

WEINTEK IIOT LTD.

iR-ETN40P High Speed Output

EasyBuilder Pro Demo Project for
High-speed Output

Demo Project

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1. Demonstration Explanation

This demonstration utilizes EasyBuilder Pro to create a project, demonstrating how to activate the high-speed output function of iR-ETN40P.

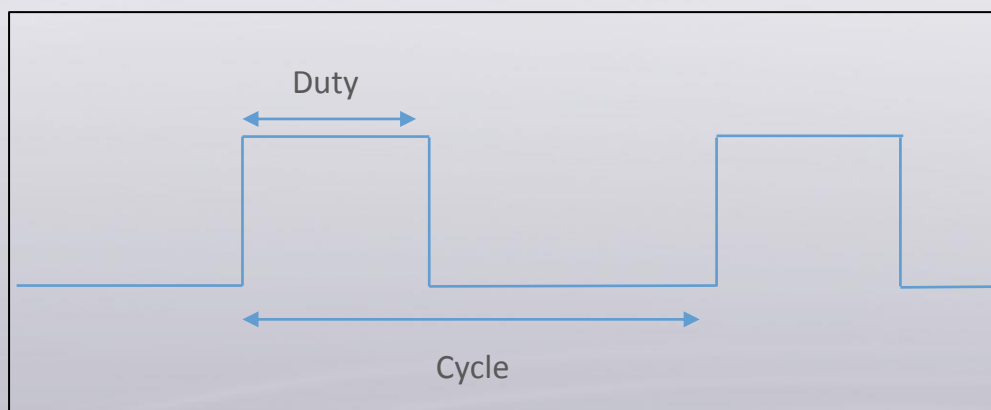
Introduction

iR-ETN40P provides two high-speed outputs with a maximum frequency of 40kHz and a voltage of 5V. The pinouts are located at Slot I and Slot II, pins 8 The high-speed output function needs to be enabled through configuration. There are three output modes for high-speed output: (1) Digital Output, (2) PWM Output, and (3) Motion Output. The Motion Output includes CW/CCW and Pulse/Dir modes.

Digital Output Mode

Functions similar to standard digital output, with states of ON or OFF.

PWM Mode



PWM stands for Pulse Width Modulation, commonly used to control the power or speed of electronic devices, such as motors. PWM technology

adjusts the average power of a signal by altering the width of pulses within a fixed time period.

In simple terms, PWM involves changing the duration ratio of the signal's Duty Cycle (refer to the diagram) within a fixed time period, which is the pulse width. This adjustment generates an average voltage, allowing simulation of different voltage values by varying the pulse width.

PWM (Pulse Width Modulation) is widely used in various applications, with one primary use being in power control for electronic devices. For instance, when it is necessary to control the speed of a motor, PWM can be employed to modify the voltage supplied to the motor instead of using a fixed voltage directly. By adjusting the width of PWM pulses, precise speed control can be achieved.

Motion Mode

Controlling motion through pulses typically involves the use of pulse signals, especially when managing motors or other motion devices. Stepper motors are the primary application for the high-speed output Motion Mode, enabling control over speed, distance, and homing movements.

- **Speed Control**

Pulse signals are used for speed control by transmitting a series of pulses. The driver adjusts the rotational speed based on the frequency of these pulses.

