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Media Initialization

The INIT Program

The INIT program is a run-only BASIC language utility which tests media for defective tracks, establishes physical records, and creates both main and spare file directories. To run the program, first be sure that the medium containing utilities is on-line. Then execute the following:

RUN"INIT"

The initial menu is:

HP250	INITIALIZATION UTILITY		
INITIALIZE	- Tests the disc medium and prepares the medium for use by the HP250.		
PURGE ALL - Eliminates all files currently stored on the specified medium.			
EXIT PROGRAM - Terminates program.			
EXIT - Returns to the previous menu.			
Please select a			
INIT- IALIZE	PURGE EXIT ALL PROGRAM		

To initialize a blank medium, first press the INITIALIZE softkey. The display now indicates the mass storage devices which are on-line; "unavailable" indicates an empty drive; "uninitialized" indicates a blank medium.

Initialize

Press the appropriate softkey to select the medium to be initialized. The next menu is one of the following:

Flexible Disc

INITIALIZATION UTILITY HP250 INITIALIZE Selected device is FLEX DISC :F2,6,0. Media will be initialized with Interleave = 4 with standard format. CHANGE FORMAT - Specifies the media format used (see BASIC programming manual). INTERLEAVE - Allows you to specify the number of revolutions required to read a track of information (see BASIC programming manual). Please press CONTINUE to proceed. CONTINUE CHANGE INTER-EXIT FORMAT LEAVE

5 Mb. Disc

	INITIALIZATION UTILITY
HP250.4.E	INITIALIZE
Selected devi	ce is SMB DISC :G2,7,0.
Media will be	e initialized with standard format.
CHANGE FORMAT	- Specifies the media format used (see BASIC programming manual).
DIRECTORY	- Changes directory capacity (see BASIC programming manual).
Please press	CONTINUE to proceed.

Tape Cartridge

IP250		TION UTILITY IALIZE		
Selected device is CTD	:K2,7,1.			
1edia will be initialized	with standar	d format.		
Please press CONTINUE to p	oroceed.			
CONTINUE				EXIT

If a message indicates that a tape is unavailable when a tape is really in the drive, you may have one of these situations:

- Disc is uninitialized. In this case, switch from disc buffered mode to memory buffered mode. Use the DIRECT command as described in Chapter 6 of the BASIC manual.
- 2) Tape was removed from another drive. Run TAPFIX as described in Chapter 6 to check the status of the tape.
- 3) Drive is waiting for another tape. Run TAPFIX as described in Chapter 6 to check the status of the tape.
- 4) Tape is not loaded properly. Eject the tape from the drive, and reinsert it, allowing it to load properly.

7908 Disc

INITIALIZATION UTILITY
INITIALIZE

HP250

. .. - .

Selected device is 7908 DISC: Q2,7,0.

Media will be initialized with Interleave = 1 with standard format.

INTERLEAVE

 Allows you to specify the number of revolutions required to read a track of information (see BASIC programming manual).

DIRECTORY

- Changes directory capacity (see BASIC programming manual).

Please press CONTINUE to proceed.

CONTINUE INTER- DIRECTORY EXIT
LEAVE 4:1472

7906 Disc

INITIALIZATION UTILITY
INITIALIZE

HP250

Selected device is 7906 CART :C2,5,0.

Media will be initialized with standard format.

CHANGE FORMAT - Specifies the media format used

(see BASIC programming manual).

DIRECTORY

- Changes directory capacity (see BASIC programming manual).

Please press CONTINUE to proceed.

CONTINUE CHANGE DIRECTORY EXIT 50RMAT 2:1200

7911 Disc

INITIALIZATION UTILITY INITIALIZE HP250 Selected device is 7911 DISC :R2,7,0 Media will be initialized with Interleave = 1 with standard format. - Allows you to specify the number of revolutions required to read a track of information (see BASIC programming manual). - Changes directory capacity (see BASIC programming manual). DIRECTORY Please press CONTINUE to proceed. DIRECTORY EXIT INTER-CONTINUE 4:1472 LEAVE

7912 Disc

INITIALIZATION UTILITY HP250 INITIALIZE				
Selected devic	ce is 7912 DISC :S2,7,0			
Media will be	initialized with Interleave = 1 with standard format.			
INTERLEAVE	 Allows you to specify the number of revolutions required to read a track of information (see BASIC programming manual). 			
DIRECTORY	- Changes directory capacity (see BASIC programming manual).			
Please press	CONTINUE to proceed.			

