

## BASF 7/8X Series

### PRODUCT DESCRIPTION

The new 7/88 is the top-end of the BASF 7 series and to date, is the most powerful member. It is competitive with the IBM 3081 model K, and comes in two versions, the single processor version, referred to as the 7/88 and a multiprocessor system, called the 7/88 MP. The central processor used in both is by far the most powerful in the BASF 7 line and, as with other members of the range, is manufactured by Hitachi. It has a cycle time of 30 nanoseconds and features high-speed arithmetic as a standard feature.

The standard 7/88 uses one processor, while the 7/88 MP can have from two to four processors. On the 7/88, main memory extends from 8 megabytes to 32 megabytes in increments of 8 megabytes. On the 7/88 MP, the size of the main memory is either 16 or 32 megabytes. The 7/88 can be field-upgraded to a 7/88 MP.

Besides having a more powerful CPU than earlier members of the BASF 7/XX series, the 7/88 also features an Input/Output Processor as part of its configuration. The 7/88 is equipped with either one or two I/O processors, while the 7/88 MP can have from two to four. Each of these input/output processors can have a channel group with either 4 or 8 channels attached, thus producing a maximum complement of 16 channels on the 7/88 and 32 on the 7/88 MP. Each channel is of the data streaming variety with a possible throughput rate of 3 megabytes/second. On the 7/88, therefore, the maximum theoretical throughput rate is 48 megabytes/second with double this rate possible on the 7/88 MP in its maximum 4 I/O processor configuration. This rate is achieved in practice, according to BASF, by new disks, which they introduced with the series. The 6480/6481, which run on the BASF model 6085/7 controller are compatible with the IBM 3380/3880 with extended functions. The storage capacity of each unit is 1260 megabytes. Up to two units can be attached per controller. The average access time, including latency, is 24.3 milliseconds.

The 7/88 models, like the other BASF 7 Series computers, features IBM-compatible software. System/370 EF, 3033 EF, 370 Assist for MVS, VM 370 Assist and others, such as "Start I/O Fast Queueing", are all offered.

The operating systems which will run on the 7/88 consist of VM/370, VM/SP and MVS/SP. The 7/88 processors when equipped with extended architecture (not, as yet fully defined), will also run version 2 of MVS (XA).

All program products from IBM and those from compatible producers can be made to run on the 7/88.

**PRODUCTS ANNOUNCED:** BASF 7/88 and 7/88 MP (multiprocessor), new top of the range models in the BASF plug-compatible family of machines. They are based on Hitachi's M2808.

**COMPETITION:** IBM's 3081 model K.

**DATE ANNOUNCED:** March 1983.

**SCHEDULED DELIVERY:** Second quarter 1983.

**VENDOR:** BASF AG, D6700 Ludwigshafen, West Germany. Telephone (621) 601.

**MANUFACTURER:** Hitachi, Japan.

**CONFIGURATIONS:** 7/88; the basic configuration of the 7/88 consists of a central processor using the IBM/370 standard instruction set, the IBM/370 standard feature, the IBM/370 EF (Extended Feature), VMA, 3033 EF, a buffer store of 256KB, high-speed arithmetic and I/O control. As part of this basic configuration, there is also a console service processor, one input/output processor with its one Byte Multiplexer Channel (BYMPX) and four Block Multiplexer Channels (BLMPXs).

Options for the 7/88 in its single processor version comprise: an integrated array multi-processor, from one to three increments of 8 megabytes of main memory, providing a total of 32 megabytes in all, an extra BYMPX or an extra BLMPX plus one more BLMPX. Thus the number of channels on the single, standard I/O processor can be four BLMPXs and one BYMPX, four BLMPXs and two BYMPXs, or five BLMPXs and one BYMPX. The number of channels and their options can be doubled by adding another I/O processor.

The 7/88 can be field upgraded to a 7/88 MP. The 7/88 MP basic configuration comprises two processors, each with the plug-compatible features listed for the 7/88 configuration, a total of 16 megabytes of main memory shared by both processors, a console service processor for each central processor, a single I/O processor for each central processor, each equipped with a basic complement of one BYMPX and four BLMPXs, and I/O control on each central processor.

The joined dual-7/88s share the same storage and have the same operating system. It is possible to process two instructions concurrently. A pipeline technique is applied on each processor to decode and execute instructions. The 7/88 MP may be reconfigured as two separate 7/88s.

Options for the 7/88 MP are: an integrated array processor for each of the two CPUs, an extension of main memory from its basic 16 megabytes to 32 megabytes, the addition of one I/O processor to each of the dual 7/88s making a total of four I/O processors. Each of the I/O processors can have BYMPX and BLMPX channel option extensions identical with those listed for the 7/88 in its single processor form.

### PRICING

At the time of this writing BASF has not released prices for the 7/88 systems.

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**RELATION TO CURRENT PRODUCT LINE:** The 7/88 and 7/88 MP are the current top-of-the-line as far as BASF plug-compatible ranges are concerned. These machines are a logical extension to the members of the BASF 7/6X and 7/7X series, which now brackets the IBM 4300, 303X and the 3081.

**COMPETITIVE POSITION:** the reception accorded to earlier members of the BASF plug-compatible products has been very good in both Germany and the U.K., especially. The main competitors are, of course, the corresponding

IBM machines (the 3081 model K for the BASF 7/88), but BASF has also been replacing the machines of other manufacturers. Particularly in Germany, many users seem to favor IBM-compatible machines over the competition. And, the BASF systems are undoubtedly attractive, costing up to 25% or so less than their IBM counterparts and using less power and less physical space. Reliability of these Hitachi-based products is also good. It seems, therefore, that as long as potential users do not expect miracles in the software area, that is, the latest operating system at the time of its release by IBM itself, for example, BASF, can continue to make inroads into IBM's customer base.□