USB INTERFACE
CIU-2

S.BUS PC-Link Software Manual

The operating parameters of the Futaba programmable **S.BUS** servo can be set and changed from a PC by using this software. Since the Futaba **CIU-2** USB adapter and power supply (4.8~6V battery) and Y-harness (or **S.BUS** hub) are necessary, procure them beforehand and place into the state in which the **CIU-2** is operated properly from the PC.

*Note: **The S.BUS PC-Link software is for Windows® 7/Vista/XP use and is not compatible with other OS.**

Distribution & exemption of liability

Downloaded Zip file extraction (decompression)

The downloaded **S.BUS PC-Link** software file is a Zip format file. Extract (decompress) this file, the procedure is shown as below.

*Download the **S.BUS PC-Link** software file from your Futaba importer's home page.

1. Double click the Zip format file to display its contents.

2. Click "Extract all files". The Extraction Wizard launches.

3. Extract (decompress) the Zip format file to the same location as the Zip file storage location.

***PC-Link.msi** file and **setup.exe** file are extracted.

PC-Link software installation

Before installing the **PC-Link** software, confirm that all other applications are closed. Close all virus check and other resident programs, if any.

1. Double click the EXE file named "setup", and push the "Next" button.
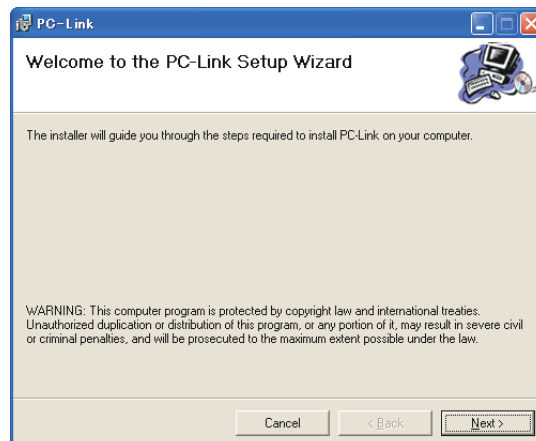
2. Choose the target folder, and push the "Next" button.

3. Push the "Next" button.
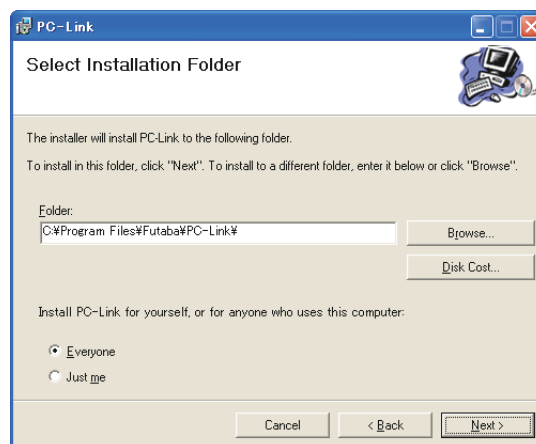
PC-Link

Confirm Installation

The installer is ready to install PC-Link on your computer.

Click "Next" to start the installation.

Cancel   < Back   Next >
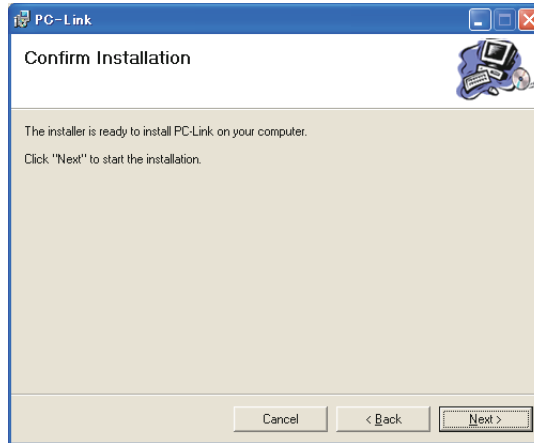
4. The install process begins.

PC-Link

Installing PC-Link

PC-Link is being installed.

Please wait...

