

## S.BUS Servo Usage Precautions

### ⚠ CAUTION

- ⊘ **Do not touch the servo case immediately after servo operation.** You may be burned because the motor and circuits inside the servo become hot.
- ⊘ **Do not turn the servo horn with unreasonable force.** If the servo horn is turned with unreasonable force, the servo may be damaged.
- ⊘ **Do not expose the servo to dust and water.** The servo does not have a waterproof construction. If it gets wet, the servo may not operate or the power supply may short circuit.
- ⊘ **Do not disassemble or modify the servo.** The servo has a precision construction. Futaba Corp. will not be responsible for any disassembly or modification other than those specified by us.
- ⊘ **Never connect the battery in reverse.** Reverse connection may cause smoke, fire, and damage.
- ⊘ **Do not leave the servo in the locked state.** Leaving the servo in the locked state (state in which enough force is applied that the servo cannot move), may cause the generation of smoke, sparks or damage.
- ⚠ **Use the servo as an actuator in hobby applications.** Futaba will not be responsible if the servo is used in applications other than the above.

Futaba will not be responsible for damage, etc. caused by the use of parts other than Genuine Futaba parts.

- **Current consumption:** The S.BUS servo is designed to be used with models which require especially high torque and high speed, the same as conventional digital servos. For this reason, a large current flows during servo operation. Therefore, decide the safe number of uses by paying careful attention to the remaining battery capacity.
- **Power supply:** Use a battery with an ample margin as the power supply. The specified performance cannot be displayed with a dry cell battery.
- **Operating angle:** Install the servo so that the pushrod does not bind or become slack even when the servo is operated up to its limit, or set the maximum travel using the functions (ATV, EPA, etc.) of the digital proportion set or of the servo itself. Refer to the instruction manual of each product and its setting program for a description of the digital proportional set and servo setting method.
- **Applicable models:** The S.BUS cannot be used with transmitters (servo neutral signal: 1310μs) manufactured before 1982.

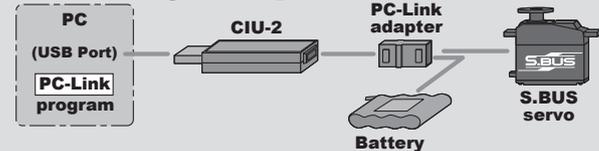
- **System use:** The simple wiring S.BUS system can be used by connecting the S.BUS servo to an S.BUS compatible receiver. In addition, the various operating characteristics as a programmable servo can be changed by connecting the S.BUS servo to a PC by using a CIU-2 USB serial interface.

## Programmable functions of the S.BUS servo

### Programmable functions

The operating characteristics can be changed by PC-Link program installed on a PC by using the CIU-2 USB serial interface to connect the S.BUS servo to the PC. The set operating characteristics are effective for both conventional radio control systems and the S.BUS system. (Some functions are compatible with only one system)

#### [Connection using PC-Link]



\* A Y-harness or S.BUS hub can also be used instead of the PC-Link adapter.

### How to obtain the PC-Link program

PC-Link programmable devices setting program for various models can be downloaded for free from our website. Refer to the instruction manual for each program for the operating instructions for each program.

### Settable functions

The following operating characteristics can be set by PC-Link program.

#### [S.BUS servo setting parameter example]

Channel assignment / Servo reverse / Servo type / Soft start / Stop mode / Smother / Neutral offset / Speed control / Dead band / Travel adjust / Boost / Damper / Stretcher, etc.

- \* The setting parameters differ depending on the model of the S.BUS servo.
- \* Refer to the PC-Link instruction manual for other functions and detailed setting contents.

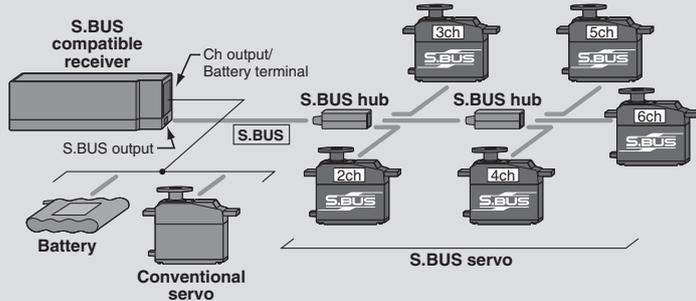
# About the S.BUS system

## What is S.BUS?

Different from conventional radio control systems the **S.BUS** system uses data communication to transmit control signals from a receiver to a servo, gyro, or other **S.BUS** compatible device.

This data includes commands such as “move the channel 3 servo to 15 degrees, move the channel 5 servo to 30 degrees” to multiple devices. The **S.BUS** devices execute only those commands for their own set channel. For this reason, it can be used by connecting multiple servos to the same signal line.

### [Connection by S.BUS system]



\*Can also be used together with conventional servos.

\***Items required:** S.BUS receiver, S.BUS servo, S.BUS hub, SBC-1 channel changer or CIU-2 USB serial interface

### [Procedure for use with the S.BUS system]

#### 1. Set the channel at the S.BUS servos.

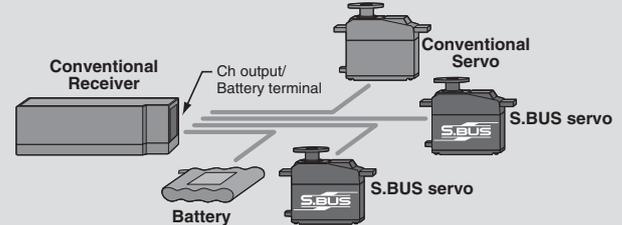
Set the channel at the S.BUS servos by using an S.BUS compatible receiver, an SBC-1 channel changer or CIU-2 USB serial interface.

\*Refer to the S.BUS compatible receiver, the channel changer or setting program instruction manual for the S.BUS servo channel setting method.

#### 2. Connect the servos to an S.BUS compatible receiver.

Connect the servos from the S.BUS port of the S.BUS compatible receiver via S.BUS hubs.

### [Connection to conventional receiver]



\*Operation is the same as that of a conventional servo.

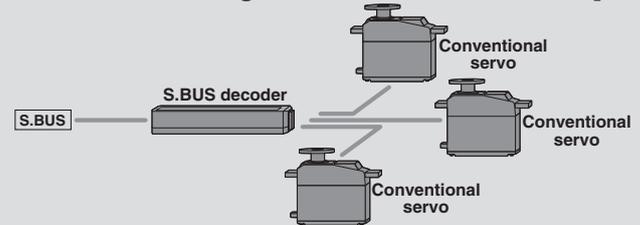
\***Items required:** Receiver, S.BUS servo, CIU-2 (if changing the servo settings)

### [Operation by conventional radio control]

An S.BUS servo connected to a conventional receiver operates as a conventional servo. The channel becomes the receiver connection point.

\*The contents set by programmable function are effective.

### [Method of connecting conventional servo to S.BUS]



\***Items required:** S.BUS receiver, S.BUS decoder, servo, SBC-1 channel changer or CIU-2 USB serial interface

### [Connecting conventional servos to the S.BUS]

Conventional servos can be connected to the S.BUS by using an S.BUS decoder. The servo channel is set at the S.BUS decoder.

\*Refer to the S.BUS decoder instruction manual for the S.BUS decoder channel setting method.

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