Server Mode of CAN Bridge function.

Default Value of Wireless LAN Environment

CDS-2150's SSID, the pre-shared key, and the default value of IP address are stated below.

SSID: CDS + the last six digits of Ethernet address
Pre-shared key: PreSharedKey
IP address: 192.168.3.10

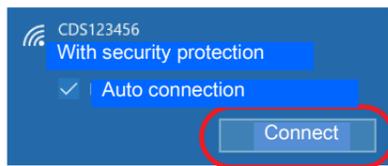
Wireless Connection

For Windows 10 (How to connect CDS-2150)

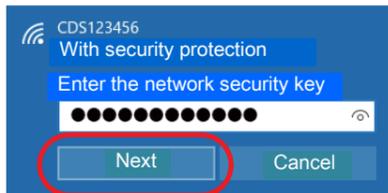
See OS Help for other OS.

1. Click the network icon  on the task tray.

2. Select SSID of CDS-2150 from the network list and click **[Connect]**.



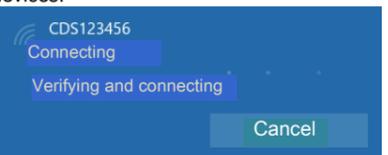
3. When the following window appears, enter the pre-shared key of CDS-2150 in the network security field, and click **[Next]**.



4. When the following window appears, click **[No]**.



5. When the following window appears, CDS-2150 starts connecting to devices.

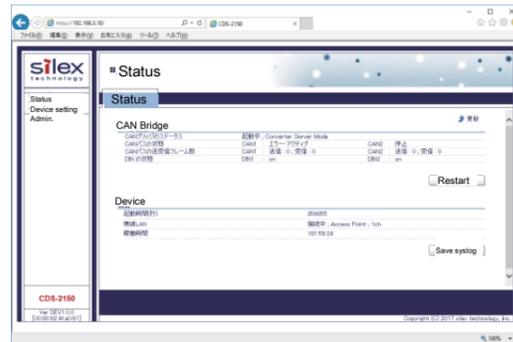


Access Web Page

1. Start a web browser and enter the IP address of CDS-2150. Enter <http://xxx.xxx.xxx.xxx/> in the web browser's address bar.

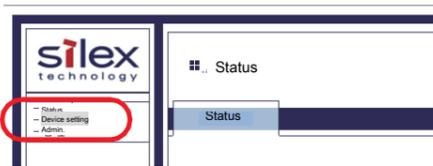
[Note]
- The above "xxx.xxx.xxx.xxx" is the IP address of CDS-2150.

2. The CDS-2150 page will be displayed.

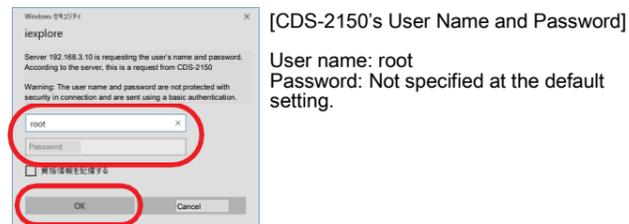


Converter Server Mode Setting

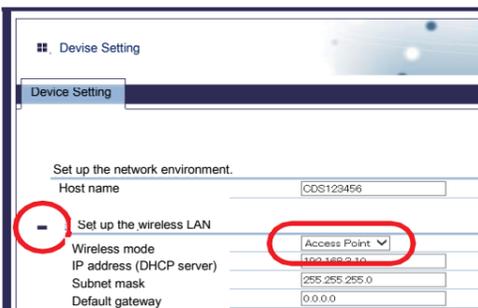
1. Click **[Device Setting]** from the page switching menu on the left of the CDS-2150 web page.



