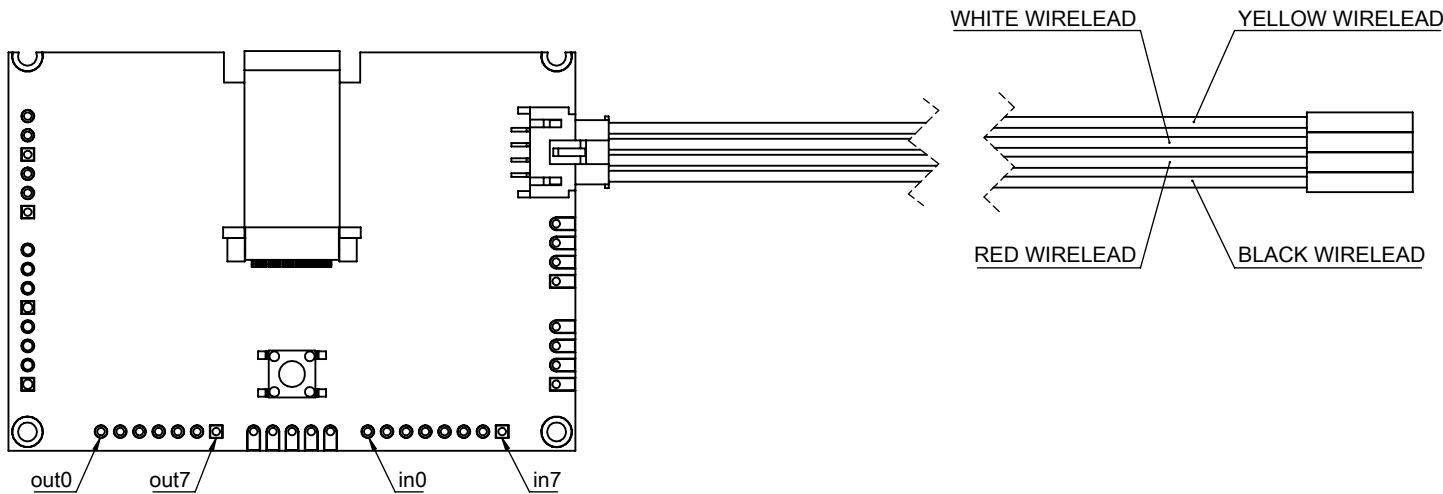
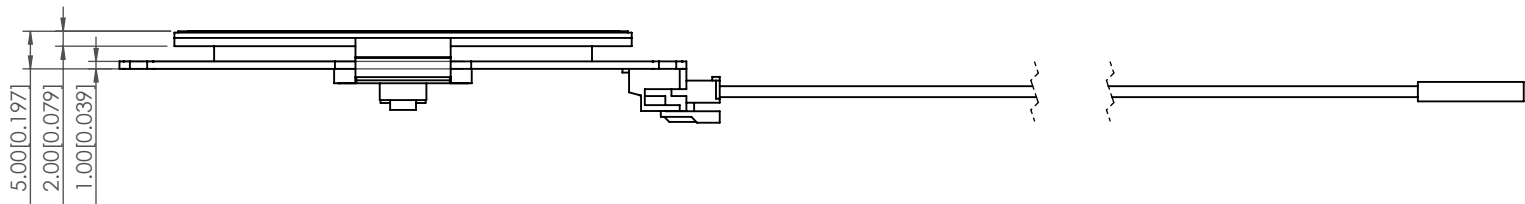
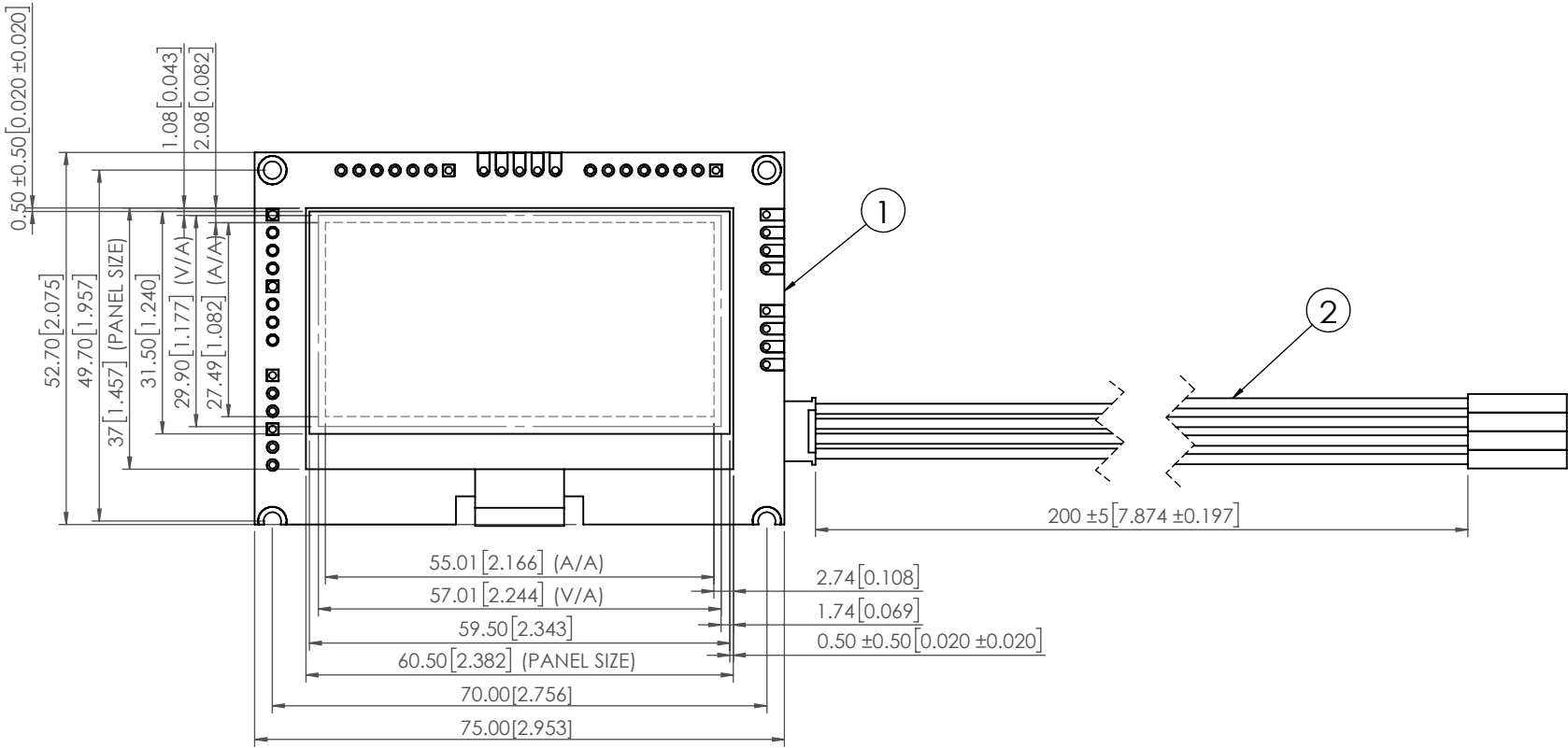




