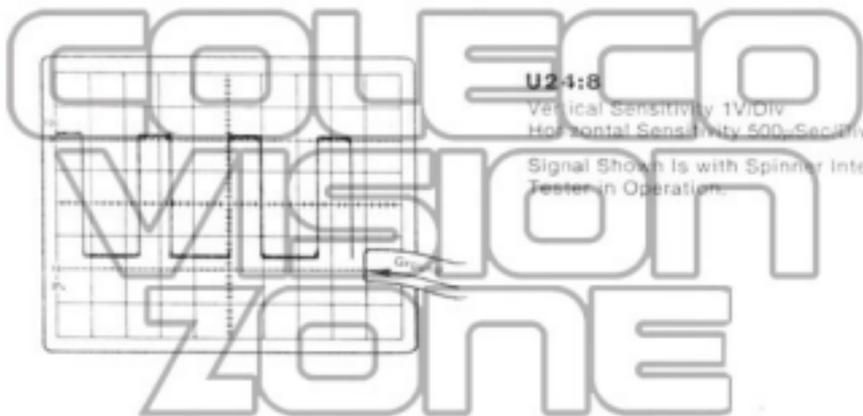

**U23:11 — Y VIDEO**

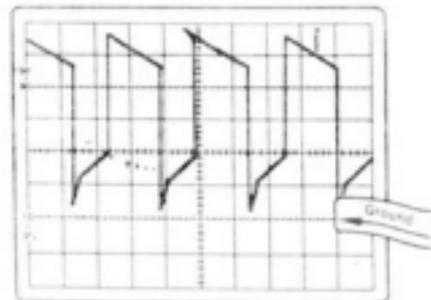
Vertical Sensitivity 1V/Div

Horizontal Sensitivity 0.2mSec/Div

 Signal Shown Is During Blue Menu  
Screen of Game Cartridge.

**U24:8**

Vertical Sensitivity 1V/Div

Horizontal Sensitivity 500µSec/Div

 Signal Shown Is with Spinner Interface  
Tester in Operation.

**U24:9**

Vertical Sensitivity 1V/Div

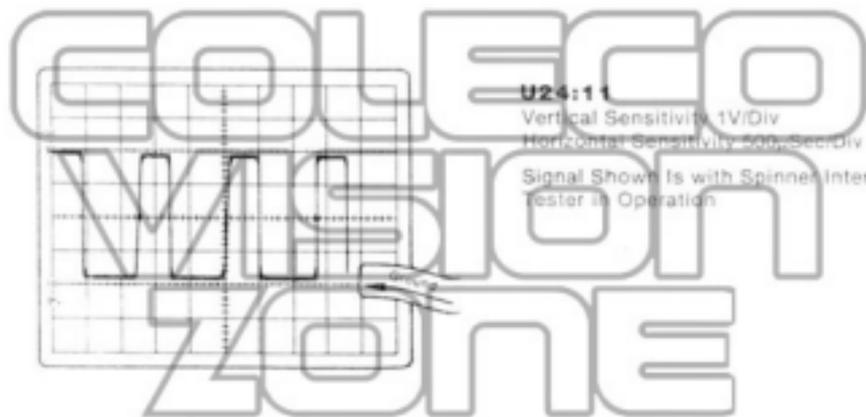
Horizontal Sensitivity 500µSec/Div

 Signal Shown Is with Spinner Interface  
Tester in Operation


**U24:10**

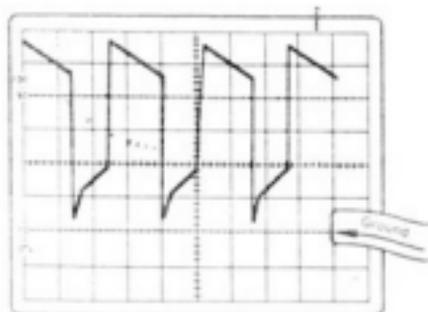
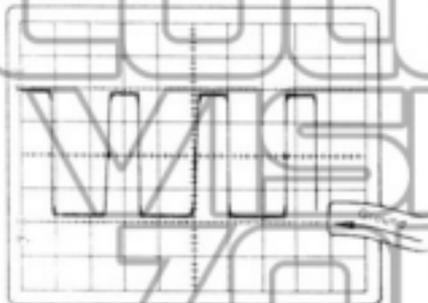
Vertical Sensitivity 1V/Div  
Horizontal Sensitivity 500 $\mu$ Sec/Div

