

ezLCD-405 Quick Start Guide



ezLCD-405 Quick Start Guide last edited: 07/07/2015

# TABLE OF CONTENTS

STEP 1 - INSTALL DRIVER STEP 2 - UPGRADE FIRMWARE STEP 3 - USING THE TEST PLATFORM GET CONNECTED FONTS IMAGES STARTUP SETTINGS GENERATING THE CONFIG FILE FOR UNEXPECTED PROBLEMS



<u>IMPORTANT NOTE</u>: The ezLCD-405 ships with a test program that automatically runs from the SD card. To disable it, you must remove the microSD card from the ezLCD-405 and put it in a PC and edit the config.txt file as follows:

- A. Change the line "TestMode = True" to "TestMode = False"
- B. Save the file, put it back in the ezLCD-405 and then reset it by pressing the reset button.

### STEP 1 - INSTALL DRIVER

1. Download all ezLCD-405 files from <a href="http://store.earthlcd.com/ezLCD-405">http://store.earthlcd.com/ezLCD-405</a> and save to Desktop for easy reference.



- 2. Unzip all the files
- 3. Click on the ezLCD-405 Comport Installer folder
- 4. run STM32 Virtualport driver ("VCP\_V1.3.1\_Setup.exe")



- 5. Plug 5V power supply into the power jack
- 6. Plug in Micro USB cable from the PC to the ezLCD-405.



### STEP 2 - UPGRADE FIRMWARE

New firmware will be added to the website to update your device. These updates help fix bugs and problems that may occur with the device.

- 1. Install/Unzip the "Test Platform" and run it
- 2. Go to "Update Firmware" tab and click the "Open" button on the left side

Display Test	Fonts	Images	Startup Settings	Config.txt	Update Firmware	Demos	Manual
Open							
Update							

3. To "Open", select the latest firmware (ex. "ezLCD405-Firmware-x-xx.dfu")





4. Before Updating, set the ezLCD-405 to DFU Mode (firmware upgrade mode) by first holding the BOOT0 and then press and release the RESET button.



5. Now click "Update" and it will say "done parsing DfuSe file" when finished



6. Now you are done with updating firmware and can start displaying stuff with the Test Platform



## STEP 3 - USING THE TEST PLATFORM

An easy way to test the ezLCD-405 is by using the 405\_Test\_Platform. With this, you can quickly test out some of its different commands and capabilities.

#### 1. GET CONNECTED

- a. Under the "Serial Port", select the "COM\_\_\_" (port) the ezLCD-405 is connected at. You can check this by looking at "Device Manager" > "Ports".
- b. Then click "Open". Make sure you have "Open" the device or it will not be connected to the platform.

ton Commands Backlight Commands Set XV X 0 1 V 0 1 Light On Light Off Light Bright	Color Commands CLS Set ColorH Color Selector 200 Set BG COLOPH Color Selector	
Commands iet North Set East Set South Set West seet Font 0 = et.CC-405 By EarthLCD.com	Touch Protocol ezLC2405 Mode Touch Protocol ezButton Standard Calibrate Touch Calibrate AVY Extended	
INIT_STRING_BG	0 0 Touch Demo	Buttons Button Def Number 0 th State Up V
ArcH         Radius         0         ÷         Begin         0         ÷         End         0         ÷         SD Put leon           BoxH         0         ÷         0         ÷         Set Layer 0         PUT_SF_ICOM	/mages/car320.bmp	Image Up 0 🖨 X 0 🖨 Image Down 0 🗢 Y 0 💠
BoH Fill 0 🗘 0 🗘 Set Layer 1 Serial Port		Image Disabled 0 - Width 0 -
Circle RH 0 ÷ COM16	-	Height 0 🌲
H_LINEH 0 + ReScan Serie	I Ports Open Close	Button State 0 -Delete Permanently -
V_LNE 0 (+)		
E_TO_XHY 0 🗘 0 🗘 Get Serial	Reset ezLCD Show S	ettings Buzzer On Buzzer Off Beep

- c. If unable to connect, "ReScan" if you want to recheck all the Serial Ports, or re-plug the power supply.
- d. If it has successfully connected, it will be stated on the bottom left of the window.

Circle RH			Serial Port COM16
H_LINEH	0	Visible 1	ReScan Serial Ports Open Close
V_LINE	0		
LINE_TO_XHY	0	0	Get Serial Rese
	•		
➡	•		



### 2. COLORS

There is a "Color Commands" section on the Test Platform where you can specify the colors you want to use.

a. Click "Color Selector" and choose a color

CLS	
Set ColorH	Color Selector
Set BG COLORH	Color Selector

- b. When you choose a color, specify the intensity of the color on the right side by dragging the cursor (the intensity is defaulted on the darkest/black)
- c. Then click "OK"

Text Color	-9	-	80. (A. 19	1	4	×
asic colors				• /		
		-	T	11		Y
					•	
						1
				н.		1
				11		1
Pick Screen Color						
	_				-	
ustom colors	Hue:	107	<b></b>	Red:	55	
	Sat:	229	*	Green:	185	×
	Val:	185	A V	Blue:	18	*
	нтмі -	#376912				
Add to Custom Colors	THE.	#5/0712	-	-		
			and the second second			

d. Press the "Set" button adjacent to the Color Selector you chose

CLS	
Set ColorH	Color Selector
et BG COLORH	Color Selector



### 3. FONTS

If you want to have a specific font printed to the screen, you must upload it to the microSD card.

