LEDBOY Instructions for programming and using the hardware.

Below you can find a tutorial on how to use all the functions of the de

Below you can find a tutorial on how to use all the functions of the device as well as hardware information.

<u>1.</u> Install drivers for the serial programmer and be able to upload code. -Download the driver for the CH340C serial adapter

popular searches	012465	2 710					
CH563 CH395 CH559 Ethernet	CH3415E	K.ZIP					
extension MCU	The scope of app	lication	version	upload time	size		
DataSheet	CH340G, CH340 0E, CH340B, CH H341B, CH341C	T, CH340C, CH34 H341A, CH341T, C , CH341U	3.5	2019-03-05	179KB	townload	
Development Source	CH340/CH341 U	SB to serial port Win	dows driver, i	ncludes DLL dynami	c library and	non-standard baud rate	
Driver&Tools	2000/ME/98, Mi	icrosoft WHQL Certif	ied, supports	USB to 3 and 9 wire	serial ports.	server 2010/2012/2008/2005,	
Others	rolation fi	loc					
Video	file name	file content					
Contact IIa	CH341SER.EXE	CH341SER.EXE CH340/CH341 USB to serial port Windows driver, supports 32/64-bit Windows 10/8.1/8/7/VISTA/XP, Server 2016/2012/2008/2003, 2000/ME/98. Microsoft WHQL Certified, supports USB to 3 and 9 wire serial ports. Used to distribute to the end user with the product.					
contact Us							
	CH341SER_LINUX.ZIP	CH340/CH341 USB t	o serial port LIN	NUX driver, supports 3	2/64-bit operat	ion system.	

http://www.wch-ic.com/downloads/CH341SER_ZIP.html

These are compatible with: Windows 10/8.1/8/7/VISTA/XP, Server 2016/2012/2008/2003, 2000/ME/98. Then the installation will be shown in Windows 10, but it is applicable to all

Windows systems that the driver is compatible.

After downloading the file .zip extract all its contents to a new folder on our desktop that we can call "Drivers".

When finish, there is a folder containing all drivers.

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	^	Nombre	Fecha de modificación	Тіро	Tamaño		
Acces	io rapido	DRVSETUP64	5/3/2019 9:47	Carpeta de archivos			
Escri	itorio 🗶	CH341PT.DLL	4/3/2019 17:27	Extensión de la ap	15 KB		
🔶 Desc	cargas 🖈	CH341S64.SYS	4/3/2019 17:27	Archivo de sistema	68 KB		
🗎 Doci	umentos 🖈	CH341S98.SYS	4/3/2019 17:27	Archivo de sistema	28 KB		
📰 Imág	genes 🖈	CH341SER.CAT	4/3/2019 17:27	Catálogo de segur	11 KB		
Eagl	e Libraries	CH341SER.INF	4/3/2019 17:18	Información sobre	8 KB		
Gem	naLightWatc	CH341SER.SYS	4/3/2019 17:27	Archivo de sistema	50 KB		
LEDE	воу	CH341SER.VXD	4/3/2019 17:18	Controlador de di	20 KB		
	воу	😼 SETUP.EXE	20/7/2018 10:43	Aplicación	109 KB		
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🔤 Ardu	uino						
Atifl	ash						
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Doci	umentos						
Eagle	e Libraries						
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Fat3	2						
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9 elementos	s						:

Then do a search in Windows for: DeviceManager.

Mejor coincidencia		
Administrador de dispositivos Panel de control		
Configuración		Administrador de dispositivos
Administrador de credenciales	>	Panel de control
Crear y formatear particiones del disco duro	>	Cî Abrir
Ver uso de recursos del sistema en el Administrador de tareas	>	Adm
Cambiar configuración de Control de cuentas de usuario	>	
Agregar, editar o quitar otros usuarios	>	
85 Cambiar la imagen de cuenta	>	
Buscar en la escuela y en la web		
A administrador - Ver los resultados de la escuela y de la web	>	
Aplicaciones (3)		
𝒫 administrador de dispositivos		

Next, connect our LEDBOY to a USB port and search the device manager under "Other Devices"

"USB Serial"