Media Initialization

To specify an alternate flexible disc media format, press CHANGE FORMAT until the desired format appears on the screen. The HP interchange format allows you to use the media on other compatible HP systems. The IBM format allows you to use the media on both HP 250 and compatible IBM systems.* A disc interleave of 1 should be used with the IBM format.

Track Interleave refers to the number of disc revolutions needed to read a complete track of information from a disc. You may want to alter the disc interleave for certain less common applications. Refer to the chart below for the default interleave and legal range for each disc.

Disc	Default Interleave	Possible Interleave Values
7908	1	1-29
7906	1	1
Flexible	4	1-29
7911	1	1-29
7912	1	1-29
5 Mb. Di	sc 1	1

To specify an alternate interleave format, press the INTERLEAVE softkey and enter the desired format number for the disc.

Applications involving a large number of files may necessitate an increase in the size of the directory. The directory softkey displays the current number of tracks specified for the directory itself and the number of files that the directory may contain.

See the table of Directory Sizes on the next page.

NOTE

When duplicating one disc from another, both discs must have the same directory sizes.

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^{*}Specifying the IBM initialization format only allows flexible discs to be used on either an HP 250 or an IBM system. It does not enable one system to read data written on disc by the other system; that requires unique software. In addition, an IBM data structure may need to be established on the disc. Refer to the system's operating procedures for more details.

Directory Sizes

Tracks for Directory	File Entries	Tracks for Directory	File Entries
5 Mb. Disc		7910	1
1	368	1	384
2	768	2	800
3	1168	3	1200
4	1568	4	1616
5	1968	5	2032
6	2352	6	2432
7	2752	7	2848
8	3152	8	3248
9	3552	9	3664
10	3952	10	4080
11	4336	11	4480
12	4736	12	4896
13	5136	13	5296
14	5536	14	5712
15	5936	15	6128
10	5350		0120
7906		7911	
1	592	1	656
2	1200	2	1344
3	1824	3	2032
4	2432	4	2704
5	3056	5	3392
6	3664	6	4080
7	4272	7	4752
8	4896	8	5440
9	5504	9	6128
10	6128	10	6800
11	6736	11	7488
12	7344	12	8176
13	7968	13	8848
14	8576	14	9536
15	9200	15	10224
	5200		
7908		7912	
1	352	1	656
2	720	2	1344
3	1104	3	2032
4	1472	4	2704
. 5	1840	5	3392
6	2224	6	4080
7	2592	. 7	4752
8	2960	8	5440
9	3344	9	6128
10	3712	10	6800
11	4080	11	7488
12	4464	12	8176
13	4832	13	8848
14	5200	14	9536
15	5584	15	10224
10	000 .	,	

A tape cartridge has a fixed directory size. 384 sectors allow for 4080 file entries.

To begin initialization, press CONTINUE. Times are as follows:

Disc	Size	Initializati	on Time *
7912	64 megabyte	35 minut	es
7911	27.5 megabyte	15 minut	es
7908	16.7 megabyte	25 minut	es
7906	9.8 megabyte	30 secon	ds
Flexible	1.2 megabyte	10 minut	e s
5 Mb. Disc	4.7 megabyte	** 3 minut	e s
Tape	16 megabyte	20 minut	es
Tape	67 megabyte	70 minut	es

^{*} These times may vary if bad tracks/sectors/blocks are spared.

The display indicates each test being performed. If a defective disc track is found, its number remains displayed. For tapes, only the total number of spared blocks is displayed.

	INITIALIZE	
Selected device is FLE	EX DISC :F2,6,1.	
INITIALIZATION IN PROG	OGRESS (Interleave = 4 with standard format)	
Pattern test # 1		
Gystem busy.		
System busy.		

While tape initialization is done with one pattern test, disc initialization is performed with varying numbers of pattern tests. Each media has its own limit in regard to the tolerated number of spared tracks. (See the charts on the next page.)

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^{**} The space available to you on the 5 Mb. Disc is 4.7 Mb. The balance of the disc is used for the directory.

Disc	Pattern Tests	Maximum Tracks Spared Before Media is Unusable
7912	8	15
7911	8	15
7908	8	15
7906	1	20
Flexible	5	4
5 Mb. Disc	1	l sector per track spared
		- no track sparing

If you do not exceed these limits, the number of tracks "spared" or substituted for defective tracks is shown. As mentioned previously, block sparing not track sparing, is done on tapes.

