

GODISP_DMD

**Replacement display for Gottlieb 80B & SYS3
(MA-644, MA-999 and MA-1361)**

Software Version 0.91

user manual

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Important remark

By using GODISP_DMD it is possible to damage your pinball machine. As this is a private project with NO commercial interest the author accepts no liability for any damage that may arise by using GODISP_DMD!

1. Introduction

GODISP_DMD can replace different 'Tube Displays' used in Gottlieb System80B & SYS3 pinball games. It can be used with:

- Gottlieb 80B displays MA-644, used in

Bounty Hunter - Chicago Cubs Triple Play - Tag Team - Rocky - Raven
Rock Encore - Hollywood Heat - Genesis - Gold Wings - Monte Carlo - Amazon Hunt II -
Spring Break - Arena - Victory - Diamond Lady - TX Sector - Robo War

- Gottlieb 80B display MA-999, used in

Excalibur - Bad Girls - Big House - Hot Shots - Bone Busters Inc.

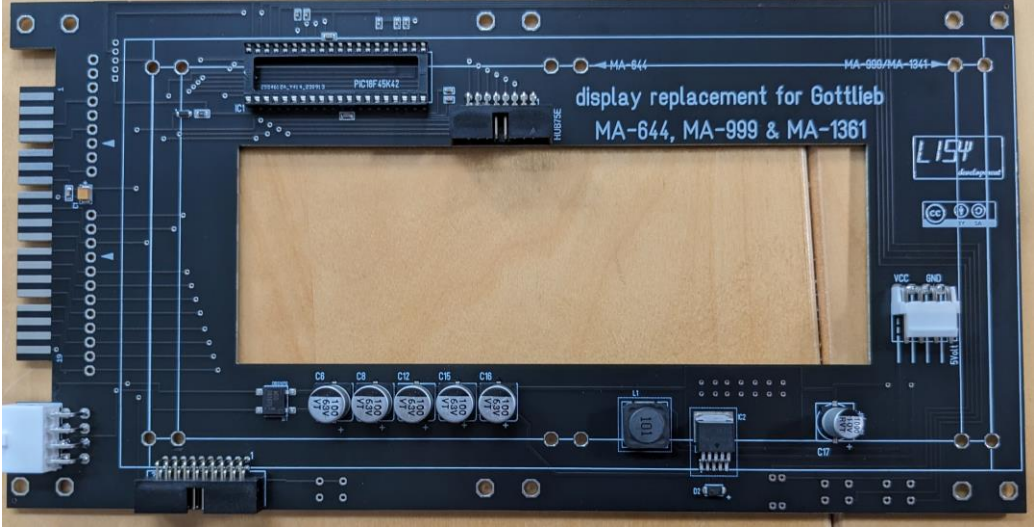
- Gottlieb SYS3 display MA-1361, used in

Lights Action Camera - Silver Slugger - Vegas - Deadly Weapon - Title Fight - Nudge-It - Bell
Ringer - Car Hop - Hoops - Cactus Jack's - Class of 1812 - Surf 'n Safari - Caribbean Cruise -
Operation Thunder

