
Multi-Platform Subsystem Test

MPST/PC Functions Reference Manual

Version 2.04

112114706

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About this Book

The *MPST/PC Functions Reference Manual* deals specifically with Multi-Platform Subsystem Test functions. This reference manual is a companion to the *MPST/PC Installation and User's Guide*.

Audience

This book was written for Storage Technology Corporation (StorageTek) personnel to support the testing and diagnostics of StorageTek products.

Reader's Comments

We'd like to know what you think about this book. For that purpose, we've included a reader's comment form in the back of this book. Please copy the form, fill it out, and mail it to us.

About the Software

Version 2.04 of the Multi-Platform Subsystem Test software for PC/DOS operating systems (MPST/PC) is supported by this book.

How this Book is Organized

This book contains the following information:

- Chapter 1. “Count-Key-Data Map Function.” The **CKDMAP** function maps count-key-data for DASD devices that produce data set or space maps.
- Chapter 2. “Library Look Function.” The **LIBLOOK** function lists the cartridges located in an LSM. Cartridges can be listed by panel, CAP, cell, or cartridge tape drive.
- Chapter 3. “Library Mount Function.” The **LIBMOUNT** function defines, mounts, dismounts, moves, swaps, enters, and ejects cartridge tapes. This function can also be used to reserve and release the cartridge access port (CAP) in an automated cartridge system (ACS).
- Chapter 4. “LSM Exerciser Function.” The **LSMEXER** function tests the ability of the host to communicate with the automated cartridge system (ACS). **LSMEXER** is an installation verification test that should not be run once customer production cartridge tapes have been entered into the LSM and the HSC database has been initialized.
- Chapter 5. “OPTION Function.” The **OPTION** function specifies MPST/PC function execution options. The options specified apply until they are changed on the next **OPTION** function control card, an **OPTION RESET** card is encountered, or an **OPTION modify** command is entered.
- Chapter 6. “Random Locate Block.” The **RLB** function exercises the locate block feature of cartridge tape subsystems. It can also be used to write and read full or partial cartridges of data.
- Chapter 7. “Tape Copy Function.” The **TAPECOPY** function copies data from an input cartridge tape to (up to seven) output cartridge tapes. **TAPECOPY** can also be used to compare the data found on the input cartridge tape to the data found on another cartridge tape.

- Chapter 8. “Tape Scan Function.” The **TAPESCAN** function analyzes 18-track and 36-track cartridge tapes. **TAPESCAN** reads customer cartridge tapes, mounted on a cartridge tape unit, and reports any error conditions found.
- Chapter 9. “Tape Independent Protocol Set Function.” The **TIPS** function queries and alters configurations of the 9840 subsystem, updates embedded code (firmware), and retrieves dumps.
- Chapter 10. “Tape Monitor and Control Function.” The **TMC** function modifies cartridge tape forced logging status, as well as other tape monitoring and control functions, on StorageTek cartridge tape drives.
- Chapter 11. “Track Dump Function.” The **TRKDUMP** function dumps (prints) home address (HA), record zero (R0), and all fields of all data records on a track of a DASD volume.
- Chapter 12. “Volume Scan Function.” The **VOLSCAN** function reads home address (HA), record zero (R0), and all data records on every track of a DASD volume, including the CE tracks. **VOLSCAN** checks all defective and alternate tracks for correct defective/alternate track pairing.
- Chapter 13. “Terminal Control Unit Verification Function.” The **VTERM** function tests LMU function. **VTERM** is used in the event that an LMU for an automated cartridge tape system is not functioning but all internal diagnostics show that it should be working.
- Chapter 14. “Write-Read Cartridge Function.” The **WRCART** function writes and reads full or partial cartridge tapes of data. **WRCART** can exercise one to eight cartridge tape drives.
- Chapter 15. “Write-Read Disk Function.” The **WRDISK** function exercises one to eight DASD devices (volumes). These devices can be mixed types: 3330–1, 3330–11, 3350, 3380, and 3390.

- Appendix A. “Run-time Commands.” Run-time commands cancel or stop MPST/PC operation, request information, and alter existing or issue new control cards.
- Appendix B. “Dump Data Format.” There are two formats for all data printed by MPST/PC: memory format and record format. Examples of both record and memory format are included in this appendix.
- Index

Conventions for Reader Usability

Conventions are used to shorten and clarify explanations and examples within this book.

Typographic

The following typographical conventions are used in this book:

- **Bold** is used to introduce new or unfamiliar terminology.
- Letter Gothic is used to indicate command names, filenames, and literal output by the computer.
- **Letter Gothic Bold** is used to indicate literal input to the computer.
- *Letter Gothic Italic* is used to indicate that you must substitute the actual value for a command parameter. In the following example, you would substitute your name for the “username” parameter.

Logon *username*

- A bar (|) is used to separate alternative parameter values. In the example shown below either username or systemname must be entered.

Logon *username | systemname*

- Brackets [] are used to indicate that a command parameter is optional.
- Ellipses (...) are used to indicate that a command may be repeated multiple times.
- The use of mixed upper and lower case characters (for non-case sensitive commands) indicates that lower case letters may be omitted to form abbreviations. For example, you may simply enter **F** when executing the **modiFy** command.

Keys Single keystrokes are represented by double brackets [[]] surrounding the key name. For example, press [[ESC]] indicates that you should press only the escape key.

Combined keystrokes use double brackets and the plus sign (+). The double brackets surround the key names and the plus sign is used to add the second keystroke. For example, press [[ALT]] + [[C]] indicates that you should press the alternate key and the C key simultaneously.

Enter Command The instruction to “press the [[ENTER]] key” is omitted from most examples, definitions, and explanations in this book.

For example, if the instructions asked you to “enter”
Logon pat, you would type in Logon pat *and* press
[[ENTER]].

However, if the instructions asked you to “type” Logon
pat, you would type in Logon pat and you would *not*
press [[ENTER]].

Symbols

The following symbols are used to highlight text in this book.



Warning: Information needed to keep you from damaging your hardware or software.



Caution: Information needed to keep you from corrupting your data.



Hint: Information that can be used to shorten or simplify your task, or hints may simply be used as reminders.

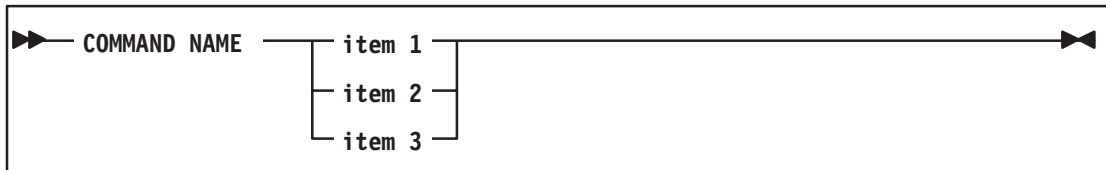


Note: Information that may be of special interest to you. Notes are also used to point out exceptions to rules or procedures.

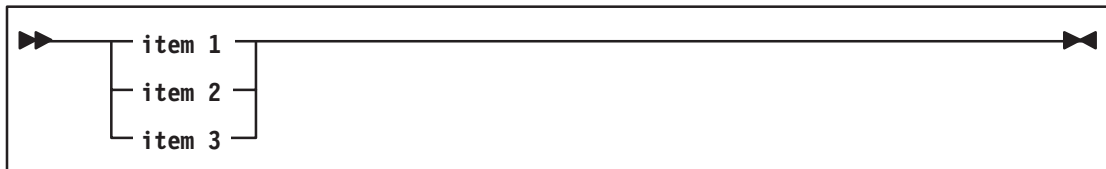
Syntax Diagrams

Syntax flow diagramming conventions include the following:

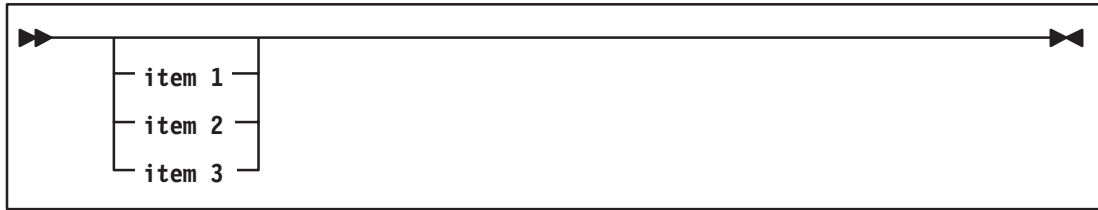
Flow Lines—Syntax diagrams consist of a horizontal baseline, horizontal and vertical branch lines and the command text. Diagrams are read left to right and top to bottom. Arrows show flow and direction.



Single Required Choice—Branch lines (without repeat arrows) indicate that a single choice must be made. If one of the items to choose from is on the baseline of the diagram, one item must be selected.



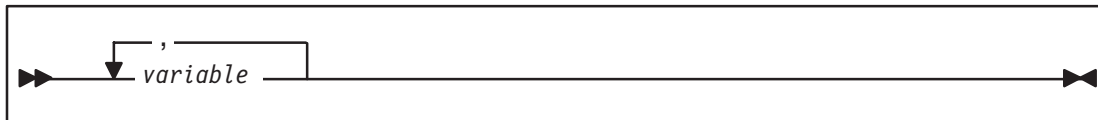
Single Optional Choice—If the first item is on the line below the baseline, one item may optionally be selected.



Defaults—Default values and parameters appear above the baseline.



Repeat Symbol—A repeat symbol indicates that more than one choice can be made or that a single choice can be made more than once. The repeat symbol shown in the following example indicates that a comma is required as the repeat separator.



Keywords—All command keywords are shown in all upper case or in mixed case. When commands are not case sensitive, mixed case implies that the lowercase letters may be omitted to form an abbreviation.

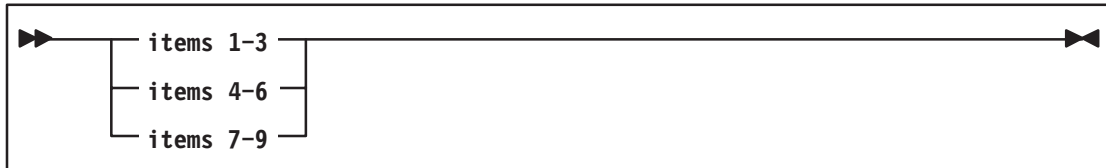
Variables—Italic type is used to indicate a variable.

Alternatives—A bar (|) is used to separate alternative parameter values.

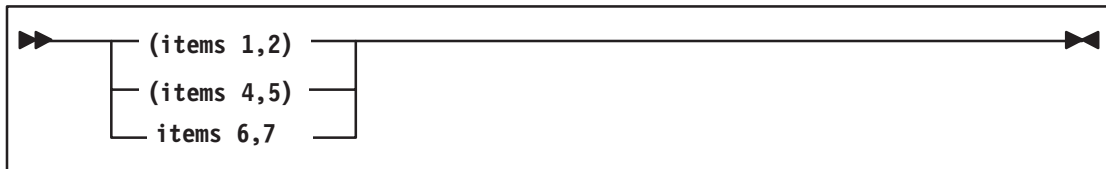
Optional—Brackets [] are used to indicate that a command parameter is optional.

Delimiters—If a comma(,), a semicolon(;), or other delimiter is shown with an element of the syntax diagram, it must be entered as part of the statement or command.

Ranges—An inclusive range is indicated by a pair of elements of the same length and data type, joined by a hyphen. The first element must be strictly less than the second element.



Lists—A list consists of one or more elements. List elements must be separated by a comma or a blank and, depending on the parameter, they may or may not be enclosed by parentheses.



Technical Support

Contact CS Software Support at 1–800–866–6789.

Related Documentation

The following books provide more information about the MPST/PC software product:

- *MPST/PC Installation and User's Guide*
- *Multi-Platform Subsystem Test Messages and Codes Manual*
- *StorageTekFRIEND Function for MPST Reference Manual*

Chapter 1. Count-Key-Data Map Function

Function Overview

The Count-Key-Data Map (**CKDMAP**) function maps count-key-data for DASD devices that produce data set or space maps.

Partial Table of Contents

- “CKDMAP Parameter Table” on page 12.
- “Operation Considerations for CKDMAP” on page 12.
- “CKDMAP Function Parameters” on page 13.
- There are no **modiFy** commands for **CKDMAP**.

CKDMAP Parameter Table

Table 1. lists the function parameters available for **CKDMAP**.

Table 1. CKDMAP Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
DEVICE		
DSN		
MAP		
PRINT		

Operation Considerations for CKDMAP

The amount of storage required to run **CKDMAP** depends on the size of the volume table of contents (VTOC). For example: approximately 480K is required per VTOC cylinder on a 3380.

CKDMAP Function Parameters

DEVICE The **DEVICE** parameter specifies the device to be used when running **CKDMAP**.

CKDMAP DEVICE=UUT nm

nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.

DSN The **DSN** parameter limits reports to the specified data set name or data set name prefix. If **DSN** is not specified, all data sets are included by default.

CKDMAP DSN= $name$ | $prefix$.+

- If **DSN= $name$** the variable $name$ should specify the entire data set name. (For example: **DSN=TEST.LOAD.LIB**)
- If **DSN= $prefix$.+** the variable $prefix$ should specify the data set name prefix. (For example: **DSN=TEST.+**)

MAP

The **MAP** parameter limits the amount of data reported on the Map Report. The Map Report is a space utilization map of the volume.



Note: The **PRINT** parameter specifies which reports are to be produced for this run of **CKDMAP**. If **PRINT=DATA** is specified, the Map Report will not be printed.

CKDMAP MAP=BOTH|DATA|FREE

- If **MAP=BOTH**, the Map Report lists all extents whether allocated or free. The default value for **MAP** is **BOTH**.
- If **MAP=DATA**, the Map Report is limited to allocated space only.
- If **MAP=FREE**, the Map Report is limited to free space only.

PRINT The **PRINT** parameter specifies which reports are to be produced for this run of **CKDMAP**.

CKDMAP PRINT=BOTH|MAP|DATA

- If **PRINT=BOTH**, both the Data Report and the Map Report are produced. The default value for **PRINT** is **BOTH**.
- If **PRINT=MAP**, the Map Report is produced. The Map Report is a space utilization map of the volume which lists all extents on the volume (starting from the low address to high).



Note: The **MAP** parameter limits the amount of data reported on the Map Report.

- If **PRINT=DATA**, the Data Report is produced. The Data Report lists all data sets on the volume, in alphanumeric order, along with information about each data set.

MODIFY Command Parameters for CKDMAP

There are no **modiFy** command parameters available for the **CKDMAP** function.

Chapter 2. Library Look Function

Function Overview

The Library Look (**LIBLOOK**) function lists the cartridges located in an LSM. Cartridges can be listed by panel, CAP, cell, or cartridge tape drive.

Partial Table of Contents

- “LIBLOOK Parameter Table” on page 18.
- “Operation Considerations for LIBLOOK” on page 19.
- “LIBLOOK Function Parameters” on page 20.
- “MODIFY Command Parameters for LIBLOOK” on page 32.

**LIBLOOK
Parameter Table**

Table 2. lists the function and **modiFy** command parameters available for **LIBLOOK**.

Table 2. LIBLOOK Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
CAP	CAP	
	CMDLIST	
CONFIG		CON
DRIVE	DRIVE	DRI
END	END	
HOSTID		
LSM	LSM	
LSMRST	LSMRST	
NOLSMRST	NOLSMRST	
NOWTO	NOWTO	
PANEL	PANEL	PAN
	STATLSM	
STATUS		STA
TRACE		
	TRACEOFF	
	TRACEON	
TRACERR		
	TRERROFF	
	TRERRON	
VERIFY		VER
	VERIFYOFF	
	VERIFYON	
	WTO	

Operation Considerations for LIBLOOK

The following information must be taken into consideration when running the **LIBLOOK** function:

- If the host software component (HSC) is running on the library management unit (LMU), **HOSTID=id** must be coded with an ID that is different from the one assigned to HSC.
- If the host software component (HSC) is running, the LMU address must be a different address than the address used by HSC.
- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address). Refer to “Run-time Commands” on page 285 for additional information on the LMU command.

LIBLOOK Function Parameters

CAP The **CAP** parameter lists information about cells in a CAP.

The following information should also be taken into account when entering the **CAP** parameter.

- If **LSM=ll** has been specified, you do not have to include the *ll* variable on the *[ll]cell* parameter.
- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBLOOK LSM=ll CAP [ll]cell|ALL
```

The **CAP** *cell* variable can be specified as:

aa lists all cells in CAP *aa*.

aarr lists a single cell at CAP location *aa*, row *rr*, column 00.

aa-aa

lists all cells in CAP *aa* through CAP *aa*. The hyphen must be typed when entering a range.

aarr-aarr

lists all cells in CAP *aa* row *rr* column 00 through CAP *aa* row *rr* column 00. The hyphen must be typed when entering a range.

rr lists all cells in row *rr*.

rrcc lists a single cell in the CAP at row *rr* column *cc*.

rr-rr

lists all cells in row *rr* through row *rr*. The hyphen must be typed when entering a range.

rrcc-rrcc

lists all cells in row *rr* column *cc* through row *rr* column *cc*. The hyphen must be typed when entering a matrix range.

rrcc=rrcc

lists sequentially all cells starting at column *cc* row *rr* through column *cc* row *rr*. The equal sign must be typed when entering a cell-to-cell range.

ALL lists all cells for all available CAPs.

ll is the two-digit LSM id number (00–15).

aa is the two-digit CAP id.

rr is the two-digit row number.

cc is the two-digit column number.

Matrix Ranges and
Cell-to-cell Ranges

The difference between entering the matrix range 0102–0304 and the cell-to-cell range 0102=0304 is:

Matrix Range							Cell-to-cell Range						
	Col 0	Col 1	Col 2	Col 3	Col 4	Col 5		Col 0	Col 1	Col 2	Col 3	Col 4	Col 5
Row 0							Row 0						
Row 1			M	M	M		Row 1			C	C	C	C
Row 2			M	M	M		Row 2	C	C	C	C	C	C
Row 3			M	M	M		Row 3	C	C	C	C	C	
Row 4							Row 4						
Row 5							Row 5						

CONfig The **CONfig** parameter lists the configuration information for all of the LSMs defined to the LMU.

The following information should also be taken into account when entering the **CONfig** parameter.

- The command **CMD LMU *num*** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU *num*
LIBLOOK CONfig

DRive The **DRive** parameter lists information about the cartridge tape drives on a panel.

The following information should also be taken into account when entering the **DRive** parameter.

- If **LSM=ll** has been specified, you do not have to include the *ll* variable on the *[ll]drive* parameter.
- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBLOOK LSM=ll DRive [ll]drive

The **DRive** *drive* variable can be specified as:

pp lists all cartridge tape drives on panel *pp*.

ppdd
lists a single cartridge tape drive *dd* on panel *pp*.

ppdd-dd
lists cartridge tape drives *dd* through *dd* on panel *pp*. The hyphen must be typed when entering a range.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

dd is the two-digit cartridge tape drive number.

END The **END** parameter terminates the **LIBLOOK** function. All devices are disabled prior to **ENDING**.

The following information should also be taken into account when entering the **END** parameter.

- If **END** is specified from the control statement, **LIBLOOK** terminates after all other parameters listed on the control statement have been processed.
- If **END** is not specified on the control statement, **LIBLOOK** will continue to run until **END** is entered using the **modiFy** command.
- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBLOOK END
```

HOSTID The **HOSTID** parameter specifies the HOST identity that will be used to communicate with the LMU.

The following information should also be taken into account when entering the **HOSTID** parameter.

- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num  
LIBLOOK HOSTID=id
```

id is the two-digit HOST identification number (01–16 or 41–56). The default setting for **HOSTID=id** is 01.

LSM The **LSM** parameter defines which LSM will be listed. Once the **LSM=** parameter has been specified you do not need to respecify **LSM=** on subsequent passes of the **CAP**, **DRIVE**, or **PANe1** parameters.

The following information should also be taken into account when entering the **LSM** parameter.

- The default setting for **LSM=ll** is 00. If another LSM will be used, the **LSM=ll** parameter must be specified.
- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num  
LIBLOOK LSM=ll liblook_parm
```

ll is the two-digit LSM id number (00–15).

LSMRST The **LSMRST** parameter specifies that all LSMs that were varied on by **LIBLOOK** be varied off at completion.

The following information should also be taken into account when entering the **LSMRST** parameter.

- The default setting is **LSMRST**.
- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBLOOK LSMRST

NOLSMRST The **NOLSMRST** parameter inhibits all LSMs that were varied on by **LIBLOOK** from being varied off at completion.

The following information should also be taken into account when entering the **NOLSMRST** parameter.

- The default setting is **LSMRST**.
- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBLOOK NOLSMRST

NOWTO The **NOWTO** parameter suppresses duplicate copies of MPSTL0K** messages, which are generated when messages are directed to both the operator and system output.

The following information should also be taken into account when entering the **NOWTO** parameter.

- The command **CMD LMU *num*** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU *num*
LIBLOOK NOWTO

PANe1 The **PANe1** parameter lists information about the cells on a panel.

The following information should also be taken into account when entering the **PANe1** parameter.

