

#### The Datapoint Marketing Newsletter

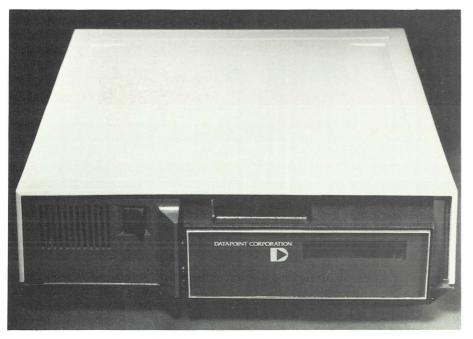
"Out-thinking our competition to help your customers out-think theirs"

No. 26

CONFIDENTIAL - FOR DATAPOINT USE ONLY

September 1980

# Announcement Package for 9310/9320 Drives and Systems



It's here! The 10MB disk cartridge drive for 1500 and 1800 processors may now be ordered. All of you are probably aware of the fact that this drive is manufactured by Honeywell Bull in France, imported by us, and assembled at our plant in Sunnyvale. You should also realize that we are in the standard production ramp-up period with this product. What you may not be aware of is the popularity of this product--everybody wants one. The initial plan was to have the shipments controlled during the first quarter of availability, but that is not going to be the case now. It is going to be simply FIFO -- first in, first out. So the earlier you get your order in, the earlier you will get it shipped. Special cases such as key accounts or customer satisfaction situations will be handled in the usual manner for these types of orders -- through the RM and the OPS Area Director. You can check with your RM to find out what the lead times are going to be initially.

Some information on the various systems is included here to assist in

### What's in a System?

All of the systems below contain a single diskette drive. This is the standard drive for each processor, single density for the 1500, dual density for the 1800. Both processors can support up to four of the 9310/9320 disk drives for a total of 40MB of storage. (Who said the 1500 doesn't have enough storage?). The 9310 and 9320 drives can be mixed in a system, the only difference between them being the integral FPCA in the 9320. This is a four-port comm adaptor, not eight-port like a 9462. It is powered by the 9320, however, and does not require a 9022 power supply.

The 0506 upgrade kit will convert a 9310 drive to a 9320 drive. It consists of the FPCA which can be installed in the field. So your customer doesn't have to get the FPCA on his initial order if he doesn't need it right off the bat.

#### Continued on page 2

your marketing of this product. First is model codes and descriptions:

MODEL	PROCESSOR	DISKETTE	DISK	INTEGRAL FPCA *
1514	60K 1500	.25MB	10MB	No
1515	60K 1500	.25MB	10MB	Yes
1816	64K 1800	.5MB	10MB	No
1817	128K 1800	.5MB	10MB	No
1818	64K 1800	.5MB	10MB	Yes
1819	128K 1800	.5MB	10MB	Yes
1820	128K 1800	.5MB	10MB	No (External RIM)
9310	N/A	N/A	10MB	No
9320	N/A	N/A	10MB	Yes

\* four-port comm adaptor

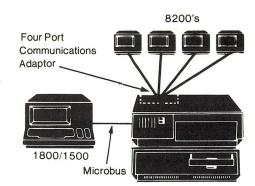
Some additional Model Codes of interest to you are:

MODEL	DESCRIPTION	PRICE	INST	MAINT
80501	10MB removable cartridge	\$250	N/A	N/A
0506	9310 to 9320 upgrade kit (adds the FPCA to the 9310)	\$850	\$150	\$8

(See Figure E for pricing of drives and various systems and components)

#### Continued

He can order the 0506 kit at a later time and then have the DATASHARE<sup>®</sup> capability when he really needs it. As an example, say that your account needs a 1514 today but may need a 1515 at some later date. He can order the 1514 now and upgrade later to a 1515 with the upgrade kit. Same holds true for the 18xx configurations. Each system, like this dual density 1800 system, contains a standard single diskette drive. It is contained in the standard diskette cabinet but has only one drive -- the left side of the housing is empty. The 10MB disk drive is housed in a cabinet of the same size as the diskette and is stackable.





