

INSERT COINS

ROMSTAR®
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Serial No.
No. 24775

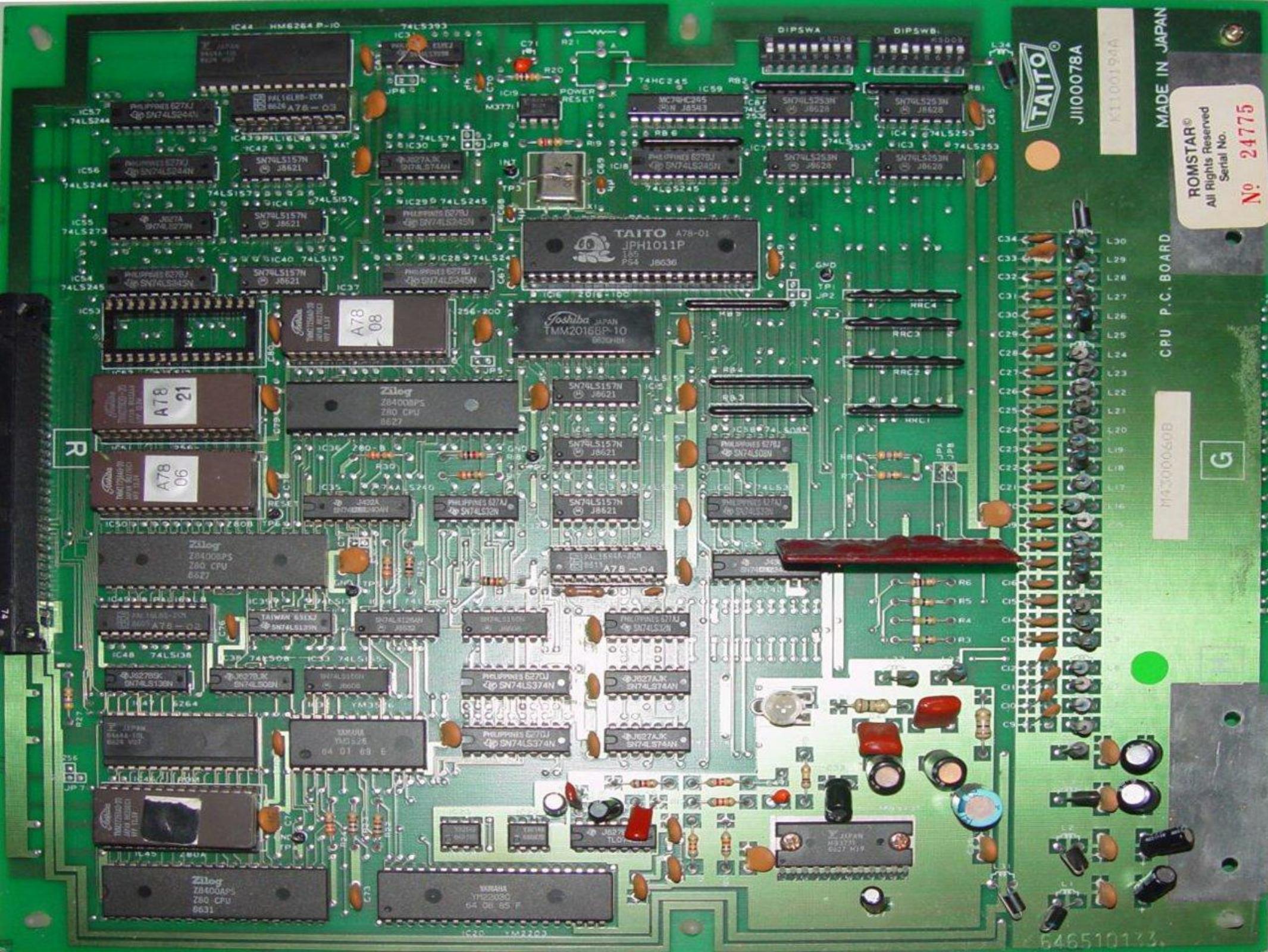
MADE IN JAPAN

JII00078A

CPU P.C. BOARD

ROMSTAR®
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Serial No.

54510194A



```
static MACHINE_CONFIG_START( tokio, bublbobl_state )

    /* basic machine hardware */
    MCFG_CPU_ADD("maincpu", Z80, MAIN_XTAL/4)      // 6 MHz
    MCFG_CPU_PROGRAM_MAP(tokio_map)
    MCFG_CPU_VBLANK_INT_DRIVER("screen", bublbobl_state, irq0_line_hold)

    MCFG_CPU_ADD("slave", Z80, MAIN_XTAL/4) // 6 MHz
    MCFG_CPU_PROGRAM_MAP(tokio_slave_map)
    MCFG_CPU_VBLANK_INT_DRIVER("screen", bublbobl_state, irq0_line_hold)

    MCFG_CPU_ADD("audiocpu", Z80, MAIN_XTAL/8) // 3 MHz
    MCFG_CPU_PROGRAM_MAP(tokio_sound_map)

    MCFG_QUANTUM_TIME(attotime::from_hz(6000))

    MCFG_MACHINE_START_OVERRIDE(bublbobl_state,tokio)
    MCFG_MACHINE_RESET_OVERRIDE(bublbobl_state,tokio)

    /* video hardware */
    MCFG_SCREEN_ADD("screen", RASTER)
    MCFG_SCREEN_RAW_PARAMS(MAIN_XTAL/4, 384, 0, 256, 264, 16, 240)
    MCFG_SCREEN_UPDATE_DRIVER(bublbobl_state, screen_update_bublbobl)

    MCFG_GFXDECODE(bublbobl)
    MCFG_PALETTE_LENGTH(256)

    /* sound hardware */
    MCFG_SPEAKER_STANDARD_MONO("mono")

    MCFG_SOUND_ADD("ymsnd", YM2203, MAIN_XTAL/8)
    MCFG_SOUND_CONFIG(ym2203_config)
    MCFG_SOUND_ROUTE(0, "mono", 0.08)
    MCFG_SOUND_ROUTE(1, "mono", 0.08)
    MCFG_SOUND_ROUTE(2, "mono", 0.08)
    MCFG_SOUND_ROUTE(3, "mono", 1.0)

MACHINE_CONFIG_END
```

1UP
34760

HIGH SCORE
34760

**INSERT
COIN**

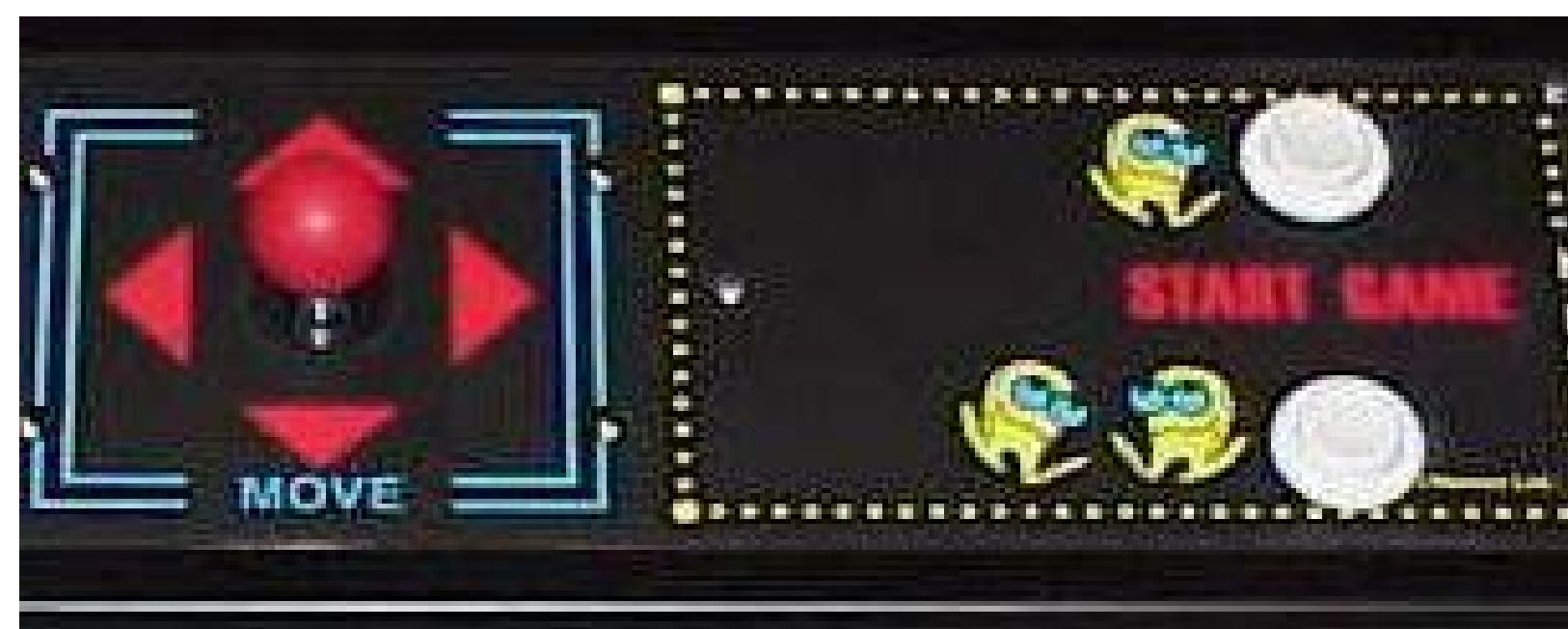


A Venn diagram consisting of three overlapping circles. The leftmost circle is light red and labeled "Hacking". The rightmost circle is light blue and labeled "Gaming". The middle circle is pink and labeled "Emulation". All three circles overlap, representing the shared concepts between the three fields.

Hacking

Emulation

Gaming



Vs.

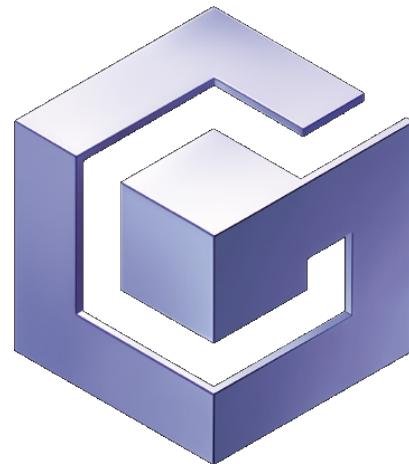




NAOMI™



Chihiro™



TRIFORCE™
NAMCO • SEGA • NINTENDO

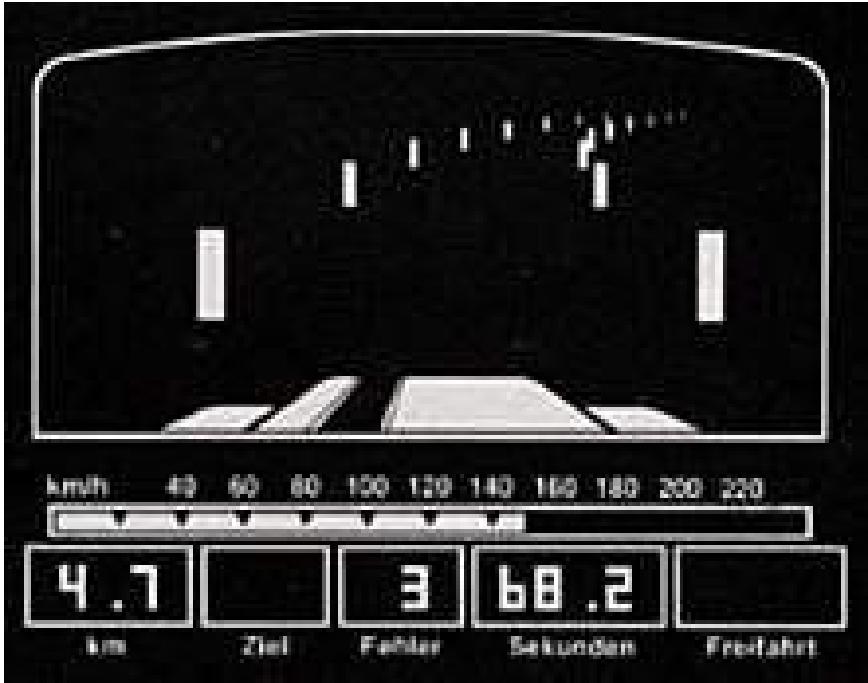
YOUR SCORE 016

TIME 077
TOP SPEED 083



GEAR 3

NOVICE



Nürburgring

neu · hochwertig · zukunftssicher

Nürburgring 1 **Nürburgring 2**

Patent angemeldet

Nürburgring nimmt neue Maßstäbe für Videospielmaschinen. Es ist nicht ein Spiel mit herkömmlichen Motorrädern, sondern faszinierendes Rennsportfahrten aus der Sicht des Fahrers. Dient gibt es atemberaubenden Fahrtstunden mit naturgetreuem perspektivischen Straßenbild als Motorradkompass.

Nürburgring /1	Nürburgring /2
mit Motorrad und Gaspedal	mit Motorradformel und Gaspedal
Height: 1.82 m Breite: 56 cm Tiefe: 76 cm Gewicht: 85 kg	Height: 1.80 m Breite: 56 cm Tiefe: 70 cm Gewicht: 85 kg

NIGHT DRIVER

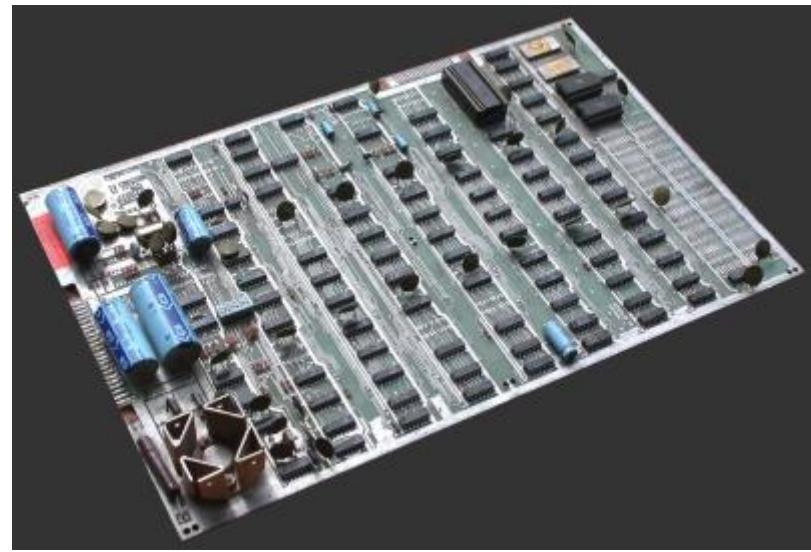
The popularity of a classic driving game... the attraction appeal of a realistic race car cabinet design... spectacular new profit opportunity.

NIGHT DRIVER

Drivers can select "Novice", "Pro", or "Expert" mode.
 Players compete for highest top speed and points based on "distance traveled".
 • Best top speed and score previously achieved are displayed when track selection switch is activated.
 • Built-in self-programmer.
 • Operator adjustable game time to 50, 75, 100, or 125 seconds.
 • Optional Extended Play for 350 points (operator sets difficulty).
 • Infrared switch lets operator select a different set of 3 tracks.
 Dimensions: Height: 52", 132 cm; Width: 30", 76 cm; Depth: 67", 170 cm;
 Weight: 282 lbs./128 kg

Contact your Atari distributor or contact us for referral at Atari, Inc., 2221 Mission Avenue, Sunnyvale, CA 94085. (408) 745-2500

© Atari Inc. 1978



Nürburgring, 1975 (28 PCBs) → Night driver 1976

1980
16 words
\$1000 / word

If you think we went crazy developing Berzerk, you're right! This is the first time we've ever put all of our technology and wit to work in one video game. The result is a video masterpiece that not only drives players absolutely Berzerk, it drives profits directly to operators.