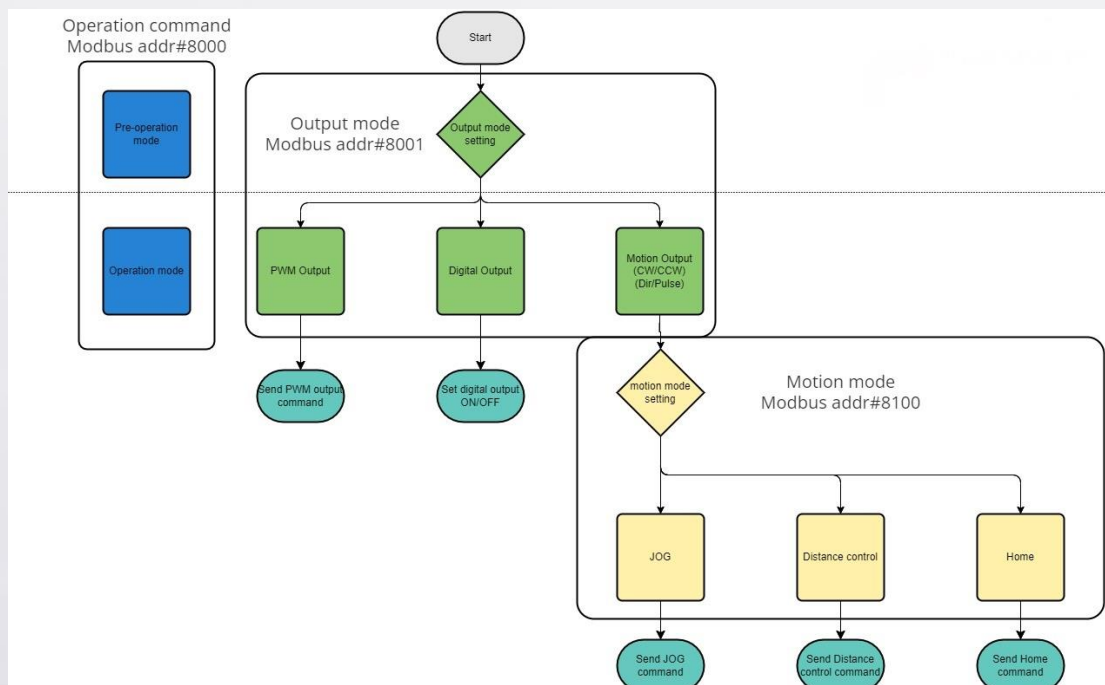
- **Distance Control**

Pulse signals are used for distance control by transmitting a series of pulses. This enables precise control of the device's movement at a specific distance.

- Homing

Pulse signals are used for homing by transmitting a series of pulses. This assists in locating the home sensor position and enables precise control for devices to return to a predefined position.

2. Flowchart



3. Operation Steps

Follow the steps below using the EasyBuilder Pro project to activate Digital Output, PWM, and Motion modes.

Digital Output Mode

Step 1. Click [Pre-operation] and set the [Operation Mode].

