**Introduction**

Strictly speaking, **SoftServo-B24CH** is a 24-channel PWM signals generator, which can be applied to most of the devices that integrate RC interface, but the original intention of the design is to control the *PWM-Style* servo. It integrates RS485 and I2C into one connector, and they share the same user register, so the servo controller can be used via any one of the two interfaces at any time. All functions can be performed by reading or writing the user register, except for a few special operations(please refer to the corresponding communication protocols for details), which is similar to the MCU operation. In addition, the high-level width of the PWM signal is simplified as *PWM-Effective-Width* which is typically from 500μs to 2500μs.

**Features**

* All the PWM signals output at the same time(in other words, they almost have the same rising edge), and the actual resolution is up to 1μs(the hardware version must be higher than V22).
* The signal coupling is so low that it is difficult to detect visually, just like all the PWM signals are generated by separate hardware.
* It integrates the *Soft-Start* function. As we all know, the initial position of the *PWM-Style* servo is typically unknown. *Conventional-Start* mode makes servo rotate to the goal position with full speed, which is unsatisfactory in most robotic applications. *Soft-Start* mode can make servo rotate slowly when the current position is unknown, but need more current in a short time. It is suggested that all the servos should be started in time-sharing mode to reduce the electric current when you need to control several servos.
* The cycle, the minimum *PWM-Effective-Width* and the maximum *PWM-Effective-Width* can be set flexibly, which makes all the *PWM-Style* servos compatible.
* It is based on a subdivision algorithm, the maximum subdivision value is up to 250. The position and the speed of each channel can be controlled separately, which is conductive to robot dynamic control. The speed depends on the subdivision(see below).
* All the PWM signals can be terminated by setting the equivalent position value to 251 at any time, which is extremely useful for protecting the servo.
* It integrates a stable and high-efficiency RS485, and the baud rate can be detected automatically. There is no instruction packet loss when the baud rate is not higher than 28800bps, otherwise the first instruction packet will be discarded. Furthermore, it is recommended to send the sync bytes(0xff 0xff 0xff 0xff) first when the baud rate is higher than 28800bps.
* It integrates a stable and high-efficiency I2C.

**Specification**

Supply voltage : DC 5 ~ 24V

Baudrate range : 1200 ~ 115200bps

I2C speed : 100KHz

Size : 64mm \* 47mm \* 13mm (L\*W\*H)

**Tool**

“SoftServo\_B24CH\_Tool.jpg”