I would really be grateful if you start to build the Optical Tester, that you go to the Photrio thread and say hi. Also please post photos of your completed tester.

Please refer to Photrio for further build help & to let us know you are building the tester Build a Optical Shutter Tester Cheap, Easy & it Works | Photrio.com Photography Forums

V1 Arduino firmware load 05/03/2024

If not already done so, download the code from the github page. https://github.com/billbill100/Camera-Shutter-Tester-Optical-Cheap-Easy-It-Works

click on the green <> Code button, which will allow you to download all of the files as a zip file. Un-zip the downloaded file.

Flashing firmware onto the Arduino Board.

A program called AVRDUDESS is required. This is included in this Github page, or can be downloaded from https://github.com/ZakKemble/AVRDUDESS/releases/download/v2.14/AVRDUDESS-2.14-setup.exe

To view the web page (for those who want more details <u>AVRDUDESS – A GUI for AVRDUDE | Zak's Electronics Blog (zakkemble.net)</u>

Watch this video, from 2.30 to 5.15

https://youtu.be/Wcaql0jtlUg

It explains how to load the .hex file onto your Arduino. Watch the video first, then read the below before trying to load the .hex file to your Arduino. *Ignore the first & last part of the video, it is not relevant. Watch between 2.30 and 5.15*

At 3.31, connect your Arduino to your computer using an appropriate USB cable. The drop-down menu in AVRDUDDESS should find the correct com port, if not, go to Device Manager (press Windows Key + X then select Device Manager) on your computer to find which com port has ben assigned to the Arduino board.

Note:- If the correct driver is not on your computer, you will need to download and install it. Most Chinese Nano clones use the CH340 driver. Drivers are included on the Github. This video shows how to install the drivers. <u>How to Install CH340 Drivers - SparkFun Learn</u>

At 3.34 this is where you browse to your downloaded and un-zipped code download and select the .hex files, for example Shutter_Tester_LED_0_0_1.hex.

A4 4.18 'Arduino Uno (Atmega328P) is selected.

You will also notice, when selecting this, the com port changes to 1 and the file path disappears. **BE SURE** to select the correct COM port and file path again.

*** To complicate things, there are two different bootloaders which could be in your Nano. **Most Chinese Nano boards have the old bootloader.** For the old bootloader (described at 4.18), you will need to select the settings below.

Select 'Arduino' in the Programmer box.

Select 'ATmega328P' in the MCU box.

Select 'Arduino Nano (ATmega328P)' in the presets box.

(If this does not work, or you have the new bootloader, select 'Arduino Uno (ATmega329P)' as shown in the video).

You will also notice the com port changes to 1 and the file path disappears. **BE SURE** to select the correct COM port and file path again.

Below are four screenshots,

- 1) showing the com port in Device Manger (your com port number will be different),
- 2) Loading software as Nano (old bootloader)
- 3) Loading software as Uno (new bootloader)
- 4) Loading with wrong bootloader selected, showing errors.



Device Manger

Programmer (-c)			MCU (-p)
Arduino		~	ATmega328P
Port (-P) Bau	d rate (-b) Bit clock (-B)		Flash: 32 KB 1E950
COM8 S760	00		EEPROM: 1 KB Detect
Flash			Presets
C:\Shutter_Tester_LED_0_0_1.ind	o.hex		Arduino Nano (ATmega328P)
● Write ○ Read ○ Verify	Go Format	Auto (writing only) $\qquad \lor$	Manager
EEPROM			Fuses & lock bits
			L 0xFF Read Write
Write Read Verify	Go Format	Auto (writing only)	H OxDA Set fuses
		Providence and a second se	E OxFD Fuse settings
	IB OVEE Read Write		
Disable verity (-v)			Set lock
_ Disable flash erase (-D)	Verbosity 0 ~		Bit selector
Program!	Stop	Options ?	Additional command line args
Program! c arduino -p m328p -P COM8	Stop -b 57600 -U flash:w:"C:\Shutte	Options ? r_Tester_LED_0_0_1.ino.I	Additional command line args
Program! c arduino -p m328p -P COM8 eading ###################################	Stop -b 57600 -U flash:w:"C:\Shutte ###################################	Options ? r_Tester_LED_0_0_1.ino.1 ## 100% 0.00s rase cycle will be perfo n. _1.ino.hex" x auto detected as Inte: ## 100% 6.61s ter_LED_0_0_1.ino.hex: x auto detected as Inte:	Additional command line args
Program! c arduino -p m328p -P COM8 eading ###################################	Stop -b 57600 -U flash:w:"C:\Shutte ###################################	Options ? r_Tester_LED_0_0_1.ino.1 ## 100% 0.005 rase cycle will be perform 1.ino.hex" x auto detected as Inte: ## 100% 6.615 ter_LED_0_0_1.ino.hex: x auto detected as Inte: ## 100% 5.025	Additional command line args
Program! c arduino -p m328p -P COM8 eading ###################################	Stop -b 57600 -U flash:w:"C:\Shutte ###################################	Options ? r_Tester_LED_0_0_1.ino.I ## 100% 0.00s rase cycle will be perfo n. _1.ino.hex" x auto detected as Inte: ## 100% 6.61s ter_LED_0_0_1.ino.hex: x auto detected as Inte: ## 100% 5.02s	Additional command line args
Program! c arduino -p m328p -P COM8 reading ###################################	Stop -b 57600 -U flash:w:"C:\Shutte ###################################	Options ? r_Tester_LED_0_0_1.ino.I ## 100% 0.00s rase cycle will be perfo n. _1.ino.hex" x auto detected as Inte: ## 100% 6.61s ter_LED_0_0_1.ino.hex: x auto detected as Inte: ## 100% 5.02s	Additional command line args