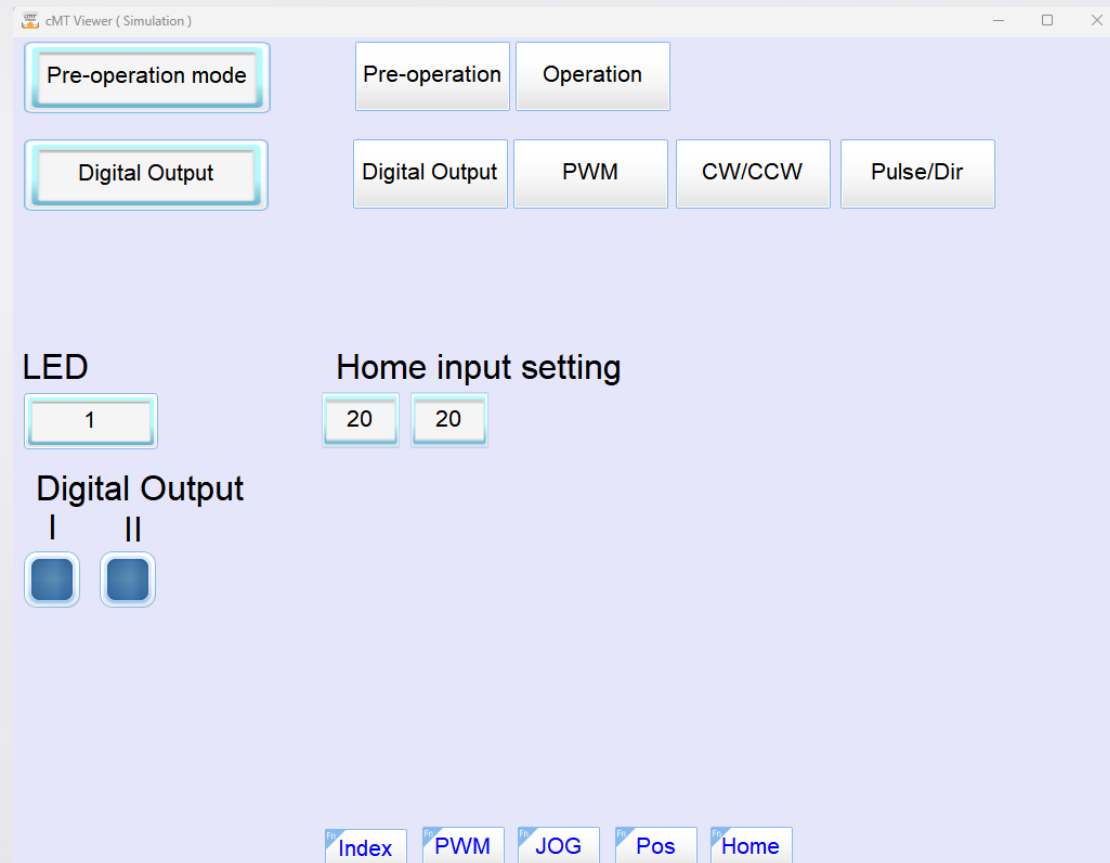
iR-ETN40P High Speed Output



Step 2. Click [Digital Output] and set the [Output Mode].

Step 3. Click [Operation] and set the [Operation Mode].

Step 4. Click "I" and "II" to output 5V or turn off the output.



PWM Mode

Step 1. Click [Pre-operation] and set the [Operation Mode].

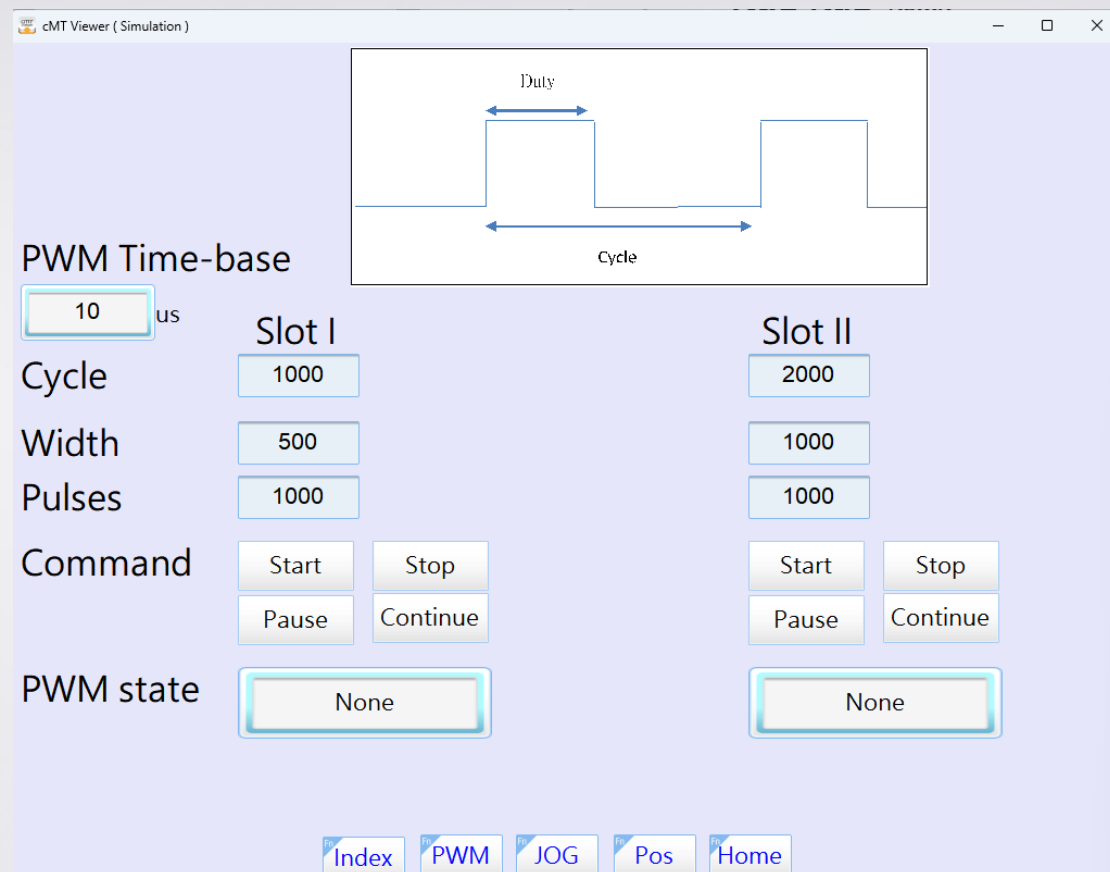
Step 2. Click [PWM] and set the [Output Mode].

