

27 1983

- 8088 CPU
- High Resolution
- Color or Monochrome
- Three 128 kbyte RAM Graphic Buffers
- 110-19200 Baud Data Transfer
- 5 Channel Timer Counter

THE GRAPHIC DIFFERENCE

Intelligent Display System

VDU-140/CG
COLOR
VDU-140/MG
MONO



Expandable 16-Bit Graphic 8088,

When combined with ai-M 16, the VDU becomes part of a multiuser, multitask, high-performance multiprocessor system that places it in a class all its own. The 14-inch color or monochrome display unit is a high-performance intelligent terminal that has full capability for character overlay display, full graphics and full screen scrolling feature.

Smart? No - GENIUS

More than just a smart terminal, the VDU-140 packs more power than many personal computers. The 8088 CPU is supported by a 5-channel clock, two SIO ports, keyboard and joystick interfaces, 16 kbyte ROM, 64 kbyte RAM, and three 128 kbyte graphic RAM buffers. An optional 8087 numeric data processor provides even more computing power.

With capabilities like this, we are reluctant to call the VDU-140 a smart terminal or graphics display. Certainly it can perform these functions, and very well too, but neither term adequately captures the full potential of this system. Visit your Ai distributor and you'll see what we mean.

VDU-140 has a high-resolution, 14-inch, 8-color or monochrome, 640 x 400 dot display and uses 8088 CPU with CRT control LSIs. The output of any host can be easily displayed graphically. An optional high-speed 8087 CPU can be added to expand the capability of this powerful system.

Self-test Ensures Proper Operation

A self-test begins every time the VDU-140 is turned on, reset, or if it receives a reset to an initial state (RIS) from a host computer. Tests include ROM, RAM, combined ROM and RAM, and illegal interrupt. The frequent application of these tests ensures the user that VDU-140 will be ready when called on.

Variety of Communication Modes

Either or both of two RS-232-C serial I/O ports can be connected to a host computer in full or half duplex modes. Data rates are independently selectable from 110 to 19200 bps in eight steps. All I/O communication is under the control of an 8088 CPU.



These intelligent display systems were developed based on ai Electronics' more than 20 years of experience in computer technology.

Large Capacity Graphic Buffer

VDU-140/CG and VDU-140/MG Main Specifications

Item	VDU-140/CG	VDU-140/MG
CRT	14-inch, 8-color (Red, blue, green, yellow, sky blue, light purple, white and black background)	14-inch, Green
Display characters	JIS, ASCII: 2,000 characters (80 characters x 25 lines) Kanji display: 1,000 characters (40 columns x 25 lines)	
Display method	Raster scan	
Codes used	ISO code is basic. JIS and ASCII codes for various countries are available.	
Display characters	Upper and lower case alphameric characters with alpha symbols, kana, kana symbols, simple graph characters and abbreviated variations for various other languages.	
Character structure block	Display characters: 5x9 dot matrix Kanji and kana: 16x16 dot matrix Color specification (8 colors) by individual character is possible.	
Display character color	8 colors (black background) (Red, blue, green, yellow, sky blue, light purple, white and black background)	Monochrome (green)
Full graphic display	640x400 dot display per screen. Color specification (8 colors) by dot is possible.	
Cursor display	Block reverse blinking, or underline blinking	
Display attribute function	Blinking, reverse, underline, expanded character, kanji display (option), color specification (8 colors), and contrast (VDU-140/MG)	
Character structure	10, 11 bit start-stop structure	
Data communication mode	Interactive, full and half duplex	
Data format	Bit serial	
Data transmission speed	110 to 19,200 baud (programmable)	
Interface	RS-232-C Asynchronous	
Keyboard	ASCII, JIS or other language specifications and 10-key numeric pad	
Hard copy printer interface	RS-232-C serial interface for various printers (optional)	
Options	Light-pen, Joystick and Multi-code input mat	
Control CPU	8088 (8087 NDP option)	
Control memory	ROM 16KB, RAM 64KB (Optional 32KB ROM)	
Timer Counter	5 channels	
SIO ports	2	
Joystick interface	1 (Joystick option)	
Character generator ROM	8KB	
Kanji character generator ROM	128KB (option)	
Screen character buffer RAM	8KB	
Graphic buffer RAM	128KBx3	128KB
Dimensions	Main unit Keyboard	420(W)x415(H)x510(D) mm 520(W)x82(H)x215(D) mm
Weight	Main unit Keyboard	24,3 kg 2,2 kg
Power supply	100, 115, 220, 240 VAC $\pm 10\%$ (voltage is selectable) 50/60Hz single phase	
Power consumption	160 VA (typical)	122 VA (typical)
Environment	0 to 40 °C, operating temperature -20 to 60 °C storage temperature 35 to 80% RH operating humidity (no condensation) 10 to 90% RH storage humidity (no condensation)	



