

## Honeywell Series 60, Levels 66 and 68

### New Product Announcement

The news from Honeywell Information Systems has been coming at a fast clip during the past few months. Covered in this announcement are new developments in hardware and software for the Level 66; new processors for the Xerox users group; and the probable replacement for the Level 66—DPS 8 family.

**HONEYWELL LEVEL 66:** New hardware and software enhancements are available for the Level 66 standard and DPS models. Enhancements to hardware are through changes in maximum configuration rules implemented through modification to GCOS. In total, Honeywell has added four support options to GCOS release 4JS for Level 66 standard systems and to GCOS release DPS1 for Level 66/DPS systems.

The processor support option extends the Level 66 central system configuration maximum from four to six processors on the 66/60, 66/80, and full-range Level 66/DPS. With this option, a system control unit can be configured with up to six CPU's and two I/O multiplexers.

The front-end processor support option allows up to eight communications processors to be configured on all Level 66 systems except the 66/05, the 66/07, and 66/17. The General Remote Terminal Supervisor (GRTS), Network Processor Supervisor releases NT3 (for standard systems) and DP1 (for Level 66/DPS systems), and GRTS-11 communication software may be configured in the front-end processors in any combination.

The program number as a resource option ensures the availability of a program number required for execution when memory is available. This option is most beneficial when the system is heavily loaded with a large number of tasks waiting for system resources.

The multicopy time-sharing support option enables up to four copies of the Time-Sharing System to be resident and to execute simultaneously. Up to 800 users can be supported through this option, dependent on available hardware resources.

**LEVEL 66/DPS SYSTEMS FOR XEROX USERS:** A third Level 66/DPS system designed for the Xerox user base has been introduced. Last year Honeywell announced the Level 66/DPS/C3 and /C5 systems for up to 120 and 200 users, respectively. The new processor, the Level 66/DPS/B3, is designed to accommodate up to 80 users. The B3, C3, and C5 hardware is similar to that of the Level 66/DPS processors marketed to Honeywell users. The C3 provides about 60 percent greater performance than the B3, while the C5 provides about the same performance increase over the C3. Honeywell has not released any performance comparisons between the Xerox and Honeywell versions of the Level 66/DPS.

The Level 66/DPS/B3 is an upgrade for the Sigma 6, 7, and 560 Series machines and runs under an upgrade to the CP-5 operating system, called CP-6. The Level 66/DPS/B3 will be available during the first quarter of 1980, while CP-6 available in December 1979 for use with the Level 66/DPS/C3 and C5.

The basic Level 66/DPS/B3 (CPS6723) consists of a modified Level 66 CPU with 2K cache and rated at 0.71 times the 66/80, an integrated controller, an integrated 27-slot IOM, free standing memory cabinet, three one-megaword memory modules, SCU (four megaword version), a 120-cps TWU1005 Teleprinter Terminal and a data communications subsystem with 80 low-speed asynchronous lines. The data communications subsystem consists of a 60 inch CAB9003 Bulkhead, 9-slot CAB9402 Megabus Extension, 4-slot CAB9401 Megabus Extension, 10-slot CPS9561 Level 6/43, 32K word CMC 9010 EDAC Memory Increment and Controller, three 32K word CMC9007 EDAC Memory Increments, CPF 9501 Memory Mapping and Protection Feature, PSS4002 Memory Power Save, MDC9101 Multiple Device Controller, DIM9101 Diskette Device Package, 256K-byte DIV9101 Single Diskette Drive ten MLC9101 Multi-line Communications Processors each with eight asynchronous lines, DCF6700 Level 66/Level 6 Coupler, and PSS9004 Power Distribution Unit. The basic Level 66/DPS/C3 and C5 are of similar configuration except that the C3 has 15 MLC9101 and the C5 has 25 MLC9101. Also, the Level 66/DPS/C5 has an additional system control unit and communications processor.