THE BERZERK LINEUP OF INNOVATIVE FEATURES:

- Unsurpassed 30-word vocabulary allows game to communicate to player.
- 64,000 random maze patterns appear on video screen for explosive—and non-repetitive—action.
- Newly designed "Joy Stick" enables player to move image of humanoid in 8 different directions.
- 10 highest scores-to-date register on screen after play is over.
- Memory also stores 5 highest scores-to-date, even when machine is unplugged.
- Attract mode beckons players by voicing—"Coins detected in pockets"—at timed intervals.
- All logic boards housed in accessible pullout drawer in cabinet front, providing easy service for technicians.
- Sophisticated self-diagnostic programming routine.



ENEMY IN RANGE

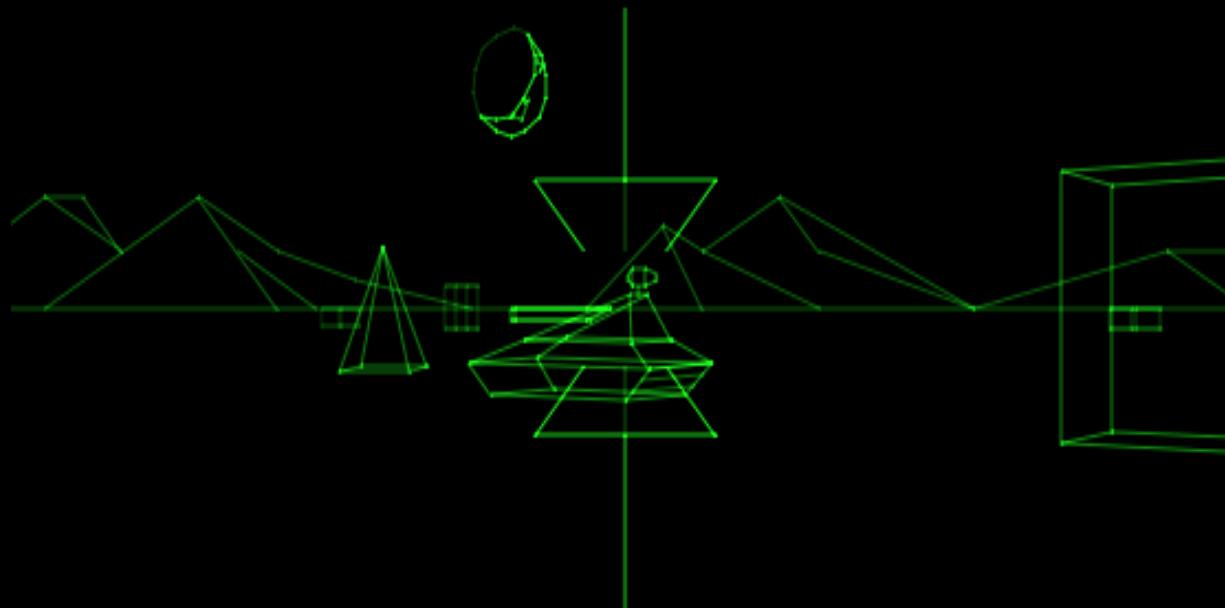


SCORE

0000

HIGH SCORE

5000



1980 Battlezone

O 100

1983
I, Robot

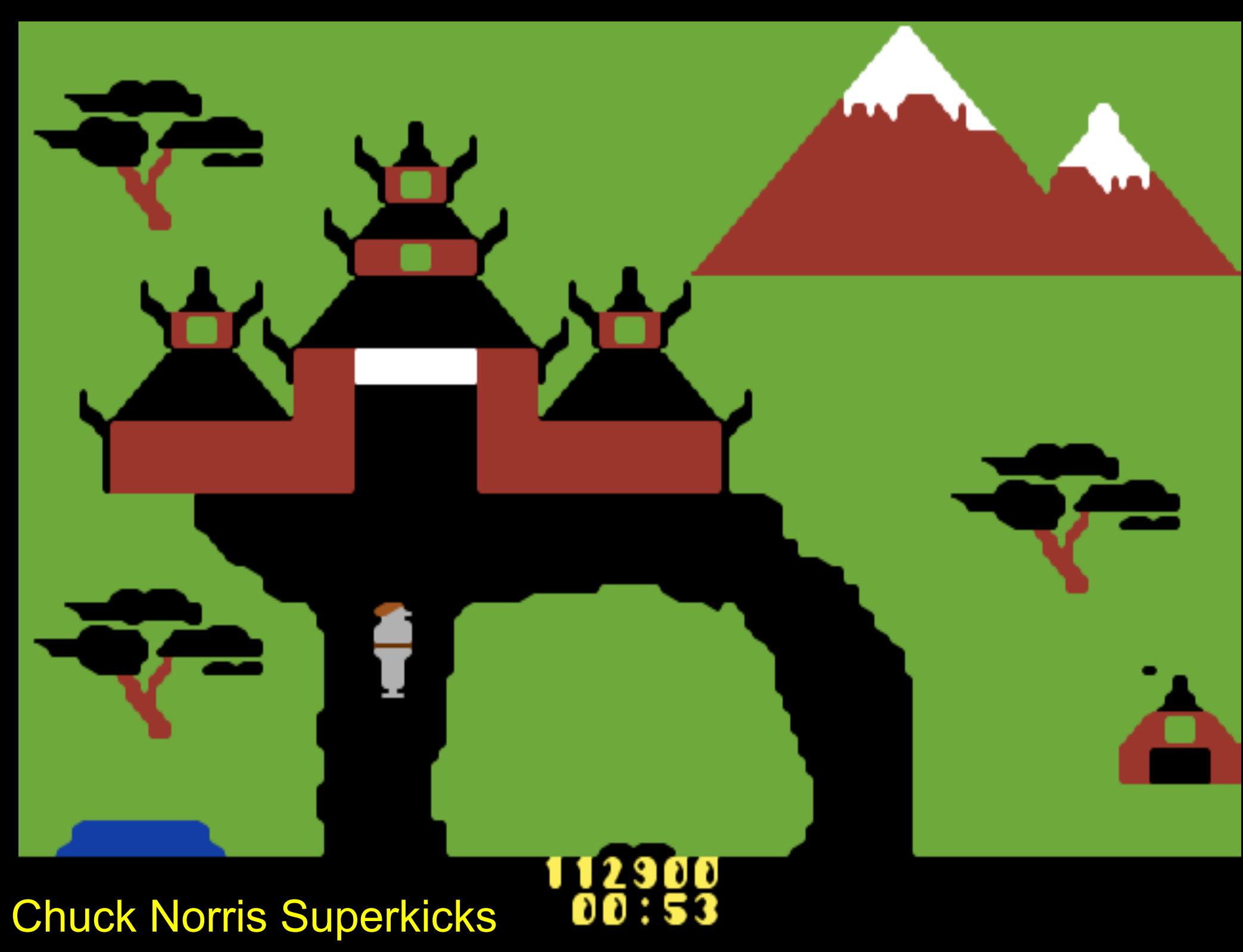


TIMER 3800
BEST 3000

LEVEL 1

1983 Dragon's Lair





Chuck Norris Superkicks

112900
00:53

TIME

33

SCORE

361940

LAP

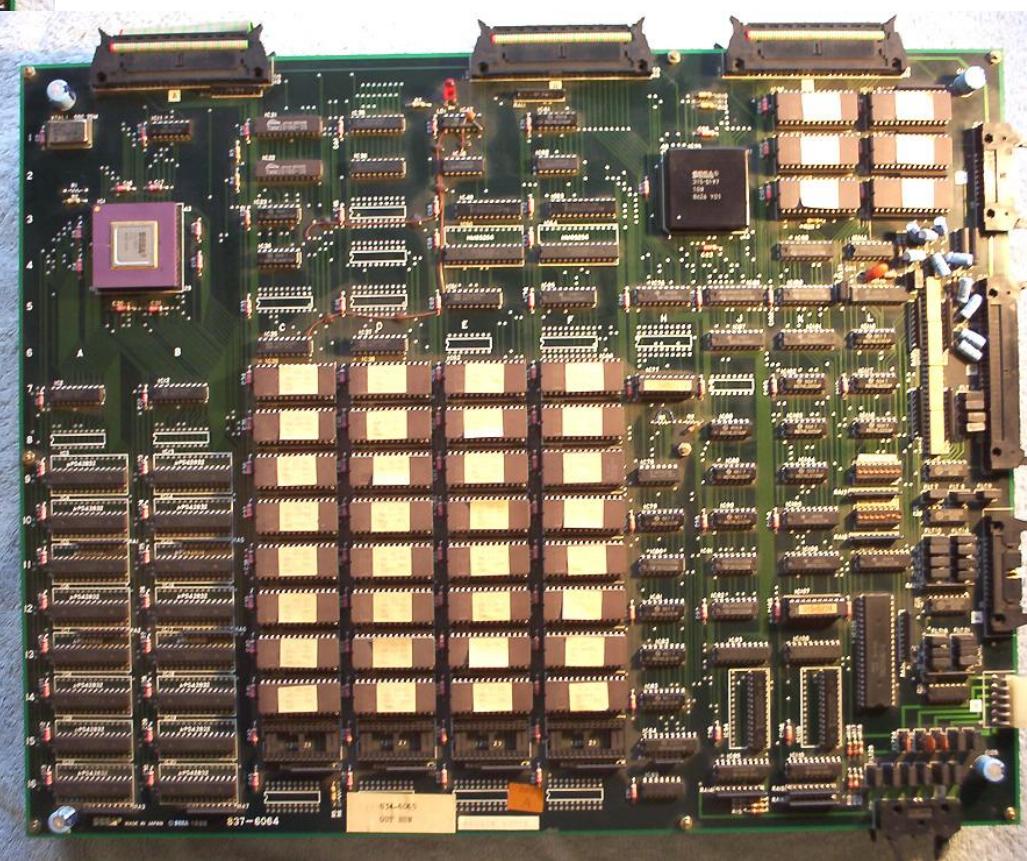
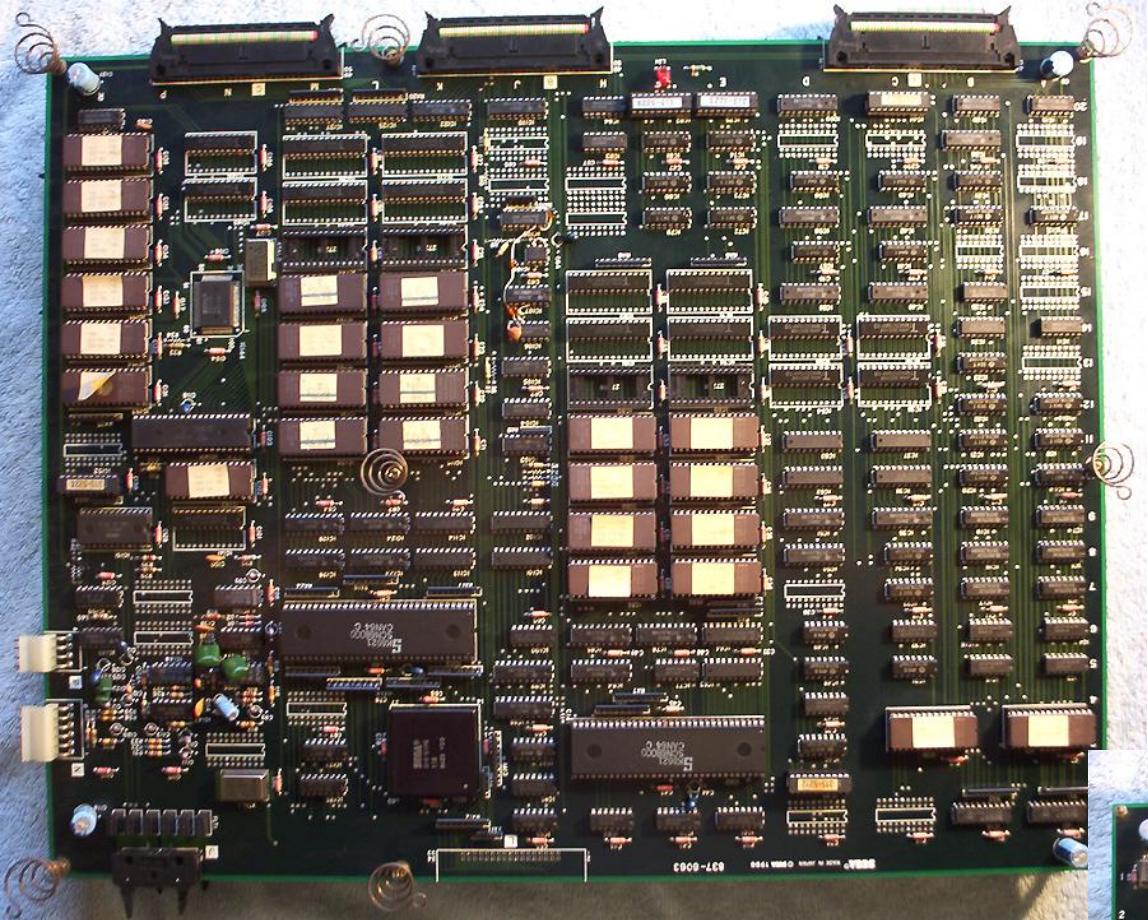
0'40"95

