



# GY520 Link Software Manual

The operating parameters of the Futaba GY520 gyro can be set and changed from a PC by using this software. Since the Futaba CIU-2 USB adapter and power supply (receiver battery or 5V power source) are necessary, procure them beforehand and place into the state in which the CIU-2 is operated properly from the PC.

**Note: The GY520 Link software is for Windows<sup>®</sup> Vista/XP/2000 use and is not compatible with other OS.**

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## **Distribution & exemption of liability**

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- The copyright of this software and document resides with Futaba Corporation. Redistribution without the approval of the copyright holder is prohibited.
- Reverse engineering and modification of this software is strictly prohibited.

## Downloaded Zip file extraction (decompression)

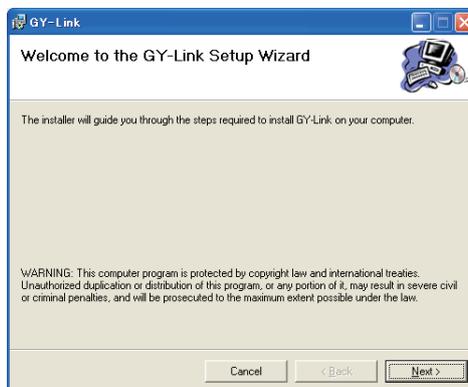
The downloaded GYLink\_Eng\_V100.zip file is a Zip format file. Extract (decompress) this file. (\*For Windows® 2000, separate decompression software is necessary.)

1. With Windows Vista/XP, double click file GYLink\_Eng\_V100.zip to display its contents.
2. Click "Extract all files". The Extraction Wizard launches.
3. Extract (decompress) Zip file GYLink\_Eng\_V100.zip to the same location as the Zip file storage location. GYLink.msi file and setup.exe file are extracted in the GYLink\_Eng\_V100 folder.

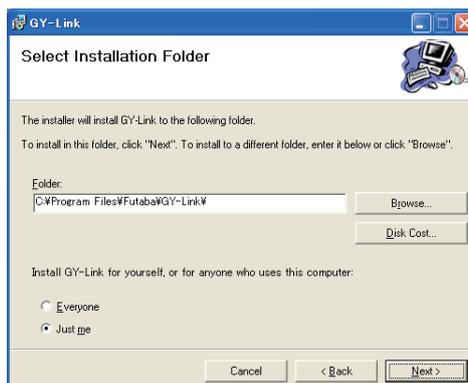
## GY-Link software installation

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

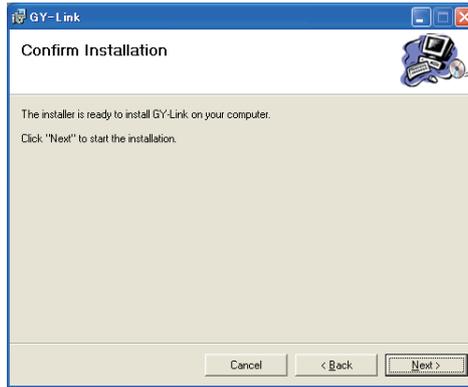
1. Select and double click the folder named GYLink\_Eng\_V100 created by downloaded Zip file extraction (decompression). The contents of the folder are displayed.
2. Double click the EXE file named "setup", and push the "Next" button.



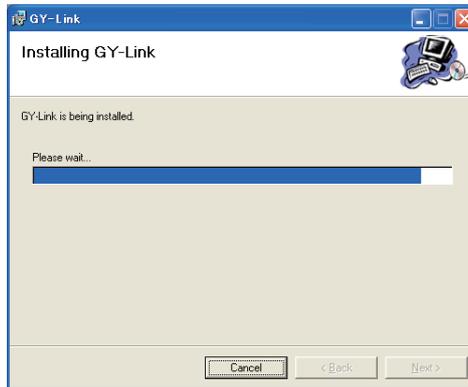
3. Choose the target folder, and push the "Next" button.



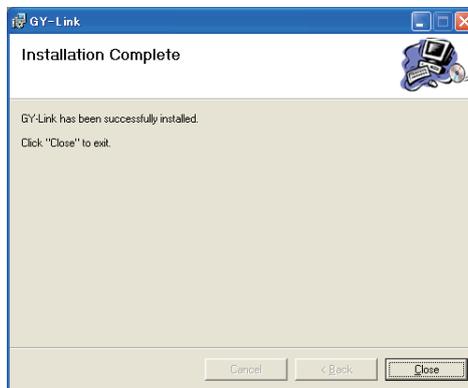
4. Push the "Next" button.



