



WORKING MS PACMAN

Abbreviation Example:

2A p1 short to p2

Chip 2A pin 1 is shorted to pin 2.

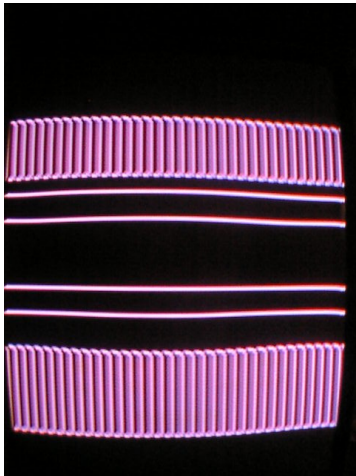
Low means grounded.

High means +5V

M(red, pink, cyan, gold) are the monster colors from top to bottom.

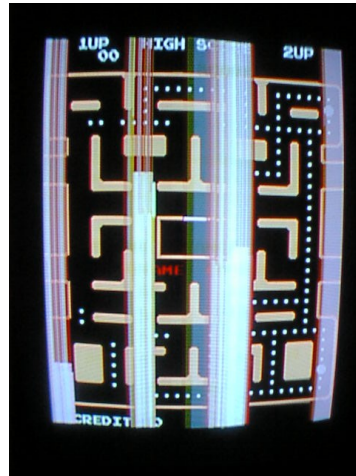


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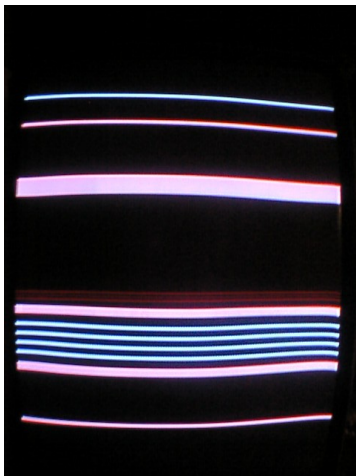
Vertical pieces of the maze scroll across from right to left. Shape of the pieces will vary.

2R p11,12,13,14.



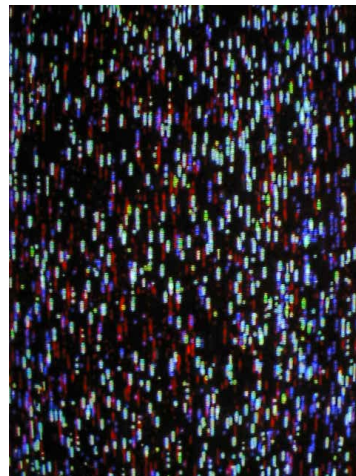
Fast moving vertical lines from top to bottom. Caused by shorting the 6 MHz clock signal.

Chip 3D p4 or 13.



Horizontal bars across screen. Size and color of bars will vary.

3N p9 high.

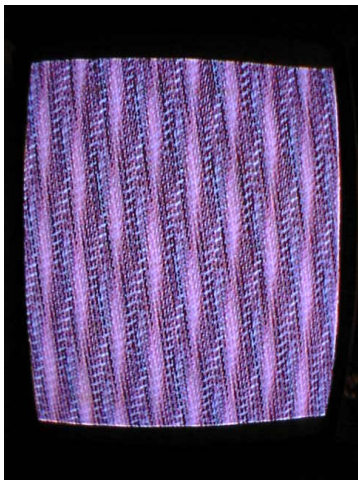


Fast moving short vertical lines covering screen. High pitch squeal from monitor. Caused by shorting 6 MHz clock signal to other chip pins.

2B shorted 6 MHz clock signal p14 to p9,10,11,12,13 or 15.

2A short p14 to pad next to it.

1E,2E short p2 to 1,3,4,5,6,8



No sync for the monitor.

2S p11 V Sync low

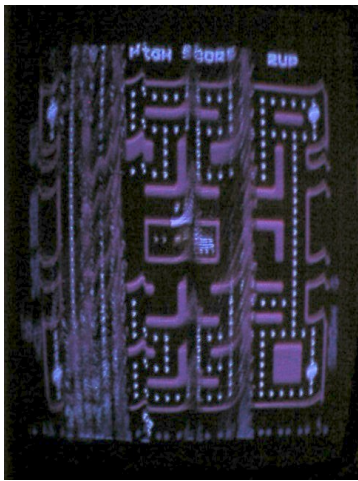
Check 2R,2S



Fast moving long vertical lines from top to bottom in two columns. High pitch squeal from monitor.

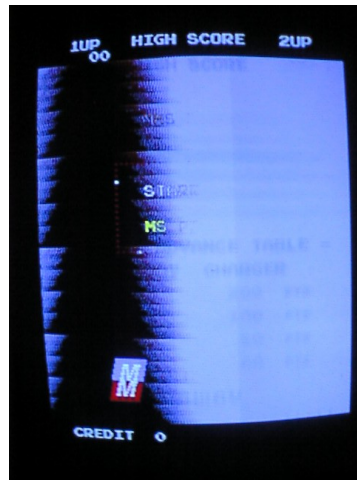
Chip 2A,2B,2C,2D 6 MHz clock signal pin 14 is grounded.

Chip 4B pin 11 short to 3B pin 9-14.



Distorted maze.

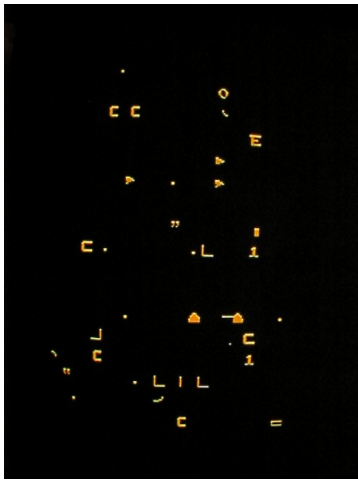
6 MHz signal short from chip 4B p11 to 3B p15.



Blue tornado moving quickly from right to left. Can also be a solid blue block with the score and credit ok.

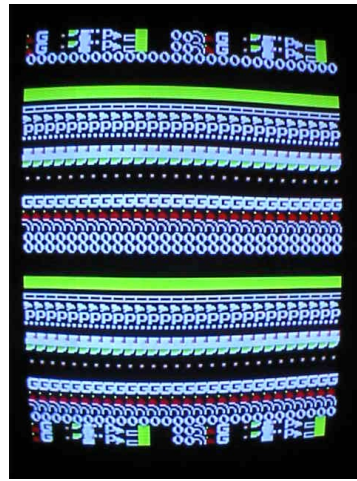
3A bad or missing.

3A p9 short to p13.