Signal Shown Is with Spinner Interface Tester in Operation


**U24:11**

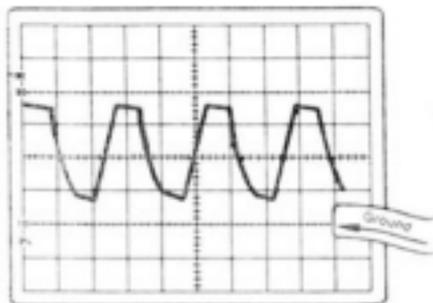
Vertical Sensitivity 1V/Div  
Horizontal Sensitivity 500 $\mu$ Sec/Div

Signal Shown Is with Spinner Interface Tester in Operation


**U24:12**

Vertical Sensitivity 1V/Div  
Horizontal Sensitivity 500 $\mu$ Sec/Div

Signal Shown Is with Spinner Interface Tester in Operation



**U24:13**

Vertical Sensitivity 1V/Div  
 Horizontal Sensitivity 500 $\mu$ Sec/Div

Signal Shown Is with Spinner Interface  
 Tester in Operation.

# COLECO VISION ZONE

Pin 1 - 12 VDC, Pin 2 - 5VDC, Pin 3 - 12 VDC, Pin 4 - 12 VDC, Pin 5 - 12 VDC, Pin 6 - 12 VDC, Pin 7 - 12 VDC, Pin 8 - 12 VDC, Pin 9 - 12 VDC, Pin 10 - 12 VDC, Pin 11 - 12 VDC, Pin 12 - 12 VDC

## Technical Tips

### Black Out on Screen

If the screen blacks out after the game has been played for a short interval check C106 for proper polarity. If polarity is wrong replace C106.

### Purple Monkey

In Donkey Kong, if the monkey, Mario and the barrels are purple, rather than their normal colors, replace U9.

### Joystick Game Selection

If the keypad does not control the game selection, only the joystick can be used to select games, replace U6.

### Channel 3 But Not Channel 4

Channel 3 operates normally but channel 4 works only if the game is turned off and then turned back on again, (or vice versa) replace RF board.

### Not All Cartridges Function

Game does not accept all and/or any cartridges. Examine C70 for mechanical obstructions, is it flopped over flat on board? Replace U5.

### Vertical Lines

Vertical lines on background rather than solid blue background with no lines. Replace C106. If not, try U9 or U5. C106 is the suspect.

### Skips Menu

Menu is skipped. This is the blue screen with skill levels. Check pins 3-9 of U18 with DVM. If any pin is below 2.2VDC change U18. Check pins 2-8 of U19 with DVM. If any pin is below 2.2VDC, change U19.

### No Explosion

If there is no explosion, a sound testing the noise generator, on the final test, replace U20.

### 12 VDC Is Shorted to -5VDC

Examine WJ2 to see if it has shorted to adjacent test points.

### No RF Voltage

If there is no voltage to RF board, check WJ2.

### No Color

If color has disappeared, check frequency at J4 Pin 8. Correct frequency is 3.57954 MHz  $\pm$  100 Hz. If the frequency is incorrect, check the clock circuit.

### Double Image

Replace U9 for double images.

### Wavy Picture

If the picture is wavy, ensure that R62 is 270 $\Omega$  and C90 is 120pF. If they are incorrect, replace them. Check Q2, if it is an ITT transistor, replace it.

