

Connectors

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
J1	30 pin, cartridge connector	R75451
J2	60 pin, expansion port connector	Part of Logic Board
J3	4 pin, power connector	R75458
J4	8 pin riser	Order RF board
J5	9 pin "D", handcontrol connector	R75450
J6	9 pin "D", handcontrol connector	R75450

Crystals

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Y1	7.15909 MHz crystal	R73276

Diodes

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
CR1	Signal diode	R57188
CR2	Signal diode	R57188
CR3	Not used	
CR4	Not used	
CR5	Not used	
CR6	Not used	
CR7	Not used	
CR8	Not used	
CR9	Tuner diode	Order RF board

Zener Diodes

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
ZR1	6.2V zener	Order RF board

Inductors

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
L1	Not used	
L2	10 μ H postage stamp	R73273
L3	10 μ H postage stamp	R73273
L4	10 μ H postage stamp	R73273
L5	10 μ H $\frac{1}{2}$ W	R73274
L6	10 μ H $\frac{1}{2}$ W	R73274
L7	120 μ H postage stamp	R73277
L8	120 μ H postage stamp	R73277
L9	43 μ H postage stamp	R73278
L10	10 μ H postage stamp	R73273
L11	Adjustable sound tank coil	Order RF board
L12	2 $\frac{1}{2}$ turn	Order RF board
L13	6 turn	Order RF board
L14	2.7 μ H postage stamp	R73275
L15	43 μ H, postage stamp	R73278
L16	.7 μ H	Order RF board
L17	43 μ H postage stamp	R73278

Integrated Circuits

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
U1	Z-8CA microprocessor	R73069
U2	Masked ROM	R73108
U3	1K x 4 RAM	R73071
U4	1K x 4 RAM	R73071
U5	3 to 8 decoder	R73072
U6	3 to 8 decoder	R73072
U7	Hex inverter, open collector	R73073
U8	Dual "D" flip-flop	R73074
U9	Video display processor	R73075
U10	16K x 1 video RAM	R73076
U11	16K x 1 video RAM	R73076
U12	16K x 1 video RAM	R73076
U13	16K x 1 video RAM	R73076
U14	16K x 1 video RAM	R73076
U15	16K x 1 video RAM	R73076
U16	16K x 1 video RAM	R73076

Integrated Circuits

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
U17	16K x 1 video RAM	R73076
U18	Octal buffer	R73077
U19	Octal buffer	R73077
U20	Sound generator	R73078
U21	RF modulator	Order RF board
U22	Hex inverter	R73079
U23	CMOS quad bilateral switch	R73030
U24	Quad nand gate	R73113
U25	22K Ω resistor pack	R73114
U26	22K Ω resistor pack	R73114

Resistors

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
R1	1.5K Ω carbon film, 1/4W	R58286
R2	Not used	
R3	Not used	
R4	Not used	
R5	330 Ω carbon film, 1/4W	R57269
R6	620 Ω carbon film, 1/4W	R74310
R7	91K Ω carbon film, 1/4W	R74292
R8	3.3K Ω carbon film, 1/4W	R58446
R9	1M Ω carbon film, 1/4W	R57570
R10	3.3K Ω carbon film, 1/4W	R58446
R11	180 Ω carbon film, 1/4W	R58049
R12	3.3K Ω carbon film, 1/4W	R58446
R13	1.1K Ω carbon film, 1/4W	R58441
R14	3.3K Ω carbon film, 1/4W	R58446
R15	2.7K Ω carbon film, 1/4W	R74004
R16	3.3K Ω carbon film, 1/4W	R58446
R17	3.3K Ω carbon film, 1/4W	R68446
R18	1.8K Ω carbon film, 1/4W	R58007
R19	1.8K Ω carbon film, 1/4W	R58007
R20	1.8K Ω carbon film, 1/4W	R58007
R21	1.5K Ω carbon film, 1/4W	R58286
R22	120 Ω carbon film, 1/4W	R74060
R23	120 Ω carbon film, 1/4W	R74060

