

EVB-cDA110

User Manual

V 1.0.0

■ History

Version	Date	History	Author
1.0.0	2023. 09. 01	- publication	Enoch

■ Terminology Definition

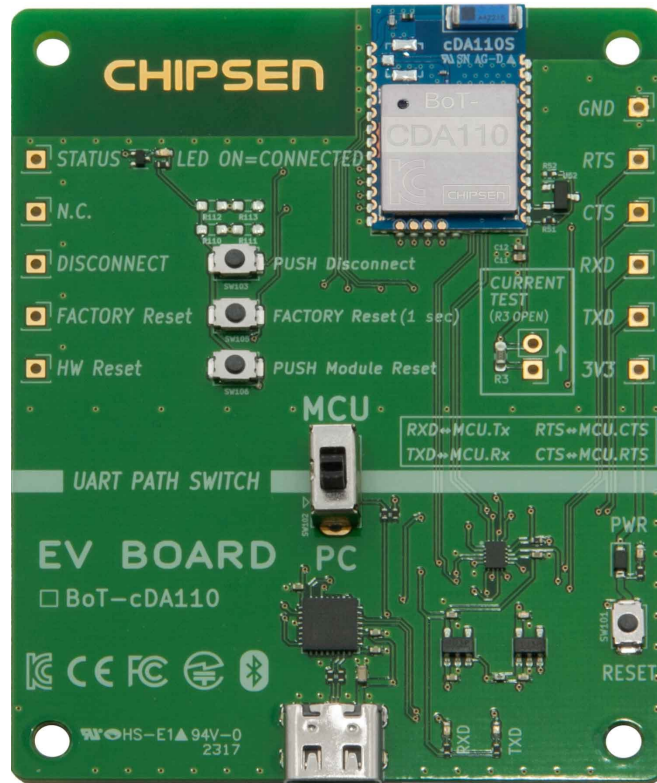
- . **BoT-cDA110** : Product name of Bluetooth Low Energy (BLE) module developed and manufactured by CHIPSEN Inc.
Hereinafter abbreviated as "**BT module**"
- . **EVB-cDA110** : Product name of test board with BoT-cDA110 (Bluetooth module).
Hereinafter abbreviated as "**EVB**" below

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1. Product introduction

The **EVB-cDA110** ("Hereinafter **EVB**") is a test board that allows customers (developers) to easily test each function before designing the **BoT-cDA110** (Bluetooth Low Energy Module, Hereinafter "**BT Module**").