- If **LSM=ll** has been specified, you do not have to include the *ll* variable on the *[ll]cell* parameter.
- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num  
LIBLOOK LSM=ll PANe1 [ll]cell
```

The **PANe1 cell** variable can be specified as:

pp lists all cells on panel *pp*.

pprr
lists all cells on panel *pp* row *rr*.

pprrcc
lists a single cell located on panel *pp*, at column *cc* and row *rr*.

pprr-rr
lists all cells in rows *rr* through *rr* on panel *pp*. The hyphen must be typed when entering a range.

pprrcc-rrcc
lists multiple cells located on panel *pp* at rows *rr* through *rr*, and column *cc* through *cc*. The hyphen must be typed when entering a matrix range.

pprrcc=rrcc

lists sequentially the cells located on panel *pp* starting at column *cc* row *rr* through column *cc* row *rr*. The equal sign must be typed when entering a cell-to-cell range.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

rr is the two-digit row number.

cc is the two-digit column number.

Matrix Ranges and Cell-to-cell Ranges

The difference between entering the matrix range 010102–0304 and the cell-to-cell range 010102=0304 is:

Matrix Range							Cell-to-cell Range						
Panel 1	Col 0	Col 1	Col 2	Col 3	Col 4	Col 5	Panel 1	Col 0	Col 1	Col 2	Col 3	Col 4	Col 5
Row 0							Row 0						
Row 1			M	M	M		Row 1			C	C	C	C
Row 2			M	M	M		Row 2	C	C	C	C	C	C
Row 3			M	M	M		Row 3	C	C	C	C	C	
Row 4							Row 4						
Row 5							Row 5						

STatus The **STatus** parameter prints the status of all the LSMs configured to the LMU.

The following information should also be taken into account when entering the **STatus** parameter.

- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBLOOK STatus

TRACE The **TRACE** parameter lists each cartridge move, where it came from and where it is going.

The following information should also be taken into account when entering the **TRACE** parameter.

- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBLOOK TRACE



Caution: The **TRACE** parameter produces a large amount of output.

TRACERR The **TRACERR** parameter lists all the information about a transaction if an error of any type is encountered. **TRACE** continues until a transaction without any errors is issued.

The following information should also be taken into account when entering the **TRACERR** parameter.

- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBLOOK TRACERR
```

VERify The **VERify** parameter specifies that the data returned by the LMU for each cell be verified three times. If you specify **VERify**, three passes will be required for each cell.

The following information should also be taken into account when entering the **VERify** parameter.

- The command **CMD LMU num** must be entered before the first **LIBLOOK** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBLOOK VERify
```

MODIFY Command Parameters for LIBLOOK

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.



Note: When **LIBLOOK** is running it calls **LIBMOUNT**. To ensure that the **modiFy** command is issued to the **LIBLOOK** function and not to **LIBMOUNT**, do not exclude **FUNC LIBLOOK** from the command syntax.

CAP

The **CAP** parameter lists information about cells in a CAP.



Note: If **LSM=ll** has already been specified for this execution of **LIBLOOK**, the **LSM=ll** parameter and the **ll** variable on the **[ll]cell** parameter are optional.

modiFy FUNC LIBLOOK [LSM=ll] CAP [ll]cell|ALL

The **CAP cell** variable can be specified as:

aa lists all cells in CAP *aa*.

aarr lists a single cell at CAP location *aa*, row *rr*, column 00.

aa-aa

lists all cells in CAP *aa* through CAP *aa*. The hyphen must be typed when entering a range.

aarr-aarr

lists all cells in CAP *aa* row *rr* column 00 through CAP *aa* row *rr* column 00. The hyphen must be typed when entering a range.

rr lists all cells in row *rr*.

rrcc lists a single cell in the CAP at row *rr* column *cc*.

rr-rr

lists all cells in row *rr* through row *rr*. The hyphen must be typed when entering a range.

rrcc-rrcc

lists all cells in row *rr* column *cc* through row *rr* column *cc*. The hyphen must be typed when entering a matrix range.

rrcc=rrcc

lists sequentially all cells starting at column *cc* row *rr* through column *cc* row *rr*. The equal sign must be typed when entering a cell-to-cell range.

ALL lists all cells for all available CAPs.

ll is the two-digit LSM id number (00–15).

aa is the two-digit CAP id.

rr is the two-digit row number.

cc is the two-digit column number.



Note: For additional information on a matrix range versus a cell-to-cell range refer to “Matrix Ranges and Cell-to-cell Ranges” on page 21.

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **LIBLOOK** function.

modiFy FUNC LIBLOOK CMDLIST

DRive The **DRive** parameter lists information about cartridge tape drives on a panel.



Note: If **LSM=ll** has already been specified for this execution of **LIBLOOK**, the **LSM=ll** parameter and the *ll* variable on the *[ll]cell* parameter are optional.

modiFy FUNC LIBLOOK [LSM=ll] DRive [ll]drive

The **DRive** *drive* variable can be specified as:

pp lists all cartridge tape drives on panel *pp*.

ppdd lists a single cartridge tape drive *dd* on panel *pp*.

ppdd-dd

lists cartridge tape drives *dd* through *dd* on panel *pp*. The hyphen must be typed when entering a range.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

dd is the two-digit cartridge tape drive number.

END The **END** parameter terminates the **LIBLOOK** function. If **END** is accompanied by other parameters, termination occurs after all accompanying parameters have been processed.

modiFy FUNC LIBLOOK END

LSM The **LSM** parameter defines which LSM will be listed. This parameter only needs to be specified once per control statement. **LSM=** does not need to be respecified on subsequent passes of the **CAP**, **DRIVE**, or **PANE1** parameters.

modiFy FUNC LIBLOOK LSM=ll

ll is the two-digit LSM id number (00–15).

LSMRST The **LSMRST** parameter specifies that all LSMs that were varied on by **LIBLOOK** be varied off at completion.

modiFy FUNC LIBLOOK LSMRST

NOLSMRST The **NOLSMRST** parameter inhibits all LSMs that were varied on by **LIBLOOK** from being varied off at completion.

modiFy FUNC LIBLOOK NOLSMRST

NOWTO The **NOWTO** parameter suppresses duplicate copies of MPSTL0K** messages, which are generated when messages are directed to both the operator and system output.

modiFy FUNC LIBLOOK NOWTO

PANe1 The **PANe1** parameter lists information about the cells on a panel.



Note: If **LSM=ll** has already been specified for this execution of **LIBLOOK**, the **LSM=ll** parameter and the *ll* variable on the *[ll]cell* parameter are optional.

modiFy FUNC LIBLOOK [LSM=ll] PANe1 [ll]cell

The **PANe1** *cell* variable can be specified as:

pp lists all cells on panel *pp*.

prrr
lists all cells on panel *pp* row *rr*.

prrrcc
lists a single cell located on panel *pp*, column *cc*, row *rr*.

prrr-rr
lists all cells in rows *rr* through *rr* on panel *pp*. The hyphen must be typed when entering a range.

prrrcc-rrcc
lists multiple cells located on panel *pp* at rows *rr* through *rr*, and column *cc* through *cc*. The hyphen must be typed when entering a matrix range.

prrrcc=rrcc
lists sequentially the cells located on panel *pp* starting at column *cc* row *rr* through column *cc* row *rr*. The equal sign must be typed when entering a cell-to-cell range.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

rr is the two-digit row number.

cc is the two-digit column number.



Note: For additional information on a matrix range versus a cell-to-cell range refer to “Matrix Ranges and Cell-to-cell Ranges” on page 29.

STATLSM The **STATLSM** parameter displays the current status of LSM *id*.

modiFy FUNC LIBLOOK STATLSM=*id*

id is the two-digit LSM id number (00–15).

TRACEOFF The **TRACEOFF** parameter stops transaction tracing if it was enabled.

modiFy FUNC LIBLOOK TRACEOFF

TRACEON The **TRACEON** parameter lists each cartridge move, where it came from and where it is going; and lists each transaction issued to the LMU.

modiFy FUNC LIBLOOK TRACEON



Caution: The **TRACEON** parameter produces a large amount of output.

TRERROFF The **TRERROFF** parameter stops transaction error tracing if it was enabled.

modiFy FUNC LIBLOOK TRERROFF

TRERRON The **TRERRON** parameter lists all the information about a transaction if an error of any type is encountered.

modiFy FUNC LIBLOOK TRERRON

VERIFYOFF The **VERIFYOFF** parameter stops data verification. Only one pass will be required when cataloging a cell.

modiFy FUNC LIBLOOK VERIFYOFF

VERIFYON The **VERIFYON** parameter specifies that the data returned by the LMU for each cell be verified three times. If you specify **VERIFYON**, three passes will be required for each cell.

modiFy FUNC LIBLOOK VERIFYON

WTO The **WTO** parameter stops the suppression of duplicate copies of MPSTLOK** messages, which are generated when messages are directed to both the operator and system output.

modiFy FUNC LIBLOOK WTO

Chapter 3. Library Mount Function

Function Overview

The Library Mount (**LIBMOUNT**) function defines, mounts, dismounts, moves, swaps, enters, and ejects cartridge tapes. This function can also be used to reserve and release the cartridge access port (CAP) in an automated cartridge system (ACS).

Partial Table of Contents

- “LIBMOUNT Parameter Table” on page 42.
- “Operation Considerations for LIBMOUNT” on page 43.
- “LIBMOUNT Function Parameters” on page 44.
- “MODIFY Command Parameters for LIBMOUNT” on page 65.

**LIBMOUNT
Parameter Table**

Table 3. lists the function and **modiFy** command parameters available for **LIBMOUNT**.

Table 3. LIBMOUNT Parameters

Page 1 of 2

Function Parameters	Modify Command Parameters	Parameter Abbreviations
DEFINE		DEF
	CMDLIST	
DISMOUNT		DISM
DSPLMU	DSPLMU	
EJECT		EJ
END	END	
ENTER		EN
EXCHANGE		
HOSTID		
LSM		
LSMRST	LSMRST	
MOUNT		MOU
MOVE		MOV
NOLSMRST	NOLSMRST	
RELEASE		REL
RESERVE		RES
	RETRY	
	RETRYEND	
SKIPCLEJ		
	STATLSM	
STATUS		
SWAP		SWA
	SWLMU	
TRACE		
TRACERR		
	TRACEOFF	
	TRACEON	

Function Parameters	Modify Command Parameters	Parameter Abbreviations
	TRERROFF	
	TRERRON	
VERIFY		
VISIONCK		

Operation Considerations for LIBMOUNT

The following information must be taken into consideration when running the **LIBMOUNT** function:

- If the host software component (HSC) is running on the library management unit (LMU), **HOSTID=id** must be coded with a host identification number that is different from the one assigned to HSC.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address). Refer to “Run-time Commands” on page 285 for additional information on the LMU command.

LIBMOUNT Function Parameters

DEFine The **DEFine** parameter references the system address of a cartridge tape drive to the physical position of the cartridge tape drive in the LSM.

The following information should also be taken into account when entering the **DEFine** parameter.

- Up to a maximum of 64 cartridge tape drives can be defined. Multiple addresses can be defined on the same control statement.
- The **DEFine** parameter is required when specifying **DISMount**, **MOunt**, and **SWAp**.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT DEFine addr:llppdd00, ... addr:llppdd00
```

For **DEFine** *addr:llppdd00* the variable:

addr

is a 3 or 4 character hexadecimal address that defines the cartridge tape drive's address.

llppdd

defines the physical location of the cartridge tape drive.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

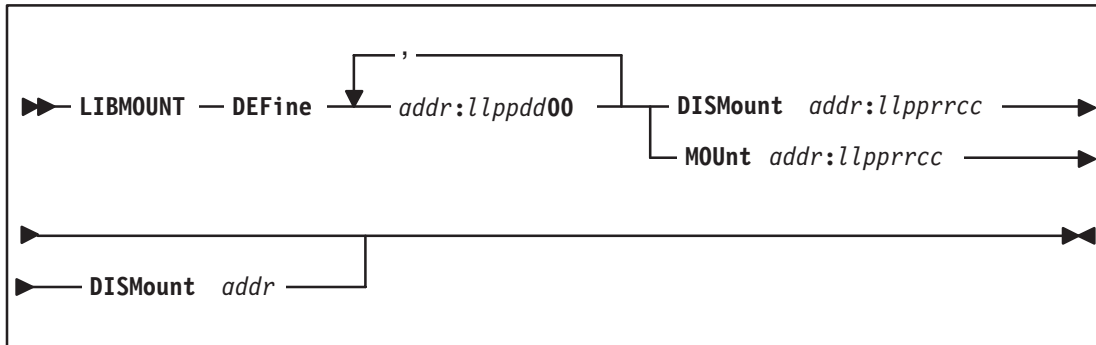
dd is the two-digit cartridge tape drive number.

Do not forget to include the colon between *addr* and *llppdd00*, and the comma between multiple variables if more than one is specified. The double zero must be included at the end of *llppdd*.

DISMount The **DISMount** parameter specifies that a cartridge tape is to be moved from the cartridge tape drive back to either the cartridge tape's original LSM cell or to a specific cell location.

The following information should also be taken into account when entering the **DISMount** parameter.

- The **DEFine** parameter must be specified whenever the **DISMount** parameter is entered.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).



Dismounting to the Original LSM Cell

Moving a cartridge tape from the cartridge tape drive back to the cartridge tape's original LSM cell.

```
CMD LMU num
LIBMOUNT DEFine addr:llppdd00 -
MOUNT addr:llpprrcc DISMount addr
```

addr is a 3 or 4 character hexadecimal address that defines the cartridge tape drive's address.



Note: The **DISMount** *addr* command can only be used if the cartridge tape being dismounted had also been **MOUNT**'d from the same **LIBMOUNT** statement.

Dismounting to a Specific Cell

Moving a cartridge tape from the cartridge tape drive to a specific cell location.

```
CMD LMU num
LIBMOUNT DEFine addr:llppdd00 -
DISMount addr:llpprrcc
```

For **DISMount** *addr:llpprrcc* the variable:

addr

is a 3 or 4 character hexadecimal address that defines the cartridge tape drive's address.

llpprrcc

defines the location of the cell in the LSM.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

rr is the two-digit row number.

cc is the two-digit column number.

Do not forget to include the colon between *addr* and *llpprrcc*.

DSPLMU The **DSPLMU** parameter displays the current status and system address of both the master and standby LMUs. This parameter is only valid if dual LMU is configured and defined.

The following information should also be taken into account when entering the **DSPLMU** parameter.

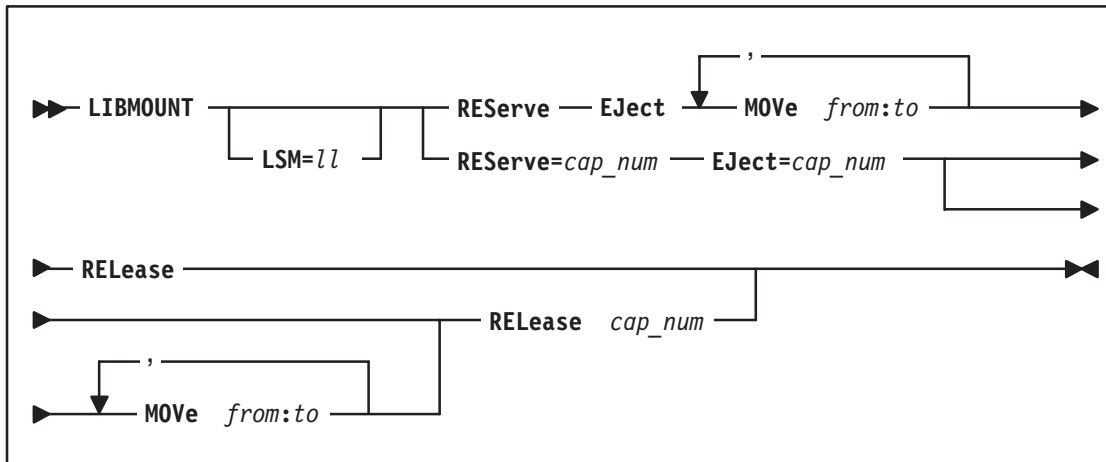
- The command **CMD LMU *num*** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU *num*
LIBMOUNT DSPLMU

Eject The **Eject** parameter specifies that a cartridge tape or tapes are to be ejected through a single-CAP or a multi-CAP LSM. **Eject** can also be used to unlock a CAP door in a multi-CAP LSM.

The following information should also be taken into account when entering the **Eject** command.

- **REServe** and **RELease** must be specified when entering **Eject**.
- The **Eject** parameter and the required accompanying parameters must be contained within a single execution of **LIBMOUNT**.
- The **Eject** parameter defaults to LSM 00. If another LSM's CAP will be used, **LSM=ll** must be specified.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).



Ejecting from a Single-CAP LSM

Ejecting a cartridge tape from a single-CAP LSM.

```
CMD LMU num
LIBMOUNT [LSM=ll] REServe -
  Eject MOVE from:to, ... from:to RELease
```

Ejecting from a Multi-CAP LSM

Ejecting a cartridge tape from a multi-CAP LSM.

```
CMD LMU num
LIBMOUNT [LSM=ll] REServe=cap_num -
  Eject=cap_num MOVE from:to, ... from:to -
  RELease cap_num
```

cap_num is the two-digit CAP number (00, 01, 02).

Unlocking a Multi-CAP LSM

Unlocking a CAP door in a multi-CAP LSM using **Eject**.

If the **Eject** parameter is executed without the **MOVE** parameter being specified, the selected CAP door will be unlocked. The CAP is released (no longer reserved) once the CAP door has been opened and then closed.

```
CMD LMU num
LIBMOUNT [LSM=ll] REServe=cap_num -
  Eject=cap_num RELease cap_num
```

cap_num is the two-digit CAP number (00, 01, 02).

END The **END** parameter terminates the **LIBMOUNT** function. All devices are disabled prior to **LIBMOUNT** terminating.

The following information should also be taken into account when entering the **END** parameter.

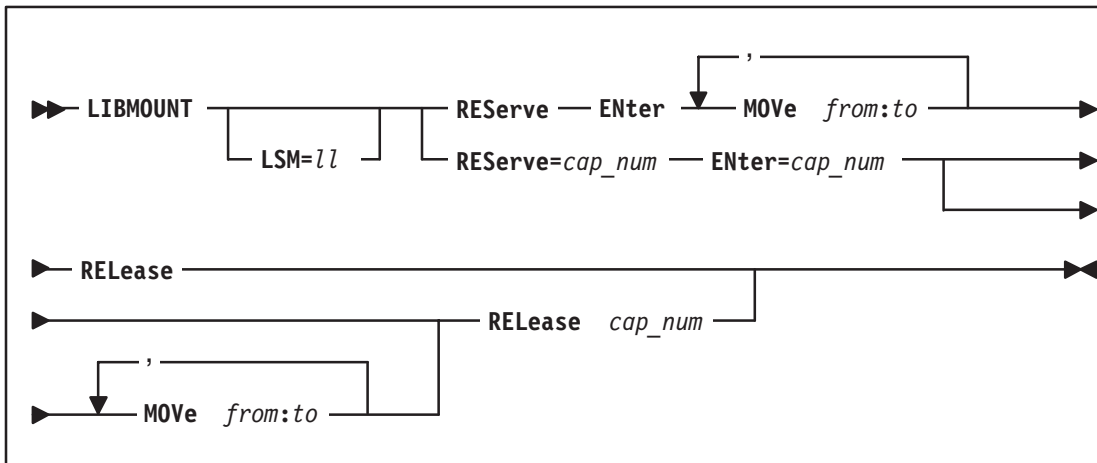
- If **END** is specified from a control statement, **LIBMOUNT** terminates after all other parameters listed on the control statement have been processed.
- If **END** is not specified on a control statement, **LIBMOUNT** continues to run until **END** is entered using the **modiFy** command.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBMOUNT END

ENter The **ENter** parameter specifies that a cartridge tape or tapes are to be entered through a single-CAP or a multi-CAP LSM. **ENter** can also be used to unlock a CAP door in a multi-CAP LSM.

The following information should also be taken into account when entering the **ENter** command.

- **REServe** and **RELease** must be specified when entering **ENter**.
- The **ENter** parameter and the required accompanying parameters must be contained within a single execution of **LIBMOUNT**.
- The **ENter** parameter defaults to LSM 00. If another LSM's CAP will be used, the **LSM=ll** parameter must also be specified.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).



Entering through a
Single-CAP LSM

Entering a cartridge tape through a single-CAP LSM.

```
CMD LMU num
LIBMOUNT [LSM=ll] REServe -
  ENter MOVE from:to, ... from:to RELease
```

Entering through a
Multi-CAP LSM

Entering a cartridge tape through a multi-CAP LSM.

```
CMD LMU num
LIBMOUNT [LSM=ll] REServe=cap_num -
  ENter=cap_num MOVE from:to, ... from:to -
  RELease cap_num
```

cap_num is the two-digit CAP number (00, 01, 02).

Unlocking a
Multi-CAP LSM

Unlocking a CAP door in a multi-CAP LSM using **ENter**.

When the **ENter** parameter is executed without the **MOVE** parameter being specified, the selected CAP door will be unlocked. The CAP is released (no longer reserved) once the CAP door has been opened and then closed.

```
CMD LMU num
LIBMOUNT [LSM=ll] REServe=cap_num -
  ENter=cap_num RELease cap_num
```

cap_num is the two-digit CAP number (00, 01, 02).

EXCHANGE The **EXCHANGE** parameter specifies the exchange of cartridge tapes between two cartridge tape drives. Both drives must have a cartridge tape mounted for **EXCHANGE** to function.

The following information should also be taken into account when entering the **EXCHANGE** parameter.

- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num  
LIBMOUNT EXCHANGE addr1 addr2
```

For **EXCHANGE addr1 addr2** the variables:

addr1 and *addr2*

3 or 4 character hexadecimal addresses that define the addresses of the cartridge tape drives that the cartridge tapes are being exchanged between.

HOSTID The **HOSTID** parameter specifies the HOST identity that will be used to communicate with the LMU.

The following information should also be taken into account when entering the **HOSTID** command.

- The default setting for **HOSTID=***id* is 01.
- The command **CMD LMU** *num* must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT HOSTID=id
```

id is the two-digit HOST identification number (01–16 or 41–56).

LSM The **LSM** parameter defines the LSM that will be used for the **REServe**, **RELease**, **ENter**, and **EJect** parameters.

The following information should also be taken into account when entering the **LSM** command.

- The default setting for **LSM=ll** is 00. If another LSM will be used, the **LSM=ll** parameter must be specified.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT LSM=ll libmount_parm
```

ll is the two-digit LSM id number (00–15).

LSMRST The **LSMRST** parameter specifies that all LSMs that were varied on by **LIBMOUNT** be varied off at completion.

The following information should also be taken into account when entering the **LSMRST** command.

- The default setting is **LSMRST**.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT LSMRST
```

MOUnT The **MOUnT** parameter moves a cartridge tape from an LSM cell to a cartridge tape drive.

The following information should also be taken into account when entering the **MOUnT** parameter.