Resistors

REFERENCE/ DESIGNATOR	DESCRIPTION	PART NUMBER
R24	100K Ω carbon film, 1/4W	R57602
R25	1.5K Ω carbon film, 1/4W	R58286
R26	470 Ω carbon film, 1/4W	R74008
R27	100K carbon film, 1/4W	R57602
R28	Not used	
R29	Not used	
R30	Not used	
R31	Not used	
R32	Not used	
R33	Not used	
R34	3.3K Ω carbon film, 1/4W	R58446
R35	3.3K Ω carbon film, 1/4W	R58446
R36	Not used	
R37	3.3K Ω carbon film, 1/4W	R58446
R38	Not used	
R39	1K Ω carbon film, 1/4W	R57268
R40	390 Ω carbon film, 1/4W	R74298
R41	390 Ω carbon film, 1/4W	R74298
R42	390 Ω carbon film, 1/4W	R74298
R43	10K Ω carbon film, 1/4W	Order RF board
R44	Not used	
R45	Not used	
R46	22K Ω carbon film, 1/4W	Order RF board
R47	Not used	
R48	470K Ω carbon film, 1/4W	R74300
R49	10K Ω carbon film, 1/4W	R57266
R50	8.2K Ω carbon film, 1/4W	Order RF board
R51	4.7K Ω carbon film, 1/4W	Order RF board
R52	1K Ω carbon film, 1/4W	Order RF board
R53	1K Ω carbon film, 1/4W	Order RF board
R54	1K Ω carbon film, 1/4W	Order RF board
R55	1.8K Ω carbon film, 1/4W	Order RF board
R56	82 Ω carbon film, 1/4W	Order RF board
R57	240 Ω carbon film, 1/4W	Order RF board
R58	240 Ω carbon film, 1/4W	Order RF board
R59	Not used	
R60	47 Ω carbon film, 1/4W	R74294
R61	1K Ω carbon film, 1/4W	R57268
R62	270 Ω carbon film, 1/4W	R74034

Resistors

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
R63	Not used	
R64	1K Ω carbon film, 1/4W	R57268
R65	270 Ω carbon film, 1/4W	R74034
R66	Not used	
R67	270 Ω carbon film, 1/4W	R74034
R68	47 Ω carbon film, 1/4W	Order RF board
R69	22K Ω carbon film, 1/4W	R57920
R70	10K Ω carbon film, 1/4W	R57266
R71	22K Ω carbon film, 1/4W	R57920
R72	10K Ω carbon film, 1/4W	R57266
R73	47K Ω carbon film, 1/4W	R57266
R74	39K Ω carbon film, 1/4W	Order RF board
R75	Not used	
R76	1.8K Ω carbon film, 1/4W	R58007
R77	21K Ω carbon film, 1/4W	R57920
R78	1K Ω carbon film, 1/4W	R57268
R79	Optional trim resistor	
R80	39K Ω carbon film, 1/4W	Order RF board

Switches

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
S1	Reset switch	R74933
S2	On/off switch	R74932
S3	Channel selector switch	Order RF board

Transistors

<u>REFERENCE/ DESIGNATOR</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Q1	Not used	
Q2	PNP transistor	R74983
Q3	PNP transistor	R57298
Q4	NPN transistor	R74977
Q5	NPN transistor	R74977
Q6	PNP transistor	R57298

Miscellaneous

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Power supply	S55416
Logic board	S75747
RF board	S75748
Donkey Kong cartridge	S78021
Handcontroller	S78022
Switch box assembly	R74606
Game cable	R75315
RF box sideshield	F74516
RF box cover	F74519
Heat sink (for UB)	F74937
Loctite 420 adhesive	R75962
Bottom shield assembly	S57048
Top housing assembly	S92049
Cartridge door assembly	S78016
Expansion port door	F74751
Front console label	R77390
Top console label	R77391
Top shield	R74514
Bottom housing	R74747
On/off switch cap	R74749
Reset switch cap	F74750
Phillips pan head screws	M65319
Rubber foot	R75973
Instructions for fine tuning	R74888
Warranty card, console	R78074B
Owner's manual	R78200A
Donkey Kong instruction manual	R78214
Retail carton	R78080
Top styrofoam insert	R79962
Bottom styrofoam insert	R79963

Troubleshooting Equipment Requirements

In addition to having good ColecoVision peripherals (power supply, handcontroller, RF switch box, and coax game cable), the following test equipment is required for ColecoVision repair —

- A 35 MHz oscilloscope
- An 80 MHz frequency counter
- An RF preamp capable of amplifying RF signals up to 80 MHz. This unit will be in series with the game and the frequency counter. This combination tests carrier frequency.
- A properly adjusted color television.
- A diagnostic cartridge.
- A ColecoVision Repair Manual.
- A spinner interface tester.

Diagnostic Cartridge

~~The cartridge was developed to aid in the testing of ColecoVision. Game cartridges should not be substituted to test the ColecoVision games, as they do not test as much circuitry as the diagnostic software.~~

This test is to be used in conjunction with the flow charts located at the end of this section. If a malfunction occurs while operating the diagnostic cartridge, refer to flow charts for troubleshooting procedures.

The first portion of the test is to check the internal ROM and RAM. The screen will indicate whether one or both of these tests have passed. If ROM is bad, change U2. If RAM is defective, change U3 or U4.