Will not boot. Orange garbage on screen. Making a repetitive noise on and off.

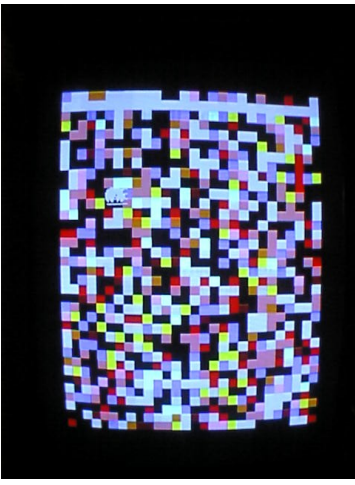
4R p12 short to p15



Random garbage on screen.

Problem with 5F ROM.

Dip Switch 8 is ON. This will freeze the video on power up.



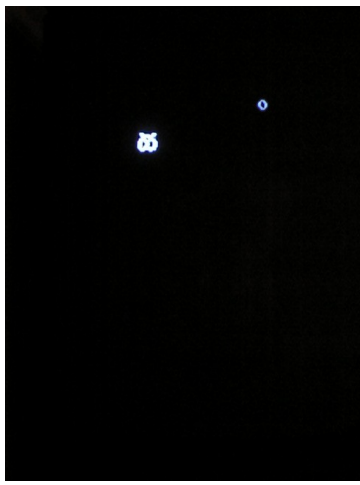
Random blocks of garbage on screen.
Problem with 5E ROM.



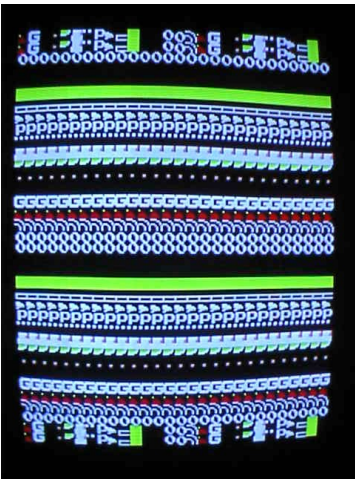
Board will not boot. Screen covered with zeros. Top row changes to different letters and a single object changes in the center as the board tries to boot.
4K,4N video RAM bad.



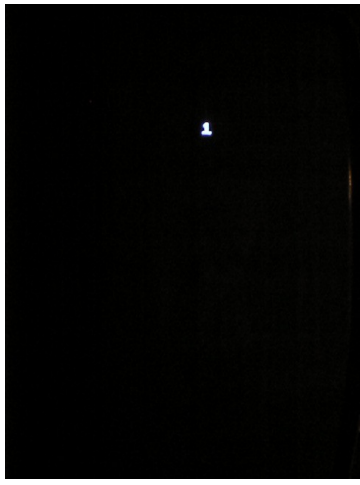
Board will not boot. This is just one of the 3-4 screens it shows trying to boot.
4L video RAM bad.



Just a few random objects on the screen.
4M video ram bad.



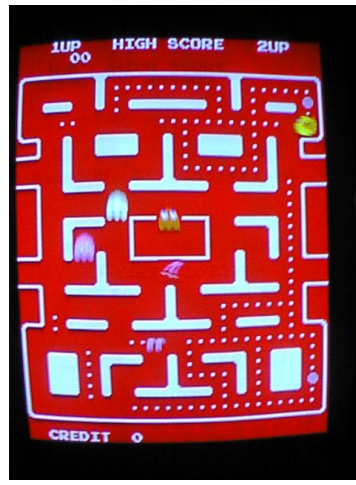
Board will not boot. This is just one of the 3-4 screens it shows trying to boot.
4P video RAM bad.



Board will not boot.
4R video RAM bad.



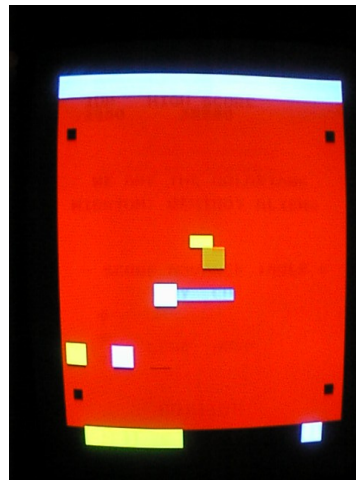
Light red haze over entire screen.
Signal from 4A p11 to 3A,3B p11 high.
Signal from chip 3B p9 to 7F p11 is high.



Red Background
Signal from 4A p12 to 3A,3B p14 low.
Signal from 3B p12 to 7F p10 is high.



Red background between score and credit. No characters.
3A p9 short to p11,14.



Red screen, blocks for characters, score and credits.
5A removed



Thick green haze.
This is most likely caused by your monitor. If you have a known good monitor then:
Green output edge connector 16 is high.



Thick red haze.
This is most likely caused by your monitor. If you have a known good monitor then:
Red output edge connector T is high.



Thick blue haze.
This is most likely caused by your monitor. If you have a known good monitor then:
Blue output edge connector pin U is high.



Graphics are blocks. Characters are ok.
5E Bad or removed.



White background, red maze, blocks behind characters.

5C Removed

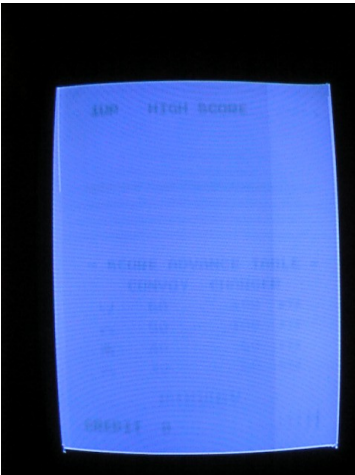
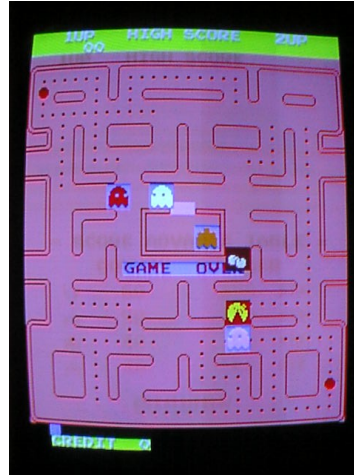
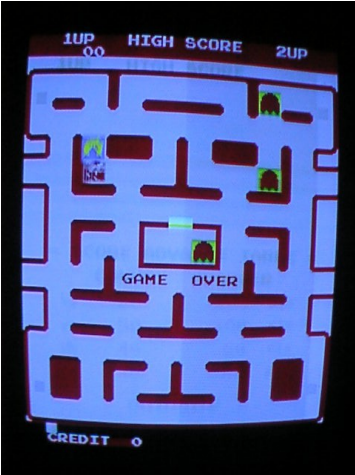
5A p14 high



Pink background, pink maze, red maze outline. Blocks behind characters. Yellow behind score and credit.