< EVB-cDA110 Product Image >

1.1. Brief introduction Bluetooth Module (BoT-cDA110SC)



<Key Features>

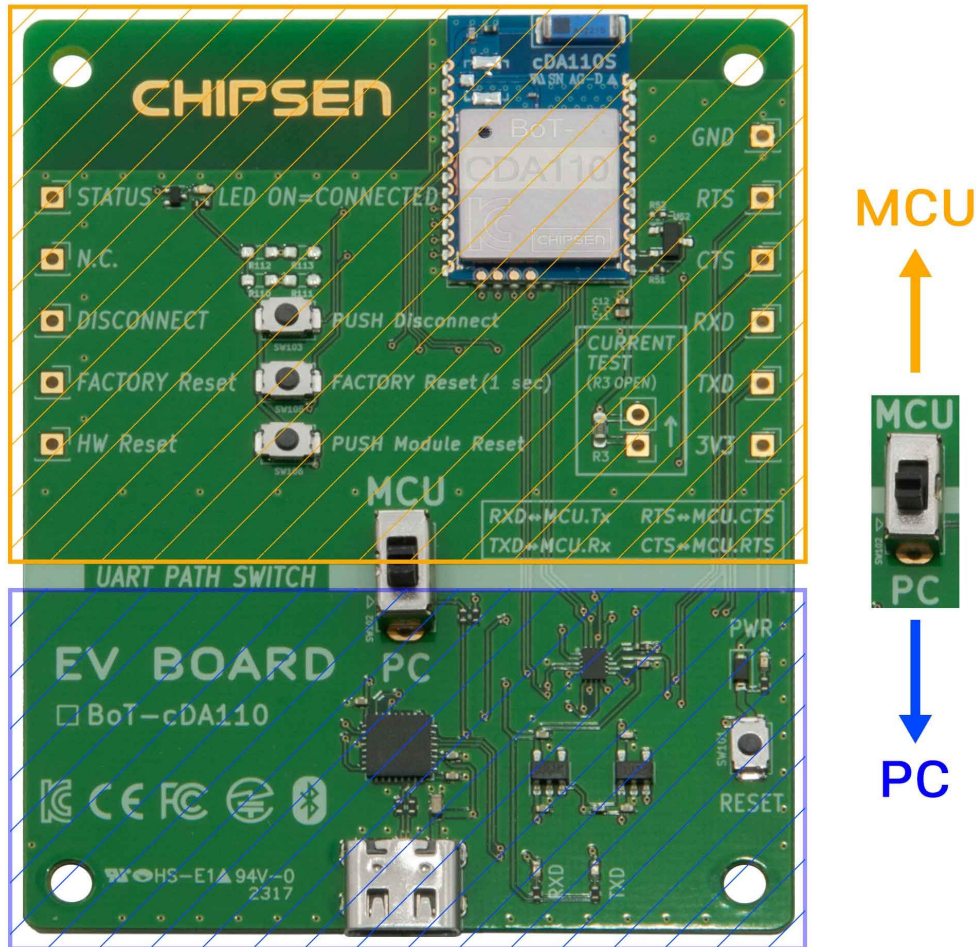
- Bluetooth Classic 5.1 (data communication only)
- Classic SPP (Serial Port Profile)
- Up to 40,000 Byte transmissions per second
- Compatible OS : Windows, Android, Linux)
- Certificated : FCC, CE, JAPAN-MIC, SIG, KC

After testing with EVB-cDA110, you can apply the BoT-cDA110 Series.

Model Image	Model Name	Description
	BoT-cDA110SC	SMD Type + Chip Antenna
	BoT-cDA110SU	SMD Type + U.FL Connector
	BoT-cDA110DC	DIP Type + Chip Antenna
	BoT-cDA110DU	DIP Type + U.FL Connector
	BoT-cDA110DS	DIP Type + SMA Connector