- Multiple mounts can be specified on the same control statement.
- The **DEFine** parameter must be specified whenever the **MOUnT** parameter is entered.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT DEFine addr:llppdd00 -
MOUnT addr:llpprrcc, ... addr:llpprrcc
```

For **MOUnT** *addr:llpprrcc* the variable:

addr

is a 3 or 4 character hexadecimal address that defines the cartridge tape drive's address. Do not forget to include the colon between *addr* and *llpprrcc*.

llpprrcc

defines the location of the cell in the LSM.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

rr is the two-digit row number.

cc is the two-digit column number.

MOVE The **MOVE** parameter moves a cartridge tape from an LSM cell to another LSM cell.

The following information should also be taken into account when entering the **MOVE** parameter.

- Multiple moves can be specified on the same control statement.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBMOUNT MOVE *from:to, ... from:to*

For **MOVE** *from:to* the variable:

from

is the location the cartridge tape is being moved from. The eight-digit address consists of *llpprrcc*.

to is the location where the cartridge tape is being moved to. The eight-digit address consists of *llpprrcc*.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

rr is the two-digit row number.

cc is the two-digit column number.

Do not forget to include the colon between *from* and *to*.

NOLSMRST

The **NOLSMRST** parameter inhibits all LSMs that were varied on by **LIBMOUNT** from being varied off at completion.

The following information should also be taken into account when entering the **NOLSMRST** parameter.

- The default setting is **LSMRST**.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT NOLSMRST
```

RELease

The **RELease** parameter specifies that the CAP be released if it is reserved to the HOSTID specifying the **RELease** parameter.

The following information should also be taken into account when entering the **RELease** parameter.

- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT [LSM=ll] RELease[=cap_num]
```

- **RELease** is used to release a cap in a single-cap LSM.
- **REL=cap_num** is used to release a cap in a multi-cap LSM. *cap_num* is the two-digit CAP number (00, 01, 02).



Note: The **RELease** parameter defaults to LSM 00. If another LSM's CAP will be used, the **LSM=ll** parameter must also be specified.

REServe The **REServe** parameter specifies that the CAP be reserved, if it is not already reserved, to the HOSTID specifying the **REServe** parameter.

The following information should also be taken into account when entering the **REServe** parameter.

- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT [LSM=ll] REServe[=cap_num]
```

- **REServe** is used to reserve a cap in a single-cap LSM.
- **RES=cap_num** is used to reserve a cap in a multi-cap LSM. *cap_num* is the two-digit CAP number (00, 01, 02).



Note: The **REServe** parameter defaults to LSM 00. If another LSM's CAP will be used, the **LSM=ll** parameter must also be specified.

SKIPCLEJ The **SKIPCLEJ** parameter specifies whether the CAP door eject cycle is skipped during clean-up.

The following information should also be taken into account when entering the **SKIPCLEJ** parameter.

- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT SKIPCLEJ=NO|YES
```

For **SKIPCLEJ=NO|YES**:

- If **SKIPCLEJ=NO**, the CAP door eject cycle will be performed during clean-up. The default setting for **SKIPCLEJ** is **NO**.
- If **SKIPCLEJ=YES**, the CAP door eject cycle will be skipped during clean-up.

STATUS The **STATUS** parameter specifies that the status of the LSM be printed.

The following information should also be taken into account when entering the **STATUS** parameter.

- The **STATUS** parameter defaults to LSM 00. If any other LSM's status is being requested, the **LSM=ll** parameter must also be specified.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBMOUNT [LSM=ll] STATUS

SWAp The **SWAp** parameter moves a cartridge tape from one cartridge tape drive to an empty cartridge tape drive.

The following information should also be taken into account when entering the **SWAp** parameter.

- Only one **SWAp** can be specified per control statement.
- The **DEFine** parameter must be specified whenever the **SWAp** parameter is entered.
- Both cartridge tape drives must be defined before the **SWAp** parameter can be entered.
- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LIBMOUNT DEFine addr:llppdd00, addr:llppdd00 -
SWAp from to
```

For **SWAp** *from to* the variable:

from

is a 3 or 4 character hexadecimal address that defines the address of the cartridge tape drive that the cartridge tape is being moved from.

to

is a 3 or 4 character hexadecimal address that defines the address of the cartridge tape drive that the cartridge tape is being moved to.

TRACE The **TRACE** parameter lists each transaction issued to the LMU.

The following information should also be taken into account when entering the **TRACE** parameter.

- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBMOUNT TRACE



Caution: The **TRACE** parameter produces a large amount of output.

TRACERR The **TRACERR** parameter lists all the information about a transaction if an error of any type is encountered. Tracing continues until a transaction without any errors is issued.

The following information should also be taken into account when entering the **TRACERR** parameter.

- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBMOUNT TRACERR

VERIFY The **VERIFY** parameter specifies the volser be read three times for verification.

The following information should also be taken into account when entering the **VERIFY** parameter.

- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBMOUNT VERIFY

VISIONCK The **VISIONCK** parameter specifies that the external volser be verified on each cartridge tape movement.

The following information should also be taken into account when entering the **VISIONCK** parameter.

- The command **CMD LMU num** must be entered before the first **LIBMOUNT** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LIBMOUNT VISIONCK

MODIFY Command Parameters for LIBMOUNT

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **LIBMOUNT** function.

modiFy [FUNC LIBMOUNT] CMDLIST

DSPLMU The **DSPLMU** parameter displays the current status and system address of both the master and standby LMUs. This parameter is only valid if dual LMU is configured and defined.

modiFy [FUNC LIBMOUNT] DSPLMU

END The **END** parameter terminates the **LIBMOUNT** function.

modiFy [FUNC LIBMOUNT] END

LSMRST The **LSMRST** parameter specifies that all LSMs that were varied on by **LIBMOUNT** be varied off at completion.

The default setting is **LSMRST**.

modiFy [FUNC LIBMOUNT] LSMRST

NOLSMRST The **NOLSMRST** parameter inhibits all LSMs that were varied on by **LIBMOUNT** from being varied off at completion.

The default setting is **LSMRST**.

modiFy [FUNC LIBMOUNT] NOLSMRST

RETRY The **RETRY** parameter specifies the new retry count.

modiFy [FUNC LIBMOUNT] RETRY=[*num*]

num is a decimal number from 1 to 999.

If **RETRY** is entered without *num* being specified, the current setting for **RETRY** will be displayed.

RETRYEND The **RETRYEND** parameter forces the retry count to **1**.

modiFy [FUNC LIBMOUNT] RETRYEND

STATLSM The **STATLSM** parameter displays the current status of LSM *ll*.

modiFy [FUNC LIBMOUNT] STATLSM=*ll*

ll is the two-digit LSM id number (00–15).

SWLMU The **SWLMU** parameter issues a force switch command to the standby LMU causing the master LMU to become the new standby and the standby LMU to become the new master. This parameter is valid only if dual LMU was configured and defined.

modiFy [FUNC LIBMOUNT] SWLMU

TRACEOFF The **TRACEOFF** parameter stops transaction tracing if it was enabled.

modiFy [FUNC LIBMOUNT] TRACEOFF

TRACEON The **TRACEON** parameter lists each cartridge tape move, where it came from and where it is going; and lists each transaction issued to the LMU.

modiFy [FUNC LIBMOUNT] TRACEON



Caution: The **TRACEON** parameter produces a large amount of output.

TRERROFF The **TRERROFF** parameter stops transaction error tracing if it was enabled.

modiFy [FUNC LIBMOUNT] TRERROFF

TRERRON The **TRERRON** parameter lists all the information about a transaction if an error of any type is encountered.

modiFy [FUNC LIBMOUNT] TRERRON

Chapter 4. LSM Exerciser Function

Function Overview

The Library Storage Module (LSM) Exerciser (**LSMEXER**) function tests the ability of the host to communicate with the automated cartridge system (ACS). **LSMEXER** is an installation verification test that should not be run once customer production cartridge tapes have been entered into the LSM and the HSC database has been initialized.



Warning: If you choose to run **LSMEXER** with production cartridges, *only known empty cells* can be used.

Partial Table of Contents

- “LSMEXER Parameter Table” on page 70.
- “Operation Considerations for LSMEXER” on page 72.
- “LSMEXER Function Parameters” on page 73.
- “MODIFY Command Parameters for LSMEXER” on page 97.

**LSMEXER
Parameter Table**

Table 4. lists the function and **modiFy** command parameters available for **LSMEXER**.

Table 4. LSMEXER Parameters

Page 1 of 2

Function Parameters	Modify Command Parameters	Parameter Abbreviations
CAPCYCLE	CAPCYCLE	
CAPDOOR	CAPDOOR	
	CARTLIST	
CARTSTAT	CARTSTAT	
CELIMIT	CELIMIT	
CLEAN	CLEAN	
	CMDLIST	
CLNCART		
CLNCRTL		
DEFINE		DEF
DELIMIT	DELIMIT	
	DRIO	
	DSPLMU	
ELIMIT	ELIMIT	
EMPTY		EMP
HOSTID		
INPUT		INP
IOCNT	IOCNT	
LSMRST	LSMRST	
	LSMSEOP	
MAGAZINE	MAGAZINE	MAG
MNTCNT	MNTCNT	
NODRIO	NODRIO	
NOLSMRST	NOLSMRST	
OCCUPIED		OCC
PASSTHRU		PAS
PTPATHS		PTP

Table 4. LSMEXER Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
PTPCNT	PTPCNT	
SKIPCLEJ	SKCLEJ	
	STATLSM	
SUMMARY	SUMMARY	SUM
	SWLMU	
TESTSEQ	TESTSEQ	
TRACE		
	TRACEOFF	
	TRACEON	
TRACERR		
	TRERROFF	
	TRERRON	
	VISION	
VISIONCHK		

Operation Considerations for LSMEXER

The following information must be taken into consideration when running the **LSMEXER** function:

- The **LSMEXER** function should not be run once customer production cartridge tapes have been entered into the LSM and the HSC database has been initialized. If you choose to run **LSMEXER** with production cartridges, *only known empty cells* can be used.
- The **DEFine** parameter must be used if any cartridge tape drives are to be exercised.
- In order to run **LSMEXER**, you'll need one or more cartridge tapes and two or more empty cells. At a minimum, empty cells must be equal to the number of cartridge tapes + 1.
- If the **OCcupied** or **EMpty** parameters are not specified, all cells in each allowed LSM can be used. If both the **OCcupied** and **EMpty** parameter specify the same cell, the **OCcupied** parameter overrides the **EMpty** parameter.
- If the **PASsthru** parameter is specified, all LSMs configured to the LMU can be used. To prevent usage of a specified LSM use the **OCcupied** parameter to indicate that the entire LSM is occupied.
- If the host software component (HSC) is running on the library management unit (LMU), **HOSTID=id** must be coded with an ID that is different from the one assigned to HSC.
- Cells used by HSC must be defined as **OCcupied**.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address). Refer to "Run-time Commands" on page 285 for additional information on the LMU command.

LSMEXER Function Parameters

CAPCYCLE The **CAPCYCLE** parameter defines the number of complete cycles that must be performed, for all cartridge tapes entered via the CAP, before the cartridges are placed back into the CAP and then cycled again.

The following information should also be taken into account when entering the **CAPCYCLE** parameter.

- The command **CMD LMU *num*** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num  
LSMEXER CAPCYCLE=num
```

num is a decimal number from 0–999. If 0 is specified, no CAP cycles are performed. **0** is the default setting for *num*.

CAPDOOR The **CAPDOOR** parameter specifies whether the CAP door must be opened and closed on each CAP cycle.

The following information should also be taken into account when entering the **CAPDOOR** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER CAPDOOR=NO|YES

For **CAPDOOR=NO|YES**:

- If **CAPDOOR=NO**, the CAP door will not be opened and closed on each CAP cycle. **CAPDOOR=NO** is the default setting.
- If **CAPDOOR=YES**, the CAP door must be opened and closed on each CAP cycle.

CARTSTAT The **CARTSTAT** parameter specifies that the cartridge status, for all valid cartridge tapes, be included on each SUMMARY output.

The following information should also be taken into account when entering the **CARTSTAT** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER CARTSTAT
```

CELIMIT The **CELIMIT** parameter specifies the number of errors that are allowed on a cartridge tape before the cartridge is eliminated from use by the exerciser.

The following information should also be taken into account when entering the **CELIMIT** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER CELIMIT=err_num
```

err_num is a decimal number from 0–999. If 0 is specified, the cartridge tape will never be eliminated due to errors. **5** is the default setting for *err_num*.

CLEAN The **CLEAN** parameter specifies the number of mounts that can be performed on a cartridge tape drive before a cleaning cartridge is mounted.

The following information should also be taken into account when entering the **CLEAN** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num  
LSMEXER CLEAN=num
```

num is a decimal number from 0–999. If 0 is specified, no cleaning is performed. **0** is the default setting for *num*.

CLNCART

The **CLNCART** parameter defines the library cell location where the cleaning cartridge will be placed while **LSMEXER** is running.

The following information should also be taken into account when entering the **CLNCART** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER CLNCART=llpprrcc
```

llpprrcc defines the physical location of the cleaning cartridge.

- ll* is the two-digit LSM id number (00–15).
- pp* is the two-digit LSM panel number.
- rr* is the two-digit row number.
- cc* is the two-digit column number.



Note: The cleaning cartridge is entered via slot 21 in the CAP (when the exercise cartridge tapes are entered), or via the P mail slot CAP on a multi-CAP door.

CLNCRTL The **CLNCRTL** parameter allows the user to specify the label on the cleaning cartridge in use.

The following information should also be taken into account when entering the **CLNCRTL** parameter.

- The default label is **DG CLN**.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER CLNCRTL=label
```

label is the six-character alphanumeric cleaning cartridge label.

DEFine The **DEFine** parameter enables the use of cartridge tape drives and references the system address of a cartridge tape drive to the physical position of the cartridge tape drive in the LSM.

The following information should also be taken into account when entering the **DEFine** parameter.

- Up to 64 **DEFines** can be specified; but, only eight of the cartridge tape drives will be used at one time.
- Multiple definitions can be specified on the same control statement.
- The default setting for **LSMEXER** is that no cartridge tape drives will be exercised.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER DEFine=addr:llppdd00, ... addr:llppdd00
```

For **DEFine** *addr:llppdd00* the variable:

addr

is a 3 or 4 character hexadecimal address that defines the cartridge tape drive's address.

llppdd

defines the physical location of the cartridge tape drive.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

dd is the two-digit cartridge tape drive number.

Do not forget to include the colon between *addr* and *llppdd00*, and either a comma or blanks between multiple variables if more than one is specified. The double zero must be included at the end of *llppdd*.

DELIMIT The **DELIMIT** parameter specifies the number of errors that will be allowed on a cartridge tape drive before it is eliminated from use by **LSMEXER**.

The following information should also be taken into account when entering the **DELIMIT** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER DELIMIT=err_num
```

err_num is a decimal number from 0–999. If 0 is specified, the cartridge tape drive will never be eliminated due to errors. **5** is the default setting for *err_num*.

ELIMIT The **ELIMIT** parameter specifies the maximum number of unrecoverable I/O errors allowed before **LSMEXER** terminates.

The following information should also be taken into account when entering the **ELIMIT** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER ELIMIT=err_num
```

err_num is a decimal number from 0–999. If 0 is specified, an infinite number of errors is allowed. **10** is the default setting for *err_num*.

EMPTy The **EMPTy** parameter defines the specified cells as empty. These cells will be used by the exerciser.

The following information should also be taken into account when entering the **EMPTy** parameter.

- Multiple cells can be specified and up to 200 entries can be entered on the same **EMPTy** control statement.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER EMPTy cell, ... cell

The **EMPTy cell** variable can be specified as:

ll all the cells in LSM *ll* will be used.

llpp
all the cells in LSM *ll* on panel *pp* will be used.

llpprr
all the cells in LSM *ll* on panel *pp* and row *rr* will be used.

llpprrcc
only the one cell located in LSM *ll* on panel *pp* and row *rr* at column *cc* will be used.

ll is the two-digit LSM id number (00–15).

pp is the two-digit LSM panel number.

rr is the two-digit row number.

cc is the two-digit column number.

Do not forget to include either a comma or blanks between the variables if multiple entries are specified on the **EMPTy** control statement.

HOSTID The **HOSTID** parameter specifies the HOST identity that will be used to communicate with the LMU.

The following information should also be taken into account when entering the **HOSTID** parameter.

- If the host software component (HSC) is running on the library management unit (LMU), **HOSTID=*id*** must be coded with an ID that is different from the one assigned to HSC.
- **LSMEXER** should not be run once customer production cartridge tapes have been entered into the LSM and the HSC database has been initialized.
- The command **CMD LMU *num*** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU *num*
LSMEXER HOSTID=*id*

id is the two-digit HOST identification number (01–16 or 41–56). **01** is the default setting for *id*.

INPut The **INPut** parameter defines the LSM to be used for inputting cartridge tapes for this exercise.

The following information should also be taken into account when entering the **INPut** parameter:

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER INPut ll
```

ll is the two-digit LSM id number (00–15). **00** is the default setting for *ll*.

IOCNT The **IOCNT** parameter defines the number of I/Os that will be attempted on each cartridge tape drive mounted during a cartridge movement to an LSM cell.

The following information should also be taken into account when entering the **IOCNT** parameter:

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER IOCNT=num
```

num is a decimal number from 1–99. **4** is the default setting for *num*.

LSMRST The **LSMRST** parameter specifies that all LSMs that were varied on by **LSMEXER** be varied off at completion.

The following information should also be taken into account when entering the **LSMRST** parameter.

- **LSMRST** is the default setting.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER LSMRST

MAGazine The **MAGazine** parameter defines which of the magazines found in a 20, 50, or 80 cell CAP door are to be used.

The following information should also be taken into account when entering the **MAGazine** parameter.

- **MAGazine ALL** is the default setting.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER MAGazine num|ALL

The **MAGazine** variable can be specified as:

- A single magazine: *num*
num is a decimal number from 0–7.
- Multiple magazines:
 - A list of magazines: *num, num*
 - A range of magazines: *num-num*
 - A combination: *num, num num-num*

List items must be separated by a space or a comma and the hyphen must be typed when specifying a range. *num* is a decimal number from 0–7.

- **ALL**: all available magazines are used.

MNTCNT The **MNTCNT** parameter specifies the number of moves that must be performed before a mount will be issued, if **DEFine** was specified.

The following information should also be taken into account when entering the **MNTCNT** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER DEFine addr:llppdd00, ... addr:llppdd00 -
MNTCNT num
```

num is a decimal number from 1–999. **9** is the default setting for *num*.

NODRIO The **NODRIO** parameter inhibits all I/O from being issued to a mounted cartridge tape drive. Specifying this parameter allows more mounts to be performed in a given time period.

The following information should also be taken into account when entering the **NODRIO** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER NODRIO
```

NOLSMRST The **NOLSMRST** parameter inhibits all LSMs that were varied on by **LSMEXER** from being varied off at completion.

The following information should also be taken into account when entering the **NOLSMRST** parameter.

- The default setting is **LSMRST**.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER NOLSMRST

OCCupied The **OCCupied** parameter defines the specified cells as occupied. These cells will not be used by the exerciser.

The following information should also be taken into account when entering the **OCCupied** parameter.

- Multiple cells can be specified and up to 200 entries can be entered on the same **OCCupied** control statement.
- Cells used by HSC must be defined as **OCCupied**.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER OCCupied cell, ... cell
```

The **OCCupied** *cell* variable can be specified as:

ll all the cells in LSM *ll* will not be used.

llpp
all the cells in LSM *ll* on panel *pp* will not be used.

llpprr
all the cells in LSM *ll* on panel *pp* and row *rr* will not be used.

llpprrcc
only the one cell located in LSM *ll* on panel *pp* and row *rr* at column *cc* will not be used.

ll is the two-digit LSM id number (00–15).
pp is the two-digit LSM panel number.
rr is the two-digit row number.
cc is the two-digit column number.

Do not forget to include either a comma or blanks between the variables if multiple entries are specified on the **OCCupied** control statement.

PASsthru The **PASsthru** parameter specifies that cartridge tapes can be passed from one LSM to another LSM.

The following information should also be taken into account when entering the **PASsthru** parameter.

- The default setting is no passthru moves.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num
LSMEXER [OCCupied ll] PASsthru
```



Note: If the **PASsthru** parameter is specified, all LSMs configured to the LMU can be used. To prevent usage of a specified LSM use the **OCCupied** parameter to indicate that the entire LSM is occupied.

PTPaths The **PTPaths** parameter specifies which LSMs will be varied online to provide the paths necessary to move a cartridge tape from one LSM to another LSM.

The following information should also be taken into account when entering the **PTPaths** parameter.

- Multiple LSM id's can be specified on the same **PTPaths** control statement.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num  
LSMEXER PTPaths ll, ... ll
```

ll is the two-digit LSM id number (00–15). Do not forget to include either a comma or blanks between the variables if multiple LSM id's are specified on the **PTPaths** statement.

PTPCNT The **PTPCNT** parameter specifies the number of moves that must be performed before a passthru is issued, if **PASsthru** was specified.

The following information should also be taken into account when entering the **PTPCNT** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num  
LSMEXER PASsthru PTPCNT=num
```

num is a decimal number from 1–999. **7** is the default setting for *num*.

SKIPCLEJ The **SKIPCLEJ** parameter specifies whether the CAP door eject cycle is skipped during clean-up.

The following information should also be taken into account when entering the **SKIPCLEJ** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER SKIPCLEJ=NO|YES

For **SKIPCLEJ=NO|YES**:

- If **SKIPCLEJ=NO**, the CAP door eject cycle will be performed during clean-up. The default setting for **SKIPCLEJ** is **NO**.
- If **SKIPCLEJ=YES**, the CAP door eject cycle will be skipped during clean-up.

SUMmary The **SUMmary** parameter defines the amount of time in minutes between summary update outputs.

The following information should also be taken into account when entering the **SUMmary** parameter.

- The default setting for **SUMmary** is that the summary update is output once at the completion of the exercise.
- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER SUMmary time

time is the minutes from 1–999.

TESTSEQ The **TESTSEQ** parameter specifies which sequences of operation are to be performed on the cartridge tape drives.

The following information should also be taken into account when entering the **TESTSEQ** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER TESTSEQ=*sequence*

The **TESTSEQ=*sequence*** variable is specified as a string of 1–16 predefined characters. An explanation of these predefined characters and their meanings follows:

W – Write pass

R – Read forward pass

B – Read backward pass

The read backward pass command, **B**, must be immediately preceded by a write pass command, **W**, or a read forward pass command, **R**.

The default setting for *sequence* is **TESTSEQ=WBR**.

TRACE The **TRACE** parameter lists each transaction issued to the LMU. The following information should also be taken into account when entering the **TRACE** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER TRACE



Caution: The **TRACE** parameter produces a large amount of output.

TRACERR The **TRACERR** parameter lists all the information about a transaction if an error of any type is encountered. Tracing continues until a transaction without any errors is issued.

The following information should also be taken into account when entering the **TRACERR** parameter.

- The command **CMD LMU num** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

CMD LMU num
LSMEXER TRACERR

VISIONCHK

The **VISIONCHK** parameter specifies that the external volser be verified on each cartridge tape movement.

The following information should also be taken into account when entering the **VISIONCHK** parameter.

- The command **CMD LMU *num*** must be entered before the first **LSMEXER** command can be submitted. *num* is the LMU address (terminal address).