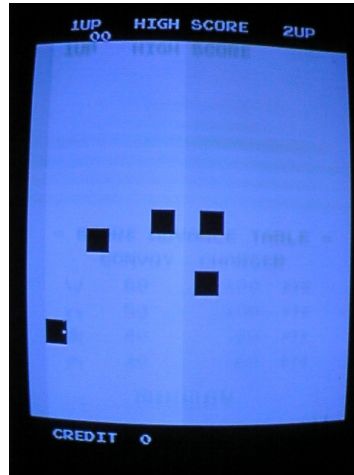
5B removed

5A p11 high



Entire screen is blue. Sounds and game still function.

Chip 3B bad or removed.



Blue box with black blocks where characters are. Score and credit ok.

A 74157 was placed into socket 3A instead of a 74158.

Red or yellow box. Sounds ok.

2C p7 short to p5,6,8 yellow.

3D p6 low yellow.

2D p7 short to p5,6,8 red.

3D p3 low red.

Red or yellow box on screen. Score and credit ok.

2C p7 short to p1 yellow.

2D p7 short to p1 red.



1 Bar on top half of screen.
Score is ok.
2C short p15 to 9 yellow.
2D short p15 to p9 red.



2 Bars on screen.
2C short p15 to p10 yellow.
2D short p15 to p10 red.



4 Bars on screen.
2C short p15 top11 yellow.
2D short p15 to p11 red.



8 Bars on screen.
2C short p15 to p12 yellow.
2D short p15 to p12 red.



16 Bars on screen.
2C short p15 to p13 yellow.
2D short p15 to p13 red.



32 Bars on screen.
2C short p7 to p2 yellow.
2D short p7 to p2 red.



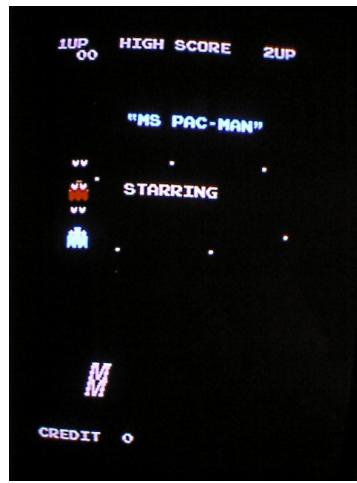
64 Bars on screen.
 2C short p7 to p3 yellow.
 2D short p7 to p3 red.



Entire rows of characters cloned from the left to the right side of the screen.
 2A,2B,2C,2D p1 chip select is grounded, enabling the chip all the time.



No characters on screen. Dots can be seen being eaten. Caused by interfering or grounding databus RA0 thru RA5.
 These can be found on 2A,2B,2C,2D p2,3,4,11,12,13, or 1E p11,12,13,14 or 2E p13,14.
 2B p1 is high, or p2&3 or 3&4 or 4&5 shorted.
 2A p12&13 or p11&12 shorted.
 2E short pin7 to p10.

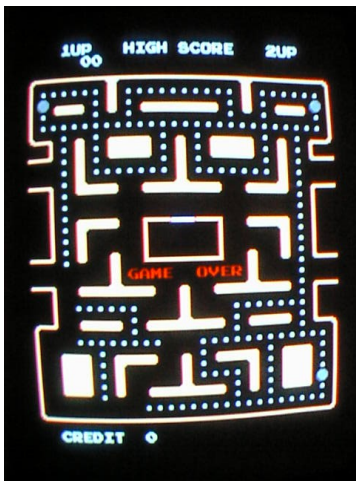


128 Bars on screen. Hazy shade of Yellow or Red over entire screen.
 2C short p7 to p4 yellow.
 2D short p7 to p4 red.

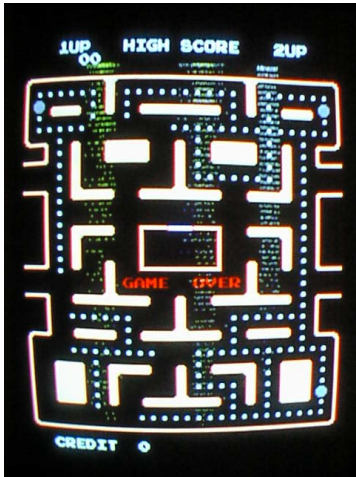
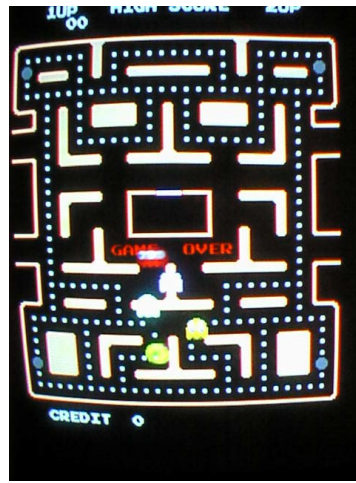


All characters are chopped in half with their base on top of their head and stuck on the top row of the game maze below the score.
 1E or 2E bad or removed.
 1E p15 short to p16.
 If characters are also flashing chip 2E p7 and p10 are high.

All characters are stuck in the lower center quarter of the screen.
 1E or 2E P9 is high.



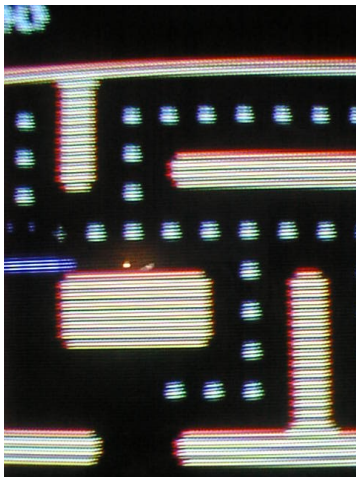
1E, 2E p15 shorted to p 11,12,13,14.
3D Bad or Removed.
3A, 3B p1 low.
3B p1 short to p8.
Signal 3E p6 to 3A,3B p1.
2F 10,13 low.



