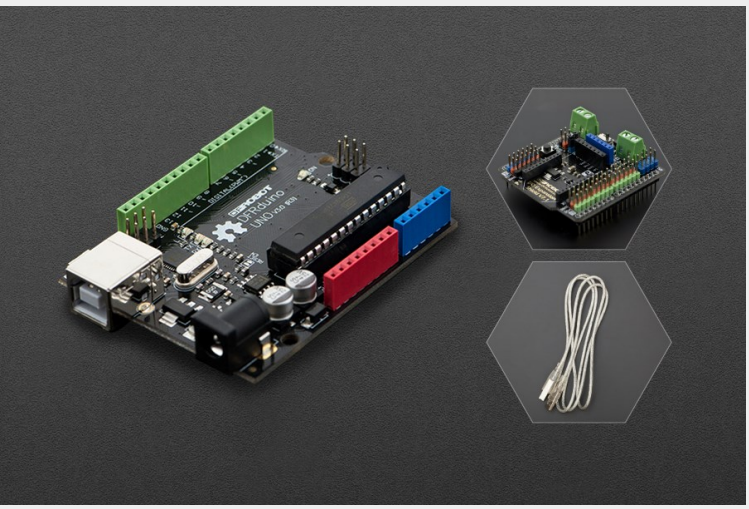
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DFRduino UNO R3 with IO Expansion Shield and USB Cable A-B

SKU:DFR0216-2 Brand:DFRobot Reward Points: 165

* Model: UNO R3 | Leonardo | Mega2560 | Mega1280 | Nano

UNO R3 with IO Expansion Shield and USB Cable A-B

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INTRODUCTION

Note: This product includes DFRduino UNO R3, Gravity: IO Expansion Shield, and USB Cable A-B.

DFRduino Uno V3.0 from DFRobot is a physical world computing board of small size for academics or development . It is a simple microcontroller board fully compatible with Arduino UNO R3 and Arduino IDE open-source development environment. This environment implements the Processing / Wiring language. Arduino can be used to develop stand-alone interactive objects or can be connected to software on your computer (e.g. Flash, Processing, MaxMSP). The open-source IDE can be downloaded for free (currently for Mac OS X, Windows, and Linux).

This board features the ATmega16U2 programmed as a USB-to-serial converter. An added bonus is that our DFRduino is still using the DIP package AVR Chip. You could remove it to update or reprogram the chip's firmware, or even to place it on a finished, more compact project. The cool thing about our new DFRduino microcontroller is that the headers use different colors to feature I/O ports of different types:

- Red for Power Section.
- Blue for Analog I/O.
- Green for Digital I/O.

These colors match our sensor cables. This makes it really easy to figure out where to connect sensors, or to identify which side is Analog (blue) or Digital (green).

" Arduino Uno" is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

This board added SDA and SCL pins that are near to the AREF pin and two other new pins placed near to the RESET pin, the IOREF that allow the shields to adapt to the voltage provided from the board. In future, shields will be compatible both with the board that use the AVR, which operate with 5V and with the "Arduino Due" that operate with 3.3V. The second one is a not connected pin, that is reserved for future purposes.

DFRduino UNO R3 Related Projects:

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How To a Make Bluetooth Tank for Arduino with Custom Android Application (V1.0)?
Arduino Project - Make an Arduino Intervalometer For Timelapse Photography
Existential Crisis aka Arduino RPG
How to Make A Terrifying Halloween Gadget?
How to Build a Robot – Lesson 1: Introduction
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How to Build a Robot Lesson 4: Build a Robot That Could Avoid Obstacles with Arduino
How to Build a Robot Lesson 5: Build a Robot With Light And Sound Effects with Arduino
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How to Build a Robot Lesson 7: Build a Bluetooth-Controlled Robot with Arduino
ESP8266 Arduino Programming Tutorial

How to DIY an Indoor Carbon Dioxide Detector?

How to Build A Smart Cooling Fan with Arduino

DFRduino UNO R3 Project 1: How to Make A Terrifying Halloween Gadget
This is a simple but fun application for Halloween. All you need is a mask, a stepper motor, a micro-controller, a motor driver, a MP3 module and some wires as well as batteries.
Hardware components:
DFRduino UNO R3 - Arduino Compatible
TMC260 Stepper Motor Driver Shield For Arduino
Bipolar Stepper Motor with Planet Gear Box (18kg.cm)
DFPlayer - A Mini MP3 Player For Arduino
Gravity: Digital PIR (Motion) Sensor For Arduino

DFRduino UNO R3 Project 2. Test DFPlayer Mini MP3 Module by Stonez
This tutorial here is just to show you how to connect DFPlayer module with Arduino and speaker and the Arduino sketch provided here just to play few sample sounds I collected from Internet.