Loading firmware as Nano (old bootloader)

Programmer (-c)			MCU (-p)
Arduino		~	ATmega328P
Port (-P) Ba	ud rate (-b)	Bit clock (-B)	Flash: 32 KB 1E950
COM8 ~ [11	5200		EEPROM: 1 KB Detect
Flash			Presets
C:\Arduino_shuttertimer_3_1_1_	new.ino.hex		Arduino Uno (ATmega328P)
● Write ○ Read ○ Verify	y Go Format	Auto (writing only) \sim	Manager
EEPROM			Fuses & lock bits
			L OxFF Read Write
Write Read Verifi	Go Format	Auto (writing only)	H OxDE Set fuses
			E OxFD Fuse settings
Options		CERDON (-)	IP OVEC Pond With
	De pet write (a)		
Disable verity (-V)	Do not write (-n)		Set lock
Disable flash erase (-D)	Verbosity 0	~	Bit selector
Program!	Stop	Options ?	Additional command line args
Program! c arduino -p m328p -P COM8 >>: avrdude -c arduino -p	Stop 3 -b 115200 -U flash: m328p -P COM8 -b 115	Options ? w:"C:\Arduino_shuttertim 200 -U flash:w:"C:\Ardui	Additional command line args
Program! c arduino -p m328p -P COM8 >>: avrdude -c arduino -p vrdude.exe: AVR device ini eading ###################################	Stop 3 -b 115200 -U flash: m328p -P COM8 -b 115 itialized and ready t memory has been spec is feature, specify t file "C:\Arduino_shuttertimer (24036 bytes):	Options ? W:"C:\Arduino_shuttertim 200 -U flash:w:"C:\Ardui o accept instructions ############## 100% 0.6 bly m328p) ified, an erase cycle wi he -D option. ttertimer_3_1_1_new.ino. c_3_1_1_new.ino.hex auto	Additional command line args
Program! c anduino -p m328p -P COME >>: avrdude -c anduino -p vrdude.exe: AVR device ini- eading ###################################	Stop 3 -b 115200 -U flash: m328p -P COM8 -b 115 itialized and ready t memory has been spec ls feature, specify t file "C:\Arduino_shu Arduino_shuttertimen (24036 bytes): memory memory has been spec	Options ? w:"C:\Arduino_shuttertin 200 -U flash:w:"C:\Ardui o accept instructions ############## 100% 0.0 bly m328p) ified, an erase cycle wi he -D option. ttertimer_3_1_1_new.ino. _3_1_1_new.ino.hex auto ################# 100% 3.7	Additional command line args no_shuttertimer_3_1_1_new.in Was Additional command line args
Program! c arduino -p m328p -P COMB >>: avrdude -c arduino -p vrdude.exe: AVR device ini eading ###################################	Stop 3 -b 115200 -U flash: m328p -P COMS -b 115 itialized and ready t memory has been spec is feature, specify t file "C:\Arduino_shutertimer (24036 bytes): memory against C:\ Arduino_shuttertimer	Options ? w:"C:\Arduino_shuttertim 200 -U flash:w:"C:\Ardui o accept instructions ############## 100% 0.0 bly m328p) ified, an erase cycle wi he -D option. ttertimer_3_1_1_new.ino. _3_1_1_new.ino.hex auto ################# 100% 3.7 Arduino_shuttertimer_3_1 _3_1_1_new.ino.hex auto	Additional command line args no_shuttertimer_3_1_1_new.in Nos 11 be performed hex" detected as Intel Hex '3s _1_new.ino.hex: detected as Intel Hex
Program! c arduino -p m328p -P COME c arduino -p m328p -P COME c avrdude -c arduino -p vrdude.exe: AVR device init cading ###################################	Stop 3 -b 115200 -U flash: m328p -P COM8 -b 115 itialized and ready t memory has been spec is feature, specify t file "C:\Arduino_shutertimer (24036 bytes): memory against C:\ Arduino_shuttertimer the memory against C:\ Arduino_shutertimer	Options ? w:"C:\Arduino_shuttertim 200 -U flash:w:"C:\Ardui o accept instructions ############# 100% 0.6 bly m328p) ified, an erase cycle wi he -D option. ttertimer_3_1_1_new.ino. _3_1_1_new.ino.hex auto ################ 100% 3.7 Arduino_shuttertimer_3_1 _3_1_1_new.ino.hex auto ################### 100% 2.8	Additional command line args Additional command line args Ino_shuttertimer_3_1_1_new.in Mos Il be performed hex" detected as Intel Hex '3s _1_new.ino.hex: detected as Intel Hex :7s
Program! c arduino -p m328p -P COM8 >>: avrdude -c arduino -p /rdude.exe: AVR device ini eading ###################################	Stop 3 -b 115200 -U flash: m328p -P COM8 -b 115 itialized and ready t mamory has been spec is feature, specify t file "C:\Arduino_shutertimer (24036 bytes): fflash written sh memory against C:\ Arduino_shuttertimer fflash written sh memory against C:\ Arduino_shuttertimer fflash veified	Options ? w:"C:\Arduino_shuttertim 200 -U flash:w:"C:\Ardui o accept instructions ############# 100% 0.6 bly m328p) ified, an erase cycle wi he -D option. ttertimer_3_1_1_new.ino. _3_1_1_new.ino.hex auto ################ 100% 3.7 Arduino_shuttertimer_3_5 _3_1_1_new.ino.hex auto ################### 100% 2.6	Additional command line args