```
CMD LMU num  
LSMEXER VISIONCHK
```

MODIFY Command Parameters for LSMEXER

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.



Note: When **LSMEXER** is running it calls **LIBMOUNT**. To ensure that the **modiFy** command is issued to the **LSMEXER** function and not to **LIBMOUNT**, do not exclude **FUNC LSMEXER** from the command syntax.

CAPCYCLE

The **CAPCYCLE** parameter defines the number of complete cycles that must be performed, for all cartridge tapes entered via the CAP, before the cartridges are placed back into the CAP and then cycled again.

modiFy FUNC LSMEXER CAPCYCLE=[*num*]

- If **CAPCYCLE=*num***, *num* cycles are performed. *num* is a decimal number from 0–999.
- If **CAPCYCLE=0**, no cycles are performed.
- If **CAPCYCLE=** is entered without *num* being specified, the current setting for **CAPCYCLE** will be displayed.

CAPDOOR

The **CAPDOOR** parameter specifies whether the CAP door must be opened and closed on each CAP cycle.

modiFy FUNC LSMEXER CAPDOOR=[NO|YES|SIM]

- If **CAPDOOR=NO**, the CAP door will not be opened and closed on each CAP cycle. The default setting for **CAPDOOR** is **=NO**.
- If **CAPDOOR=YES**, the CAP door must be opened and closed on each CAP cycle.
- If **CAPDOOR=SIM**, cartridge tapes entered through the CAP door will be cycled in and out of the door without the CAP having to be opened and closed on each CAP cycle.
- If **CAPDOOR=** is entered without **NO|YES|SIM** being specified, the current setting for **CAPDOOR** will be displayed.

CARTLIST The **CARTLIST** parameter specifies that the status for all defined cartridge tapes will be listed. The variable *num* defines the cartridge tapes in the CAP.

modiFy FUNC LSMEXER CARTLIST=*num*|ACTIVE|VALID|ALL

The **CARTLIST** *num* variable can be specified as:

- A single cartridge tape: *num*
num is a decimal number that defines a cartridge tape.
- Multiple cartridge tapes:
 - A list of cartridge tapes: (*num*, *num*)
 - A range of cartridge tapes: (*num*-*num*)
 - A combination: (*num num num*-*num*)

List items must be separated by a space or a comma and the hyphen must be typed when specifying a range. Both lists and ranges must be enclosed in parentheses.

num is a decimal number that defines a cartridge tape.

- **ACTIVE:** All currently active cartridge tapes.
- **VALID:** All cartridge tapes entered into the CAP for the exercise.
- **ALL:** 20 cartridge tapes for a standard CAP, 80 for the clipper CAP, and 50 for the Wolfcreek CAP.

CARTSTAT The **CARTSTAT** parameter specifies that the current setting for **CARTSTAT** will be displayed.

modiFy FUNC LSMEXER CARTSTAT

CELIMIT The **CELIMIT** parameter specifies the number of errors that are allowed on a cartridge tape before the cartridge is eliminated from use by the exerciser.

modiFy FUNC LSMEXER CELIMIT=[*err_num*]

- If **CELIMIT=***err_num*, *err_num* errors will be allowed before the cartridge tape is eliminated. *err_num* is a decimal number from 0–999.
- If **CELIMIT=0**, the cartridge tape will never be eliminated due to errors.
- If **CELIMIT=** is entered without *err_num* being specified, the current setting for **CELIMIT** will be displayed.

CLEAN The **CLEAN** parameter specifies the number of mounts that can be performed on a cartridge tape drive before a cleaning cartridge is mounted.

modiFy FUNC LSMEXER CLEAN=[*num*]

- If **CLEAN=*num***, *num* mounts will be allowed before a cleaning cartridge is mounted. *num* is a decimal number from 0–999.
- If **CLEAN=0**, no cleaning is performed.
- If **CLEAN=** is entered without *num* being specified, the current setting for **CLEAN** will be displayed.

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **LSMEXER** function.

modiFy FUNC LSMEXER CMDLIST

DELIMIT The **DELIMIT** parameter specifies the number of errors that will be allowed on a cartridge tape drive before it is eliminated from use by **LSMEXER**.

modiFy FUNC LSMEXER DELIMIT=[*err_num*]

- If **DELIMIT=err_num**, *err_num* errors will be allowed before the cartridge tape drive is eliminated. *err_num* is a decimal number from 0–999.
- If **DELIMIT=0**, the cartridge tape drive will never be eliminated due to errors.
- If **DELIMIT=** is entered without *err_num* being specified, the current setting for **DELIMIT** will be displayed.

DRIO The **DRIO** parameter allows all I/O to be issued to a mounted cartridge tape drive.

modiFy FUNC LSMEXER DRIO

DSPLMU The **DSPLMU** parameter displays the current status and system address of both the master and standby LMUs. This parameter is only valid if dual LMU is configured and defined.

modiFy FUNC LSMEXER DSPLMU

ELIMIT The **ELIMIT** parameter specifies the maximum number of unrecoverable I/O errors allowed before **LSMEXER** terminates.

modiFy FUNC LSMEXER ELIMIT=[*err_num*]

- If **ELIMIT=***err_num*, *err_num* errors will be allowed before **LSMEXER** terminates. *err_num* is a decimal number from 0–999.
- If **ELIMIT=0**, an infinite number of errors is allowed.
- If **ELIMIT=** is entered without *err_num* being specified, the current setting for **ELIMIT** will be displayed.

IOCNT The **IOCNT** parameter defines the number of I/Os that will be attempted on each cartridge tape drive mounted during a cartridge tape movement to an LSM cell.

modiFy FUNC LSMEXER IOCNT=[*num*]

- If **IOCNT=***num*, *num* I/Os will be attempted. *num* is a decimal number from 1–99.
- If **IOCNT=** is entered without *num* being specified, the current setting for **IOCNT** will be displayed.

LSMRST The **LSMRST** parameter specifies that all LSMs that were varied on be varied off at completion.

modiFy FUNC LSMEXER LSMRST

LSMSEOP The **LSMSEOP** parameter specifies whether LSM status is checked during each operation.

modiFy FUNC LSMEXER LSMSEOP=[NO|YES]

- If **LSMSEOP=NO**, LSM status will not be checked during each operation. The default setting for **LSMSEOP** is **NO**.
- If **LSMSEOP=YES**, LSM status will be checked during each operation.
- If **LSMSEOP=** is entered without **NO|YES** being specified, the current setting for **LSMSEOP** will be displayed.

MAGazine The **MAGazine** parameter prints a list of the magazines assigned for this exercise.

modiFy FUNC LSMEXER MAGazine

MNTCNT The **MNTCNT** parameter specifies the number of moves that must be performed before a mount will be issued, if **DEFine** was specified.

modiFy FUNC LSMEXER MNTCNT=[num]

- If **MNTCNT=num**, *num* moves must be performed. *num* is a decimal number from 1–999.
- If **MNTCNT=** is entered without *num* being specified, the current setting for **MNTCNT** will be displayed.

NODRIO The **NODRIO** parameter inhibits all I/O from being issued to a mounted cartridge tape drive. Specifying this parameter allows more mounts to be performed in a given time period.

modiFy FUNC LSMEXER NODRIO

NOLSMRST The **NOLSMRST** parameter inhibits all LSMs that were varied on by **LSMEXER** from being varied off at completion.

The default setting is **LSMRST**.

modiFy FUNC LSMEXER NOLSMRST

PTPCNT The **PTPCNT** parameter specifies the number of moves that must be performed before a passthru is issued, if **PASsthru** was specified.

modiFy FUNC LSMEXER PTPCNT=[num]

- If **PTPCNT=num**, *num* moves must be performed. *num* is a decimal number from 1–999.
- If **PTPCNT=** is entered without *num* being specified, the current setting for **PTPCNT** will be displayed.

SKCLEJ The **SKCLEJ** parameter specifies whether the CAP door eject cycle is skipped during clean-up.

modiFy FUNC LSMEXER SKCLEJ=[NO|YES]

- If **SKCLEJ=NO**, the CAP door eject cycle will be performed during clean-up. The default setting for **SKCLEJ** is **NO**.
- If **SKCLEJ=YES**, the CAP door eject cycle will be skipped during clean-up.
- If **SKCLEJ=** is entered without **NO|YES** being specified, the current setting for **SKCLEJ** will be displayed.

STATLSM The **STATLSM** parameter displays the current status of LSM *ll*.

modiFy FUNC LSMEXER STATLSM=*ll*

ll is the two-digit LSM id number (00–15).

SUMmary The **SUMmary** parameter defines the amount of time in minutes between summary update outputs.

modiFy FUNC LSMEXER SUMmary=*time*

time is the minutes from 1–9999.

SWLMU The **SWLMU** parameter issues a force switch command to the standby LMU causing the master LMU to become the new standby and the standby LMU to become the new master.



Note: This parameter is valid only if dual LMU is configured and defined.

modiFy FUNC LSMEXER SWLMU

TESTSEQ The **TESTSEQ** parameter specifies which sequences of operation are to be performed on the cartridge tape drives.

modiFy FUNC LSMEXER TESTSEQ=[*sequence*]

The **TESTSEQ=*sequence*** variable is specified as a string of 1–16 predefined characters. An explanation of these predefined characters and their meanings follows:

W – Write pass

R – Read forward pass

B – Read backward pass

The read backward pass command, **B**, must be immediately preceded by a write pass command, **W**, or a read forward pass command, **R**.

If **TESTSEQ=** is entered without *sequence* being specified, the current list of sequence characters will be displayed.

TRACEOFF The **TRACEOFF** parameter stops transaction tracing if it was enabled.

modiFy FUNC LSMEXER TRACEOFF

TRACEON The **TRACEON** parameter lists each cartridge tape move, where it came from and where it is going; and lists each transaction issued to the LMU.

modiFy FUNC LSMEXER TRACEON



Caution: The **TRACEON** parameter produces a large amount of output.

TRERROFF The **TRERROFF** parameter stops transaction error tracing if it was enabled.

modiFy FUNC LSMEXER TRERROFF

TRERRON The **TRERRON** parameter lists all the information about a transaction if an error of any type is encountered. Tracing continues until a transaction without any errors is issued.

modiFy FUNC LSMEXER TRERRON

VISION The **VISION** parameter specifies when the external volser will be verified.

modiFy FUNC LSMEXER VISION=[ON|OFF]

- If **VISION=ON**, the external volser will be verified on each cartridge tape movement. **VISION=ON** increases the time required for each cartridge tape movement.
- If **VISION=OFF**, the external volser will only be verified during the CAP enter cycle.
- If **VISION=** is entered without **ON|OFF** being specified, the current setting for **VISION** will be displayed.

Chapter 5. OPTION Function

Function Overview

The **OPTION** function specifies MPST/PC function execution options. The options specified apply until they are changed by another **OPTION** function control statement, an **OPTION RESET** command is encountered, or an **OPTION modify** command is entered.

Partial Table of Contents

- “OPTION Parameter Table” on page 112.
- “Operation Considerations for OPTION” on page 113.
- “OPTION Function Parameters” on page 114.
- “MODIFY Command Parameters for OPTION” on page 127.

OPTION Parameter Table

Table 5. lists the function and **modiFy** command parameters available for **OPTION**.

Table 5. OPTION Parameters

Page 1 of 2

Function Parameters	Modify Command Parameters	Parameter Abbreviations
CACHE	CACHE	
	CMDLIST	
DATAcnt		
DATAfmt	DATAfmt	
DDNAME		
ENVprt	ENVprt	
IOCHK	IOCHK	
IODELAY	IODELAY	
IODLYTC	IODLYTC	
IOMSG		
IOSTAT	IOSTAT	
	LIST	
LOG		
NOCACHE	NOCACHE	
	NOENVprt	
NOIOCHK	NOIOCHK	
NOIODELAY	NOIODELAY	
NOIOMSG		
NOIOSTAT	NOIOSTAT	
NOLOG		
NOREPEAT		
NOSUMMARY		
NOTERMINATE		
NOTRACE	NOTRACE	
RCDINFO	RCDINFO	
RDCINFO	RDCINFO	
REPEAT		

Function Parameters	Modify Command Parameters	Parameter Abbreviations
RESET		
SIDINFO	SIDINFO	
SUMMARY		
TERMINATE		
TESTRC		
TITLE		
TRACE	TRACE	

Operation Considerations for **OPTION**

The following information must be taken into consideration when running the **OPTION** function:

- The following **OPTION** parameters require a defined test device: **RCDINFO**, **RDCINFO**, and **SIDINFO**.
- **IOCHK**, **IOSTAT** and **TRACE** parameters are function debugging aids and should not be specified unless requested by a software support representative (SSR).
- The **LOG** parameter should not be specified unless action has been taken to ensure that device errors logged during MPST/PC testing will not affect any performance or reliability measurement programs that report on the data in the system error log file.

OPTION Function Parameters

CACHE The **CACHE** parameter specifies that caching is to be allowed for all functions that use caching DASD.

The default setting is **NOCACHE**.

OPTION CACHE

DATAcnt The **DATAcnt** parameter specifies the maximum number of data bytes displayed by standard I/O error messages for each CCW.

OPTION DATAcnt=bytes

bytes is a number from 1–99999. **100** is the default setting for *bytes*.

DATAFMT The **DATAFMT** parameter specifies the format of any data which is to be dumped (printed). See Appendix B. “Dumped Data Format” on page 303 for a description of the format of the printed data.

OPTION DATAFMT=R|M

- If **DATAFMT=R**, record format is specified.
- If **DATAFMT=M**, memory format is specified.

The default setting is **DATAFMT=R**.

DDNAME The **DDNAME** parameter specifies the current device to be tested.

OPTION DDNAME=UUT nm

nm is the two-digit UUT number (01–08). **01** is the default setting for nm . UUT (unit under test) numbers are assigned to the test devices during device definition.

ENVPRT The **ENVPRT** parameter specifies the printing of all environmental data as it occurs.

Printing a partial summary of environmental data, at the completion of MPST/PC, is the default setting.

OPTION ENVPRT

IOCHK The **IOCHK** parameter prints a message for each I/O operation and flags failed CCWs.

The default setting is **NOIOCHK**.

OPTION IOCHK



Note: **IOCHK** should not be specified unless requested by a software support representative (SSR).

IODELAY The **IODELAY** parameter allows the user to specify a time delay after a specified number of I/O operations. The **IODLYTC** parameter specifies how many I/O operations will occur.



Note: Both the **NOIODELAY** parameter and the **IODELAY** parameter, if **IODELAY=0**, can cause system degradation or missing interrupts.

OPTION IODELAY=secs

secs is a decimal number from 0–9. **2** is the default setting for *secs*.

IODLYTC The **IODLYTC** parameter allows the user to specify the number of I/O operations that will occur before an I/O time delay is performed.

OPTION IODLYTC=num

num is a decimal number from 1–9999. **256** I/O operations is the default setting for *num*.

IOMSG The **IOMSG** parameter specifies that the first line of the I/O status information is to be displayed on the message line only if the I/O pass ended with a good ECB of X7F. Otherwise, the standard I/O status information will be printed.

The default setting is **NOIOMSG**.

OPTION IOMSG



Note: If both the **IOSTAT** and the **IOMSG** parameters are active, **IOSTAT** overrides **IOMSG**

IOSTAT The **IOSTAT** parameter specifies that I/O status information will be printed for all I/O operations.

The default setting is **NOIOSTAT**.

OPTION IOSTAT



Note: **IOSTAT** should not be specified unless requested by a software support representative (SSR).

LOG The **LOG** parameter allows operating system error recovery procedures (ERPs) to be invoked when an I/O error occurs. The logging of errors in the system error file is part of the error recovery procedure.

The **LOG** parameter can have an effect on the way some functions operate.

The default setting is **NOLOG**.

OPTION LOG

NOCACHE The **NOCACHE** parameter specifies that caching is to be inhibited for all functions that use caching DASD.

The default setting is **NOCACHE**.

OPTION NOCACHE

NOIOCHK The **NOIOCHK** parameter specifies that error messages are only printed for I/O operations if an error is incurred.

The default setting is **NOIOCHK**.

OPTION NOIOCHK

NOIODELAY The **NOIODELAY** parameter allows the user to specify no I/O time delay after a specified number of I/O operations.

OPTION NOIODELAY



Note: Both the **NOIODELAY** parameter and the **IODELAY** parameter, if **IODELAY=0**, can cause system degradation or missing interrupts.

NOIOMSG The **NOIOMSG** parameter specifies that the first line of the I/O status information will not be displayed on the message line.

The default setting is **NOIOMSG**.

OPTION NOIOMSG



Note: If both the **IOSTAT** and the **NOIOMSG** parameters are active, **IOSTAT** overrides **NOIOMSG**.

NOIOSTAT The **NOIOSTAT** parameter specifies that no I/O status information will be printed.

The default setting is **NOIOSTAT**.

OPTION NOIOSTAT

NOLOG The **NOLOG** parameter inhibits operating system error recovery procedures (ERPs) from being invoked when an I/O error occurs. All error recovery is done by MPST/PC.

The default setting is **NOLOG**.

OPTION NOLOG

NOREPEAT The **NOREPEAT** parameter inhibits control statement input from being repeated during that run of MPST/PC.

The default setting is **NOREPEAT**.

OPTION NOREPEAT

NOSUMMARY The **NOSUMMARY** parameter specifies no summary messages are displayed on the operator's console.
The default setting is **NOSUMMARY**.

OPTION NOSUMMARY

NOTERMINATE The **NOTERMINATE** parameter specifies that the program runs continuously until either the **TERMINATE** option is specified or the **stop** command is entered at the operator's console.
The default setting is **TERMINATE**.

OPTION NOTERMINATE

NOTRACE The **NOTRACE** parameter specifies that function trace points are not to be printed.
The default setting is **NOTRACE**.

OPTION NOTRACE

RCDINFO The **RCDINFO** parameter specifies which device's Read Configuration Data will be printed.

OPTION RCDINFO=UUT nm |ALL

- If **RCDINFO=UUT nm** , a single device is specified. nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.
- If **RCDINFO=ALL**, all defined devices are specified.

RDCINFO The **RDCINFO** parameter specifies which device's Read Device Configuration data will be printed.

OPTION RDCINFO=UUT nm |ALL

- If **RDCINFO=UUT nm** , a single device is specified. nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.
- If **RDCINFO=ALL**, all defined devices are specified.

REPEAT The **REPEAT=num** parameter allows entire control statement input, for a run of MPST/PC, to be repeated. **NOREPEAT** is the default setting.

OPTION REPEAT=num

num is a decimal number from 1–99.

Operation
Considerations for
REPEAT

The **REPEAT=num** parameter must be contained on a single **OPTION** control statement. If more than one **OPTION** control statement in the control statement set specifies the **REPEAT=num** parameter, the last value (*num*) specified is used.

If a function's return code exceeds the value of the **TESTRC** parameter, the remainder of the control statement set will be skipped. To ensure that all of the control statements in the control statement set are executed during each repeat cycle, the **TESTRC=99** parameter should be coded on the first **OPTION** control statement.

The first time the control statement set is processed, the **OPTION REPEAT=num** parameter is saved and the repeat option is enabled. When MPST/PC finishes processing the control statement set, the repeat option becomes active and the entire control statement set (except for the **REPEAT=num** parameter which is ignored) is repeated the number of times specified by *num*.

Repeating of the control statement is terminated when the control statement set has been repeated the specified number of times. This function can also be terminated by entering the operator **stop** command at the console.