A powerful 16-bit microcomputer, ai-M16



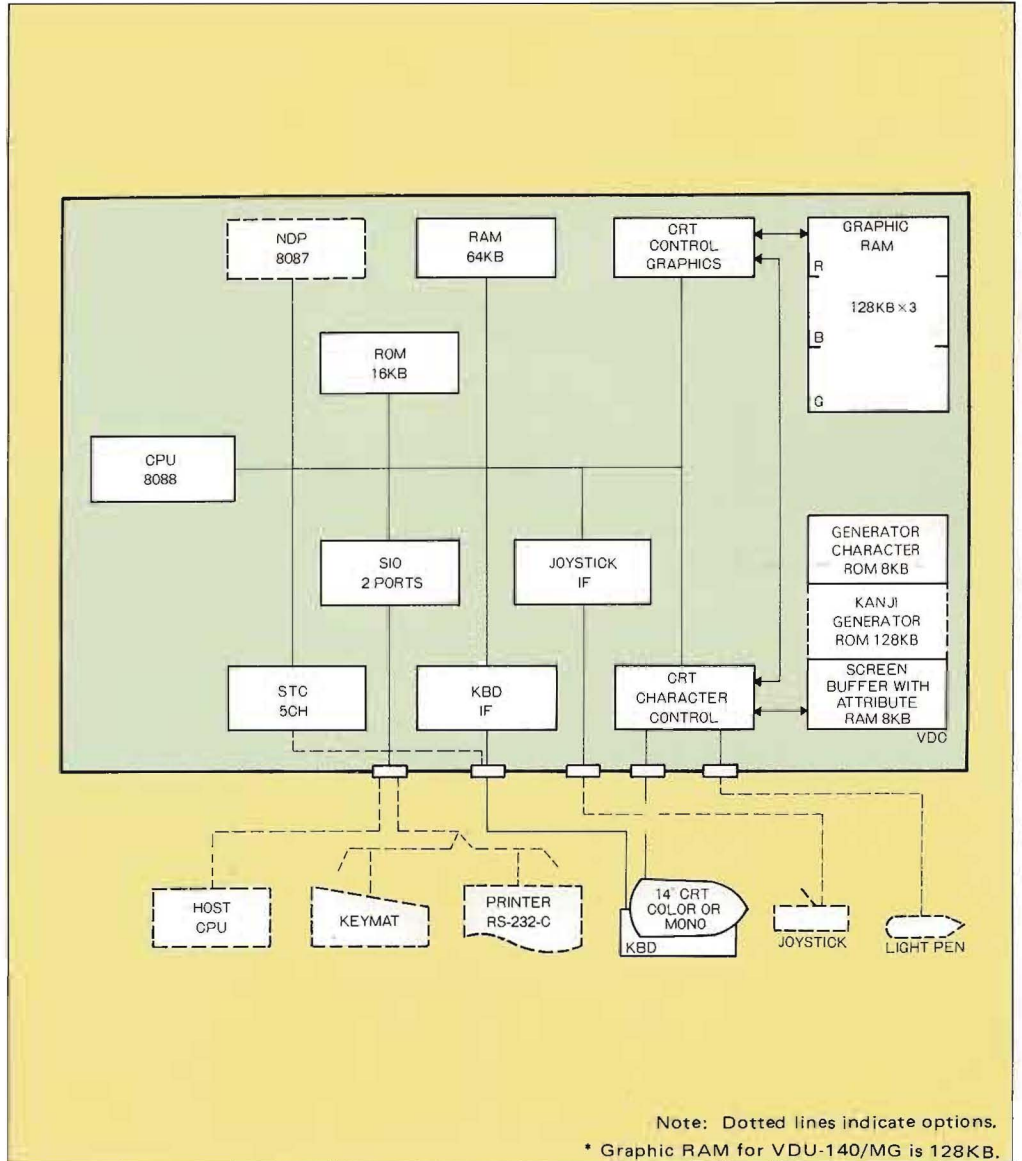
A scenery of VDU-140/CG Q.C. test line

ai-M16 FEATURES

16-bit microprocessor
 High-performance, high-speed multi-CPU
 8086 main CPU (5 MHz, 8 MHz)
 8089 I/O CPU (5 MHz, 8 MHz)
 A large-scale system can be created by adding 8086 and 8089 I/O CPUs independent of the arithmetic CPU 8087 (5 MHz, 8 MHz).
 Main CPU, auxiliary memory controller, multi-terminal controller, and communication controller functions are distributed.
 The 512 kbyte RAM (with 2 parity bits) and 16 kbyte ROM are standard equipment.
 The maximum memory size of each is 512 kbytes and public memory is 512 kbytes.
 The two-bus system includes a high-speed private bus and public bus (IEEE-796) for convenience.
 Serial I/O: 6 port RS-232-C specified for use as the interface for CRT terminal, frequency synchronized memory, acoustic coupler, serial printer, X-Y plotter and digitizer.
 Parallel I/O: Single port Centronics interface.
 Battery backup for the calendar clock which displays year, month, day, hour, minute and second.
 10-channel timer counter clock: Six channels for serial I/O baud rate setting.
 Interrupt request input: 15 channels minimum to permit expansion.
 System modules are based on single function unit packaging to permit matched buildup depending on the user's applications.
 All peripheral equipment is compatible for each package.
 Modules inside the mainframe have 10 slots. In the basic structure, 4 slots are used.

OPTIONAL UNITS

- WDU-40A: External 40 Mbyte Winchester Disk Unit connected to SIOP.
- MTU-8 , MTU-10: External 1600/800 BPI Magnetic Tape Unit connected to SIOP.
- FDU-8D: External 8-inch Floppy Disk Unit.
- WDU-XXBE: External 5.25-inch Winchester Disk Unit.



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