

Hardware Pin Connections Reference

ARDUINO UNO Q INTEGRATION BLUEPRINT

Host Controller: Arduino UNO Q

Peripherals: 9 Modules

Status: Validated Specification

I/O Assignment & Connection Map

ARDUINO UNO Q PIN	TARGET COMPONENT / MODULE	COMPONENT TERMINAL
D9	Pololu DRV8835 Dual Motor Shield	Motor_1 [Speed]
D7	Pololu DRV8835 Dual Motor Shield	Motor_1 [Direction]
D10	Pololu DRV8835 Dual Motor Shield	Motor_2 [Speed]
D8	Pololu DRV8835 Dual Motor Shield	Motor_2 [Direction]
GND	TCRT5000 Infrared Sensor [First]	GND
5V	TCRT5000 Infrared Sensor [First]	VCC
A2	TCRT5000 Infrared Sensor [First]	OUT
GND	TCRT5000 Infrared Sensor [Second]	GND
5V	TCRT5000 Infrared Sensor [Second]	VCC
A3	TCRT5000 Infrared Sensor [Second]	OUT
GND	Grove - Electromagnet (5V)	GND
5V	Grove - Electromagnet (5V)	VCC
D12	Grove - Electromagnet (5V)	SIG
D11	Grove - WS2813 RGB LED Strip	Data
GND	Analog Joystick	GND
5V	Analog Joystick	+5V
A4	Analog Joystick	VRX
A5	Analog Joystick	VRY
D2	Analog Joystick	SW

ARDUINO UNO Q PIN	TARGET COMPONENT / MODULE	COMPONENT TERMINAL
D3	Control Button (A)	+
D4	Control Button (B)	+
D5	Control Button (C)	+
D13	Micro Switch with Pulley (KW10-Z5P)	+

Electrical Deployment Notes

Ensure that all common ground (GND) lines are tied securely to the Arduino Ground rail to prevent floating references. For power-intensive elements like the DRV8835 Motor Shield and the WS2813 RGB LED strip, ensure an adequate external power source is provided rather than relying solely on the Arduino's onboard 5V regulator.

Component Reference Links

- Pololu DRV8835 Dual Motor Driver Shield: pololu.com/product/2511
- TCRT5000 Infrared Sensor Module: vishay.com/docs/83760/tcrt5000.pdf (Datasheet)
- Grove - Electromagnet (5V): wiki.seeedstudio.com/Grove-Electromagnet
- Grove - WS2813 RGB LED Strip (60 LED): wiki.seeedstudio.com/Grove-WS2813_RGB_LED_Strip
- Analog Joystick Module: docs.arduino.cc/built-in-examples/joystick
- Micro Switch with Pulley (KW10-Z5P): omron.com (General Micro Switches Variant Info)