

The
KNOWLEDGE WORKER™

KNOWLEDGE WORKER HARDWARE



The Knowledge Worker Series™ is a high-performance desktop computer system that delivers the power of a mainframe at a price comparable to some personal computers. It's a versatile, personal productivity tool that provides the flexibility, processing capabilities and information needed to increase the efficiency and output required by office support, professional, managerial and executive personnel.

The Series is a modular family of Workstations which can be configured in a wide variety of ways, to meet diverse application requirements in office and business applications.

ABDICK information
systems
making knowledge work for you

WHAT IT INCLUDES

Utilizing a Distributed Intelligence Architecture, each Workstation consists of:

- a high-performance 16-bit 8MHz (80186) micro-processor,
- a high quality video display monitor,
- a programmable keyboard that meets all international ergonomic standards,
- up to one million bytes of memory,
- a power supply,
- a wide range of floppy and mass storage options including "slim-line" floppy and Winchester disks,
- an optional bit-map graphics capability in monochrome or color.

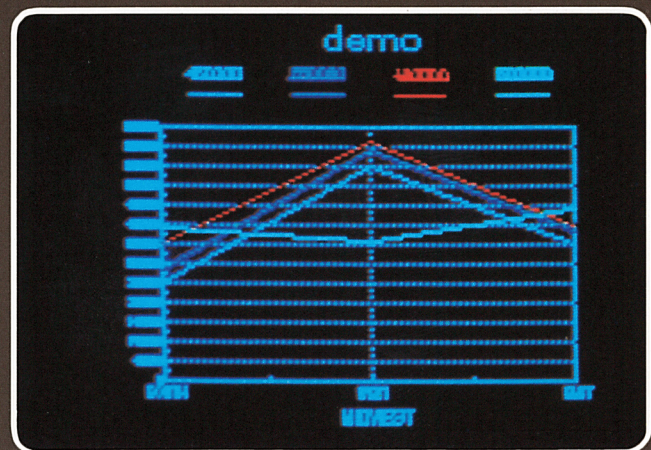
The Central Processor

The Central Processor module forms the core of the Workstation. It contains an 8MHZ Intel 80186 micro-processor, operating with no wait states. In addition to the microprocessor, the Central Processor also contains video control logic for the 29 line by 80 character display, 256KB of volatile random-access memory (RAM) with parity error detection, slots for two RS-232-C ports and an RS-422 port. Up to 768KB of volatile RAM can be added to the Central Processor module for a total of 1024KB memory storage. Memory is added in 256KB blocks packaged in a manner similar to video game cartridges and can be installed by the user without tools—as easily as snapping in building blocks.

Video Display Monitors

Two Knowledge Worker monitors are currently available to suit individual preferences or application needs. Both monitors—12-inch monochrome and 15-inch color can operate in character mode, displaying 29 lines of 80 characters each. Each character is built in a 9 x 12 pixel cell for clear, easy-to-read text. Characters are stored in a font RAM which can be loaded by user application software. The character set may be easily changed under software control by loading another character set into the font RAM. In this way, the number of character sets is virtually limitless. Special characters may be created by the user for specialized applications. Each character on the screen may offer any combination of the following attributes associated with it: underline, half-bright, bold, blink, reverse video, and struck-through.

The logic to drive both monochrome and color bit-map operations is provided by the optional Graphics Controller, which easily attaches to the KWS processor module via the X-BUS™. This module contains a dedicated Graphics Processor, and 256KB of dual-ported display memory.



The video display monitors are fully articulated and may be tilted from -5° to 30° and rotated $\pm 45^\circ$ for easy viewing.

Keyboard

The keyboard contains 98 keys arranged in a familiar typewriter-style. This low-profile detached device weighs less than 4 lbs. It is cable connected via the right or left side of the keyboard depending on user preference. The unused connector port may be utilized to connect a second serial input device, such as a mouse. For optimum user comfort, the keyboard can be inclined at 5° to 10° to the work surface. LEDs (Light Emitting Diodes) are placed on certain keys to indicate status. This gives reinforcement to the user and reduces potential errors. Versions of the keyboard are even available with foreign language legends and characters for major Western languages.

Mass Storage Options

The Knowledge Worker family offers a variety of mass storage modules, all based on 5¼-inch Winchester technology. Storage options include:

- a dual floppy diskette module
- a floppy/hard disk module
- a hard disk expansion module

Each floppy module provides storage capabilities of 630KB per drive. Those users requiring larger storage capabilities have the option of selecting hard disk modules with capacities of 10MB, 20MB and 40MB. A maximum of 160MB can be configured in a single Workstation. As user requirements grow, the Knowledge Worker Series can easily be upgraded and expanded to meet those needs.

Power Supply

Each Workstation is powered by a free-standing 150-watt power supply unit. The power supply can be placed on the floor, leaving the work area free for the Workstation and work-related objects. This space-conscious power supply is switch-selectable for nominal 110-volt or 220-volt operation.