Cancel   < Back   Next >
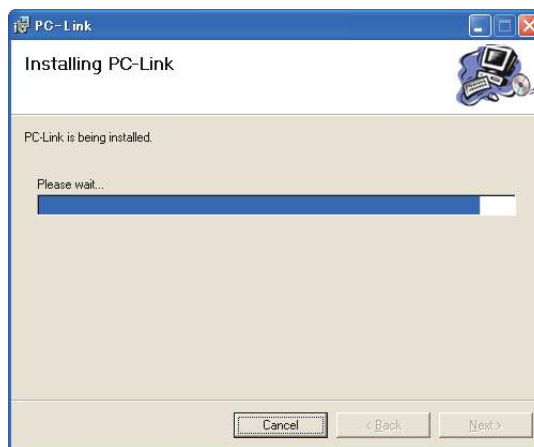
5. The installer displays the following after the install process. Push the "Close" button.

PC-Link

Installation Complete

PC-Link has been successfully installed.

Click "Close" to exit.

Cancel   < Back   Close
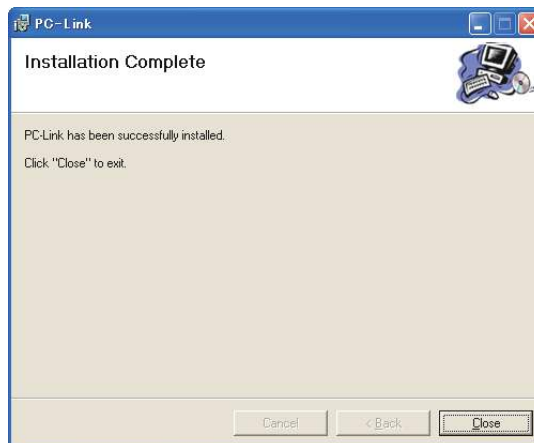
CIU-2 and S.BUS servo connection

Connect **S.BUS** servo, **CIU-2** USB adapter, 4.8~6V battery and Y-harness (or **S.BUS** hub) as shown below.