2. Assembly

2.1. needed Parts

2.1.1.1. GODISP_DMD PCB preassembled by JLCPCB



Bottom view

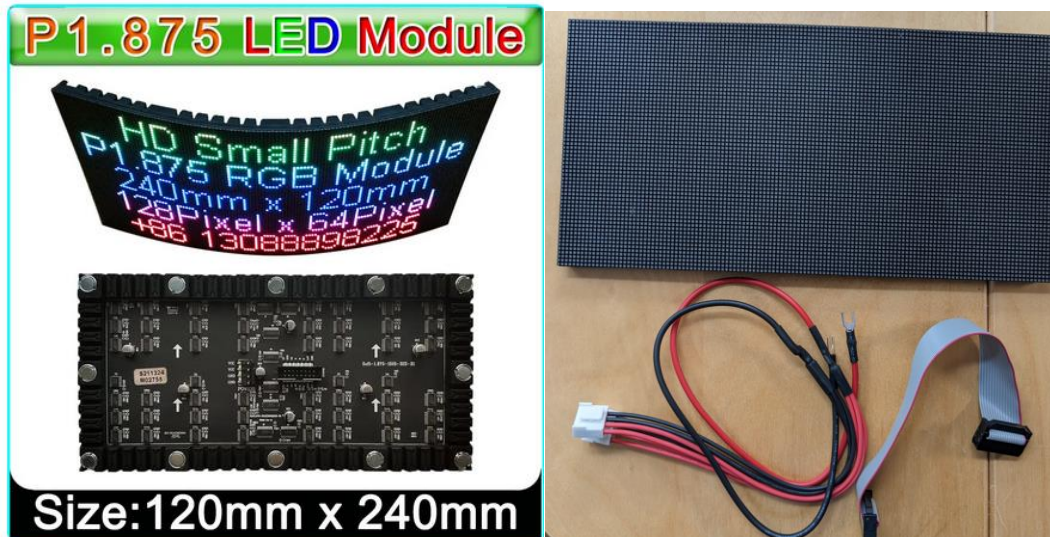


Top view

2.1.2. LED Module

You need the LED module below which can be ordered via Aliexpress for around 40€, shipping included.

<https://de.aliexpress.com/item/1005003671026006.html>



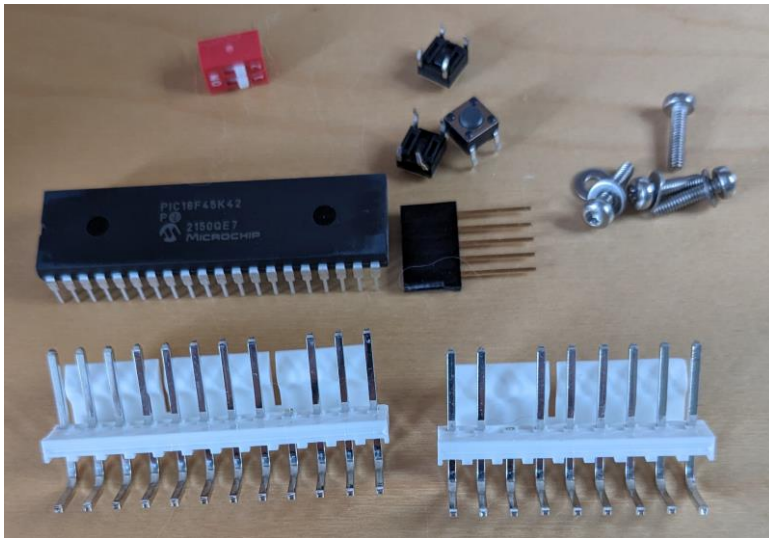
It comes with a ribbon cable and a cable for the 5Volt power supply.

Note: Make sure you get LED moduls with NON-PWM chipset like MBI5124, ICN2037, ICN2038, FM6124, FM6126, FM6127 etc.

PWM chipsets like MBI5153, ICND2153, LYD6168, FM6353 are currently not supported.

2.1.3. other parts

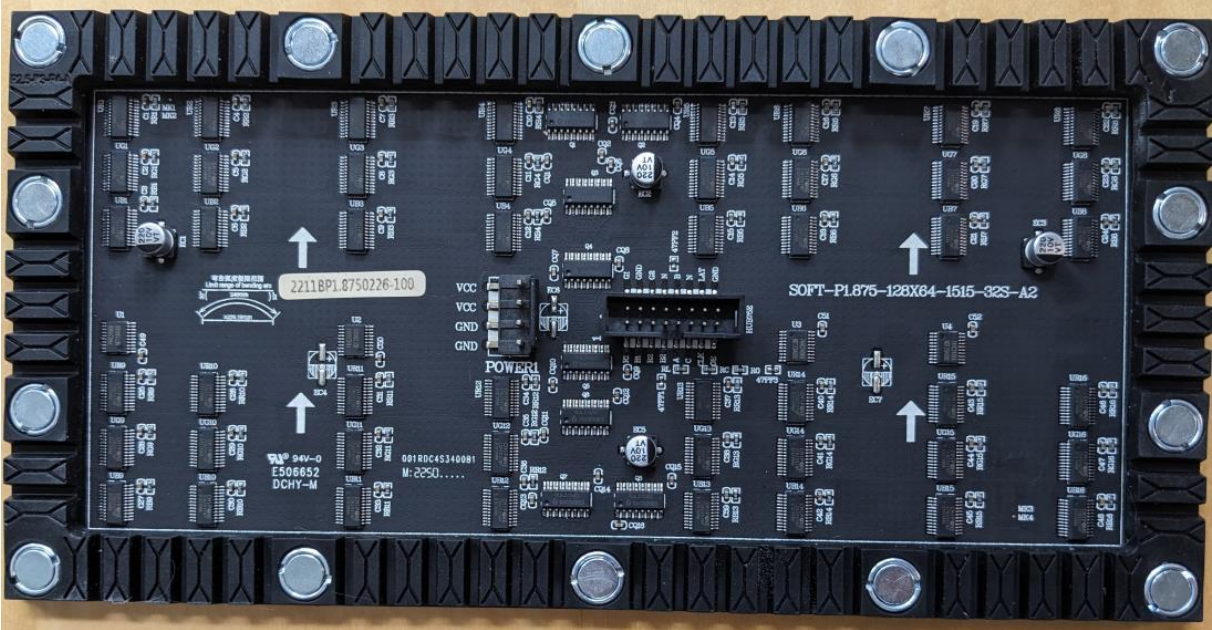
- PIC18F45K42 with my program
- 5pin connector (needed for programming the PIC)
- A 'dual' DIP switch
- Three standard switches
- Six screws and six shims to fix the LED Module onto the PCB
- Two Molex connectors (for MA999 (late Gottlieb 80B) only)



