

ezDisplay Dot Matrix LED Display



ITW ECS brand Lumex® announces the release of the ezDisplay Dot Matrix LED Display Module equipped UART interface which features a 96x8 dot matrix LEDs on single PCB. The UART LED Display has on board driver ICs, ideal for displays need more than one single 8x8 dot matrix.

With the UART interface it can shorten the developing process and simplified the PCB layout. It is the most friendly dot matrix LED display ever for engineer, Maker and student.

Features:

- UART interface
- Runs HEX or AT command modes
- Able to receive 128x64 bitmap data and display the bitmap simultaneously
- Build in fonts and patterns
- Mixed Character and Graphic modes
- Multi screens display capability
- AP for Win10 is available
- Light weight, Lower power consumption

Benefits:

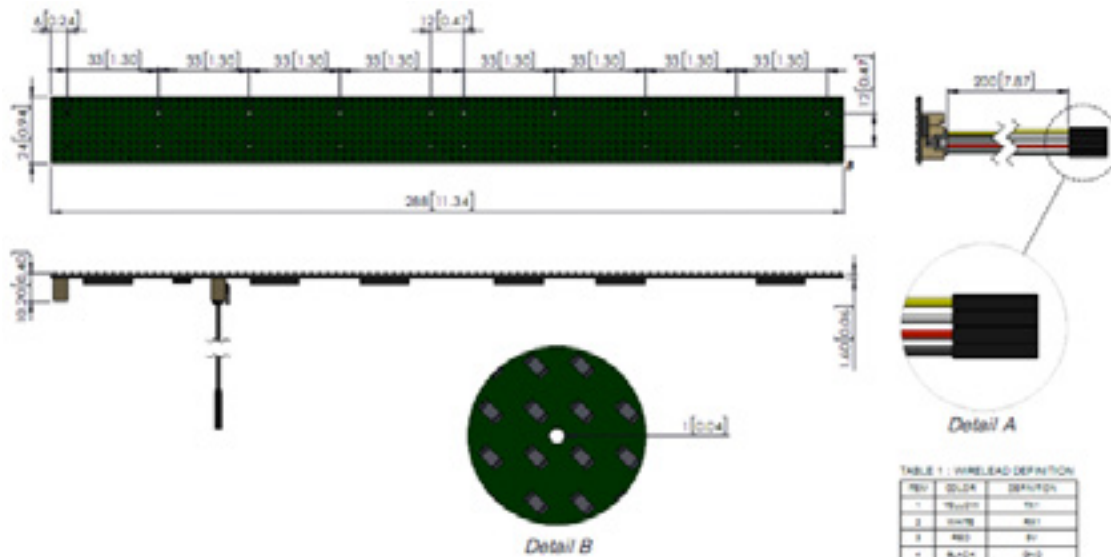
- Fits any MCUs and Embedded systems
- No driver or library needed
- Able to show animation
- Different languages are available on request
- More complex information can be showed
- Control multi OLED modules by one controller
- User can run and test the display contents on PC
- Portable

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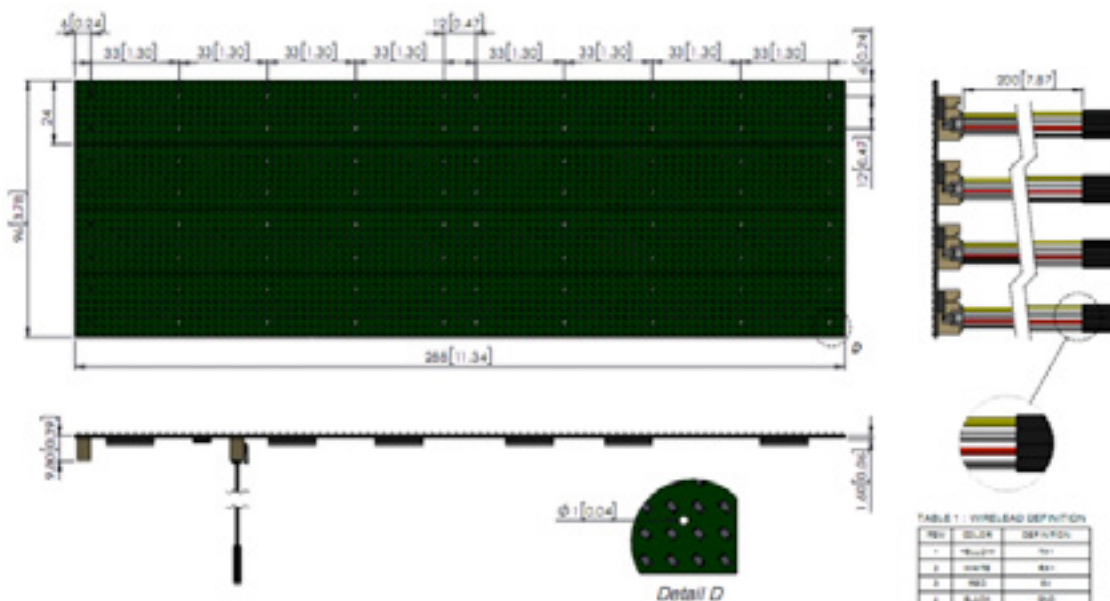
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Spec & Technical Information