5. The install process begins.



6. The installer displays the following after the install process. Push the "Close" button.



## CIU-2 and GY520 connection

Connect GY520, CIU-2 USB adapter and power supply as shown below.

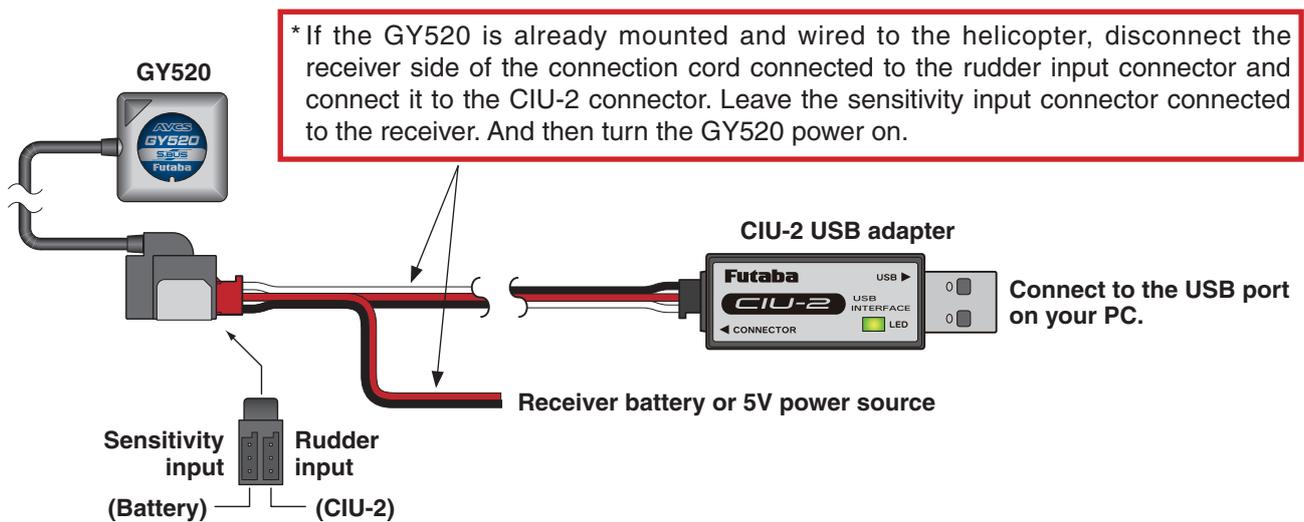
### Installing the CIU-2 device driver

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 our home page.

### Connection method

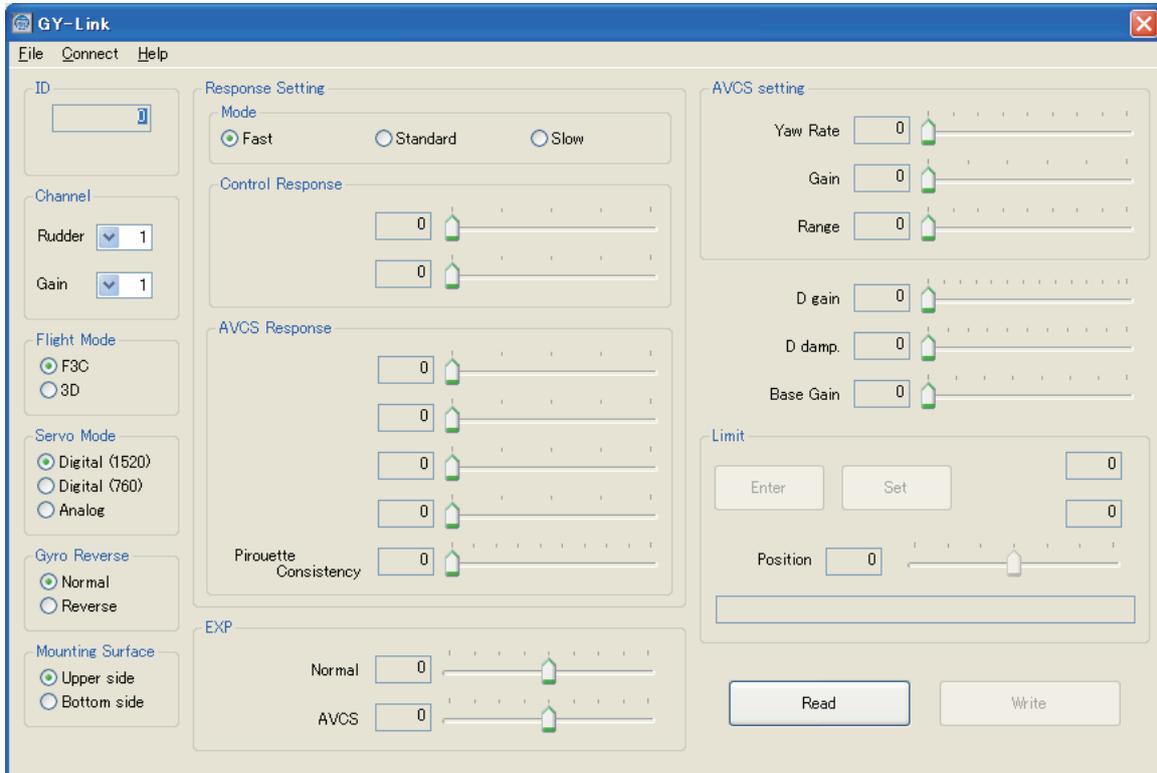
1. Connect the CIU-2 to the USB port of the PC.
2. Using the connection cord connect the 3 pin connector of the CIU-2 to the rudder input connector of the GY520.
3. Connect the receiver battery or a 5V power source to the sensitivity input connector of the GY520.