Step 3. Click [Operation] and set the [Operation Mode].

Step 4. Switch to the [PWM] settings window and configure PWM channels for Slot I and II.

Step 5. Send a "Start" command to Slot I or II; PWM pulses will output according to the configuration.

*In PWM output, "Stop," "Pause," and "Continue" commands can control high-speed output.



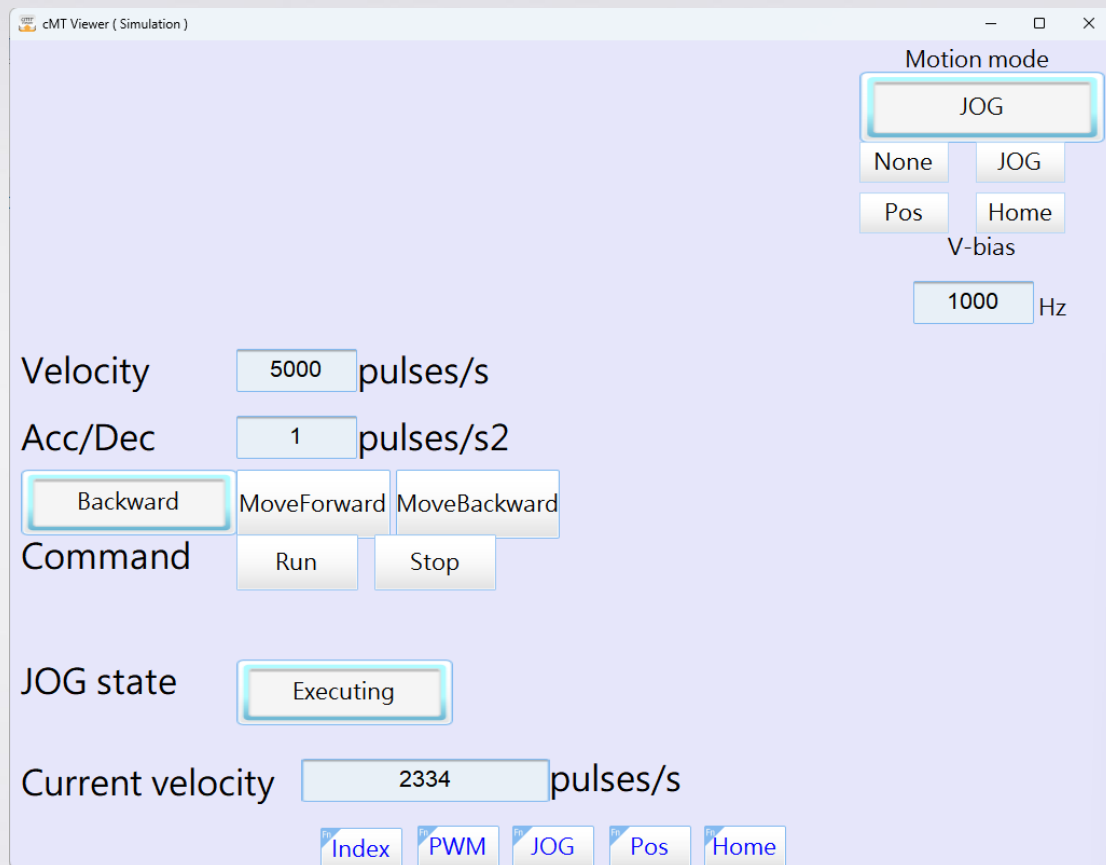
Motion Mode

- Step 1.** Click [Pre-operation] and set the [Operation Mode].
- Step 2.** Choose pulse output mode by clicking [CW/CCW] or [Pulse/Dir] and set the [Output Mode].
