



Haidar Technology
Innovative measurement and control solutions for OEMs

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MOB-12864M31-2.8xx
Module On Board Panel

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1- Overview:

Haidar Technology Module On board (MOB) LCDs offer the designers fast, perfect and all-in-one solutions for their graphical user interface application, which highly improve the look and feel of their end products.

MOB-12864M31-2.8xx panels are based on the new **F-51852** HPC (High Performance Color) LCD from Optrex and Haidar Technology GUI LCD module **GLC-M31** offering a unique combination of performance enhancements. These include:

- Optrex new **F-51852** 128X64 LCD series featuring a wide operating temperature, high contrast ratio up to 80:1, high brightness up to 100 nits, and high ambient-light legibility.
- Variety of display color to choose from. F-51852 series is available with White, Blue, Green, Red, and Yellow pixels on a Black background, each with a user selectable mode (reverse mode) for Black pixels on the HPC color.
- Haidar Technology **GLC-M31** module mounted on the rear of the LCD. GLC-M31 includes all the necessary software and hardware to control/drive the LCD (see GLC-M31 manual for more information). Only a 16-pin IDC connector is required to connect the display to your host controller.
- Optional 4-wire resistive touch screen.

2- Features:

- **ROHS Complaint**
- TTL RS232 interface
- Single +5V power supply
- Buzzer and status LEDs on board
- Simple interface (single 16-pin connector)
- All-in-one solution (module mounted to the rear of the LCD)

3- Part Number:

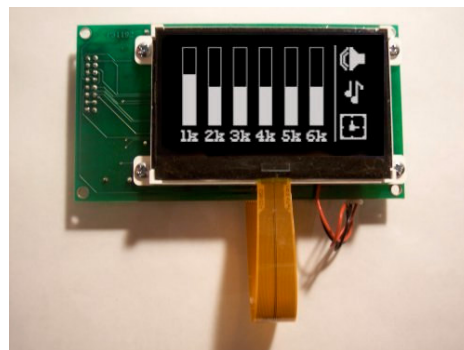
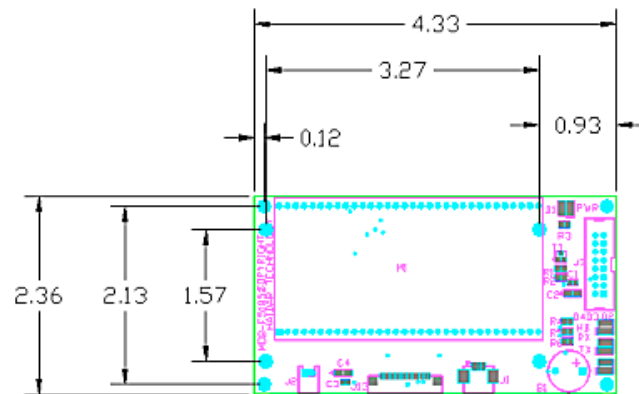
HT Part No.	LCD Part No.	Color	LCD Size	LCD Res.	Touch Screen
MOB-12864M31-3.0BL	F-51852GNFQJ-LB-ADN	Blue	3.0"	128X64	No
MOB-12864M31-3.0BL-T	F-51852GNFQJ-LB-ADN	Blue	3.0"	128X64	Yes
MOB-12864M31-3.0GL	F-51852GNFQJ-LG-ACN	Green	3.0"	128X64	No
MOB-12864M31-3.0GL-T	F-51852GNFQJ-LG-ACN	Green	3.0"	128X64	Yes
MOB-12864M31-3.0YL	F-51852GNFQJ-LY-ADN	Yellow	3.0"	128X64	No
MOB-12864M31-3.0YL-T	F-51852GNFQJ-LY-ADN	Yellow	3.0"	128X64	Yes
MOB-12864M31-3.0WL	F-51852GNFJ-SLW-AEN	White	3.0"	128X64	No
MOB-12864M31-3.0WL-T	F-51852GNFJ-SLW-AEN	White	3.0"	128X64	Yes
MOB-12864M31-3.0RL	F-51852GNFJ-LR-AEN	Red	3.0"	128X64	No
MOB-12864M31-3.0RL-T	F-51852GNFJ-LR-AEN	Red	3.0"	128X64	Yes

4- Applications:

- Consumer products
- Industrial test and process control equipment
- Computer peripherals
- Industrial panel meters and data collection displays
- Medical instrumentation

4- Dimensions:

All dimensions in inches



6- Connectors

- **J1, 4-pin 1mm FFC connector for touch screen interface**

1	Y-Upper
2	X-Right
3	Y-Lower
4	X-Left

- **J3, 16-pin standard IDC connector**

Pin Number	Pin Name	Pin Type	Pin Description
1	+5V	PWR	+5V DC In (500 MA)
2	NC	No Connection	Leave this pin open
3	GND	PWR	Ground reference
4	GND	PWR	Ground reference
5	RS232-Rx	TTL IN	RS232 Receiver
6	RS232-Tx	TTL OUT	RS232 Transmitter
7	RS422-DE	TTL OUT	RS422 Data Enable
8	AIN-CH0	Analog IN	CH0 Analog input (0 – 5V) for chart update
9	AIN-CH1	Analog IN	CH1 Analog input (0 – 5V) for chart update
10	AIN-CH2	Analog IN	CH2 Analog input (0 – 5V) for chart update
11	HSS	TTL IN	Horizontal Scanning Signal for chart update
12	Alarm-LED	TTL OUT	This output can be used as general visual alarm controlled by software. LED with limiting resistor can be connected to this pin.
13	Buzzer	TTL OUT	This output can be used as general audible alarm controlled by software. A buzzer with proper current sink can be connected to this pin (This pin is already connected to the buzzer on board)
14	BL-ON/OFF	TTL OUT	This TTL Output indicates the status of the LCD back light. 1 => ON 0 => OFF It can be used to turn external light (front panel lighting) ON or OFF
15	NC	No Connection	Leave this pin open
16	NC	No Connection	Leave this pin open

- **J2, 2-pin JST S2B-PH-K-S for LCD back light**

1	LED Anode Terminal
2	LED Cathode Terminal

- **J13 , 30 pins 0.5mm FFC connector for Optrex F-51852 display**

1	CS
2	RESET
3	A0
4	WR
5	RD
6	D0
7	D1
8	D2
9	D3
10	D4
11	D5
12	D6
13	D7
14	VDD
15	GND
16	NC
17	NC
18	NC
19	NC
20	NC
21	NC
22	V1
23	V2
24	V3
25	V4
26	V5
27	NC
28	GND
29	VDD
30	GND

7- Status LEDs:

D1	Power ON
D2	Heart Beat LED (Flashing at 4HZ rate) indicating the module is running normally
D3	RX-LED (every time the module receives data, this LED flashes)
D4	TX-LED (every time the module sends data, this LED flashes)

8- Interface:

Please see GLC-M31 Manual for more information.

Important Note:

- The following Configuration bytes are internally fixed by code, changing them through the Module Configuration Utility has no effect on the module performance.
LCDResX = 128
LCDResY = 64
LCD-Config = 0x05 (Reverse, Left to Right, Bottom to Top, 1/9 bias, NJU6676)
- In the programming mode, the display will be initialized normally and there is no need to disconnect the display in the programming mode. All commands will be accepted except the touch screen commands.