GottFA80

Gottlieb System 80 · FPGA MPU

User Manual

Software Version 1.01 / 2.01 · Hardware Version 1.1 (SMD)

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⚠ **WARNING** GottFA80 can damage your pinball machine if installed or configured incorrectly. This is a community project with no commercial backing. The author accepts no liability for any damage that may result from its use. Proceed at your own risk.

1. Introduction

GottFA80 is an FPGA-based drop-in replacement for Gottlieb System 80 and System 80B MPU boards. It replaces the original MPU directly, providing hardware emulation with faithful original behaviour.

2. Installation

GottFA80 boards use the same connectors and mounting holes as the original Gottlieb System 80 MPU. The swap is a direct drop-in — no rewiring or mechanical modification required.

3. DIP Switch Settings

The four DIP banks on the left of the board (S1–S32) are identical to those on the original Gottlieb System 80 MPU — refer to your machine's game manual for their individual functions. The two banks on the right are for game selection and board options.

3.1 Game Select

The game select bank determines which ROM image GottFA80 loads from the SD card. Set the switches to match your machine using Appendix A.

3.2 S2 — Board Options

Default setting is all switches OFF.

DIP	Label	Description
Dip 1	Freeplay	When ON, press and hold the Credit button for more than two seconds to simulate a left coin-chute insert. This allows free play without inserting coins.
Dip 2	Init NVRAM	When ON, clears all NVRAM for the selected game during boot. Use on first power-up or to perform a full factory reset. Turn OFF after initialisation is complete.
Dip 3	Slam Contact — Open	When ON, simulates the slam switch as open. Required for certain late System 80B games.
Dip 4	Slam Contact — Closed	When ON, simulates the slam switch as closed regardless of its actual state. Most System 80 games will not boot if the slam contact is open — enable this DIP if the machine fails to start normally.

Boot Sequence

On power-up, GottFA80 runs through three boot phases. Progress is shown on the playfield displays.

Phase 1 — Initialisation

Immediately after power-on, the playfield displays show:

- Player 1: FPGA program version.
- Player 2: Selected game number.
- Player 3: lisy.dev FPGA board identifier.
- Player 4: SD card image version (not yet implemented).

Phase 2 — SD Card Read

The board reads the SD card and loads the ROM image selected by the game select DIP bank.

> **ℹ NOTE** If the SD card cannot be read, the red SD Error LED illuminates. Verify the card is seated correctly. On successful read, the SD card image version is shown on Player 4.

Phase 3 — Game Execution

The ROM indicated by the game select switch is loaded and executed.
The selected ROM is loaded and executed. When the game is running normally, the yellow ON LED illuminates.

Appendix A — Supported Game List

Entries marked * require a Cyclone IV dev board instead of the standard Cyclone II board. Contact us before ordering if your machine is a late System 80B title.

No	ON Switches	Game	Remark
0	all OFF	Panthera	
1	S1	Spiderman	
2	S2	Circus	
3	S1,S2	Counterforce	
4	S3	Star Race	
5	S1,S3	James Bond (Timed Play)	
6	S2,S3	James Bond (3/5-Ball)	
7	S1,S2,S3	Time Line	
8	S4	Force II	
9	S1,S4	Pink Panther	
10	S2,S4	Mars — God of War	Speech
11	S1,S2,S4	Mars — God of War	Sound only
12	S3,S4	Volcano	Speech rev4
13	S1,S3,S4	Volcano	Sound only
14	S2,S3,S4	Black Hole	
15	S1,S2,S3,S4	Black Hole	Sound only
16	S5	Haunted House	
17	S1,S5	Eclipse	
18	S2,S5	Devil's Dare	Speech
19	S1,S2,S5	Devil's Dare	Sound only
20	S3,S5	Rocky	
21	S1,S3,S5	Spirit	
22	S2,S3,S5	Punk	

No	ON Switches	Game	Remark
23	S1,S2,S3,S5	Striker	
24	S4,S5	Krull	
25	S1,S4,S5	Q*Bert's Quest	
26	S2,S4,S5	Super Orbit	
27	S1,S2,S4,S5	Royal Flush Deluxe	
28	S3,S4,S5	Goin' Nuts	
29	S1,S3,S4,S5	Amazon Hunt	
30	S2,S3,S4,S5	Rack 'Em Up	
31	S1,S2,S3,S4,S5	Ready...Aim...Fire!	
32	S6	Jacks to Open	
33	S1,S6	Touchdown	
34	S2,S6	Alien Star	
35	S1,S2,S6	The Games	
36	S3,S6	El Dorado City of Gold	
37	S1,S3,S6	Ice Fever	
38	S2,S3,S6	Caveman	
40	S4,S6	Bounty Hunter	
41	S1,S4,S6	Chicago Cubs Triple Play	
42	S2,S4,S6	Tag Team	
43	S1,S2,S4,S6	Rock	
44	S3,S4,S6	Raven	
45	S1,S3,S4,S6	Rock Encore	
46	S2,S3,S4,S6	Hollywood Heat	
47	S1,S2,S3,S4,S6	Genesis	
48	S5,S6	Gold Wings	
49	S1,S5,S6	Monte Carlo	
50	S2,S5,S6	Spring Break	
51	S1,S2,S5,S6	Arena	
52	S3,S5,S6	Victory	
53	S1,S3,S5,S6	Diamond Lady	
54	S2,S3,S5,S6	TX Sector	
55	S1,S2,S3,S5,S6	Robo War	
56	S4,S5,S6	Excalibur	* Cyclone IV required
57	S1,S4,S5,S6	Bad Girls	* Cyclone IV required
58	S2,S4,S5,S6	Big House	* Cyclone IV required
59	S1,S2,S4,S5,S6	Hot Shots	* Cyclone IV required
60	S3,S4,S5,S6	Bone Busters Inc.	* Cyclone IV required
61	S1,S3,S4,S5,S6	Night Moves	* Cyclone IV required