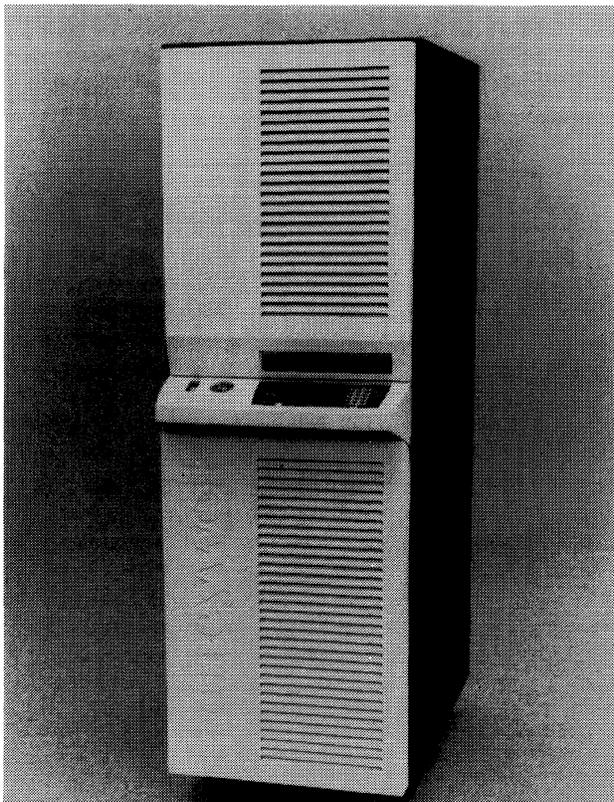


Honeywell Datanet 6678



The Datanet 6678 front-end processor hardware shown above operates within the Honeywell Distributed Systems Environment.

MANAGEMENT SUMMARY

The Datanet 6678, first introduced in January 1977 and only recently delivered, is actually a Level 6 device, similar in design to Honeywell's minicomputers. Its unveiling coincided with the announcement of Distributed Systems Environment (DSE), Honeywell's answer to IBM's SNA. The 6678 is the first processor to adhere to DSE networking rules.

DSE, which will govern the design and direction of new Honeywell communications-oriented hardware and software products, is built upon two premises. First, future network arrangements must accommodate an integrated, distributed data base. This approach requires the capability to maintain a disk data base in which the parts are physically scattered over the geography of the network. The substance of this premises is that Honeywell has made an irrevocable commitment to true distributed data processing. Second, host processors within the network will not have a master/slave relationship. All host processors under DSE will operate in a "co-operative mode." Bit-oriented protocol for the network will be High-Level Data Link Control (HDLC). Honeywell's sensor-based systems will also conform to DSE rules and, therefore, can be incorporated in a network along with Honeywell's data processing equipment. ➤

A programmable front-end processor for Honeywell Level 66 and Level 68 host computers. The Datanet 6678 operates under NPS, GRTS, or GRTS-II on the Level 66 and under Multics on the Level 68.

The 6678 can accommodate up to 96 full- or half-duplex communications lines operating asynchronously at speeds up to 9600 bps and synchronously at up to 56,000 bps. BSC and the bit-oriented HDLC are supported.

A typical system handling 40 asynchronous and 12 synchronous lines, including two high speed lines, can be purchased for \$233,771, or rented for \$5,012 per month including maintenance.

The 6678 is the first Honeywell front end to conform to Distributed Systems Environment, Honeywell's networking architecture.

CHARACTERISTICS

VENDOR: Honeywell Incorporated, Honeywell Plaza, Minneapolis, Minnesota 33408. Telephone (612) 870-5200.

DATE OF ANNOUNCEMENT: January 1977.

DATE OF FIRST DELIVERY: Third quarter of 1978.

NUMBER DELIVERED TO DATE: Information not available.

SERVICED BY: Honeywell Incorporated.

CONFIGURATION

The Datanet 6678 front-end processor is based on Honeywell's Level 6 minicomputer technology. The 6678 was designed to service Level 66 and Level 68 host computers. The basic configuration includes the processor with cache memory, 64K words of memory storage, a host processor attachment, a controller for console and cassette/diskette drive attachment, and six Channel Interface Bases. The maximum number of communications lines that can be physically attached, through adapters, to the six Channel Interface Bases is 48. The processor has a one-microsecond memory cycle time and an average instruction execute time of 2 microseconds. The 64K of 18-bit words of standard memory is expandable in 64K increments up to 256K words. Data traveling between the processor and memory is via the system bus. The Input/Output Multiplexer handles data between the I/O Adapters/Controller and memory storage. The cache memory contains the last information from memory that received processor action, permitting faster access if additional processor action is required upon the information.