#### DATASHARE and the FPCA

The 1515, 1818, and 1819 contain an integral FPCA and thereby support DATASHARE systems. The 1515 runs DS41500 which is a modified version of DS42200. (See Figure A for major differences between DS41500 and DS5). DS41500 will support up to four stations with the console optionally serving as port 1. DS5 version 3 runs on the 1818 and 1819 and will support up to five stations on the 1818 (the console plus four tubes), and up to nine stations on the 1819 (the console plus eight tubes) with the addition of a second 9320 drive. Since the 9320 contains only four ports, a second 9320 is required to configure the additional four stations.

DS5 will support a 9462 MPCA in conjunction with a 9310 drive. This configuration would be desirable in a situation where a customer has previously purchased an 1800, 9462, and 9022 power supply and wishes to upgrade to a 9310 drive.

Another situation would be for the user who wants to use more than four DATASHARE terminals but doesn't want or need a second 9320 drive. If 10MB of storage is sufficient for him, he can optionally install a 9462 MPCA and a 9022 power supply along with his 10MB 9310 drive. DS5 will allow you to configure either a 9462 MPCA or a 9320 FPCA, but not both. The two will not be allowed to be mixed on a single processor. On a previously purchased system with a 9462 and 9022 the customer will most likely choose to use the 9462 rather than the 9320 since he has already paid for the MPCA. On a leased system this is not a problem since the 9462 and 9022 can be cancelled upon installation of the 9320 drive.

**NOTE:** There is a possibility of electrical static discharge (ESD) occurring on 8200's running from the 9320 FPCA. This ESD problem can be minimized by using the three pair shielded cable (Model Code 3449) instead of the standard three twisted pair cable (Model Code 3452).

Following is a list of some of the major differences between DS41500 and DS5. Be sure to inform your customers of these differences if they are planning to develop a single package to run under both interpreters. Otherwise, you are apt to have an extremely irate customer on your hands when the package doesn't operate properly under DS41500.

\* DS41500 has a maximum program size of 32K; DS5 has a maximum of 64K.

\* User Data Area (UDA) under DS5 can approach 8K per port; under DS41500 the limit is 4K per port.

\* Good news: function keys are supported on the console and on the 8200 (3600s don't have function keys).

\* There is no MULTILINK, (internal or external) under DS41500. This function requires the use of DBML15.

\* DS41500 does not have the editing features, the extended TRAPs, or the extended instructions of DS5.

\* DS41500 does not support the DATASHARE library feature. All programs must be standalone DOS files.

\* Highlighting is implemented on the console only.

Figure A -- DS41500/DS5 Comparison

#### How to Make Your Diskette System Grow Up

So far we have been discussing systems. Now let's talk upgrades. To upgrade an existing 1800, simply order a 9310 or 9320 drive (depending on whether or not you need the integral FPCA). A 1500 must have 60K of memory, so a 1532 must also get the memory expansion kit (model code 6674) in addition to the 9310/9320 drive. A 1536 requires only the 9310/9320 since it is already at 60K. Extension drives are the 9310/9320 drives. Same drive, same price. There is no difference between the initial drive and add-on extensions. But 9310 drives can be added on to a 9320 with no problem, so you don't have to pay for the FPCA if you don't need it on extension drives. And remember that the 9310 can also be field upgraded to a 9320.

The 9310/9320 upgrade drives do not include the single diskette drive. The upgrades utilize the existing double diskette drives on the basic system. There is no way to order the single diskette as an upgrade either -- it is only available on the system configurations, such as the 1515 and 1818. So the upgraded 1500 and 1800 diskette systems will consist of the 10MB disk cartridge drive and the standard twodrive diskette module.

To upgrade an existing 64K 1800 to 128K, order the 64K memory expansion kit (model code 0542) at a onetime cost of \$1500. This is a new product. Monthly maintenance is \$8 and installation is \$125.