We right-click on "USB Serial" and the following window will appear, click "Update driver"

BESKTOP-NL58N	ИК5
> 属 Adaptadores	de pantalla
> 📮 Adaptadores	de red
> 🚯 Bluetooth	
> 📻 Colas de imp	presión
> 📑 Componente	es de software
> 🔄 Controladora	as de almacenamiento
> 🏺 Controladora	as de bus serie universal
> 🛺 Dispositivos	de interfaz de usuario (HID)
> 📢 Dispositivos	de juego, sonido y video
> 🛐 Dispositivos	de seguridad
> 📔 Dispositivos	de software
> 🍋 Dispositivos	del sistema
> 💐 Entradas y sa	lidas de audio
> 💻 Equipo	
> Firmware	
> 🚍 Impresoras	
> 🧱 Monitores	
> II Mouse y otro	os dispositivos señaladores
Otros dispos	itivos
USB S	Actualizar controlador
> Procesad	Actualizar controlador
> 🔤 Teclados	Deshabilitar dispositivo
> 🕳 Unidades	Desinstalar dispositivo
	Buscar cambios de hardware
	Propiedades

Then choose the option to search for drivers on the computer



Chose the "Browse" option and looked for the "Drivers" folder created earlier with the driver files.

Bluetooth		×
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Accept and then give the Next option, if everything goes well, this message will be shown, and the drivers will already be installed.

DESKTOP-NL58MK5	
> 🏣 Adaptadores de panta	alla
> 🖵 Adaptadores de red	
> 🚯 Bluetooth	

← 📱 Actualizar controladores: USB-SERIAL CH340 (COM14)

Windows actualizó correctamente los controladores.

Windows finalizó la instalación de los controladores para este dispositivo:



USB-SERIAL CH340

Cerrar

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Now close all windows and continue installing the IDE to program

2. Preparing to program the console.

LEDBOY uses the Arduino IDE to program itself -**Download the Arduino IDE:** <u>https://www.arduino.cc/en/software</u> Download the desired version (minimum recommended version 1.8.13). Next, we will need to make an initial configuration.

-Manager of tarjetas:

Open the downloaded program and a window will open with a blank project. Proceed to select the preferences option in the files tab.



Once the window is opened, enter the following URL:

http://drazzy.com/package_drazzy.com_index.json

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etch_aug21a				F
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/ put your setup	code here, to ru	n once:		
Preferencias			×	1
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Mostrar salida detallada mientra	s: Compilación Subir			L
Advertencias del compilador:	Ninguno V			L
Mostrar números de línea		Habilitar Plegado Código		L
Verificar código después de	subir	Usar editor externo		L
Comprobar actualizaciones	al iniciar	Guardar cuando se verifique o cargue		L
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C: \Users\gross\AppData\Local\	Arduino 15\preferences.txt			
(editar sólo cuando Arduino no	estă corriendo)			
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If there is a URL already entered, it is not necessary to delete it, we simply add the new one below. We give OK to all windows to save the changes. Then we must go to Tools-Board-Card Manager.





When the card manager opens we will need to look for **mega TinyCore** and install it to have support for the Attiny 1614.



Once this is done, support to program the microcontroller integrated in LEDBOY is installed.

The good thing about the Arduino IDE is that there are many libraries available to execute functions or integrate peripherals in a very simple way, you can install as many as you need since these are installed on the PC but when integrating them into the project you must be careful since these consume resources of the microcontroller, and we can easily run out of space.

3.Create a program, compile it and upload it to the microcontroller Also applicable for downloaded games or programs.

To create an Arduino program : first of all, integrate the libraries needed for our program, this provides us with functions to facilitate the use of hardware, for that you can copy the following text at the beginning of the sketch without deleting anything.