### Incorrect Scoring

If scoring is not working properly, replace U3 and/or U4.

### Wrong Frequency

3.579 MHz clock is the wrong frequency. If U22 is a Texas Instrument I.C., replace it.

### Bad Spinner Interface

Spinner interface is not working. If U24 is a Texas Instrument I.C., replace it.

### Slow Game

If game is running abnormally slow, replace U20.

### Crambled Picture

If the following images appear on your screen (at this point no cartridge or expansion module is being used) rather than "ColecoVision Presents" make adjustments as directed below each example.



**Replace U10**



**Replace U11**

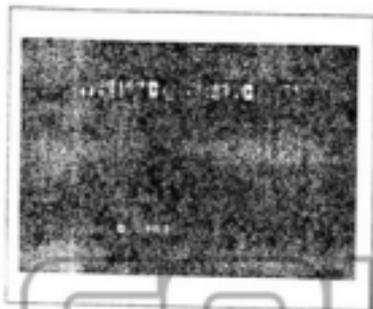


**Replace U12**

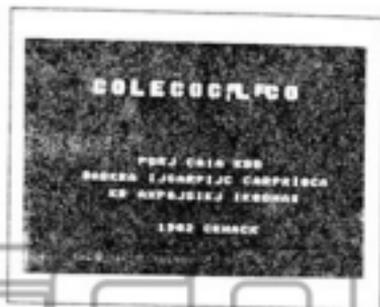
*check cartridge  
 each screen*



**Replace U13**



**Replace U14**



**Replace U15**



**Replace U16**



**Replace U17**

## Glossary

**Active High**—A signal is considered active high when the true state of the signal is high.

**Active Low**—A signal is considered active low when the true state of the signal is low.

**CAS**—Column Address Strobe—Used to inform VRAM that the address on the bus is the column of the matrix.

**CPU**—Central Processing Unit

**CSR**—Chip Select Read—The VDP sends data onto the data bus when CSR is active (low).

**CSW**—Chip Select Write—The VDP writes data from the data bus into internal registers when CSW is active (low).

**CS1-CS4**—Chip Select 1-4—Used to select separate IC's inside the cartridge.

**Data Address Bus**—a wire or group of wires used to carry data to or from a number of different locations.

**IC**—Integrated Circuit—a combination of interconnected circuit elements inseparably associated on or within a continuous substrate.

**Memory Bus**—the CPU register in a computer, which holds the address of the memory location being accessed.

**Mode A0**—A control signal used by the VDP to select data entry or exit point. If high, the data will be stored or retrieved from internal registers. If low, data will be stored into or retrieved from VRAM.

**NMI**—Non Maskable Interrupt—The VDP sends an NMI signal to the CPU every 1/60 second (refresh rate of TV).

**NOP**—No Operation—An instruction for a computer to do nothing but process the next instruction in sequence.

**Pixel**—The smallest point on the television screen that can be independently controlled.

**Planes**—Same as geometric planes, provide background, borders, etc.

**RAM**—Random Access Memory—A memory that can be written into or read by locating any data address.

**RAS**—Row Address Strobe—Used to inform VRAM that the address on the bus is the row of the matrix.

**RF Modulator**—Combines video and audio information into a carrier wave to transport it to television receiver.

**Sprite**—An object whose pattern is relative to a specified X, Y coordinate and whose position can therefore be controlled by that coordinate with a positional resolution of one pixel.

**Tri-State**—Logic systems utilizing three conditions on one line; a definitely applied high voltage (logic 1); a definite low voltage (logic 0); and an open circuit of undefined state, permitting another part of the circuit to determine whether the line will be high or low.

**VRAM**—Video RAM—refers to the dynamic RAMs that connect to the VDP and whose contents define the TV image.

**Updates**

**Subject:** First Update  
**Date:** March 1, 1983

An example of the ColecoVision updates that will be provided to you as they occur. They should be placed in this section for quick referral.

COLECO  
VISION  
ZONE