The video test follows. Simply compare the screen to the color pictures provided on page V43. If the screen does ~~not compare~~ with the pictures, ~~follow the~~ directions in the flow charts.

The sound test is the next step. ~~All three of the~~ sound generators are tested first, then the noise generator is tested. The test uses audio tones. Game cartridges do not consistently use all the generators so it is essential that the diagnostic cartridge is used, ensuring a thorough check of the audio portion of the game. If only one sound is missing replace U20.

The final test is the handcontroller test. It indicates each handcontrol function on the screen. Each function will blank out after that function has been selected and is performing correctly. It also provides a method of checking the spinner interface. This is accomplished by plugging the spinner interface tester into player number one, then player number two. After turning the tester on, an arrow should flash. Changing the direction switch will cause the arrow to flash in the opposite direction.

Explanation of Troubleshooting

This manual is written as a guideline to aid in troubleshooting. It will lead the repair person to a level where individual isolation techniques can take over and diagnose the failure.

At this point, two assumptions have been made: the peripherals (power supply, controllers, RF switch box, RF cord) are good, and the landlines and solder connections are good. The peripherals can be tested by substitution. Faulty landlines and solder connections can be found by a careful visual inspection.

The troubleshooting guide uses flow charts, signal pictures and a list of technical tips. The signal pictures demonstrate how the signals should look in a perfect situation with an explanation and methods of examining each signal.

Following is a description of each symbol used in the flow charts.

Decision Block — Carefully read the question inside the block. Answer it by a simple yes or no. Follow the appropriate answer to the next block. Signals to be examined are designated by an IC number, a color followed by a pin number (U9 3B means U9 Pin 3B).

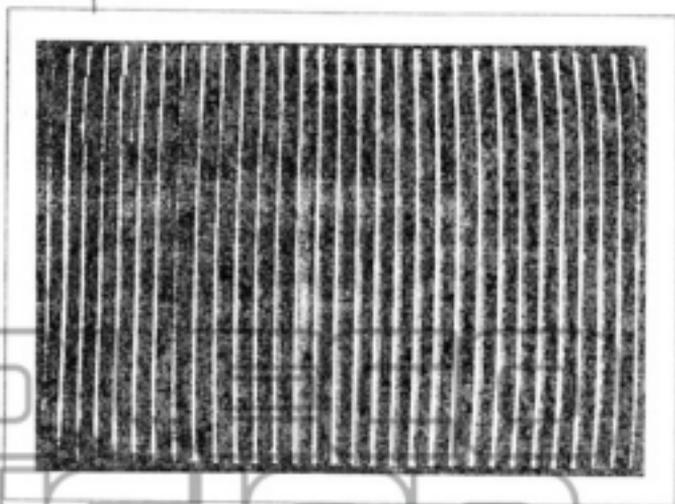
Process Block — Perform the operation stated in the block and proceed to the next step.

Subroutine Block — Follow specific direction, usually directing repair person to proceed onto an additional page for more detailed instructions.

Return Block — Return to beginning of flow charts.

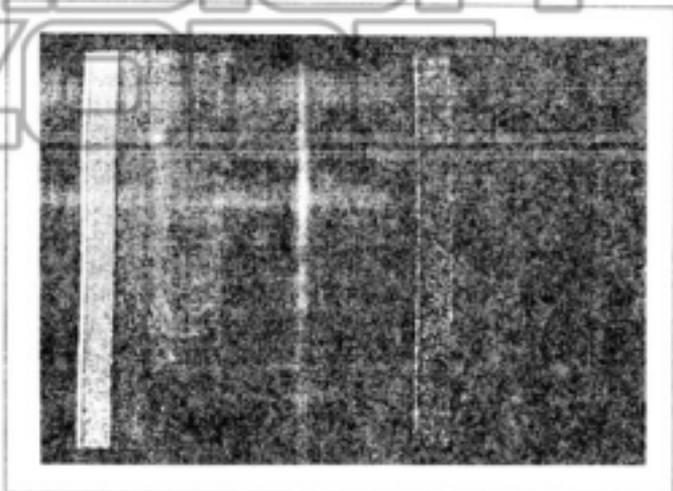
Go to Sheet 3

Video Test



COOLVISION
Z

Color Test



Troubleshooting Flow Charts

Sheet 1	Overview Test
Sheet 2	No Picture
Sheet 3	Scrambled Picture
Sheet 4	Bad Color
Sheet 5	Miscellaneous Picture Problem
Sheet 6	Audio
Sheet 7	Power Supply
Sheet 8	Logic Section
Sheet 9	Video Section
Sheet 10	RF
Sheet 11	3.58 MHz Clock
Sheet 12	10.7 MHz Clock
Sheet 13	U6
Sheet 14	Handcontroller
Sheet 15	Spinner Interface