<BoT-cDA110 Series>

1.2. EVB-cDA110 Configuration



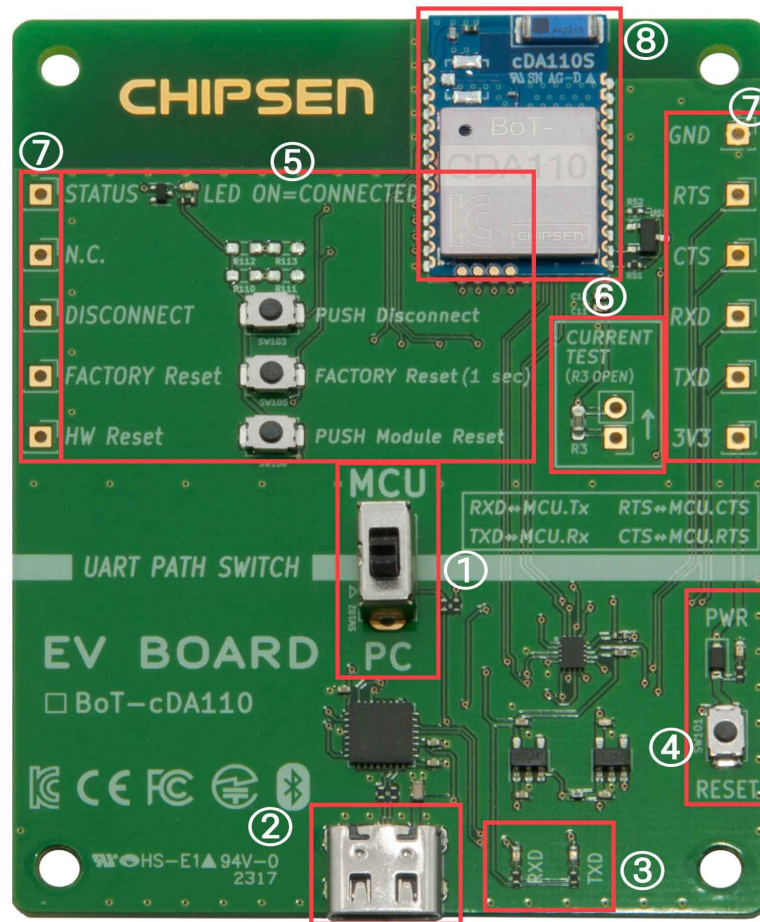
< EVB-cDA110 block image>

The EVB-cDA110 supports two types of testing.

- (1) MCU : Test the **BT module** by connecting to an external HOST (such as the MCU). A separate test PAD is applied, so you can verify the operation by connecting UART and GPIO.
- (2) PC : Test the **BT module** by plugging in the USB-C type cable and connecting it to the PC. It can be tested using a terminal programs and it is easier to set up and test by using the setting PC program (cDA Manager) provided by us.

The choice of two test methods can be made by controlling the *UART PATH SWITCH* in the center of the product.

1.3. EVB-cDA110 layout and functional description

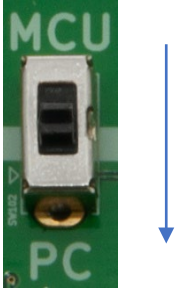


< EVB-cDA110 image >

- ① UART PATH SWITCH (*UART communication path selection switch*)
- ② USB-C connector
- ③ TX/RX LED for PC Test
- ④ Power Reset Button & Power LED
- ⑤ I/O operation setting switch
- ⑥ Pin for power consumption measurement
- ⑦ Pin for external HOST connection
- ⑧ BoT-cDA110SC (Equipped Module)

1.3.1. ①UART PATH SWITCH

The UART PATH SWITCH can be operated to select a communication test method.

PC orientation settings	MCU orientation setting
	
You can UART communicate with PC.	Can be communicated with external HOST(MCU, etc.) by test pins.

1.3.2. ②USB-C connector

C-Type connector supports power supplying for **EVB** and creating USB virtual serial port (VCP). When the PC and **EVB** are connected using a USB-C type cable, the USB virtual serial port driver is automatically installed. (Refer to section 2: driver installation)
Cable USB C to USB C type is not supported. (to be supported in the future)

1.3.3. ③TX/RX LED for PC Test

You can check the UART Data transmission status between the PC and the **BT module**. Selecting UART PATH SWITCH to PC, the TXD LED flashes when data transfer occurs from the PC, and the RXD LED flashes when data transfer occurs from the **BT module** to the PC.

1.3.4. ④Power Reset Button & Power LED

A reset button for disconnecting the power supplied to the **BT module**. When 5V power is supplied via the USB connector, a 3.3V voltage is supplied to the **BT module** via the LDO embedded in the **EVB** and the Power LED is lit. If the **BT module** operates abnormally or requires a power reset, you can press the Reset button to cut off the power to the **BT module**. While the button is being pressed, the **BT module** is powered off and the power LED is turned off. If you release the button you were pressing, the **BT module** will be re-energized, and the Power LED will turn on.

1.3.5. ⑤ I/O operation setting switch

You can check and test the function works of the **BT module**. You can also test the functionality of GPIO as implemented in standard operating firmware. For a detailed description of GPIO behavior, refer to User Manual and Datasheet on the **BT module**.