P/N	Size	Pixel Color	Operating Temp.
LDM-768-1LT-R1	96x8	Red	-40°C to +85°C
LDM-768-1LT-G1	96x8	Green	-40°C to +85°C
LDM-768-1LT-Y1	96x8	Yellow	-40°C to +85°C



P/N	Size	Pixel Color	Operating Temp.
LDM-768-1LT-R4	96x32	Red	-40°C to +85°C
LDM-768-1LT-G4	96x32	Green	-40°C to +85°C
LDM-768-1LT-Y4	96x32	Yellow	-40°C to +85°C



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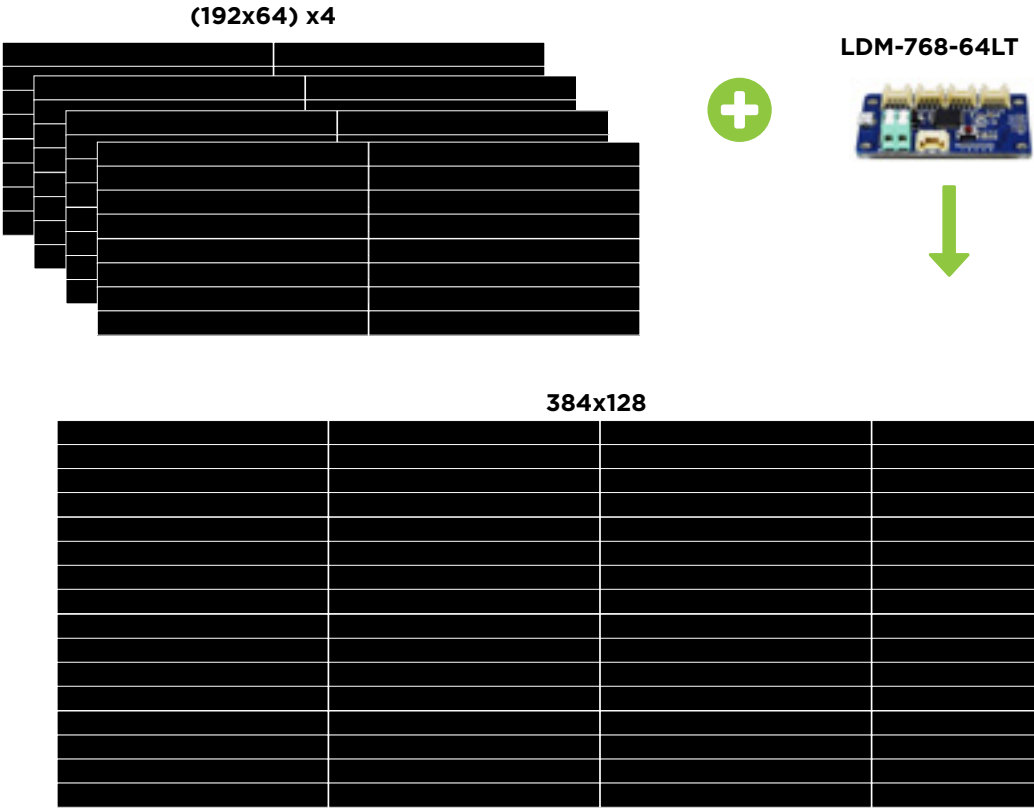
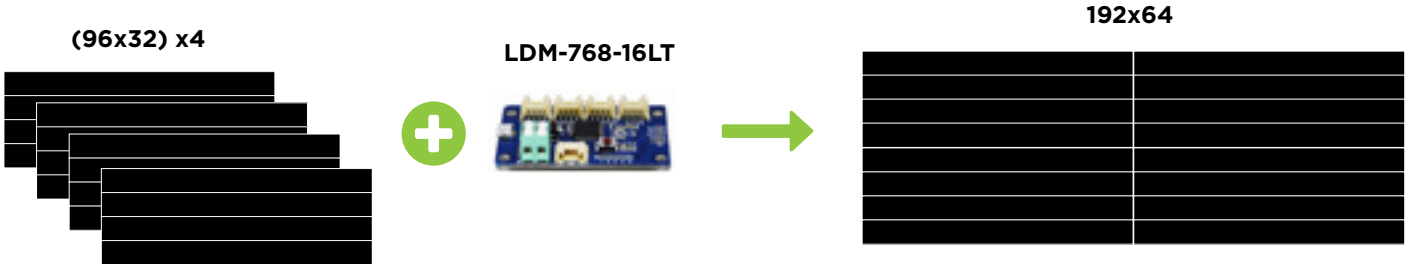
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Item	P/N	Description
	WIRE001	4Pins 200mm with YH2.0 Terminal + 4Pins Housing x 2 (AWG#24)
	WIRE002	4Pins 200mm with YH2.0 Terminal + 4Pins Housing + 1Pin Housing (AWG#24)
	WIRE003	4Pins 450mm with YH2.0 Terminal + 4Pins Housing x 2 (AWG#24)
	USB-UART-1	USB to Serial convert board (Supply by WAVESHARE ELECTRONICS)
	Bluetooth-UART-1	UART interface Bluetooth module (Supply by WAVESHARE ELECTRONICS)
	LDM-768-4LT-OLED	1 to 4 expansion board for OLED
	LDM-768-4LT	1 to 4 expansion board for 96x8 LED Display Module
	LDM-768-16LT	1 to 16 expansion board for 96x8 LED Display Module
	LDM-768-64LT	1 to 64 expansion board for 96x8 LED Display Module

