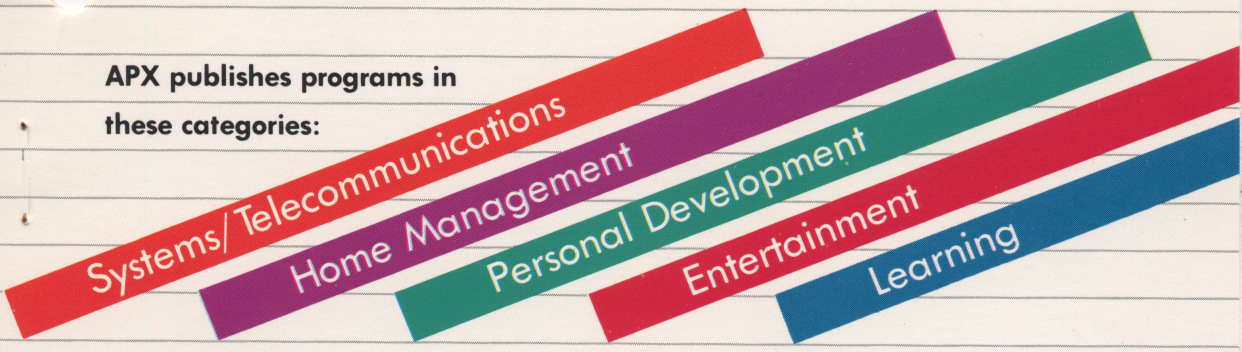
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COLOR ALIGNMENT GENERATOR

HOME MANAGEMENT

Use your computer to correct your TV's color
(ages 17 and up)

by Don Lee

Requires: ATARI BASIC Language Cartridge

Cassette version (1): (APX–10222)	ATARI 410 or 1010 Program Recorder 24K RAM
Diskette version (1): (APX–20222)	ATARI 810 or 1050 Disk Drive 32K RAM

Edition A

CONSUMER-WRITTEN PROGRAMS FOR

ATARI®

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ATARI Program Exchange

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Introduction

OVERVIEW

Convert your ATARI Computer into a versatile color alignment generator! The ATARI 400/800 computers can do wonderful things with color graphics, but some TV sets don't do them justice. The color may be off, or your screen may look off center: maybe short and fat at the bottom of the screen and tall and thin at the top of the screen.

With the help of this program, you can identify and correct many common TV alignment problems.

COLOR ALIGNMENT GENERATOR features a menu selection of over 17 patterns, including vertical and horizontal lines, cross-hatch and dot patterns, purity screens, color bars, a gray scale, and a sound test.

Warning. Don't remove the back of your TV set, even if it's unplugged. Always call a repairman if you determine that an adjustment inside the set is necessary.

REQUIRED ACCESSORIES

ATARI BASIC Language Cartridge

Cassette version

ATARI 410 or 1010 Program Recorder
24K RAM

Diskette version

ATARI 810 or 1050 Disk Drive
32K RAM

OPTIONAL ACCESSORIES

GTIA Chip

CONTACTING THE AUTHOR

Users wishing to contact the author may write to him at:

18010 15th N.E. No. 8
Seattle, WA 98155

Getting started

LOADING COLOR ALIGNMENT GENERATOR INTO COMPUTER MEMORY

1. Insert the ATARI BASIC Language Cartridge into the cartridge slot of your computer.

2. If you have the cassette version of COLOR ALIGNMENT GENERATOR:

   a. Have your computer turned OFF.

   b. Turn on your TV set.

   c. Insert the COLOR ALIGNMENT GENERATOR cassette into the program recorder's cassette holder and press REWIND on the recorder until the tape rewinds completely. Then press PLAY to prepare the program recorder for loading the program.

   d. Turn on the computer while holding down the START key.

   e. When you hear a beep, release the START key and press the RETURN key. The program will load into computer memory and start automatically.

