Apple IIGS: Composite and analog video

This article last reviewed: 20 January 1987

The Apple IIGS has two video ports: an RCA phono jack and a 15-pin D-Type connector. An EIA-standard composite video signal (2.0V white, 0.75V black, 0.0V sync., 75-ohm impedance) is available from both connectors. This composite signal drives many monitors such as the AppleColor Composite Monitor, the Apple Monochrome Monitor, and a TV unit with an RF modulator. While composite video monitors can be used with the Apple IIGS, they don't fully render the 320 x 200- and 640 x 200-pixel color graphics potential of the new system.

The 15-pin connector analog RGB signals provide full color graphics display capability. Note that the Apple IIGS outputs analog, not digital, RGB signals. The designers preferred the unrestricted character of an analog signal for the ability of the Apple IIGS to support 4096 colors. Apple offers a new platinum Apple Color RGB Monitor for the Apple IIGS. Other analog RGB monitors known to work with the Apple IIGS include several models by Hitachi, Panasonic, Sanyo, Mitsubishi, Conrac, and Commodore.

To check if your monitor is analog RGB, consult the manual. Check the pinouts before connecting the monitor to an Apple IIGS to make sure your monitor is compatible with pins 7 and 8. The Apple IIGS's 15-pin RGB video signals are as follows:

Pin	Signal
1	Signal ground (Red)
2	Analog RED with sync
3	Composite sync
4	No connection
5	Analog GREEN with sync
6	Signal ground (Green)
7	-5 volts DC
8	+12 volts DC
9	Analog BLUE with sync
10	No connection
11	Sound 1V peak-to-peak
12	NTSC/composite color video out
13	Signal ground (Blue)
14	No connection
15	No connection

Shield System ground

There's no simple, straightforward way to invert sync or to separate horizontal and vertical sync on the composite signal for incompatible monitors, but it could be done as an interface product.

Some types and makes of monitors won't work at all. Digital RGB monitors either won't work at all or will work with unpredictable results. Digital RGB monitors with these problems are Apple's older Color Monitor 100 and IBM RGB monitors (IBM's RGB monitors need inverted sync in addition to TTL video signals.). Apple's Flat Panel Display has incompatible signals.

Do NOT assume that a DB-15 connector on your color monitor means it's analog RGB.
<None>

Keywords: <None>

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19960215 11:05:19.00

Tech Info Library Article Number: 2118