

THE COMMODORE DIAGNOSTICIAN II™

A Newly Revised Symptomatic Chart for Diagnosing Faulty IC Components on
Commodore Computers and Peripherals

(Included are the Latest Commodore Combination Chips / ROM Changes and Upgrades)

RELEASED SEPT. 1989



SERIAL NUMBER 17015

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COMMODORE C-64 (ALL MODELS
INCLUDING C-128)

Reference Aid # 6

By IAN PERRY, MA, PO Box 48, Kyneton
Victoria 3444, Australia

SYMPTOMS

COMPONENTS	6510 MICROPROCESSOR	6526 COMPLEX INTERFACE ADP	6581 SOUND INTERFACE DEVICE	6567 VIC NTSC. (6569 PAL)	82S100 PROGRAMMABLE LOGIC ARRAY	901226 BASIC ROM	901227 KERNAL ROM	901225 CHARACTER ROM	8701 IC CLOCK GENERATOR	2114 COLOR RAM	4164 MEMORY RAM	POWER SUPPLY
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Cursor jumps back to home position.	•					•						
Abnormal colors appear in the letters.				•				•				
Different characters are displayed, cursor is locked when turned on & off.	•		•	•								
The 'RESTORE' key does not work.	•					•						
Cursor stops blinking when system warms up.		•										
Keyboard does not operate correctly when system warms up.		•				•					•	
Syntax error.					•					•		
Cursor disappears when cassette is plugged in.	•											
Cassette runs extremely slow, the program seems to load but will not run.	•											
Blank screen on power up.	•			•	•	•		•		•	•	
Intermittent blank screen or graphics.	•		•	•						•	•	
Powers up when 'PRESS PLAY ON TAPE' message and the display blanks.	•					•						
When 'RETURN' is pressed after a run command, cursor returns to home position.	•			•	•	•				•		
Poke command does not work.					•							
Joystick does not operate correctly.		•										
Unreadable letters appear on screen.			•				•					
Keyboard is unresponsive.		•										
Graphic characters instead of letters displayed.			•	•			•					
'DEVICE NOT PRESENT' error is displayed, when disk is used.	•	•										
Disk drive continues to search when trying to load.	•	•										
Incorrect screen color or no color at all.			•	•					•			
Cassette does not save.	•											
Flashing colors or blocks.				•				•				
Game cartridge does not function.				•		•						
User port does not function (eg. modem).		•										
No sound.			•									
Missing notes.			•									
Game paddles do not function.			•									
Long programs do not load.	•			•						•		
Unit completely dead (30-40% possibility PLA).	•		•	•			•			•	•	
Wavy screen after system warms up.			•									
'OUT OF MEMORY' error on power up.										•		
After a few minutes, characters all over screen.		•	•	•							•	