CONNECTION TO HOST COMPUTER: The standard Direct Interface Adapter supports attachment to a local host ➤

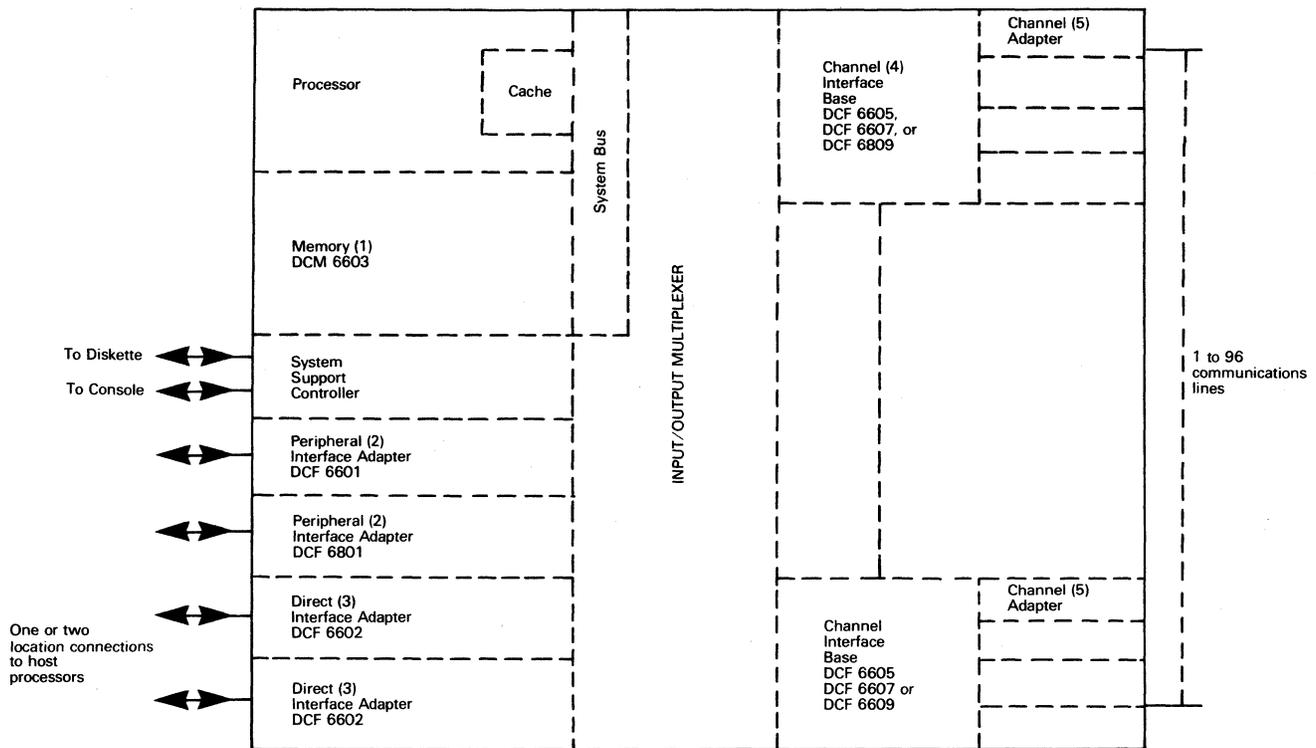
Honeywell Datanet 6678

Table 1. Channel Adapters

Type of Line Interfaces	Speed, bps	Feature Number	Number of Lines Supported
RS-232C Synchronous	Up to 9600	DCF6611	2
RS 232-C Asynchronous	Up to 9600	DCF6612	2
CCITT V.35 for HDLC Synchronous	Up to 9600	DCF6623	1
CCITT V.35 for High-speed Synchronous	Up to 56,000	DCF6627	1
BSC, voice-grade	Up to 2400	DCF6618	1
BSC, high-speed	Up to 56,000	DCF6621	1
Synchronous, high-speed	Up to 56,000	DCF6619	1
HDLC, voice grade	Up to 9600	DCF6620	1
HDLC, high-speed	Up to 56,000	DCF6622	1
Automatic Call Unit	—	DCF6613	2

Configuration

DCF6678 Front-end Network Processor



- (1) Basic memory is 64K 18-bit words, expandable in 64K word increments to 256K words.
- (2) One or two Peripheral Interface Adapters are optional.
- (3) One Direct Interface Adapter, providing connection to the host, is standard. A second adapter, which serves only for backup redundancy, is optional.
- (4) Six Channel Interface Bases, which support all channel adapters, are standard. Six additional CIB's can be added. Three types are available; DCF6607, which supports all channel adapters; DCF6605, which supports all adapters except BSC; and DCF6609, which supports all except HDLC.
- (5) Four Channel Adapters can be attached to one Channel Interface Base. Depending on type of line interface, each adapter can support one or two lines; see Table 1.