The **REPEAT** parameter has no effect on any other **OPTION** parameter.

RESET The **RESET** parameter specifies that the following **OPTION** function parameters are to be set to their default settings:

- DATAFMT=R
- DDNAME=UUT01
- NOIOCHK
- NOIOSTAT
- NOLOG
- NOTRACE
- NOSUMMARY
- TESTRC=0

OPTION RESET

SIDINFO The **SIDINFO** parameter specifies which device's Sense ID data will be printed.

OPTION SIDINFO=UUT nm | ALL

- If **SIDINFO=UUT nm** , a single device is specified. nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.
- If **SIDINFO=ALL**, all defined devices are specified.

SUMMARY The **SUMMARY** parameter specifies that a summary message is to be displayed on the operator's console when each function starts and ends.

The default setting is **NOSUMMARY**.

OPTION SUMMARY

TERMINATE The **TERMINATE** parameter specifies that, when the program has finished processing all the control statements, the program terminates.

The default setting is **TERMINATE**.

OPTION TERMINATE

TESTRC The **TESTRC** parameter specifies the maximum function return code allowed. If the value specified is exceeded, MPST/PC terminates.

OPTION TESTRC=*rcode*

rcode is the maximum return code to be allowed. **0** is the default setting for *rcode*.

TITLE The **TITLE** parameter allows the user to specify the title that appears at the top of each page of MPST/PC output.

OPTION TITLE="name"

"name" can be 1 to 64 characters in length including the double quotes. *name* is blank by default.

TRACE The **TRACE** parameter specifies that function trace points are to be printed in the output file.

The default setting is **NOTRACE**.

OPTION TRACE



Caution: This parameter produces a large amount of output. **TRACE** should not be specified unless requested by a software support representative (SSR).

MODIFY Command Parameters for OPTION

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.

CACHE The **CACHE** parameter specifies that caching is to be allowed for all functions that use caching DASD.

modiFy FUNC OPTION CACHE

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **OPTION** function.

modiFy FUNC OPTION CMDLIST

DATAFMT The **DATAFMT** parameter specifies the format of any data which is to be dumped (printed).

modiFy FUNC OPTION DATAFMT=R|M

- If **DATAFMT=R**, record format is specified.
- If **DATAFMT=M**, memory format is specified.

See Appendix B. “Dumped Data Format” on page 303 for a description of the format of the printed data.

ENVPRT The **ENVPRT** parameter specifies printing of all environmental data as it occurs.

modiFy FUNC OPTION ENVPRT

IOCHK The **IOCHK** parameter prints a message for each I/O operation and flags failed CCWs.

modiFy FUNC OPTION IOCHK



Note: **IOCHK** should not be specified unless requested by a software support representative (SSR).

IODELAY The **IODELAY** parameter allows the user to specify a time delay after a specified number of I/O operations. The **IODLYTC** parameter specifies how many I/O operations will occur.



Note: Both the **NOIODELAY** parameter and the **IODELAY** parameter, if **IODELAY=0**, can cause system degradation or missing interrupts.

modiFy FUNC OPTION IODELAY=secs

secs is a decimal number from 0–9.

IODLYTC The **IODLYTC** parameter allows the user to specify the number of I/O operations that will occur before an I/O time delay is performed.

modiFy FUNC OPTION IODLYTC=num

num is a decimal number from 1–9999.

IOSTAT The **IOSTAT** parameter specifies that I/O status information will be printed for all I/O operations.

modiFy FUNC OPTION IOSTAT



Note: **IOSTAT** should not be specified unless requested by a software support representative (SSR).

LIST The **LIST** parameter lists the current settings of **OPTION**.

modiFy FUNC OPTION LIST

NOCACHE The **NOCACHE** parameter specifies that caching is to be inhibited for all functions that use caching DASD.

modiFy FUNC OPTION NOCACHE

NOENVPRT The **NOENVPRT** parameter specifies the printing of environmental data, in a partial summary, at the completion of MPST/PC.

modiFy FUNC OPTION NOENVPRT

NOIOCHK The **NOIOCHK** parameter specifies that error messages are only printed for I/O operations if an error is incurred.

modiFy FUNC OPTION NOIOCHK

NOIODELAY The **NOIODELAY** parameter allows the user to specify no I/O time delay after a specified number of I/O operations.

modiFy FUNC OPTION NOIODELAY



Note: Both the **NOIODELAY** parameter and the **IODELAY** parameter, if **IODELAY=0**, can cause system degradation or missing interrupts.

NOIOSTAT The **NOIOSTAT** parameter specifies that no I/O status information will be printed.

modiFy FUNC OPTION NOIOSTAT

NOTRACE The **NOTRACE** parameter specifies that function trace points are not to be printed.

modiFy FUNC OPTION NOTRACE

RCDINFO The **RCDINFO** parameter specifies which device's Read Configuration Data will be printed.

modiFy FUNC OPTION RCDINFO=UUT nm |ALL

- If **RCDINFO=UUT nm** , a single device is specified. nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.
- If **RCDINFO=ALL**, all defined devices are specified.

RDCINFO The **RDCINFO** parameter specifies which devices Read Device Configuration data will be printed.

modiFy FUNC OPTION RDCINFO=UUT nm |ALL

- If **RDCINFO=UUT nm** , a single device is specified. nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.
- If **RDCINFO=ALL**, all defined devices are specified.

SIDINFO The **SIDINFO** parameter specifies which device's Sense ID data will be printed.

modiFy FUNC OPTION SIDINFO=UUT nm |ALL

- If **SIDINFO=UUT nm** , a single device is specified. nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.
- If **SIDINFO=ALL**, all defined devices are specified.

TRACE The **TRACE** parameter specifies that function trace points are to be printed in the output file.

modiFy FUNC OPTION TRACE



Caution: This parameter produces a large amount of output. **TRACE** should not be specified unless requested by a software support representative (SSR).

Chapter 6. Random Locate Block Function

Function Overview

The Random Locate Block (**RLB**) function exercises the locate block feature of cartridge tape subsystems. It can also be used to write and read full or partial cartridges of data.

Partial Table of Contents

- “RLB Parameter Table” on page 136.
- “Operation Considerations for RLB” on page 137.
- “Error Recovery for RLB” on page 137.
- “RLB Function Parameters” on page 138.
- “MODIFY Command Parameters for RLB” on page 149.

**RLB
Parameter Table**

Table 6. lists the function and **modiFy** command parameters available for **RLB**.

Table 6. RLB Parameters

Function Parameter	Modify Command Parameter	Parameter Abbreviations
BLKSIZE		
BLKIDPRT	BLKIDPRT	
	CMDLIST	
CNFGRETRY		
DATA		
FILECNT		
FINALSUM	FINALSUM	
ICRC		
LOCATES	LOCATES	
MODE	MODE	
MSGALL	MSGALL	
MSGERROR	MSGERROR	
NOBLKIDPRT	NOBLKIDPRT	
NOCNFGRETRY		
NORECOVERY	NORECOVERY	
NORMSUM	NORMSUM	
NOTBLPRT	NOTBLPRT	
NPASS	NPASS	
	PARMS	
	PASS	
RECCNT		
RECOVERY	RECOVERY	
	SIZES	
TBLPRT	TBLPRT	
TESTSEQ		
VOLSER		

Operation Considerations for RLB

The following information must be taken into consideration when running the **RLB** function.

- **RLB** requires a type 5 device definition for each device to be tested. For additional information on device definition types refer to the *MPST/PC Installation and User's Guide*.
- If more than one device is to be tested, the devices to be tested must be defined as UUT01 through UUT08. UUT (unit under test) numbers are assigned to the test devices during device definition.

Error Recovery for RLB

Error recovery is performed for data checks and overruns. All other errors are considered permanent and testing is terminated on that device.

Write Error Recovery

Write error recovery consists of back space block, erase gap, and write. If the **NORECOVERY** parameter is in effect, 15 retries are attempted for each write error before the error is considered permanent and testing, on that device, is terminated. If **ICRC** is in effect, no host write recovery is attempted.

Error Reporting

Error reporting is done for all temporary and permanent errors. At the end of each write a pass summary message is issued. At the completion of **RLB** function execution a summary message for each test cartridge tape drive and cartridge tape volume pair is issued.

RLB Function Parameters

BLKSIZE The **BLKSIZE** parameter specifies the size or range of sizes of the records to be written.

RLB BLKSIZE=*size* [**-***size*]

size is a decimal number from 28–32000. The hyphen must be typed when entering the **BLKSIZE=***size*–*size* parameter. The maximum size that can be specified is 32000.



Note: If the *size* specified is larger than maximum, *size* will be reset to 32000.

BLKIDPRT The **BLKIDPRT** parameter issues message MPSTRLB23 for each Block ID retrieved during a write pass or a table build pass.

The default setting is **NOBLKIDPRT**.

RLB BLKIDPRT

CNFGRETRY The **CNFGRETRY** parameter specifies that the **RLB** function will allow retry on errors during configuration of the device.

The default setting is **CNFGRETRY**.

RLB CNFGRETRY

DATA The **DATA** parameter specifies a fixed data pattern be written and repeated, as necessary, to fill the record being written.

The default is to write random data patterns.

RLB DATA=hex

hex is 1–32 hexadecimal characters. If an odd number of characters is specified, a zero is appended to make the total number even.

FILECNT The **FILECNT** parameter specifies the number of files to be written to the cartridge tape. If this parameter is not specified, files are written until end-of-tape is encountered.

RLB FILECNT=num

num is any decimal number from 1–99999.



Note: Files will only be written until end-of-tape. Numbers larger than 100 can be ineffective unless used in conjunction with **RECNT** and **BLKSIZE** parameters.

FINALSUM The **FINALSUM** parameter specifies that only the final summary message will be issued. The start and end of pass message and the pass summary message are not issued.

RLB FINALSUM

ICRC The **ICRC** parameter specifies that data compression be used if the 3480/3490 has the ICRC function installed and enabled.

The default setting is non-compressed data.

RLB ICRC

LOCATES The **LOCATES** parameter specifies the number of random locate block executions to be performed. This parameter is only valid when specified with **TESTSEQ=R**.

RLB TESTSEQ=R LOCATES=*num*

num is any decimal number from 1–99999. The default value for *num* is **10**.

MODE The **MODE** parameter specifies whether or not the 3480/3490 control unit's internal buffer will be used to buffer the data written on the cartridge.

The default setting is **MODE=WTI**.

RLB MODE=FULL|WTI

- If **MODE=FULL**, all write commands will have their data buffered and written onto the cartridge tape later.
- If **MODE=WTI**, all write commands put the data directly onto the cartridge tape.

MSGALL The **MSGALL** parameter specifies that all messages for sequential and random locate will be issued.

The default setting is **MSGERROR**.

RLB MSGALL

MSGERROR The **MSGERROR** parameter specifies that only the error messages for sequential and random locate will be issued.

The default setting is **MSGERROR**.

RLB MSGERROR

NOBLKIDPRT The **NOBLKIDPRT** parameter specifies message MPSTRLB23 will not be issued for each Block ID retrieved during a write pass or a table build pass.

The default setting is **NOBLKIDPRT**.

RLB NOBLKIDPRT

NOCNFGRETRY The **NOCNFGRETRY** parameter specifies that the **RLB** function will not allow retry on errors during configuration of the device.

The default setting is **CNFGRETRY**.

RLB NOCNFGRETRY

NORECOVERY The **NORECOVERY** parameter specifies that the 3480/3490 control unit will not perform internal error recovery on errors. When **NORECOVERY** is in effect, 15 retries are performed by the software before a permanent error is flagged.

The default setting is **RECOVERY**.

RLB NORECOVERY

NORMSUM The **NORMSUM** parameter specifies that all pass and summary messages will be issued.

RLB NORMSUM

NOTBLPRT The **NOTBLPRT** parameter specifies that a message containing the segment and logical block number table will not be issued following a write pass or a table build pass.

The default setting is **NOTBLPRT**.

RLB NOTBLPRT

NPASS The **NPASS** parameter specifies the number of write, table build, locate sequential, and locate random passes done on each test device.

The default value is the number of passes required to perform each specified test sequence (**TESTSEQ**) once.

RLB NPASS=*num*

num is any decimal number from 1–99999.



Note: The first variable specified on **TESTSEQ=*sequence*** must be either a write (**W**) or a table build (**T**) pass command. If neither **W** nor **T** are specified, a table build pass will be inserted and the **NPASS** parameter will be adjusted.

RECCNT The **RECCNT** parameter specifies the number of records to be written in each file.

The default setting is **511** if the **RECCNT** parameter is not specified.

RLB RECCNT=num

num is any decimal number from 1–99999.



Note: Record counts of more than 7000 can be terminated by end-of-tape. Numbers larger than 7000 can be ineffective unless used in conjunction with the **BLKSIZE** parameter.

RECOVERY The **RECOVERY** parameter specifies that the 3480/3490 control unit will perform internal error recovery on errors. There are no software retries if **RECOVERY** is in effect.

The default setting is **RECOVERY**.

RLB RECOVERY

TBLPRT The **TBLPRT** parameter specifies that a message containing the segment and logical block number table will be issued following a write pass or a table build pass.

The default setting is **NOTBLPRT**.

RLB TBLPRT

TESTSEQ The **TESTSEQ** parameter specifies the test sequences performed by **RLB**.

RLB [*rlb_parms*] **TESTSEQ**=*num*|*sequence*

TESTSEQ and RLB Sub-functions

The **RLB** function is used to exercise the locate block feature of cartridge tape subsystems. **RLB** consists of four separate sub-functions.

Write Pass—Creates files on a cartridge tape and builds a table of block identifiers. A table entry is generated for each segment number and consists of the lower and upper logical block numbers for that tape segment number.

Data written on the cartridge tape consists of random length records (from 28 to maximum bytes). Files are written on the cartridge tape until end of tape or the file count (**FILECNT**) value is encountered. At the end of each file there is a tape mark.

Files can contain a variable number of records (**RECCNT**). The record number and length are contained in the first and last eight bytes of each record. A 12 byte random or a fixed 1–32 byte data pattern is repeated, as necessary, to fill the remaining bytes in the record.

Table Build Pass—Builds a table of segment and logical block numbers from a previously existing cartridge tape.

Sequential Pass—Performs locates using the upper logical block number of each segment number beginning with segment number 1 and progressing to the logical end of tape.

Random Pass—Performs locates using a randomly generated logical block number that is equal to or less than the highest logical block number on the cartridge tape. The logical block number is compared to each table entry to determine the associated segment number.

TESTSEQ=num Use the **TESTSEQ=num** parameter to choose one of four predefined test sequences.

The following information should also be taken into account when entering the **TESTSEQ=num** parameter.

- The number of cartridge tape operations (passes) executed is controlled by the **NPASS** parameter. The **NPASS** parameter must be large enough to ensure that the specified test sequence can be completely executed.
- The default setting is **TESTSEQ=4**.

For additional information on pass commands refer to “TESTSEQ and RLB Sub-functions” on page 145.

RLB [*rlb_parms*] **TESTSEQ=num**

An explanation of the four predefined test sequences (1, 2, 3, and 4) follows:

TESTSEQ=1	Write a cartridge tape of data Locate sequential
TESTSEQ=2	Write a cartridge tape of data Locate random
TESTSEQ=3	Write a cartridge tape of data Locate sequential Locate random
TESTSEQ=4	Table build from an existing cartridge of data Locate sequential Locate random

TESTSEQ=*sequence*

Use the **TESTSEQ**=*sequence* parameter to define a sequence to perform. *sequence* is a string of 1–16 predefined characters.

The following information should also be taken into account when entering the **TESTSEQ**=*sequence* parameter.

- The first variable specified on **TESTSEQ**=*sequence* must be either a write (**W**) or a table build (**T**) pass command. If neither **W** nor **T** are specified, a table build will be inserted and **NPASS** will be adjusted.
- The number of cartridge tape operations (passes) executed is controlled by the **NPASS** parameter. The **NPASS** parameter must be large enough to ensure that the specified test sequence can be completely executed.
- The default setting is **TESTSEQ**=**TSR**.

RLB [*rlb_parms*] **TESTSEQ**=*sequence*

The following characters are valid for **TESTSEQ**=*sequence*:

- W** Write pass
- T** Table build pass
- R** Random pass
- S** Sequential pass



Note: Both the random and sequential pass commands, **R** and **S**, must be immediately preceded by a write pass command, **W**, or a table build pass command, **T**.

For additional information on pass commands refer to “TESTSEQ and RLB Sub-functions” on page 145.

VOLSER The **VOLSER** parameter specifies the volume serial number to be placed on the cartridge tape for the first write sequence performed during **RLB**.

RLB VOLSER*nm=volser*

For **VOLSER***nm=volser* the variable:

nm is the UUT number (01–08) for each cartridge tape drive. UUT (unit under test) numbers are assigned to the test devices during device definition

volser is the volume serial number to be used. *volser* can be 1–6 alphanumeric characters in length.



Note: This *volser* stays on the cartridge tape until changed and is *not* a standard IBM *volser*.

MODIFY Command Parameters for RLB

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.

BLKIDPRT The **BLKIDPRT** parameter issues message MPSTRLB23 for each Block ID retrieved during a write pass or a table build pass.

modiFy [FUNC RLB] BLKIDPRT

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **RLB** function.

modiFy [FUNC RLB] CMDLIST

FINALSUM The **FINALSUM** parameter specifies that only the final summary message will be issued. The start and end of pass message and the pass summary message are not issued.

modiFy [**FUNC RLB**] **FINALSUM**

LOCATES The **LOCATES** parameter specifies the number of random locate block executions to be performed. This parameter is only valid when specified with **TESTSEQ=R**.

modiFy [**FUNC RLB**] **LOCATES=num**

num is any decimal number from 1–99999. The default value for *num* is **10**.

MODE The **MODE** parameter specifies whether or not the 3480/3490 control unit's internal buffer will be used to buffer the data written on the cartridge.

modiFy [**FUNC RLB**] **MODE=FULL|WTI**

- If **MODE=FULL**, all write commands will have their data buffered and written onto the cartridge tape later.
- If **MODE=WTI**, all write commands put the data directly onto the cartridge tape.

