V1 Arduino firmware load.

If not already done so, download the code from the github page.

<u>billbill100/Multi-Trigger-3-AstroSplash-Digital-Display: Adds a digital display showing timings, to the</u> <u>HiViz Timer-Trigger and AstroSplash range of products (github.com)</u>

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 the Github page above, 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

At 3.34 this is where you browse to your downloaded and un-zipped code download and select one of the .hex files

A4 4.18 'Arduino Uno (Atmega328P) is selected. **As Saravanan says this is very important ***.** 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 at 4.18, you will need to select 'Arduino Nano (ATmega328P)' in the Preset box.

For the new bootloader, select 'Arduino Uno (ATmega329P)' as shown in the video.

It is suggested to select 'Arduino Nano (ATmega328P)' in the Preset box, as the first option. If this does not work, then try 'Arduino Uno (ATmega328P).

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

Arduino ATmega328P Port (-P) Baud rate (-b) Bit clock (-B) Flash: 32 KB COM8 57600 EEPROM: 1 KB Plash	1E950 Detect mega328P) \ ger
Port (-P) Baud rate (b) Bit clock (-B) Flash: 32 KB COM8 57600 EEPROM: 1 KB Rash Presets Arduino Nano (ATI Image: C:Varduino_shuttertimer_3_1_1_ori.ino.hex Arduino Nano (ATI Image: Write O Read O Verify Go Format Auto (writing only) Mana EEPROM Fuses & lock bits Image: U Vrite O Read O Verify Go Format Auto (writing only) Mana Image: U Vrite O Read O Verify Go Format Auto (writing only) Image: U OxFF F Image: U Vrite O Read O Verify Go Format Auto (writing only) Image: U OxFF F	1E950 Detect mega328P) \
COM8 57600 EEPROM: 1 KB Rash Presets Arduino_shuttertimer_3_1_1_ori.ino.hex Image: Write O Read O Verify Go Format Auto (writing only) Mana Mana EEPROM Fuses & lock bits L Image: Write O Read O Verify Go Format Auto (writing only) Fuses & lock bits Image: Write O Read O Verify Go Format Auto (writing only) H 0xDA	Detect mega328P) \
Rash Presets C:\Arduino_shuttertimer_3_1_1_ori_ino.hex Image: Write O Read O Verify Go Format Auto (writing only) Mana EEPROM Image: Write O Read O Verify Go Format Auto (writing only) Fuses & lock bits Image: Update O Read O Verify Go Format Auto (writing only) Image: Update O Read O Verify Go Format Auto (writing only)	mega328P) 🚿
C: \Arduino_shuttertimer_3_1_1_ori.ino.hex	mega328P) 🚿
Write O Read O Verify Go Format Auto (writing only) Mana EEPROM Go Format Auto (writing only) H OxDA	ger
EEPROM Fuses & lock bits Image: Stress with the stress with th	
Write O Read O Verify Go Format Auto (writing only) V H OxDA	A COLORADO
Write O Read O Verify Go Format Auto (writing only) H OxDA	lead winte
	Set fuses
Ontions E OxFD	se settings
Force (-F) Erase flash and EEPROM (-e) LB 0xFF F	Read Write
Disable verify (-V) Do not write (-n)	Set lock
Disable flash erase (-D) Verbosity 0 Verbosity	
rdude.exe: AVR device initialized and ready to accept instructions	
20110 *********************************	
vrdude.exe: Device signature = 0x1e950f (probably m328p)	
vrdude.exe: Device signature = 0x1e950f (probably m328p) vrdude.exe: NOTE: "flash" memory has been specified, an erase cycle will be performed To disable this feature, specify the -D option.	
<pre>vrdude.exe: Device signature = 0x1e950f (probably m328p) vrdude.exe: NOTE: "flash" memory has been specified, an erase cycle will be performed</pre>	
<pre>vrdude.exe: Device signature = 0x1e950f (probably m328p) vrdude.exe: NOTE: "flash" memory has been specified, an erase cycle will be performed To disable this feature, specify the -D option. vrdude.exe: erasing chip vrdude.exe: reading input file "C:\Arduino_shuttertimer_3_1_1_ori.ino.hex" vrdude.exe: input file C:\Arduino_shuttertimer_3_1_1_ori.ino.hex auto detected as Intel vrdude.exe: writing flash (24036 bytes):</pre>	Нех
<pre>vrdude.exe: Device signature = 0x1e950f (probably m328p) vrdude.exe: NOTE: "flash" memory has been specified, an erase cycle will be performed To disable this feature, specify the -D option. vrdude.exe: erasing chip vrdude.exe: reading input file "C:\Arduino_shuttertimer_3_1_1_ori.ino.hex" vrdude.exe: input file C:\Arduino_shuttertimer_3_1_1_ori.ino.hex auto detected as Intel vrdude.exe: writing flash (24036 bytes): riting ###################################</pre>	нех
<pre>vrdude.exe: Device signature = 0x1e950f (probably m328p) vrdude.exe: NOTE: "flash" memory has been specified, an erase cycle will be performed To disable this feature, specify the -D option. vrdude.exe: erasing chip vrdude.exe: reading input file "C:\Arduino_shuttertimer_3_1_1_ori.ino.hex" vrdude.exe: input file C:\Arduino_shuttertimer_3_1_1_ori.ino.hex auto detected as Intel vrdude.exe: writing flash (24036 bytes): riting ###################################</pre>	Hex
<pre>cading ###################################</pre>	Hex
<pre>cduing ###################################</pre>	Hex
<pre>cduing ###################################</pre>	Hex