Honeywell Datnet 6678

▷ Physically, the handsome 6678 occupies 6 square feet of floor space compared to the 27 square feet of older Datnet models. The physical mounting of up to four unique-function daughter boards onto one mother board is an example of DSE's packaging technological improvements. A tangible result is that the 6678 can be expanded one communications base at a time, whereas the smallest equivalent increment in earlier Datnets is four.

Development delayed first delivery of the 6678 until third quarter 1978, a full year later than the originally scheduled delivery date. It was too early for us to gather user experience. □

▶ computer. Optionally, a second Direct Interface Adapter can be added for a total of two paths to one or two host computers. Only one host link can be active at any given time. Use of a second Adapter for two paths to the same processor would be for back-up purposes.

TRANSMISSION SPECIFICATIONS

The Channel Interface Base serves as the interface between the Input/Output Multiplexer and up to four Channel Adapters. Six Channel Interface Bases are standard, with one to six additional Bases available as options. The maximum of 12 Bases can support up to 48 Channel Adapters. Different Channel Adapter types can be selected, depending upon the type of line interface to be supported Synchronous speeds up to 56,000 bps and asynchronous speeds up to 9600 bps are accommodated. Except for the Bisynchronous adapter, lines can be either full- or half-duplex. The number of lines each adapter can support is shown in Table 1.

The six Channel Interface Bases included in the basic 6678 are the "standard" type. The standard Base will support all Channel Adapters. A second type of Base supports all types of Channel Adapters except HDLC, and a third supports all except the Bisynchronous Adapter. Automatic dialing is available as a feature that occupies one adapter slot in the Channel Interface Base. Each Automatic Call unit can handle up to two lines.

SOFTWARE

The software to drive the 6678 front-end processor when it is attached to a Level 66 host is the Network Processing Supervisor (NPS). NPS will interface with GCOS-66 operating system and requires no applications reprogramming. Software similar to NPS that is native within the Multics operating system operates the front-end processor when it is attached to Level 68 hosts. Along with performing the communications line handling function, the 6678 software provides automatic restart/recovery options and statistical traffic recording.

Alternatively, the Remote Terminal System (GRTS) or its updated version (GRTS-II) will operate the Datnet 6678 when the host is a Level 66 computer. GRTS does not perform all the functions of NPS and in that light can be considered a sub-set of NPS.

CONSOLE: The System Support Controller serves as the interface between the Input/Output Multiplexer and the console. A diskette or a cassette drive can be attached to the controller for bootstrapping and operating system support. The Honeywell Heavy Duty Console is required when the operating software is NPS. Otherwise, a basic teleprinter console can be used.

PERIPHERAL INTERFACE: Up to two Peripheral Interface Adapters are optional. The primary reason for this capability is for the attachment of disk for audit, restart and message switch purposes. GRTS software does not support this option.

PRICING

The equipment is available for purchase or for rental under a 1-year, 3-year, 5-year, 6-year, or 7-year lease. Maintenance is included in the rental prices for periods from 8 a.m. to 6 p.m. on Mondays through Fridays. For other periods, the user pays a fixed percentage of the monthly maintenance charge. Alternatively, the user can obtain on-call maintenance service at standard hourly rates of \$45 per man-hour.

		Monthly Lease (1)			
		1-year	6-year	Purchase Price	Monthly Maint.
DCP6678	Basic Datnet 6678; includes 64K words of memory and 6 Channel Interface Bases; supports up to 48 lines	\$4,230	\$3,690	\$190,870	\$491
DCM6603	Memory, 64K words	616	524	24,870	116
DCF6601	Peripheral Interface Adapter	176	150	7,070	34
DCF6602	Direct Interface Adapter	176	150	7,070	34
DCF6605	Channel Interface Base, excludes Bisynchronous Adapters	38	32	1,501	8
DCF6609	Channel Interface Base, excludes HDLC Adapter	38	32	1,501	8
DCF6607	Channel Interface Base, accommodates all adapters	42	38	1,651	9
DCF6611	RS 232C Synchronous Interface	36	31	1,450	7
DCF6612	RS 232-C Asynchronous Interface	16	14	590	4
DCF6623	CCITT V.35 for HDLC Interface	80	68	3,430	11
DCF6627	CCITT V.35 for Wideband Interface	80	68	3,430	11
DCF6618	Bisynchronous Adapter	36	31	1,450	7
DCF6621	Bisynchronous Wideband Adapter	72	62	3,056	11
DCF6619	Synchronous, Wideband Adapter	72	62	3,056	11
DCF6620	HDLC Adapter	62	52	2,573	10
DCF6622	HDLC, Wideband Adapter	72	67	3,056	11
DCF6613	Automatic Call Unit	28	24	1,180	4
DCF6606	Heavy Duty Console	180	154	7,345	33
DCF6608	Basic TTY Console	104	88	3,640	31

(1) Includes prime shift maintenance. ■