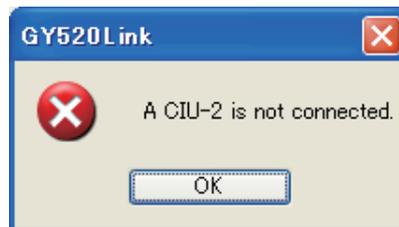
## GYLink software usage method

### Connecting the GY520 and PC

1. Select desktop lower left side "Start" button - "All Programs" - "Futaba" - "GY-Link", in that order. The GYLink software starts up.



\*If the following message appears, the CIU-2 is not properly connected to the PC. Recheck the connection and re-execute the program.



### Reading parameters data from the GY520

1. Press the "Read" button. When connection to the PC is complete, the following message box will appear.



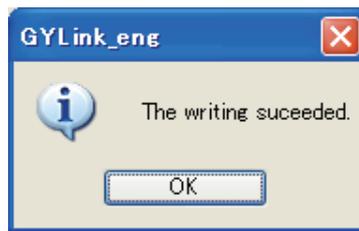
\*If communication between the GY520 and the PC could not be started normally; the following message box will appear. Temporarily disconnect the CIU-2 from the PC, and then reconnect the CIU-2 and the PC and press the "Read" button again.

## GY520 Link



### Writing parameters data to the GY520

1. After parameters setting is complete, press the "Write" button. This operation transfers the modified parameters data to the GY520.
2. If the data was transferred to the GY520 normally, the following message will appear.

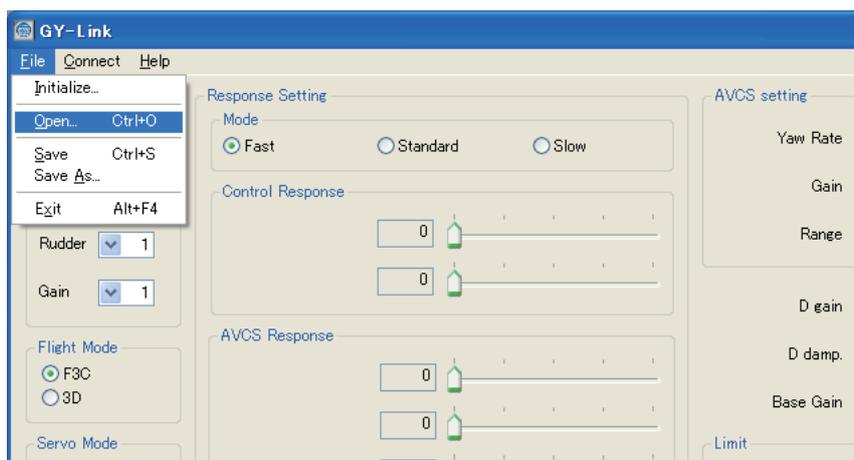


\*If the following message appeared, check the connections and then press the "Write" button again.



### 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 GY520. To write data directly to the GY520, check the read contents and transfer the parameters data to the GY520 by pressing the "Write" button.