IS 1 km/h

STAGE 1



1986 Out Run

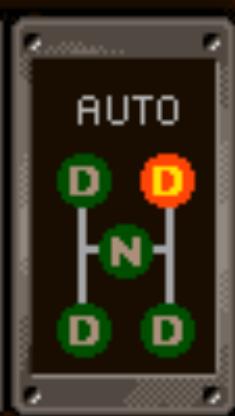


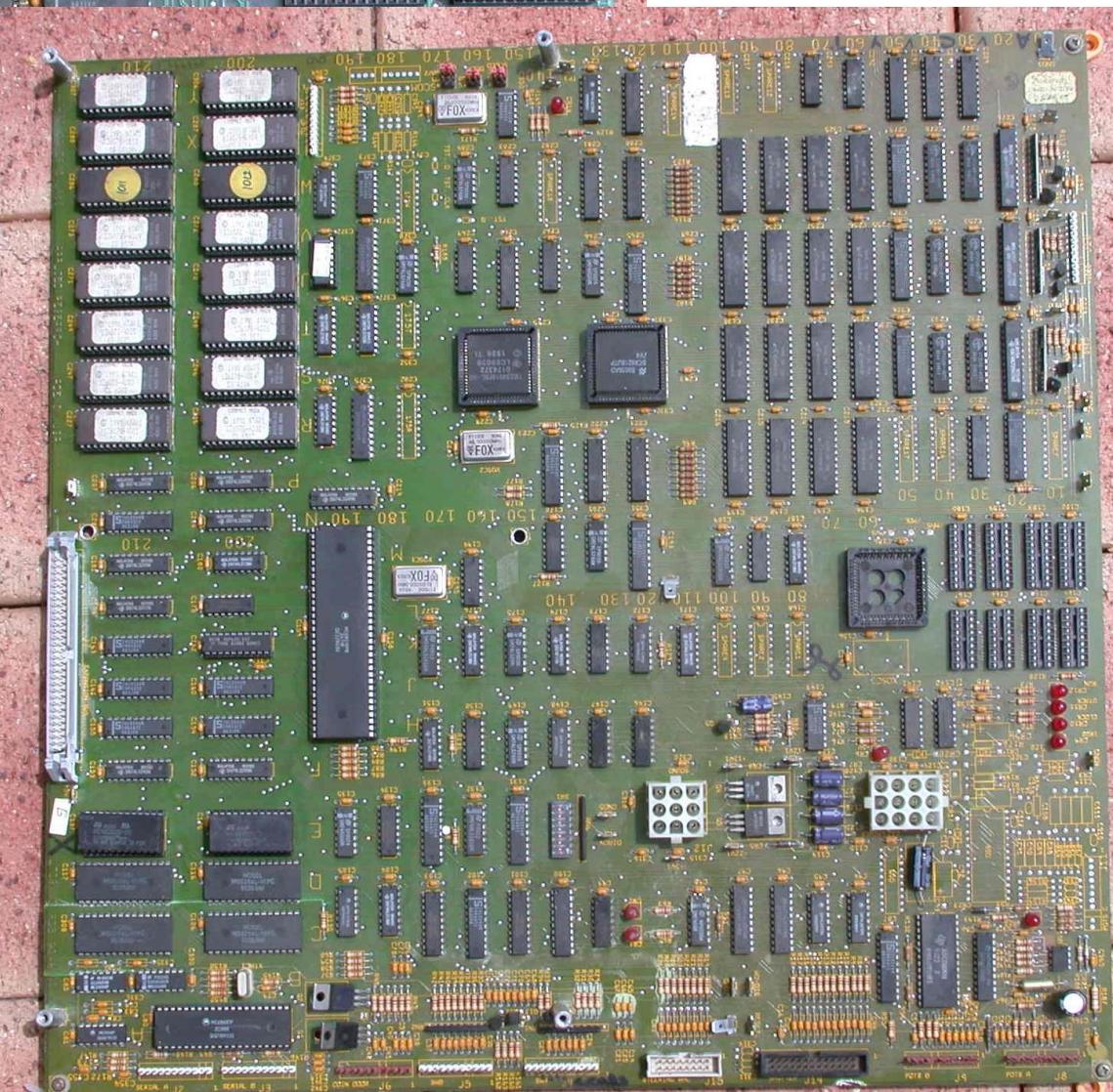
1 : 33

SCORE	0
LAP TIME	0:00:00
BEAT 1:38:00 TO CHALLENGE	



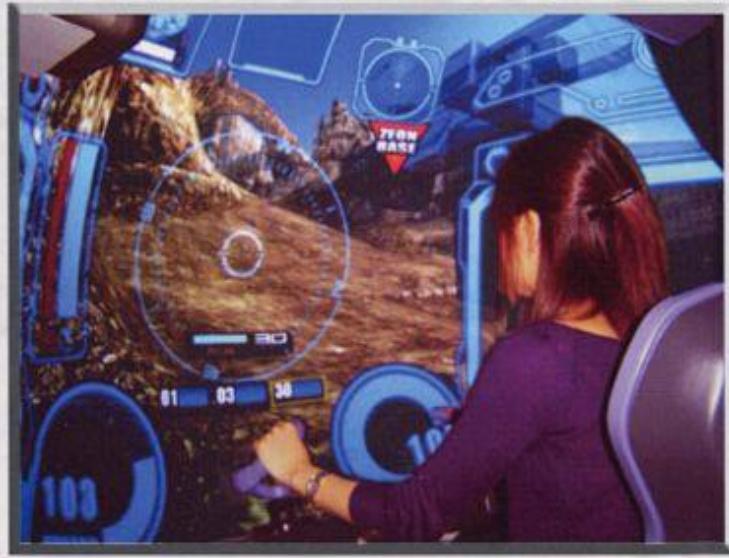
FUEL
OIL
AMP
TEMP
BELT
HZRD

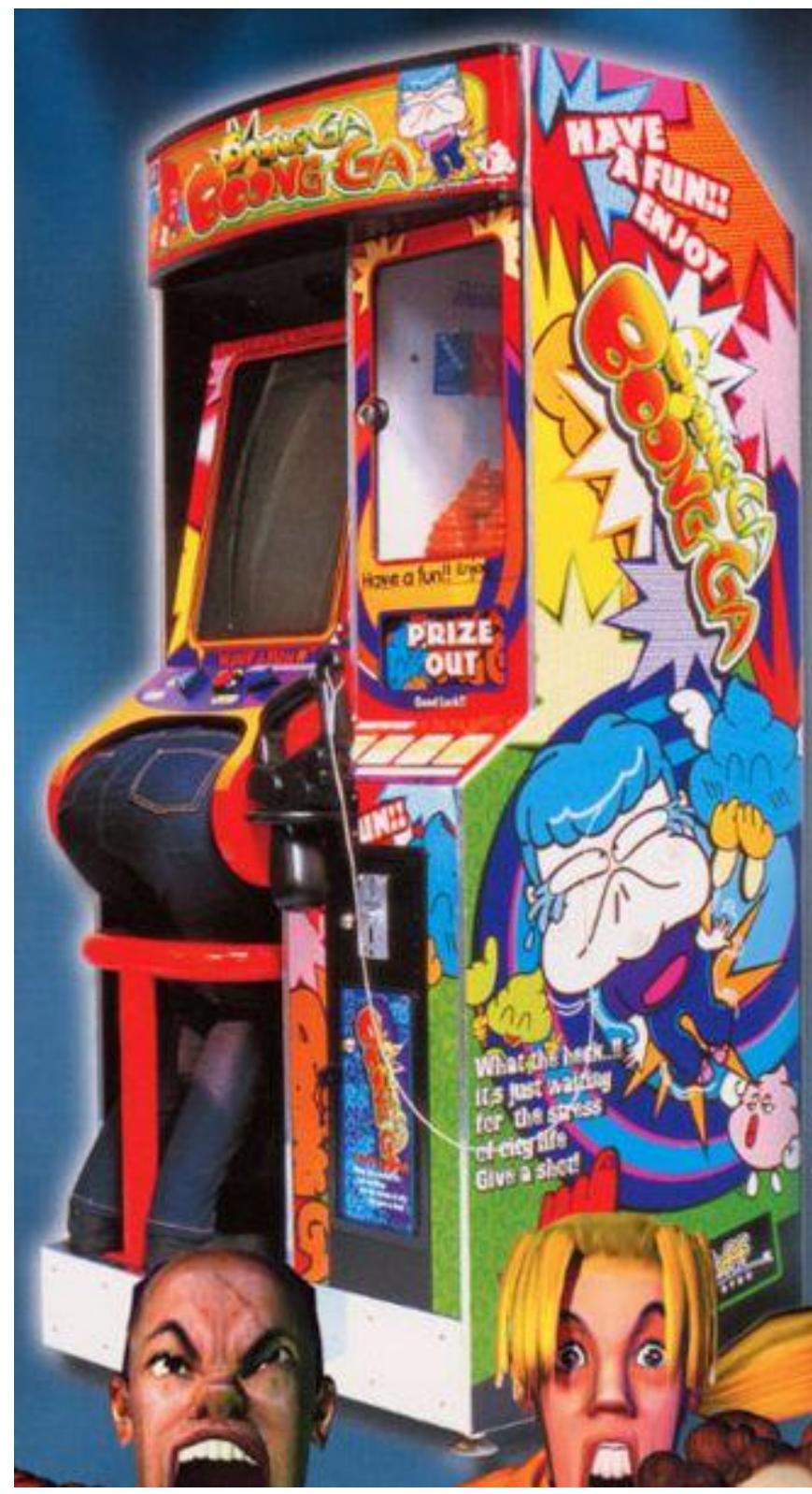




1988 Hard Drivin'









CHARACTER

- A1. OBJECT
2. SCROLL1
3. SCROLL2
4. SCROLL3



with great ~~power~~ games,
comes great ~~responsability~~ piracy
(thus great protections)

1P.

5058400

COMBAT



(B B B B B)

TOP

1000000

TIME

SCORE

701810

STAGE 1

36

SPEED

92KM



1UP

0 HI

1000

0 2UP

P 0

TIME 2'54"

P 0



GAME OVER

STAGE 5

POWER

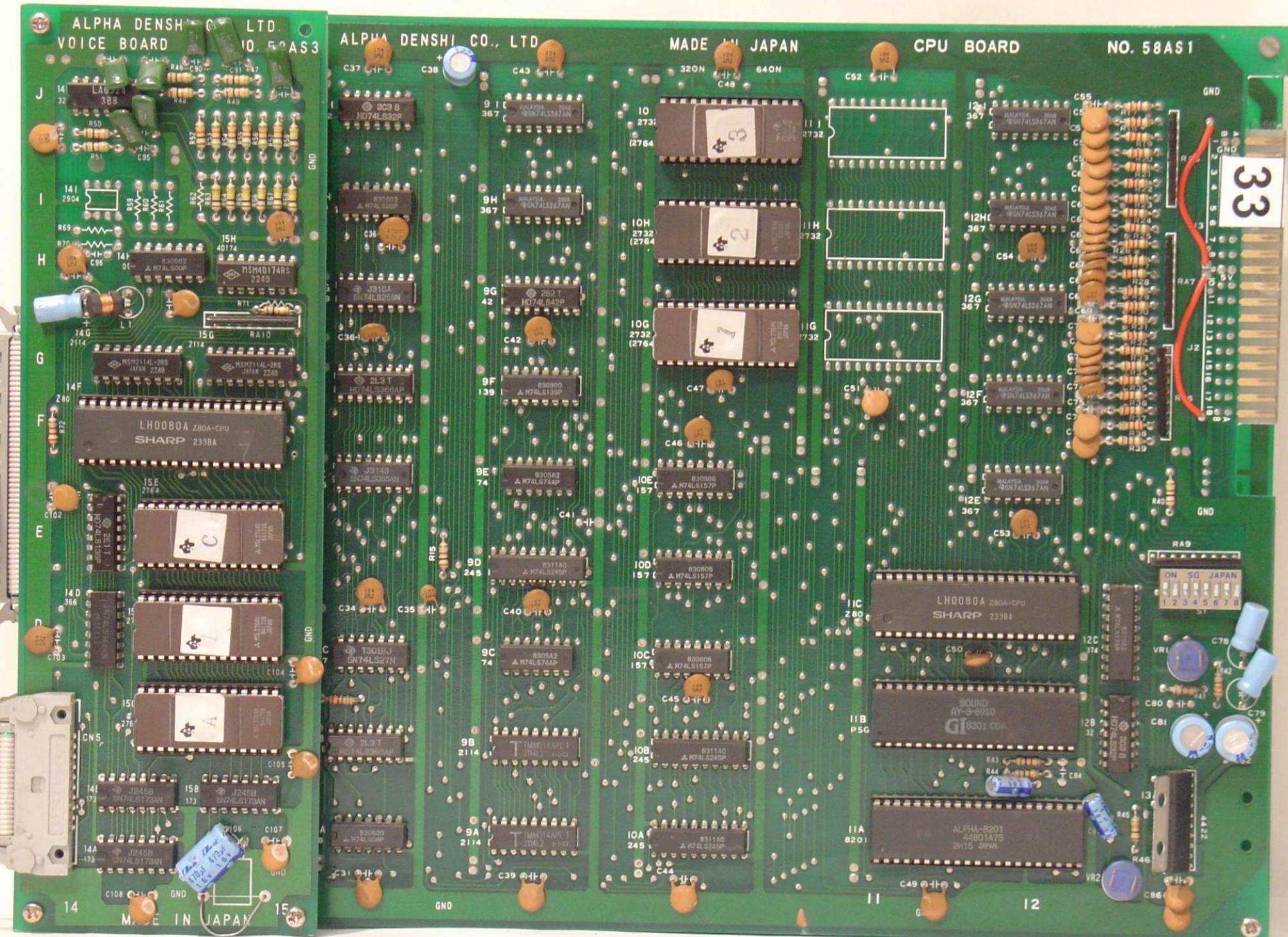
00000

CREDIT 00

00000

POWER

1982: Alpha-8201





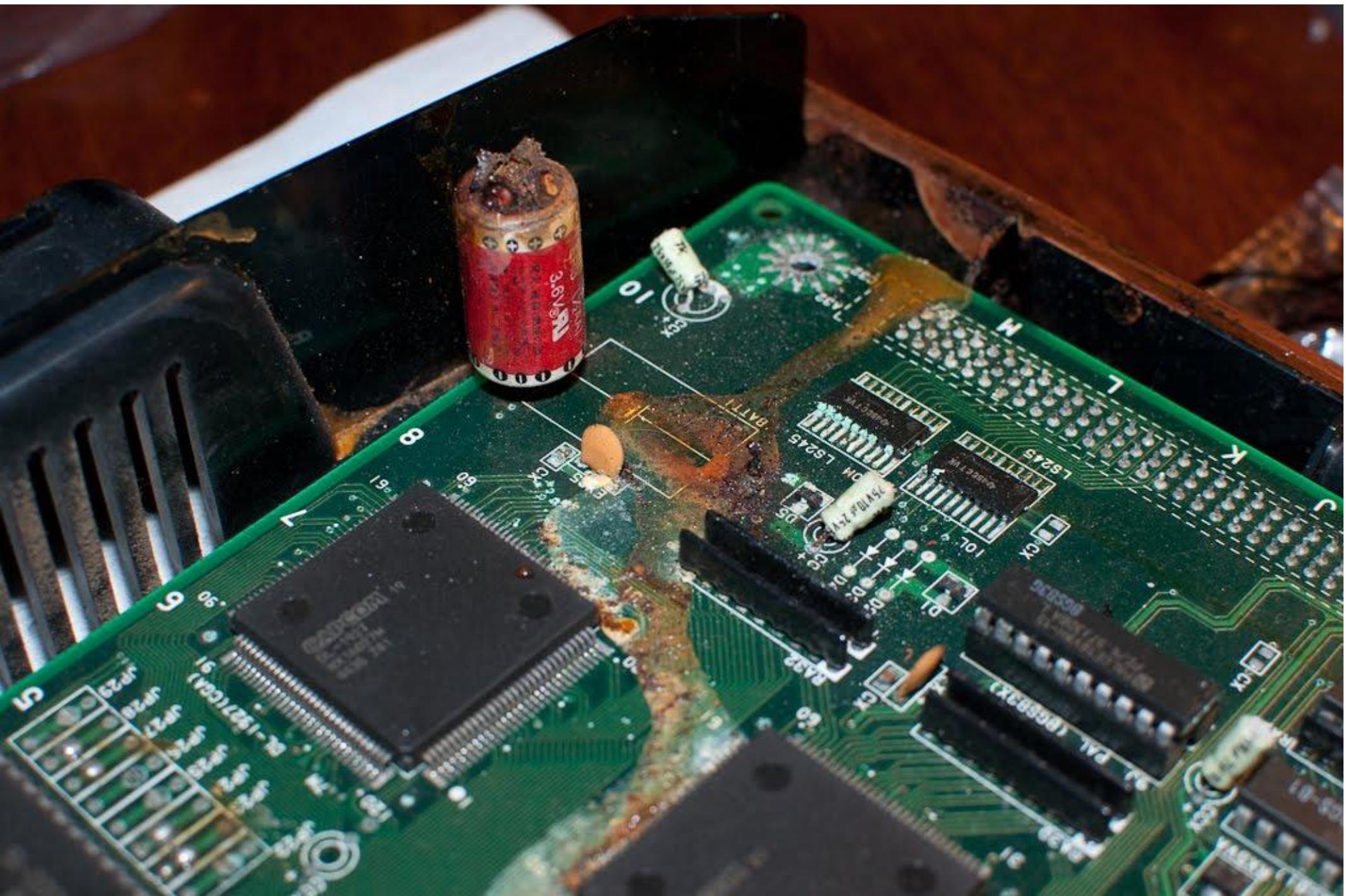
TAITO A78-01
JPH1011P
185
PS4 J8635

The Dead Battery Society

The Dead Battery Society isn't really a society at all. It's just a web page.
Membership dues are not required. ;-)

You may have heard the term "suicide battery" used before and wondered what the heck it meant. Several arcade game manufacturers decided it would be a good idea to put a suicide battery on their game boards that, when they die (and they will die), disable the game. Why they did this isn't exactly clear. Is it a way to artificially limit the lifespan of their games? An anti-piracy measure? Do they want to assure that they will continue making money from their games by forcing you to send your boards to them for repair after a certain amount of time? Whatever their reasons, it sucks in a big way.

legality ↔ reality



Capcom Play System (CP System/CPS1)

1988-1995

STREET FIGHTER II

The World Warrior

PUSH 1P OR 2P START.

