

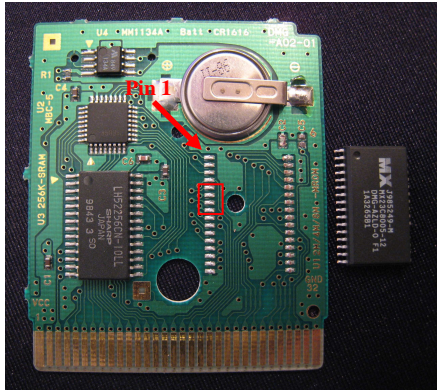
Build a GameBoy Color programming cartridge with MBC5 chip and AM29F032B-90SD flash chip. © 2008 by Reiner Ziegler

First, buy a cartridge with ROM+MBC5+RAM+BAT. For more details about MBC5 cartridges take a look into <http://www.reinerziegler.de/gbcmc.txt>.

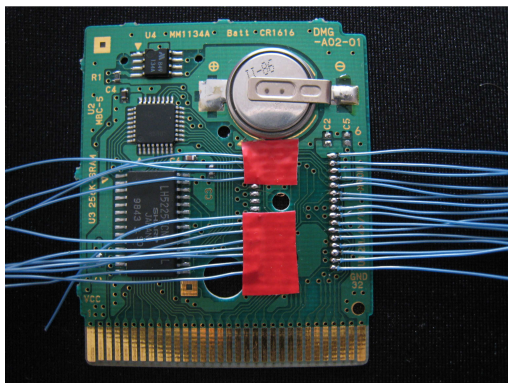
I bought a Zelda cartridge with 32K RAM. With this large RAM you can play nearly all GBC games.

Second, buy the 29F032B-90SD flash chip from www.spoerle.com or from www.jameco.com.

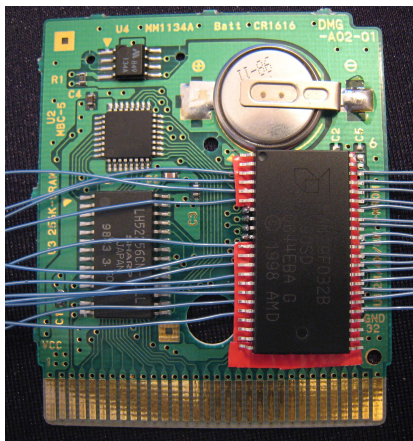
Remove the ROM chip (MX23C8005) carefully with a sharp cutter.



After that, solder 5 cm wires on each pin, except pin 5, 6, 7, 8.



Cover all pin's (except pin 5, 6, 7, 8) with a piece of tape and solder the AM29F032B-90SD with pin 7, 8, 9, 10 directly to these 4 pin's.