- Step 3.** Click [Operation] and set the [Operation Mode].

Motion Mode - Speed Control

Continue from Step 3.

- Step 4.** Switch to the [JOG] settings window, set "Motion mode" to JOG mode, and configure speed control parameters.
- Step 5.** Send a "Run" command; high-speed output for Slot I and II will output pulses according to the set direction.



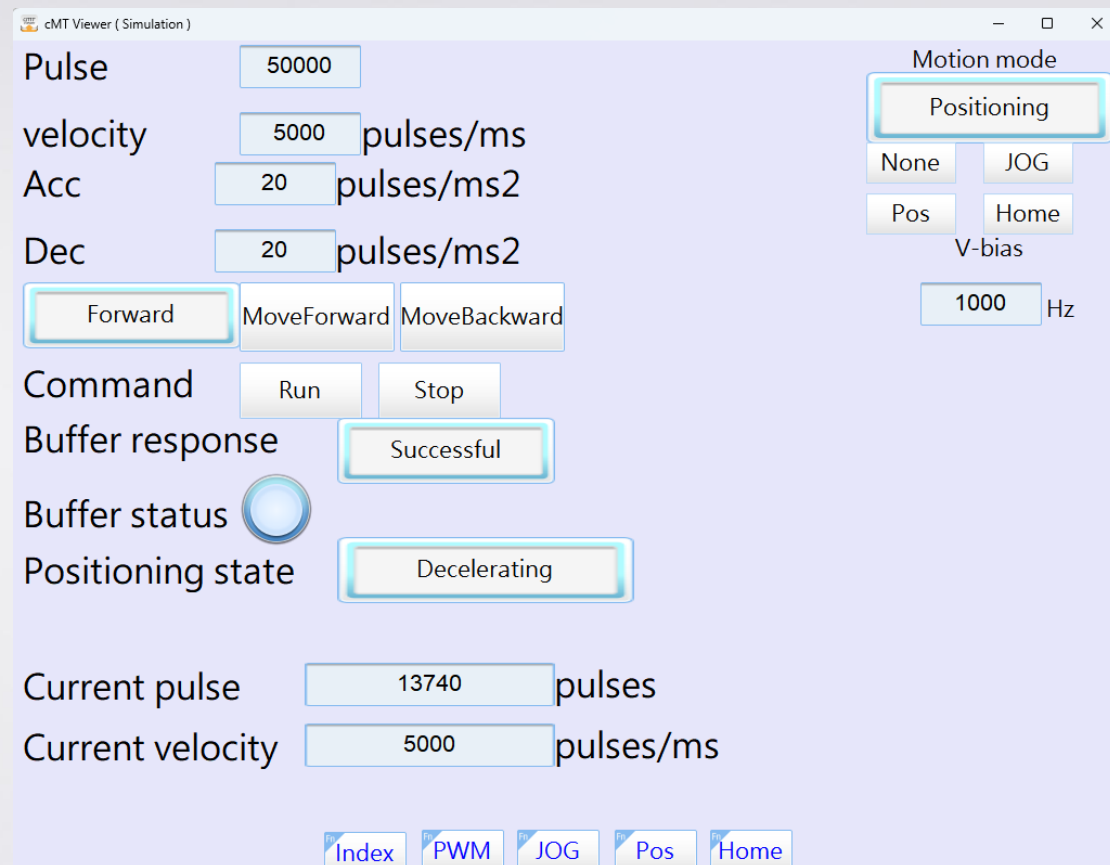
* While in motion, giving a "Stop" command can stop the high-speed output.

