

C64 CHIPS and COMMON SYMPTOMS
latest additions and corrections: 9-28-07

- U1 906108-02 (6526) CIA
Startup screen normal, but no cursor. No keyboard or control port access. Partial failure: some keys or joystick positions don't work, one character appears ahead of startup cursor, screen fills at startup as if keys are being held down. Cartridge works.
- U2 906108-02 (6526) CIA
Startup screen normal. No serial or user port access. "File not found" error when drive accessed. Cartridge works. Characters sometimes will show as blocks on startup screen.
- U3 901226-01 BASIC ROM
Blank screen w/ border. Cartridge works.
- U4 901227-03 (early -02) KERNAL ROM
Blank screen, no border. Most cartridges don't work but a few game carts (example: CBM Kickman and Jupiter Lander) will work with a normal screen because they bypass the Kernal ROM.
- U5 901225-01 CHARACTER ROM
Normal startup border, but "garbage" characters where startup page characters should be. Cartridge works.
- U6 2114 SRAM (COLOR RAM)
Startup screen shows flickering characters with shimmering colors. check also PLA U17.
- U7 906107-01 (6510) MPU
Blank screen, no border. Cartridge doesn't work.
- U8 7406 LOGIC CHIP
Blank screen. Partial failure: drive access problems: drive resets, but "device not present" error.
- U9 THRU U12 & U22 THRU U24 8 RAM CHIPS (4164)
note: only 2 4464 RAM chips in C64C
Blank screen, no border. Shorted chips will get warmer than the other RAM chips. Partial failure: will sometimes produce garbage screen, abnormal number of bytes free or "out of memory" error on startup screen.
- U13 74LS257 (or MOS7708) LOGIC
Blank screen or less than 38911 bytes free at startup.
- U14 74LS258 LOGIC
Blank screen.
- U15 74LS139 LOGIC
Blank screen
- U16 CD4066 (generic CMOS quad bilateral switch)
Color problems such as random color "checkerboard" pattern on screen or no color.
- U17 906114-01 (82S100PLA) PLA
Blank screen, no border. It can produce colored screen or flashing color garbage instead of startup screen. It can cause intermittent loss of cursor, screen freeze and/or program crashes after warmup and it can put random characters on screen. This chip normally runs hot. It is the most common chip to fail in the C64 and it should run no hotter than the SID.
- U18 906112-01 (6581) SID
Normal screen. No sound or garbled sound. Mouse or graphics tablet pointer stuck or jitters. If shorted, can cause blank or "garbage" screen. NOTE: computer will work without a SID plugged in (unplug to check). This chip normally runs hot.
- U19 906109-04 (6567) VIC (PAL version is 6569)
Blank screen (may be light or dark) with no border. Sometimes will produce garbage or "checkerboard" screen, or screen that lacks contrast. If screen is blank or garbled from bad VIC, "blind" disk commands from keyboard may still work.
- U20 556 LOGIC, TIMER
Blank screen. Computer will not reset, or RESTORE doesn't work.
- U25 74LS257 (or MOS7708) LOGIC

Blank screen or less than 38911 bytes at startup.

- U26 74LS373 LOGIC
Startup screen has normal border, but characters are scrambled.
- U27 74LS08 (or MOS7712) LOGIC
Normal startup border, but screen full of "garbage" characters.
- U28 CD4066 (generic CMOS quad bilateral switch)
Normal startup screen. Proportional mouse or graphics tablet
doesn't work in one or both control (joystick) ports.
- U29 74LS74 LOGIC, DIVIDER
Startup screen shows normal characters in multicolored "rainbow".
- U31 8701 MASTER OSC. (Some C64s use 74LS629N w/ support logic)
Blank white screen, no border. Normal "whine" in nearby AM radio
will be missing if the oscillator is not running. Check also VIC U19
- U32 4044 CMOS LOGIC
No monitor picture, just diagonal lines on screen.

POWER PACK:

Can produce many problems like blank screen (red LED on, dim, or off),
program lock-up, garbage screen, hum bars moving on screen, hum in audio,
damaged RAM or other chips, intermittant operation after warmup, etc.

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