EASY TO INSTALL

The various modules in the series are connected together via the proprietary X-BUS. Different combinations of modules can be configured by the end-user to achieve Workstations with varying capabilities and capacities—depending on precise needs of each user. The actual connection of devices is attained by a unique latching mechanism. A sliding plate in one module draws the next device to it, forming a rigid mechanical sub-assembly. This connection supplies both power and logic signals to the additional module. This allows system expansions, upgrades, as well as future capabilities to be installed by non-technically trained personnel.

EFFICIENT ENVIRONMENTAL DESIGN

The Knowledge Worker Series (KWS) is ergonomically designed for the office environment. The low-profile, tactile feedback keyboard, and the flicker-free video display greatly enhance user comfort. The small monitor footprint (7" by 9") takes minimal space on the user's desktop. The electronic modules (processor, mass storage and various options) can be placed up to 16 feet from the video display. This leaves the desktop free for other business-related materials. Additionally, these modules have been designed to fit neatly on surfaces and shelves found in most office environments.

HOW THE FLEXIBLE KNOWLEDGE WORKER SERIES CAN MEET YOUR NEEDS TODAY AND TOMORROW

The A.B.Dick family of desktop Workstations provides the growth capabilities and flexibility necessary to meet both existing needs and continually growing and changing office requirements. Professionally trained A.B.Dick personnel are ready to assist in designing a cost-effective hardware and software solution to achieve the end-user's desired goals and objectives.

Configuration

The Knowledge Worker Series can be configured as standalone or clustered systems in order to satisfy various office needs. Clustered stations offer the flexibility for sharing:

- software
- mass storage
- data
- peripherals (such as printers, plotters, etc.)

The sharing of software, mass storage and peripherals provides an extremely cost-effective system. Sharing data will reduce the duplication of effort and the possibility of error. End result: the professional and support staff become more effective.

Clustered Systems can include Workstations known as:

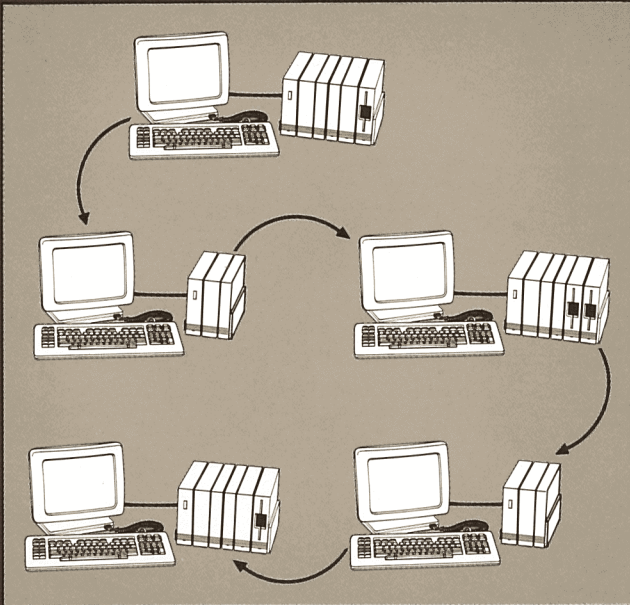
- Master Station
- Local File Station (LFS)
- Cluster Station

A Knowledge Worker Series Master Station consists of a keyboard, video display, central processor, power supply and mass storage devices (which provide resources such as disk storage to other KWS Workstations). Storage options, including floppy disks and Winchester disks can be added. The system maximum is 4 floppy drives and 4 Winchester drives. The role of the Master Station in the cluster is as "manager" of the system's shared resources serving three basic functions:

- the residence of CTOS™ (proprietary host operating system)
- running applications
- providing resources to the individual Cluster Stations.

Optimization of these functions depends on the kind of applications being executed, the number of connected Cluster Stations, and the amount of memory in the Master Station. Only the Master Station can operate the server programs: ISAM, A.B. DICK-DBMS, KWS-Mail, Print Spooler, 2780/3780 RJE Server, Bisync 3270 Server, SNA Transport Service, and the X.25 Network Gateway.

A Cluster Station and Local File Station each consist of a keyboard, video display, central processor, and power supply. The Local File Station has local storage (ie; floppy and/or Winchester drives) but the Cluster Station relies on the Master Station for the storage and retrieval of data. System software is provided to the Cluster and/or LFS by the Master Station. As with the Master Station, up to 4 floppy drives and 4 Winchester drives can be attached to the Cluster Station and/or the LFS.



Workstations are connected to the Master Station by way of the RS-422 connection port over shielded twisted pair cables. Workstations are connected by a passive "daisy-chain" approach. Maximum cable length from the Master to the last Workstation in the chain may be up to 1200 feet. Cluster communications for the Knowledge Worker operate at 1.8 million bits per second.