If you have the diskette version of COLOR ALIGNMENT GENERATOR:

   a. Have your computer turned OFF.

   b. Turn on your disk drive.

   c. When the BUSY light goes out, open the disk drive door and insert the COLOR ALIGNMENT GENERATOR diskette with the label in the lower right-hand corner nearest to you. Close the door.

   d. Turn on your computer and your TV set. The program will load into computer memory and start automatically.

THE FIRST DISPLAY SCREEN

When the program has loaded into computer memory, the following screen appears:

```
          COLOR ALIGNMENT GENERATOR
            (c) 1983 BY DON LEE

DISPLAY MODE      DISPLAY CONTENT

  1 by 1          HORIZONTAL LINES
  3 by 3          VERTICAL LINES
  5 by 5          DOT PATTERN
                  CROSS HATCH
                  COLOR BARS
                  GRAY SCALE
                  SOUND TEST

  PRESS OPTION FOR MODE
  PRESS SELECT FOR CONTENT
  PRESS START TO BEGIN
```

Figure 1 First display screen

Using COLOR ALIGNMENT GENERATOR

MENU CHOICES

From the menu (Figure 1), you can press the OPTION key to select the display mode of 1 by 1, 3 by 3, or 5 by 5. This measures the number of lines or spaces displayed on the screen. For example, if you're displaying horizontal lines, you can choose 5 by 5 to see five spaces between the seven lines on the screen. The quick reference sheet, later in this manual, shows each option in detail.

Press the SELECT key to determine the display content, or the type of display.

When the cursor (a diamond-shaped marker) appears beside the two choices you want, press the START key.

If you leave the program on for a long time, you notice that the screen changes colors. Type any letter key to return to the original colors.

Note: Owners of black and white sets should turn to the black and white TV alignment procedure later in this manual.

COLOR TV ALIGNMENT

This procedure lets you make a general check of the fine tuning and alignment of your TV.

First, from the menu display (Figure 1), press the SELECT key six times to move the cursor to SOUND TEST and press the START key.

Turn up the sound on your TV.

Turn off the automatic frequency control (AFC) on the front of your TV and adjust the fine tuning for the best picture and best sounding middle C note.

Turn the AFC back on. While still in SOUND TEST, press the START key to turn the sound back off.

From the menu screen (Figure 1), press the OPTION key to select

5 by 5, and use the SELECT key to move the cursor on the right column to CROSS-HATCH. Then press the START key.

Adjust the vertical height and linearity controls on the back of your TV set to make all the rectangles on the screen approximately the same size.

Press the START key to get back to the menu (Figure 1).

BLACK AND WHITE TV ALIGNMENT

This procedure lets you make a general check of the fine tuning alignment of your black and white TV.

First, from the menu display (Figure 1), press the SELECT key six times to move the cursor to SOUND TEST and press the START key.

Turn up the sound on your TV.

Adjust the fine tuning for the best picture and best sounding middle C note. Press the START key to turn the sound back off.

From the menu screen (Figure 1), press the OPTION key twice to select 5 by 5, and use the SELECT key to move the cursor on the right column to CROSS-HATCH. Then press the START key.

Select 1 by 1 and CROSS-HATCH. Then press the START key.

Adjust the vertical centering, and if your set has one, the horizontal centering control, so that the cross-hatch pattern is centered on the screen. You find these controls on the back of the TV set.

Press the START key to get back to the menu (Figure 1).

GRAY SCALE ADJUSTMENTS

There is only one gray scale pattern in this program. To check your TV set, press the SELECT key until the cursor is beside GRAY SCALE and press the START key.

After a few seconds you see seven gray bars on a black screen. The darkest one is on the left, and the lightest one is on the right.

Adjust the contrast and brightness controls on the front of your TV set for the best transition from dark to light.

CHECKING FOR PINCUSHION

From the menu screen (Figure 1), press the OPTION key twice to select 5 by 5, and use the SELECT key to move the cursor on the right column to HORIZONTAL LINES. Then press the START key.

The lines should look straight and parallel to each other. But if they look bent, as in Figure 2, you have a pincushion problem.