©CAPCOM CO.,LTD.

STREET FIGHTER II

CHAMPION EDITION

PUSH 1P OR 2P START.

©CAPCOM CO.,LTD. 1991,92

CREDIT= 2

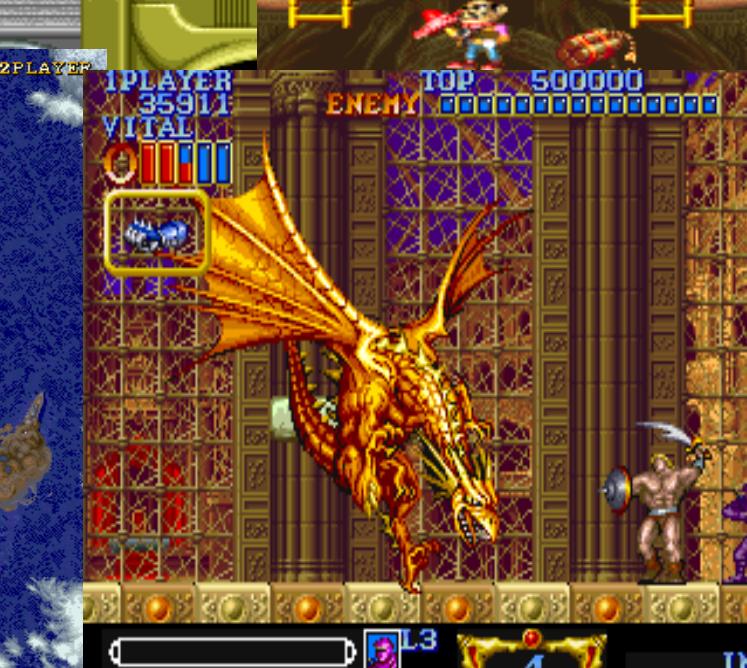
STREET FIGHTER II

HYPER FIGHTING

PUSH 1P OR 2P START.

©CAPCOM CO.,LTD. 1991,92





awesome
&
easy to hack!

1P

1000 Yu

99999

KO

RYU

95

DHALSIM



SELECT PLAYER



GUY

CODY

HAGGAR

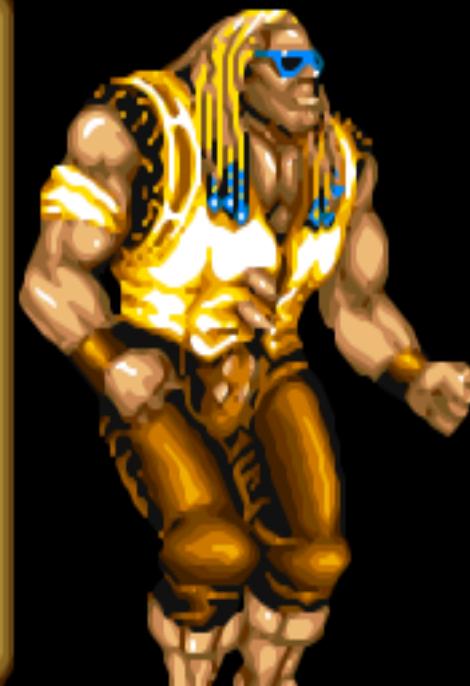


I . PLAYER

Height ... 5.87ft Height ... 5.97ft Height ... 6.64ft
Weight ... 158lb Weight ... 187lb Weight ... 297lb



I . PLAYER



SELECT PLAYER

JAMMA

B44553
CAPCOM

RIZVO
896248-3
MADE IN JAPAN

CAPCOM

88622-C-5

1941
CAPCOM

NO 046491

CAPCOM

41
9

41
E
18

41
9

A32
B32

A31
B31

A30
B30

41
U
31

41
U
35

RAM 16M 64K (64x256)

D+

MODEL
PC/AT
PC/XT

MODEL
PC/AT
PC/XT

MODEL
PC/AT
PC/XT

MODEL
PC/AT
PC/XT

MODEL
PC/AT
PC/XT

CAPCOM®

CP システム II

SER. No.

MADE IN JAPAN

株式会社 **カプコン®**



SUPER
STREET FIGHTER II
931005
JAPAN

The New Challengers



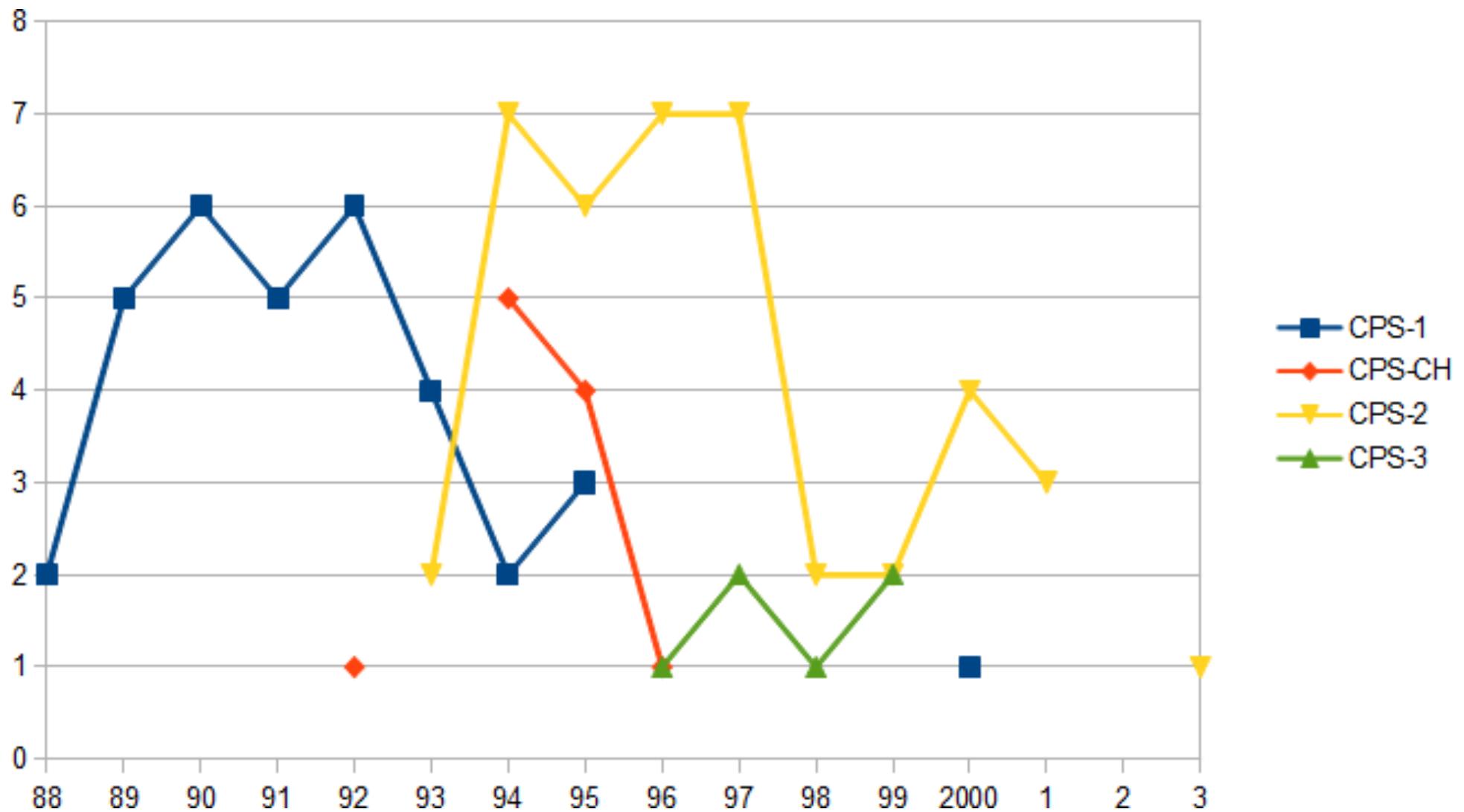
HYPER
STREET FIGHTER II
040202
U.S.A.

The Anniversary Edition





Games on CPSx hardwares



the complete list of CPS2 hacks

- defeated protection:

- hacks:

- hardware hacks:

- 1 ☺

1UP

O LEO 50000

INSTER

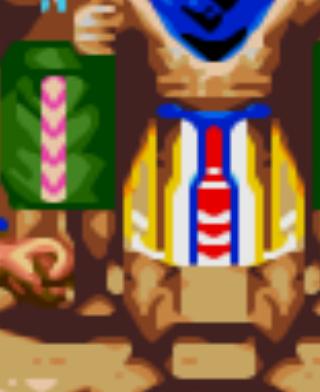
KO

E Honda

99

T Hawk

FIGHT
BATTLE 01



1P

1 P 00

50000

2P

1

K.O

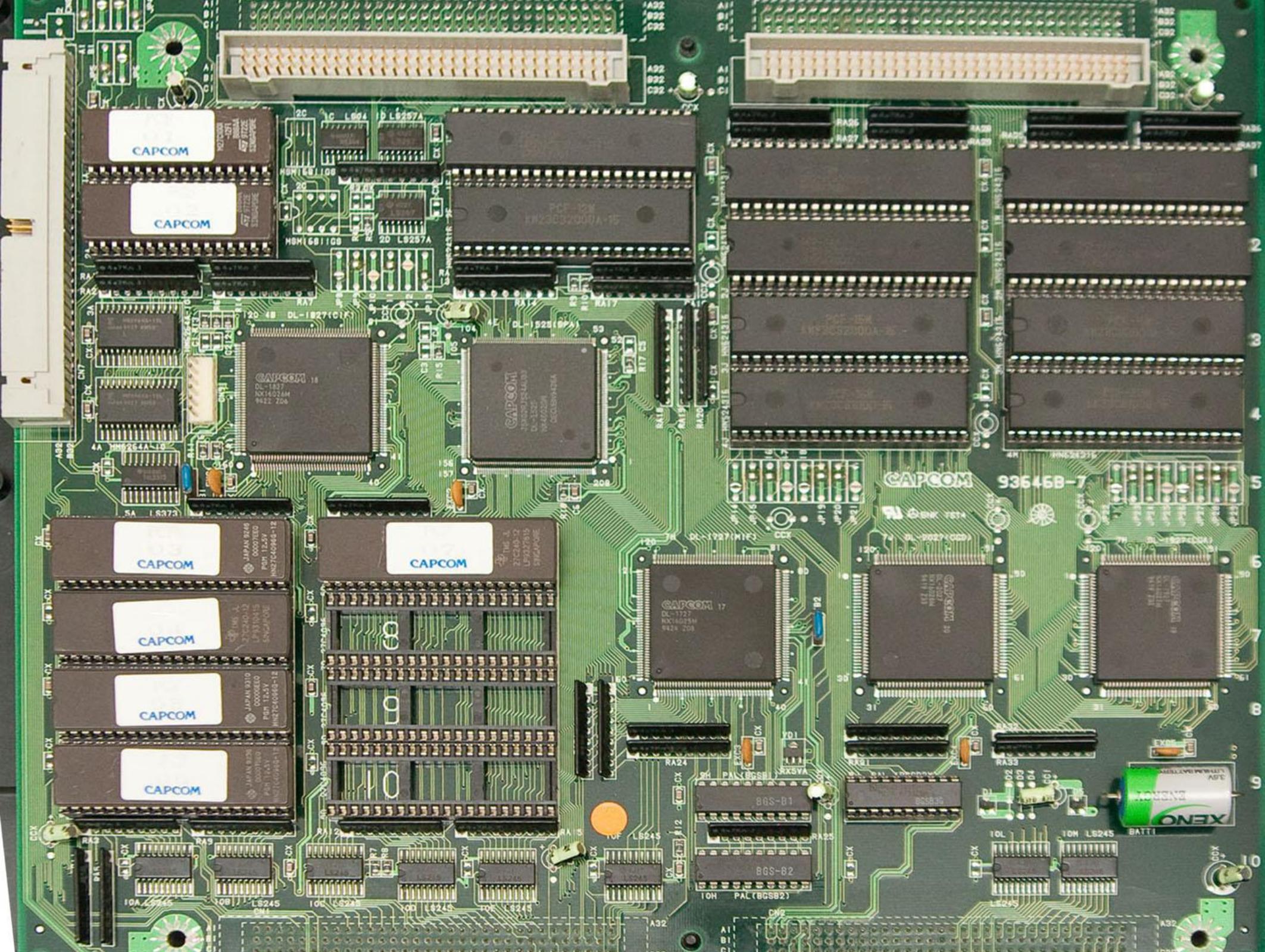
98

E.Honda

T.Hawks



the hardware in details



Expansion connector

Sound
code

SRAM

CODE
DATA

SAMPLES

GFX

PALS

battery

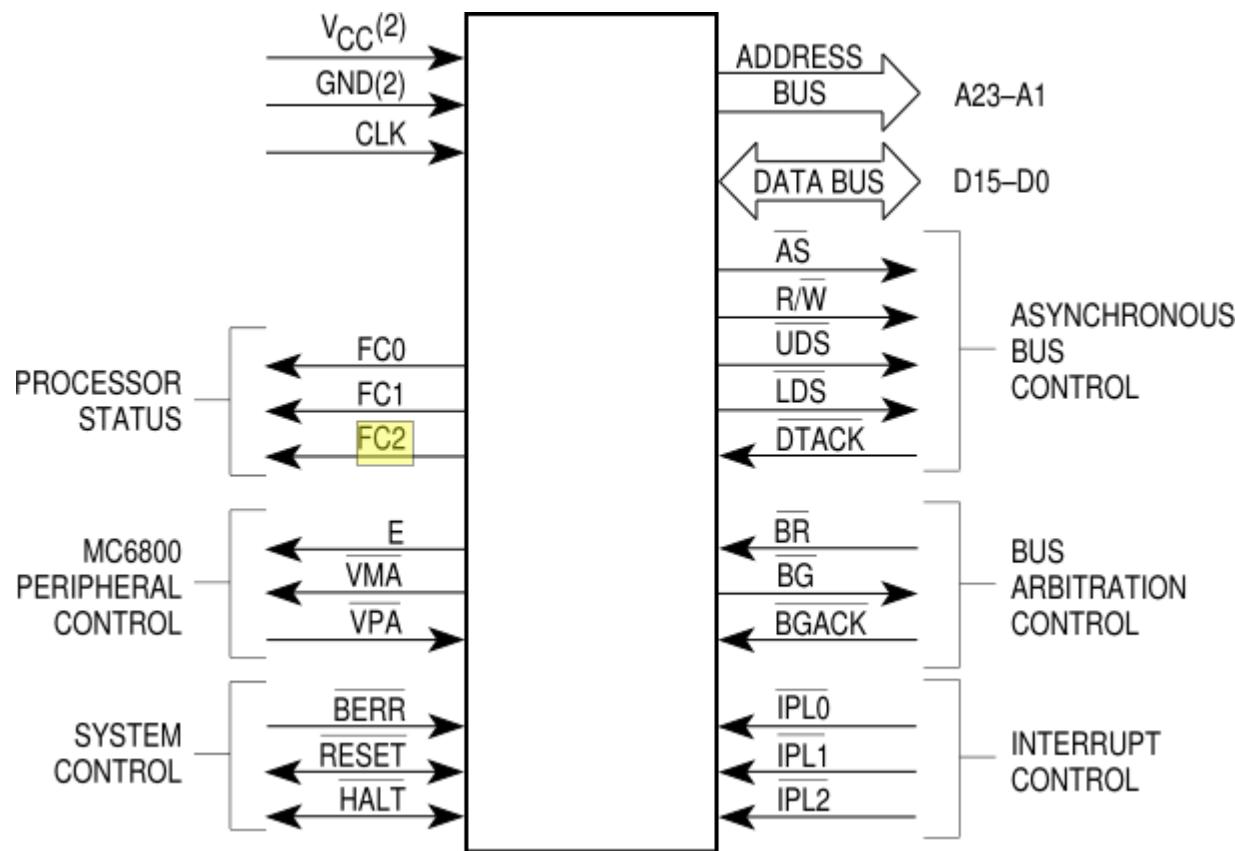


Table 3-3. Function Code Outputs

Function Code Output			Address Space Type
FC2	FC1	FC0	
Low	Low	Low	(Undefined, Reserved)
Low	Low	High	User Data
Low	High	Low	User Program
Low	High	High	(Undefined, Reserved)
High	Low	Low	(Undefined, Reserved)
High	Low	High	Supervisor Data
High	High	Low	Supervisor Program
High	High	High	CPU Space

Table 6-2. Exception Vector Assignment

Vectors Numbers		Address		Space ⁶	Assignment
Hex	Decimal	Dec	Hex		
0	0	0	000	SP	Reset: Initial SSP ²
1	1	4	004	SP	Reset: Initial PC ²
2	2	8	008	SD	Bus Error
3	3	12	00C	SD	Address Error

Assigned these numbers.

