

VME Colour Graphics Controller

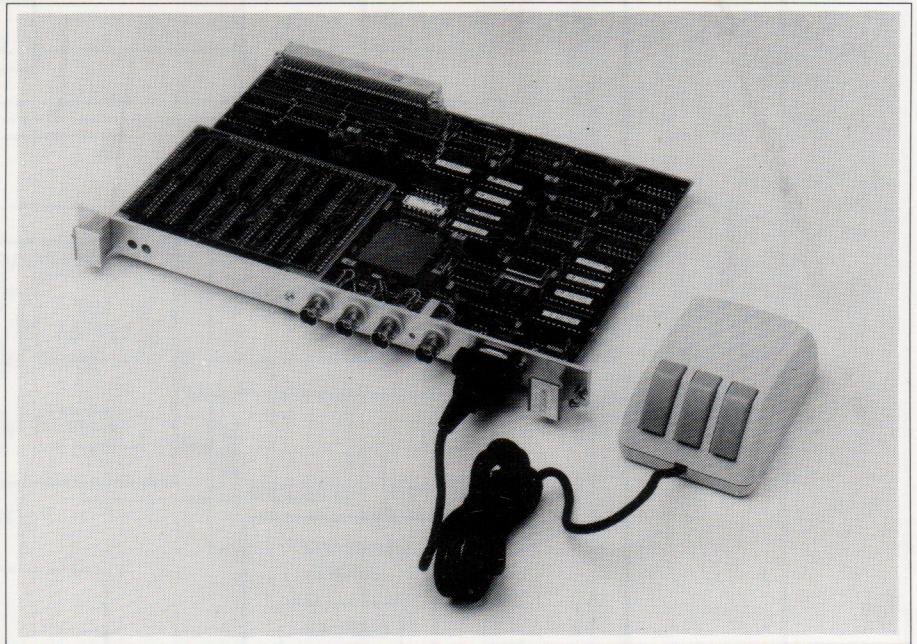
Introduction

5190 is a high resolution graphics card designed to meet most demands on graphic data presentation. The card circuitry is based on the Hitachi HD63484 graphics chip.

High resolution colour graphics

The card offers an image resolution of 1024x1024 pixels. The size of the image displayed on the screen is defined by card settings and monitor performance. The capacity of the 5190 graphics card can be extended to a total of 8 image planes thus achieving 256 different colours from a palette of more than 16 million colours.

The length of the computer-to-monitor cable may be up to 15 meters.



VME interface

A host interface is employed to connect the card to a VME short I/O space. The screen interface is compatible with RS343A (75 ohms, 0.7 Vpp). Monitors with separate sync, composite sync as well as 'sync on green' (internal sync) can be used with the card. The pixel frequency depends on clock frequency selected and may vary between 12 and 70 MHz.

Palette

The standard palette has a 4 bit resolution per channel thus featuring programming of 256 different colours out of 4096. Optionally, the card may be equipped with an 8 bit resolution palette with access to more than 16 million tints. Each image plane can be programmed for blink and/or on/off.

Image memory

The image memory has a capacity of 1 million pixels, organized as 1024x1024. The card handles 4 image planes as standard but can be up-graded to 8 image planes. The image memory can be panned (through control chip programming) both vertically and horizontally when using monitors having a resolution of less than 1 million pixels.

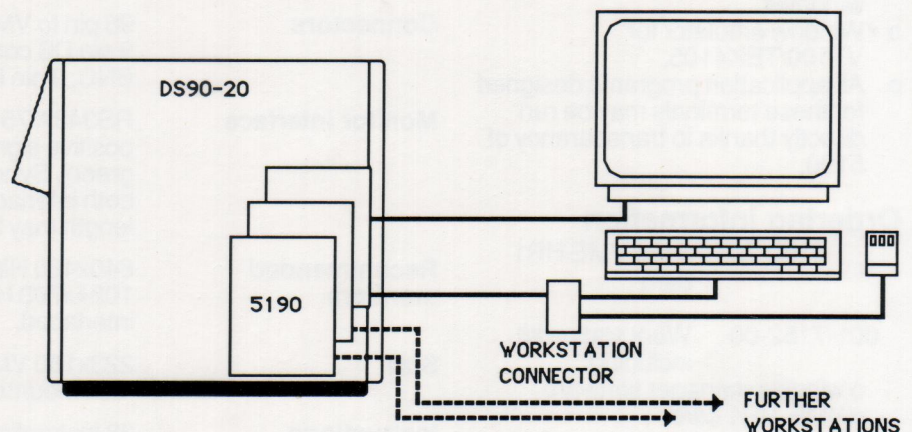
Mouse control

The card also has a mouse interface through a parallel channel (XA, XB, YA, YB encoder signals). A track ball or any other compatible control device may be used. The interface is designed to accept ± 2047 pulses between each position sample. (approximately ± 25 cm mouse movement at 8 pulses per mm when using an optical high precision mouse).

The mouse interface supports three buttons readable from the host interface.