Tape	Pattern Tests	Number of Blocks Spared Before Tape is Unusable
150 ft.	1	32
600 ft.	1	128

The final display is:

HP250	INITIA	ALIZATION UTIL INITIALIZE	ITY	
Selected device i	s FLEX DISC :F2,€	5,0.		
racks spared:				
INITIALIZATION CO	MPLETE.			
INITIALIZATION CO		evice or EXIT	PROGRAM to stop.	
		evice or EXIT	PROGRAM to stop.	· · · · · · · · · · · · · · · · · · ·

If a data-recovery error occurs during initialization, the utility cannot read data from the media. This may be caused by a defective media, or dust on the media surface. To verify the error, attempt to initialize the media again.

1-9

Purge All

The purge-all routine re-initializes the main and spare directories on a medium, in effect performing a "fast initialization". This routine does not test the entire media, and cannot be used on new (blank) media.

To purge all files, first press the PURGE ALL softkey. Then select the drive holding the medium to be purged. Next, press the CONTINUE softkey to start the routine. PURGE ALL takes only a few seconds.

HP250	INITIALIZATION UTILITY PURGE ALL	
Selected device	is FLEX DISC :F2,6,0.	
ALL FILES PURGE		
DESTANT A	o select another device or EXIT PROGRAM t	n stan
Press RESTART to		3 3 6 0 р .
Press RESTART to	REST	· .

Backup and Software Duplication

The Full Volume Backup Utility

The FVBACK (full volume backup) program is a BASIC-language utility which allows you to rapidly copy the entire contents of a disc to a backup file contained on a cartridge tape. Backup files may also be restored from the tape to a disc using this program. Your system must have either an HP 7908, 7911, or 7912 disc with an integrated cartridge tape drive (CTD) to use this program.

The FVBACK program is not file oriented; it copies entire volumes. If a selective file backup is desired, use the BACKUP program described in this chapter.

A special file type, BKUP, is used for the backup data. When more than one BKUP file is required because the source device is larger than 65535 sectors, the FVBACK program will automatically allocate additional BKUP files.

Backup and Software Duplication

To run FVBACK, execute the following:

RUN "'FVBACK''

The initial menu is:

	BACKUP - Backup an entire volume to a cartridge tape.			
DESTRUCT - Destruct				
RESTORE - Restore an entire volume from a cartridge tape.				
	Residue Residue du Entire volume from a cartriage tape.			
	Resiste Resiste di Entire volume from a cartriage tape.			
	VEPIFY IS OFF			
Pl eas e s				
Please s BACKUP	VEPIFY IS OFF			

To copy a disc to a tape file, press the BACKUP key.

To restore a disc from a previously created backup file on the tape, press the RESTORE $\ensuremath{\text{key}}\xspace$

The VERIFY key will toggle the verify mode from ON to OFF or from OFF to ON.

To exit the utility, press EXIT PROGRAM.

When the BACKUP key is selected in the initial menu, the program prompts you for the source volume and the volume to contain the destination file. A menu displaying all discs on the system appears in the format shown on the following page.

HP250	FL	EL VOLUME BACKUI BACKUP VOLUMI		
	LABEL	DEVICE	COMMENT	
	UTILITY	FLEX DISC :F2,6 FLEX DISC :F2,6 7908 DISC :Q2,7	,1 unavailable	
Please select	source volume.			
				EXIT

Press the key labeled with the disc you wish to backup.

The EXIT key causes the program to return to the main menu.

After the source device has been selected, the program prompts you for the destination device. A menu displaying all of the Cartridge Tape Drive (CTD's) on the system appear. The menu looks like the following:

	LADEL	DEVICE COMMENT	
	<u>LABEL</u>		
		CTD :K2,7,1	
Please select	destination vol	lume to contain backup file.	

Backup and Software Duplication

Press the key labeled for the tape to contain the backup file.

NOTE

Performance is maximized when a disc containing an integrated CTD is backed up to that CTD.

Press the key labeled EXIT to return to the main menu.