MSGALL The **MSGALL** parameter specifies that all messages for sequential and random locate will be issued.

modiFy [FUNC RLB] MSGALL

MSGERROR The **MSGERROR** parameter specifies that only the error messages for sequential and random locate will be issued.

modiFy [FUNC RLB] MSGERROR

NOBLKIDPRT The **NOBLKIDPRT** parameter specifies message MPSTRLB23 will not be issued for each Block ID retrieved during a write pass or a table build pass.

modiFy [FUNC RLB] NOBLKIDPRT

NORECOVERY The **NORECOVERY** parameter specifies that the 3480/3490 control unit will not perform internal error recovery on errors. When **NORECOVERY** is in effect, 15 retries are performed by the software before a permanent error is flagged.

modiFy [FUNC RLB] NORECOVERY

NORMSUM The **NORMSUM** parameter specifies that all pass and summary messages will be issued.

modiFy [FUNC RLB] NORMSUM

NOTBLPRT The **NOTBLPRT** parameter specifies that a message containing the segment and logical block number table will not be issued following a write pass or a table build pass.

modiFy [FUNC RLB] NOTBLPRT

NPASS The **NPASS** parameter specifies the number of write, table build, locate sequential, and locate random passes done on each test device.

The default value is the number of passes required to perform each specified test sequence (**TESTSEQ**) once.

modiFy [**FUNC RLB**] **NPASS**=[*num*]

- If **NPASS**=*num* is specified, *num* is any decimal number from 1–99999.
- If **NPASS**= is specified, the current **NPASS** count is displayed.



Note: The first variable specified on **TESTSEQ**=*sequence* must be either a write (**W**) or a table build (**T**) pass command. If neither **W** nor **T** are specified, a table build pass will be inserted and the **NPASS** parameter will be adjusted.

PARMS The **PARMS** parameter displays the settings of various **RLB** parameters.

modiFy [**FUNC RLB**] **PARMS**

PASS The **PASS** parameter displays the current information for all configured cartridge tape drives. If the cartridge tape drive was active at the time the **PASS** parameter was received, an asterisk is displayed after the pass number.

modiFy [**FUNC RLB**] **PASS**

RECOVERY The **RECOVERY** parameter specifies that the 3480/3490 control unit will perform internal error recovery on errors. There are no software retries if **RECOVERY** is in effect.

modiFy [FUNC RLB] RECOVERY

SIZES The **SIZES** parameter displays the current sizes for record count, file count, and block size.

modiFy [FUNC RLB] SIZES

TBLPRT The **TBLPRT** parameter specifies that a message containing the segment and logical block number table will be issued following a write pass or a table build pass.

modiFy [FUNC RLB] TBLPRT

Chapter 7. Tape Copy Function

Function Overview

The **TAPECOPY** function copies data from an input cartridge tape to (up to seven) output cartridge tapes. **TAPECOPY** can also be used to compare the data found on the input cartridge tape to the data found on another cartridge tape.

Partial Table of Contents

- “TAPECOPY Parameter Table” on page 156.
- “Operation Considerations for TAPECOPY” on page 157.
- “TAPECOPY Function Parameters” on page 158.
- “MODIFY Command Parameters for TAPECOPY” on page 160.

**TAPECOPY
Parameter Table**

Table 7. lists the function and **modiFy** command parameters available for **TAPECOPY**.

Table 7. TAPECOPY Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
CFMDTM	CFMDTM	
CFMPRT	CFMPRT	
CFMTM	CFMTM	
COMPARE		
CONFIRM	CONFIRM	
ICRC		
	NOCONFIRM	

Operation Considerations for TAPECOPY

The following information must be taken into consideration when running the **TAPECOPY** function:

- **TAPECOPY** requires a type 5 device definition for each device. For additional information on device definition types refer to the *MPST/PC Installation and User's Guide*.
- Both the input device and the output device can be a 3480, 3490, or 3590 cartridge tape. The input and output devices do **not** have to be the same device type.
- The input device must be defined as UUT01. Output devices can be defined as UUT02 through UUT08. UUT (unit under test) numbers are assigned during device definition.
- Input data can be either non-compressed or compressed.
- The maximum record size for both the input and output cartridge tapes is the same as the maximum size of the device on which the tapes are mounted.
- If any of the “confirm” parameters were requested, the record length and the record number will be included in the message prompt to the user.

TAPECOPY Function Parameters

CFMDTM The **CFMDTM** parameter specifies that during copying all data and single tape marks from the input cartridge tape will be written to the output cartridge tape, but the user will be prompted to confirm every double tape mark before it will be copied from the input cartridge tape to the output cartridge tape.

TAPECOPY CFMDTM

CFMPRT The **CFMPRT** parameter specifies that during copying the first 16 bytes of each record will be printed to the operator's console.

TAPECOPY CFMPRT

CFMTM The **CFMTM** parameter specifies that during copying all data from the input cartridge tape will be written to the output cartridge tape, but the user will be prompted to confirm every tape mark before it will be copied from the input cartridge tape to the output cartridge tape.

TAPECOPY CFMTM

COMPARE The **COMPARE** parameter specifies that the data on the cartridge tape mounted on device UUT01 will be compared byte for byte with the data on the cartridge tape mounted on device UUT02. The cartridge tapes will be compared until end of tape or until a double tape mark, that is *not* a zero length data set, is detected.

All the data on the tapes including records, tape marks, double tape marks, and record length must be identical or a **COMPARE** failure message is issued.



Note: The **COMPARE** parameter disables **TAPECOPY**'s copy function.

TAPECOPY COMPARE

CONFIRM The **CONFIRM** parameter specifies that during copying the user will be prompted to confirm every record and tape mark being copied from the input cartridge tape to the output cartridge tape.

TAPECOPY CONFIRM

ICRC The **ICRC** parameter specifies that the data from the input cartridge tape will be compressed on the output cartridge tape. The default setting is non-compressed data.

TAPECOPY ICRC

MODIFY Command Parameters for TAPECOPY

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.

CFMDTM The **CFMDTM** parameter specifies that during copying all data and single tape marks from the input cartridge tape will be written to the output cartridge tape, but the user will be prompted to confirm every double tape mark before it will be copied from the input cartridge tape to the output cartridge tape.

modiFy [FUNC TAPECOPY] CFMDTM

CFMPRT The **CFMPRT** parameter specifies that during copying the first 16 bytes of each record will be printed to the operator’s console.

modiFy [FUNC TAPECOPY] CFMPRT

CFMTM The **CFMTM** parameter specifies that during copying all data from the input cartridge tape will be written to the output cartridge tape, but the user will be prompted to confirm every tape mark before it will be copied from the input cartridge tape to the output cartridge tape.

modiFy [FUNC TAPECOPY] CFMTM

CONFIRM The **CONFIRM** parameter specifies that during copying the user will be prompted to confirm every record and tape mark being copied from the input cartridge tape to the output cartridge tape.

modiFy [FUNC TAPECOPY] CONFIRM

NOCONFIRM The **NOCONFIRM** parameter turns off all confirm-type parameters; including **CONFIRM**, **CFMTM**, **CFMDTM**, and **CFMPRT**.

modiFy [FUNC TAPECOPY] NOCONFIRM

Chapter 8. Tape Scan Function

Function Overview

The **TAPESCAN** function analyzes 18-track and 36-track cartridge tapes. **TAPESCAN** reads customer cartridge tapes, mounted on a cartridge tape unit, and reports any error conditions found.

Partial Table of Contents

- “TAPESCAN Parameter Table” on page 164.
- “Operation Considerations for TAPESCAN” on page 164.
- “TAPESCAN Function Parameters” on page 166.
- “MODIFY Command Parameters for TAPESCAN” on page 170.

TAPESCAN Parameter Table

Table 8. lists the function and **modify** command parameters available for **TAPESCAN**.

Table 8. TAPESCAN Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
ANALYSIS		
BLKCNT		
	CMDLIST	
COUNTALL		
DSPRCDLN	DSPRCDLN	
LABEL		
	NODSPRCDLN	
NORECOVERY		NOREC
	PARMSTAT	
RDTOPEOT		
RECOVERY		REC
STOPDC		

Operation Considerations for TAPESCAN

The following information must be taken into consideration when running the **TAPESCAN** function:

- The **TAPESCAN** function requires a type 5 or 6 device definition. If a type 5 device definition is specified, **TAPESCAN** will only allow tape read functions.

For additional information on device definition types refer to the *MPST/PC Installation and User's Guide*.

- The tape volume should be file protected. If your cartridge tape hardware has a “never file protected” feature, reply **I** to the not file protected message.

- The **TAPESCAN** function could take an extensive amount of time to complete if it's run against a high-capacity tape device (i.e., 9840 or Redwood). If **TAPESCAN** runs for an excessive amount of time, check for permanent errors. The **TAPESCAN** function can be stopped by entering either the **Cancel** or **stop** command.
- Cartridge tapes used by **TAPESCAN** can have IBM or ANSI standard labels (SL). For SL tapes the function stops when EOF and two tape marks are detected, or when EOJ and one tape mark is detected.
- For SL tapes, **TAPESCAN** provides the user with two utility functions: The **LABEL** parameter prints all standard label volumes; and the **BLKCNT** parameter counts the number of data records in each file, it also prints trailer record (EOF1/EOJ1) block counts.
- NL and NSL cartridge tapes can also be used with **TAPESCAN**. For non-standard-labeled cartridge tapes (NL or NSL), program analysis is more limited and the function stops when two consecutive tape marks are detected by the program.
- **TAPESCAN** will attempt a program analysis of the first error found on the cartridge tape. If the errors are expected, the **TAPESCAN ANALYSIS** function should be run before trying either the **LABEL** or **BLKCNT** utilities. The **ANALYSIS** function can suggest the proper run parameters for additional **TAPESCAN** runs.
- Error reporting is done for all errors that are encountered by **TAPESCAN** in the valid recorded area of the cartridge tape. Errors that are detected either past EOF/EOJ or after tape marks are not reported.

TAPESCAN Function Parameters

ANALYSIS The **ANALYSIS** parameter will bypass an error record and attempt to read records, past the initial error record, for problem determination.

The following information should also be taken into account when entering the **ANALYSIS** parameter.

- Data blocks are read using the **CCW READ** command, **SKIP** and **SLI** flag modifiers, and a 32000 byte transfer.
- If no parameters are entered on the **TAPESCAN** control statement, **ANALYSIS** is the default setting. If the cartridge tape is a standard label (SL) tape, the **LABEL** function is forced to assist **ANALYSIS** in problem determination.
- **ANALYSIS** runs after the **LABEL** and/or the **BLKCNT** parameters have been processed.
- The **NOREcovery** parameter causes **ANALYSIS** to run with no program recovery of possible temporary errors. If **NOREcovery** is used without **STOPDC**, unpredictable results can occur
- If **LABEL** and/or **BLKCNT** are entered, no analysis will be performed unless the **ANALYSIS** parameter is also entered.

TAPESCAN [ANALYSIS]



Note: Reading into blank tape areas without blank-tape detection can cause channel-detected errors on timeout-type channels. It can even “lock out” other users from the cartridge tape subsystem. This method of analysis can cause unpredictable results on some vendor hardware.

BLKCNT The **BLKCNT** parameter reads the header and trailer labels of a standard label (SL) tape and the data blocks within the data file are counted with the use of the forward space block command. Record counts are printed for each file encountered and the block count, retrieved from the trailer label, is printed for comparison. Data records are not read.

TAPESCAN BLKCNT

COUNTALL The **COUNTALL** parameter specifies that all records on the tape are counted even if an error is found on the cartridge tape.

TAPESCAN COUNTALL

DSPRCDLN The **DSPRCDLN** parameter specifies that record length will be displayed.

The default setting is **NODSPRCDLN**

TAPESCAN DSPRCDLN

LABEL The **LABEL** parameter reads and prints the header and trailer labels of a standard label (SL) tape.

This parameter is forced whenever the cartridge tape being scanned is an SL tape.

TAPESCAN LABEL

NOREcovery The **NOREcovery** parameter causes **TAPESCAN** to run the analysis function with no program recovery of possible temporary errors.

The default setting is **REcovery**.

TAPESCAN [STOPDC] NOREcovery



Note: Unpredictable results can occur if **NOREcovery** is used without **STOPDC**.

RDTOPEOT The **RDTOPEOT** parameter specifies that **TAPESCAN** will read to the physical end of tape. It will continue to read past the logical end of tape and past any errors that can be found on the cartridge tape.

TAPESCAN RDTOPEOT

REcovery The **REcovery** parameter causes **TAPESCAN** to attempt to recover from temporary errors using programmed retry.

The default setting is **REcovery**.

TAPESCAN REcovery

STOPDC The **STOPDC** parameter is used to stop **TAPESCAN ANALYSIS** after a permanent error is encountered. It can also be used to position the cartridge tape for visual inspection.

TAPESCAN STOPDC



Note: The **NORECOVERY** parameter should be used with **STOPDC** to position the cartridge tape for visual inspection. If the **STOPDC** parameter is entered, no programmed analysis of errors takes place.

MODIFY Command Parameters for TAPESCAN

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **TAPESCAN** function.

modiFy [FUNC TAPESCAN] CMDLIST

DSPRCDLN The **DSPRCDLN** parameter specifies that record length will be displayed.

modiFy [FUNC TAPESCAN] DSPRCDLN

NODSPRCDLN The **NODSPRCDLN** parameter specifies that record length will not be displayed.

modiFy [**FUNC TAPESCAN**] **NODSPRCDLN**

PARMSTAT The **PARMSTAT** parameter displays the settings of various **TAPESCAN** parameters.

modiFy [**FUNC TAPESCAN**] **PARMSTAT**=*parameter*

The following *parameters* cannot be changed while **TAPESCAN** is running.

- ANALYSIS
- BLKCNT
- LABEL
- RECOVERY
- STOPDC

Chapter 9. Tape Independent Protocol Set Function

Function Overview

The Tape Independent Protocol Set (**TIPS**) function queries and alters configurations of the 9840 subsystem, updates embedded code (firmware), and retrieves dumps.

Partial Table of Contents

- “TIPS Parameter Table” on page 174.
- “Operation Considerations for TIPS” on page 175.
- “TIPS Function Parameters” on page 176.
- There are no **modiFy** commands for **TIPS**.

**TIPS
Parameter Table**

Table 9. lists the function parameters available for **TIPS**.

Table 9. TIPS Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
COMPRESS		
DEFINE		DEF
DRIVE		
DSE		
EMULATE		
FRCDMP		FD
IPL		
LIBADR		
LOGADR		
QUERY		
READDUMP		RDMP
RDERRLOG		REL
SAVECNFG		
STATUS		
TAPEID		TID
WMCFILE		

Operation Considerations for TIPS

The following information must be taken into consideration when running the **TIPS** function:

- The first device address defined in device definition must be the address of the device the update tape will be loaded from. For additional information on device definition refer to the *MPST/PC Installation and User's Guide*.

All other **TIPS** devices are dynamically allocated while **TIPS** is running.

- Customer data should never be transferred using **TIPS**.

TIPS Function Parameters

COMPRESS The **COMPRESS** parameter specifies that the setting for compression control be modified.

The following information should also be taken into account when entering the **COMPRESS** parameter.

- The **DEFine** parameter must be specified whenever the **COMPRESS** parameter is entered.
- All defined drives must be offline prior to executing the **COMPRESS** command.
- Multiple configuration-type parameters can be specified on the same control statement.
- The **SAVECNFG** parameter can be entered to activate the configuration changes.
- The defined drives must be online at the completion of the **TIPS** command.

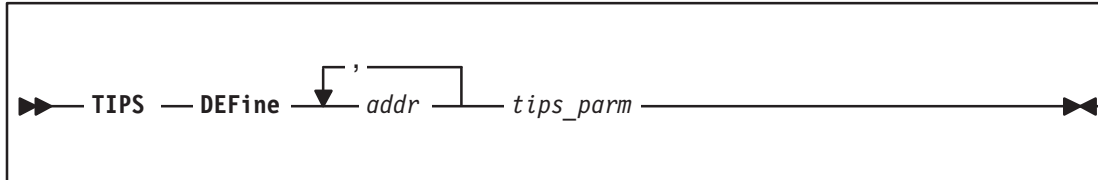
```
TIPS DEFine addr DRIVE=OFF -  
COMPRESS=NO|YES|OFF [parm...parm] -  
[SAVECNFG] DRIVE=ON
```

- If **COMPRESS=NO**, compression is disabled but still host changeable. The default setting for **COMPRESS** is **NO**.
- If **COMPRESS=YES**, compression is enabled but still host changeable.
- If **COMPRESS=OFF**, compression is always off and host settings will be ignored.

DEFine The **DEFine** parameter specifies the system address of the cartridge tape drives to **TIPS**.

The following information should also be taken into account when entering the **DEFine** parameter.

- **DEFine** must specified for every execution of **TIPS**.
- Any previously defined devices will be deleted once the **DEFine** *addr* command is entered.
- **DEFine** can only be specified once per control statement.



The **DEFine** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to 128 device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

DRIVE The **DRIVE** parameter specifies the state of the common controller.

The following information should also be taken into account when entering the **DRIVE** parameter.

- The **DEFine** parameter must be specified whenever the **DRIVE** parameter is entered.

TIPS **DEFine** *addr* **DRIVE=OFFline|ONline**

The common controller must be in the offline state before any of the following **TIPS** parameters can be entered:

- COMPRESS
- DSE
- EMULATE
- LIBADR
- LOGADR
- QUERY
- SAVECNFG

DSE The **DSE** parameter allows the Data Security Erase mode for each 9840 subsystem to be altered.

The following information should also be taken into account when entering the **DSE** parameter.

- The **DEFine** parameter must be specified whenever the **DSE** parameter is entered.
- All defined drives must be offline prior to executing the **DSE** command.
- Multiple configuration-type parameters can be specified on the same control statement.
- The **SAVECNFG** parameter can be entered to activate the configuration changes.
- The defined drives must be online at the completion of the **TIPS** command.

TIPS DEFine *addr* **DRIVE=OFF** -
DSE=FULL|PSEUDO [*parm...parm*] [**SAVECNFG**] -
DRIVE=ON

- If **DSE=FULL**, the next host-initiated DSE operation will erase the remaining length of tape.
- If **DSE=PSEUDO**, the next host-initiated DSE operation performs a pseudo erase.

EMULATE The **EMULATE** parameter alters the drive emulation type.

The following information should also be taken into account when entering the **EMULATE** parameter.

- The **DEFine** parameter must be specified whenever the **EMULATE** parameter is entered.
- All defined drives must be offline prior to executing the **EMULATE** command.
- Multiple configuration-type parameters can be specified on the same control statement.
- The **SAVECNFG** parameter can be entered to activate the configuration changes.
- The defined drives must be online at the completion of the **TIPS** command.