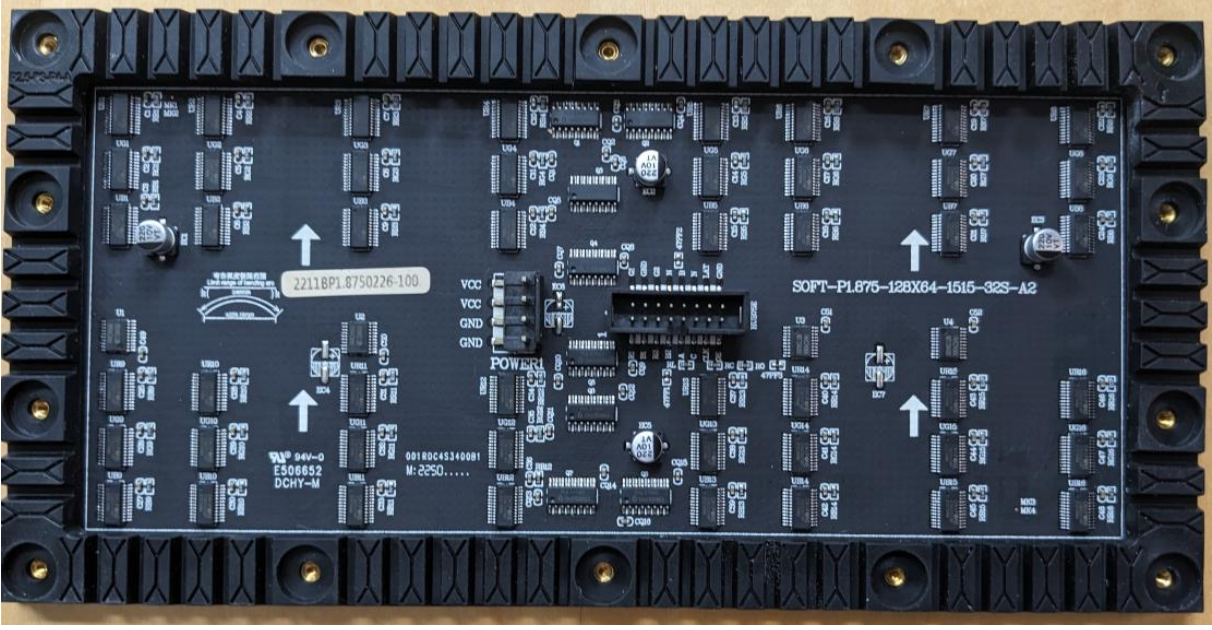
2.2. assembly steps

2.2.1. prepare the LED module

The LED Module comes with Magnets installed. In order to be able to mount the LED module onto the PCB these magnets need to be removed. Although only six screws are used to mount the LED Module, **removing of all 14 magnets is recommended to avoid electrical shorts on the PCB.**