★ CROSS REFERENCE ★

★★ FIND FAULTY COMPONENTS ABOVE, MATCH TO CROSS REFERENCE BELOW USING YOUR MODEL PC BOARD ★★

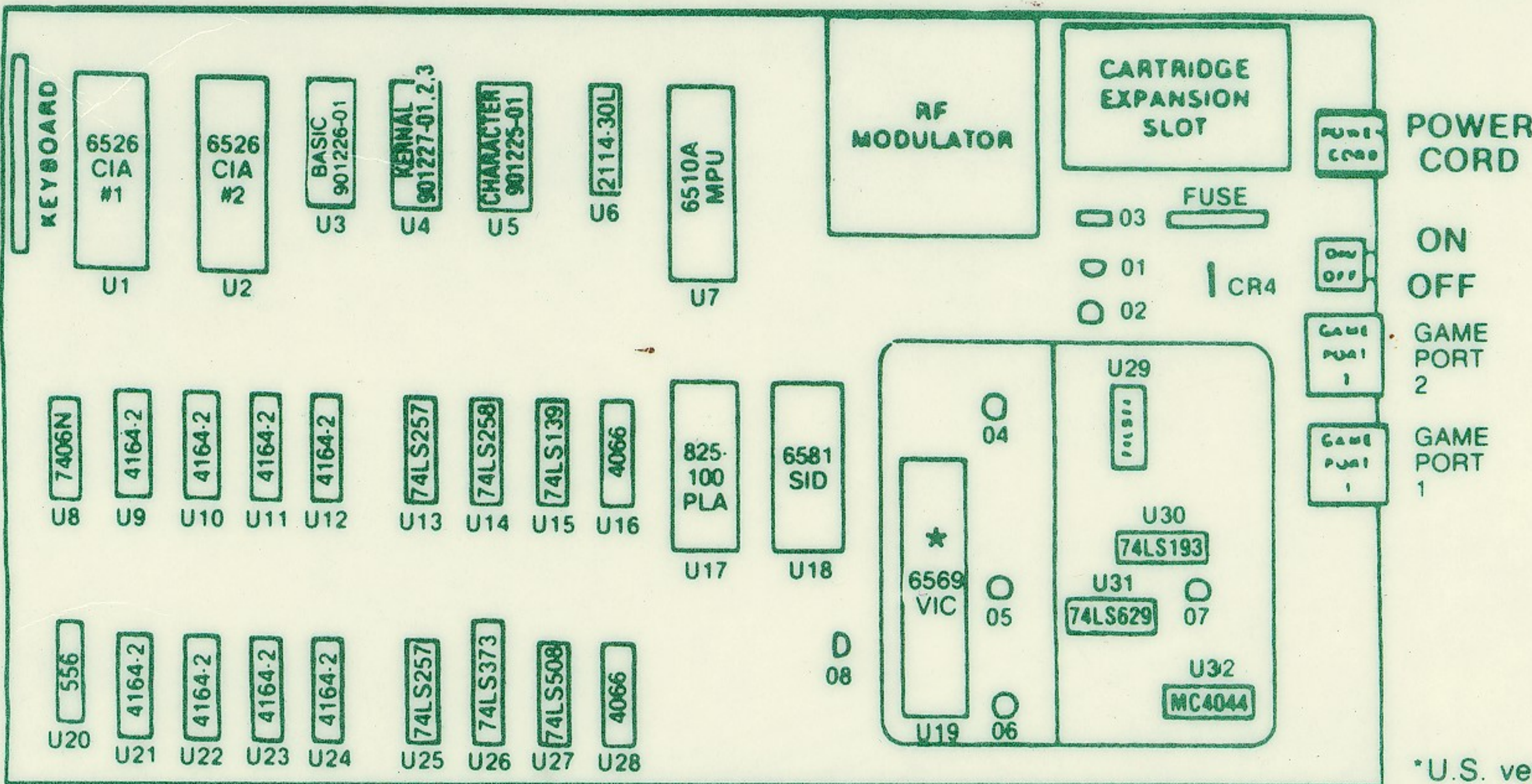
COMMODORE C64/64C COMPONENTS	PC BOARD LOCATION	COMMODORE C64E COMPONENTS	PC BOARD LOCATION	COMMODORE C128 COMPONENTS	PC BOARD LOCATION	COMMODORE C128D COMPONENTS	PC BOARD LOCATION
6510	U7	8500	U6	8502	U6	8502	U6
6526	U1, U2	6526	U1, U2	6526	U1, U4	6526	U1, U4
6581	U18	6581	U9	6581	U5	8580	U5
6567	U19	8562	U7	8563 (80 COL)	U22	8564	U21
82S100	U17	251715	U8	8564	U21	8568 (80 COL)	U22
901226	U3	251913	U4	8721, 8722	U11, U7	8721, 8722	U11, U7
901227	U4	251913	U4	251913	U32	251913	U32
901225	U5	901225	U5	251913	U32	251913	U32
8701	U31	8701	U20	390059	U18	390059	U18
2114	U6	2114	U19	8701	U28	8701	U28
4164	U9, U12, U21, U24	4164	U9, U10	2016	U19	2016	U19
				4164	U38, U45, U46, U53	4164	U23, U25, U38, U40

Note — ROM chips are 901226-01 (Basic), 901227-03 (Kernal), 901225-01 (Character). PCB Assy. 32629801 & 250407. Do not use 8701 IC.

COMMODORE 1541 FLOPPY DRIVE

SYMPTOMS	POSSIBLE SOLUTION							
	6502	6522	325302	901229	LM311	592	9602	325572
Error LED blinks on power up.	•		•					
Searching with no red LED.			•	•				
Drive fails to read.					•	•	•	•
Fails to format.		•						•
Stepper motor does not step.		•						•
Will not save when drive heats up.	•	•						
Lights stay on, motor runs continuously.	•			•				
No LED's on power up.	Check power supply voltage, Check CR3, VR2, VR1, CR1.							
Drive motor runs continuously with no green LED.	Check 5VLT on power supply.							
Drive motor runs continuously with green LED light on.	Check UC1, UD2.							
Flashing light on and off during loading, load is intermittent.	Check alignment, defective disk.							
Message of 'FILE NOT FOUND' is displayed.	Clean drive head w/ alcohol, check alignment.							
Drive speed will not stabilize.	Check PCB speed, (LAG570 - for Newt. Drive).							
Displays read ERROR 21-29 (Disk Errors).	Check diskette, drive motor.							
Write protect on ERROR #25.	Check WPS, UA1, Write Protect Switch, alignment.							
Track 18 Display 21 read ERROR.	Check alignment, UC2, UE6, check R/W head.							
Will not load certain programs.	Check alignment, track 0 stop.							

C-64 CHIP LAYOUT



*U.S. version of the 6569 is 6567.

- HINTS:**
- 1) Over 50% of faulty computers are caused by the external power supply delivering excessive voltages.
 - 2) Check power supply to see if your unit has a fuse which could be changed.
 - 3) Check all interconnecting cables.

AVAILABLE DIAGNOSTICS

- COMPLETE SCHEMATICS
- COMMODORE SERVICE MANUALS
- "TECH" UPGRADE/INFO NEWSLETTER
- PARTS REPLACEMENT/UPGRADE IC LISTINGS
- DIAGNOSTIC TESTERS/EVALUATORS

REPLACEMENT CHIPS (IC's) CAN BE OBTAINED REASONABLY FROM:

USE YOUR COMMODORE II SERIAL NUMBER TO OBTAIN A DISCOUNT ON ALL REPLACEMENT/UPGRADE CHIPS.

Disclaimer: I hereby disclaim any responsibility for the accuracy of the information on this chart and disclaim all liability for the use thereof. This chart is supplied as an adjunct to Commodore computer users. It is intended for assistance in isolating a faulty chip and is to be used by persons experienced in the repair of computers and computer related devices.