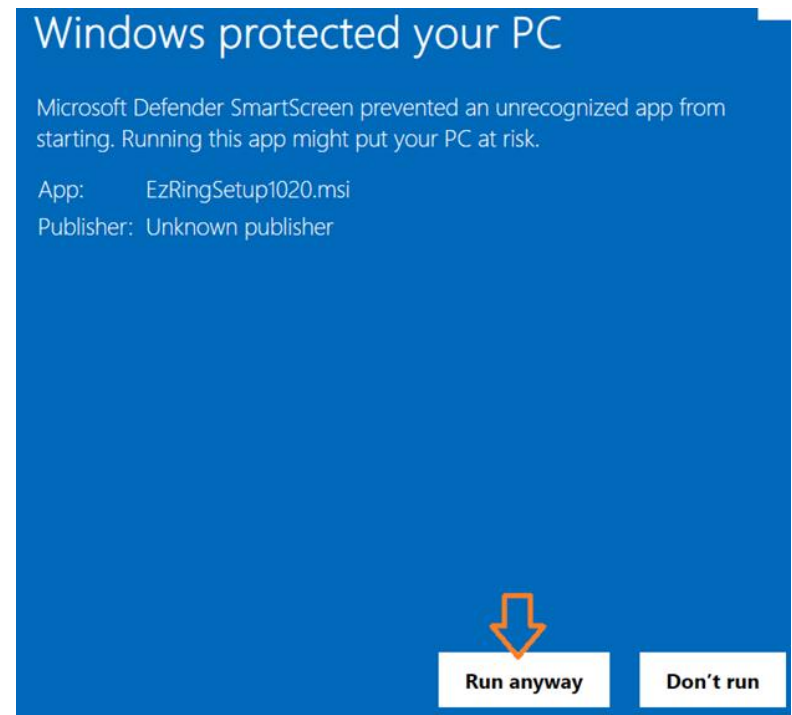
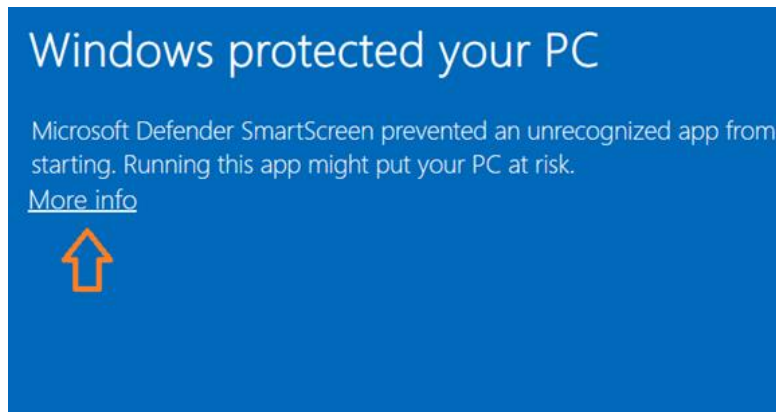


Lumex EzRing Console – Quick Guide

Kevin C.

1. ezRing software installation

- 1) Download link <https://www.lumex.com/attachment/ezRingSetup.zip>
- 2) Unzip and run ezRingSetup.msi



2. Install SiliconLabs CP201x driver

- 1) Download driver from SiliconLabs:

Current Link: <https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers?tab=downloads>

- 2) Please check EzRing “Device Configuration” Tab, it supposed to have “USB to UART Bridge (COM#)” selection before EzRing operation.

If the driver didn't work, you need to remove the old driver, and install again.

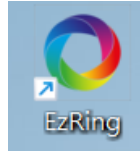
On the Windows OS, you can go to Start > Device Manager and check the driver status is well installed or not:

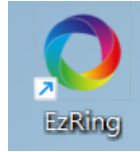


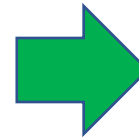
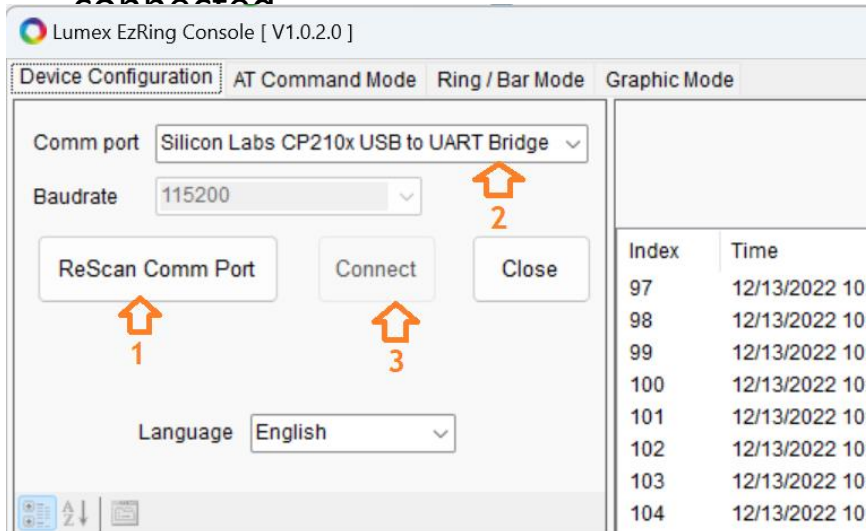
3. Connect **Digital LED Evaluation Kit** to your USB port by micro-USB cable.



4. Open and Edit in EzRing software



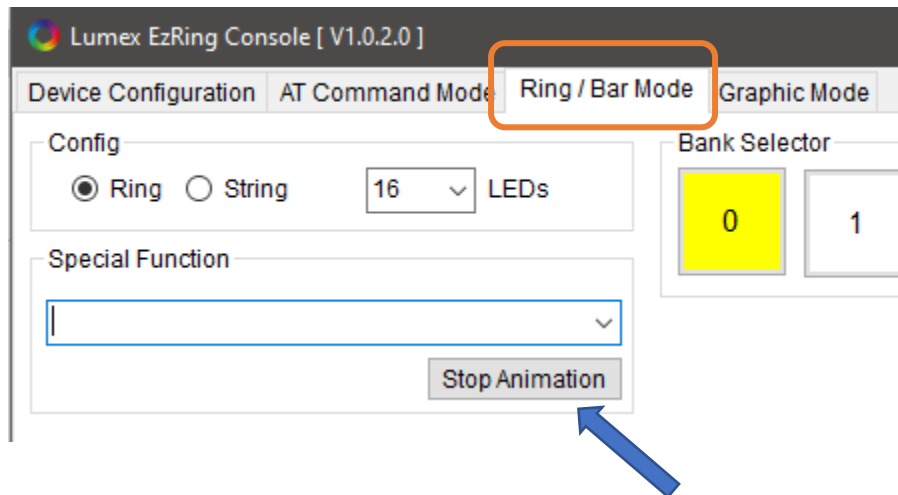
- 1) Double click the icon  to open Lumex EzRing Console.
- 2) When your “Digital LED Evaluation Kit” is connected and USB to UART bridge driver is well installed, click “ReScan Comm Port” button, you will find “Silicon Labs CP201x USB to UART Bridge” appeared in the list of “comm port”.
- 3) Select Silicon Labs CP2010x USB to UART Bridge, then Click “Connect” button. If you found the UART connection parameter appeared at the bottom left corner of EzRing Console, the connection between PC and Kit is successfully connected.

A screenshot of a table showing UART connection parameters. The table has two columns: parameter name and value.

Misc	
BaudRate	115200
DataBits	8
DiscardNull	False
DtrEnable	False
Handshake	None
Parity	None
ParityReplace	63
PortName	COM7
ReadBufferSize	4096
ReadTimeout	1000
ReceivedBytesThreshold	1
RtsEnable	False
StopBits	One
WriteBufferSize	2048
WriteTimeout	-1

5. “Ring /Bar Mode”

- Our Evaluation Kit is default to run a Demo while powering up. You can press “Stop Animation” button to stop Demo right away.



6. “AT Command Mode”

Click the tag “AT Command Mode” to start AT Command editing.