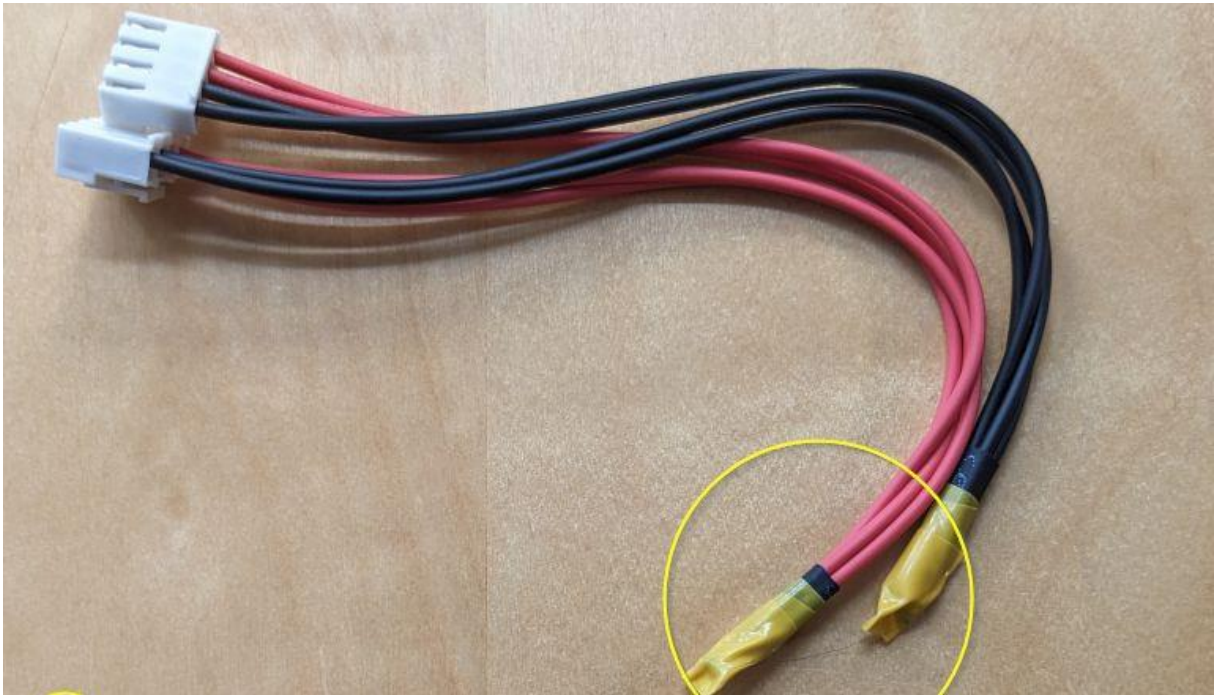


Original LED module



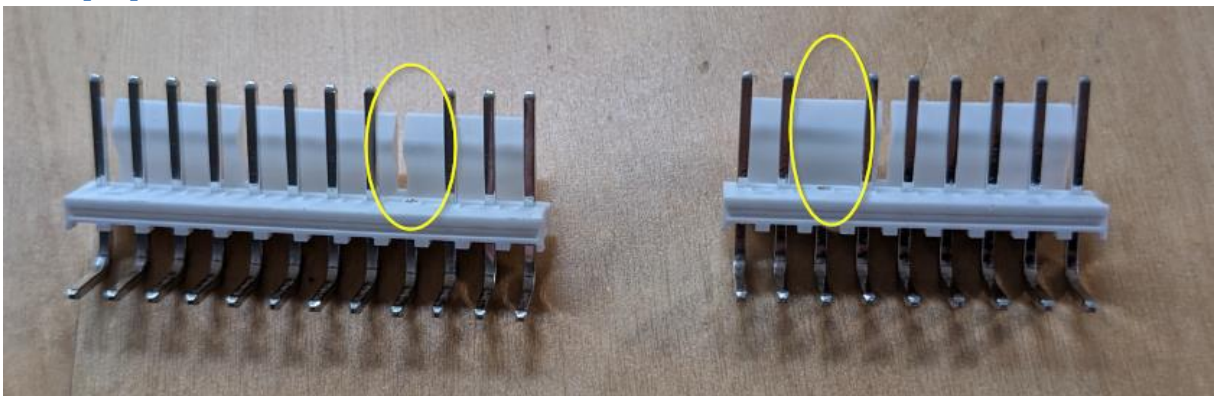
LED module with magnets removed

2.2.2. prepare the power cable



Cut/isolate the not needed blank ends of the 5 Volt connector as shown in the picture above.