BOM :

P/N	ITEM	COMPONENT	QTY
LOD-H12864GP-X-UR	1	LOD-H12864GP-X	1
	2	WIRE002	1

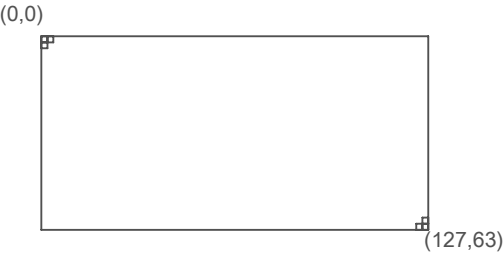
P/N INFORMATION :

PART NUMBER	SIZE	PIXEL COLOR
LOD-H12864GP-W-UR	128x64	WHITE
LOD-H12864GP-Y-UR	128x64	YELLOW
LOD-H12864GP-G-UR	128x64	GREEN
LOD-H12864GP-B-UR	128x64	BLUE

MECHANICAL SPECIFICATIONS :

ITEM	DESCRIPTION
NUMBER OF PIXELS	128 * 64
PANEL SIZE	60.50*37.00*2.00(mm)
ACTIVE AREA	55.01*27.49(mm)
PIXEL PITCH	0.43*0.43(mm)
PIXEL SIZE	0.40*0.40(mm)
WEIGHT	8.60(g)