Hardware list:
DFPlayer Mini module
Speaker - DFPlayer module support to to 3W
SD card - 2GB ~ 32GB formatted with FAT or FAT32
MP3 / WAV - audio files
Arduino Uno Rev 3
Few jump wires
DFRduino UNO R3 Project 3. How to make a Smart Rock-Paper-Scissors Game Robot



When finishing reading this tutorial, you will find those very simple devices, principles and technologies can help you build very interesting equipment.
Hardware list:
DFRduino Uno R3 x 1
Gravity IO expansion shield for Arduino x 1
Tower Pro MG90S servo x 3
Ultrasonic wave sensor x 1
DFRduino UNO R3 Project 4 Arduino Projects: Zelda Song Player
Things you may need in this project: Hardware components

- DFRobot DFRduino Uno R3
- DFRobot Input Shield for Arduino
- DFRobot Gravity: Digital Speaker Module
- Arduino UNO & Genuino UNO

DFRduino UNO R3 Project 5 How To Make LED Kitchen Sink Lights with a PIR Sensor, Arduino, and 3D Printing



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DFRobot Microcontrollers compatible with Arduino

	DFRduino UNO R3				
Name	DFRduino UNO	DFRobot Leonardo	DFRobot Mega 2560	Romeo V2	Romeo
SKU	DFR0216	DFR0221	DFR0191	DFR0225	DFR0004
Microcontroller	ATmega328p	ATmega32u4	ATmega2560	ATmega32U4	Atmega328
Working voltage	5V	5V	5V	5V	5V
CPU Frequency	16MHz	16MHz	16MHz	16MHz	16MHz
TIO ports / PWM	6 / 14	7 / 20	54 / 15	20 / 7	14 / 6
Analog inputs	6	12	16	12	8
UART	1	2	4	2	1
I2C	1	1	2	3	3
SPI	1	1	1	1	1
Interrupt pins	2	2	2	2	2
EEPROM[KB]	1	1	4	1	1
Flash[KB]	32	32	256	32	32
SRAM[KB]	2	2.5	8	2.5	2
USB	A-B USB cable	micro USB cable	A-B USB cable	micro USB cable	A-B USB cable
Dimension	75*55*15mm	75*55*15mm	100*53*15mm	89*84*14mm	90*80*14mm
Vin	7-12V	7-12V	7-12V	7-12V	7-12V
Price					
Weight(g)	45	50	70	80	80
IDE version	Arduino 1.0 and above	Arduino 1.0 and above	Arduino 1.0 and above	Arduino 1.0 and above	Arduino 1.0 and above
Feature	DFRduino UNO is fully compatible with Arduino UNO R3,suitable for Arduino beginner and hobbyists	DFRobot Leonardo is a low cost controller, integrated with Xbee and SPI. Suitable for low cost and communication demand of hobbyists	DFRduino Mega has 54 digital pins and 16 analog pins, 4 UART channels. Suitable for demands of vast sensors	Use ATmega32u4, 2 serial ports. Intergrated with Xbee socket and motor drivers	Microcontroller with motor driver, communication ports, IO expansion ports, it can be used as the main controller of robots

SPECIFICATION

- Microcontroller: ATmega328 (DIP Package)
- Operating Voltage: 5V
- Input Voltage (recommended): 7 ~ 12V
- Input Voltage (limits): 6 ~ 20V
- Digital I/O Pins: 14 (of which 6 provide PWM output)
- Analog Input Pins: 6
- DC Current per I/O Pin: 40 mA
- DC Current for 3.3V Pin: 50 mA
- Flash Memory: 32 KB of which 2KB used by bootloader
- SRAM: 2 KB (ATmega328)
- EEPROM: 1 KB (ATmega328)
- Clock Speed: 16 MHz
- Size: 75 x54 x15 mm (2.95 x2.13 x0.59")
- Environment Friendly: Rohs Compliance

DOCUMENTS

- ATmega328P datasheet
- DFRobot Arduino Compatible Microcontrollers Selection Guide

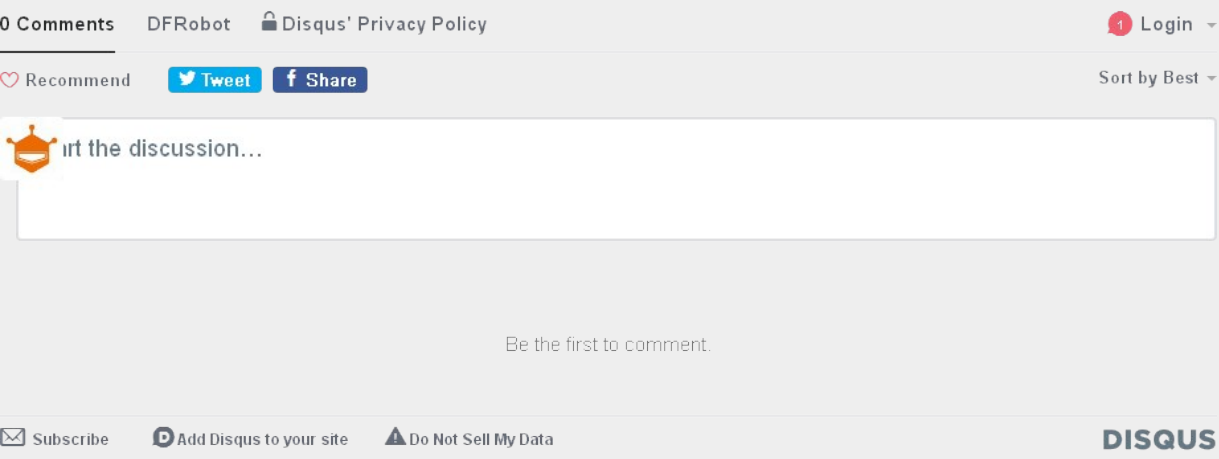
SHIPPING LIST

Downloaded from Arrow.com.

- DFRduino Uno V3.0 x1
- Gravity: IO Expansion Shield for Arduino V7.1 x1
- USB Cable A-B for Arduino Uno/Mega x1

REVIEW

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