



# Tech Info Library

## Lisa Hardware: Video State ROM

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If you're unable to print to a printer which previously worked with your system, the Lisa's Video State ROM, part number 341-0229, may be defective.

To check for a defective Video State ROM, follow these steps:

1. Verify the proper configuration of Preferences with the printer switches and check the connection of the cables.
2. Borrow a functioning Lisa Video State ROM and ProFile from another system, then try to print again.
3. If your system now prints, replace the borrowed ROM with the original ROM.
4. If the problem persists, check the printer switches, cables, and Preferences. once again as well as the printer itself.
5. If the problem still occurs, you will have to apply to your local Technical Support address for a new Lisa Video State ROM. There is no charge for this ROM.

The Technical Support people will need the AppleNet number and the ROM's serial number. While the Lisa's serial number may be found on the serial number sticker located underneath the left corner of the CRT, you must also get the AppleNet number. You can get both these numbers from the Lisa by placing it in service mode and using the Lisa's Service Mode to read the numbers encoded on the serialized PROM.

**IMPORTANT:** If the CPU board is ever replaced on a system, be sure to take the Video State ROM from the old board and install it in the replacement board.

--> Placing the Lisa in Service Mode

1. After starting up your Lisa,
  - a. press either the SPACEBAR after hearing the audible "click" and before the "double-click",

or else

b. press the spacebar during the memory board test.

2. REMOVE any diskette from your drive, then select option 2 from the displayed "STARTUP MENU". A dialog box will display on the screen informing you there is no disk (as expected) in your drive. You are starting the Lisa from an unattached device: i.e., booting from upper drive when there is no disk in that drive.
3. After the Lisa gives you this error message, hold down the Apple key while you press the "S" key. The Lisa enters the Service Mode and displays the Service Mode menu.

--> Obtaining the Serial Number and AppleNet number with Service Mode

1. Select display memory - "Display Mem"
2. When prompted for ADDRESS, type 240 <CR>.
3. When prompted for COUNT, type 20 <CR>.

The Service Mode window then looks something like this:

```
00000240  0F0F 0002 0802 0002 0000 0400 0300 0F0F
00000250  0000 0100 0004 0102 0002 0900 0000 0000
```

The serial number is embedded in the top 16-byte memory location, which the window displays as 16 hexadecimal pairs, 0F... and so on. Each hexadecimal pair is divided into two halves or "nibbles", e.g., the hex number 0F consists of nibble 0 and nibble F. The second nibble of each of the 16 hexadecimal pairs forms the basis for the serial number.

4. First remove every other nibble like this:

```
00000240  0F0F 0002 0802 0002 0000 0400 0300 0F0F
      240   F F  0 2  8 2  0 2  0 0  4 0  3 0  F F
```

5. Then group the numbers as follows:

```
Number of the Nibble in Hex  01 23 45 678 9ABC D EF
Address          240          FF 02 82 020 0403 0 FF
                   XX PP YY DDD SSSS X XX
```

Extract the serial number from this group of 16 nibbles as follows:

- a. Ignore nibbles 0,1,D,E and F, marked as XX or X above.
- b. Nibbles 2 and 3 are the two digit plant code (PP).
- c. Nibbles 4 and 5 are the two digit year code (YY).
- d. Nibbles 6, 7 and 8 are the day of the year code (DDD).
- e. Nibbles 9 thru C are the 4 digit serial number (SSSS).

You would submit this serial number, 02820200403, to Technical Support in the

Lisa form B02B820200403, where the letter B merely 1) separates the plant and year codes and 2) precedes the entire number.

6. The Applenet Number is similarly embedded in the first 8 bytes of the next line of the memory dump. So, using the same method as step 4 above, we get:

```
00000250  0000 0100 0004 0102 0002 0900 0000 0000
      250   0 0  1 0  0 4  1 2  0 2  9 0  0 0  0 0
```

```
Number of the Nibble in Hex    012 34567 89ABCDEF
```

```
Address      250                001 00412 02900000
                                PPP NNNNN XXXXXXXXX
```

7. To extract the Applenet Number:

- a. Ignore nibbles 8 through F, marked as XXXXXXXXX above.
- b. Nibbles 0, 1 and 2 are the AppleNet prefix (PPP).
- c. Nibbles 3 thru 7 are the AppleNet number (NNNNN).

You would submit this AppleNet number, 00100412, to Technical Support with the Lisa Video State ROM serial number to obtain a new ROM at no charge.  
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