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PRODUCT: 26-3027 26-3127 26-3128 Color Computer II

SUBASSEMBLY: AXX-7092 Direct Video II

PURPOSE: Installation and alignment instructions for Direct Video II.

DISCUSSION:

In many cases it is desirable to bypass the R.F. modulator in the Color Computer II and the RF receiver section in the television by using a DIRECT VIDEO CONNECTION between the Color Computer II and the monitor.

The Direct Video II modifies the Color Computer II to supply a direct video (also called composite video) output. After the modification is installed, the Color Computer II no longer produces a RF (channel 3/4) output, making it unusable on normal television receivers.

Composite video is NOT the same as "Cable Ready" or "Cable Input", as these are RF inputs.

PROCEDURE:

INSTALLATION

1. Remove P.C. board from the color computer.
2. Remove the ground shield.
3. Remove the RF modulator (U5) from the P.C. board.
4. Install the Direct Video II into the holes where the modulator was removed.
5. Solder all connections (7 pins and the brackets).
6. Connect the wire from E1 to the cathode side (polarity band) of CR4 on the color computer board.

7. Connect the wire from E2 to the anode side of CR4 on the Color Computer board.

8. Replace R1Ø on the main logic board with 6.81k ohm 1% resistor supplied with the kit.

9. Replace U4 with the new Signetics SE555 IC chip supplied with the kit.

1Ø. Reassemble the computer except for the case top.

ALIGNMENT

1. Turn power OFF.

2. See building a terminator plug, page 3.

3. Terminate the video output with 75 ohms or plug into the monitor.

4. Connect the oscilloscope probe to the right side of R13 on the Direct Video II (the side closest to the output jack). Use X1Ø probe. Set the oscilloscope controls:
   VERTICAL - 2Ø millivolts per division, AC coupled.
   HORIZONTAL - 1Ø microseconds per division.

5. Turn R5 and R7 on the Direct Video II fully counterclockwise (signal present).

6. Turn on the computer.

7. Adjust the Gain Control (R7) on the direct video circuit board for 525 mv (4 divisions high, peak to peak).

8. Adjust the symmetry control (R5) on the direct video circuit board for 3ØØ mv (2 divisions high, peak to peak (from reference black level to sync tip (as in illustration).

9. Check the color of the unit with a diagnostics cartridge (AXX-2Ø23) using the color bar test. Any fine tuning can be accomplished by using (R7) gain control.

1Ø. Check the sound by using the diagnostics cartridge (AXX-2Ø23). There are no adjustments for the audio section except to check for satisfactory signal at the output. When terminated with 6ØØ ohms, the output should be about 1.1 volts peak to peak.

BUILDING A TERMINATION PLUG

You will need the following materials:

One (1) 1/8 inch miniature phone plug (male)
Radio Shack catalog number 271-1312
Two (2) 150 ohm 1/4 watt 5% resistors
Radio Shack catalog number 274-286
Wire Cutters
Soldering Equipment

1. Locate the two 150 ohm resistors. Lay them side by side and twist their leads together at each end, making a parallel connection. This will result in an effective resistance of 75 ohms.

2. Locate the male mini plug. Unscrew and remove its barrel housing.

3. Cut one end of the resistor leads to 1/4 inch in length. Solder this end to the center (smaller) connector of the mini phone plug.

4. Bend the long resistor leads around and solder them to the ground (larger) connector of the mini phone plug. Clip off any excess lead length.

5. If the above is done neatly the barrel housing can be screwed onto the plug, protecting the resistor. However, this is not required. The barrel connector may be left off without damage to the plug or the connector.

6. The above assembly can now be plugged into the Direct Video II output jack to properly terminate the video line during the alignment procedure.

FIGURE 1