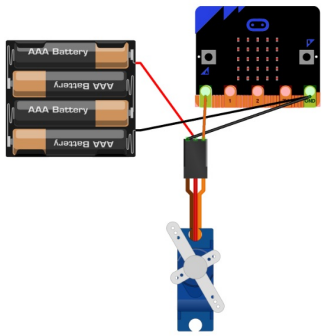
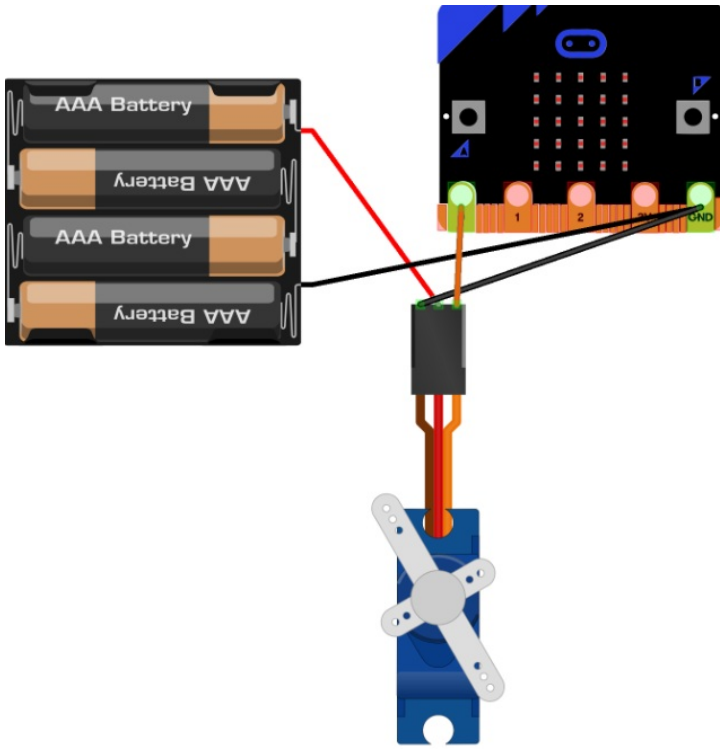


BBC Microbit Servo Motor Drive User Manual

Contents

Microbit Servo Motor Drive



BBC Microbit Servo Motor Drive Users Manual

H-bridge Logic:
P13 and P14 are input pins that can control the state of the LA and LB outputs. The same P15 and P16 can control the output states of RA and RB.

P13	P14	LA	LB	Features
0	0	Z	Z	Stop/fast domain
0	1	L	H	Reverse
1	0	H	L	Positive
1	1	L	L	Instigating/shunning

Inputs:
The input pin can be used to control the speed of the motor by means of PWM. When the motor is controlled to rotate, if the drive current is suddenly interrupted, the internal current of the motor cannot be terminated immediately because the motor has an inductance property, and the freewheeling circuit must be supplied with current. In order to solve the freewheeling problem, the H-bridge circuit has two modes of operation, a fast decay mode and a slow decay mode. In fast decay mode, the H-bridge will be disabled and current will flow through the body diode; in fast decay mode, the motor coil will be shorted. In fast decay mode, one of the two input pins inputs a PWM signal and the other inputs a low level signal. In slow decay mode, one of the two input pins inputs a PWM signal, and the other one inputs a high level signal.

P13	PWM
1	0

Features:

- Forward PWM, fast-forward school

- Forward PWM
- Reverse PWM
- Reverse PWM, slow buck

Usage I nstructions

To control the servo motor using the BBC Microbit Servo Motor

Drive, follow these steps:

1. Connect the servo motor to the LA, LB, RA and RB outputs of the BBC Microbit Servo Motor Drive.
2. Connect P13 and P14 to the input pins of the servo motor.
3. To control the speed of the motor, use PWM signals. Connect P13 to the PWM input pin and P14 to a low level signal for fast decay mode. Alternatively, connect P13 to a PWM signal and P14 to a high level signal for slow decay mode.
4. Use the H-bridge logic table to control the direction of the motor by setting the corresponding input pins to the desired values.
5. Refer to the sample program provided in the manual for more guidance on controlling the servo motor.