Loading firmware as Uno (new bootloader)

Programmer (-c)			MCU (-p)
Arduino		~	ATmega328P
Port (-P) Baud	rate (-b)	Bit clock (-B)	Flash: 32 KB 1E950
COM8 ~ 1152	00		EEPROM: 1 KB Detect
Flash		-	Presets
C:\Arduino_shuttertimer_3_1_1_ori.	ino.hex	-	Arduino Uno (ATmega328P)
Write O Read O Verify	Go Format	Auto (writing only) \sim	Manager
EEPROM			Fuses & lock bits
			L 0xFF Read Write
With O Read O Vorte	Go Format	Auto (writing only)	H OxDE Set fuses
	Go Formac	ALCO (Writing Only)	E Over Fuse settings
Options			
Force (-F)	LB 0xFF Read Write		
Disable verify (-V)	Do not write (-n)		Set lock
	247 C		
_ Disable flash erase (-D)	Verbosity 0	~	Bit selector
Disable flash erase (-D) Program!	Verbosity 0	V Options ?	Bit selector Additional command line args
Disable flash erase (-D) Program! c arduino -p m328p -P COM8 - >>: avrdude -c arduino -p m3 vrdude.exe: stk500 recv(): p	Verbosity 0 Stop b 115200 -U flash: 28p -P COMB -b 115: rogrammer is not ro	Options ? W:"C:\Arduino_shuttertim 200 -U flash:w:"C:\Ardui esponding	Bit selector Additional command line args bo_shuttertimer_3_1_1_ori.in
<pre>Program! Program! c arduino -p m328p -P COM8 - >>: avrdude -c arduino -p m3 vrdude.exe: stk500_recv(): p vrdude.exe: stk500_recv(): p</pre>	Verbosity 0 Stop b 115200 -U flash: 1280 -P COMS -b 115: rogrammer is not ro attempt 1 of 10: 0 rogrammer is not ro attempt 3 of 10: 1 rogrammer is not ro attempt 4 of 10: 1 rogrammer is not ro attempt 5 of 10: 1 rogrammer is not ro attempt 5 of 10: 1 rogrammer is not ro attempt 7 of 10: 1 rogrammer is not ro attempt 3 not ro attempt 3 not ro	Options ? Options ? w:"C:\Arduino_shuttertim 200 -U flash:w:"C:\Arduil esponding not in sync: resp=0x88 esponding espondi	Bit selector Additional command line args

Loading with wrong bootloader selected, showing errors.