After the devices have been selected, the following form is displayed:

DAT	E (optional)	09/18/81		SOURCE	<u>:Q2,7,0</u>
TIM	E (optional)	14:18		DESTINATION	:K2,7,1
ВАС	KUP FILE NAME	FVBFIL			
Comm	ent (optional)				
<u></u>			· · · · · · · · · · · · · · · · · · ·		
lease co	mplete this for	n and press C	DNT I NIIE		

The DATE, TIME and COMMENT fields need not be filled in. If the TIMER DROM is loaded and the date and time are set, they are automatically displayed. The date and time are stored in a header for the backup file. The COMMENT field is also stored in the backup file header. The default backup file name is filled in by the program. You can change this to any valid file name. If you want to have more than one backup file on a tape, the files must have different names.

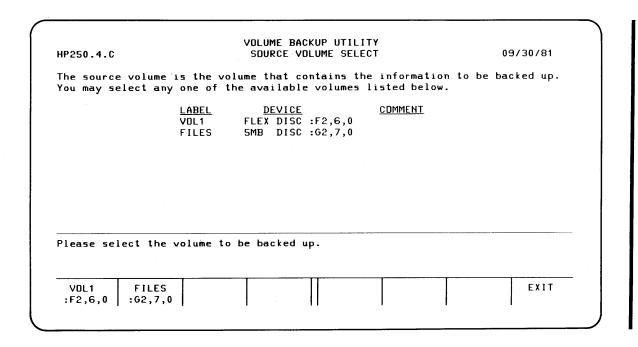
The source and destination devices are displayed only, and cannot be changed on this screen.

When the data is correct, press the CONTINUE key to continue with the backup.

The BACKUP mode selected from the previous screen is displayed, along with the default values for the checkread option, mark files option, and printer select code. If you wish to change any of the options listed, press the appropriate softkey. When you have the options you desire, press CONTINUE BACKUP and the next screen will appear, asking you for source file selections.

If you change the printer, you will be asked to input a new printer select code. It is highly recommended that you respond with the select code for a hard copy device. This will give you a reference listing of all the backed up files as well as the usual CRT displays that the utility is operating. Changing the checkread to "NO" means that an automatic checkread will not be performed on each file as it is duplicated, saving some time, but sacrificing some reliability.

The Source Volume Select screen lists the drives on-line and the label of each disc inserted. "Unavailable" in the comments field indicates that a disc is not inserted, the medium is not initialized, or the disc has an IBM format.



Softkey #7 will be set to MORE DEVICES if there are more than seven volumes on-line. Pressing this key will cause up to 4 more device softkeys to be set.

The key for an empty disc drive, or a drive with an uninitialized disc will be labeled NOT AVAILABLE. Nothing will happen when this key is pressed.

Backup and Software Duplication

If you choose the Selected Files Mode, the Source File Menu will appear next. Otherwise, you will go directly to the Destination Volume Select.

When you identify the drive containing the source disc by pressing the appropriate softkey, the new menu appears.

VOLUME BACKUP UTILITY
SOURCE FILE SELECT
09/30/81

You may now do a CATalog of the source volume. You may enter a line of the CATalog displayed or you may type and enter the name of a file to be backed up. You may enter up to 50 files.

Please select a function or enter names of files to be backed up.

SOURCE CONTINUE BACKUP

CATALOG BACKUP

CHANGE END UTILITY

If you enter file names in response to this menu, each name is checked to be sure that it exists and is not a data base file. If you made a mistake, an error message appears next to the incorrect file name and you will be asked to correct the information.

If you press the SOURCE CATALOG softkey a catalog of the source volume will appear one-screen-at-a-time. During the time the catalog is being displayed, the following softkeys change function:

softkey 1 becomes CONTINUE CATALOG softkey 8 becomes STOP CATALOG

All other softkeys cease to function until the catalog is stopped. When there are no more files to be displayed in the catalog, the CONTINUE CATALOG softkey is erased.

Pressing CONTINUE BACKUP causes the destination volume select screen to appear.

HP250.4.C		DESTINATION VOLUME SELECT	09/30/81
		he volume that will receive the backupe source volume and should be removab	
	LABEL	<u>DEVICE</u> <u>COMMENT</u>	
	VDL1	FLEX DISC :F2,6,0	
	FILES	5MB DISC :G2,7,0 SDURCE	
Please select th	e volume to	o receive the backup.	

After selecting the source volume, the next menu appears. To identify the drive containing the destination volume, press the softkey with the appropriate label. The destination medium cannot be the same as the source medium, and should be removable. The "Device" column shows the drives on-line and the label of each media inserted. "Unavailable" in the comments column indicates that either a media is not inserted or that the medium is not initialized. "SOURCE" in the comments column means that this volume cannot be used for the destination.