[Download](#) [BoT-cDA110 Product Materials](#)

Function	IO Type	Description
STATUS	Output	.Indicates the operation and connection status of the module. . <u>Attempt to connect or inquiry</u>: 150ms on → 1sec off . <u>Connection/search waiting</u>: 150ms on → 150ms off → 150ms on → 1sec off . <u>CONNECTED STATE</u>: STAY ON . <u>Factory initialization</u>: 10ms on → Reset after 3 repetitions of 10ms off.
DISCONNECT ⁽¹⁾	Input	.Press the button while connected to the other device to disconnect.
FACTORY RESET ⁽¹⁾	Input	.If the button is pressed and held for more than 1 second, all settings on the cDA110 will be initialized to the factory settings after the +OK response.
HW RESET ⁽²⁾	Input	.Press the button to apply Low to the Hardware reset pin connected to the inside of the module to Hardware reset the module, and release the button to boot the module. (Same as Power On Reset)

1) Rising edge detection.

(2) Active low.

1.3.6. ⑥ Pin for power consumption measurement

The current consumed by the **BT module** can be measured. After R3 is removed, the ammeter can be connected to the consumption current measuring pin to measure the current.

1.3.7. ⑦Pin for external HOST connection

It is a PAD that can communicate by connecting to an external HOST (such as an MCU) or control the GPIO.

Pin Name	Pin Function	Description
STATUS	Output	High = LED ON / Low = LED OFF (refer AT Command manual)
N.C.	NOT CONNECT	Not used. Terminal opened.
DISCONNECT	Input ⁽¹⁾	Disconnect Bluetooth device at detect high edge.
FACTORY RESET	Input ⁽¹⁾	Set to factory default state after logic high more 1 second.
HW RESET	Input	Power-on-reset, Active low.
GND	GROUND	Power Ground
UART RTS	UART RTS	UART Request to Send
UART CTS	UART CTS	UART Clear to Send
UART RXD	DIGITAL INPUT	UART Receive Data
UART TXD	DIGITAL OUTPUT	UART Transmit Data
VDD	POWER	Main Power out. typ. DC 3.3V <i>*EVB always required USB main power</i>

(1) Rising and falling edge and level detection

2. Driver installation

2.1. automatic installation

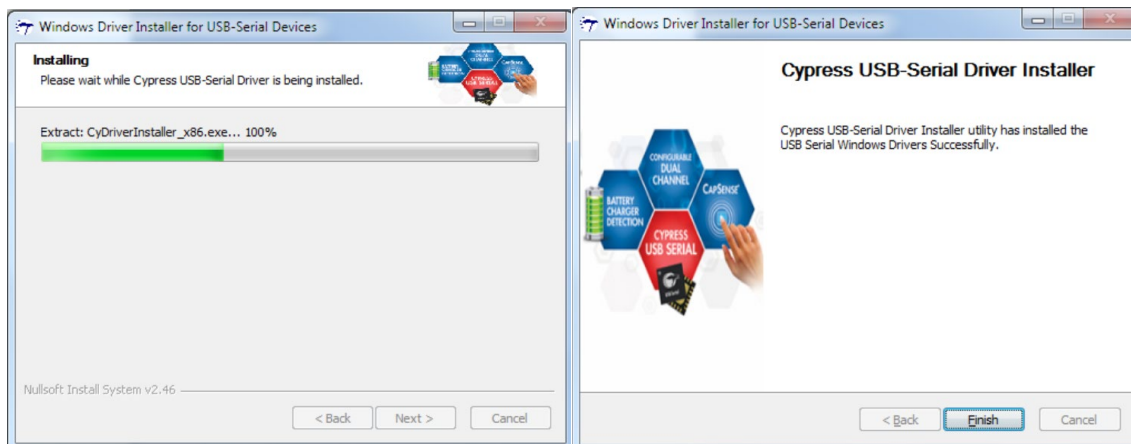
- When connecting with a PC for the first time, the PC must be connected to the Internet to automatically install it.
- If you have a history of using the same product in the past, the installation is made without an Internet connection.
- The automatic installation process takes about 30 seconds to 5 minutes and is proportional to the PC processing speed and Internet connection speed .
 - Each Serial Converter is recognized as a different COM. If you connect multiple USB hubs, even if the installation is complete, the reinstallation may proceed, and a different COM port number may be assigned.
- If you are using multiple USB-to-UART devices connected at the same time, be sure to check the COM Port number connected to each.
- If you remove the USB port during operation, you may need to reset the COM port set in the terminal program on your PC.