Installing the CIU-2 device driver

A **CIU-2** USB adapter is necessary to execute this software. Before using this software, please install the **CIU-2** device driver. If the **CIU-2** USB device driver has already been installed, advance to the next step.
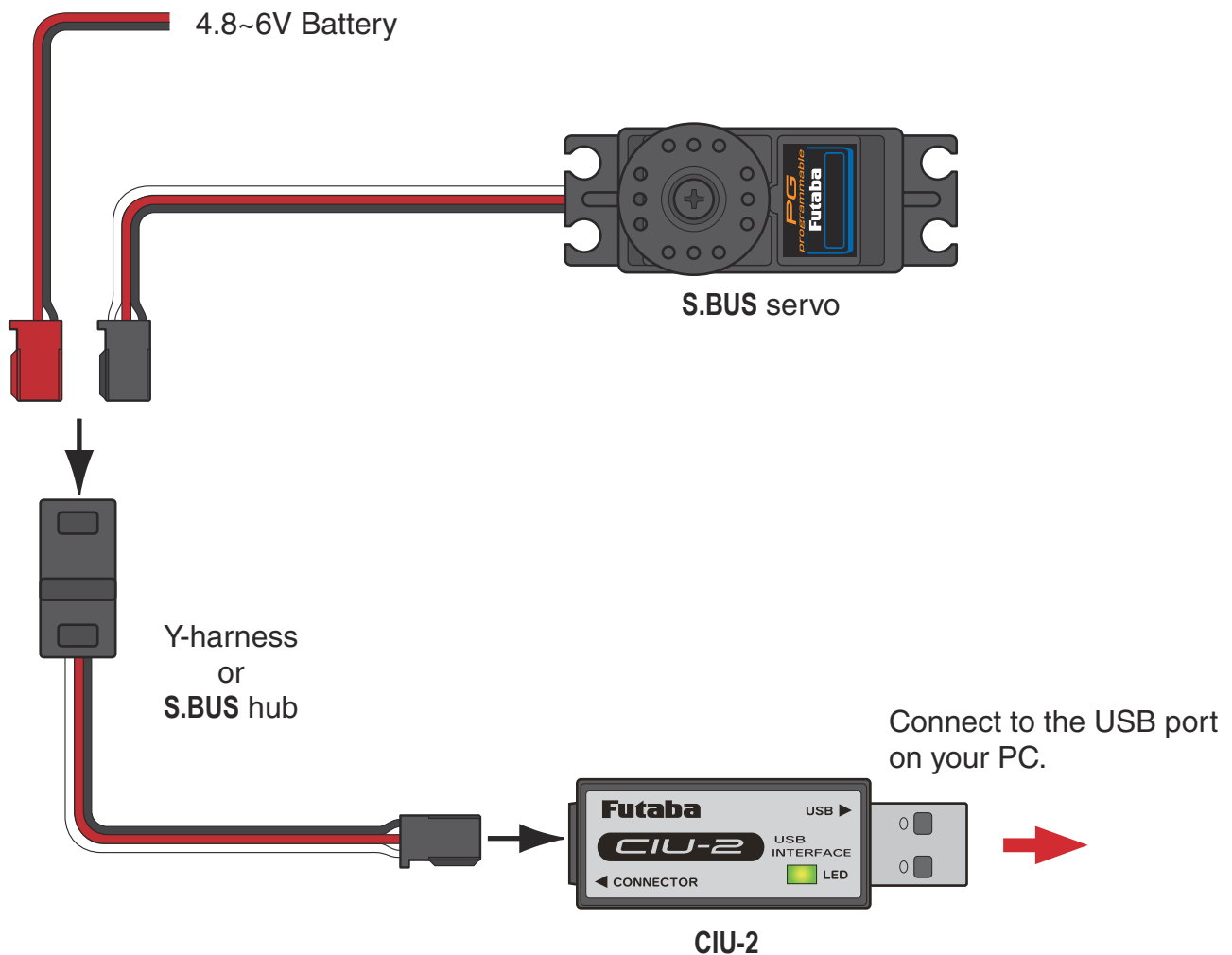
*The **CIU-2** device driver is available at the download corner of your Futaba impoter's home page.

---

1. Connect the Y-harness or **S.BUS** hub to the **CIU-2**.

2. Connect the **S.BUS** servo and the batteries to the Y-harness or **S.BUS** hub.

3. Connect the **CIU-2** to the USB port on your PC.

　• The **CIU-2** LED turns on green.

4.8~6V Battery

S.BUS servo

Y-harness
or
S.BUS hub

Connect to the USB port on your PC.

Futaba
CIU-2
USB ▶
USB INTERFACE
◀ CONNECTOR
LED

CIU-2

# How to use the PC Link Software

Starting the PC-Link software

1. In the state in which the servo was connected to the PC by the previous described connection method, select Windows Start button, "All Programs", and program file "**PC-Link**" in "Futaba" sequentially.

*The display may be different depending on the OS type and setting.

2. The parameters setup screen shown below appears.
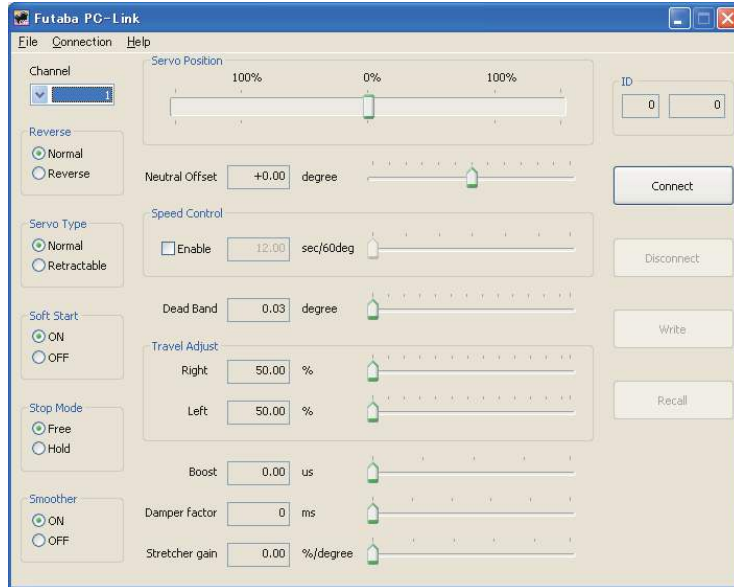
*If the message shown below is displayed, the **CIU-2** is not properly connected to the PC. Press the "OK" button and check the connection and repeat step 1 and 2.
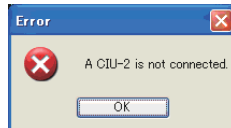
Reading the setup parameters from the S.BUS servo