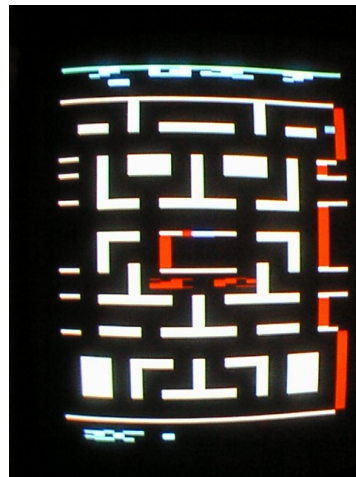
All characters look like their being transported in Startrek. Characters become lines going from the top to the bottom of the screen and still move from left to right.
1E or 2E p9 grounded or shorted to p15.
1E p9 short to 2E p 11,12,13,14,15.



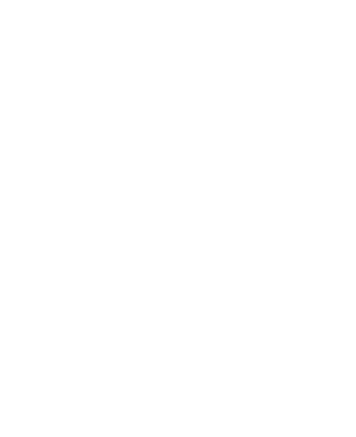
Characters ride over the maze edges and move jittery.
1E p6, 2E p3,4,5, or 6 databus DR3 thru DR7 shorted or high.



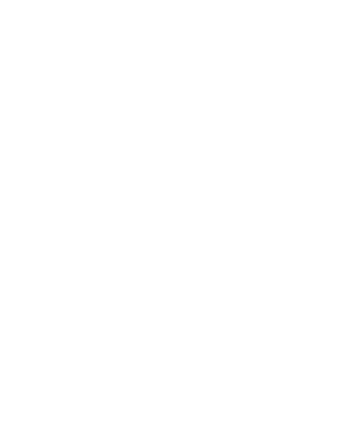
Fine horizontal washboard black lines through maze and characters.
2B p4 short to p7



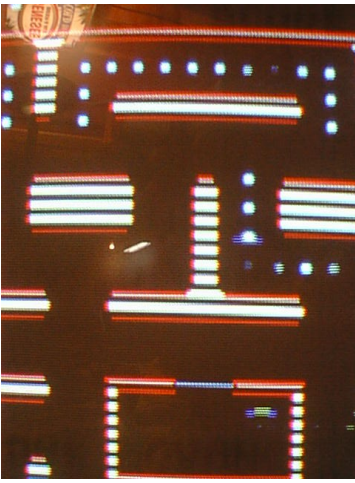
Very boxy maze with no characters.
1E or 2E p1 short p2,3,4,5,8.
1E p15 short to p10.



Medium horizontal washboard black lines through maze and characters.
2B p3 short to p7.

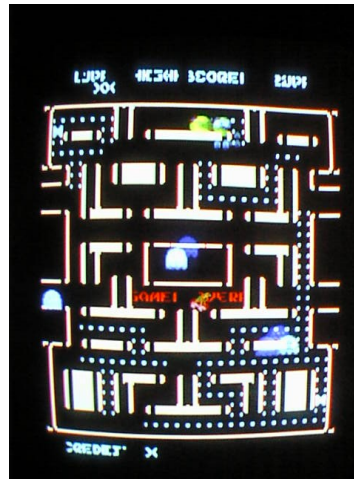
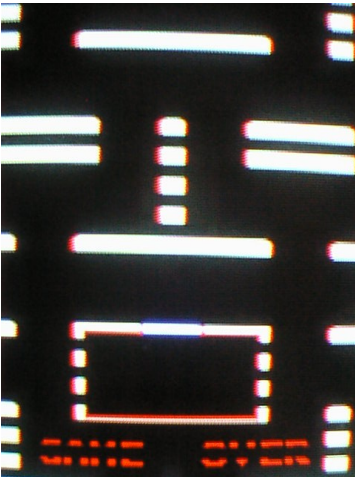


Vertical black lines and characters move jittery.
1E p3,4,5 databus DR0 thru DR2 grounded or high.



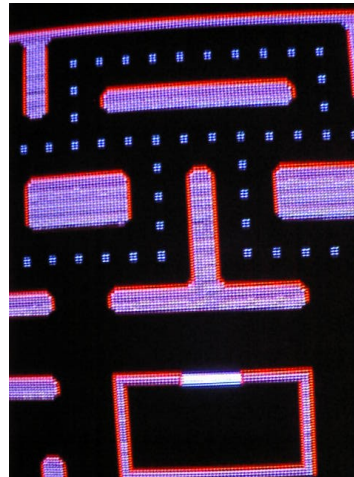
Big horizontal washboard black lines through maze and characters.

2B p2 short to p7.



Sandy Pink maze and dots. No characters.

3B p1 short to p4.



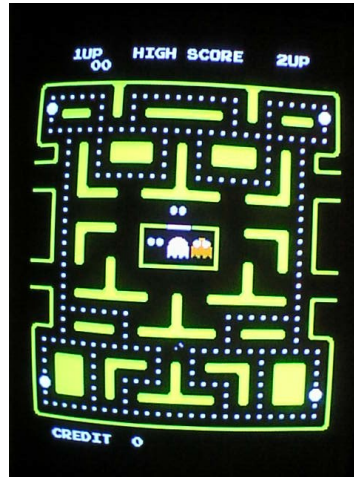
Only score and credit shows. No maze or characters.

2B p1 short p to p7.

2A,2B p15 is low.

2A p1 short to p7.

3A p4 low.



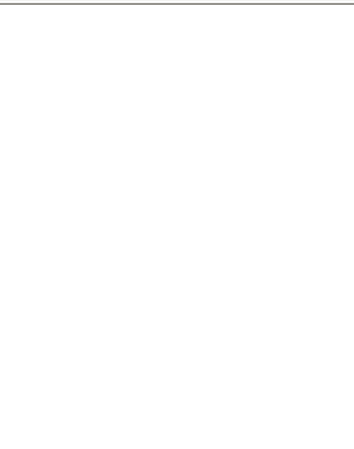
All yellow maze. Red & cyan monsters are black. No Ms pacman.

3B p9 short to p12.



White cherries

Wrong 4A or 7F

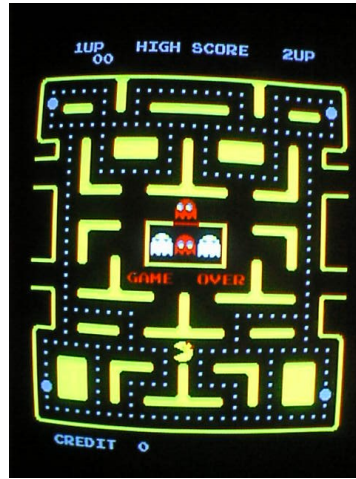


Black maze, white maze outline, white monsters, blue ms pac, red score & credit.