Now is as good a time as any to mention that every 9310/9320 drive is shipped with one model 80501 removable disk cartridge. This includes all of the systems as well as the upgrade/extension drives. So, if your customer wants only one cartridge, you don't have to order any.

# What about Diskettes?

Let's discuss the relationship between the diskettes and the disks. This relationship differs on the 1500 and the 1800 processors. Both processors require a diskette to Boot from. The ROM Boot has not changed, and therefore it still looks for a diskette. Once the diskette is Booted, the new Boot routine looks for the presence of an on-line active 9310/9320 drive. If one is found, it then becomes the Booted drive and becomes logical drive 0 (zero). This is where the 1500 and the 1800 begin to differ.

The 9310/9320 drive on a 1500 runs DOS.H just like the diskette. As a result, the diskettes are treated as online storage in addition to the disk. This means that a 1514 or 1515 system will have 10.25MB of storage--10MB of disk plus .25MB of diskette. An upgraded 1532 or 1536 will have 10.5MB of storage. Programs and data may reside on the disk or the diskette as needed by the user and are accessible from all languages. Data files may be transferred between the media via the COPY command as in the case of diskette-to-diskette transfers.

The 1800 runs DOS.G on the diskettes and DOS.D on the 9310/9320 disks. This prevents the diskettes from being on-line with the disk drives. Files may be transferred between the disks and the diskettes by using COPYFILE. After the 9310/9320 is Booted, the diskettes "go away" from the system. They effectively become a backup media only.

#### **1500 REMAP**

An additional feature on the 1500 is a utility called REMAP. This allows the user to logically remap the drive assignments to any desirable configuration. For example, the default drive assignment is for the 9310/9320 to be drives 0-3 and the diskettes to be drives 12 and 13. This allows for three 9310/9320 drives (as 0 through 11) and four diskettes (as 12 through 15). But that is awkward to deal with since 4 through 11 are unused on a single-drive system. So the user can REMAP them to assign the diskettes as drives 4 and 5, thereby using contiguous drive numbers. It is also used to MAP out the diskettes when a fourth disk drive is installed. The configuration will remain until REMAP is run again or until the processor is Booted. REMAP chain compatible, making it relatively simple and fool-proof for use by unskilled operators in remote sites.

### How to Do Disk Backups

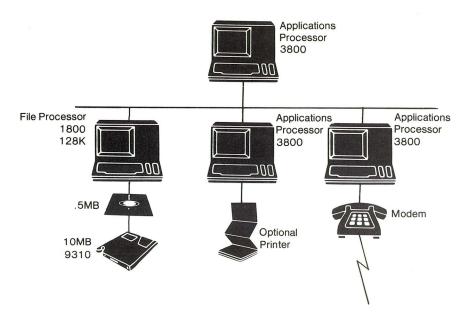
There are two new utilities called LOAD15 and LOAD18, for use on the 1500 and 1800 processors, respectively. These allow backup of the 9310/9320 drive to diskette. The 9310/9320 drive is divided into four logical drives of 2.5MB each (that's not bad though, because you get 1024 file names instead of 256). LOAD15 and LOAD18 backup an entire logical drive (2.5MB) onto diskettes. It will span diskettes, serially marking them as it goes. To backup one logical drive, you will need ten diskettes on a 1500 and five diskettes on an 1800. The execution time for these utilities is three and a half (3 1/2) minutes per diskette. These diskettes are in a unique, compressed format usable only by the respective LOAD utility to restore a disk drive. These two utilities work on a logical DRIVE basis and perform a mirrorimage backup of the disk.

Another method of accomplishing backup is on a logical FILE basis. In a normal production environment the only data that you really need to backup is the volatile data files. The actual programs (DBC files), System files, Utility files, Index files (/ISI files) and the like do not change or do not need to be backed up on a regular basis. So you can use the COPY utility on the 1500 or the COPYFILE utility on the 1800 to copy these data files on a file-by-file basis to diskette for backup. The LOAD procedure can be used one time to create a complete backup of all programs and System files, and the production backup can be done through the COPY or COPYFILE routine. This will provide a practical means of obtaining a backup of the data files while significantly reducing the amount of time required to perform that function in comparison to the LOAD routine.