1. Click the "Connect" button. Or select the "Connect" command of the "Connection" menu. An ID input screen appears.
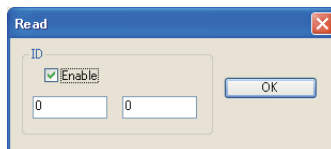
*When only one servo is connected to the **CIU-2**, after deselecting by checking the "Enable" check box; press the "OK" button. The parameters are read.

5

*When multiple servos are connected to the **CIU-2**, confirm that the "Enable" check box is checked and enter the ID given on the servo whose parameters you want to read and press the "OK" button. The parameters are read. (The figure below shows the case when the servo ID is "002-10000".)
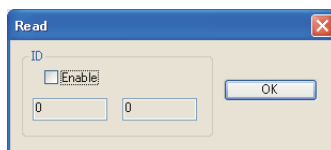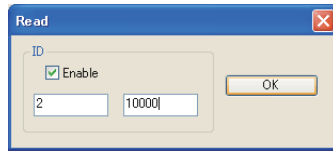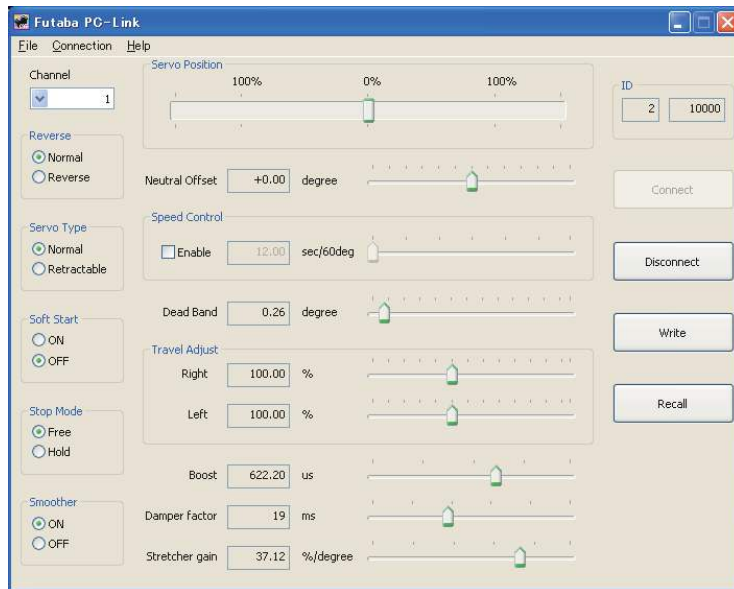

2. The state of the parameters currently programmed at the servo is displayed.

*When reading of the parameters failed, an error message is displayed. In this case, recheck the connection and ID and read the parameters again.

Setting parameters data

1. Change the desired parameters data.

*For a description of the function, see the "Description of function of each parameter", p.10.

*For a description of the parameter changing method, see the "Parameters Setup Screen Operation", p.9.

Writing parameters data to the S.BUS servo

1. After parameters setting is complete, press the "Write" button. This operation transfers the modified parameters data to the S.BUS servo.

*If the data was transferred to the S.BUS servo normally, the following message will appear.
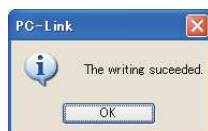
2. Press the "Disconnect" button.

3. Disconnect the **S.BUS** servo. This operation saves the modified parameters data to the S.BUS servo finally.

Reading parameters data saved at the PC

1. Select the "Open" command from the "File" menu.

2. A file open dialog opens. Select the file you want to open, and press the "Open" button. When reading is complete, the parameters data on the screen is changed.