2. Reset vector (0) requires four words, unlike the other vectors which only require two words, and is located in the supervisor program space.
3. The spurious interrupt vector is taken when there is a bus error.

1993-1999

many attacks
complete failure



1990-2004



Capcom Power System Changer (1994-1995)

STREET FIGHTER ZERO

950727

JAPAN



STREET FIGHTER ZERO

951020

CPS CHANGER





L-12

Master Swordsman



L-12

Warrior of Faith

TIME
10

PLAYER SELECT

2P



3P

THIEF



DWARF



1P

ELF



FIGHTER



CLERIC



4P
MAGIC U



L-10

Tireless Warrior



L-19

Master of Magic

---| ILLEGAL INSTRUCTION ---

ADDRESS : 00000000

ACT-ADRS:

R W :

MODE :

1

D0 :FFFF0020 D4 :000001C0 A0 :00FF0490 A4 :00FF8074
D1 :00000000 D5 :0000FFFF A1 :00FF081C A5 :00FF8000
D2 :00000010 D6 :0000FFFF A2 :00FF21B2 A6 :00FF0CA0
D3 :00000008 D7 :0000FFFF A3 :00618000 A7 :00FF7FFA
SSP :00FF081C
SR :2204

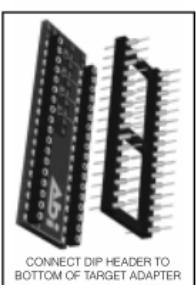
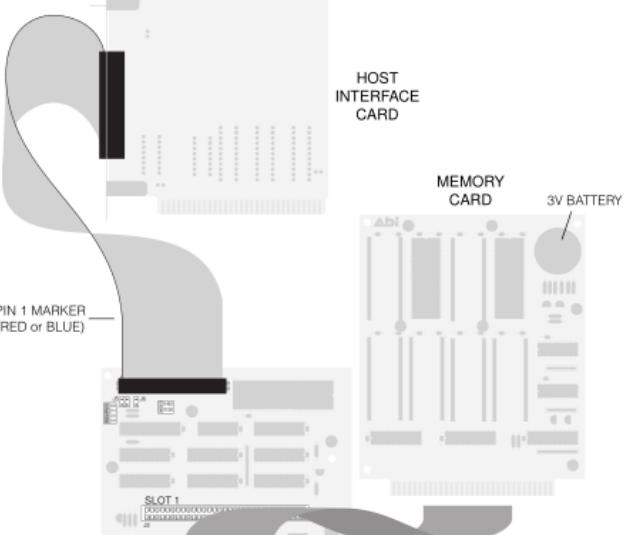
first mistake

Mode	Generation	Syntax
Register Direct Addressing Data Register Direct Address Register Direct	EA=Dn EA=An	Dn An
Absolute Data Addressing Absolute Short Absolute Long	EA = (Next Word) EA = (Next Two Words)	(xxx).W (xxx).L
Program Counter Relative Addressing Relative with Offset Relative with Index and Offset	EA = (PC)+d16 EA = (PC)+d8	(d16,PC) (d8,PC,Xn)
Register Indirect Addressing Register Indirect Postincrement Register Indirect Predecrement Register Indirect Register Indirect with Offset Indexed Register Indirect with Offset	EA = (An) EA = (An), An \leftarrow An+N An \leftarrow An-N, EA=(An) EA = (An)+d16 EA = (An)+(Xn)+d8	(An) (An)+ (-An) (d16,An) (d8,An,Xn)
Immediate Data Addressing Immediate Quick Immediate	DATA = Next Word(s) Inherent Data	#<data>
Implied Addressing¹ Implied Register	EA = SR, USP, SSP, PC, VBR, SFC, DFC	SR,USP,SSP,PC, VBR, SFC,DFC

This mode is similar to the mode described in **2.2.7 Address Register Indirect with Index (8-Bit Displacement) Mode**, except the PC is the base register. The operand is in memory. The operand's address is the sum of the address in the PC, the sign-extended displacement integer in the extension word's lower eight bits, and the sized, scaled, and sign-extended index operand. The value in the PC is the address of the extension word. This is a program reference allowed only for reads. The user must include the displacement, the PC, and the index register when specifying this addressing mode.



meanwhile...



CONNECT DIP HEADER TO
BOTTOM OF TARGET ADAPTER

```
reset          move.w  D0, ($2f64,A5)
nop           lea      $80001a.1, A0
nop           movep.l ($0,A0), D0
nop           not.l   D0
move.b #$80, $800030.1 move.l   D0, ($64,A5)
nop           cmpi.l  #$5642194, D0
nop           jmp     $eca.l
nop           movea.l A0, A3
nop           move.w  #$1, D1
nop           moveq   #$0, D3
nop           move.l  ($5c,PC,D3.w), D0
nop           lea     (A3), A0
move.b #$0, $800030.1 cmpi.l  #$5642194, D0
cmpi.l  #$5642194, D0 move.l   (A0), D2
lea     ($6,PC), A4; ($984) move.l   D0, (A0)
bra     $d82      cmp.l   (A0), D0
move.w #$ffc0, $80010c.1 bne    $c94
```

```
lea    ($6,PC), A2; ($ef4)
bra   $ef6
jmp   (A4)
moveq #$_1f, D7
move.1 #$f000f000, D0
cmpl.1 #$5642194, D0
move.1 (A0)+, (A1)
or.1  D0, (A1)+
```

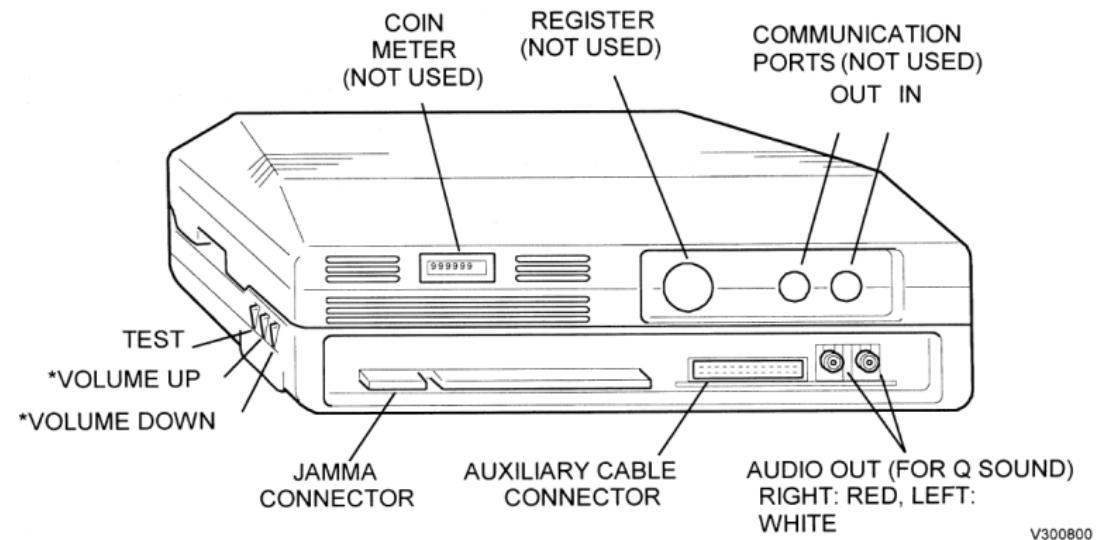
```
lea    ($6,PC), A2; ($d94)
bra   $d96
jmp   (A4)
moveq #$_1f, D7
move.1 #$f000f000, D0
move.1 (A0)+, (A1)
or.1  D0, (A1)+
move.1 (A0)+, (A1)
```

--- CPS-2 Hacker ---

Use Iup controller.

Button 1 : Fast Move
Button 2 : Step \$10000

Offset	+0	+2	+4	+6	+8	+A	+C	+E
00FF8000	0000	0000	0000	0000	0000	0000	0000	0000
00FF8010	0000	0000	0000	0000	0000	0000	0000	9000
00FF8020	0080	0000	9100	9160	9140	0000	0000	0000
00FF8030	0000	0000	0000	0000	000F	06C2	0000	0000
00FF8040	0000	7FFF	003F	0000	0005	0000	0000	0000
00FF8050	0000	0000	0000	0000	0000	0000	0000	0000
00FF8060	0000	0000	0000	00FF	0000	0000	0000	0000
00FF8070	0000	0000	0000	0000	0000	0000	0000	0000
00FF8080	0000	0000	0000	0000	0000	0000	0000	0000
00FF8090	0000	0000	0000	0000	0000	0000	0000	0000
00FF80A0	0000	0000	0000	0000	0000	0000	0000	0000
00FF80B0	0000	0000	0000	0000	0000	0000	0000	0000
00FF80C0	0000	0000	0000	0000	0000	0000	0000	0000
00FF80D0	0000	0000	0000	0000	0000	0000	0000	0000
00FF80E0	0000	0000	0000	0000	0000	0000	0000	0000
00FF80F0	0000	0000	0000	0000	0000	0000	0000	0000



Let's dump!



[stories](#)[submissions](#)[popular](#)[blog](#)[ask slashdot](#)[book review](#)[games](#)[idle](#)[yro](#)

CPS-2 Encryption Scheme Broken

Posted by **Hemos** on Sunday January 07, 2001 @10:44AM
from the more-roms-for-all dept.



[Acheon](#) writes:

"The CPS-2 arcade board from Capcom uses some hard encryption scheme that has been a very hot issue in emulation for years. Yet

The Register®

CPS2 arcade encryption smashed

Morality debate ensues

By [Lucy Sherriff](#) • [Get more from this author](#)

Posted in [Business](#), 8th January 2001 19:44 GMT

A group of gaming enthusiasts called the [CPS-2 Shock Team](#) claims to have broken the encryption on the CPS-2 arcade board from [Capcom](#).

While the algorithm itself has not been compromised, the group has managed to extract unencrypted data from the board using the 68k code on the hardware itself, according to a poster on [SlashDot](#). Whether this actually constitutes a break of encryption is a subject under discussion at the aforementioned geek site.





meanwhile...

Diagram illustrating the layout of the uU-REn software interface:

- MENU BAR:** Located at the top left, containing "File", "Search", and "Options".
- TITLE BAR:** Located at the top center, displaying "uU-REn".
- VIEW/EDIT AREA:** The main window where binary data is displayed in a grid format.
- SIZE AREA:** Located at the bottom left, showing "Size: 2 Kbyte (x1)" and "Width: 8 Bit".
- OUT AREA:** Located at the bottom center, showing "Out: Reset: high", "CBit: high", "In: GBit: low", and "User: high".
- IN AREA:** Located at the bottom right, showing "User: off".

The View/Edit area displays the following binary data:

Address	Value	Description
00000000	7B AA 5F A5 DA 52 8F 82-DE GF 81 14 B7 DB 43 94	(...R...e...C...)
0000010	9B 10 07 05 7D 00 10 AD-DF AF 10 20 DF 5B 25 87	(...)...
0000020	05 87 F9 75 93 86 FD 64-7F 97 55 08 FB 7F ED 78	...u...d...U...x
0000030	97 51 33 87 5F 10 DF 5B-FD 35 46 A0 BD 8B 05 81	.03...[SF]
0000040	75 87 C4 7F 00 2E 07 FF-FC DC A0 B1 DF 1F 19 89	u...
0000050	0F 02 55 FF 07 00 3F F7-37 GF 11 00 07 EF C7 12	..U...?To...
0000060	53 84 CC BB 90 2E B5 92-F6 38 0E 20 FF F4 07 19	S...S...
0000070	65 00 3A 4F 3F 40 DE E3-FF A7 13 12 FF EF 05 04	e...078
0000080	A5 F5 BE F5 FA 71 2C 2C-FF 9B 11 41 BF 25 C0 88	...q...R...
0000090	04 8C 7F BB 18 E8 4E 0D-FF AF 59 12 B7 C3 55 18	...N...V...U...
00000A0	C7 08 9B 30 C5 09 GD 06-5E ED 91 11 FB 7F C0 13	B...B...
00000B0	2E 29 3F 80 95 GD 9F 2F-5F 93 97 A0 DF EB 7D 40)?.../_...)
00000C0	E7 BC 07 39 3F BC 1F CG-FF 8B 7F 00 EF 9A 11 88	...9?
00000D0	93 28 0F EF 04 87 9E-FE 67 47 90 73 5B 09 00	(...gG,s[
00000E0	GD 3E GA 8E 79 2B 9F 3F-F1 51 41 0B GD BB F9 A4	=>j.y+?.DA.m...
00000F0	1B 0E 7F CF B6 91 DF 39-5F ED B1 15 3F DF 05 15	...9...?