PIXEL COORDINATE :



WIRELEAD DEFINITION :

COLOR	DEFINITION
YELLOW	TX1
WHITE	RX1
RED	5V
BLACK	GND

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ELECTRICAL/OPTO CHARACTERISTICS :

ITEM		SYMBOL	CONDITION	STANDARD VALUE			UNIT
				MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC		V _{DD} - V _{SS}	-	4.5	5.0	5.5	V
INPUT VOLTAGE	HIGH	V _{IH}	-	2.64	-	3.3	V
	LOW	V _{IL}	-	0	-	0.66	V
OUTPUT VOLTAGE	HIGH	V _{OH}	-	2.97	-	3.3	V
	LOW	V _{OL}	-	0	-	0.33	V
OLED DRIVING CURRENT		I _{DD}	-	-	50	-	mA
VIEW ANGLE		-	-	160	-	-	deg
DARK ROOM CONTRAST		-	-	-	10000:1	-	-
BRIGHNESS W/POLARIZER		-	-	60	80	-	cd/m ²

*BRIGHNESS=80cd/m² , Ta=25°C , 60% RH , ALL PIXEL ON

UART CONFIGURATION :

ITEM	SETTING VALUE
BAUD RAT	115200
DATA BIT	8
STOP BIT	1
PARITY BIT	NONE
FLOW CONTROL	NONE

COMMAND LIST :

Code	Function	Sequence of HEX command mode through UART	API for Arduino
N/A	Sent a page(128X64 bitmap) to OLED (An array consist of 1024 bytes bitmap information)	1. A "for" loop to send 1024 bytes user define display information 2. Wait until receive a module available byte ('E') from OLED	for (i = 0 ; i < 1024; i++) { Serial.write(User_define_array[i]); } while (Serial.read() !='E') {}
0x80	Write a 5X7 Character	1. Send 0x80 2. Send which line to put this character 3. Send which cloumn to put this character 4. Send character's ASCII code 5. Wait until receive a module available byte ('E') from OLED	void Write_5X7_Character(int line, int column, int negative, char Char) { Serial.write(0x80); Serial.write(line); Serial.write(column); Serial.print(Char); while (Serial.read() !='E') {} }
0x81	Write a 5X7 String	1. Send 0x81 2. Send which line to start the string 3. Send which cloumn to start the string 4. Send string 5. Wait until receive a module available byte('E') from OLED	void Write_5X7_String(int line, int column, int negative, char * string) { Serial.write(0x81); Serial.write(line); Serial.write(column); Serial.print(string); while (Serial.read() !='E') {} }
0x82	Write a 8X16 Character	1. Send 0x82 2. Send which line to put this character 3. Send which cloumn to put this character 4. Send character's ASCII code 5.Wait until receive a module available byte('E') from OLED	void Write_8X16_Character(int line, int column, int negative, char Char) { Serial.write(0x82); Serial.write(line); Serial.write(column); Serial.print(Char); while (Serial.read() !='E') {} }
0x83	Write a 8X16 String	1. Send 0x83 2. Send which line to stary the string 3. Send which cloumn to start the string 4. Send string 5. Wait until receive a module available byte('E') from OLED	void Write_8X16_String(int line, int column, int negative, char * string) { Serial.write(0x83); Serial.write(line); Serial.write(column); Serial.print(string); while (Serial.read() !='E') {} }
0x84	Dsisplay a 8X8 pattern	1. Send 0x84 2. Send the Up Left X coordinate of pattern 3. Send the Up Left Y coordinate of pattern 4. Send the ID of pattern 5. Wait until receive a module available byte ('E') from OLED	void Write_8X8_Pattern(int Up_Left_Xpos, int Up_Left_Ypos, int negative, int Pattern_ID) { Serial.write(0x84); Serial.write(Up_Left_Xpos); Serial.write(Up_Left_Ypos); Serial.write(Pattern_ID); while (Serial.read() !='E') {} }
0x85	Dsisplay a 8X16 pattern	1. Send 0x85 2. Send the Up Left X coordinate of pattern 3. Send the Up Left Y coordinate of pattern 4. Send the ID of pattern 5.Wait until receive a module available byte ('E') from OLED	void Write_8X16_Pattern(int Up_Left_Xpos, int Up_Left_Ypos, int negative, int Pattern_ID) { Serial.write(0x85); Serial.write(Up_Left_Xpos); Serial.write(Up_Left_Ypos); Serial.write(Pattern_ID); while (Serial.read() !='E') {} }

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128x64 PIXELS UART OLED MODULE

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PAGE : 2 OF 11

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SCALE: NTF

APRVD BY : R.C.