EXPANSION WITHOUT OBSOLESCENCE

The number of Workstations that can be linked together in a Cluster System with a KWS Master Station depends on the following factors: the configuration of the individual stations, the nature of the applications being run and the usage patterns of the individual Workstations. A maximum of five Cluster Stations may be connected to a Master if they contain no mass storage devices. A maximum of 16 Stations can be accommodated if all Workstations contain local hard disk storage and the cluster capability is used primarily to share printers and/or communications resources.

KWS modularity allows A.B.Dick customers to add new subsystems to the KWS line to suit unique requirements, or to take advantages of improvements in semi-conductor and mass storage technology. New modules can be added to the product line in a non-disruptive manner. This means that customers can expand their configurations without obsoleting their investments in hardware and software. And that means they can avoid the time and expense of converting systems!

HARDWARE SPECIFICATIONS:

EMISSIONS:

Meets VDE 0871 (Emissions Standards)
Meets FCC Part 15, Sub-part J for Class A Emissions

ESD:

5,000 Volts:	No observable effect
12,500 Volts:	Errors corrected via Software Intervention
17,500 Volts:	Errors corrected via Operator Intervention
25,000 Volts:	No permanent damage

ALTITUDE:

Operating:	15,000 feet ASL
Non-Operating:	25,000 feet ASL

ACOUSTIC NOISE LEVEL: NR 30

TEMPERATURE/HUMIDITY: (Excluding Magnetic Peripherals)

Operating:	0° to 40° C, 5%-95% RH
Non-Operating:	-40° to 75° C, 5%-95% RH

TEMPERATURE/HUMIDITY: (Magnetic Peripherals)

Operating:	10° to 40° C, 20%-80% RH
Non-Operating:	-20° to 65° C, 90% at 65° C, 90% at 65° C for 12 hours

CABLE LENGTHS:

Keyboard:	14 inches coiled, 6 feet extended
Monitor:	16 feet (Monochrome), 6 feet (Color)
Cluster:	1200 feet, maximum

ERGONOMIC:

Designed in accordance with DIN "Safety Regulations for Display Workstations in the Office Sector" (Standard 66234, December 1979), and "Basic Ergonomics for Desktop Workstations"

SPECIFICATIONS:

RAM: 1024KB, Maximum
ROM: 8KB

SERIAL I/O RATES:

External Clock: RS-232-C: 110 Baud to 19.2KBaud
Internal Clock: RS-232-C: 50 to 19.2KBaud
RS-422: 110 to 1.8MBaud

PARALLEL I/O RATE (Printer Interface):

Programmed I/O 9600 Characters/second (typical)

ELECTRICAL:

AC Power: 85 to 130 Vrms @ 60 Hz ± .5 Hz
185 to 260 Vrms @ 50 Hz ± .5 Hz

AC Power Requirements: Dependent on Configuration

PHYSICAL:

	HEIGHT		WIDTH		LENGTH		WEIGHT	
	Inches	MMs	Inches	MMs	Inches	MMs	Lbs	Kgs
Power Supply	3.0	76.2	4.5	114.3	10.5	266.7	2.0	.91
Central Processor	8.0	203.2	5.75	146.1	12.0	304.8	10.0	4.54
12" Mono Monitor	12.0	304.8	12.25	311.2	12.0	304.8	16.0	7.26
15" Color Monitor	15.0	301.0	13.75	349.3	15.0	301.0	27.0	12.26
U.S. Keyboard	1.8	30.0	18.0	457.2	9.0	228.6	4.0	1.82
Dual Floppy Module	8.0	203.2	5.75	146.1	12.0	304.8	13.0	5.90
10MB/Floppy Module	8.0	203.2	5.75	146.1	12.0	304.8	14.0	6.36
20MB/Floppy Module	8.0	203.2	5.75	146.1	12.0	304.8	14.0	6.36
10MB Controller	8.0	203.2	TBA	TBA	TBA	TBA	TBA	TBA
20MB Controller	8.0	203.2	TBA	TBA	TBA	TBA	TBA	TBA
40MB Controller	8.0	203.2	5.75	146.1	12.0	304.8	TBA	TBA
10MB Expansion	8.0	203.2	2.52	64.0	12.0	304.8	TBA	TBA
20MB Expansion	8.0	203.2	2.52	64.0	12.0	304.8	TBA	TBA
40MB Expansion	8.0	203.2	5.75	146.1	12.0	304.8	TBA	TBA
Graphic Controller	8.0	203.2	2.52	64.0	12.0	304.8	TBA	TBA

SAFETY:

Meets UL 478 (EDP) and 114 (Office Equipment)
Meets CSA 154 (EDP) and 143 (Office Equipment)
Meets VDE 0806 (Office Equipment)
Meets BSI 5850 (Office Equipment)

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