Something to be aware of: DC-CONV18, DCDFMT18, DCDFMT18, DCDFMT15 are not supported on the 9310/9320 drives. Any user wanting to utilize these utilities must have a two-diskette drive system. On the 1800 it must run under DOS.G in a diskette-only environment. So don't order one of the seven system configurations if these utilities are to be used. Order a 1500 or 1800 diskette system with an add-on 9310/9320 drive.

#### **1800 as ARC<sup>™</sup> AP**

Did you notice that the 1800 uses DOS.D with a 9310/9320? What possibilities does that hold? For one thing, it means that the 10MB of data is treated as local on-line storage if the 1800 is on an ARC system (they're all DOS.D). This is an economical means of providing local storage on an ARC system. Perhaps you have a prospect or a customer that wanted that capability but balked at the price of the system that was previously required to do it. With the 1816 there is an extremely attractive solution to the problem of local storage on an ARC system -- 10MB of data in an easy-touse, compact drive that spins up and down in approximately 10 seconds.



#### 1800 FP in a "Little" ARC System

But then why do we have that 1820 system without the FPCA but with a RIM? Could that possibly be a File Processor? No way, right? Wrong! The 128K 1800 with a 9310/9320 drive and an external Rim can function as a File Processor on an ARC system. But what could you possibly do with it, you ask. Well, it could function as an FP in an introductory ARC system with three or four 3800 processors. This makes a perfect introductory ARC system, or a small clustered word processing system, for that user who doesn't need a whole lot of horsepower right now but doesn't want to be locked out of an upgrade path later. With this configuration he buys what he needs today with the option of expanding it later into whatever configuration he might need. This makes the ARC building block approach even more versatile than ever by taking it another step lower in price and performance, opening up a whole new market that you couldn't satisfy before.

And the beauty of this approach is that when you expand later on and add a 6600 FP, the 1820 can become an AP with local storage or can remain as a secondary, or auxiliary, FP in the same ARC system.(See Figure B for system configuration). Figure B -- 1800 as FP in Small ARC or Clustered Word Processing System

This is still an 1800 processor, about 1/3 the speed of a 6600 FP. But in a small ARC system running IEOS and jobs that are not I/O bound, it should function satisfactorily. Benchmark figures on this configuration will be distributed later as soon as they are completed. What you have here is a good introductory ARC system at a low price with great upgrade potential.

#### 1800 Local FP in a ''Big'' ARC System

Another use for an 1820 FP would be as a sub-FP, or local FP, in a larger ARC system. With the advent of IEOS on ARC, the storage requirements are going to increase dramatically. Every document entered by every user on the ARC system would have to be on-line at all times on the central FP. That could rapidly grow into a large storage requirement involving several File Processors. But the judicious allocation

of a few 1820s in the office area could reduce that requirement significantly. By giving each of several office areas their "own" 1820, the users would have direct control over which IEOS document libraries were available at any time. They could easily pop disk cartridges in and out as needed and put а virtually unlimited storage requirement on removable cartridges instead of on-line File Processor storage. They would still have access to the central FP for software and storage, but would have their own local dedicated FP for their own storage needs. Nifty idea, isn't it? (See Figure C for system configuration).

And don't forget the programmers. With their own 1820 they could ensure that software under development would in no way affect the production software. They could retain copies of production data files on the 1820 for test purposes and not worry about blowing up the system. Software and data files could be moved from the central FP to the 1820 with the COPY command at will. They could create their own sub-ARC within an ARC for test purposes by simply running MOUNT on drives from the 1820 only. And the same 1820 could be used as an AP by simply Booting it and running MOUNT to access the central FP. Talk about versatility! This is the answer to every development programmer's dream.