UNIT : mm [INCH]



Code	Function	Sequence of HEX command mode through UART	API for Arduino
0xa3	Display image column by column Right Ward	1. Send 0xa3 2. Send the speed (typical time is 20ms) 3.Wait until receive a module available byte ('E') from OLED	<pre>void Display_Column_By_Column_Right_Ward(int Speed) { Serial.write(0xa2); Serial.write(Speed); while (Serial.read() !='E') {} }</pre>
0xa4	Erase image row by row Up Ward	1. Send 0xa4 2. Send the speed (typical time is 20ms) 3.Wait until receive a module available byte ('E') from OLED	<pre>void Erase_Row_By_Row_Up_Ward(int Speed) { Serial.write(0xa4); Serial.write(Speed); while (Serial.read() !='E') {} }</pre>
0xa5	Erase image row by row Down Ward	1. Send 0xa5 2. Send the speed (typical time is 20ms) 3.Wait until receive a module available byte ('E') from OLED	<pre>void Erase_Row_By_Row_Down_Ward(int Speed) { Serial.write(0xa5); Serial.write(Speed); while (Serial.read() !='E') {} }</pre>
0xa6	Erase image column by column Left Ward	1. Send 0xa6 2. Send the speed (typical time is 20ms) 3.Wait until receive a module available byte ('E') from OLED	<pre>void Erase_Column_By_Column_Left_Ward(int Speed) { Serial.write(0xa6); Serial.write(Speed); while (Serial.read() !='E') {} }</pre>
0xa7	Erase image column by column Right Ward	1. Send 0xa7 2. Send the speed (typical time is 20ms) 3.Wait until receive a module available byte ('E') from OLED	<pre>void Erase_Column_By_Column_Right_Ward(int Speed) { Serial.write(0xa7); Serial.write(Speed); while (Serial.read() !='E') {} }</pre>
0xa8	Display image Inside Out	1. Send 0xa8 2. Send the speed (typical time is 20ms) 3.Wait until receive a module available byte ('E') from OLED	<pre>void Display_Inside_Out(int Speed) { Serial.write(0xa8); Serial.write(Speed); while (Serial.read() !='E') {} }</pre>
0xa9	Display image Outside In	1. Send 0xa9 2. Send the speed (typical time is 20ms) 3.Wait until receive a module available byte ('E') from OLED	<pre>void Display_Outside_In(int Speed) { Serial.write(0xa9); Serial.write(Speed); while (Serial.read() !='E') {} }</pre>

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PAGE : 6 OF 11

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SCALE : NTF

APRVD BY : R.C.

UNIT : mm [INCH]

