Control Hub Basics

The REV Robotics Control Hub (REV-31-1595) is an affordable all in one educational robotics controller that provides the interfaces required for building robots, as well as other mechatronics, with multiple programming language options. The Control Hub was designed and built as an easy to use, dependable, and durable device for use in classroom and the competition. It features an Android operating system, and a mature software package designed for both basic and advanced use cases. When the Control Hub software is updated with performance enhancements and features, the controller can receive a "field upgrade," through an update process that is fast and simple.

The Control Hub is an approved device for use in FIRST® Global and FIRST Tech Challenge.

- Physical Dimensions
  - 143mm X 103mm X 29.5 mm
  - Mounting holes on a 16mm spacing
- Input Voltage
  - 12V nominal (8-15V DC)
- Processors
  - RK3328 Quad-core ARM® Cortex-A53

  - Texas Instruments ARM® Cortex-M4
- 3.3V Ports

- 8x digital I/O: 1A source max

- 4x I2C 100kHz/400kHz busses: 500mA source max

- 4x 12-bit analog inputs: 500mA source max

- 4x quadrature encoder inputs: 500mA source max
- 5V Ports
  - +5V Power: 2A source max
  - Servos: 2A source maximum per pair (0-1, 2-3, 4-5)
  - USB 2.0: 1.5A source max
  - USB 3.0: 1.5A source max

PORT LABEL	QTY	CONNECTOR	DESCRIPTION
Battery	2	XT30	Connect one 12V NiMh battery, add an Expansion Hub with second port
Motor	4	JST VH, 2-pin	Motor power output
Encoder	4	JST PH, 4-pin	Quadrature encoder input
Servo	6	0.1" Header	Extended range 5V servo output (500-2500ms)
+5V Power	2	0.1" Header	Auxiliary device 5V/2A
Analog	4	JST PH, 4-pin	Analog input 0-5.0V measurement range with two channels per connector. 3.3V provided on the connector power pin.
Digital	8	JST PH, 4-pin	Digital Input/Output with two channels per connector
I2C	4	JST PH, 4-pin	Four separate I2C busses, 100kHz/400kHz bus speed

RS485	2	JST PH, 3-pin	Use this serial communication port to add an Expansion Hub
UART	2	JST PH, 3-pin	Debugging only
USB C	1	USB C	Connect directly to the Control Hub via PC, USB 2.0
USB 2.0	1	USB A	Connect USB cameras and other USB peripherals to the Control Hub
USB 3.0	1	USB A	Connect USB cameras and other USB peripherals to the Control Hub
HDMI	1	HDMI A	Supports 4k @ 60Hz