

XinaBox Datasheet OC05 - Servo Driver



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Overview

The OC05 xCHIP is a servo motor controller driver that uses the PCA9685 PWM controller as servo interface supported by a BU33SD5 regulator to drive and accurately control up to 8 servo motors on a single module and act as system power supply. The module has 8 standard 2.54 mm (0.1") servo headers, plus 1 standard 2.54 mm (0.1") battery/BEC input header.

Product Highlights

- Servo motor controller/driver
- Connect up to 8 servos
- Standard 2.54 mm Servo Motor Header
- Support for 8 different I²C Addresses (Possible to connect up to 64 Servos)

Applications

- Robotics
- Motion Control
- Actuator Interfaces
- Positional Control

Specifications

PCA9685

- 8 PWM Drivers
- 1 MHz Fast-mode Plus compatible I²C-bus interface
- 4096-step (12-bit) linear programmable PWM output varying from fully off (default) to maximum PWM
- Internal power-on reset
- No output glitches on power-up
- Low standby current

BU33SD5

- Input Power Supply Voltage Range: 3.5V to 6.0V
- Output Current Range: 0 to 500mA
- Operating Temperature Range: -40°C to +105°C
- Output Voltage Accuracy: ±2.0%
- Circuit Current: 33µA
- Standby Current: 0µA

External Links

Datasheets

- PCA9685 From NXP Semiconductors (<https://www.nxp.com/docs/en/data-sheet/PCA9685.pdf>)
- BU33SD5 From ROHM (http://rohmfs.rohm.com/en/products/databook/datasheet/ic/power/linear_regulator/buxxsd5wg-e.pdf)

Shop

- Buy OC05 (<https://xinabox.cc/products/oc05>)

GitHub Libraries

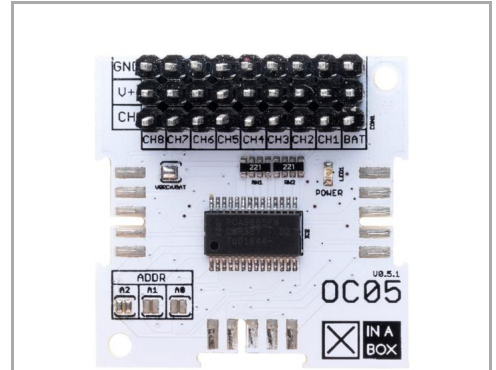
- Arduino (https://github.com/xinabox/Arduino_OC05)
- MakeCode (<https://github.com/xinabox/pxt-OC05>)
- Raspberry Pi (https://github.com/xinabox/RPi_OC05)

Featured Samples

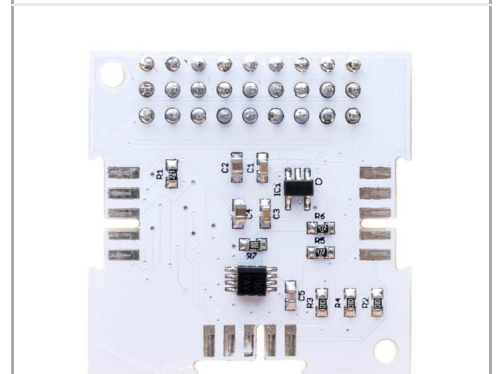
- sample_servowave_SL06OC05 (https://github.com/XinaBoxSamples/sample_servowave_SL06OC05)

Featured Projects

OC05 - Servo Driver (PCA9685 & BU33SD5)



Front



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☒CHIP

| | |
|-------------------------------------|---|
| Main Category | Output |
| Sub Category | Control |
| Introduced | 1 January 2017 |
| Current version | 1.0.0 |
| Current version date | 1 January 2017 |
| Dimensions | |
| Size | 2x2U (32x32mm) |
| Weight | 4.9 g |
| Height | 11.3/8.6/1.5 mm |
| Non-☒BUS Connections | |
| North | 8 x 2.54 mm servo headers 1 x 2.54 mm battery/BEC header |
| Main Chip Set | |
| Main Chip | PCA9685/BU33SD5 |
| I²C Configuration | |
| Default Address | 0x70 0x78 |
| Alternative Addresses | 0x7B 0x7C 0x7E 0x79 |
| Change Setting | Solder |

- Servo Control with Capacitive Touch Using XinaBox (<https://www.hackster.io/Luqmaan/servo-control-with-capacitive-touch-using-xinabox-cd0c36>)
- Time-Lapse Camera (<https://www.hackster.io/gotfredsen/servo-controlled-time-lapse-camera-f7d81f>)