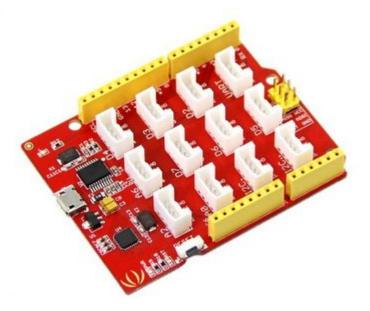
# Seeeduino Lotus v1.0



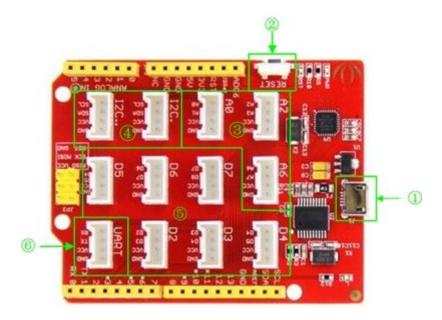
### Introduction

Seeeduino Lotus is an ATMEGA328 Microcontroller development board. It is a combination of Seeeduino and Base Shield. It used Atmel ATMEGA328P-MU and CH340. ATMEGA328P-MU is a high performance, low power AVR 8-Bit Microcontroller. CH340 is an USB bus converter chip that can realize an USB to serial interface. Seeeduino Lotus has 14 digital input/output (6 of which can output PWM) and 7 analog input/output, a micro USB connection, an ICSP header, 12 Grove connections, a reset button.

### Specification

- Microcontroller: ATmega328P-MU
- Operating Voltage: 5V
- Digital I/O Pins:14
- PWM Channels:6
- Analog Input Channels:7
- DC Current per I/O Pin: 40 mA
- Flash Memory: 32 KB (ATmega328P-MU)
- RAM: 2 KB (ATmega328P-MU)
- EEPROM:1 KB (ATmega328P-MU)
- Clock Speed:16 MHz

### **Interface Function**



- ① : Micro USB
- ② : Reset button
- ③ : Analog Ports: Analog sensors can return readings ranging from 0 to 1023.Compared with digital sensors that only return 0 or 1, analog readings are more detailed and precise.
- ④ : I2C Ports:I2C is a low-speed bus protocol that transfers data via two wire : SCL and SDA . SCL is the clock line that synchronizes data transfer over the I2C bus, and SDA is data line.
- (5) : Digital Ports: Normally, they are used when reading a digital sensor that only outputs 0 or 1, or turning on or off an actuator.
- (6) : UART Port:we can control serial device by this port.

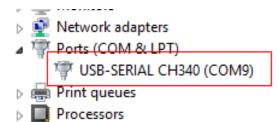
## **Driver Install**

Seeeduino Lotus is used CH340 to download .It need to install driver.

#### Windows/Linux

Totally compatible with serial application program in computer endpoint Windows operation system

- 1)You plug it to computer by USB Port.
- 2)Wait a minute, you can find it in Device Manager.
- 3)If you can not find the port, please download Driver from <u>Here</u>



#### Mac OS

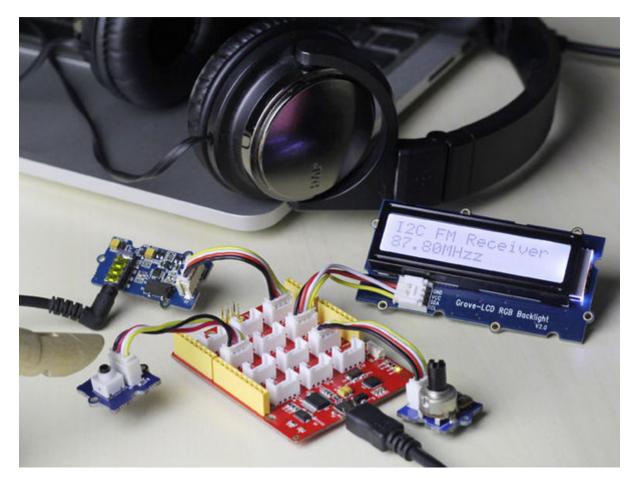
Driver download: <u>http://www.wch.cn/downloads.php?name=pro&proid=178</u>

### Usage

We will show how to used Seeeduino Lotus.

#### **Hardware Installation**

- 1) Part lists:Seeeduino Lotus v1.0、Grove LCD RGB Backlight、Grove I2C FM Receiver、Grove Button、Grove Rotary Angle Sensor.
- 2) Hardware linking is very easy, Grove LCD RGB Backligt and Grove I2C FM Receiver are I2C communication,Grove Button is digital input,Grove Rotary Angle Sensor is analog input,so you can link it as show.