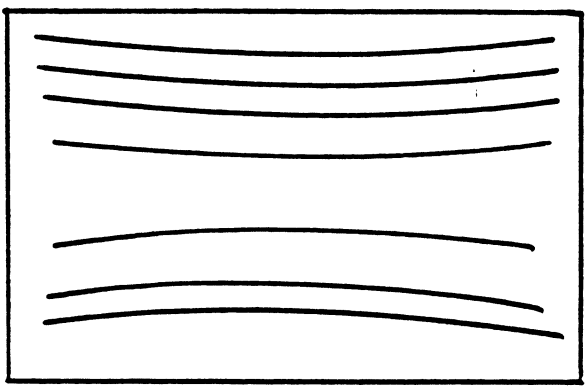


Figure 2 Pincushion display

If your display looks like Figure 2, you may want to call a TV repairman to make an adjustment.

Press the START key to return to the menu.

CHECKING FOR HUM BARS

From the menu screen (Figure 1), press the OPTION key twice to select 5 by 5, and use the SELECT key to move the cursor on the right column to VERTICAL LINES. Then press the START key.

If the screen has a thick horizontal bar rolling up or down the screen, as in Figure 3, you have sixty-cycle hum in your picture.

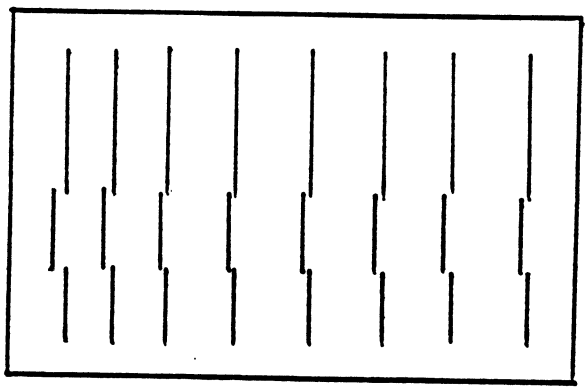


Figure 3 Sixty-cycle hum display

If your screen looks like this display, you may want to call your TV repair man to make an adjustment.

Press the START key to return to the menu screen.

CHECKING FOR PROPER CONVERGENCE

From the menu screen (Figure 1), press the OPTION key twice to select 5 by 5. Use the SELECT key to move the cursor on the right column to DOT PATTERN. Then press the START key.

Adjust the focus control on the back of your television for the sharpest picture.

The following diagrams show how to check the display at different distances. The color phosphors converge to white at normal viewing distance. All the dots on the screen should be white.

If you stand about three inches from the screen, you see that the white dots have turned into three color phosphors of blue, green, and red, as in the following diagram:

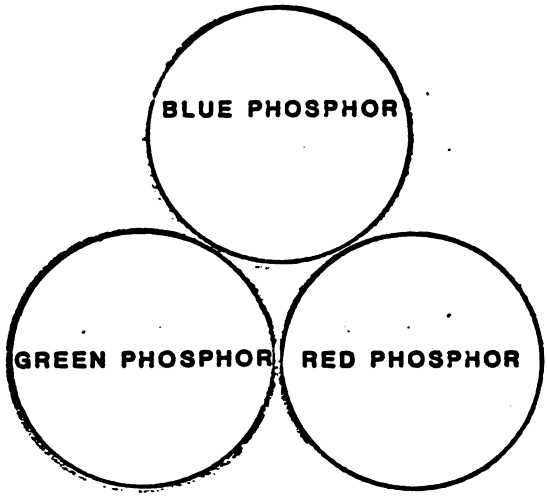


Figure 4 Convergence display at 3 inches

If you stand about one foot from the screen, the three color phosphors look like this:

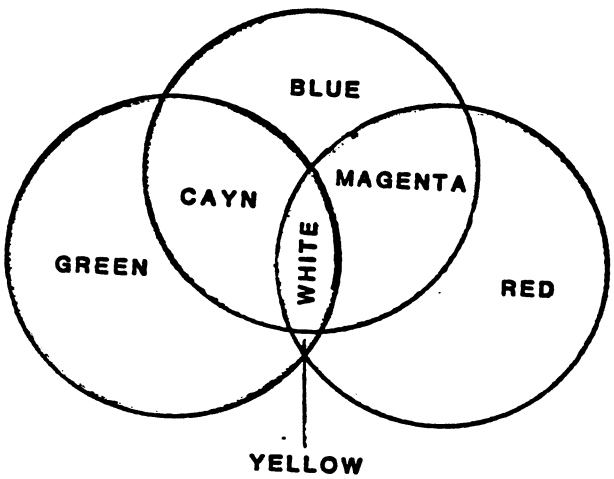


Figure 5 Convergence display at twelve inches

At normal viewing distance, the three color phosphors look like one white dot.

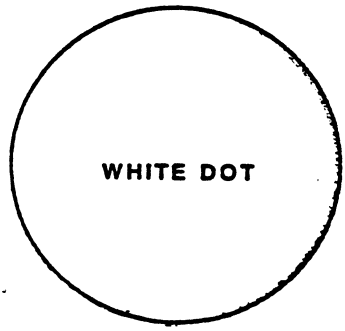


Figure 6 Convergence display at normal viewing distance

All the dots on the screen should be white.

If the dots in the center of the screen are colors other than white (Figure 7), you have a static convergence problem. If the problem is bad enough, you may want to call a TV repairman to adjust your set.

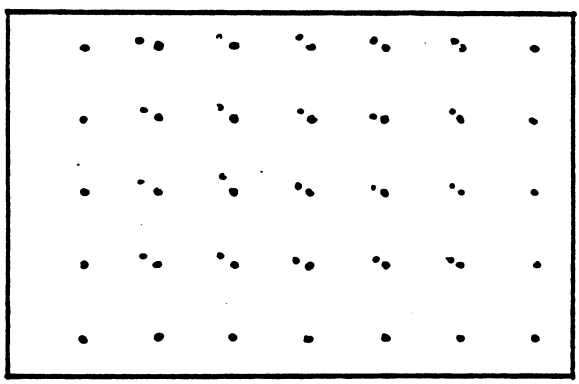


Figure 7 Static convergence problem

If the dots in the corners of the screen are colors other than white (Figure 8), you have a dynamic convergence problem. If the problem is bad enough, you may want to call a TV repairman to adjust the set.

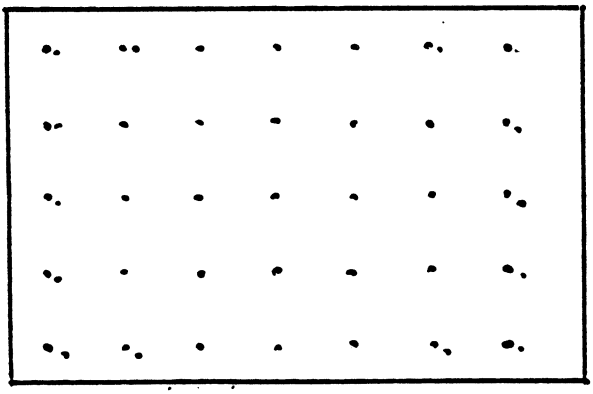


Figure 8 Dynamic convergence problem

Press the START key to return to the menu.

PURITY

We'll assume that the picture tube "CRT" is not magnetized, and all the stages of your receiver are working normally.

From the main menu (Figure 1) select 1 by 1 and COLOR BAR to cycle through all colors. The following prompt appears:

PRESS SPACE FOR COLOR
PRESS START FOR MENU
BLACK

First touch up the red, blue, and green controls on the back of your TV set for a black screen. Then, each time you press the SPACE BAR, the name of another color replaces the word "BLACK" and the screen changes color. The following colors appear in order:

RUST
RED-ORANGE
DARK-ORANGE
RED
DARK-LAVENDER
COBALT-BLUE
ULTRAMARINE BLUE
MEDIUM BLUE
DARK-BLUE
BLUE-GREY
OLIVE-GREEN
MEDIUM-GREEN
DARK-GREEN
ORANGE-GREEN
ORANGE

You can see if the colors all look "pure", i.e., if every portion of the screen, is the same color. If the TV color doesn't match the color at the bottom of the screen, touch up the red, blue, and green screen controls for the best overall match. Finally, BLACK reappears on the screen.