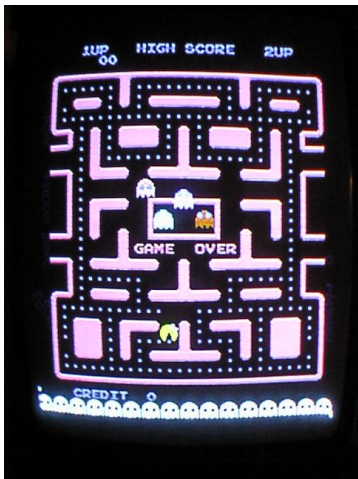
Signal 5B p12 to 5A p11 low.



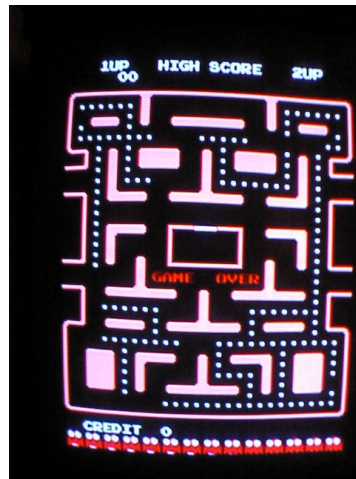
Yellow maze border no characters.
3D bad or removed.



Yellow maze. Yellow on top of midway logo. Pink monster is red, yellow is cyan. Green eyes yellow pupils.
Signal from 4A p11 to 3A,3B p11 low.
Signal from 3B p9 to 7F p11 is low.



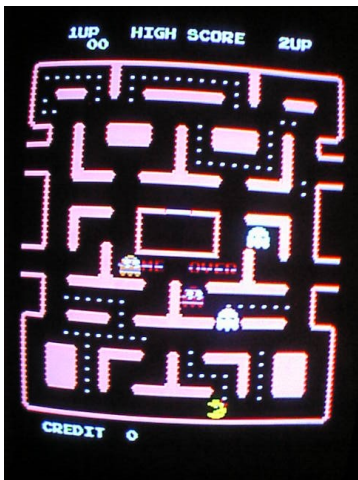
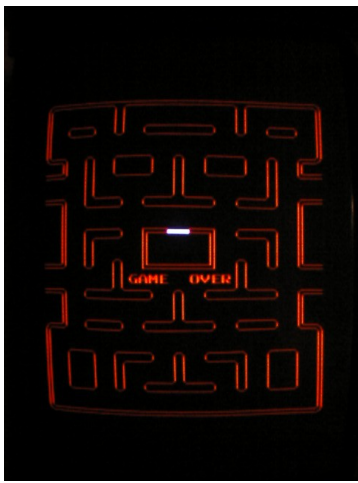
White monsters stuck on bottom of screen below credit. Score and credit are faintly seen on the left and right edges.
3A p12 short to p15.



Row of characters stuck on bottom below credit. No other characters on the rest of the screen.
3N p6 high.

All red maze outline. No characters, no score or credit.
3B p1 short to p2,5.

Red outline on maze. Cyan monster is red, yellow is pink. Eyes are blue, no pupils. Top of midway logo is blue.
Signal from 4A p10 to 3A,3B p5 low.
Signal from 3B p7 to 7F p12 low.



Red & blue or Red & white horizontal bars thru monsters and game over. Maze is also lightly striped.

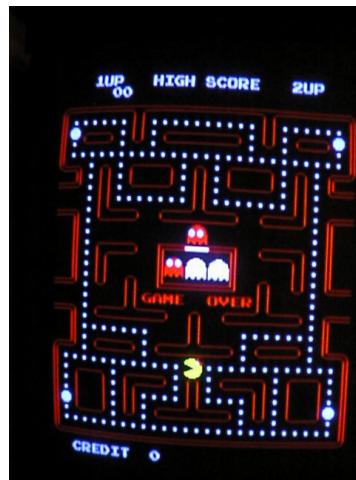
Character ROM databus outputs CD0 thru CD7 are grounded.

5B,5C p3,4,5,6

5E,5F p9,10,11,13,14,15,16,17.

Signal 5B p2 to 5A p10 low.

5A p10,13 high.



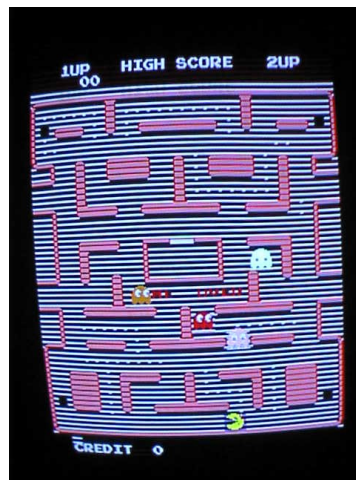
Red outline on maze. Cyan monster is red, yellow is pink. All blue eyes.

3B p7 short to p8.



No Dots, Red Ms pac, blue monsters, no outline around maze.

Signal 5C p15 to 5A p14 low.



White horizontal bars thru entire maze

Character ROM databus outputs CD0 thru CD7 are high.

5B,5C p3,4,5,6

5E,5F

p9,10,11,13,14,15,16,17.



Blue maze, red outline. Red Ms pacman, yellow dots.

3A,3B p2 low.

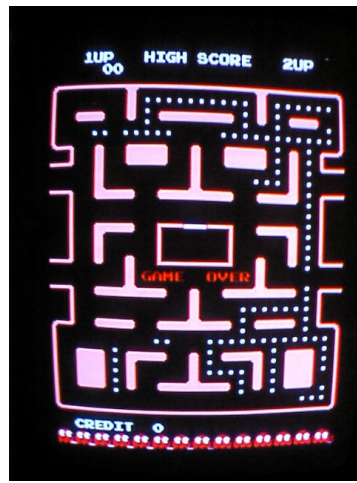
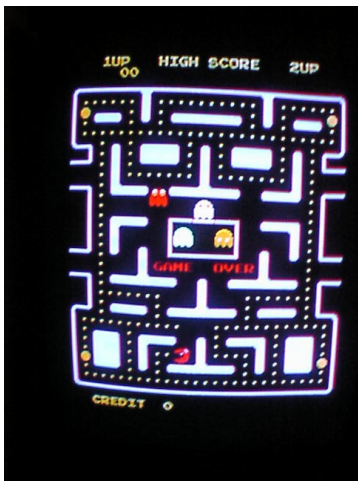
3B p4 low.

3A p2 short to p3,6,8.