- a. If you are not using a font already on the computer, download and install one.
- b. Open the Font Editor and Select the font you want to use

ezLCD-004	ezLCD	Font List			AS	CII		
Fonts	No	Font Name		Height	From	То	Size	V.
Start Screen	1	Algerian_20		20	0x20	0xFF	7605	-
Touch Screen RS232								Е
Transmitter								
	•						F	Ť
	*	copy cop	У				× Remo	/e
	Schr	atchpad			AS	СП		
		Font Name		Height	From	То	Size	8
		Algerian 20		20	0x20	0xFF	7605	_
				_	1.00		Save For	nt
	For	nt Lab	ALG	ERLAN				-
		G	Weste			()	_	-
	ASCII R	ange	Heigh	nt of the L	etter 'M'	in pixels	: 12	-
	From: 2	0 hex Select	Bold	Ital	ic 🔳			-

c. Click "Process", then "copy" to the ezLCD Font List

- ezi CD-004		The second second				CIT		
Fonts	No	Font Nam	le.	Height	From		Size	
Backlight	1	Algerian_2	0	20	0x20	0xFF	7605	
Touch Screen								
RS232								Е
Transmitter								
- Pin Functions								
								Ŧ
	•		III				P.	
	*	¢ copy c	opy				🗙 Remo	/e
	Schr	atchp			AS	CII		
		ne		Height	From	То	Size	3
		A 20		20	0x20	0xFF	7605	
					Load	Font	Save For	nt
	For	nt Lab	ALG	ERLAN				•
			Weste	ern Europe	an (Win	dows)		•
	ASCII R	lange	Heid	ht of the L	etter 'M	' in pixels	: 12	-
	From: 2 To: F	0 hex F hex Select	Bold	🔲 Ital	ic 🗖		Process	



- d. You can select and "Remove" any fonts you don't want to use
- e. Insert your microSD card from the ezLCD-405
- f. Then "Save Font" in the "FONTS" file on **your microSD card** (make sure the file extension is ".ezf") as well as one for reference

					_			
ezLCD-004	ezLCD	Font List			AS	СП	0.0000	
Backlight	No	Font Nam	e	Height	From	То	Size	6
Start Screen	1	Algerian_20	)	20	0x20	0xFF	7605	-
Touch Screen								
RS232								Ξ
- Transmitter								
r in anciona								
								-
	•					-		-
	*	ç Copy	ору		(		K Remov	/e
	Schra	atchpad			AS	CII	_	
	0.	Font Name		Height	From	То	Size	3
		Algerian 20		20	0x20	0xFF	7605	
							Save For	nt
	For	nt Lab	ALG	ERLAN				•
		(	Weste	ern Europe	an (Wind	lows)		-
	ASCII R	lange	Heig	ht of the L	etter 'M'	in pixels	: 12	-
	From: 2 To: F	0 hex F hex Select	Bold	I 📰 Ital	ic 🔳	F	Process	٦

g. In the Test Platform, go to the "Fonts" tab and "Add" the font (the font ID will be displayed on the left side)

		ATTICAS		Startap St	ttings	Config.txt	Update F	irmware	Demos	Manual					
Fonte	a 18														
1 Ones		N								-		т	c.	-	
		INO			Font	Name		He	agnt	From		10	Size	Type	
U	p	0	E:/F	onts/Ubunt	u Light	20.ezf		20		32	255		6507		
Dor	wn	1	C:/l	C:/Users/admin/Desktop/Champagne & Lim				14		32	255		3562		
	ы )														
AC															
Rem	ove														
Rem	ove														
Rem	ove														
Rem	ove														
Rem	ove														
Rem	ove														
Rem	ove														
Kem	ove														
Kem	ove														
Kem	ove														
Kem	ove														
Rem	ove														
Kem	ove														
Rem	ove														
Rem	ove														
Rem	ove														
Rem	OVE														
Rem	OVE														
Rem	OVE														
Rem	OVE														
Kem	OVE														
Rem	OVE														



- h. Now you will need to generate the Config.txt following these steps.
- i. You do not need to close the Test Platform window. If you keep it open, then you would be able to see which ID numbers the fonts are specified as
- j. Go back to the "Display Test" tab
- k. Set up your colors and position as shown <u>here</u> (make sure the color you use is not the same as the background color)
- I. In the "Font Commands" section, specify the ID number of the font you want to use and then PRESS "Select Font"