The screenshot shows the Lumex EzRing Console interface. The 'AT Command Mode' tab is selected and highlighted with an orange box. The main area contains a table of AT commands:

Index	Cmd Code	Param Format	Description
1	10	AT10=(value of R 0~255, value of G 0~255, value of B 0~25...	Fill pixel one by one, strat from last pixel
2	11	AT11=(value of R 0~255, value of G 0~255, value of B 0~25...	Fill pixel one by one, strat from first pixel
3	12	AT12=(value of R 0~255, value of G 0~255, value of B 0~25...	Stack pixel one by one clockwise then turn off pixel ...
4	13	AT13=(value of R 0~255, value of G 0~255, value of B 0~25...	Stack pixel one by one counterclockwise then turn ...
5	14	AT14=(value of R 0~255, value of G 0~255, value of B 0~25...	Two pixels collision then firework
6	15	AT15=(value of R 0~255, value of G 0~255, value of B 0~25...	Two stack pixels collision then firework
7	16	AT16=(value of R 0~255, value of G 0~255, value of B 0~25...	Two pixels collision then bounce back
8	17	AT17=(value of R 0~255, value of G 0~255, value of B 0~25...	Two stack pixels collision then fade back
9	c0	ATc0=(address of pixel, value of R 0~255, value of G 0~25...	Set the color of desinated pixel
10	c1	ATc1=(address of the start pixel, address of the end pixel, v...	Set the color of desinated pixels within a section
11	c2	ATc2=()	Set the color randomly for each pixel of ring
12	c3	ATc3=(speed of turning 1~30)	Turn the ring pixels clockwise one round
13	c4	ATc4=(speed of turning 1~30)	Turn the ring pixels counter clockwise one round
14	c5	ATc5=(speed of shifting 1~30)	Turn one pixels Clockwise
15	c6	ATc6=(speed of shifting 1~30)	Turn one pixels Counter clockwise
16	c7	ATc7=(address of pixel, speed of flashing 1~100)	Flash one desinated pixle
17	c8	ATc8=(address of the start pixel, address of the end pixel, ...	Flash desinated pixels within a section
18	c9	ATc9(speed of flashing 1~100)	Flash whole ring
19	ca	ATca=(0 or 1 for R, 0 or 1 for G, 0 or 1 for B)	Breath effect of whole ring for 7 major colors
20	cd	ATcd=(value of R 0~255, value of G 0~255, value of B 0~255)	Set the dynamic fuction's color
21	ce	ATce=(speed 1~100)	Set the dynamic fuction's speed
22	cf	ATcf=(number of pixels of ring 1~120)	Set the pixel number of ring
23	d0	ATd0=()	Clear display
24	f2	ATf2=(Dimming level 0~31)	Set the Dimming level
25	fc	ATfc=(0~7) Page0~Page7	Switch display designated page
26	fd	ATfd=(Function Code 0~20)	Set the dynamic function
27	fe	ATfe=()	Write dipslay contents to current displayed page a...

On the right side of the interface, there are control buttons: Append, Remove, Load, Batch, Delay (set to 5), Cancel, Insert, Save, RESET, and Loop send. Below these buttons is a table for sending commands:

Index	Commands	Send
<input type="checkbox"/> 1	<input type="text"/>	<input type="button" value="T"/>

At the bottom left of the console, the status 'ATfa=0' is displayed.

7. Take an example of “Clear display” command: ATd0=()

<Step 1> Double click Command you assigned,

<Step 2> the software will automatically fill the dialogue with the scripts you click.

<Step 3> Press “T” button to send command, **all of LED will be OFF by “ATd0=()” command.**

Lumex EzRing Console [V1.0.2.0]