Code	Function	Sequence of HEX command mode through UART	API for Arduino
0xaa	Erase image Inside Out	1. Send 0xaa 2. Send the speed (typical time is 20ms) 3.Wait until receive a module available byte ('E') from OLED	<pre>void Erase_Inside_Out(int Speed) { Serial.write(0xaa); Serial.write(Speed); while (Serial.read() !='E') {} }</pre>
0xab	Erase image Outside In	1. Send 0xab 2. Send the speed (typical time is 20ms) 6.Wait until receive a module available byte ('E') from OLED	<pre>void Erase_Outside_In(int Speed) { Serial.write(0xab); Serial.write(Speed); while (Serial.read() !='E') {} }</pre>
0xc0	Build user define 8X8 pattern bitmap into OLED's display memory (Maximun number of user define 8X8 pattern is 10 (0~9))	1. Send 0xc0 2. Send the pattern ID 3. Sent the bitmap of this pattern ID 4.Wait until receive a module available byte ('E') from OLED	<pre>void Build_User_Define_8X8_Pattern() { Serial.write(0xc0); Serial.write(0); for (i = 0; i < 8; i++) { Serial.write(User_Define_8X8_pattern_ID[i]); } while (Serial.read() !='E') {} }</pre>
0xc1	Build user define 8X16 pattern bitmap into OLED's display memory (Maximun number of user define 8X16 pattern is 10 (0~9))	1. Send 0xc1 2. Send the pattern ID 3. Sent the bitmap of this pattern ID 4.Wait until receive a module available byte ('E') from OLED	<pre>void Build_User_Define_8X16_Pattern() { Serial.write(0xc1); Serial.write(0); for (i = 0; i < 16; i++) { Serial.write(User_Define_8X16_pattern_ID[i]); } while (Serial.read() !='E') {};</pre>
0xc2	Build user define 16X16 pattern bitmap into OLED's display memory (Maximun number of user define 16X16 pattern is 10 (0~9))	1. Send 0xc2 2. Send the pattern ID 3. Sent the bitmap of this pattern ID 4.Wait until receive a module available byte ('E') from OLED	<pre>void Build_User_Define_16X16_Pattern() { Serial.write(0xc2); Serial.write(0); for (i = 0; i < 32; i++) { Serial.write(User_Define_16X16_pattern_ID[i]); } while (Serial.read() !='E') {} }</pre>
0xc3	Build user define 32X32 pattern bitmap into OLED's display memory (Maximun number of user define 32X32 pattern is 5 (0~4))	1. Send 0xc3 2. Send the pattern ID 3. Sent the bitmap of this pattern ID 4.Wait until receive a module available byte ('E') from OLED	<pre>void Build_User_Define_32X32_Pattern() { Serial.write(0xc3); Serial.write(0); for (i = 0; i < 128; i++) { Serial.write(User_Define_32X32_pattern_ID[i]); } while (Serial.read() !='E') {} }</pre>
0xc4	Dsisplay a user define 8X8 pattern (Build user define 8X8 pattern function needs to run before this function)	1. Send 0xc4 2. Send the Up Left X coordinate of pattern 3. Send the Up Left Y coordinate of pattern 4. Send the ID of pattern 5.Wait until receive a module available byte ('E') from OLED	<pre>void Write_User_Define_8X8_Pattern(int Up_Left_Xpos, int Up_Left_Ypos, int negative, int Pattern_ID) { Serial.write(0xc4); Serial.write(Up_Left_Xpos); Serial.write(Up_Left_Ypos); Serial.write(Pattern_ID); while (Serial.read() !='E') {} }</pre>

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Code	Function	Sequence of HEX command mode through UART	API for Arduino
0xf1	Turn display On	1. Send 0xf1 2.Wait until receive a module available byte ('E') from OLED	<pre>void Display_On(void) { Serial.write(0xf1); while (Serial.read() !='E') {} }</pre>
0xf2	Set the brightness of the OLED	1. Send 0xf2 2. Send the level of brightness 3.Wait until receive a module available byte ('E') from OLED	<pre>void Set_Display_Contrast(int contrast) { Serial.write(0xf2); Serial.write(contrast); while (Serial.read() !='E') {} }</pre>
0xf3	Set the status of 8 output pins on OLED	1. Send 0xf3 2. Send the output pin No. 3. Send 0 or 1 (0--> Low, 1-->High) 4.Wait until receive a module available byte ('E') from OLED	<pre>void Set_Output_Port(int Output_pin_No, int HL) { Serial.write(0xf3); Serial.write(Output_pin_No); Serial.write(HL); while (Serial.read() !='E') {} }</pre>
0xf4	Read the input pins status on the OLED	1. Send 0xf4 2. Send the input pin No. 4. Recive the input pins status from OLED (0 or 1) 5. Return the input pins status	<pre>int Read_Input_Port(Input_pin_No) { Serial.write(0xf4); Serial.write(Input_pin_No); while (Serial.available() <= 0) {} incomingByte = Serial.read(); return incomingByte; }</pre>
0xf6	Change Instruction mode (1 for AT command)	1. Send 0xf6 2. Send instruction mode 1 3. Wait until receive a module available byte ('E') from OLED	<pre>int Change_Display_Mode(int mode) { Serial.write(0xf6); Serial.write(1); while (Serial.read() !='E') {} }</pre>

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