Position Commands       Backlight Commands         Set XY       X       Y       0         System Commands       Light On         PING       Light Off         Font Commands       Light Bright         Set North       Set East         Set North       Set East         Set South       Set West	Display Test	Fonts	Images	Startup Settings	Config.txt	Update Firmware	Demo
Set XY X 0 Y 0 Light On   System Commands Light Off   PING Light Bright   Font Commands   Set North Set East Set South   Set West   Set Set Foot 2	Position Co	mmands			Backlight Comm	nands	
System Commands       Light Off         PING       Light Bright         Font Commands       Set North         Set North       Set East         Select Font       2	Set X	(	X 0	Y 0 🛓	Light On	]	
PING     Light Bright       Font Commands     Set Fast       Set North     Set Fast       Select Font     2	System Co	mmands			Light Off	]	
Font Commands       Set North     Set Fast     Set South     Set West	PING				Light Bright		
Select Font 2	Font Comm Set Nor	th	Set Feet	Set South	Set West		
Selection	Select F	ont 2	2				
Print String ezLCD-405 By EarthLCD.com	Print Str	ing e	zLCD-405 B	y EarthLCD.com			

m. Type the string you want to print and then click "Print String"



#### 4. IMAGES

- a. convert a 320x240 pixel image to a bitmap with extension .bmp
- b. Connect your microSD card and load the image into the "Images" folder



- c. Open the Test Platform (if not already open) and go to the "Images" tab
- d. Click "Add" button on the left and select the image you want to use
- e. The ID number will appear on the left, the file name and other information as follows after. A sample image should appear on the right side of the window.

play Test Fo	nts	Images	Startup Settings	Config.txt	Update Firmware	Demos	Manual					
mages												
Up	No		Image Na	me	Width	Height	Size	Trans Color	Depth	Туре		
Down	0	E:/Image	s/001_b_one.bmp		96	32	9270		32	bmp		
Add	1											
Remove	1											
	1										ONE	
											0	
	4				III					, P		



- f. You will need to generate a new config file as shown <u>here</u> and save it onto your microSD card
- g. Once that is done, put the microSD card back into your ezLCD-405
- h. Make sure the serial port is open as shown here
- i. Go to "Position Commands" on the top left and type in the "X" and "Y" coordinates you want the image to start displaying at
- j. Then click "Set XY"

				-	
Set XV	X	0	▲ Y	0	

- k. Now go the "Image Commands" towards the center of the window and type in the name of the file ( starting with " /Images/ " )
- I. Then click "SD Put Icon " to the left of it

D Put Icon	/Images/ca	r320.bmp		
JT_SF_ICON	0			
ial Port			<b>_</b> ]	
			 <u>י</u>	



### 5. STARTUP SETTINGS

The startup settings is automatically set to "ezLCD Default" but you can change the settings so that whenever the ezLCD-405 turns on or resets then it will display the things you want.

- a. Default Transmitter by default it is set to Serial which is used when the device is connected via USB
- b. Backlight you can control the brightness of the screen or you can just turn off the light which makes the screen black.
- c. Start Screen You can either have the Default, Image or Solid Color start screen.
  - i. Image See Images (steps a-g) and you can select the ID number of the image in the "Image Number" section and plot the x and y position
  - ii. Color select "Solid Color" and click the " ... " button to choose a color

Display Test Fonts Images Startup Settings	Config.txt Update Firmware Demos Manual
Backlight	Default Transmitter
Backlight On	Serial
	SPI
Brightness	0 IZ
Start Screen	
🔘 ezLCD Default Image Number 6	
◎ Image Position X 0 ▲	
Solid Color Position Y	
Touch Screen	
© ezButton	
💿 cuButton	
CalibratedXY	
Serial Port Baud Rate	
▼	



### 6. GENERATING THE CONFIG FILE

- a. Make sure to have the microSD card inserted into your computer
- b. Go to "Config.txt" tab
- c. Click "Generate Config.txt"
- d. Click "Generate Flash Image"



e. Save it as "ezLCD405.ezs" (make sure to have the name typed out exactly the same)

Organize 🔻 🛛 Ne	w folder		
	* Name	Date modified Type	Size
😹 Libraries		5/13/2015 1:10 PM File fi	older
Documents	🔒 Images	5/13/2015 1:11 PM File fo	older
J Music	ezLCD405	7/1/2015 10:24 AM EZS F	ile 72 KB
Podcasts Videos Computer	E		
<ul> <li>Podcasts</li> <li>Videos</li> <li>Computer</li> <li>Windows (C:)</li> <li>Secure Digital</li> </ul>	M		
<ul> <li>Podcasts</li> <li>Videos</li> <li>Computer</li> <li>Windows (C:)</li> <li>Secure Digital</li> <li>File name:</li> </ul>	ezLCD405		

- f. Eject the microSD card and put it back into the ezLCD-405
- g. Then RESET the device



## FOR UNEXPECTED PROBLEMS

Before continuing, make sure you have properly downloaded and installed the correct files. Make sure to install the appropriate programs according to the type of computer you are using.

1. If your computer is not recognizing the device and showing error in the "Device Manager", manually Update the driver.



a. Right - click and select "Update Driver Software..."





b. Then click "Search automatically for updated driver software"

Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.	
Browse my computer for driver software Locate and install driver software manually.	