#include <tinyNeoPixel.h>
#include <avr/sleep.h>
#include <avr/interrupt.h>
#include <avr/eeprom.h>

// pins
#define NUMLEDS 100
#define RIGHT PIN_PA1
#define LEFT PIN_PA2
#define SLEEPMENU PIN_PA3
#define MOSFET PIN_PA4
#define ROTARYA PIN_PA5
#define ROTARYB PIN_PA6
#define EXT PIN_PA7
#define NEOPIN PIN_PB0
#define BUZZER PIN_PB1

tinyNeoPixel strip = tinyNeoPixel(NUMLEDS, NEOPIN, NEO_GRB);

```
void setup() {
pinMode(SLEEPMENU, INPUT);
pinMode(LEFT, INPUT);
pinMode(RIGHT, INPUT);
pinMode(ROTARYA, INPUT);
pinMode(ROTARYB, INPUT);
pinMode(EXT, INPUT_PULLUP);
pinMode(BUZZER, OUTPUT);
pinMode(MOSFET, OUTPUT);
```

digitalWrite(MOSFET, LOW);// P CHANNEL mosfet low to activate strip.begin(); strip.setBrightness(50); // set all pixels brightness

```
strip.setPixelColor(0, 50, 0, 0); //set individual pixels color in dec. RGB
strip.show();
}
```

Now you are ready to write your programs and make use of all the functions to program your LEDBOY.

We recommend looking at our sample programs/tutorials on our channel for more examples.

Then select these parameters in the Arduino IDE before uploading our program.



In tools, board, Mega Tiny core we must choose the microcontroller Attiny 1614.

Before flashing LEDBOY choose the correct COM port, if we have a single COM port that is the correct one.

If there is more than one and we do not know which one corresponds to our console.

Simply unplug the USB cable from our LEDBOY we leave the options, we go back in and see that port is no longerthere, the COM port that is not when disconnecting the console is the one that corresponds to LEDBOY.

Always have it selected.

🤓 sketch_oct07a Arduino 1	.8.16		
Archivo Editar Programa	Herramientas Ayuda		
	Auto Formato	Ctrl+T	
	Archivo de programa.		
sketch_oct07a	Reparar codificación & Recargar.		
<pre>void setup() {</pre>	Administrar Bibliotecas	Ctrl+Mayús+I	
// put your	Monitor Serie	Ctrl+Mayús+M	
	Serial Plotter	Ctrl+Mayús+L	
}	WiFi101 / WiFiNINA Firmware Updater		
<pre>void loop() {</pre>	Placa: "ATtiny3224/1624/1614/1604/824/814/804/424/414/404/"	>	
// put your	Chip: "ATtiny1614"	>	
	Clock (burn bootloader NOT req'd): "8 MHz internal"	>	
}	millis()/micros() Timer: "RTC w/w32.768 kHz ext. crystal (1/2-series only, n"	>	
	Startup Time: "8ms"	>	
	BOD Voltage Level (burn bootloader req'd): "1.8V (5 MHz or less)"	>	
	BOD Mode when Active/Sleeping (burn bootloader req'd): "Disabled/Disabled"	>	
	Save EEPROM (burn bootloader req'd): "EEPROM not retained"	>	
	Voltage Baud Correction: "Ignore (saves flash, almost always fine)"	>	
	Puerto	\$	Puertos Serie
	Obtén información de la placa		COM14
	Programador: "SerialUPDI with 4.7k resistor or diode SLOW (57600"	>	
	Quemar Bootloader		

Mainly need to be careful NOT to select any option that has "Optiboot" unless we are sure of what we do, in this option it does not give the possibility to change the behavior of I PINUPDI that our LEDBOY uses to upload programs, if we choose the wrong option WE WILL NOT BE ABLE TO RE-UPLOAD MORE PROGRAMS.

It can only be reversed with a special 12vprogrammer.