Loading software as Nano (old bootloader)

riogrammer (~)			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	Go Format	Auto (writing only) ~	Manager
EEPROM			Fuses & lock bits
		1	L OxFF Read Write
	Go Format	Auto (writing only)	H OxDE Set fuses
		Auto (mining only)	E Over Fuse settings
Options			
Force (-F)	Erase flash and	EEPROM (-e)	LB UxFF Read Write
Disable verify (-V)	Do not write (-n))	Set lock
Disable flash erase (-D)	Verbosity 0	~	Bit selector
Disable flash erase (-D)	Verbosity 0	∼ Options ?	Bit selector Additional command line args
Disable flash erase (-D) Program! c arduino -p m328p -P COMB	Verbosity 0 Stop 	Options ?	Bit selector Additional command line args
Disable flash erase (-D) Program! c arduino -p m328p -P COM8 >>>: avrdude -c arduino -p avrdude.exe: AVR device ini Reading ###################################	Verbosity 0 Stop - b 115200 -U flash: m328p -P COM8 -b 119 tialized and ready fl memory has been speci s feature, specify fl file "C:\Arduino_shutertimer (24036 bytes):	Options ? W:"C:\Arduino_shutterti 5200 -U flash:W:"C:\Ardu to accept instructions ################ 100% 0. ably m328p) cified, an erase cycle w the -D option. Uttertimer_3_1_1_new.ino r_3_1_1_new.ino.hex auto ####################################	Bit selector Additional command line args m sino_shuttertimer_3_1_1_new.in 005 will be performed o.hex" o detected as Intel Hex 735
Disable flash erase (-D) Program! c arduino -p m328p -P COM8 c arduino -p m328p -P COM8 c arduino -p m328p -P COM8 c arduino -p c arduino-p c arduino -p c arduino -p c arduino-p c arduino	Verbosity 0 Stop Stop 3 -b 115200 -U flash: m328p -P COM8 -b 119 tialized and ready f memory has been specify f file "C:\Arduino_shut Arduino_shuttertimer (24036 bytes): mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	<pre>Options ? Options ? W:"C:\Arduino_shutterti 5200 -U flash:W:"C:\Ardu to accept instructions ####################################</pre>	Bit selector Additional command line args inno_shuttertimer_3_1_1_new.in 00s 0111 be performed 0.hex" 0 detected as Intel Hex 735
Disable flash erase (-D) Program! c arduino -p m328p -P COMB c arduino -p m328p -P COMB c arduino -p m328p -P COMB c arduino -p wrdude.exe: AVR device ini c arduino - p wrdude.exe: AVR device ini c arduino -p wrdude.exe: NOTE: "flash" To disable thi wrdude.exe: erasing chip wrdude.exe: input file C:1 wrdude.exe: verifying flas wrdude.exe: input file C:1	Verbosity 0 Stop Stop - b 115200 -U flash: m328p -P COM8 -b 119 tialized and ready t memory has been specify the file "C:\Arduino_shuttertimer (24036 bytes): - flash written th memory against C:\ Arduino_shuttertimer	Options ? W:"C:\Arduino_shutterti 5200 -U flash:W:"C:\Ardu to accept instructions ############### 100% 0. ably m328p) cified, an erase cycle w the -D option. Uttertimer_3_1_1_new.inc r_3_1_1_new.ino.hex auto ###################### 100% 3. Arduino_shuttertimer_3_ r_3_1_1_new.ino.hex auto	Bit selector Additional command line args wino_shuttertimer_3_1_1_new.in 0005 0111 be performed 0.hex" 0 detected as Intel Hex 735 1_1_new.ino.hex: 0 detected as Intel Hex
Disable flash erase (-D) Program! c arduino -p m328p -P COM8 >>: avrdude -c arduino -p vrdude.exe: AVR device ini teading ###################################	Verbosity 0 Stop Stop 3 -b 115200 -U flash: m328p -P COM8 -b 119 tialized and ready fl memory has been specify fl file "C:\Arduino_shuttertimer (24036 bytes): memory against C:\ Arduino_shuttertimer th memory against C:\ Arduino_shuttertimer	Options ? W:"C:\Arduino_shutterti 5200 -U flash:w:"C:\Ardu to accept instructions ############### 100% 0. ably m328p) cified, an erase cycle w the -D option. Uttertimer_3_1_1_new.ino r_3_1_1_new.ino.hex auto ####################################	Bit selector Additional command line args mino_shuttertimer_3_1_1_new.in 0005 0111 be performed 0.hex" 0 detected as Intel Hex 735 1_1_new.ino.hex: 0 detected as Intel Hex 875