*At the time the file was read data is not transferred to the S.BUS servo. To write data directly to the S.BUS servo, check the read contents and transfer the parameters data to the S.BUS servo by pressing the "Write" button.
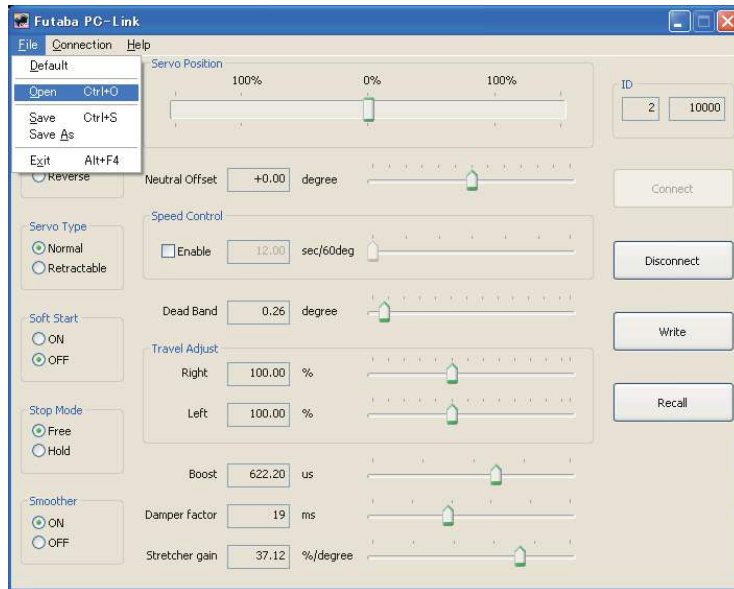
Saving parameters data to PC

1. Select the "Save" or "Save As" command from the "File" menu.

*The "Save" command overwrites an existing filename. The "Save As" command saves the data under a new filename.

2. The parameters file is saved to the PC by pressing the save button in the data save dialog.

Initializing the parameters data

1. Select the "Initialize" command from the "File" menu.

*A confirmation message appears.

2. When Yes (Y) is clicked, the parameters data on the screen is changed to the default state.

*At the time the parameters data was initialized, the data is not transferred to the S.BUS servo. The S.BUS servo parameters data is initialized to the initial values by pressing the "Write" button.

Discarding the parameter changes

1. Click the "Recall" button. Or select the "Recall" command of the "Connection" menu.

*The displayed parameters return to the parameters read last.

Parameters Setup Screen Operation
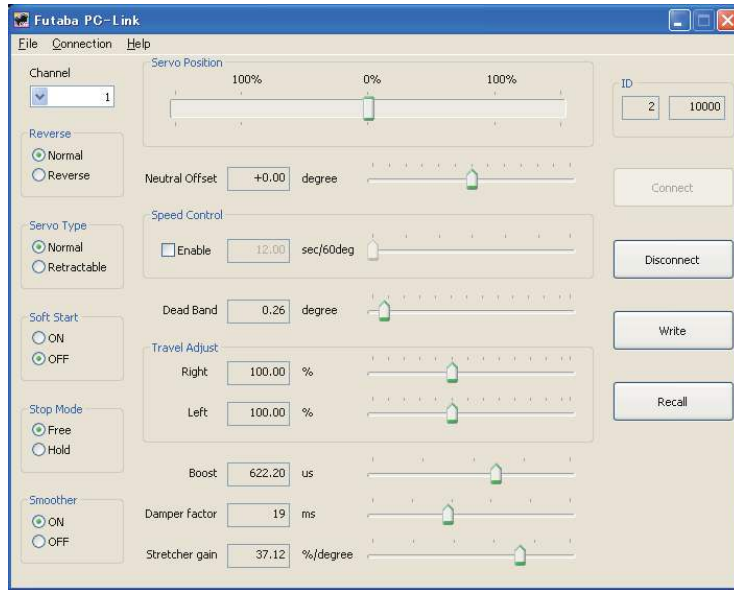
(Parameters setting screen)

1. You can change the Channel parameters by clicking the down arrow next to the number and selecting a different channel.