## **Saving parameters data to PC**

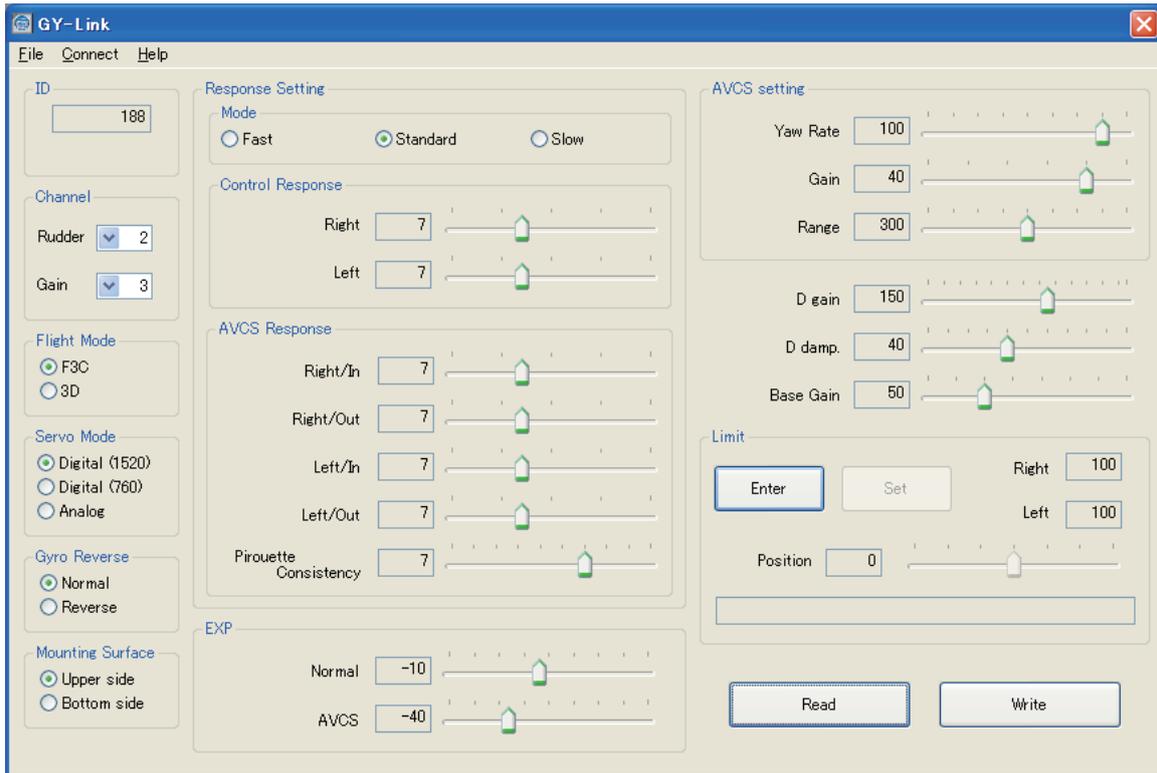
- 1.** Select the "Save" or "Save As" command from the "File" menu. The "Save" command overwrites an existing filename. The "Save As" command saves the data under a new filename.
- 2.** The parameters file is saved to the PC by pressing the save button in the data save dialog.

## **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 GY520. The GY520 parameters data is initialized to the initial values by pressing the "Write" button.

## Changing the parameters



**(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 Flight Mode, Servo Mode, Gyro Reverse, Mounting Surface and Response Setting Mode 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. Set the Limit parameter after the gyro is mounted to the fuselage. When the "Enter" button is pressed, the setting mode is entered. Slide the scale bar to set the limit position. Memorize this position by pressing the "Set" button.
5. After the optimum value of each item was set, the new parameters can be written by clicking the "Write" button.

**Note:** Do not disconnect the GY520 and do not turn off power while writing the parameter.

**Note:** Always confirm the normal operation in the ground test after installing it in the fuselage enough.

## Description of the function of each parameter

- **ID**

Displays the gyro serial No. It cannot be changed.

- **Channel**

Initial value: Rudder=2, Gain=3

Specifies the rudder channel and gain channel numbers connected to the receiver. It is effective at S-Bus connection.

- **Flight Mode**

Initial value: F3C

Sets the F3C and 3D operation modes. When the setting is changed, the parameters needed to operate the gyro are automatically initialized.

- **Servo Mode**

Initial value: Digital (1520)

Selects the servo type. When the setting is changed, the parameters needed to operate the gyro are automatically initialized.