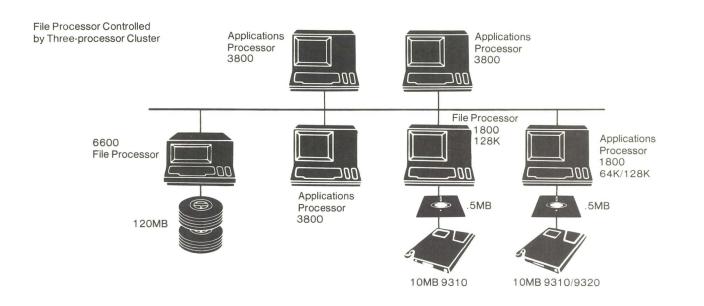


Figure C -- Using an 1800 as a Locally-Controlled Database

# Software and Documentation

There are only a few new pieces of software on the 9310/9320 drives. The 1500 uses DOS.H 2.5, the 1800 uses DOS.D 2.6 (ordered on dual-density diskettes and loaded onto the 9310/9320). The 1800 uses DS5 version 3. Following are the new software items with model codes:

Description	Model Code		Users Guide	Price
DS41500	20727	\$15	50482	\$4.00
LOAD15	20726		50497	\$1.50
LOAD18	40426		50498	\$1.50
DOS.H 2.5	40279		50308	\$9.00
DOS.D 2.6	40427		50432	\$15.00

Additional pieces of literature that you might be interested in are the product spec, GODE, and flysheet. A copy of the product spec and the GODE are included in the shipping list of every drive. Model codes and prices are:

Description	Model Code	Price
9310/9320 Product		
Specification	60876	\$1.50
9310/9320 GODE	60910	\$1.00
9310/9320 Flysheet	60918	\$0.50

The 80501 disk cartridges are shipped in virgin condition--they are not formatted. DOSGEN will need to be run on them before they can be used. All software will be distributed on diskette and loaded onto the disk at the user's site. The 1500 systems use DOSGEN under DOS.H 2.5 to prepare the disk cartridges. The 1800 systems use a new utility called GEN9320, which is included with DOS.D 2.6 on dual density diskettes. All seven system configurations will include in their shipping lists all of the software related to the 9310/9320 drives. For upgrades the software must be ordered separately since there is no way of determining on which processor a 9310/9320 drive will be installed. The LOAD15 and LOAD18 utility programs are not included on any of the system diskette packages and must therefore must be ordered separately when ordering an upgrade drive. They are, however, included in the shipping lists of the seven system configurations.



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#### DATASHARE Benchmarks

Some preliminary DATASHARE benchmarks were run on 1515 and 1818 systems to get a feel for the relative performance of the two systems. These benchmarks were designed in a manner that tended to "break" the system, not as a "real world" environment. The same tests were made about a year ago on other DATASHARE systems, so we were able to give you side-by-side performance factors for most systems in comparison to the 9320 systems. (See Figure D for benchmark timing results.)

Basically, what the benchmarks illustrate is that the 1818 appears to outperform a 3800 running the same applications under DATASHARE. The 1818 is, however, slower than a 5500-no big surprise.

The benchmark results show that the 1800 has a performance edge on the 1500 under DATASHARE. But then the 1800 has a similar edge in most areas of performance. It is, after all, "big brother" to the 1500. As more ports were added to the configurations, the 1800 showed a slightly greater performance than the 1500. But the 1500 functions quite well in a DATASHARE environment with two or three ports. If you are going to need more ports than that or if you need a parallel I/O bus, go with the 1800. Otherwise the 1515 makes a beautiful small DATASHARE system at only \$17,630.