TOTAL

65200

1P

COM INSERT COIN

45

ROCK HOWARD

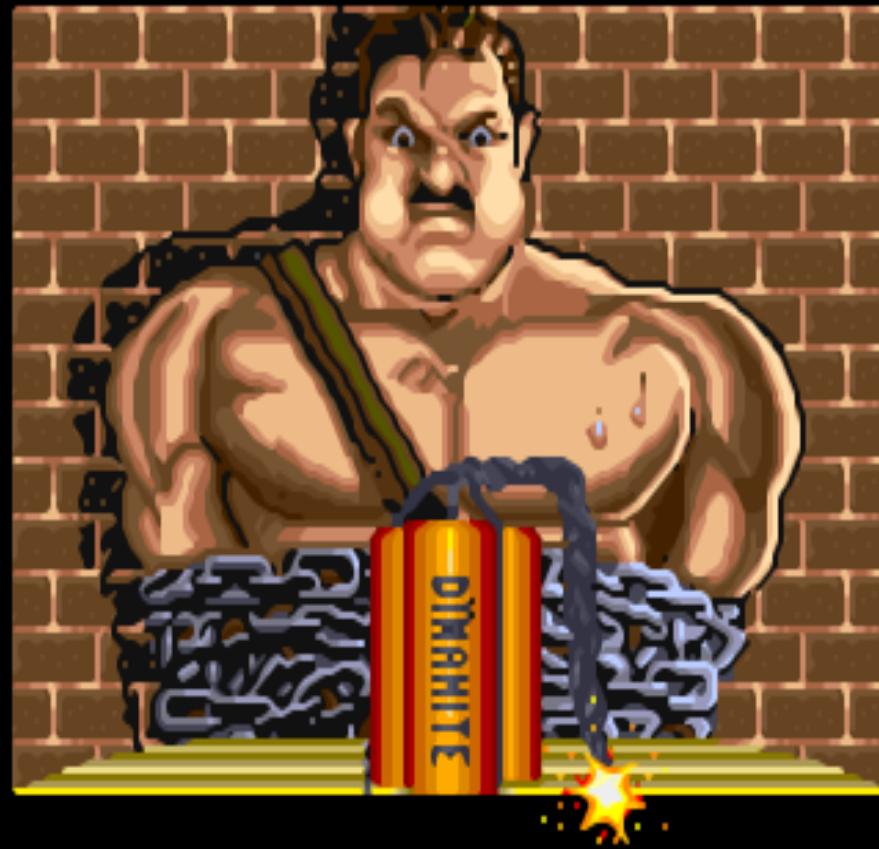
MOTARU FUTABA

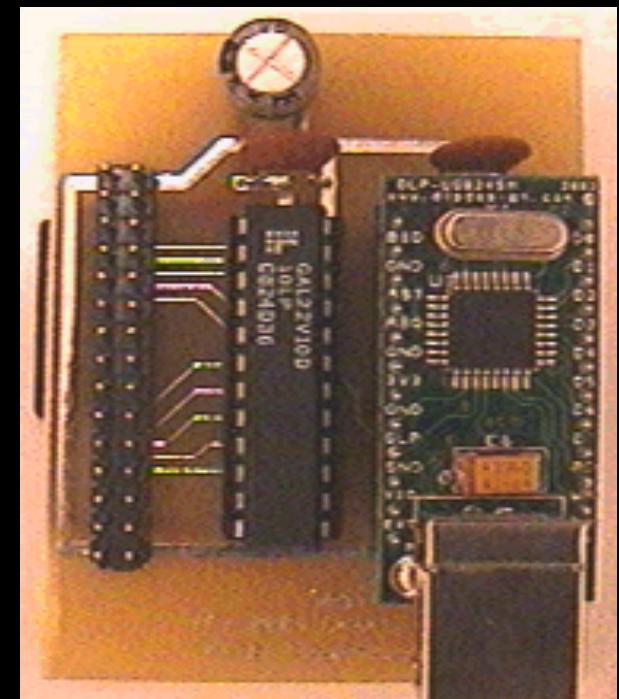
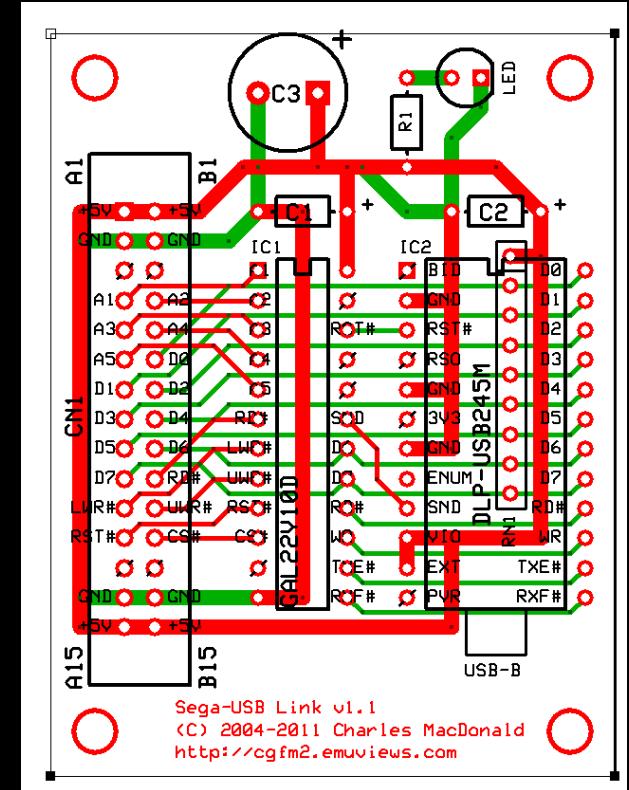
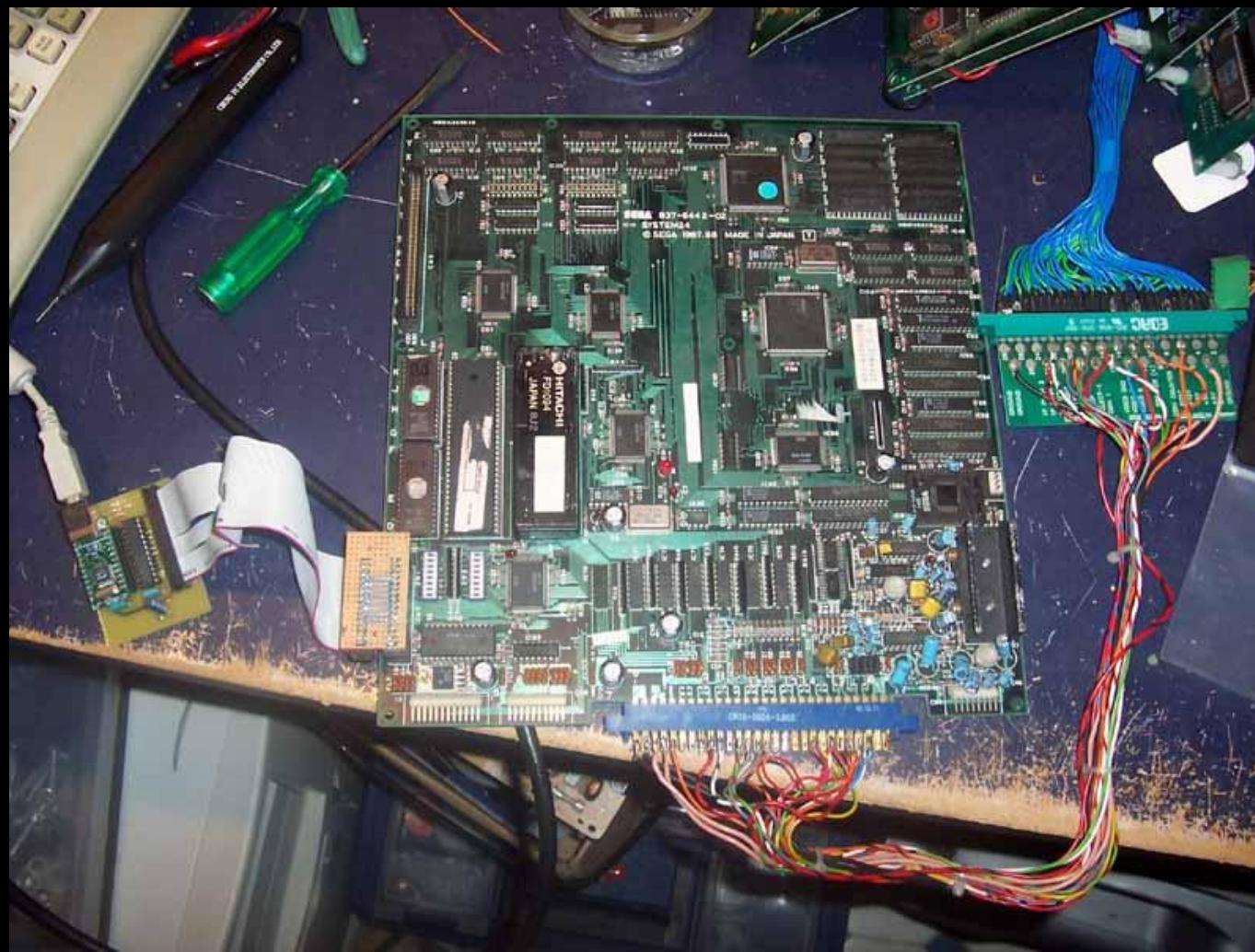
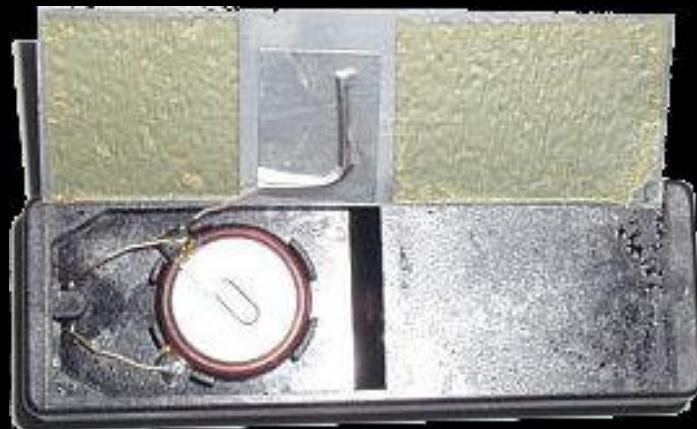


