

HA-8-3-1 Color Graphics Board for the Heathkit H8 Computer

Compatible with and based on the original HA-8-3 design by New Orleans General Data Systems

Video Display Processor

TI TMS9928, or optionally TMS9918
YPbPr component video (TMS9928) or composite video (TMS9918)
16K static VRAM
256x192 video resolution

Programmable Sound Generator

AY-3-8910 PSG
3 noise channels + 3 tone channels
2 x 8-bit digital input/output ports
Stereo output: Ch0 - A + 50%C, Ch1 - B + 50% C

Analog Inputs

8-bit ADC (AD7574)
8 channel multiplexer (AD7501)
10v reference voltage

Arithmetic Processing Unit

AMD AM9511 or Intel C8231A
2, 3 and 4MHz APU supported

Joystick/Controller Inputs

Four 12-pin headers, each with
GND, +5v, and +10v Vref
2 digital inputs (0-5v)
2 digital outputs (0-5v direct, 1 TTL load only)
2 buffered digital outputs (74LS07, 40ma open collector, 30v maximum)
2 analog inputs (0-10v)

General I/O Wait State Generator

Adjustable ~700ns wait state on IORQ
Most legacy H8 boards will run at 16MHz with I/O wait states

Soft Reset Capability

Write to port 066Q forces reset of TMS99x8 without a hardware system reset