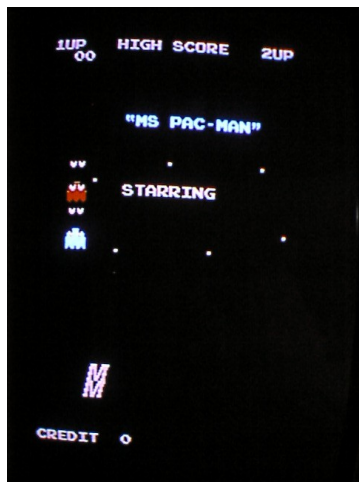
All characters stuck on bottom of screen below credit.

3A p9 short to p15.



WORKING MS PACMAN

M(red, pink, cyan, orange)



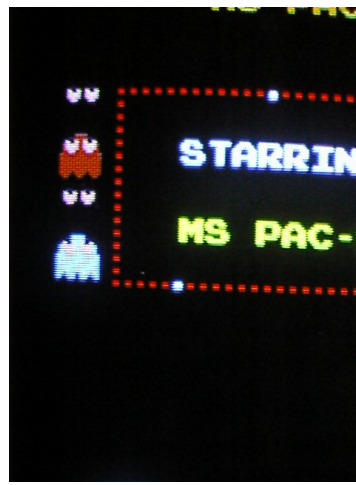
M(Black, Red, Black, Blue)

No Ms pacman, "Ms pac-man" name is blue. Missing Midway name, and marquee border.

Signal from 4A p12 to 3A,3B p14 high.

Signal from 3B p12 to 7F p10 low.

3B p12 short to p10,11.



M(Black, Red, Black, Blue)

No Ms Pacman.

Signal from 3D p14 to 3B p13 is low.



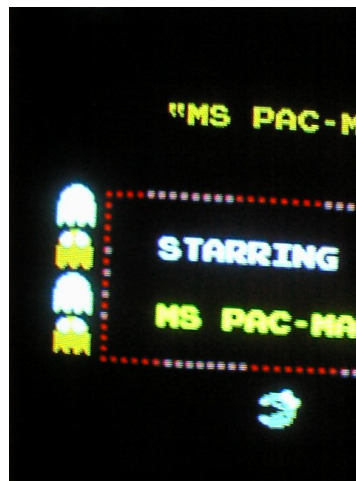
M(Red, Pink, Red, Pink)

All monster eyes are blue with no pupil.

2B bad, removed, shorted p15 & 16, or p7 high.

Signal from 3A p7 to 2B p15 high.

Signal from 3D p8 & 3B p6 is low.



M(cyan,yellow,cyan,yellow)

Ms Pacman is a dull pea green. All monster eyes white with no pupils.

Signal from 3D p8 and 3A & 3B p6 is high.



M(yellow, blue, green, gray)

Yellow Ms pacman bow and lipstick.

Signal from 3D p1 and 3A & 3B p3 is high.



M(pink, pink, orange, orange)

Blue Ms Pacman.

Signal from 3D p11 and 3A & 3B p10 is high.

3A p9 short to p10,12.



M(yellow, blue, gray, cyan)

Yellow midway name, bottom of midway logo is yellow. Yellow outline around maze.

Signal from 4A p9 to 3A,3B p2 high.

Signal from 3B p4 to 7F p13 is

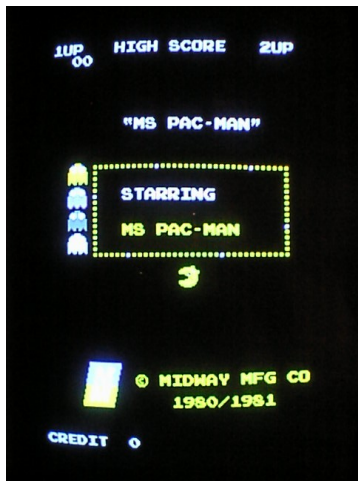


M(black, yellow, black, blue)

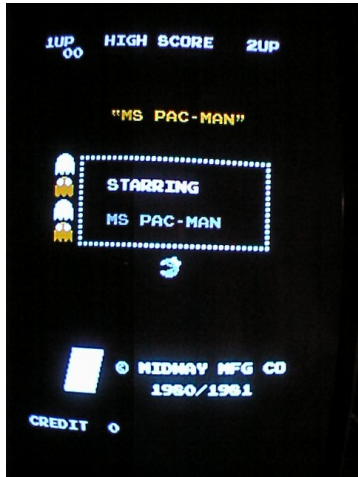
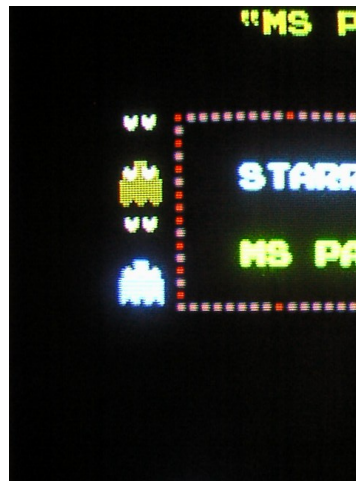
No Ms Pacman.

2D bad or removed.

Signal from 3A p12 to 2D p15 shorted to 2D p16.



high.

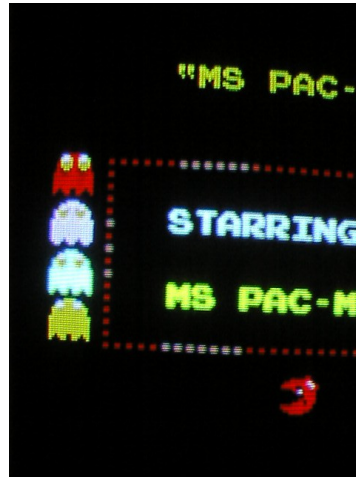


M(cyan, red, cyan, red)

Ms pacman grey, Midway logo blue & cyan. Blue eyes with no pupils. Marquee is blue.

Signal from 4A p10 to 3A,3B p5 high.

Signal from 3B p7 to 7F p12 high.



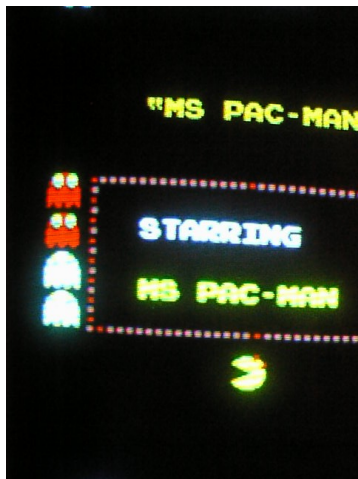
M(red, pink, cyan, orange)

Red Ms Pacman, Monster eyes white, yellow pupils.

2A bad, removed, or p7 high.