H-bridge logic:
P13 and P14 are input pins that can control the state of the LA and LB outputs. The same P15 and P16 can control the output states of RA and RB.

P13	**P14**	**LA**	**LB**	**Features**
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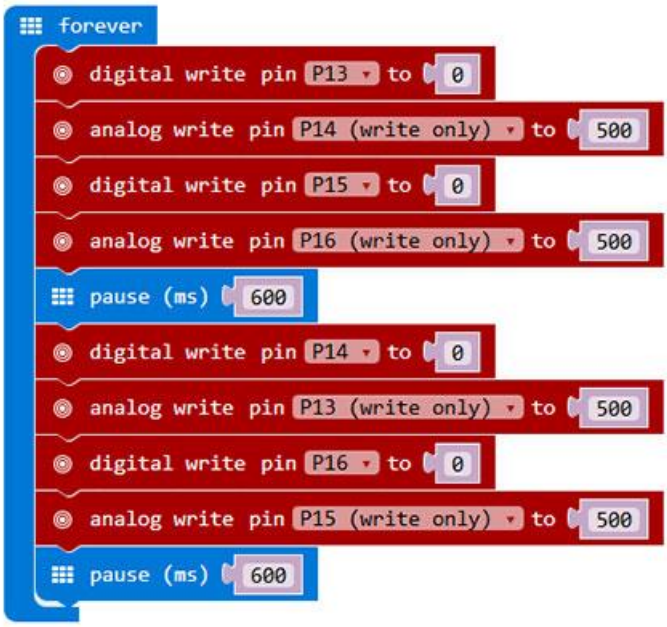
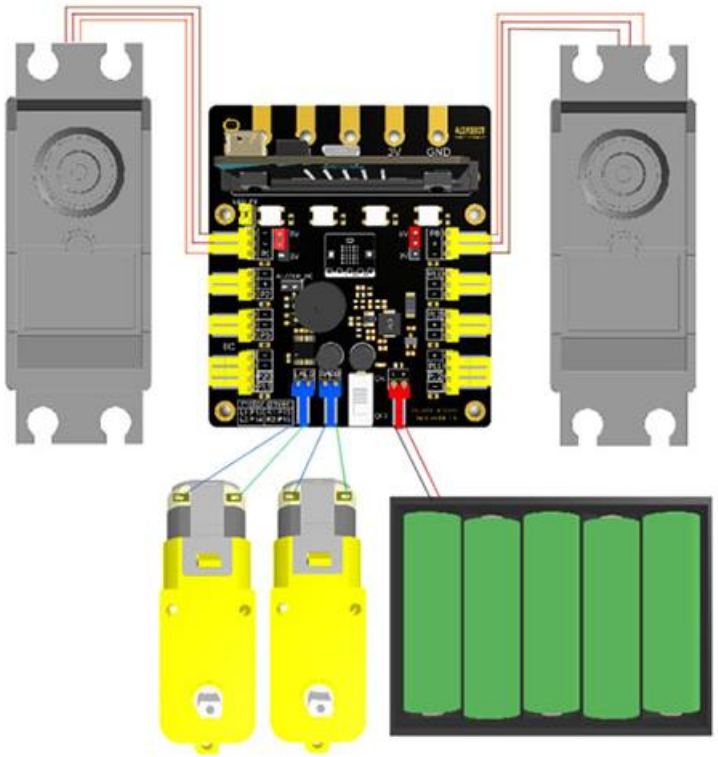
P13	P14	Features
PWM	0	Forward PWM, fast-forward school
1	PWM	Forward PWM
0	PWM	Reverse PWM
PWM	1	Reverse PWM, slow buck