```
TIPS DEFine addr DRIVE=OFF -  
EMULATE=3490E|3590 [parm...parm] [SAVECNFG] -  
DRIVE=ON
```

FrcDmp

The **FD** parameter forces the drive to halt execution of all operations and initiates the internal collection of current trace information for all subsystem processors.

The following information should also be taken into account when entering the **FD** parameter.

- Both the **DEFine** and the **STATUS** parameter must be specified whenever the **FD** parameter is entered.
- The drive automatically IPLs after executing **FD**. During IPL the device will be varied offline and the ESCON channel emulator loses link connection with the drive.
- Once **FD** executes, MPST/PC forces **TIPS** to cancel. No additional control statements or device definitions can be entered for this execution of MPST/PC.



Warning: You must quit and restart MPST/PC operation once the **TIPS FD** parameter finishes executing.

- Collection of the information gathered by the **FD** parameter is done as a completely separate execution of MPST/PC. Refer to the **RDMP** parameter.

TIPS DEFine addr STATUS FD

IPL The **IPL** parameter forces the drive to IPL itself.

The following information should also be taken into account when entering the **IPL** parameter.

- The **DEFine** parameter must be specified whenever the **IPL** parameter is entered.
- The drive automatically IPLs after executing **IPL**. During IPL the device will be varied offline and the ESCON channel emulator loses link connection with the drive.



Note: Once **IPL** executes, no additional control statements or device definitions can be entered for this execution of MPST/PC.

TIPS **DEFine** *addr* **IPL**

LIBADR The **LIBADR** parameter defines the address of the library in which the 9840 subsystem is installed.

The following information should also be taken into account when entering the **LIBADR** parameter.

- The **DEFine** parameter must be specified whenever the **LIBADR** parameter is entered.
- All defined drives must be offline prior to executing the **LIBADR** command.
- Multiple configuration-type parameters can be specified on the same control statement.
- The **SAVECNFG** parameter can be entered to activate the configuration changes.
- The defined drives must be online at the completion of the **TIPS** command.

TIPS DEFine *addr* **DRIVE=OFF** -
LIBADR=xx [*parm...parm*] [**SAVECNFG**] **DRIVE=ON**

xx is a 2 character hexadecimal address.

LOGADR The **LOGADR** parameter references the system device address to the physical address of the device.

The following information should also be taken into account when entering the **LOGADR** parameter.

- The **DEFine** parameter must be specified whenever the **LOGADR** parameter is entered.
- Only 12-bit logical addresses are stored by the 9840.
- All defined drives must be offline prior to executing the **LOGADR** command.
- Multiple configuration-type parameters can be specified on the same control statement.
- The **SAVECNFG** parameter can be entered to activate the configuration changes.
- The defined drives must be online at the completion of the **TIPS** command.

TIPS DEFine *addr* **DRIVE=OFF** –
LOGADR=0*adr* [*parm...parm*] [**SAVECNFG**] **DRIVE=ON**

adr is a 3 character hexadecimal address.

QUERY The **QUERY** parameter allows the user to query the configuration of the 9840 subsystem.

The following information should also be taken into account when entering the **QUERY** parameter.

- All defined drives must be offline prior to executing the **QUERY** command.
- The configuration of the 9840 ESCON subsystem must have been saved in non-volatile storage before the **QUERY** parameter is entered.
- The defined drives must be online at the completion of the **TIPS** command.

**TIPS DEFine *addr* DRIVE=OFF QUERY=Saved|Current -
DRIVE=ON**

- If **QUERY=Saved**, information about the saved configuration for all defined devices is transferred from the subsystem to the host.
- If **QUERY=Current**, information about the current configuration of all defined devices is transferred from the subsystem to the host.

ReadDuMP

The **RDMP** parameter initiates the collection of internal trace data if the subsystem encounters a fatal error. This data is saved to a file named *DUMPaddr*. *addr* is the address of the device the data was collected from.

The following information should also be taken into account when entering the **RDMP** parameter.

- Both the **DEFine** and the **STATUS** parameter must be specified whenever the **RDMP** parameter is entered.

TIPS DEFine *addr* STATUS RDMP

RdErrLog

The **REL** parameter initiates the collection of internal trace data if the subsystem encounters an unusual error. This data is saved to a file named *LOGaddr*. *addr* is the address of the device the data was collected from.

The following information should also be taken into account when entering the **REL** parameter.

- Both the **DEFine** and the **STATUS** parameter must be specified whenever the **REL** parameter is entered.

TIPS DEFine *addr* STATUS REL

SAVECNFG The **SAVECNFG** parameter specifies that the currently loaded configuration data be saved in non-volatile storage.

The following information should also be taken into account when entering the **SAVECNFG** parameter.

- The **DEFine** parameter must be specified whenever the **SAVECNFG** parameter is entered.
- All defined drives must be offline prior to executing the **SAVECNFG** command.
- The defined drives must be online at the completion of the **TIPS** command.

TIPS DEFine *addr* DRIVE=OFF SAVECNFG DRIVE=ON

STATUS The **STATUS** parameter displays the drive status information not attainable through normal 3490 channel requests.

The following information should also be taken into account when entering the **STATUS** parameter.

- The **DEFine** parameter must be specified whenever the **STATUS** parameter is entered.

TIPS DEFine *addr* STATUS

TapeID The **TID** parameter identifies what type of tape is loaded on all defined devices.

The following information should also be taken into account when entering the **TID** parameter.

- The **DEFine** parameter must be specified whenever the **TID** parameter is entered.

TIPS DEFine *addr TID*

WMCFILE The **WMCFILE** parameter specifies the name of the file that will be used to update the 9840's embedded code (firmware).

The following information should also be taken into account when entering the **WMCFILE** parameter.

- Before you can run **WMCFILE**, the microcode must have already been ftp'd to the specified file.
- The **DEFine** parameter must be specified whenever the **WMCFILE** parameter is entered.
- The drive automatically IPLs after executing **WMCFILE**. During IPL the device will be varied offline and the ESCON channel emulator loses link connection with the drive.



Note: Once **WMCFILE** executes, no additional control statements or device definitions can be entered for this execution of MPST/PC.

TIPS DEFine *addr WMCFILE=name*

name is the file name where the update code resides.

MODIFY Command Parameters for TIPS

There are no **modiFy** command parameters available for the **TIPS** function.

Chapter 10. Tape Monitor and Control Function

Function Overview

The Tape Monitor and Control (TMC) function modifies cartridge tape forced logging status, as well as other tape monitoring and control functions, on StorageTek cartridge tape drives.

Partial Table of Contents

- “TMC Parameter Table” on page 192.
- “Operation Considerations for TMC” on page 193.
- “TMC Function Parameters” on page 194.
- “MODIFY Command Parameters for TMC” on page 207.

**TMC
Parameter Table**

Table 10. lists the function and **modiFy** command parameters available for **TMC**.

Table 10. TMC Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
ASSIGN	ASSIGN	
	CMDLIST	
DEFINE	DEFINE	DEF
DISABLE	DISABLE	DIS
ENABLE	ENABLE	ENA
END	END	
GETSTATUS	GETSTATUS	
NOWTO	NOWTO	
PRTSTATUS	PRTSTATUS	PRTSTAT
REW	REW	
RUN	RUN	
TIMEOUT	TIMEOUT	
TIMER	TIMER	
TRACEOFF	TRACEOFF	
TRACEON	TRACEON	TRACE
UNASSIGN	UNASSIGN	
WTM	WTM	
WTO	WTO	

Operation Considerations for TMC

The following information must be taken into consideration when running the **TMC** function.

- The cartridge tape drives must be offline whenever the **TMC ENAbLe** or **DISAbLe** commands are issued.
- Devices are automatically defined and undefined using the **TMC DEFine** command.
- **TMC** keeps an internal table of the status of all defined cartridge tape drives. The initial status of all drives in this table is defined as the previous state of either enabled or disabled.
- The **TMC** function can be either started and ended using a control statement, or it can be started on a control statement and ended by issuing the **modiFy FUNC TMC END** command. An unlimited number of **TMC** changes can be performed while the **TMC** function is in the run state.
- While a cartridge tape drive has **TMC** enabled, all temporary errors will result in unit checks (format 19 in sense byte 7). Leaving a cartridge tape drive in this state will result in large amounts of logrec entries.
- If the **TMC** function is terminated by either a timeout or an **END** command, an attempt is made to disable all cartridge tape forced-logging modes that were enabled. Any cartridge tape drives that cannot be disabled will be listed in ending warning messages.

TMC Function Parameters

ASSIGN The **ASSIGN** parameter sets a bit in the cartridge tape drive inhibiting other channel paths from utilizing the specified drive.

The following information should also be taken into account when entering the **ASSIGN** parameter.

- The devices to be assigned must have been previously defined.

TMC [DEFine *addr*] ASSIGN *addr*

The **ASSIGN** variable can be specified as:

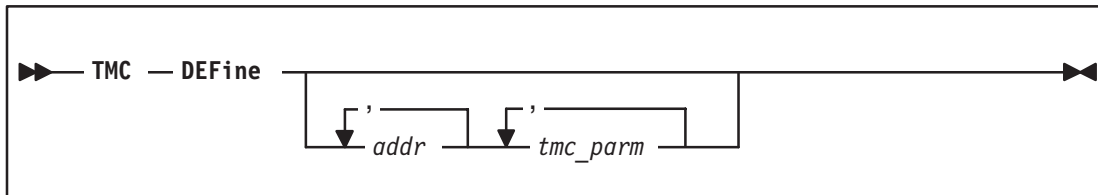
- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

DEFine The **DEFine** parameter specifies the system address of the cartridge tape drives that will have their **TMC** status modified.

The following information should also be taken into account when entering the **DEFine** parameter.

- Any previously defined devices will be deleted once the **DEFine** *addr* command is entered.
- **DEFine** can only be specified once per control statement.



The **DEFine** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

If **DEFine** is specified, without any variables, the status of all defined devices will be obtained and printed.

DISable The **DISable** parameter specifies the cartridge tape drives that will have their **TMC** function turned off.

The following information should also be taken into account when entering the **DISable** parameter.

- The devices to be disabled must have been previously defined.
- The cartridge tape drives must be offline whenever the **TMC DISable** command is issued.

TMC [DEFine *addr*] DISable [*addr*|ALL]

The **DISable** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.
- **ALL**: all defined devices are to be disabled.

If **DISable** is specified, without any variables, the status of all defined devices will be obtained and printed, after **DISable** has been issued to the devices.

ENable The **ENable** parameter specifies the cartridge tape drives that will have their **TMC** function turned on.

The following information should also be taken into account when entering the **ENable** parameter.

- The devices to be enabled must have been previously defined.
- The cartridge tape drives must be offline whenever the **TMC ENable** command is issued.

TMC [DEFine *addr*] ENable [*addr*|ALL]

The **ENable** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.

- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

- **ALL**: all defined devices are to be enabled.

If **ENable** is specified, without any variables, the status of all defined devices will be obtained and printed, after **ENable** has been issued to the devices.

END The **END** parameter terminates the **TMC** function.

The following information should also be taken into account when entering the **END** parameter.

- All devices are disabled prior to **ENDING** unless **TIMER=0** was specified.
- If **TIMER=0** was specified, **TMC ENDS** without disabling all devices.
- If **END** is specified from the control statement, **TMC** functions will terminate after all other parameters listed on the control statement have been processed.
- If **END** is not specified on the control statement, **TMC** will continue to run until **END** is entered using the **modiFy** command.

TMC END

GETSTATUS The **GETSTATUS** parameter issues a **SENSE** command to each of the defined devices and then prints out the current cartridge forced logging status of each defined device.

TMC GETSTATUS

NOWTO The **NOWTO** parameter inhibits all **TMC** messages and printouts from being displayed at the console. Data will only appear in the **PRINT** file.

TMC NOWTO

PRTSTATUS The **PRTSTATUS** parameter prints out the current **TMC** status of all defined devices.

TMC PRTSTATUS

REW The **REW** parameter specifies that the requested cartridge tape drives will rewind back to BOT.

TMC REW *addr*

The **REW** variable can be specified as:

- A single address: *addr*

addr is a 3 or 4 character hexadecimal address.

- Multiple addresses:

- A list of addresses: *addr, addr*

- A range of addresses: *addr-addr*

- A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

RUN The **RUN** parameter specifies that the requested cartridge tape drives will rewind and then unload.

TMC RUN *addr*

The **RUN** variable can be specified as:

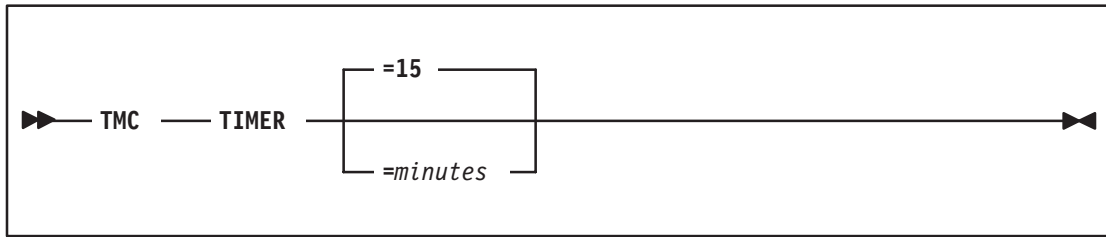
- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

TIMEOUT The **TIMEOUT** parameter causes the amount of time remaining before a timeout to be printed. The time is specified in hours, minutes, and seconds.

TMC TIMEOUT

TIMER The **TIMER** parameter specifies the number of minutes that the **TMC** function will run before automatically terminating.



- If **TIMER=0** is specified, the **TMC** function will not timeout and the auto-disable of forced logging will be bypassed. A warning message will appear for all cartridge tape drives that are still enabled.
- If **TIMER=0**, the **modiFy END** command must be entered to terminate the **TMC** function.
- When the timer is equal to 1–999, **TMC** terminates when either timeout or the **modiFy END** command is entered. All cartridge tape drives that have been enabled will be disabled.

minutes is specified as a decimal number from 0–999. **15** is the default setting for *minutes*.

TRACEOFF The **TRACEOFF** parameter stops the listing of major operations being performed on each defined device.

TMC TRACEOFF

TRACEon The **TRACEon** parameter specifies, for each device that has been defined, that when any command is issued to these defined devices each major operation will be listed.

TMC TRACEon



Caution: This parameter produces a large amount of output.

UNASSIGN The **UNASSIGN** parameter specifies that previous **ASSIGN** commands, for the requested cartridge tape drives, are discontinued.

The following information should also be taken into account when entering the **UNASSIGN** parameter.

- The devices to be unassigned must have been previously defined.

TMC [DEFine *addr*] UNASSIGN *addr*

The **UNASSIGN** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

WTM The **WTM** parameter writes a tape mark on the tape mounted on the requested cartridge tape drive.



Caution: The data currently on the tape, at the location where the tape mark is written, is destroyed and cannot be recovered. If the tape mark overwrites the tape label, the customer's tape management system will be unable to identify the tape.

TMC WTM *addr*

The **WTM** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

WTO The **WTO** parameter allows all **TMC** messages and printouts to be displayed at the console. Data will appear both in the `PDPRINT_DISK_ID` file and on the console.

TMC WTO



Hint: The *filename* for the `PDPRINT_DISK_ID` file is set in the `MPCUSTOM.INI` file.

For additional information on customizing the `MPCUSTOM.INI` file refer to the *MPST/PC Installation and User's Guide*.

MODIFY Command Parameters for TMC

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.

ASSIGN The **ASSIGN** parameter sets a bit in the cartridge tape drive inhibiting other channel paths from utilizing the specified drive.

The devices to be assigned must have been previously defined.

modiFy [**FUNC** TMC] [**DEFine** *addr*] **ASSIGN** *addr*

The **ASSIGN** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **TMC** function.

modiFy [FUNC TMC] CMDLIST

DEFine The **DEFine** parameter specifies the system address of the cartridge tape drives that will have their **TMC** status modified.

The following information should also be taken into account when entering the **DEFine** parameter.

- Any previously defined devices will be deleted once the **DEFine** *addr* command is entered.
- **DEFine** can only be specified once per control statement.

modiFy [**FUNC TMC**] **DEFine** [*addr*]

The **DEFine** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

If **DEFine** is specified, without any variables, the status of all defined devices will be obtained and printed.

DISable The **DISable** parameter specifies the cartridge tape drives that will have their **TMC** function turned off.

The following information should also be taken into account when entering the **DISable** parameter.

- The devices to be disabled must have been previously defined.
- The cartridge tape drives must be offline whenever the **DISable** command is issued.

modiFy [**FUNC TMC**] **DISable** [*addr*|**ALL**]

The **DISable** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.
- **ALL**: all defined devices are to be disabled.

If **DISable** is specified, without any variables, the status of all defined devices will be obtained and printed, after **DISable** has been issued to the devices.

ENable The **ENable** parameter specifies the cartridge tape drives that will have their **TMC** function turned on.

The following information should also be taken into account when entering the **ENable** parameter.

- The devices to be enabled must have been previously defined.
- The cartridge tape drives must be offline whenever the **ENable** command is issued.

modiFy [**FUNC TMC**] **ENable** [*addr*|**ALL**]

The **ENable** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.
- **ALL**: all defined devices are to be enabled.

If **ENable** is specified, without any variables, the status of all defined devices will be obtained and printed, after **ENable** has been issued to the devices.

END The **END** parameter terminates the **TMC** function.

modiFy [FUNC TMC] END

GETSTATUS The **GETSTATUS** parameter issues a Sense command to each of the defined devices and then prints out the current cartridge forced logging status of each defined device.

modiFy [FUNC TMC] GETSTATUS

NOWTO The **NOWTO** parameter inhibits all **TMC** messages and printouts from being displayed at the console. Data will only appear in the **SYSOUT** file.

modiFy [FUNC TMC] NOWTO

PRTSTATus The **PRTSTATus** parameter prints out the current **TMC** status of all defined devices.

modiFy [FUNC TMC] PRTSTATus

REW The **REW** parameter specifies that the requested cartridge tape drives will rewind back to BOT.

modiFy [**FUNC TMC**] **REW** *addr*

The **REW** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

RUN The **RUN** parameter specifies that the requested cartridge tape drives will rewind and then unload.

modiFy [**FUNC TMC**] **RUN** *addr*

The **RUN** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

TIMEOUT The **TIMEOUT** parameter prints the amount of time remaining before a timeout occurs. The time is specified in hours, minutes, and seconds.

modiFy [**FUNC TMC**] **TIMEOUT**

TIMER The **TIMER** parameter specifies the number of minutes that the **TMC** function will run before automatically terminating.

modiFy [**FUNC TMC**] **TIMER**=[*minutes*]

- If **TIMER=** is entered without minutes being specified, the current setting of the timer will be printed. **TIMER=** can be specified an unlimited number of times from the **modiFy** command.
- If **TIMER=0**, the **TMC** function will not timeout and the auto-disable of forced logging will be bypassed. A warning message will appear for all cartridge tape drives that are still enabled.
- If **TIMER=0**, the **modiFy END** command must be entered to terminate the **TMC** function.
- If **TIMER=1–999**, timeout will be restarted from the time the command is received.
- When the timer is equal to 1–999, **TMC** terminates when either timeout or the **modiFy END** command is entered. All cartridge tape drives that have been enabled will be disabled.

minutes is specified as a decimal number from 0–999.

TRACEOFF The **TRACEOFF** parameter stops the listing of major operations being performed on each defined device.

modiFy [FUNC TMC] TRACEOFF

TRACEon The **TRACEon** parameter lists each major operation being performed on each defined device whenever a command is issued to those devices.

modiFy [FUNC TMC] TRACEon



Caution: This parameter produces a large amount of output.

UNASSIGN The **UNASSIGN** parameter specifies that previous **ASSIGN** commands, for the requested cartridge tape drives, are discontinued.

The devices to be unassigned must have been previously defined.

modiFy [**FUNC TMC**] [**DEFine** *addr*] **UNASSIGN** *addr*

The **UNASSIGN** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: *addr, addr*
 - A range of addresses: *addr-addr*
 - A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

WTM The **WTM** parameter writes a tape mark on the tape mounted on the requested cartridge tape drive.



Caution: The data currently on the tape, at the location where the tape mark is written, is destroyed and cannot be recovered. If the tape mark overwrites the tape label, the customer's tape management system will be unable to identify the tape.

modiFy [**FUNC TMC**] **WTM** *addr*

The **WTM** variable can be specified as:

- A single address: *addr*

addr is a 3 or 4 character hexadecimal address.

- Multiple addresses:

- A list of addresses: *addr, addr*
- A range of addresses: *addr-addr*
- A combination: *addr addr addr-addr*

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified. List items must be separated by a space or a comma and the hyphen must be typed when specifying a range.

WTO The **WTO** parameter allows all **TMC** messages and printouts to be displayed at the console. Data will appear both in the `PDPRINT_DISK_ID` file and on the console.

modiFy [**FUNC TMC**] **WTO**



Hint: The *filename* for the `PDPRINT_DISK_ID` file is set in the `MPCUSTOM.INI` file.

For additional information on customizing the `MPCUSTOM.INI` file refer to the *MPST/PC Installation and User's Guide*.

Chapter 11. Track Dump Function

Function Overview

The Track Dump (**TRKDUMP**) function dumps (prints) home address (HA), record zero (R0), and all fields of all data records on a track of a DASD volume.

Partial Table of Contents

- “TRKDUMP Parameter Table” on page 222.
- “Operation Considerations for TRKDUMP” on page 223.
- “TRKDUMP Function Parameters” on page 224.
- There are no **modiFy** commands for **TRKDUMP**.

**TRKDUMP
Parameter Table**

Table 11. lists the function parameters available for **TRKDUMP**.

Table 11. TRKDUMP Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
DATAFMT		
DEVICE		
ELIMIT		
NUMBER		
PRINT		
SCDUMP		
TRACK		

Operation Considerations for TRKDUMP

The following information must be taken into consideration when running the **TRKDUMP** function:

- **TRKDUMP** function requires a type 1, 2, 3, or 4 device definition. For additional information on device definition types refer to the *MPST/PC Installation and User's Guide*.
- The **TRKDUMP DATAFMT=** parameter will override the format specified by the **OPTION** parameter.

TRKDUMP Parameter	OPTION Parameter	Dumped Data Format
DATAFMT=R	DATAFMT=R	Record Format
DATAFMT=R	DATAFMT=M	Record Format
DATAFMT=M	DATAFMT=R	Memory Format
DATAFMT=M	DATAFMT=M	Memory Format

See Appendix B “Dumped Data Format” for a description of the format of the dumped data.

- If an uncorrectable data check occurs during **TRKDUMP**, the uncorrectable data field is printed with the error offset and the corrected data listed.
- The number of bytes used on the track is printed after the dump of each record.
- I/O operations which end with an error will be retried a maximum of 10 times before being considered permanent.
- Dumping of the track terminates if a permanent error occurs reading home address (HA) or record zero (R0), or if the number of permanent errors exceeds the maximum allowed as specified by the **ELIMIT** parameter.
- Error logging is under the control of the **OPTION LOG|NOLOG** function. When **OPTION LOG** is in effect, correctable errors are not detected, reported, or counted by the **TRKDUMP** function.

TRKDUMP Function Parameters

DATAFMT The **DATAFMT** parameter specifies the format of any data which is to be dumped (printed).

The default setting is **DATAFMT=R**.

TRKDUMP TRACK=cyl.hd DATAFMT=R|M

- If **DATAFMT=R**, record format is specified.
- If **DATAFMT=M**, memory format is specified.



Note: Data is dumped in the format specified by the **OPTION** parameter **DATAFMT** unless overridden by the **TRKDUMP DATAFMT=M** parameter.

See Appendix B. “Dumped Data Format” on page 303 for a description of the format of the data dumped.

DEVICE The **DEVICE** parameter specifies the device to be used when running **TRKDUMP**. If **DEVICE** is not specified, the default device is **UUT01**.

TRKDUMP TRACK=cyl.hd DEVICE=UUTnm

nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.

ELIMIT The **ELIMIT** parameter specifies the maximum number of permanent errors allowed before dumping of the track is terminated.

TRKDUMP TRACK=*cyl.hd* ELIMIT=*err_num*

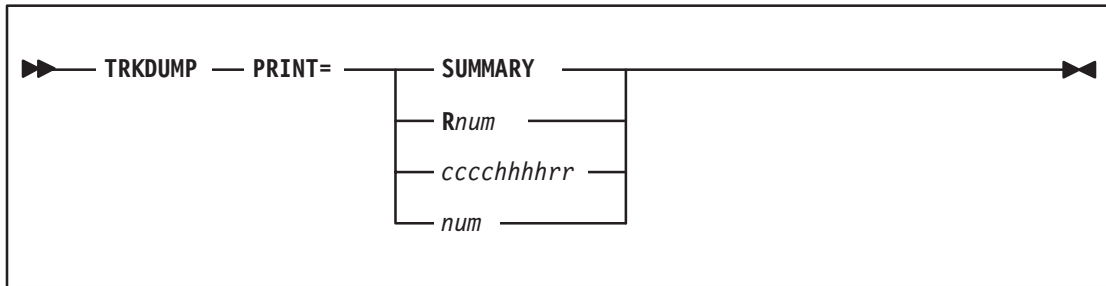
err_num is a decimal number from 0–999. If 0 is specified, an infinite number of errors is allowed. **10** is the default setting for *err_num*.

NUMBER The **NUMBER** parameter specifies the number of tracks to be dumped starting with the track specified by the **TRACK** parameter.

TRKDUMP TRACK=*cyl.hd* NUMBER=*num*

num is a decimal number from 1–99. **1** is the default setting for *num*.

PRINT The **PRINT** parameter specifies the data that is printed for each track dumped.



PRINT=SUMMARY The **PRINT=SUMMARY** command specifies that only the summary of count fields [message MPSTTKD28] is printed.

TRKDUMP TRACK=cyl.hd PRINT=SUMMARY

PRINT=Rnum The **PRINT=Rnum** command specifies that the summary of count fields [message MPSTTKD28] and record number *num* is printed.

TRKDUMP TRACK=cyl.hd PRINT=Rnum

num is a decimal number from 0–999.

PRINT=cccchhhrr The **PRINT=cccchhhrr** command specifies that the summary of count fields [message MPSTTKD28] and the record with the id *cccchhhrr* is printed. Only one record is dumped.

TRKDUMP TRACK=cyl.hd PRINT=cccchhhrr

The **PRINT=cccchhhrr** is a 10-character hexadecimal value.

cccc

is the 4-character cylinder address.

hhhh

is the 4-character head address.

rr

is the 2-character record address.

PRINT=num The **PRINT=num** command specifies that the summary of count fields [message MPSTTKD28] and only the first *num* bytes of the count, key, and data fields of each record, are printed.

TRKDUMP TRACK=cyl.hd PRINT=num

num is a decimal number from 8–99999.

SCDUMP