Device Configuration | AT Command Mode | Ring / Bar Mode | Graphic Mode

Index	Cmd Code	Param Format	Description
1	10	AT10=(value of R 0~255, value of G 0~255, value of B 0~25...	Fill pixel one by one, strat from last pixel
2	11	AT11=(value of R 0~255, value of G 0~255, value of B 0~25...	Fill pixel one by one, strat from first pixel
3	12	AT12=(value of R 0~255, value of G 0~255, value of B 0~25...	Stack pixel one by one clockwise then turn off pixel ...
4	13	AT13=(value of R 0~255, value of G 0~255, value of B 0~25...	Stack pixel one by one counterclockwise then turn ...
5	14	AT14=(value of R 0~255, value of G 0~255, value of B 0~25...	Two pixels collision then firework
6	15	AT15=(value of R 0~255, value of G 0~255, value of B 0~25...	Two stack pixels collision then firework
7	16	AT16=(value of R 0~255, value of G 0~255, value of B 0~25...	Two pixels collision then bounce back
8	17	AT17=(value of R 0~255, value of G 0~255, value of B 0~25...	Two stack pixels collision then fade back
9	c0	ATc0=(address of pixel, value of R 0~255, value of G 0~25...	Set the color of desinated pixel
10	c1	ATc1=(address of the start pixel, address of the end pixel, v...	Set the color of desinated pixels within a section
11	c2	ATc2=()	Set the color randomly for each pixel of ring
12	c3	ATc3=(speed of turning 1~30)	Turn the ring pixels clockwise one round
13	c4	ATc4=(speed of turning 1~30)	Turn the ring pixels counter clockwise one round
14	c5	ATc5=(speed of shifting 1~30)	Turn one pixels Clockwise
15	c6	ATc6=(speed of shifting 1~30)	Turn one pixels Counter clockwise
16	c7	ATc7=(address of pixel, speed of flashing 1~100)	Flash one desinated pixle
17	c8	ATc8=(address of the start pixel, address of the end pixel, ...	Flash desinated pixels within a section
18	c9	ATc9=(speed of flashing 1~100)	Flash whole ring
19	ca	ATca=(0 or 1 for R, 0 or 1 for G, 0 or 1 for B)	Breath effect of whole ring for 7 major colors
20	cd	ATcd=(value of R 0~255, value of G 0~255, value of B 0~255)	Set the dynamic fuction's color
21	ce	ATce=(speed 1~100)	Set the dynamic fuction's speed
22	cf	ATcf=(number of pixels of ring 1~120)	Set the pixel number of ring
23	d0	ATd0=()	Clear display
24	f2	ATf2=(Dimming level 0~31)	Set the Dimming level
25	fc	ATfc=(0~7) Page0~Page7	Switch display designated page
26	fd	ATfd=(Function Code 0~20)	Set the dynamic function
27	fe	ATfe=()	Write diplsay contents to current displayed page a...

1

2

3

8. How do I know the communication status?
Please move to “Device Configuration” Tab.

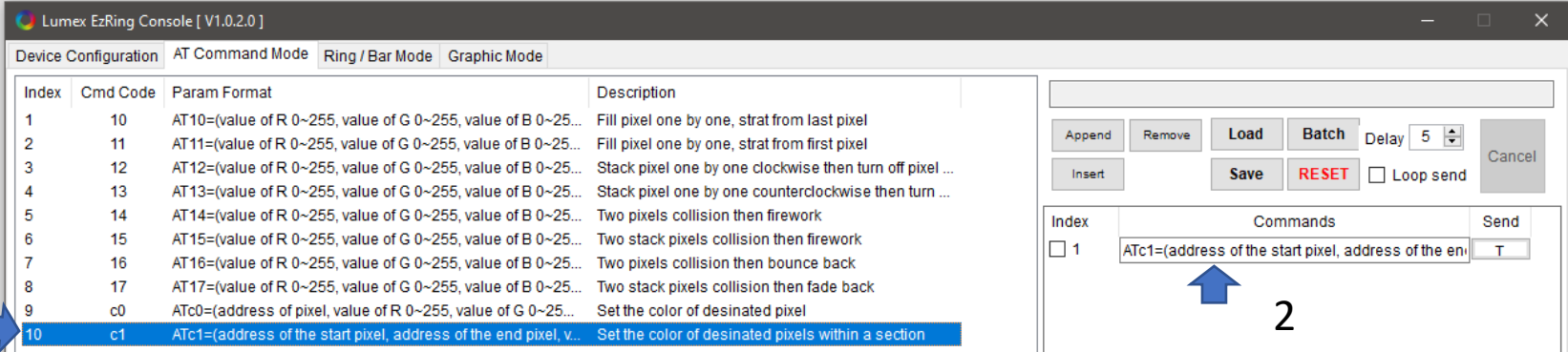
The screenshot shows the Lumex EzRing Console interface. The title bar reads "Lumex EzRing Console [V1.0.2.0]". Below the title bar are four tabs: "Device Configuration", "AT Command Mode", "Ring / Bar Mode", and "Graphic Mode". The "Device Configuration" tab is active. It contains a "Comm port" dropdown menu set to "Silicon Labs CP210x USB to UART Bridge" and a "Baudrate" dropdown menu set to "115200". Below these are three buttons: "ReScan Comm Port", "Connect", and "Close". To the right of the configuration fields is a log window with a blue border. The log window contains a table with the following data:

Index	Time	In/Out	Data
1	2022/7/22 15:27:33	Out	0xf601
2	2022/7/22 15:27:36	Out	ATd0=()

Atd0=() is logged by software.

9. Take an example of Command ATc1
Set the color of designated pixels within a section.

1



Index	Cmd Code	Param Format	Description
1	10	AT10=(value of R 0~255, value of G 0~255, value of B 0~25...	Fill pixel one by one, strat from last pixel
2	11	AT11=(value of R 0~255, value of G 0~255, value of B 0~25...	Fill pixel one by one, strat from first pixel
3	12	AT12=(value of R 0~255, value of G 0~255, value of B 0~25...	Stack pixel one by one clockwise then turn off pixel ...
4	13	AT13=(value of R 0~255, value of G 0~255, value of B 0~25...	Stack pixel one by one counterclockwise then turn ...
5	14	AT14=(value of R 0~255, value of G 0~255, value of B 0~25...	Two pixels collision then firework
6	15	AT15=(value of R 0~255, value of G 0~255, value of B 0~25...	Two pixels collision then firework
7	16	AT16=(value of R 0~255, value of G 0~255, value of B 0~25...	Two pixels collision then bounce back
8	17	AT17=(value of R 0~255, value of G 0~255, value of B 0~25...	Two stack pixels collision then fade back
9	c0	ATc0=(address of pixel, value of R 0~255, value of G 0~25...	Set the color of desinated pixel
10	c1	ATc1=(address of the start pixel, address of the end pixel, v...	Set the color of desinated pixels within a section

2

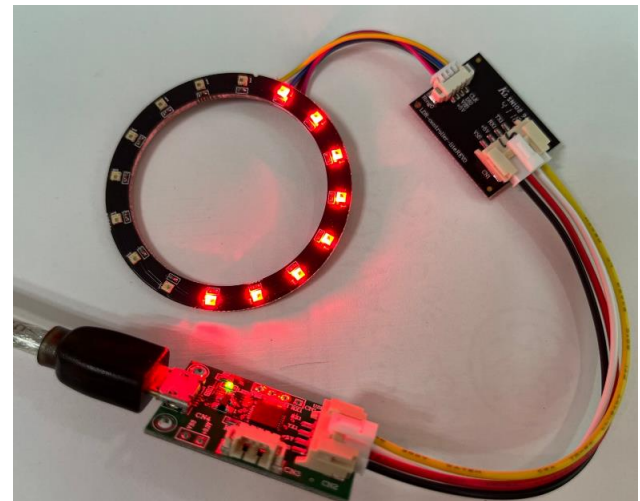
<Step 1> Double click ATc1 command,
<Step 2> The software will be automatically filling in the right command dialogue. <Step 3> Modify the command syntax:

Here is the command syntax. Remember **not to use "spacebar"** during typing scripts.

ATc1=(address of the start pixel, address of the end pixel, value of R 0~255, value of G 0~255, value of B 0~255)

Here is the example: ATc1=(0,7,255,0,0)

After this command was sent, you will see LED 0 ~ LED 1 illuminating Red color.



10. Check the communication status, move to “Device Configuration” Tab.

You can find the command “ATc1=(0,7,255,0,0)”
“ was sent successfully and logged by software.

Lumex EzRing Console [V1.0.2.0]

Device Configuration | AT Command Mode | Ring / Bar Mode | Graphic Mode

Comm port: Silicon Labs CP210x USB to UART Bridge

Baudrate: 115200

ReScan Comm Port | Connect | Close

Language: English

Index	Time	In/Out	Data
1	2022/7/22 16:02:04	Out	0xf601
2	2022/7/22 16:02:12	Out	atd0=()
3	2022/7/22 16:02:28	Out	atc1=(0,7,255,0,0)