Signal from 3A p4 to 2A p15 high or shorted to 2A P16.

3D pin 1 is low.



M(red, red, cyan, cyan)

Ms Pacman's blue center in ribbon is gone. Monsters have cyan eyes with yellow pupils.

2C bad, removed, shorted p15 to p16, or p7 is high.

Signal from 3A p9 to 2C p15 high.

Signal from 2C p7 to 3D p6 high.

3A p9 short to p16.



M(black, red, black, blue)

No Ms Pacman.

3A p12 short to p13,14.



M(black, black, cyan, orange)

No Ms Pacman.

3B p1 short to p6.



M(black, black, black, black)

No Characters, No marquee, No midway name, No red border around maze, Dots are half width.

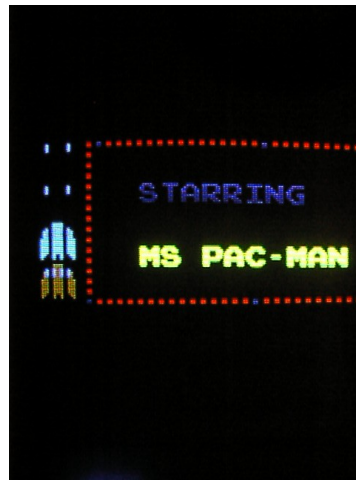
Chip 3A p2 short to p4.



M(red, pink, red, pink)

Red Ms Pacman. White eyes, yellow pupils. Top of midway logo is pink.

3A p2 short to p5.



M(black, black, lines, lines)

Red maze outline. Blue dots. Vertical black lines thru cyan and yellow monsters. Red and pink monsters almost all black. No Ms Pacman.

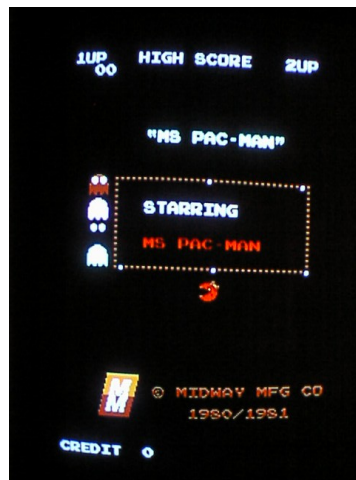
3B p1 short to p7.



M(black, black, black, black)

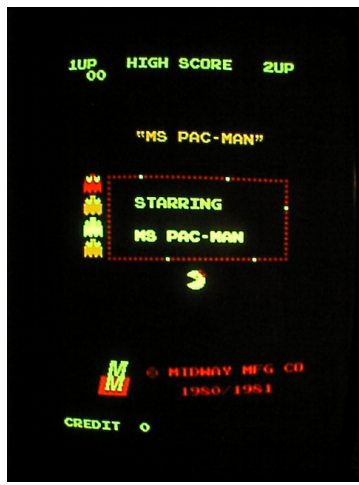
All Eyes white. Ms pacman missing red bow.

3B p1 short to p3.



M(Red, Pink, Black, White) Monsters. Red Ms pac. Pupils orange, orange top, red on bottom of Midway logo.

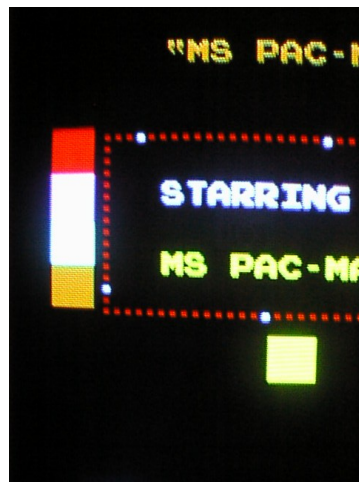
4A is a Pac Plus ROM using Ms Pac software



Void of Blue. Top of Midway logo is black. All white including dots are yellow.

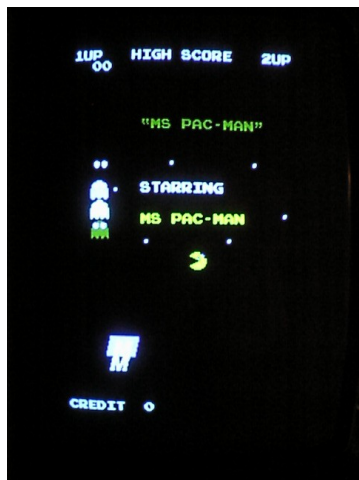
This is most likely caused by your monitor. If you have a known good monitor then:

Blue output edge connector pin U is grounded.



Characters are blocks.

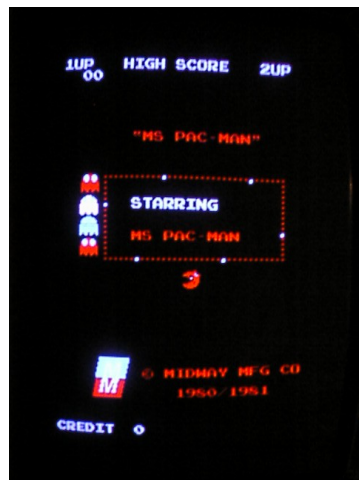
5F bad or removed



Void of Red. Bottom of Midway logo is black. Missing marquee and red monster.

This is most likely caused by your monitor. If you have a known good monitor then:

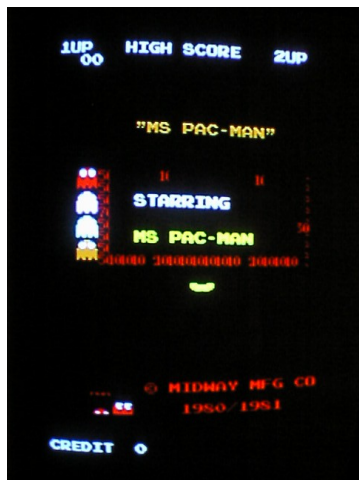
Red output edge connector pin T is grounded.



Void of Green. Red Ms Pacman, cyan is blue, yellow is red.

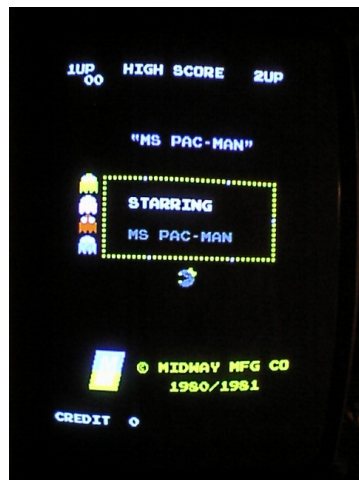
This is most likely caused by your monitor. If you have a known good monitor then:

Green output edge connector pin 16 is grounded.



