



OPERATOR INTERFACE PRODUCTS

APPLICATION NOTE

Subject: Video Memory Requirements

AN# 1069A

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Name: Duane Terreault

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Description: This will show how to calculate your video memory requirements.

The amount of video memory required for a particular resolution and color depth is a mathematical equation.

$$\text{Resolution} \times \text{color depth} = \# \text{ of memory bits}$$

If you wanted to display 16 colors at 1,024x768 resolution you would need 3,145,728 bits

$$\begin{aligned} 1,024 \times 768 &= 786,432 \text{ dots} \times 4\text{-bits per dot} = 3,145,728 \text{ bits} \\ &= 393,216 \text{ bytes} \\ &= 384 \text{ KB} \end{aligned}$$

As you can see you would need 384KB of RAM. Because most video cards would normally support only memory amounts of 256K, 512K, 1M, 2M, or 4M, you would have to install 512K to run the above resolution.

Resolution	Color Depth	No. Colors	Video Memory Required	
640 x 480	4-bit	16	256KB	153,600 bytes
640 x 480	8-bit	256	512KB	307,200 bytes
640 x 480	16-bit	65,536	1MB	614,400 bytes
640 x 480	24-bit	16,777,216	1MB	921,600 bytes
800 x 600	4-bit	16	256KB	240,400 bytes
800 x 600	8-bit	256	512KB	480,000 bytes
800 x 600	16-bit	65,536	1MB	960,000 bytes
800 x 600	24-bit	16,777,216	2MB	1,440,000 bytes
1,024 x 768	4-bit	16	512KB	393,216 bytes
1,024 x 768	8-bit	256	1MB	786,432 bytes
1,024 x 768	16-bit	65,536	2MB	1,572,864 bytes
1,024 x 768	24-bit	16,777,216	4MB	2,359,296 bytes
1,280 x 1,024	4-bit	16	1MB	655,360 bytes
1,280 x 1,024	8-bit	256	2MB	1,310,720 bytes
1,280 x 1,024	16-bit	65,536	4MB	2,621,440 bytes
1,280 x 1,024	24-bit	16,777,216	4MB	3,932,160 bytes