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Configuration Illustration



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Code	Function	Instruction of AT Command mode
N/A	Sent a page(192X64 bitmap) to OLED (An array consist of 1536 bytes bitmap information)	1. A "for" loop to send 1536 bytes user define display information 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x80	Write a 5X7 Character	1. AT80=(line,column,Character) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x81	Write a 8X8 String	1. AT81=(line,column,String) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x82	Write a 8X16 Character	1. AT82=(line,column,Character) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x83	Write a 8X16 String	1. AT83=(line,column,String) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x84	Display a 8X8 pattern	1. AT84=(X position,Y position,pattern ID) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x85	Display a 8X16 pattern	1. AT85=(X position,Y position,pattern ID) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x86	Display a 16X16 pattern	1. AT86=(X position,Y position,pattern ID) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x87	Display a 32X32 pattern	1. AT87=(X position,Y position,pattern ID) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x90	Draw a line	1. AT90=(X0 position,Y0 position,X1 position,Y1 position,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x91	Draw a Rectangle	1. AT91=(X0 position,Y0 position,X1 position,Y1 position,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms

Code	Function	Instruction of AT Command mode
0x92	Draw a filled Rectangle	1. AT92=(X0 position,Y0 position,X1 position,Y1 position,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x93	Draw a Square	1. AT93=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x94	Draw a Circle	1. AT94=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x95	Draw a filled Circle	1. AT95=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x96	Draw a tip upward Triangle	1. AT96=(X position,Y position,Height,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x97	Draw a filled tip upward Triangle	1. AT97=(X position,Y position,Height,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x98	Draw a tip downward Triangle	1. AT98=(X position,Y position,Height,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x99	Draw a filled tip downward Triangle	1. AT99=(X position,Y position,Height,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x9a	Draw a tip leftward Triangle	1. AT9a=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x9b	Draw a filled tip leftward Triangle	1. AT9b=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x9c	Draw a tip rightward Triangle	1. AT9c=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x9d	Draw a filled tip rightward Triangle	1. AT9d=(X position,Y position,Width,0 or 1) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms

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Code	Function	Instruction of AT Command mode
0x9e	Set a pixel for positive display (show pixel)	1. AT9e=(X position,Y position) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0x9f	Set a pixel for negative display (clear pixel)	1. AT9f=(X position,Y position) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa0	Display image row by row Up Ward	1. ATa0=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa1	Display image row by row Down Ward	1. ATa1=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa2	Display image column by column Left Ward	1. ATa2=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa3	Display image column by column Right Ward	1. ATa3=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa4	Erase image row by row Up Ward	1. ATa4=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa5	Erase image row by row Down Ward	1. ATa5=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa6	Erase image column by column Left Ward	1. ATa6=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa7	Erase image column by column Right Ward	1. ATa7=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa8	Display image Inside Out	1. ATa8=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xa9	Display image Outside In	1. ATa9=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xaa	Erase image Inside Out	1. ATaa=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms

Code	Function	Instruction of AT Command mode
0xab	Erase image Outside In	1. ATab=(Speed in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd0	Clear display	1. ATd0=() 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd1	Show the data in the display memory	1. ATd1=() 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd2	Scroll the whole display upward	1. ATd2=(shif time in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd3	Scroll the whole display downward	1. ATd3=(shif time in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd4	Scroll the whole display leftward	1. ATd4=(shif time in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd5	Scroll the whole display rightward	1. ATd5=(shif time in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd6	Scroll the section display upward	1. ATd6=(X0 position,Y0 position,X1 position,Y1 position, shif time in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd7	Scroll the section display downward	1. ATd7=(X0 position,Y0 position,X1 position,Y1 position, shif time in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd8	Scroll the section display leftward	1. ATd8=(X0 position,Y0 position,X1 position,Y1 position, shif time in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xd9	Scroll the section display rightward	1. ATd9=(X0 position,Y0 position,X1 position,Y1 position, shif time in ms) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xda	Display quarter of display memory (Available for Mode0, 1, and 2 only)	1. ATda=(Quadrant 0-3) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms

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Code	Function	Instruction of AT Command mode
0xf0	Turn display Off	1. ATf0=() 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xf1	Turn display On	1. ATf1=() 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xf2	Set the brightness of the LED Module	1. ATf2=(level of brightness 0-11) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xf3	Inverse image	1. ATf3=() 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xf6	Change Instruction mode (0 for Hex Coammand, 1 for AT Command)	1. ATf6=(0) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms
0xf7	Change Display Mode	1. ATf7=(Display Mode) 2. Wait until receive a module available byte ('E') from LED Module 3. Wait 2ms