Specifications for the Level 66/DPS C3, C5, and B3 CPU include: internal code—ASCII; registers—8 index, 8 address, 8 descriptor, 1 instruction segment, and 2 general-purpose; cache

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The two low-end systems, the DPS 8/20 and DPS 8/44, are the entry level systems (ELS 1) and use bit slice microprocessor technology in certain execution units. The DPS 8/20 and DPS 8/44 each contain 18 microcomputers.

All DPS 8 systems utilize a newly designed high density universal board (HDU), which reduces the maximum number of boards required. The DPS 8 processors also offer an associative (cache) memory for holding the most recently referenced page table words, descriptor controlled access which permits new levels of security and integrity by providing hardware enforced protection, virtual storage addressing of greater than 8 trillion bytes, and single/double binary and hexadecimal floating point. Finally, the DPS 8 processors offer reduced energy consumption, BTU output, and floor space requirements. For example, the DPS 8/20 offers one third more performance, 50 percent less power consumption and BTU output, 20 percent less cabinet height, and 46 percent reduction in floor space when compared to the older Model 66/10. The DPS 8/70 in a two processor configuration delivers about 11 percent more power, requires 22 percent less energy, dissipates 22 percent less BTUs and requires 24 percent less floor space than a 66/80 three processor configuration.

The DPS 8/20 is designed to be used as a free-standing or remote host system and consists of the CPU, SCU, one megabyte of main memory expandable to 4 megabytes, and an IOM with 19 channel function slots and two SCU ports. The DPS 8/20 can be configured with up to two FNP's which may be either the Datanet 6641 or Datanet 6651. The DPS 8/20 is field upgradeable to the DPS 8/44 and has about twice the power of the IBM 4331. In comparison to the older Level 66 processors, the DPS 8/20 is 1.75 times the 66/05 and 1.33 times the 66/10.

The DPS 8/44 is similar to the DPS 8/20 in system design, packaging, and memory options, but offers 50 percent more performance than the DPS 8/20. Both the IBM 4341 and the two-megabyte DPS440 offer approximately the same performance level as the DPS 8/20. Neither of the ELS 1 systems are field upgradeable to the DPS 8/52 or DPS 8/70.

The DPS 8/52 offers two and one-half times the power of the DPS 8/20 and approximately 60 percent of the power of the largest processor in the line, the DPS 8/70. The IBM 3031 is rated approximately the same, while the DPS 520 provides 33 percent less power than the DPS 8/52. The technology employed in the DPS 8/52 is the same as that used in the DPS 8/70. Both the DPS 8/52 and DPS 8/70 are in the Univac 1100/80 class and are really Level 66 machines reimplemented in Shotky TTL. Memory, system controller and I/O controller remain unchanged from those found on the older Level 66 System.

The DPS 8/52 consists of a free standing central system which includes the CPU, SCU, one megabyte of main memory expandable to eight megabytes, and an IOM with 35 channel function slots expandable to 54 slots. The DPS 8/52 supports up to two FNP's which may be either the Datanet 6641 or Datanet 6651 and two system consoles. The DPS 8/52 is field upgradeable to the DPS 8/70.

The DPS 8/70 offers single processor performance of twice the power of the single processor Model 66/80 system and slightly below the IBM 3032. The DPS 8/70 consists of a free standing central system which includes the CPU, SCU, one megabyte of main memory expandable to 16 megabytes and an IOM with 35 channel function slots expandable to 54 slots. The DPS 8/70 is expandable with up to three additional CPUs, IOMs, and SCUs. A maximum of eight Datanet 6641 or 6651 FNP's and four system consoles can be supported.

The DPS 8 systems support all Level 66/DPS peripheral subsystems. Four new mass storage processors for general use on all DPS 8 Systems were introduced along with the 1.1 billion byte MSU0501 Mass Storage Unit. At the same time five new peripheral processors were announced that are specifically designed for use on the DPS 8/20 and DPS 8/44. All the new peripheral processors are microprogrammed units designed to reduce central processor overhead.

The general use mass storage processors include the MSP0604, MSP0607, MSP0608, and MSP0609. These units handle data transfer functions such as address conversions, formatting, status reporting and collection, transfer routing, test and diagnostic processing, seeks, and seek overlapping in addition to automatic I/O command retries and alternate track processing. The