Loading software as Uno (new bootloader)

rogrammer (o)				MCU (-p)
Arduino			~	ATmega328P
Port (-P) Bau	ud rate (-b)	Bit clock (-B)		Flash: 32 KB 1E950
COM8 ~ 115	5200			EEPROM: 1 KB Detect
Flash				Presets
C:\Arduino_shuttertimer_3_1_1_c	ri.ino.hex			Arduino Uno (ATmega328P)
Write O Read O Verify	Go Format	Auto (writing only)	\sim	Manager
EEPROM				Fuses & lock bits
				L OxFF Read Write
Witte O Read O Viet	Go Format	Auto (writing only)	~	H OxDE Set fuses
	do , official	valo (withing only)		F Over Fuse settings
Options				
Force (-F)	Erase flash and	EEPROM (-e)		LB UXFF Read Write
Disable verify (-V)	Do not write (-n)			Set lock
Disable flash erase (-D)	Verbosity 0	~		Bit selector
	1			
Program!	Stop	Options	?	Additional command line args
Program! arduino -p m328p -P COM8 >: avrdude -c arduino -p rdude.exe: stk500 recv():	Stop -b 115200 -U flash: m328p -P COM8 -b 115 programmer is not r	Options w:"C:\Arduino_shutto 200 -U flash:w:"C:\/ esponding	? ertim Arduinc	Additional command line args
<pre>Program! c arduino -p m328p -P COM8 >>: avrdude -c arduino -p vrdude.exe: stk500_recv(): vrdude.e</pre>	Stop -b 115200 -U flash: m328p -P COM8 -b 115 programmer is not r () attempt 1 of 10: programmer is not r () attempt 2 of 10: programmer is not r () attempt 4 of 10: programmer is not r () attempt 5 of 10: programmer is not r () attempt 6 of 10: programmer is not r () attempt 7 of 10: programmer is not r () attempt 8 of 10: programmer is not r () attempt 9 of 10:	Options w:"C:\Arduino_shutte 200 -U flash:w:"C:\/ esponding not in sync: resp=0: esponding not in sync: resp=0: esponding	? ertim Arduino x88 x88 x88 x88 x88 x88 x88 x88 x88 x8	Additional command line args

Loading with wrong bootloader selected, showing errors.