2.2.3. prepare the molex connectors



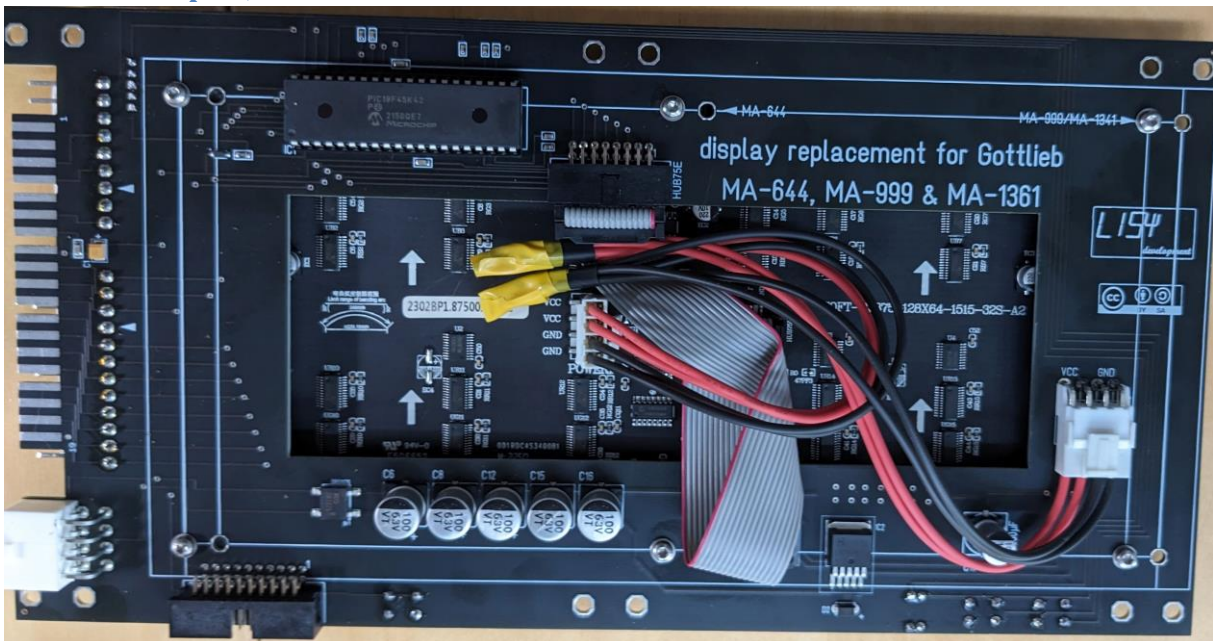
- Cut the two Gottlieb 'Keys' from the Molex connector as shown in the picture above. (for MA999 (late Gottlieb 80B) only)

2.2.4. solder & mount top parts



- Solder the three switches, the DIP switch and the programming connector
- Mount the LED Module with the six screws
- Solder the two Molex connectors (for MA999 (late Gottlieb 80B) only)
-

2.2.5. bottom part, connect the cables & insert PIC



Put the PIC into the socket and connect data & 5 Volt connector as shown in the picture above.

3. Config switches

GODISP_DMD has a 'dual' DIP switchbank und three buttons to configure the display to your needs.

3.1. DIP Switch

With the first position (80B/SYS3) you switch between Gottlieb 80B protocol und System3.

With the second position (up/down) you select if the 'step' value in between the config menu goes up or down.

3.2. Config Button

By pressing this button you switch into the config menu, subsequent pushes will go to the next config point within the config menu.

3.3. Step Button

Here you can adjust the current setting in the config menu. With Dip2 to 'up' the value will increase, with Dip2 to 'down' the value will decrease.

3.4. Test Button

The version number of the installed software is shown for a couple of seconds.

4. overview config menu

4.1. color

4.2. brightness

4.3. font

4.3.1. BIG Font

For late 80B games with MA-999 displays and System3

4.3.2. BIG Font Reduced

For early 80B games with MA-644 displays. This setting uses the big Font but with some restrictions in order to let all chars 'fit' into the window of the translite.

- If 'counting' display is detected the ball in play/credit section is reduced.
- Otherwise (usually text display) the first and last character is suppressed.

4.3.3. Small Font

This font is for early 80B games with MA-644 displays and fits into the window of the translate, but does not look very nice ...

4.4. Y offset

4.5. X offset

4.6. Exit

Config button switches between 'Save & Exit', 'Exit without saving' and 'return to top