Nintendo Famicom Family BASIC 8KB

Famicom Cartridge Edge — H1

Program ROM (27256) — IC2

Character ROM (2764) — IC4
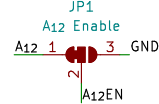
Working RAM (62256) — IC1

8KB working RAM (0x6000–0x7FFF) so 32KB 62256 gives us four possible banks. A13 and A14 are switchable — they are not connected to address bus.
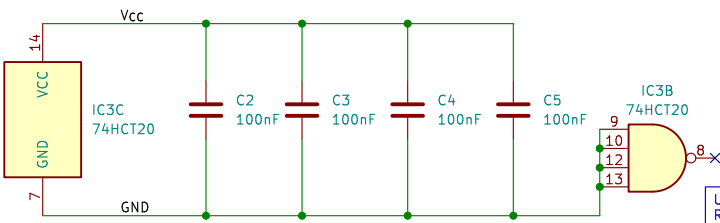
If you're not interested in switching banks, using only 8KB, then omit SW2 — A13 & A14 are pulled high by default.

If you only want the original 4KB then cut the A12-to-A12EN solder bridge and connect A12EN to GND.

JP1 — A12 Enable

SW1 — BACKUP SW

IC3A — 74HCT20

SW2 — RAM BANK SW

R1 — 5.1KΩ
R2 — 10KΩ
R3 — 10KΩ

D2 — 1N4148
D1 — 1N4148

BT1 — 3V

C1 — 68pF

Family BASIC V3 is hard-coded for a maximum of 4KB.

Some modification is required to hard coded values in the ROM to increase from 0x6FFF limit to full 0x7FFF.

IC3C — 74HCT20

C2 100nF   C3 100nF   C4 100nF   C5 100nF

IC3B — 74HCT20

Unused gate as using 256Kbit ROM rather than two 128Kbit.

Brett Hallen
Sheet: /
File: Family_BASIC_Cartridge.kicad_sch
Title: Nintendo Famicom Family BASIC 8KB
Size: A4   Date: 27/DEC/2025   Rev: A
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