Servo mode	Corresponding type
<b>Digital (1520)</b>	Digital servos for helicopter rudder only (BLS254, S9254, S9257, S9253) Other digital servos
<b>Digital (760)</b>	High-speed digital servos for helicopter rudder only (BLS251, S9256, S9251)
<b>Analog</b>	Analog servos

- **Gyro Reverse**

Initial value: Normal

Sets the gyro operating direction.

- **Mounting Surface**

Initial: Upper side

Inputs the gyro mounting direction. The rudder left and right operating directions are unambiguously determined by this parameter and the gyro reverse parameter.

- **Response Setting**

### Mode

Initial value: Standard

Selects the rudder response speed. Changing this parameter changes the rudder operation feeling and rebound characteristic at tail stopping and the tail holding characteristic. In the "Fast" mode, tail operation is most sensitive and the tail holding characteristic becomes maximum. However, the rebound when the tail stops also tends to become large. Select the mode matched to the characteristics of the tail. The "Control Response" and "AVCS Response" parameters described below allow more delicate response setting.

## Control Response

Initial value: Left=7, right=7, setting range: 0-20

Sets the rudder operation delay. The left and right delays can be set separately. When the set value is increased, the delay increases. When the rebound when the tail stops is large, it can be reduced by increasing the delay.

## AVCS Response

Initial value: Left/In=7, Left/Out=7, Right/In=7, Right/Out=7, setting range: 0-20

Adjusts the tail operation response speed. When the set value is increased, the response speed decreases. "In" is the delay setting when the rudder stick is moved to the left and right from the neutral position. "Out" is the delay setting when the rudder stick is returned to the neutral position from the left and right. The left and right in/out delay can be set separately. The rudder operation feeling and rebound characteristic when the tail stops change just like the "Control Response" setting.

## Pirouette Consistency

Initial value=7, setting range: 1-10

It selects the pirouette control feeling at the rudder input changes. Adjusting ranges are from 1 to 10. The value 10 is a most stiff of the pirouette control, the value 1 is to be a moderate control. Select with preferable rudder control style.

### • EXP

Initial value: Normal=-10, AVCS F3C=-40, AVCS 3D=-20, setting range: -100+100

Set the operation feeling near the rudder stick neutral position. When the set value is "-" side, operation near the neutral position becomes gentle. Operation is like EXP setting of the transmitter.

### • AVCS setting

#### Yaw Rate

Initial value=100, setting range: 30-110

Sets the tail rotational speed. When the rudder operating amount of the transmitter is 100% and the parameter setting is 100, the initial value is set to 450 deg/sec in the F3C mode and to 720 deg/sec in the 3D mode. The maximum control speed of the GY520 is 800 deg/sec. Care is necessary because if set above this value, the helicopter will pirouette at a very high speed exceeding the gyro control range.

#### Gain

Initial value=40 setting range: 0-50

Sets the AVCS sensitivity. When the set value is increased, the holding capacity of the tail increases, but there is a tendency toward hunting and for the tail rebound to increase.

#### Range

Initial value=300 setting range: 100-500

Sets the AVCS operating range. At initial value 300, the servo operating range becomes about 30°. When the set value is increased, the operating range increases and the neutral correction range due to cross wind, etc. increases, and tail stop operation, etc. are affected.

- **D gain**

Initial value=150 setting range: 0-250

Sets the gyro differential operation gain. The characteristic at tail stopping changes.

- **D damping**

Initial value=40 setting range=0-100

Sets the gyro differential operation duration time. The characteristic at tail stopping changes.

- **Base Gain**

Initial value=50 setting range: 30-100

Sets the gyro control basic gain. When the set value is increased, the gyro gain decreases. For example, if the set value is changed to 100, the gyro gain is halved. If the transmitter gain setting is doubled in this state, gain becomes the same as in the previous state.

- **Limit**

Initial value: Left=100, Right=100, setting range: 50-150

Sets the servo operating angle limit position. Set after the gyro is mounted to the fuselage. When the "Enter" button is pressed, the setting mode is entered. Slide the scale bar in one direction and check the servo operating position and position it so that the servo horn does not interfere with the linkage. Memorize this position by pressing the "Set" button. Next, move the scale bar up to the other limit position and perform the same operation. The limit value cannot be set to 50% or less. After deciding the limit positions, finally transfer the set value to the GY520 by pressing the "Write" button.