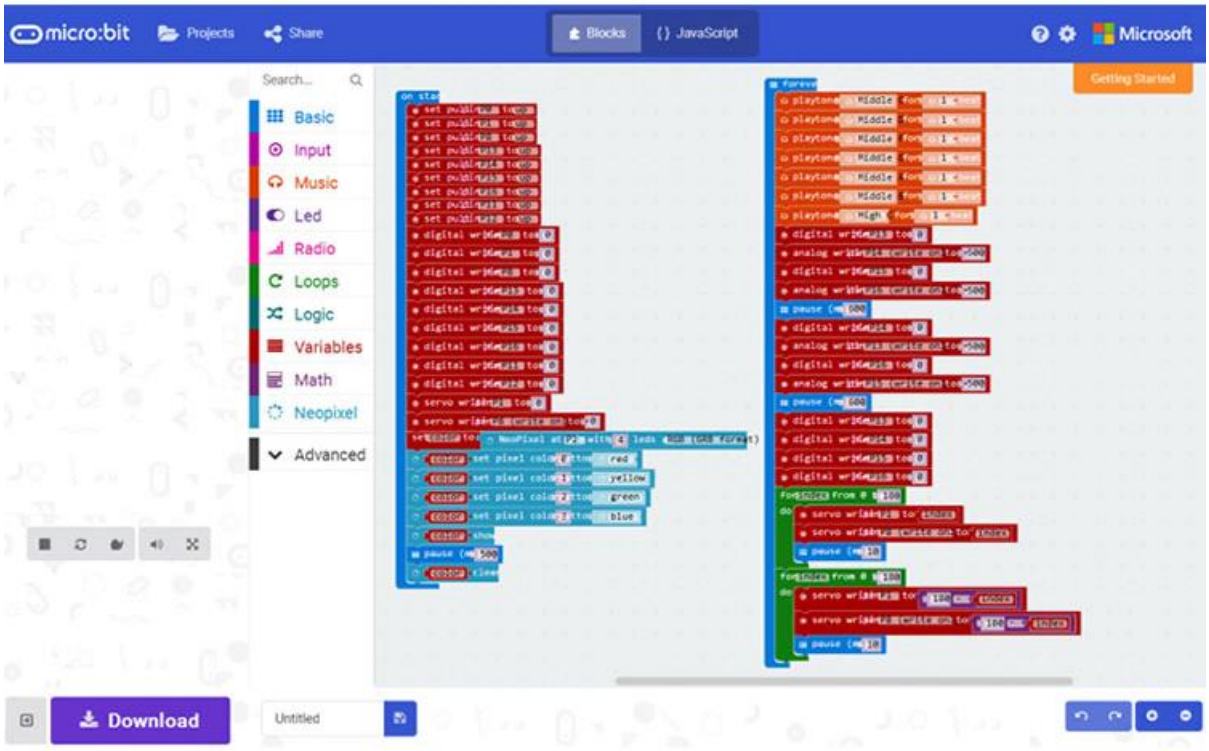


Sample program



As shown in the figure, PI and P8 are connected to the steering gear (the two power supply short-circuit sub-shorts are 5V), the L and R motor interfaces are respectively connected to the DC geared motor, and the DC interface is connected to the DC power supply or the battery (the voltage is between 6V and 11.4V). The switch is

toggled to the ON position. The four RGB lights are displayed in red, yellow, green and blue from left to right; the buzzer continuously sends out seven syllables DO, RE, MI, FA, SO, LA, XI; The DC motors are respectively rotated to the IS and then stopped after the reverse IS; the two servos connected to P1 and P8 are rotated from 0° to 180° to 0°, and then stopped.



Documents / Resources

	[BBC Microbit Servo Motor Drive] [pdf] User Manual Microbit Servo Motor Drive, Servo Motor Drive, Servo Motor Drive, Drive