Power Macintosh: AV Video Card, Video Output (1/96)

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TOPIC ---

This article describes the Power Macintosh computer's AV Video Technologies Card's video output.

DISCUSSION ---

Video and graphic images stored in VRAM may have different color depths. The two images exit VRAM through its serial access memory port and pass to the Sebastian color palette chip. Sebastian provides independent color lookup tables for video and graphics images and mixes them into a single digital RGB data stream. The Sebastian then converts the result into analog RGB video, using internal DAC circuits.

Analog RGB data passes to the Mickey encoder chip. Mickey either sends RGB directly to the monitor connector or encodes it into NTSC (National Television Standards Committee – primarily used in North America and Japan) or PAL (Phase Alternating Line – primarily used outside of North America and Japan) video signals in composite or S-video format and sends it to other connectors located on the card.

The Power Macintosh uses the HDI-45 for on board video. It supports a dot clock up to 57 MHz. On AV Power Macintosh computers, the AV card supports a dot clock up to 100 MHz.

The AV card has two banks of 80-ns VRAM soldered in, with a total capacity of 2 MB.

The AV card contains two identical connectors for video input and output with adapter cables for composite video devices that have RCA connectors, such as television equipment.

The AV card can support mixed video and graphics in full 24-bit color on small and medium-sized monitors and in 16-bit or 8-bit color on larger monitors. The color depths (in bits per pixel) available when the AV card drives Apple monitors are listed below:

Monitor type	Screen Size	Color Depths	
	Hor.by Vert.	Graphics	Graphics/video

12-inch RGB*	512 by 384	32	32/16
	560 by 384	32	16/16
13-inch RGB or	640 by 400	32	16/16
12-inch monochrome*	640 by 480	32	16/16
	704 by 512	32	16/16
Full-page monochrome*	640 by 870	8	8/8
Full-page RGB	640 by 870	16	8/16*
16-inch RGB*	832 by 624	32	16/16
19-inch RGB	1024 by 768	16	8/8
Two-page monochrome	1152 by 870	8	8/8
Two-page RGB	1152 by 870	16	8/8**
VGA*	640 by 480	32	16/16
Super VGA 56 Hz*	800 by 600	32	16/16
Super VGA 72 Hz*	800 by 600	32	16/16
Super VGA 60 Hz	1024 by 768	16	8/8**
Super VGA 70 Hz	1024 by 768	16	8/8**
NTSC	640 by 480	32	16/16
	512 by 384	32	16/16
Convolved NTSC	640 by 480	8	n.a.
	512 by 384	8	n.a.
PAL	768 by 576	32	16/16
	640 by 480	32	16/16
Convolved PAL	768 by 576	8	n.a.
	640 by 480	8	n.a.

* With a color depth of 16 bits in these configurations, the maximum video window size is limited. If the video window width is 512 pixels or less, the height may be as large as 512 pixels; if the video window width is more than 512 pixels, the height is limited to 340 pixels.

** The 8 bits of video are grayscale.

The color depths above are shown as the number of bits in which the color or grayscale value of each pixel can be encoded.

Article Change History:
04 Jan 1996 - Made minor technical changes.
16 May 1994 - Added dot clock rates.
14 Dec 1994 - Add keyword, make several minor technical updates.

Support Information Services

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