EXECUTIVE SUMMARY

PC Graphics Chip Set Market Overview

Total worldwide merchant PC graphics chip set revenue was $108 million in 1988, representing an increase of 96.4 percent over 1987 revenue of $55 million. Dataquest is forecasting 1989 revenue at $182 million, for an annual growth rate of 68.5 percent. The saturation of chip set solutions into the graphics market signals the end of the rapid growth phase for the industry. Compound annual growth rate (CAGR) for 1989 through 1993 is expected to be 11.5 percent and is closely tied to growth in the PC market, which is expected to have a CAGR of 10.5 percent for that period. However, because of severe pricing pressure, average selling prices (ASPs) are forecast to decline by a negative 26.8 percent CAGR in the period. Consequently, revenue is expected to decline beginning in 1990, and the CAGR for 1989 through 1993 is expected to be a negative 13.6 percent.

Trends and Issues

A summary of important competitive trends in this industry includes the following:

- The three largest merchant vendors of low-end PC graphics chip sets are Western Digital, Chips and Technologies, and Cirrus Logic. These companies accounted for 90 percent of merchant revenue in 1987 and 75 percent in 1988.

- In 1987, there were five merchant chip set vendors. In 1988 nine vendors offered merchant products. Currently, 12 vendors participate in the market. As the business shifts from add-in boards to motherboard implementations, some vendors who now offer boards with proprietary chip sets will begin to offer those chip sets on the merchant market. Dataquest estimates that by the end of 1990, there will be between 16 and 20 merchant graphics chip set vendors.

- The increase in the number of competitors combined with expected slower growth in unit shipments is expected to lead to aggressive pricing strategies. These strategies result in lower revenue overall for the industry and continued margin pressure for individual vendors.

- VGA is expected to become the dominant low-end PC graphics standard beginning in 1989. The older standards (HGA, CGA, EGA) are expected to decline rapidly in use as VGA prices decline.

- What the next PC graphics standard will be is currently under debate. Although the shift to a new standard will not occur as rapidly as it has in the past, Dataquest believes that the IBM 8514/A will be the eventual successor to VGA in the mainstream PC market.