#### **Software Part**

- 1)You can download the demo code in github, click <u>here</u>.
- 2)If you don't know How to install Arduino Library, please click Here
- 3)Open the I2C\_FM\_RGB\_LCD example sketch: File->Examples->Seeeduino\_lotus\_Usage->I2C\_FM\_RGB\_LCD

File Edit Sketch To	ools Help		
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#include (Wire.	03.Analog		
#include "rgb_1	04.Communication		
	05.Control		
rgb_lod lod;	06.Sensors		
define BTN	07.Display		
#define ROTATE	08.Strings		
uint16_t gChipI	09.USB	<u></u>	
uint8_t RDA5807	10.StarterKit		
	ArduinoISP	<u></u>	
define I2C_ADD	Arduinoise		
-	AirQuality_Sensor		
#define READ	Demo code		
#define WRITE	EEPROM		
() <i>21 - 1884</i>	Esplora		
	Ethernet		>
	Firmata		
	GSM		
	Humidity_Temperature_Sensor		
	12C		
	IMU_9D0F_Demo		
1	LiquidCrystal	· · · · ·	Arduine Une en COMS
	MotorDriver		
	MPU6050		
	NDEF	<u></u>	
	NFC_Tag_M24LR6E		
	RFBee_master		
	Seeeduino_lotus_Usage		I2C_FM_RGB_LCD
	Servo		ILC_FW_NOB_CCD
	Servo		

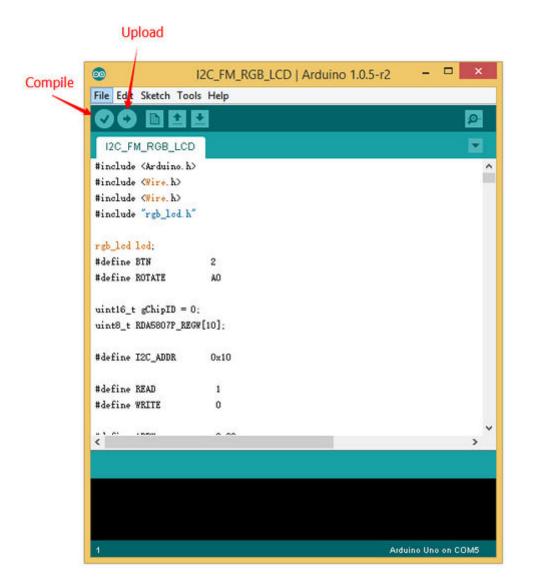
• 4)You'll need to select the entry in the Tools > Board menu that corresponds to your Arduino,You need to select Arduino Uno.

File Edit Sketch To		-			
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#include (#ire. 1	Board +	•	Arduino Uno		
#include Trgb_1	Serial Port +		Arduino Duemilanove w/ ATmega328		
rgb_lod lod: #define BTN	Programmer >		Arduino Diecimila or Duemilanove w/ ATmega168 Arduino Nano w/ ATmega328		
#define ROTATE	A0 0;		Arduino Nano w/ ATmega168 Arduino Mega 2560 or Mega ADK Arduino Mega (ATmega1280)		
uint8_t RDA5807P_KEGW[10];			Arduino Leonardo Arduino Esplora		
#define I2C_ADDR #define READ	0×10		Arduino Micro Arduino Mini w/ ATmega328		
#define WRITE 0			Arduino Mini w/ ATmega168		
			Arduino Ethernet		
<			Arduino Fio		
			Arduino BT w/ ATmega328		
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			LilyPad Arduino w/ ATmega328		
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t)			Arduino Pro or Pro Mini (5V, 16 MHz) w/ ATmega328		
			Arduino Pro or Pro Mini (5V, 16 MHz) w/ ATmega168		
			Arduino Pro or Pro Mini (3.3V, 8 MHz) w/ ATmega32		

• 5) Select the serial device of the Arduino board from the Tools | Serial Port menu.

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File Edit Sketch To	ols Help				
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#include (Wire.)	Board	,			
#include "rgb_l	Serial Port	,	-	COM5	]
rgb_lod lod: #define BTN	Programmer Burn Bootloader	•			14
#define ROTATE	AD				
uint8_t RDA5807P_RI #define I2C_ADDR	0x10				
#define READ	1				
#define WRITE	0				
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10			A	irduino Uno	on COM5

• 6) Now, simply click the "Upload" button in the environment. Wait a few seconds - If the upload is successful, the message "Done uploading." will appear in the status bar.



## **Bug Report**

• The silk printed near the D5 Grove connector has an error. The D4,D5 should be D5,D6. We will fix this error asap.



It should be D5,D6

## Resource

- <u>[Seeeduino Lotus Eagle file]</u>
  <u>[Seeeduino Lotus bootloader]</u>
  <u>[Seeeduino Lotus PDF file]</u>