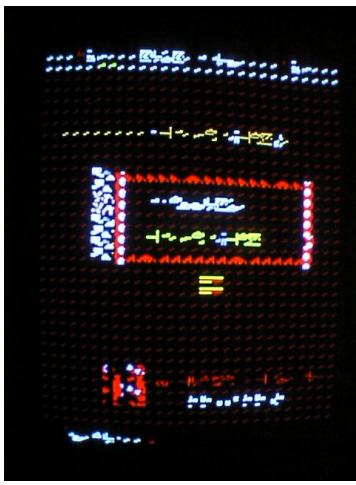
Ms pac is flapping. Midway logo is a chopped up monster. Marquee is distorted.

Using pacman 5E & 5F ROMs with Ms Pacman software ROMs.



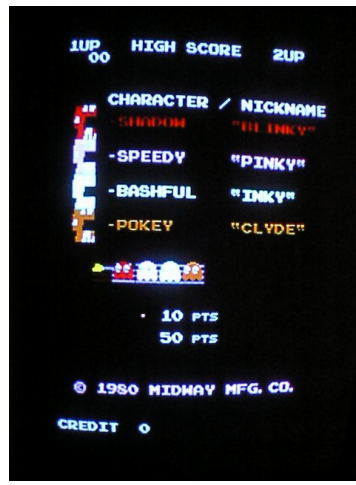
M(Yellow, Pink, Red, Blue) Monsters. Ms pacman is Grey with yellow bow. Blue maze, yellow outline. Yellow game over, marquee, Midway copyright.

7F is a Pac Plus ROM using Ms Pac software.



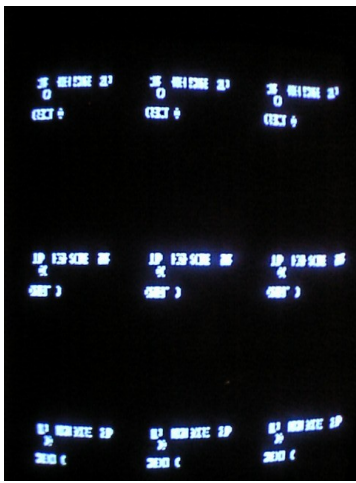
Graphics look like Egyptian Hieroglyphics.

5E & 5F are switched.



Monsters are diced, chopped in quarters and re-assembled wrong.

Using Ms pacman 5E & 5F ROMs with Pacman software ROMs.



6 Screens, no maze

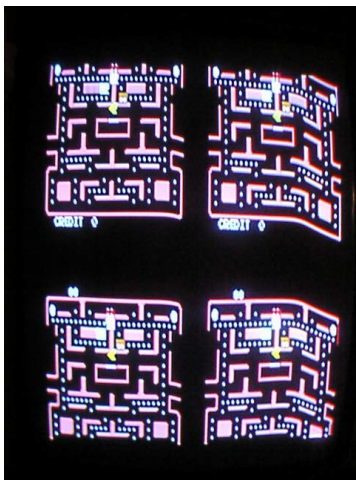
3S p11,12



Fliped words and graphics, not monsters.

4E p2,11 high = upside down.

4E p2,11 low = right side up.



4 Screens

3R p12,13,14 high



3 Screens

3N p5 high



Double characters

2F p10,13 high.

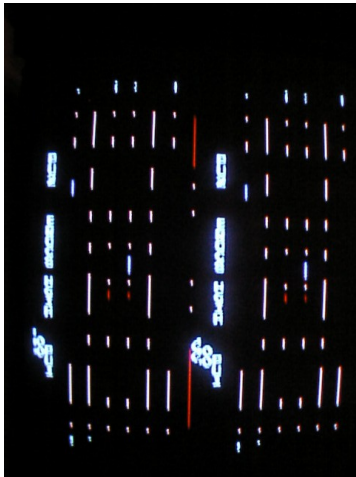
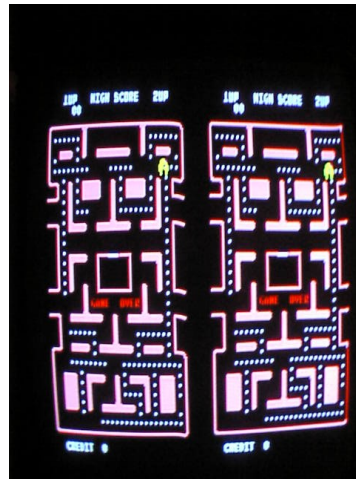
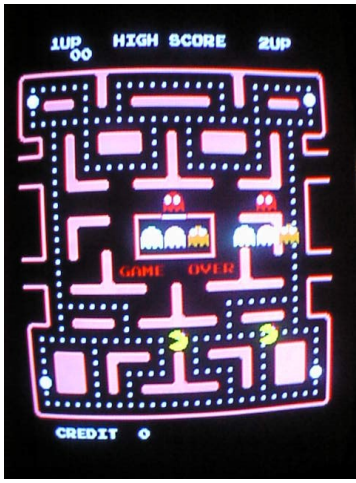


2 Screens, characters move quickly.

2S p12,13,14 low

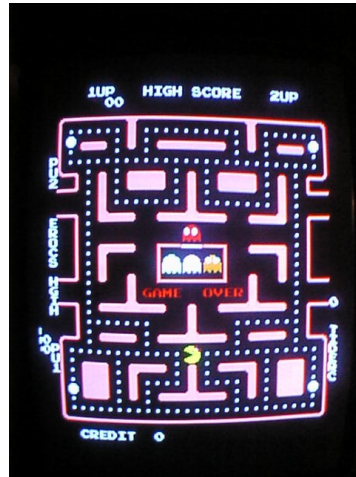
3N p 9 low

2R p 12,13,14 high



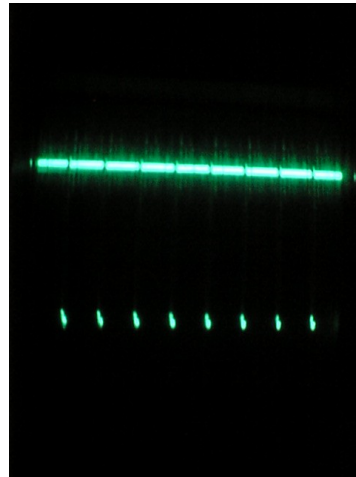
2 Screens, score & credit vertical. Vertical lines for maze.

2R p11 high.



Score & Credit also displayed vertically on left and right side of the screen.

5M p5 high.



Sync Output on Oscilloscope

Should be constant

.2V/div 50us/div