The tests used here were run in April 1979 on all of the listed systems with the exception of the 1515 and 1818 systems. The times stated were obtained at that time. The tests were run just recently on the 1515 and 1818 to obtain their times. All of the systems are listed here in an effort to provide

Processor	Software	Test "A" Disk Activity			Test "B" Disk Activity			Test "C" Disk Activity		
		1170	DS41170	4.05	3.90	5.67	5.16	6.12	7.98	4.13
2200	DS42200	2.43	3.62	5.39	2.45	3.57	5.34	2.49	3.72	5.62
1800 Diskette	DS51800	1.55	2.99	5.28	1.75	4.24	7.61	1.63	3.33	6.1
3800	ARC/DS51800	1.50	2.59	3.41	1.66	3.35	5.49	1.61	2.75	3.82
5500	ARC/DS55500	1.42	1.66	2.43	1.61	2.30	3.67	1.47	1.68	2.4
6600	ARC/DS56600	1.43	1.61	2.35	1.57	2.17	3.22	1.43	1.72	2.28
6600	ARC/DS55500	1.44	1.66	2.37	1.56	2.32	3.61	1.43	1.63	2.29
1515	DS41500	2.38	3.98	5.93	2.35	4.15	6.13	2.67	4.42	6.4
1818	DS5 3.1	1.55	2.48	3.19	1.75	3.32	4.67	1.65	2.72	3.5

Figure D -- Benchmark Timing Results

you with a comparative chart to determine proper placement of the 1515 and 1818 DATASHARE systems.

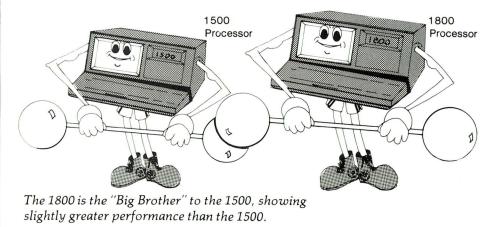
Three tests were run with different configurations. Test "A" was configured with three ports running key data entry. Low disk activity was based on 200 records of 20 bytes each being keyed in and sequentially written to disk. Medium disk activity was the same thing plus a single ISAM read of a 50 byte record for each record written. High disk activity was again the same thing plus 3 ISAM reads of a 50 byte record for each record written.

Test "B" is identical to Test "A" except that a fourth task was brought up. This task was strictly a number crunching program. The effect of this program is to tie up the background in DATASHARE with heavy processor activity.

Test "C" is identical to Test "A" except this time the fourth test is doing a display loop. The effect of this program is to load down DATASHARE's foreground activity.

In each test the first port of 200 writes concluded the test.

The figures given are the average times in seconds per record for each of the various systems.



#### "Real World" 1500 DATASHARE Benchmarks

In a separate benchmark the 1500 was tested in a manner that more closely resembled a production environment. DS41500 was configured with four ports, port one being on the console. User data area was evenly divided among the four ports. The situation emulated was that of a user with two ports performing an order entry function on a regular basis, and two ports executing an occasional inquiry-only function on an irregular basis. The order entry function was simulated by running the DATASHARE Super Demo package on the console and an 8200 terminal. The two inquiry stations were not implemented, but the configuration was such that the overhead was there in DS41500, which still polled them.

The console and the 8200 were both running through the full gamut of the Super Demo package while the other two phantom ports were idle. The response time experienced on the active ports was quite satisfactory. There was little or no degradation on either port due to the activities on the other port, regardless of which of the programs were running. This benchmark was performed as part of a customer visit with the customer actually operating the 8200. Both the customer and the Datapoint people present were quite impressed with the performance. This simulation served to show that the 1500 with the 9320 drive can be an effective DATASHARE system. (By the way, that customer signed the order as a result of that impromptu demo.)

### IEOS on the Mighty 9320

Benchmarks were also run for IEOS on 1500 and 1800 systems configured with the 9310/9320 drive. The results were extremely pleasing to those people considering running IEOS on either of those two processors. The 1515 had performance just under that of a 3800. The 1818 performance was virtually equal to that of the 3800. This just serves to prove that both of these systems can serve quite satisfactorily as stand alone IEOS Word Processing stations in addition to performing their normal Data Processing functions.