2.2. Manual Installation

If a PC that does not automatically recognize or the Internet does not connect, please install it in the following order. (Window OS example)

2.2.1. Infineon (Cypress)Driver Manual Installation

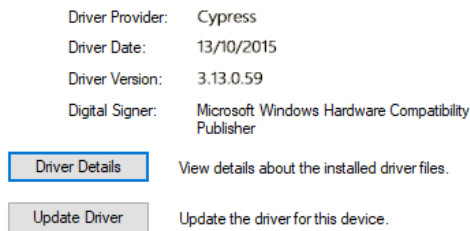
A) [CypressDriverInstaller.exe](#) ([Download](#)) Click this link to download, and run it.



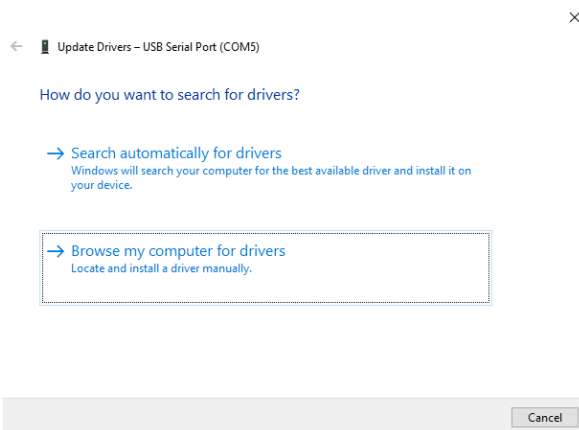
After install this, check USB Serial Port is recognized successfully on Device Manager

B) If the driver was not recognized automatically, Please proceed with the following steps.

C) Run Device Manager and update drivers that are not installed in Device Manager.



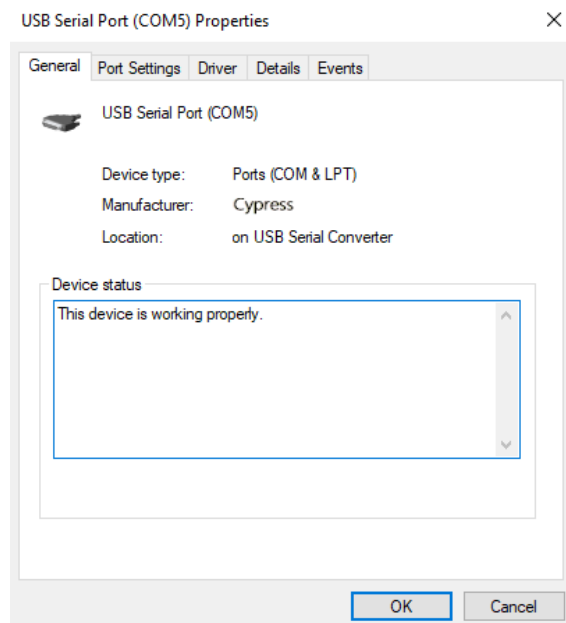
D) Specifying the location to install.



E) C:\Program Files (x86)\Cypress\Cypress USB-Serial Driver

Specify the above path or the other path specified when the driver was installed.

F) When the installation is complete, verify that the driver is installed and working properly.

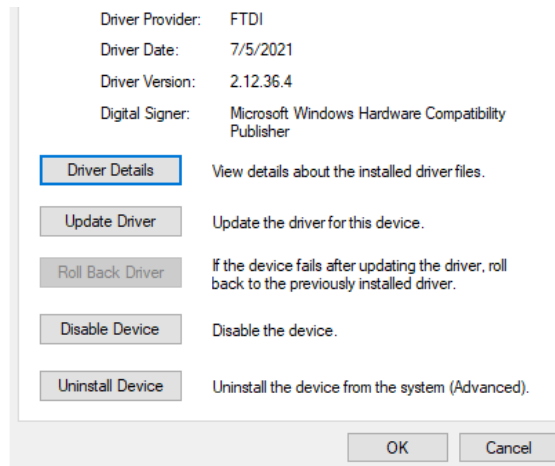


2.2.2. Manual installation of FTDI drivers

[VCP Drivers - FTDI \(ftdichip.com\)](http://ftdichip.com) Click this link.