🥯 sketch_oct06a Arduino 1.8.16

Archivo Editar Programa	Herramientas Ayuda	
	Auto Formato	Ctrl+T
	Archivo de programa.	
sketch_oct06a	Reparar codificación & Recargar.	
<pre>void setup() {</pre>	Administrar Bibliotecas	Ctrl+Mayús+I
// put your	Monitor Serie	Ctrl+Mayús+M
	Serial Plotter	Ctrl+Mayús+L
}	WiFi101 / WiFiNINA Firmware Updater	
<pre>void loop() {</pre>	Placa: "ATtiny3224/1624/1614/1604/824/814/804/424/414/404/"	>
// put your :	Chip: "ATtiny1614"	>
	Clock (burn bootloader NOT req'd): "8 MHz internal"	>
}	millis()/micros() Timer: "RTC w/w32.768 kHz ext. crystal (1/2-series only, n"	>
	Startup Time: "8ms"	>
	BOD Voltage Level (burn bootloader req'd): "1.8V (5 MHz or less)"	>
	BOD Mode when Active/Sleeping (burn bootloader req'd): "Disabled/Disabled"	>
	Save EEPROM (burn bootloader req'd): "EEPROM not retained"	>
	Voltage Baud Correction: "Ignore (saves flash, almost always fine)"	>
	Puerto	>
	Obtén información de la placa	
	Programador: "SerialUPDI with 4.7k resistor or diode (230400 bau"	>
	Quemar Bootloader	

Before uploading our program please check that the options shown in the image match those we have selected in our program.

"burn bootloader" is not necessary to use if the console already has a program installed, this option is only to configure flags on the microcontroller, this is done only once.

It is ONLY necessary to do it again in case a program specifies it or we want to change some parameter.

Latest version of megaTiny core changed the way interrupts work, if you are having problems try to set interrupts option to the old version.

Archivo de programa. Reparar codificación & Recargar. n1A Administrar Bibliotecas Ctrl+Mayús+I VU Sp Monitor Série Ctrl+Mayús+IM Serial Plotter Ctrl+Mayús+IM Vusing neopixe Vifi101 / WiFiNINA Firmware Updater Vifi101 / WiFiNINA Firmware Updater Ify Placa: "ATtiny3224/1624/1614/1604/824/814/804/424/414/404/" Ify Chip: "ATtiny1614" by cock: 16 MHz internal" jby rdig/micros/plane: "RTCW/W32.768 kHz ext. crystal (1/2-series only, n" jby Statup Time: "8ms" jby BOD Voltage Level (burn bootloader req'd): "LBV (5 MHz or less)" jby BOD Mode when Active/Sleeping (burn bootloader req'd): "Disabled/Disabled" jby attachinterrupt() Version: "Old version, (may fix bugs)" jprintf(): "Default (doesn't print floats, 1.4k flash use)" jss/>> with Pueto jss/>> jss/>> jss/>> Othen información de la placa Programador: "SerialUPDI with 4.7k resistor or diode (230400 bau" jss/>> tinyNeoPixel_Statich> Characters.h" arx/slsep.h.> avr/slsep.h.> avr/slsep.h.> <th></th> <th>Auto Formato</th> <th>Ctrl+T</th> <th></th>		Auto Formato	Ctrl+T	
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sketch_oct06a Arduino 1.8.16
Archivo Editar Programa Herramientas Ayuda
sketch_oct06a
void setup() {
    // put your setup code here, to run once:
  }
void loop() {
    // put your main code here, to run repeatedly:
}
```



After we have everything selected, press the arrow which will compile and upload the program to our LEDBOY.

In the red boxed area, the progress will be shown and in the console we should already see the program working.

An average flashing only takes 10sec or less.

		C Q Rusca	ar en LEDBOY	
	Fecha de modificación 30/9/2021 14:47 30/9/2021 14:53	Tipo Archivo H Arduino file	ar en LEDBOY Tamaño 4 KB 1 KB	
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Eagle Libraries Eagle projects Etiquetas				

If we have downloaded a program or game, we will have a folder with the name of the program and within this an **.ino** file that is the one that we will have to double click and this will open in the Arduino environment, we can upload it with the method already described above.

It is important to keep all the files inside the folder and not to modify the names.

4.Technical specifications.

-Attiny 1614 microcontroller



0 IN2

0 IN1



-UPDI programming interface: CH340c USB to serial adapter

-Screen: 10 x 10 Nano (2.4mm x 2.7mm) RGB LED 2427 (24-bit color)

-Interface: 3 buttons,1 rotary encoder

-Battery: Lithium-ion 250mha.

-Charging: Max 1555 300mha

-Average consumption at 16 MHz: 30-130mha (depends on led brightness) -Case: PLA+