Don't forget that the 9310/9320 drives are daisy chained along the diskette micro-bus on both the 1500 and 1800 processors. There is no parallel I/O bus on the 1500. So if a customer needs a parallel I/O device (such as a printer or tape drive), the 1500 cannot be used. That would require the 1800. The gains made with the 9310/9320 drive are greatly enhanced storage capacity, improved I/O speed, and DATASHARE capability on the 1500. A great system -- in the Datapoint tradition!

That pretty much gives you all of the information available on the 9310/9320 drive. You should be able to answer any and all questions that will be presented in a marketing situation. You have waited a long time for this product, and now it's here. There should be absolutely no problem in marketing it -- the marketplace has been demanding this enhancement and is eagerly awaiting its availabilty. This drive will give you whole new markets that you couldn't approach before, and give both the 1500 and 1800 processors an extremely attractive and positive upgrade path like never before. It's here, it's official, it's available, it's highly marketable.



Any questions pertaining to these products can be directed to Product Marketing, Small Systems, at extension 7583.

Figure E--Pricing Chart

DESCRIPTION		LIST PRICE	LEASE 1-YR	LEASE 2-YR	LEASE 3-YR	RENT	MAINT	INST
<u>9310</u> 10MB CARTRIDGE 1500 OR 1800, W 4-PORT COMM. AL	ITHOUT	\$10,400	\$460	\$390	\$340	\$575	\$80	\$175
	\$10,400 \$9,880 \$9,360 \$8,840 \$8,320							
<u>9320</u> 10MB CARTRIDGE 1500 OR 1800, Y 4-PORT COMM. AL	ITH	\$10,950	\$480	\$407	\$355	\$600	\$ 88	\$175
QTY 4-10 S QTY 11-25	\$10,950 \$10,400 \$9,855 \$9,308 \$8,760							
1514 1500 PROC., 608 .25MB SINGLE DI DRIVE, 9310 CAF DISK DRIVE	SKETTE	\$17,160	\$790	\$673	\$585	\$988	\$143	\$250
OTY 4-10 OTY 11-25 OTY 26-50	517,160 516,300 515,444 514,586 513,728							
1515 1500 PROC., 60k .25MB SINGLE DI DRIVE, 9320 CAR DISK DRIVE	SKETTE	\$17,630	\$810	\$690	\$600	\$1015	\$151	\$250
QTY 4-10 QTY 11-25 QTY 26-50	517,630 516,750 515,867 514,986 514,104							
1816 1800 PROC., 60K .5MB SINGLE DIS DRIVE, 9310 CAR DISK DRIVE	KETTE	\$20,280	\$830	\$733	\$650	\$1038	\$170	\$250
OTY 4-10 \$ OTY 11-25 \$ OTY 26-50 \$	20,280 19,266 18,252 17,238 16,224							
1817 1800 PROC., 128 55MB SINGLE DIS DRIVE, 9310 CAR DISK DRIVE		\$21,580	\$885	\$778	\$687	\$1106	\$178	\$250
QTY 4-10 \$ QTY 11-25 \$ QTY 26-50 \$	21,580 20,500 19,425 18,345 17,265							
<u>1818</u> 1800 PROC., 60K .5MB SINGLE DIS DRIVE, 9320 CAR DISK DRIVE	KETTE	\$20,750	\$850	\$750	\$665	\$1063	\$178	\$250
DTY 4-10 \$ DTY 11-25 \$ DTY 26-50 \$	20,750 19,713 18,675 17,638 16,600							
1819 1800 PROC., 128 .5MB SINGLE DIS DRIVE, 9320 CAR DISK DRIVE	KETTE	\$22,050	\$905	\$795	\$702	\$1132	\$186	\$250
DTY 4-10 \$ DTY 11-25 \$ DTY 26-50 \$	22,050 20,950 19,845 18,745 17,640							
1820 1800 PROC., 128 5MB SINGLE DIS DRIVE 9310 CART DISK, RIM	KETTE	\$22,050	\$905	\$795	\$702	\$1132	\$186	\$250
DTY 1-3 S DTY 4-10 S	22,050 20,950 19,845							