Most older color TV sets are partially magnetized in the corners of the screen. If the magnetism is severe, call a TV repairman.

COLOR ADJUSTMENTS

Press the START key to get to the menu.

Select COLOR BARS and 3 by 3 then press START. You now see three vertical color bars (red, blue, and green) on the screen.

Now with the automatic frequency control (AFC) turned off, adjust the color and tint/hue controls on the front of your TV set to get the correct colors.

Press the START key to get back to the menu (Figure 1).

Select COLOR BARS and 5 by 5. Then press the START key. The following screen displays:

PRESS OPTION FOR NTSC PATTERN
PRESS SELECT FOR RAINBOW PATTERN

PRESS THE OPTION key to get the standard National Television

Service Council (NTSC) color bars. After a moment you see (from left to right) green, yellow or yellow-orange, red, magenta, blue, green, and magenta color bars.

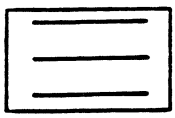
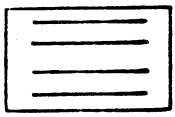
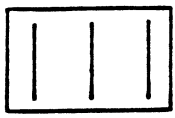
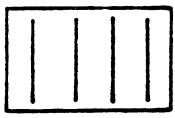
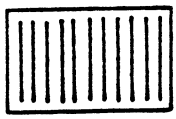
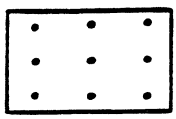
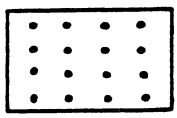
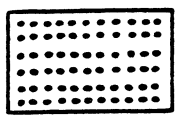
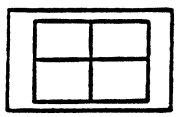
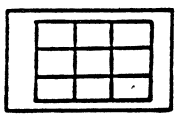
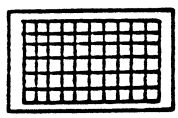
Touch up your color and tint/hue controls so that the colors look close to what they're supposed to be. You may have to adjust the brightness control.

If you have a GTIA chip, try the rainbow pattern: a total of 12 color bars that progress from yellow-orange to red to blue to green.

When you've finished adjusting the color, reconnect the antenna.

The quick reference sheet on the next page shows the options available to you from the menu.

Quick reference sheet

	1 by 1	3 by 3	5 by 5
Horizontal lines			
Vertical lines			
Dot patterns			
Cross-Hatch			
Color bars	16 PURITY PATTERNS	3 COLOR BARS	NTSC STANDARD COLOR BARS RAINBOW KEY COLOR BARS REQUIRES GTIA
Gray scale	7 GRAY BARS	7 GRAY BARS	7 GRAY BARS
Sound test	MENU &SOUND	MENU &SOUND	MENU &SOUND

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1. Name and APX number of program.

   Color Alignment Generator (222)

2. If you have problems using the program, please describe them here.

3. What do you especially like about this program?

4. What do you think the program's weaknesses are?

5. How can the catalog description be more accurate or comprehensive?

6. On a scale of 1 to 10, 1 being "poor" and 10 being "excellent", please rate the following aspects of this program:

   _____ Easy to use
   _____ User-oriented (e.g., menus, prompts, clear language)
   _____ Enjoyable
   _____ Self-instructive
   _____ Use (non-game programs)
   _____ Imaginative graphics and sound

7. Describe any technical errors you found in the user instructions (please give page numbers).

8. What did you especially like about the user instructions?

9. What revisions or additions would improve these instructions?

10. On a scale of 1 to 10, 1 representing "poor" and 10 representing "excellent", how would you rate the user instructions and why?

11. Other comments about the program or user instructions:

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[seal here]