When you press the softkey to choose your destination volume, a volume confirmation form appears.

The Confirmation Menu lists the source volume name and address, the destination volume and location, and a sequence number. The sequence number is the current number of the backup volume.

HP250		VOLUME BACKUP U DESTINATION VOLUME C		O	9/30/81
nave the	same address e volume is	e is the volume that wi as the source volume a on :02,7,0 and the des	nd should he	removable (urrently
SOURCE:	ON :02	,7,0 DESTINATION:	DN :K2	2,7,1 SEQUENCE	-
The desti	nation disc c	DISC ontains files. You may	verase the	OTD disc prior to	
continuir	g. The large	st available space is	9452 physic	al records.	
Please se	lect a functi	on.			
DEST.	ERASE	CONTINUE		CHANGE	END
CATALOG	DEST.	BACKUP		DEST.	UTILITY

At this time, you can ask for a catalog of the destination volume, change the destination volume, or erase the volume.

Pressing DEST. CATALOG produces the same kind of catalog produced for the source volume. The ERASE DEST. label only appears if there are files on the destination disc. Pressing softkey #2 will cause a menu to appear in which you are asked to CONFIRM ERASE or CANCEL ERASE. The RELABEL DEST. label only appears if the medium label does not match what you have specified.

To begin duplication, press CONTINUE BACKUP.

VOLUME RECOVERY UTILITY
HP250.4.C DESTINATION VOLUME CONFIRMATION

09/30/81

The destination volume is the volume that will be restored by the recovery. It may not be the same volume as the source volume.

Important notes: Database files can not be recovered with this utility.

Recovery mode VDLUME RECOVERY Destination volume FILES on $\underline{.62,7,0}$ Printer is $\underline{.8}$ Destination volume FILES on $\underline{.62,7,0}$

The destination disk contains files. If there is a file with the same name in the backup file, the backup copy will \underline{not} be restored.

Please select a function.

CHANGE	CHANGE	CHANGE		CONTINUE		END
PRINTER	MODE	DEST.	CATALUG	RECOVERY		UITLIIY

If you press the softkey CHANGE PRINTER, you will be asked to enter a new printer select code. It is recommended that you respond with the select code for a hard copy device. This will give you a reference listing of the recovered files and all of the CRT displays. If you CHANGE MODE to "selected files" or have previously chosen this mode and now press CONTINUE RECOV, the next screen to appear will ask you to input the names of the files to be recovered. Otherwise, the next screen will be the Source Volume Select.

1	HP250		RECOVERY U ER FILE SE			09/30/81
	The HP250 Recovery (to be recovered. Yo	Jtility will all ou may enter the	ow you to m now.	enter up to	10 names o	
	Please select a fund	tion or enter n	ames of fi	les to be b	acked up.	
•	-					
-						
	CONTINUE RECOVERY					EXIT
	, ,	1	1 1	i	ı	ı

The next screen asks you to specify the name of the BACKUP file and the protect code. The recovery displays entries for both fields, which you may alter. When you have entered the required information, press PROCESS DATA to continue. This causes the Source Volume Select to appear. Having provided the names of individual files and the name of the BACKUP file in which they reside, you are now asked to mount and select the appropriate disc.

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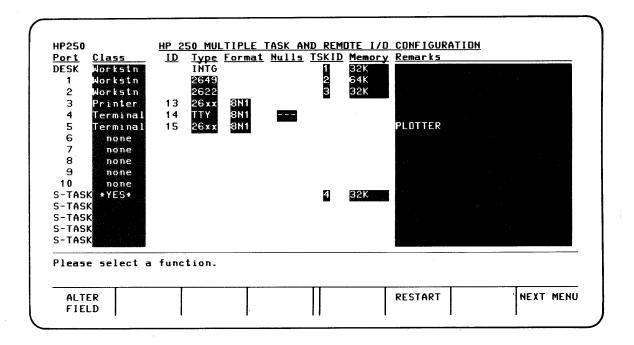
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Remote I/O Configuration (RFIG)

To review and/or change the configuration for each I/O port, either enter 9 during the initial CONFIG menu or run the RFIG program. The initial menu is as follows:



The configuration table shows the device class (computer, terminal, printer, or workstation), device type, data transfer format, and size of user memory block assigned to each workstation or background task. The appropriate information of each I/O port is entered when a device is added to your system and should not be altered until system configuration changes. Here's a summary of each field:

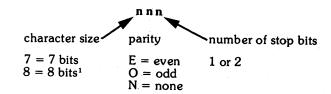
ID - Device address for each port.