2. The password input window will be displayed. Enter the user name and password of CDS-2150 and click **[OK]**.

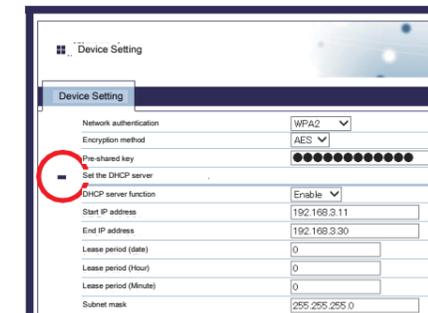
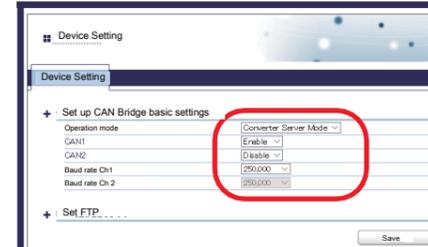


3. The device setting page will be displayed. Click **[+]** of **[Set up a wireless LAN environment]** to configure the wireless LAN environment. Choose **[Access Point]** for **[Wireless mode]**.

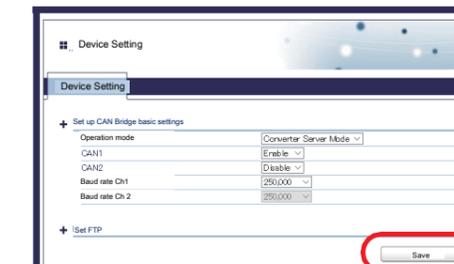


4. Click **[+]** of **[Set up DHCP server]** to configure the DHCP server.

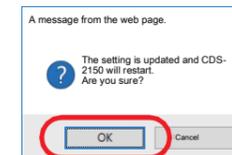
5. Choose **[Converter Server Mode]** for the **[Operation mode]** of **[Set up the CAN Bridge basic setting.]** Choose **[Enable]** for CAN1/CAN2 (channels to be used). Choose a baud rate to align with the CAN bus communication setting.



6. Click **[Save]** after checking the input.



7. The message of restarting CDS-2150 will be displayed. Click **[OK]**.



8. Execute restart. When CDS-2150 restarted completely, the change becomes effective.



The setting of CDS-2150 is now completed.

Step4

Actual Monitoring

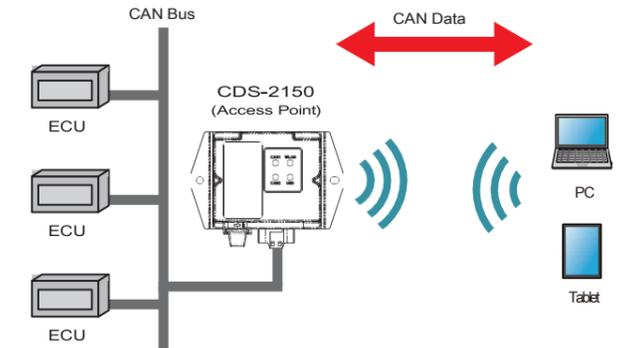
Monitor CAN data on CAN bus connected to CDS-2150 by using a PC or a tablet. A client application using Socket API is needed to monitor CAN data.

Monitoring Data on CAN Bus

1. Start CDS-2150 connected to CAN bus and display a standby screen. CDS-2150 starts when the power is supplied from CAN bus.

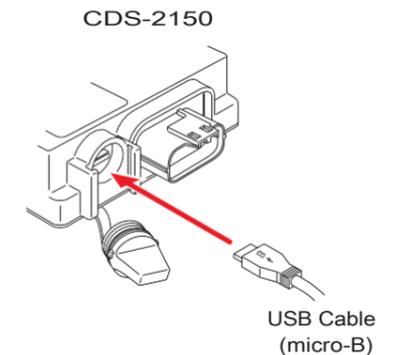
2. Start a client application on a client side such as PCs and tablets.

3. When the connection is established from the application, it makes possible to establish the connection with CAN bus.



Note When CDS-2150 Cannot be Connected Wirelessly

When you cannot connect CDS-2150 over the wireless LAN, because you don't know primarily how to set the pre-shared key, connect CDS-2150 to a PC with a USB cable to update/initialize the setting. See **[5-3. Use RNDIS Environment]** in the CDS-2150 Manual.



Inquiries about CDS-2150

Enter the following address in a web browser to access the inquiry page.

<https://www.silxtechnology.com/support>