Motion Mode - Distance Control

Continue from Step 3.

Step 4. Switch to [Pos] settings window, set "Motion mode" to Positioning mode, and configure distance control parameters.

Step 5. Send a "Run" command; high-speed output for Slot I and II will output pulses according to the set direction.



* While in motion, giving a "Stop" command can stop the high-speed output.

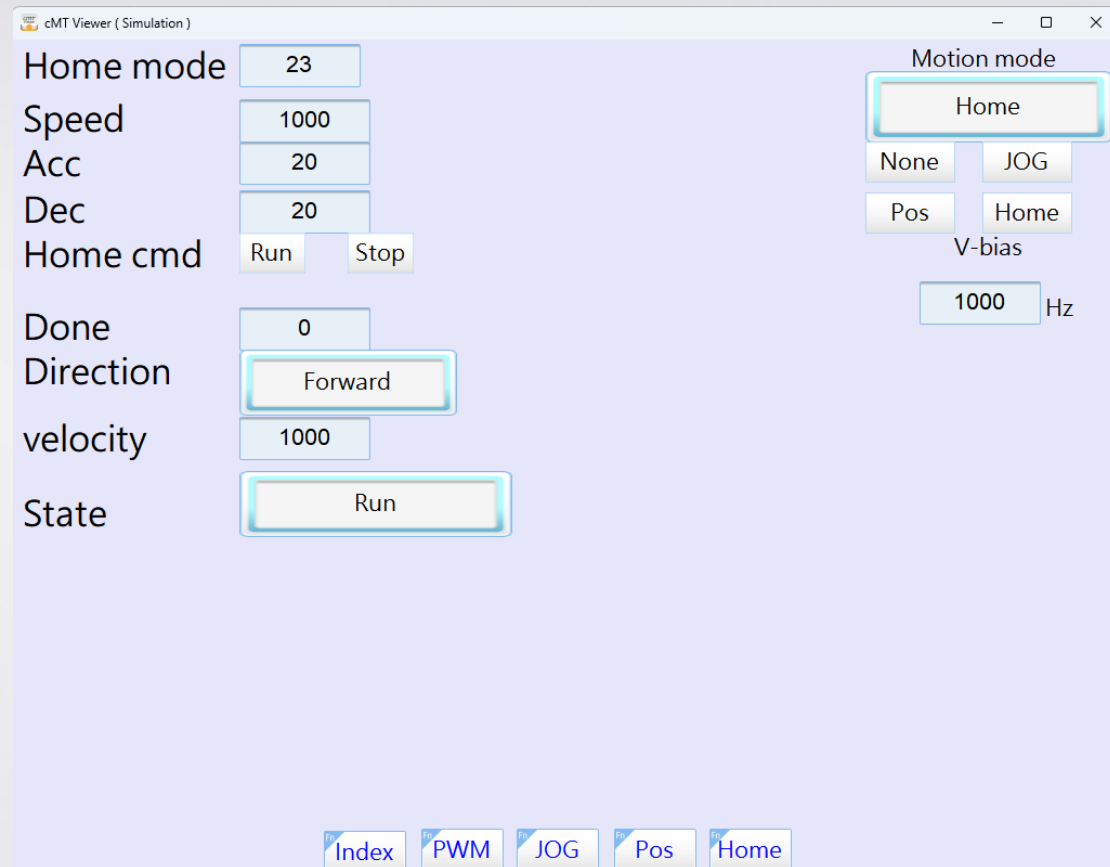
*iR-ETN40P cannot remember the current position; it can only perform relative positional movement.

Motion Mode - Homing

Continue from Step 3.

Step 4. Switch to [Home] settings window, set "Motion mode" to Home mode, and configure home position control parameters.

Step 5. Send a "Run" command; high-speed output for Slot I and II will output pulses according to the home position configuration.



*While in motion, giving a "Stop" command can stop the homing process.

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