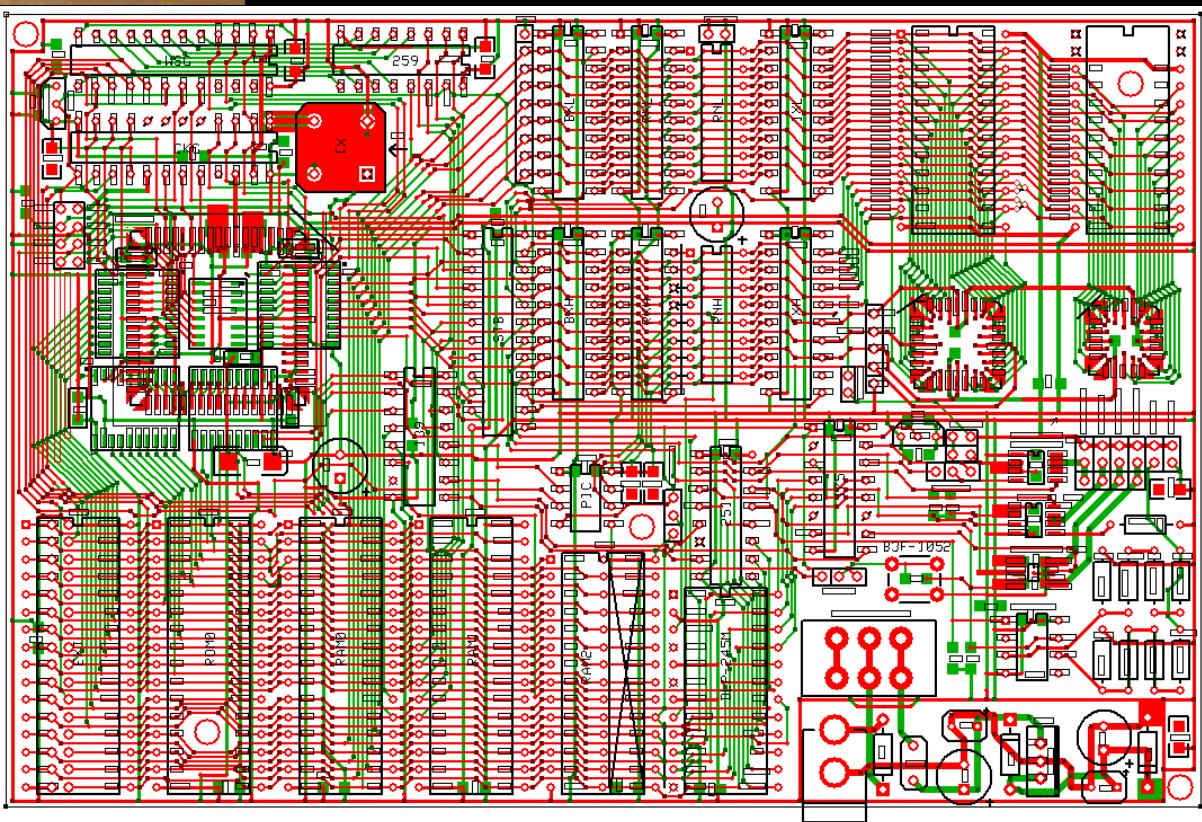
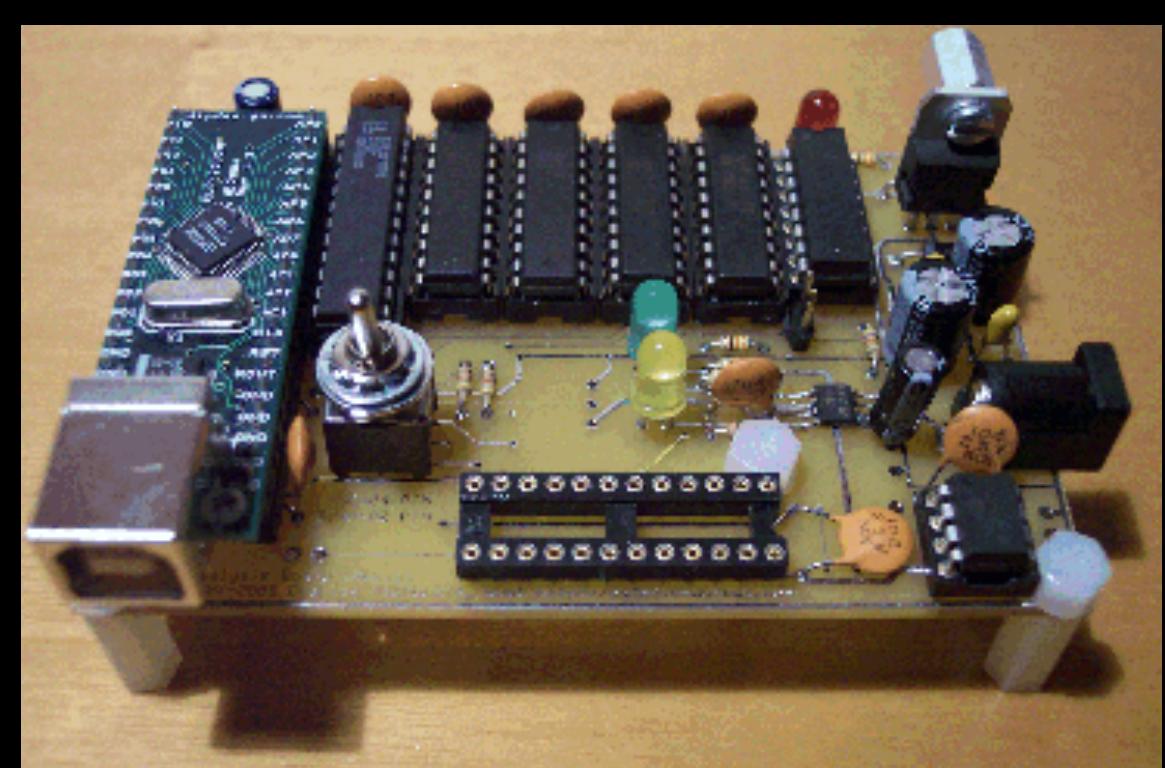
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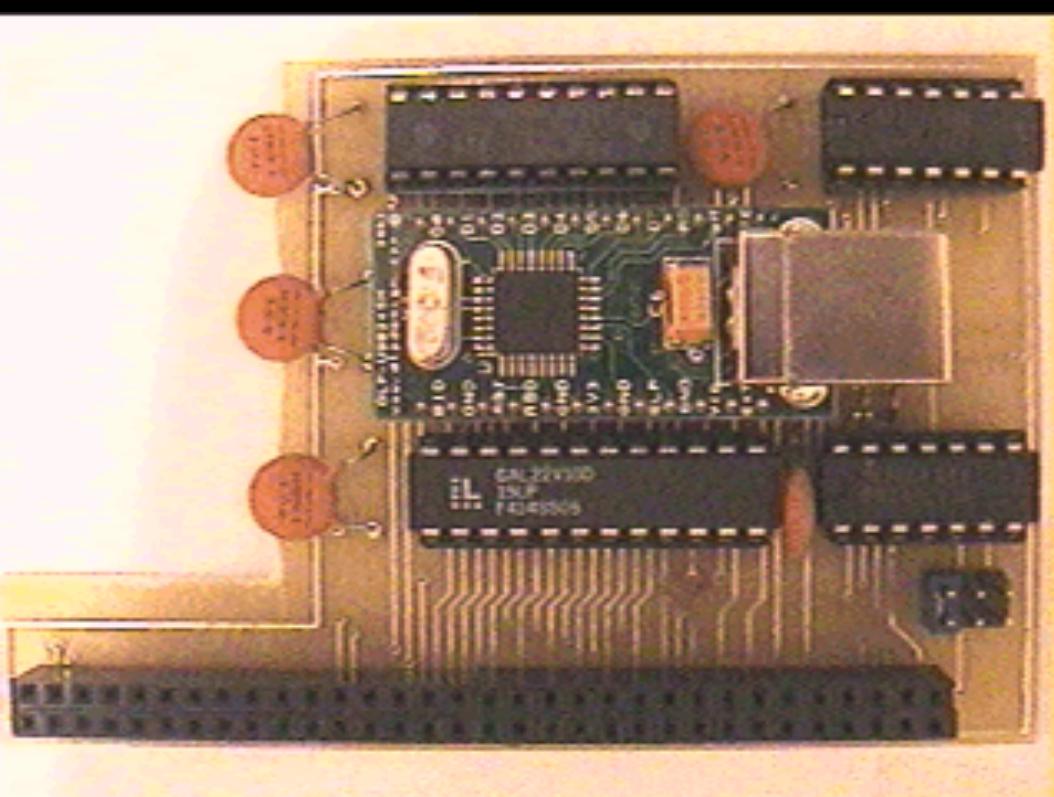
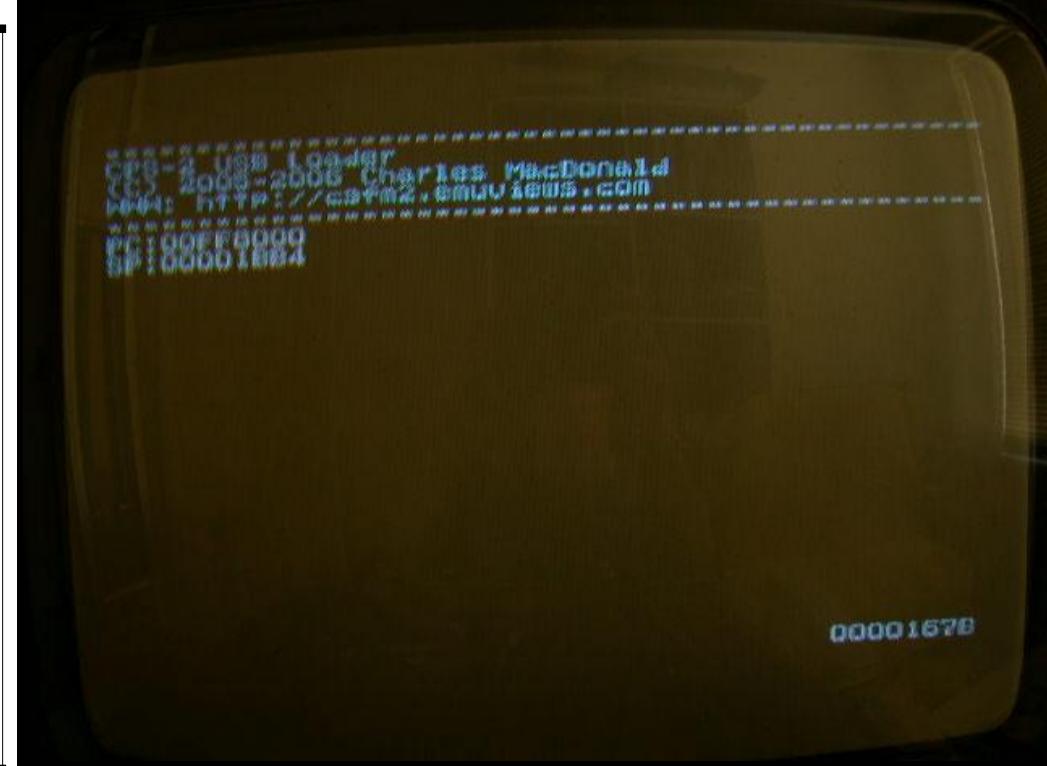
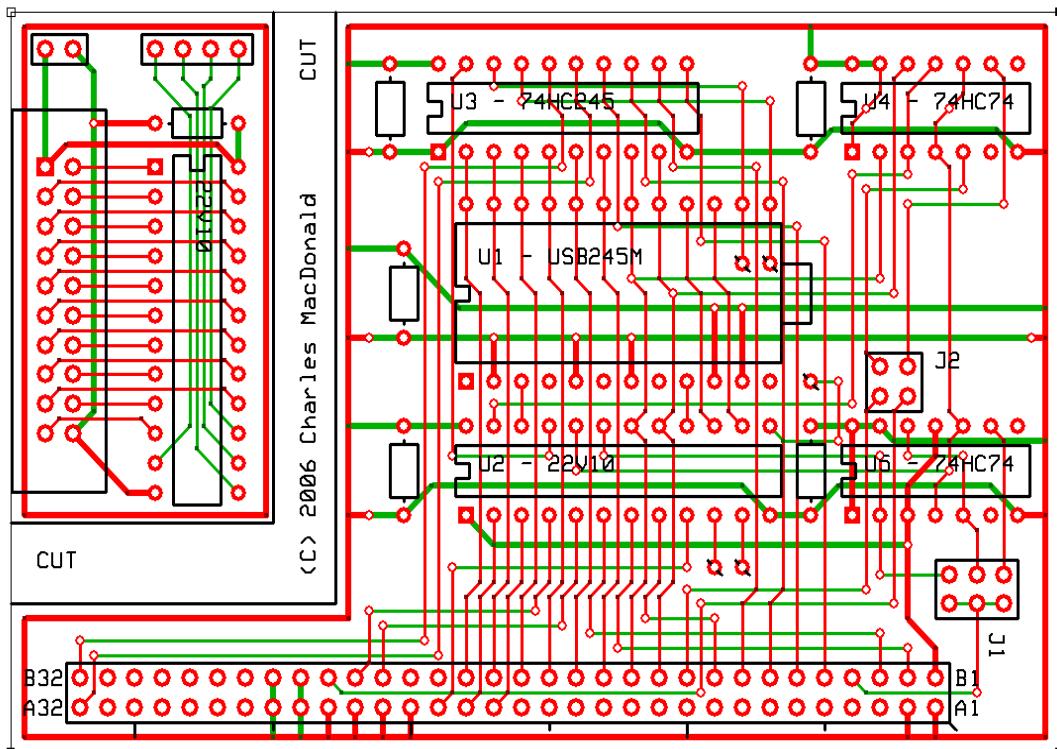
00

CONTINUE 9 NIN 20000 TIME 22 INSERT COIN

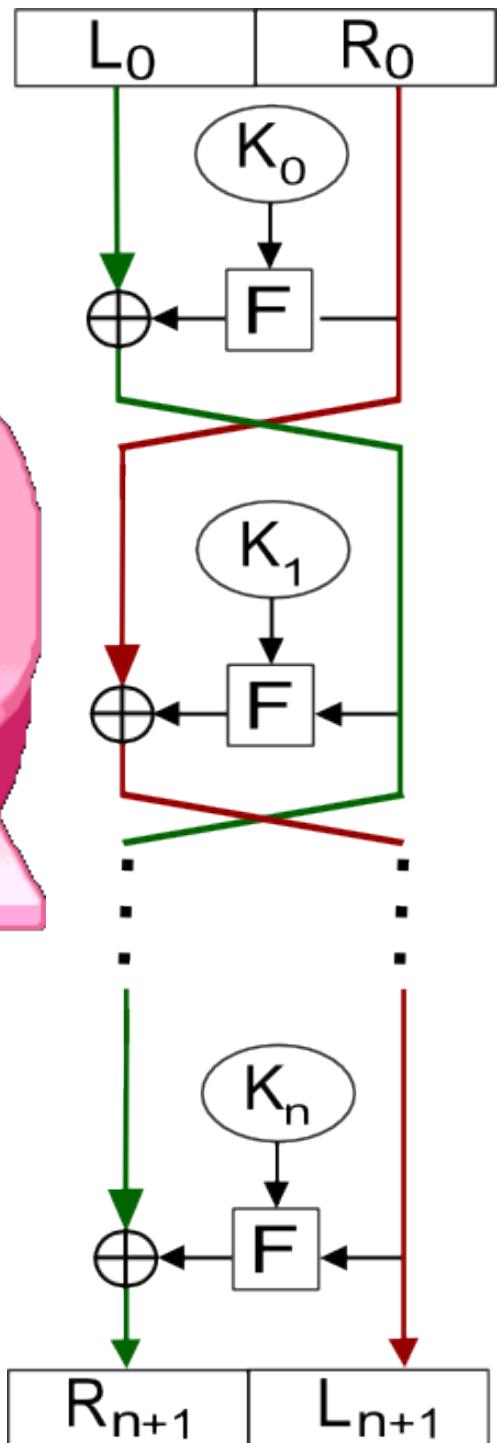


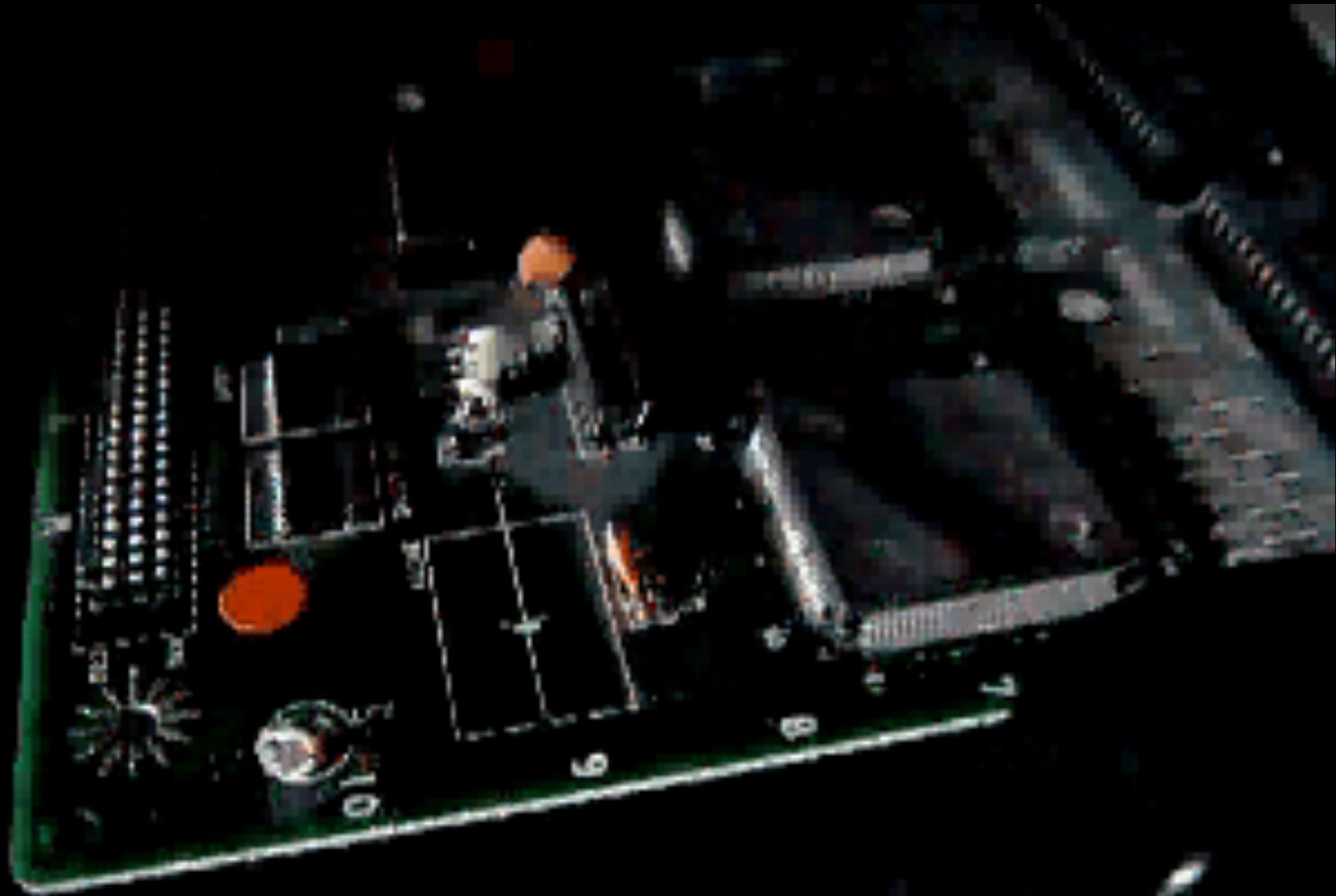






Cool...now *what*?





```
move.w #$7000, $400000.1
move.w #$0, $8040a0.1
move.w #$807d, $400002.1
move.w #$1234, $400004.1
move.w #$0, $400006.1
move.w #$40, $400008.1
move.w #$10, $40000a.1
move.w #$f00, $804040.1
cmpi.l #$5642194, D0
lea    ($6,PC), A4; ($9d6)
bra    $e82
move.w #$ffc0, $80010c.1
move.w #$0, $80010e.1
move.w #$9000, $800100.1
move.w #$9080, $800102.1
move.w #$90c0, $800104.1
```

```
move.w #$7000, $fffff0.1
move.w #$0, $8040a0.1
move.w #$807d, $fffff2.1
move.w #$1234, $fffff4.1
move.w #$0, $fffff6.1
move.w #$40, $fffff8.1
move.w #$10, $fffffa.1
move.w #$f00, $804040.1
cmpi.l #$5642194, D0
lea    ($6,PC), A4; ($9d6)
bra    $e82
move.w #$ffc0, $80010c.1
move.w #$0, $80010e.1
move.w #$9000, $800100.1
move.w #$9080, $800102.1
move.w #$90c0, $800104.1
move.w #$9100, $800106.1
```