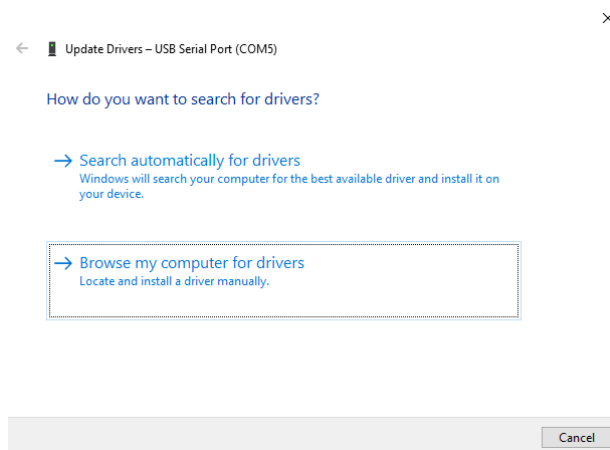
B) Download the drivers for your OS.

C) Unzip the file.



D) Update drivers that are not installed in Device Manager.

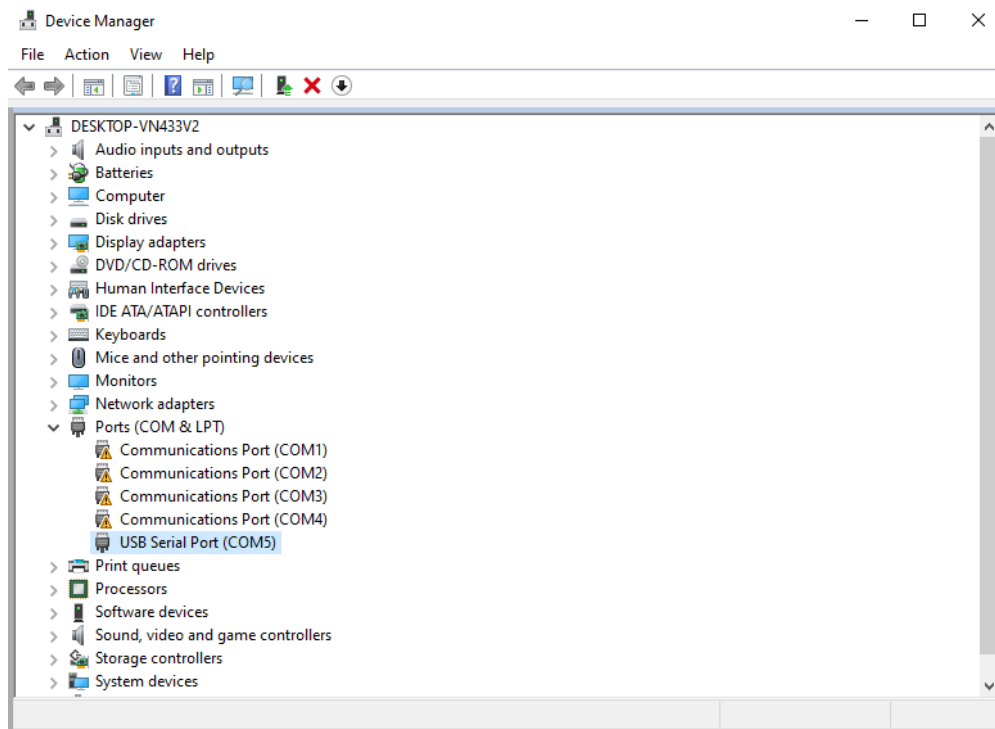
E) Select the driver to manual.



F) Automatically install by specifying a path to folder unzipped.

G) The installed port is possible to be checked as follows.

- Open 'Device Manager' and you can check the port has added.



- Right-click on new added port to select Properties and check the driver has installed successfully.