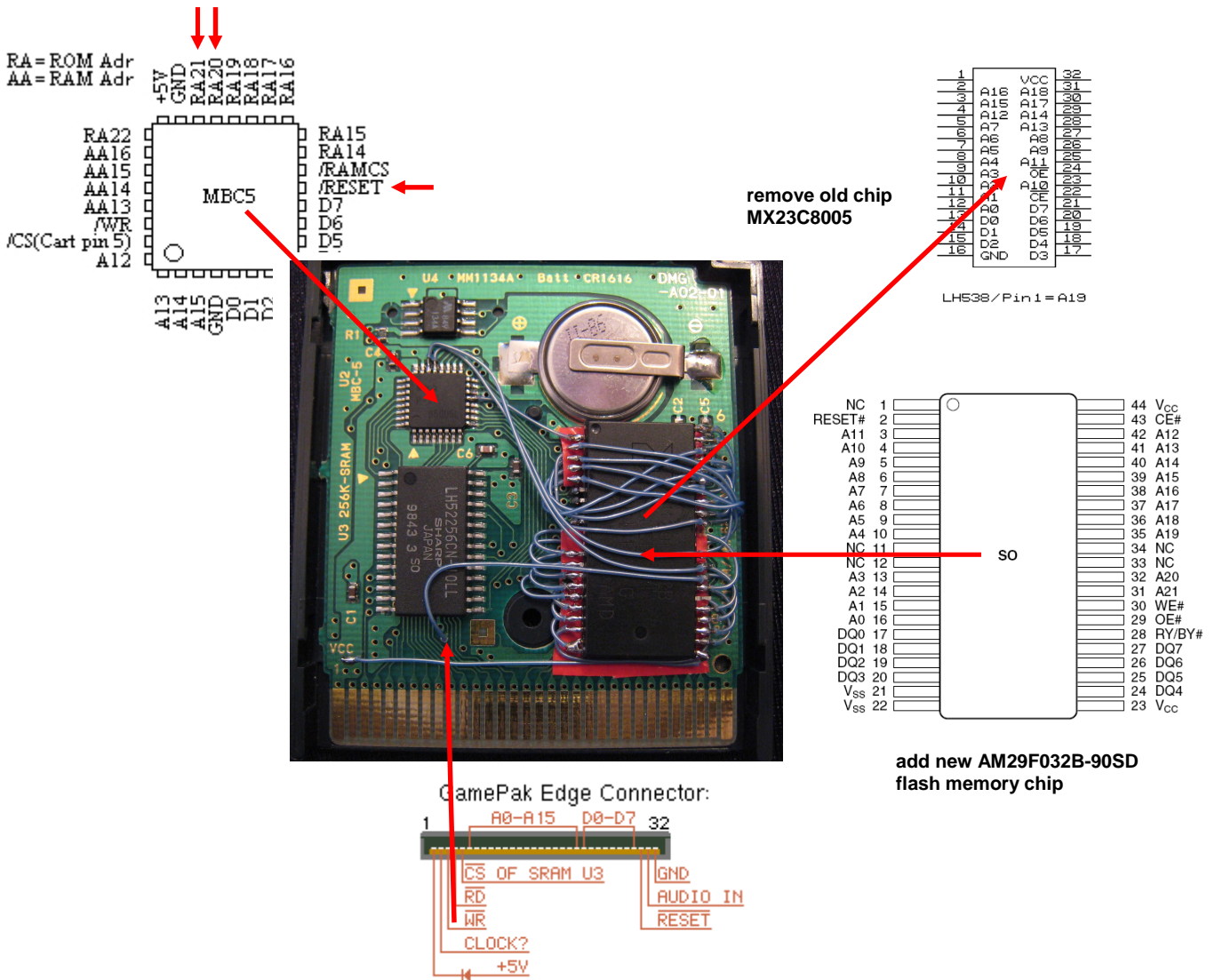
The tape is necessary to avoid any short between the PCB pin's and the flash chip.

40-Pin TSOP package	44-Pin package	32-Pin package	44-Pin SO package
AM29F032B-xxEx (x = don't care)	SEC KM23C16120 ROM	LH538 ROM / Macronix MX23C8005	AM29F032B-xxSD (x = don't care)
Pin	Pin	Pin	Pin
1	2	1	35
2	3	31	36
3	34	30	37
4	35	2	38
5	36	3	39
6	37	29	40
7	38	28	41
8	39	4	42
9	12	22	43
10	23	32	23
12	Cart Pin 30	Cart Pin 30	2
13	40	25	3
14	41	23	4
15	42	26	5
16	4	27	6
17	5	5	7
18	6	6	8
19	7	7	9
20	8	8	10
21	9	9	13
22	10	10	14
23	11	11	15
24	31	12	16
25	15	13	17
26	17	14	18
27	19	15	19
28	21	17	20
29	13	16	21
30	32	16	22
31	23	32	44
32	24	18	24
33	26	19	25
34	28	20	26
35	30	21	27
37	14	24	29
38	Cart Pin 3	Cart Pin 3	30
39	44	MBC5-RA21	31
40	43	MBC5-RA20	32

Pin table for ROM chips and FLASH chips

Cart Pin 3 = /WR = WE#

Cart Pin 30 = /RESET = MBC5-/RESET



Connect the AM29F032B-90SD pin's to the corresponding pin's described inside the pin table for ROM chips and FLASH chips.
 Try not to cross to much wires over the flash chip, there is not enough place for doing that. Try to use thin wires. I always use wrap wires for this kind of modifications.

You will need 3-4 hours for building this cartridge and a very thin soldering equipment.

Good luck ☺

Reiner Ziegler www.reinerziegler.de