CAPCOM

PHOENIX EDITION

PHOENIX SELECT MINI MENU

> REGION SETUP <
JUKEBOX PLAYER
START GAME

<HTTP://WWW.CPS2SHOCK.COM>

PHOENIX SELECT MINI MENU

CHOOSE YOUR REGION
-> ORIGINAL <-

<HTTP://WWW.CPS2SHOCK.COM>

PHOENIX SELECT MINI MENU

JUKEBOX PLAYER
-> 0000 <-
(1)=PLAY SOUND
(2)=STOP (3)=EXIT

<HTTP://WWW.CPS2SHOCK.COM>

MEGA MAN THE POWER BATTLE

9 5 1 0 0 6

U S A

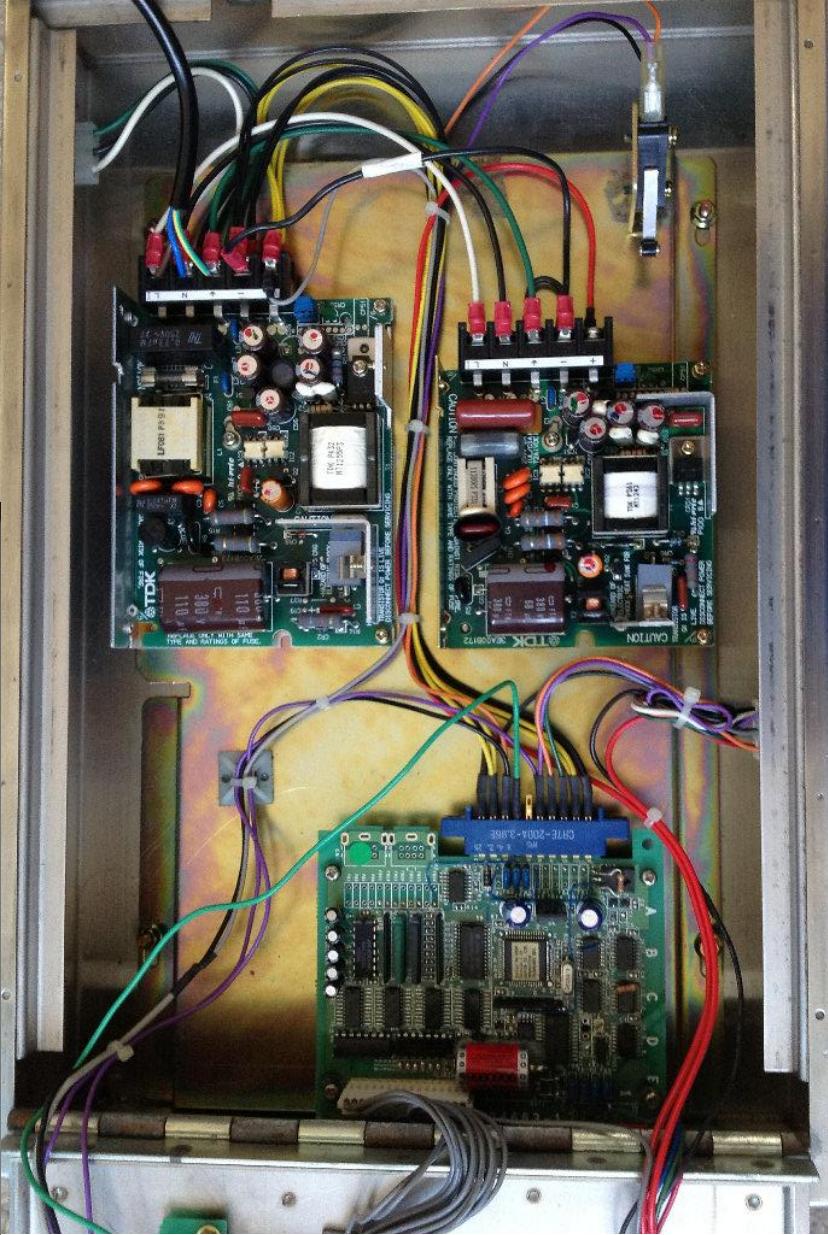
S A M P L E

Mistakes summary

fundamental mistakes:

- crash screen in production games
- similar encrypted & unencrypted sets
- unencrypted memory range
- decryption for PC indirect addressing mode
- watchdog leak
- *trivial* watchdog
 - poorly randomized

what's next?



Conclusion

1/3 a complete success

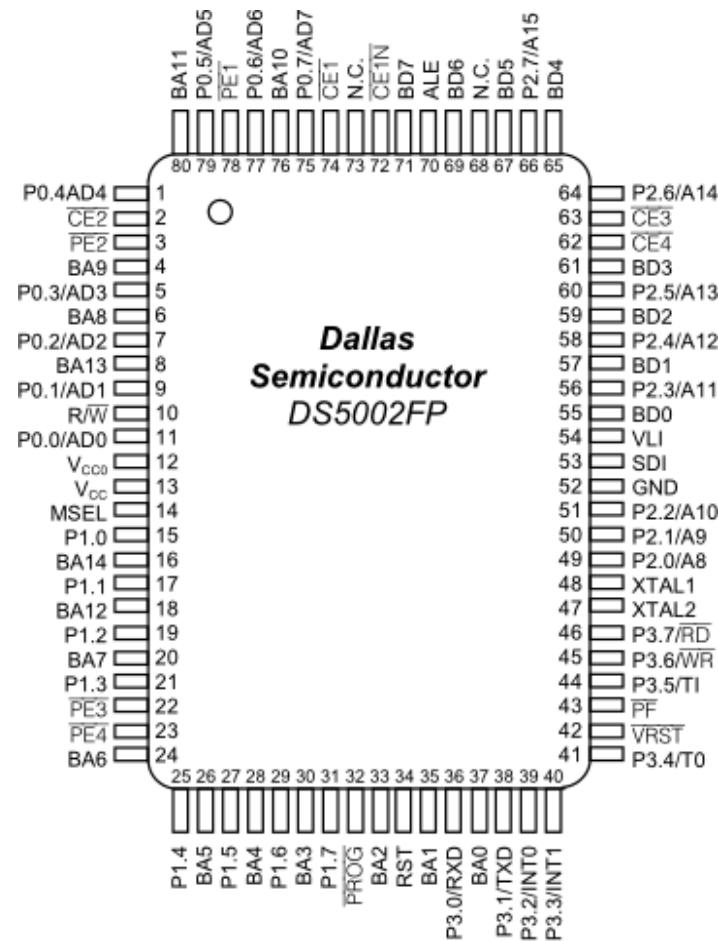
- playable - all of them
 - decrypted, decryptable, recoverable, documented
 - patch required - not 100% finished
- bootlegs (all-in-one)
- helped for another unrelated but most-wanted hardware

2/3 be patient

- many years of work
 - many tiny steps
- collective effort
 - different people, different skill sets
- stay hungry, stay foolish
 - even something 'impossible'
 - even better results!
- many mistakes despite the appearance
- side-quests are good
 - keep your brain fresh
 - keep the faith
 - for you and the public

3/3 on arcade games

- impossible without public support
 - hardware and money donations
- some hardware still undefeated, yet fragile
 - also applies to modern games



Links

- CPS2 encryption
<http://mamedev.org/source/src/mame/machine/cps2crpt.c.html>
- CPS2Shock
<http://www.cps2shock.com>
- Charles MacDonald's Home Page
<http://cgfm2.emuviews.com/old2005.php>
- Notas de Andy
http://andreasnaive.blogspot.com/2006_12_01_archive.html
- Nicola's MAME Ramblings
<http://mamelife.blogspot.com/2006/01/8gb-2-is-still-4gb.html>

Bonus

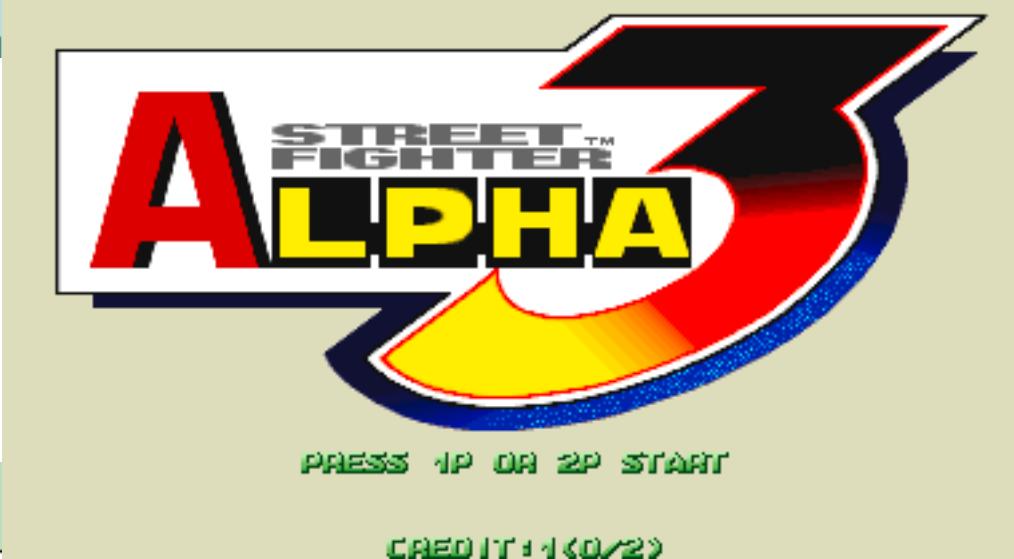


PRESS 1P OR 2P START

CREDIT 1:1

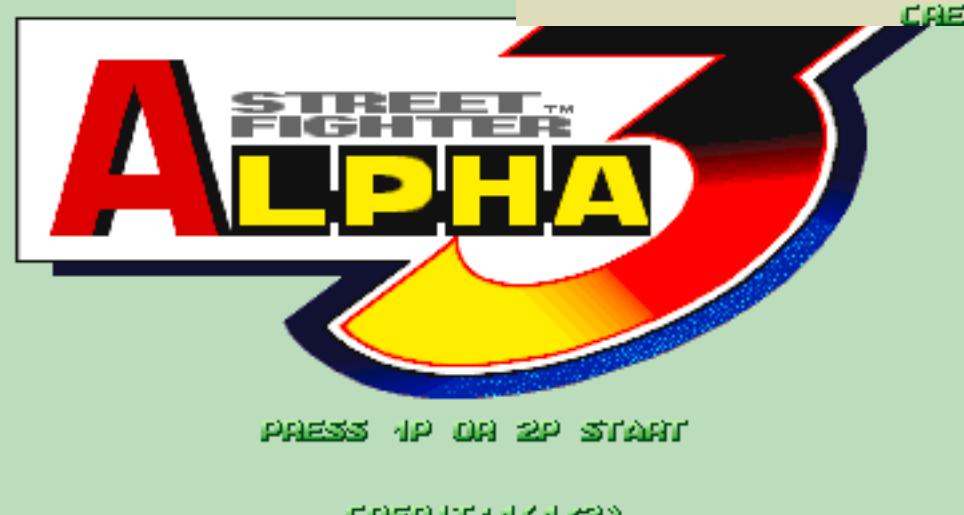
PRESS 1P OR 2P START

ITEM (0/2)



PRESS 1P OR 2P START

CREDIT 1:1 (0/2)



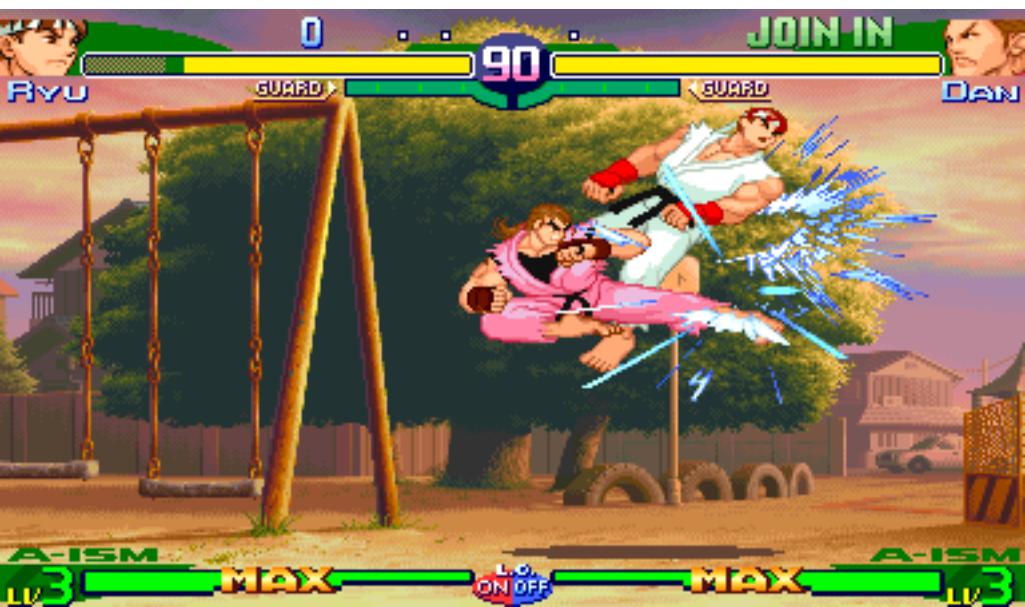
PRESS 1P OR 2P START

CREDIT 1:1 (1/2)



PRESS 1P OR 2P START

CREDIT 1:1 (0/2)



1 . I N P U T T E S T

SERVICE TEST	0	
COIN START	1P 0	2P 0
LEVER	000 000 000	000 000 000
SHOT	000 000	000 000

LP LP → LK HP S+LP

6 . G A M E D A T A

COIN	COUNTER	000036
SERVICE	COUNTER	000000
FREEPLAY	COUNTER	000000

→ ↓ ← LK → ↓ LP ↑
S+LP

4 . C O L O R B A R



LK HK MP MP ↑ S+LP

T E S T M E N U

- > 1 INPUT
- 2 OUTPUT
- 3 SOUND & VOICE
- 4 COLOR
- 5 DOT CROSS HATCH
- 6 GAME DATA
- 7 CONFIGURATION
- 8 MEMORY CHECK

5 . D O T C R O S S H A T C H

1P U
1P S

↓ MK → ↓ → HP ↓
← MP → ↑ ↓ MK WK
S+LP



CPS2, 1994



PC, 1999

ALIEN

TM

VS.

PREDATOR™

PRESS START BUTTON
UP TO TWO PLAYERS

ALIENS
VERSUS
PREDATOR

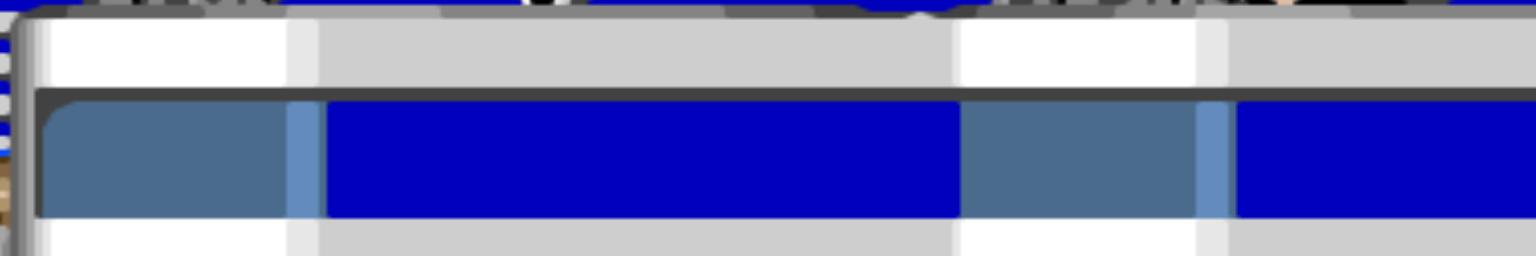
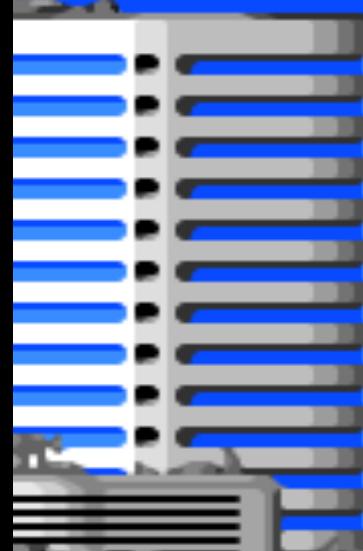
1P-

2000



1P-

2200







H Y P E R F I G H T I N G

INSERT COIN.

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