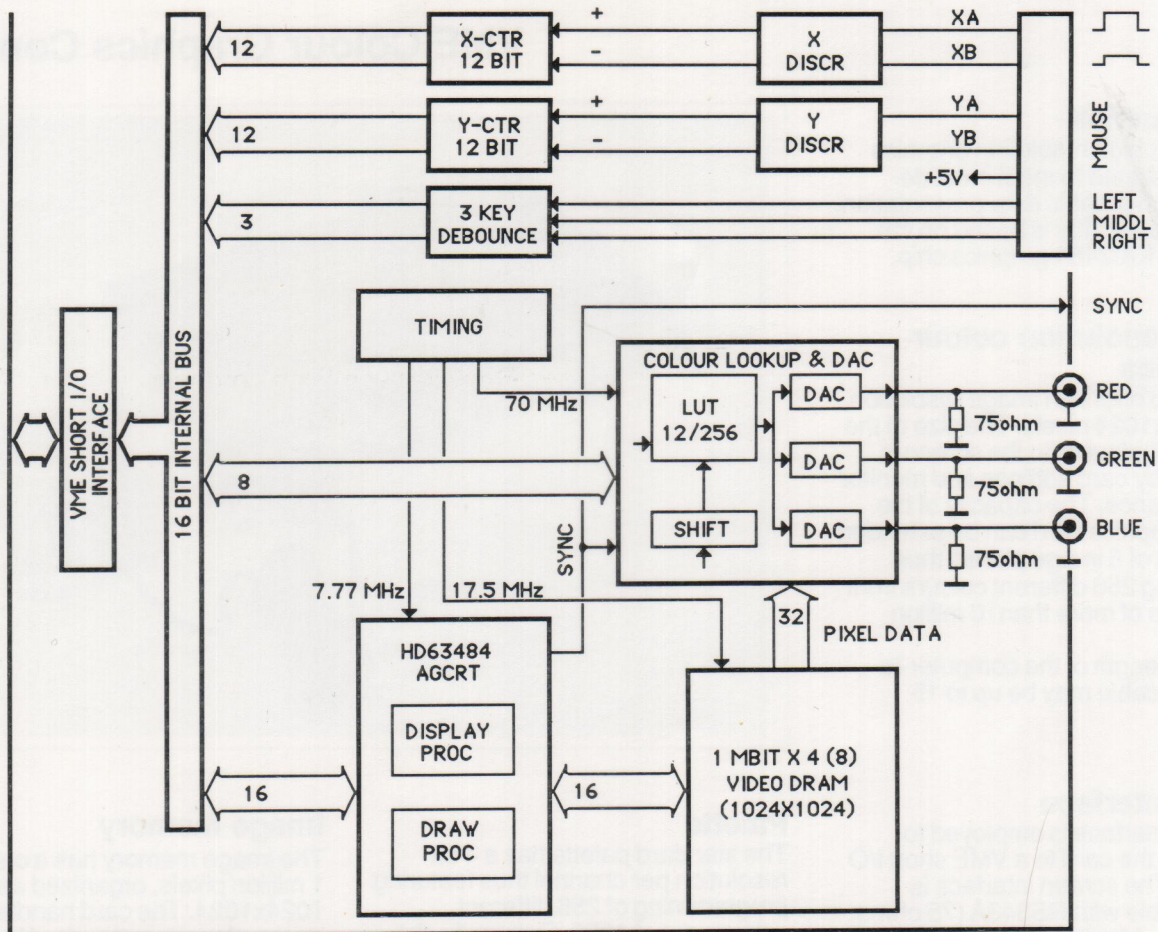
Host interface

The host interface of the card occupies 1 kByte of the VME short I/O space. This interface allows for control of graphics chip, palette and mouse interface.



5190 installed as work station kit in DS90-20

Block diagram



Software support in the DS90 series

- o Installs in DS90 through VME back plane. Requires one V24 port.
- o Window manager with 16 windows.
- o Window emulator for VT100/TEK4105.
- o All application programs designed for these terminals may be run directly thanks to transparency of 5190.

Ordering information

5190-20 5190 VME HR1 card

- 001-7152-00 Work station kit including:
- o window manager software
 - o VME-HR1 card
 - o three-button mouse
 - o VT220 compatible keyboard
 - o connection box
 - o cable set (computer-connection box)

Monitor and monitor cables to be ordered separately.

Technical data

Processor

HD63484 advanced crt controller

Power supply

+5 V

Operating temperature

0-55°C

Connectors

96 pin to VME slot
9 pin DB connector to mouse
BNC, 9 pin DB or Coax D-Sub to monitor

Monitor interface

RS343A 75 ohms. Red, green, blue 0.7 Vpp positive signal (green 1 Vpp when using 'sync on green'. Sync 75 ohm TTL level. The card handles both interlaced and non-interlaced monitors. Cable length may be up to 15 meters.

Recommended monitors

640x480 Hitachi CM1457A, non-interlaced.
1024x768 Hitachi CM2073A-48 kHz, non-interlaced.

Size

223x160 VME standard size. Has front panel for rack mounting.

Instructions

38 instructions including LINE, RECTANGLE, POLYLINE, POLYGON, CIRCLE, ELLIPSE, ARC, ELLIPSE ARC, FILLED RECT, PAINT (POLYGON FILL), PATTERN and COPY.
'Hardware Clipping and Hitting'

Drawing speed

Up to 2 million pixels per second depending on video clock frequency (VF/38 or VF/28)

Internal memory

1 million pixels x 4 planes. Expandable to 8.

Palette

16 or 256 colours out of 4096 or 16 millions depending on palette and number of image planes employed.