2. Select the function you want to set for the Reverse, Servo Type, Soft Start, Stop Mode, and Smoother parameter items.

3. When the slide knob of each item on the screen is changed, the set value is changed. When setting an exact value, the value can be changed in minimum units by PC cursor key operation.

4. The "Servo Position" item specifies the operating angle of the connected S.BUS servo. It can be set while checking operation of the set parameters.

5. The new setting is immediately sent to the servo and reflected in operation. (Temporary setting function)

   *The temporary setup parameters are not saved to the servo until the "Write" button is pressed. Save the parameters to the servo by pressing the "Write" button after deciding the optimum value of each item.

   Note: Do not pull out the lead wire or turn off the power while the parameters are being written.

   Note: After rewriting the parameters, thoroughly check the direction of operation, etc. by ground test.

Description of function of each parameter

• ID

Displays the ID of the servo whose parameters are to be read. It cannot be changed.

• Channel

Channel of the **S.BUS** system assigned to the servo. Always assign a channel before use.

• Reverse

The direction in which the servo rotates can be changed.

• Servo Type

When the servo remains stopped for 30 seconds, the dead band expands and unnecessary hold current due to external force is eliminated. When a new position signal enters, the normal mode is restored and normal operation is resumed. Select the "Retractable" mode for the retractable landing gear servo. In this case, set the Travel Adjust and the Speed Control at the same time.

• Soft Start

Restricts operation in the specified direction the instant the power is turned on. By making this setting, only the first operation when the power is turned on slowly moves the servo to the specified position.

• Stop Mode

The state of the servo when the servo input signal is lost can be specified. The "Hold" mode setting holds the servo in its last commanded position even if using AM or FM system.

• Smoother

This function changes smoothness of the servo operation relative to operation signal changes. Normally use at Smooth setting. Especially, select the "OFF" mode when quick operation is necessary.

• Neutral Offset

The neutral position can be changed. When the neutral offset is large value, the servo's range of travel is restricted on one side.

• Speed Control

Speeds can be matched by specifying the operating speed. The speed of multiple servos can be matched without being affected by motor fluctuations. This is effective for load torques below the maximum torque.

However, note that the maximum speed will not be exceeded even if a speed over the maximum speed of the servo at each operating voltage is set.

• Dead Band

The dead band angle at stopping can be specified. If the dead band angle is small, the servo will operate continuously and the life of the servo may be shortened.

• Travel Adjust

The left and right travels centered about the neutral position can be set independently.

• Boost

The minimum current applied to the internal motor when starting the servo can be set. The dead band over which the servo does not operate even when a minute command is applied can be reduced and the servo can be more accurately stopped at the target position by setting this parameter to the optimum value.

• Damper

Makes it difficult for the servo to hunt (phenomena which cause the servo to oscillate) by suppressing overshoot due to inertia when a large load is applied. When hunting occurs due to the load even though the Dead Band, Stretcher, Boost, and other parameters are suitable, adjust this parameter to a value larger than the initial value.

• Stretcher

Specifies the range which adjusts the torque when the servo attempts to return to the target position when the current position deviates from the target position. Within the range specified here the torque which attempts to return the servo to the target position is output in proportion to the difference between the target position and the current position. The left direction and right direction can be set independently.

Hunting can be reduced by using this function.

Setting range of each parameter

- **Reverse:**   Normal/Reverse
- **Servo Type:**   Normal/Retractable
- **Soft Start:**   ON/OFF
- **Stop Mode:**   Free/Hold
- **Smoother:**   ON/OFF
- **Neutral Offset:**   ±30˚ based on the default position
- **Speed Control:**   Max. 0.1sec/60˚ ~12sec/60˚
- **Dead Band:**   0.03~3.98˚
- **Travel Adjust:**   50~175%
- **Boost:**   0~1000.4μs
- **Damper factor:**   0~50ms
- **Stretcher gain:**   0~49.92%/degree