Class - Device class designation: terminal, printer, computer, or none.

Port - I/O port number on ASI, or secondary task.

Type - Specific HP product number or general class (e.g., TTY indicates teletype). Default type is entered for each class, but should be altered to indicate product number.

Format - This code summarizes the data format used:



The format needed for each device is shown in the device manual.

Nulls - indicates the number of null characters sent after every carriage return. This is to ensure that the remote device has sufficient time to do a carriage return and linefeed before it receives additional data. The manual accompanying the device describes the number of nulls necessary. (HP264x, HP263x, and HP 3000 ports do not need nulls.)

TSKID - indicates the priority level assigned to the workstation, or background task.

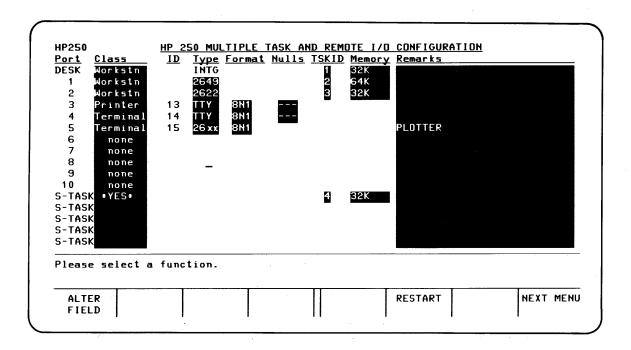
Memory - indicates the size block of user memory assigned to the workstation.

Remarks - a 28-character field for task comments.

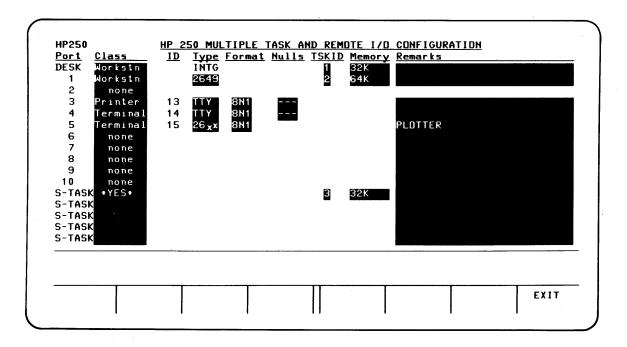
When system configuration is changed (e.g., a new terminal is added, or printer is removed), the appropriate line(s) in the table must be altered to reflect current configuration. To alter each field, position the cursor within the field and press the ALTER FIELD softkey.

*The most-significant bit (8th bit) is ignored.

For example, to alter the printer "TYPE" field in the previous table:



Now select a new assignment for port 2 by positioning the cursor in the second "CLASS" field, and pressing "ALTER FIELD", then "none". To alter the Remarks line for port 2, move the cursor to the field and press ALTER FIELD:

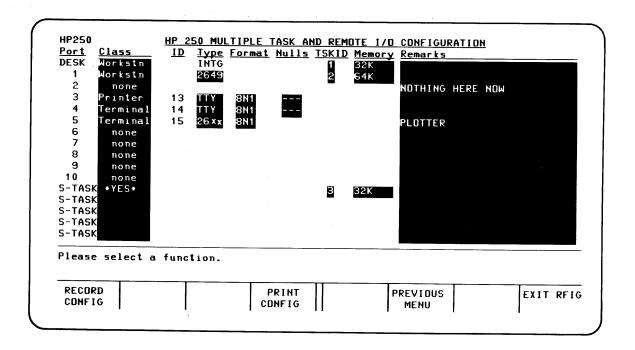


System Configuration

Type the new remark and press (0) .

When a 2622D personal workstation is connected to a port, the configuration of that port must be changed. Move the cursor to the "TYPE" column for the port, and select ALTER FIELD. Two keys will appear and you select the type of workstation you have connected to the port.

To record the new I/O configuration, press NEXT MENU and then RECORD CONFIG. The new I/O configuration is not loaded, however, until the operating system is reloaded.



RECORD CONFIG - Records the configuration (including changes just made) on the disc. Reload the operating system to use the new configuration.

PRINT CONFIG - Prints a copy of the current table.

PREVIOUS MENU - Returns you to the initial I/O configuration menu.

EXIT RFIG - Returns you to the initial CONFIG menu.