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1 Stepper Control

1.1 Introduction

You can define the number of stepper controllers needed by the Generic C_SDC_INST. Each instance of the module get an address assigned. The data bus should be 32 bit wide and the Generic C_SDC_RESOLUTION defines the possible resolution of the speed setting.

The stepper control implements 2 control signals and 3 data signals:

- enable - a control bit indicating whether the stepper output is enabled or not. If set to logic zero all output pins are set to ground. The IP module lets you connect the enable signal to extern modules. To do this add ENABLE_CON to ports in EDK and make it external.
- static hold - a control bit to enable static hold of the stepper motor. All coils are energized.
- Direction - a data bit to indicate the direction of rotation.
- Speed - a data value indicating the reference speed. The width of the data register is defined by the generic C_SDC_RESOLUTION. The default value is 8.
- Steps - a data value indicating the number of steps to take. The width of the data register is defined by the generic C_SDC_STEP_COUNT. The default value is 16.

As long as the sum of C_SDC_RESOLUTION and C_SDC_STEP_COUNT is below 29 and above 1 they are valid.

1.2 Design constraints

1.3 Features

- 32-bit OPB slave interface.
- Up to 32 stepper driver instances.

1.4 Design Implementation