The **SCDUMP** parameter specifies that a space count dump of the track is to be done (4305 only). The default is no space count dump.

TRKDUMP TRACK=*cyl.hd* SCDUMP

TRACK The **TRACK** parameter specifies the address of the first track to be dumped.

The **TRACK** parameter must be entered when specifying the **TRKDUMP** function.

TRKDUMP TRACK=cyl.hd

For **TRACK=cyl.hd** the variable:

cyl is a 3 or 4 character hexadecimal value. The dot (.) must be typed when entering the **TRACK=cyl.hd** parameter.

hd is a 2 character hexadecimal value.

The following values are valid for *cyl*, *hd*, and SA (surface analysis cylinder) limits.

Device Type	<i>cyl</i> Limits	<i>hd</i> Limits	SA Limits
3330-1	000 - 19A	00 - 12	N/A
3330-11	000 - 32E	00 - 12	N/A
3350	000 - 22F	00 - 1D	N/A
3380 (1X)	000 - 374	00 - 0E	FFFD
3380E (2X)	000 - 6E9	00 - 0E	06F4 - 06F5
3380K (3X)	000 - A5E	00 - 0E	0A6B - 0A6D
3390-1	000 - 458	00 - 0E	0481 - 0482
3390-2	000 - 8B1	00 - 0E	08D9 - 08DA
3390-3	000 - D0A	00 - 0E	0D19 - 0D1A
3390-9	000 - 2720	00 - 0E	2746 - 2750
2305-2	000 - 05F	00 - 07	N/A

MODIFY Command Parameters for TRKDUMP

There are no **modiFy** command parameters available for the **TRKDUMP** function.

Chapter 12. Volume Scan Function

Function Overview

The Volume Scan (**VOLSCAN**) function can read home address (HA), record zero (R0), and all data records on every track of a DASD volume, including the CE tracks. **VOLSCAN** checks all defective and alternate tracks for correct defective/alternate track pairing.

Partial Table of Contents

- “VOLSCAN Parameter Table” on page 232.
- “Operation Considerations for VOLSCAN” on page 233.
- “VOLSCAN Function Parameters” on page 234.
- “MODIFY Command Parameters for VOLSCAN” on page 240.

**VOLSCAN
Parameter Table**

Table 12. lists the function and **modiFy** command parameters available for **VOLSCAN**.

Table 12. VOLSCAN Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
CECYL		
CLIMIT		
	CMDLIST	
ELIMIT		
	FORCEND	
HLIMIT		
IOLIMIT		
LOOP		
NOCECYL		
PRINTDS		
RANDOM		
READCMD		
SUMMARY		

Operation Considerations for VOLSCAN

The following information must be taken into consideration when running the **VOLSCAN** function:

- **VOLSCAN** function requires a type 1, 2, 3, or 4 device definition. For additional information on device definition types refer to the *MPST/PC Installation and User's Guide*.
- When scanning a non-full volume device (4305 in 3380 mode, or a VM/370 mini-disk, etc.), **VOLSCAN** should be limited using the **CLIMIT** parameter. If **VOLSCAN** is not limited, it will terminate when the end of the mini-disk is reached.
- Error logging is under the control of the **OPTION LOG|NOLOG** function. When **OPTION LOG** is in effect, correctable errors are not detected, reported, or counted by the **VOLSCAN** function.
- For 3330, 3350, 3380 and 3390 type devices, **VOLSCAN** uses the Read Multiple Count Key Data command but can be forced to use the Read Count Key Data command.
- **VOLSCAN** can be limited to specific cylinders or heads or both. Volume scanning can be performed either sequentially or randomly
- Only one error per track appears in the **VOLSCAN** summary. This error (message MPSTVSC07) is the most severe error encountered during retry.
- Alternate track assignments are printed for all defective tracks which have alternate tracks assigned.

VOLSCAN Function Parameters

CECYL The **CECYL** parameter specifies that only the CE cylinder of the device unit under test is scanned.

VOLSCAN CECYL *vsc_parm*



Note: Either **CECYL** or **RANDOM** can be entered when specifying the **VOLSCAN** function. If neither **CECYL** nor **RANDOM** are specified, sequential track testing, the default, is specified.

CLIMIT The **CLIMIT** parameter specifies that volume scanning is to be restricted to a specific cylinder or range of cylinders.

The default setting is to scan all cylinders.

VOLSCAN [**RANDOM**] **CLIMIT**=*cyl*[-*cyl*]

cyl is a four-character hexadecimal number. The hyphen must be typed when entering the **CLIMIT**=*cyl*-*cyl* parameter.

The following values are valid for *cyl* limits:

Device Type	<i>cyl</i> Limits
3330-1	0000 – 019A
3330-11	0000 – 032E
3350	0000 – 022F (400 for CE cylinder)
3380	0000 – 0374
3380D	0000 – 0374
3380J	0000 – 0374
3380E	0000 – 06E9
3380K	0000 – 0A5E
3390-1	0000 – 0458
3390-2	0000 – 08B1
3390-3	0000 – 0D0A
3390-9	0000 – 2720
2305-2	0000 – 005F

ELIMIT The **ELIMIT** parameter specifies the maximum number of unrecoverable I/O errors allowed before **VOLSCAN** terminates scanning of the track and continues with the next track.

VOLSCAN [**RANDOM**] **ELIMIT**=*errors*

errors is a decimal number from 0–999. If 0 is specified, an infinite number of errors is allowed. **10** is the default setting for *errors*.



Note: If **VOLSCAN RANDOM** is executing, **VOLSCAN** terminates when the maximum number of unrecoverable I/O errors is received.

HLIMIT The **HLIMIT** parameter specifies that volume scanning is to be restricted to a specific head or range of heads.

The default value is to scan all heads.

VOLSCAN **HLIMIT**=*hd*[-*hd*]

hd is a two-character hexadecimal number. The hyphen must be typed when entering the **HLIMIT**=*hd-hd* parameter.

Device Type	<i>hd</i> Limits
3330-1	00 – 12
3330-11	00 – 12
3350	00 – 1D
3380, 3380D, 3380J, 3380E and 3380K	00 – 0E
3390-1, 3390-2, 3390-3, 3390-9	00 – 0E
2305-2	00 – 07

IOLIMIT The **IOLIMIT** parameter specifies the maximum number of I/O operations to be executed.

IOLIMIT can only be used if **RANDOM** was specified.

VOLSCAN RANDOM IOLIMIT=num

num is a decimal number from 1–99999999. **1000** is the default setting for *num*.

LOOP The **LOOP** parameter specifies the maximum number of times that an I/O operation, terminating with an error, is to be retried. The failing CCW chain will be retried until either the loop count is reached or the CCW chain executes successfully.

VOLSCAN LOOP=retry

retry is a decimal number from 1–99. **1** is the default setting for *retry*.

NOCECYL If **NOCECYL** is specified, scanning of the CE cylinder track is bypassed and only the data cylinder/heads (specified by **CLIMIT** and **HLIMIT**) are scanned.

The **NOCECYL** parameter is ignored if the device under test is not a 3350 or a 3380 in native mode.

VOLSCAN NOCECYL

PRINTDS If **PRINTDS** is specified, defect skip information is printed for each track scanned.

VOLSCAN [CECYL] PRINTDS

RANDOM The **RANDOM** parameter specifies that random track testing is to be performed. When **RANDOM** is specified, CE tracks are not tested and there is no report printed at the end of the run.

VOLSCAN RANDOM *vsc_parm*



Note: Either **CECYL** or **RANDOM** can be entered when specifying the **VOLSCAN** function. If neither **CECYL** nor **RANDOM** are specified, sequential track testing, the default, is specified.

READCMD The **READCMD** parameter specifies which read command to use to read the data records on each track.

The default setting is **READCMD=RMCKD**.

VOLSCAN READCMD=RMCKD | RCKD

- If **READCMD=RMCKD**, the Read Multiple Count Key Data (**X5E**) command is specified. **RMCKD** is used for 3330, 3350, 3380, and 3390 type devices.
- If **READCMD=RCKD**, the Read Count Key Data (**X9E**) command is specified. **RCKD** is used for 2305–2 type devices.

SUMMARY The **SUMMARY** parameter specifies that a summary message (MPSTVSC11) is sent to the operator's console at the completion of **VOLSCAN**.

No message to the operator's console is the default.

VOLSCAN SUMMARY

MODIFY Command Parameters for VOLSCAN

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **VOLSCAN** function.

modiFy [FUNC VOLSCAN] CMDLIST

FORCEND The **FORCEND** parameter specifies that **VOLSCAN** operation will be terminated at the start of the next cylinder.

modiFy [FUNC VOLSCAN] FORCEND

Chapter 13. Terminal Control Unit Verification Function

The Terminal Control Unit Verification (**VTERM**) function is used in the event that an LMU for an automated cartridge tape system is not functioning but all internal diagnostics show that it should be working.

Operation Considerations for VTERM

The following information must be taken into consideration when running the **VTERM** function:

- The LMU must be disconnected from its controller and replaced with a standard 3278 terminal for this test series.
- **VTERM** performs two tests, in succession, which are designed to exercise the terminal controller.
 - The first test displays a ripple pattern on the 3278 terminal consisting of the LMU character set.
 - The second test requests a single character to be read from the 3278. The character is then repeated until it fills the entire screen.
- During both tests output to the 3278 is verified by reading the terminal buffer and comparing it to the original data. When the compare is complete, a visual verification message is sent to the 3278 and the user is requested to press `[[F1]]` if the screen looks good or `[[ENTER]]` if the screen display is not good.

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==> PRESS F1 IF VISUAL DISPLAY OK. PRESS ENTER KEY IF NOT

The first test is in progress and visual confirmation is required after the full-screen display.

- Press `[[F1]]` if the screen display looks good.
- Or, press `[[ENTER]]` if the screen display is not good. Pressing `[[ENTER]]` terminates the test.

The cursor is placed at row 1 column 1 and the standard keyboard is locked.

==> ENTER A TEST CHARACTER TO BE DISPLAYED, OR PRESS F3 TO END TEST

The second test is in progress and a valid LMU character is requested for display. Only the first character entered will be used; all other characters will be ignored.

- Enter a valid LMU character. Valid characters consist of upper case alphabet, numbers 0–9, and the characters `<` `>` `(` `)` `?` and blank.
- Or, press `[[F3]]` to terminate the test.

The cursor is placed at row 1 column 1 and the standard keyboard is locked.

==> INVALID KEY PRESSED OR INVALID CHARACTER ENTERED

This message is displayed on the 3278 and is accompanied by a beep tone. The message remains on the screen for two seconds before being replaced by the original question.

Chapter 14. Write-Read Cartridge Function

Function Overview

The Write-Read Cartridge (**WRCART**) function writes and reads full or partial cartridge tapes of data. **WRCART** can exercise one to eight cartridge tape drives.

Partial Table of Contents

- “WRCART Parameter Table” on page 244.
- “Operation Considerations for WRCART” on page 245.
- “Error Recovery for WRCART” on page 246.
- “WRCART Function Parameters” on page 247.
- “MODIFY Command Parameters for WRCART” on page 259.

**WRCART
Parameter Table**

Table 13. lists the function and **modiFy** command parameters available for **WRCART**.

Table 13. WRCART Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
BLKSIZE		
CFL	CFL	
	CMDLIST	
CNFGRETRY		
COMPARE	COMPARE	
DATA		
DUMPART	DUMPART	
FILECNT		
FINALSUM	FINALSUM	
ICRC		
MODE	MODE	
NOCFL	NOCFL	
NOCNFGRETRY		
	NOCMPARE	
	NODUMPART	
NORECOVERY	NORECOVERY	
NORESINC	NORESINC	
	NORMSUM	
NPASS	NPASS	
	PARMS	
	PASS	
PATLEN	PATLEN	
RDBKICRC		
RECCNT		
RECOVERY	RECOVERY	
RESYNC	RESYNC	
	SIZES	
TESTSEQ		
VOLSER		

Operation Considerations for WRCART

The following information must be taken into consideration when running the **WRCART** function:

- The cartridge tapes used by **WRCART** *cannot* have IBM or ANSI standard labels.
- **WRCART** requires a type 5 device definition for each device to be tested. For additional information on device definition types refer to the *MPST/PC Installation and User's Guide*.
- If you run **WRCART** against a high-capacity tape device (i.e., 9840 or Redwood), both the **FILECNT** and **RECCNT** parameters must be specified and modified. If these parameters are not modified, **WRCART** will run to end of tape.
- If more than one device is to be tested, the devices to be tested must be defined as UUT01 through UUT08. UUT (unit under test) numbers are assigned to test devices during device definition.

Error Recovery for WRCART

Error recovery is performed for data checks and overruns. All other errors are considered permanent and testing is terminated on that device.

Write Error Recovery

Write error recovery consists of back space block, erase gap, and write. If the **NORECOVERY** parameter is in effect, 15 retries are attempted for each write error before the error is considered permanent and testing, on that device, is terminated. If **ICRC** is in effect, no host write recovery is attempted.

Read Error Recovery

Read error recovery consists of reposition and read, in the same direction, without cleaner action. If **NORECOVERY** is in effect, 15 retries are attempted for each read error before the error is considered permanent and testing, on that device, is terminated.

Error Reporting

Error reporting is done for all temporary and permanent errors. At the end of each write or read pass a pass summary message is issued. At the completion of **WRCART** function execution a summary message for each test cartridge tape drive and cartridge tape volume pair is issued.

WRCART Function Parameters

BLKSIZE The **BLKSIZE** parameter specifies the size or range of sizes of the records to be written.

The following information should also be taken into account when entering the **BLKSIZE** parameter.

- Some channel extenders cannot handle more than 68K. Either a write pass or **BLKSIZE** must be specified with these extenders.

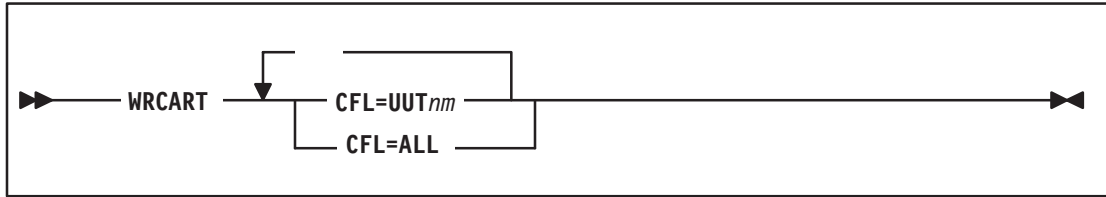
WRCART **BLKSIZE**=*size*[-*size*]

size is a decimal number from 28–32000. The hyphen must be typed when entering the **BLKSIZE**=*size*-*size* parameter. The maximum size that can be specified is 32000.



Note: If the *size* specified is larger than maximum, *size* will be reset to 32000.

CFL The **CFL** parameter specifies which cartridge tape drive's CFL (cartridge forced logging) status will be enabled.



- If **CFL=UUTnm**, a single device is specified. *nm* is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition. Multiple **CFL=UUTnm** statements can be specified for each run of **WRCART**.

For example: **WRCART CFL=UUT01 CFL=UUT02**

- If **CFL=ALL**, all defined devices are specified.

CNFGRETRY The **CNFGRETRY** parameter specifies that the **WRCART** function will allow retry on errors during configuration of the device.

WRCART CNFGRETRY

COMPARE The **COMPARE** parameter specifies that a complete comparison of the data read with the data written will be done.

The default is that only the record number and the record length of the record read is checked.

WRCART COMPARE

DATA The **DATA** parameter specifies that a fixed data pattern is to be written and that the specified pattern will be repeated as necessary to fill the record being written.

The default is to write random data patterns.

WRCART DATA=*hex*

hex is 1 to 64 hexadecimal characters. If an odd number of characters is specified, a zero is inserted at the beginning of the set of hexadecimal numbers to make the total number even.

DUMPART The **DUMPART** parameter changes the number of bytes dumped for a data-compare error. This parameter specifies that 100 bytes of expected and actual data is to be dumped starting eight bytes, if possible, previous to where the data-compare error occurred.

The default is to dump the entire record.

WRCART DUMPART

FILECNT The **FILECNT** parameter specifies the number of files to be written to the cartridge tape. If this parameter is not specified, files are written until end-of-tape is encountered.

WRCART FILECNT=num

num is any decimal number from 1–99999.



Note: Files will only be written until end-of-tape. Numbers larger than 100 may be ineffective unless used in conjunction with **RECNT** and **BLKSIZE** parameters.

FINALSUM The **FINALSUM** parameter specifies that only the final summary message will be issued. The start and end of pass message and the pass summary message will not be issued.

WRCART FINALSUM

ICRC The **ICRC** parameter specifies that data compression be used if the 3480/3490 has the **ICRC** function installed and enabled.

The default setting is non-compressed data.

WRCART ICRC

MODE The **MODE** parameter specifies whether or not the 3480/3490 control unit's internal buffer will be used to buffer the data written on the cartridge.

The default setting is **MODE=FULL**.

WRCART MODE=FULL|WTI

- If **MODE=FULL**, all write commands will have their data buffered and written onto the cartridge tape later.
- If **MODE=WTI**, all write commands put the data directly onto the cartridge tape.

NOCFL The **NOCFL** parameter specifies which cartridge tape drive's CFL (cartridge forced logging) status will be disabled.

WRCART NOCFL=UUT nm |ALL

- If **NOCFL=UUT nm** , a single device is specified. nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.
- If **NOCFL=ALL**, all defined devices are specified.

NOCNFGRETRY The **NOCNFGRETRY** parameter specifies that the **WRCART** function will not allow retry on errors during configuration of the device.

The default setting is **CNFGRETRY**.

WRCART NOCNFGRETRY

NORECOVERY The **NORECOVERY** parameter specifies that the 3480/3490 control unit will not perform internal error recovery on errors. When **NORECOVERY** is in effect, 15 retries are performed by the software before a permanent error is flagged.

The default is **RECOVERY**.

WRCART NORECOVERY

NORESINC The **NORESINC** parameter specifies that no resync is to be attempted by the **WRCART** function after a record number sequence error.

The default is **RESINC**.

WRCART NORESINC

NPASS The **NPASS** parameter specifies the number of write and/or read passes done on each test device. Exchange passes do not count toward **NPASS**.

The default value is the number of passes required to perform each specified write and/or read pass per specified test sequence once.

WRCART NPASS=*num*

num is any decimal number from 1–99999.

PATLEN The **PATLEN** parameter sets the length of the pattern used to build the data record on write pass.

WRCART PATLEN=*length*

length is the number of bytes used to set the pattern length (1–2048). The default value for *length* is 12 bytes.

RDBKICRC The **RDBKICRC** parameter specifies that read backward be simulated when the cartridge tape format is **ICRC**.

WRCART RDBKICRC

The simulations will be:

- Issue read backward CCW; CU issues a UC with ERPA=26.
- Issue read forward CCW; backspace CCW.

RECCNT The **RECCNT** parameter specifies the number of records to be written in each file.

The default setting is **511** if the **RECCNT** parameter is not specified.

WRCART RECCNT=num

num is any decimal number from 1–99999.



Note: Record counts of more than 7000 can be terminated by end-of-tape. Numbers larger than 7000 can be ineffective unless used in conjunction with the **BLKSIZE** parameter.

RECOVERY The **RECOVERY** parameter specifies that the 3480/3490 control unit will perform internal error recovery on errors. There are no software retries if **RECOVERY** is in effect.

The default setting is **RECOVERY**.

WRCART RECOVERY

RESYNC The **RESYNC** parameter specifies that the **WRCART** function tries to resync if a record number sequence error is detected and the record number read is within eight records of the expected record number.

The default setting is **RESYNC**.

WRCART RESYNC

TESTSEQ The **TESTSEQ** parameter specifies which sequences of operation are to be performed.

WRCART TESTSEQ=num|sequence



Note: Although the test sequence is controlled by the **TESTSEQ=num|sequence** parameter, the number of cartridge tape operations (passes) executed is controlled by the **NPASS** parameter. The **NPASS** parameter must be large enough to ensure that the specified test sequence can be completely executed.

For example: One complete execution of **TESTSEQ=1** is counted as five passes—write, read forward, read backward, read forward, and read backward. If **NPASS** was less than five, the entire test sequence would not have been executed.

TESTSEQ=num Use the **TESTSEQ=num** parameter to choose one of four predefined test sequences.

WRCART TESTSEQ=num

An explanation of the four predefined test sequences (1, 2, 3, and 4) follows:

TESTSEQ=1 Write a cartridge tape of data
Rewind the volume
Read forward the cartridge tape of data
Read backward the cartridge tape of data
Read forward the cartridge tape of data
Read backward the cartridge tape of data

TESTSEQ=2 Write a cartridge tape of data
Rewind the volume
Read forward the cartridge tape of data
Read backward the cartridge tape of data
Unload the volume
Request that the volume be exchanged
Read forward the cartridge tape of data
Read backward the cartridge tape of data

TESTSEQ=3 Write a cartridge tape of data

TESTSEQ=4 Read a cartridge tape of data
Read backward the cartridge tape of data

TESTSEQ=*sequence*

Use the **TESTSEQ**=*sequence* parameter to define a sequence to perform. *sequence* is a string of 1–16 predefined characters.

WRCART TESTSEQ=*sequence*

An explanation of these predefined characters and their meanings follows:

- W** Write pass
- R** Read forward pass
- B** Read backward pass

The read backward pass command, **B**, must be immediately preceded by a write pass command, **W**, or a read forward pass command, **R**.

- X** Exchange pass



Note: If the **ICRC** parameter is specified, no backward reads will be executed if **RDBKICRC** was not specified.

VOLSER The **VOLSER** parameter specifies the volume serial number to be placed on the cartridge tape for the first write sequence performed during **WRCART**.

WRCART VOLSER*nm=volser*

For **VOLSER***nm=volser* the variable:

nm is the two-digit UUT number (01–08) assigned to the cartridge tape drive. UUT (unit under test) numbers are assigned to the test devices during device definition.

volser

is the volume serial number to be used. *volser* can be one to six alphanumeric characters in length.



Note: This *volser* stays on the cartridge tape until changed and is *not* a standard IBM *volser*.

MODIFY Command Parameters for WRCART

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.

CFL The **CFL** parameter specifies which cartridge tape drive’s CFL (cartridge forced logging) status will be enabled.

modiFy [FUNC WRCART] CFL=UUT nm |ALL

- If **CFL=UUT nm** , a single device is specified. nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.
- If **CFL=ALL**, all defined devices are specified.

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **WRCART** function.

modiFy [FUNC WRCART] CMDLIST

COMPARE The **COMPARE** parameter specifies that a complete comparison of the data read with the data written will be done.

The default is that only the record number and the record length of the record read is checked.

modiFy [FUNC WRCART] COMPARE



Note: For this parameter to be active, the **COMPARE** parameter must have been specified when **WRCART** was initially started.

DUMPART The **DUMPART** parameter changes the number of bytes dumped for a data-compare error. This parameter specifies that 100 bytes of (expected and actual) data are to be dumped starting eight bytes, if possible, previous to where the data-compare error occurred.

modiFy [FUNC WRCART] DUMPART

FINALSUM The **FINALSUM** parameter specifies that only the final summary message will be issued. The start and end of pass message and the pass summary message will not be issued.

modiFy [**FUNC WRCART**] **FINALSUM**

MODE The **MODE** parameter specifies if the buffer internal to the 3480/3490 control unit will or will not be used to buffer the data written on the cartridge tape.

modiFy [**FUNC WRCART**] **MODE=FULL|WTI**

- If **MODE=WTI**, all write commands will put the data directly onto the cartridge tape.
- If **MODE=FULL**, all write commands will have their data buffered and written onto the cartridge tape later.

NOCFL The **NOCFL** parameter specifies which cartridge tape drive's CFL (cartridge forced logging) status will be disabled.

modiFy [**FUNC WRCART**] **NOCFL=UUT nm |ALL**

- If **NOCFL=UUT nm** , a single device is specified. nm is the two-digit UUT number (01–08). UUT (unit under test) numbers are assigned to the test devices during device definition.
- If **NOCFL=ALL**, all defined devices are specified.

NOCOMPARE The **NOCOMPARE** parameter specifies that a complete comparison of the data read with the data written will not be done.

modiFy [FUNC WRCART] NOCOMPARE

NODUMPART The **NODUMPART** parameter resets the number of bytes dumped for a data-compare error. This parameter will allow the entire record of expected and actual data to be dumped.

modiFy [FUNC WRCART] NODUMPART

NORECOVERY The **NORECOVERY** parameter specifies that the 3480/3490 control unit will not perform internal error recovery on errors. When **NORECOVERY** is in effect, 15 retries are performed by the software before a permanent error is flagged.

modiFy [FUNC WRCART] NORECOVERY

NORESINC The **NORESINC** parameter specifies that no resync is to be attempted by the **WRCART** function after a record number sequence error.

modiFy [FUNC WRCART] NORESINC

NORMSUM The **NORMSUM** parameter specifies that all pass messages and the pass summary message will be issued.

modiFy [**FUNC WRCART**] **NORMSUM**

NPASS The **NPASS** parameter specifies the number of write and/or read passes done on each test device.

modiFy [**FUNC WRCART**] **NPASS**=[*num*]

num is a decimal number from 1–99999.

If **NPASS=** is entered without *num* being specified, the current npass setting will be displayed.

PARMS The **PARMS** parameter displays the settings of various **WRCART** parameters.

modiFy [**FUNC WRCART**] **PARMS** *parameter*

The settings of the following *parameters* can be displayed while **WRCART** is running.

- COMPARE | NOCOMPARE
- DUMPART | NODUMPART
- MODE=FULL | MODE=WT I
- NORMSUM | FINALSUM
- RECOVERY | NORECOVERY
- RESYNC | NORESYNC

PASS The **PASS** parameter displays the current information about all cartridge tape drives that are configured. An asterisk (*) is displayed after the pass number of the cartridge tape drive that was active at the time the **PASS** parameter was received by **WRCART**.

modiFy [**FUNC WRCART**] **PASS**

PATLEN The **PATLEN** parameter sets the length of the pattern used to build the data record on write pass.

modiFy [**FUNC WRCART**] **PATLEN**=*length*

length is the number of bytes used to set the pattern length (1–2048). The default value for *length* is 12 bytes.

RECOVERY The **RECOVERY** parameter specifies that the 3480/3490 control unit will perform internal error recovery on errors. There are no software retries if **RECOVERY** is in effect.

modiFy [**FUNC WRCART**] **RECOVERY**

RESYNC The **RESYNC** parameter specifies that the **WRCART** function tries to resync if a record number sequence error is detected and the record number read is within eight records of the expected record number.

modiFy [**FUNC WRCART**] **RESYNC**

SIZES The **SIZES** parameter displays the current sizes for record count, file count, and block size.

modiFy [**FUNC WRCART**] **SIZES**

Chapter 15. Write-Read Disk Function

Function Overview

The Write-Read Disk (**WRDISK**) function exercises one to eight DASD devices (volumes). These devices can be mixed types: 3330–1, 3330–11, 3350, 3380, and 3390.

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- “WRDISK Parameter Table” on page 268.
- “Operation Considerations for WRDISK” on page 269.
- “Testing Sequence for WRDISK” on page 270.
- “WRDISK Function Parameters” on page 272.
- “MODIFY Command Parameters for WRDISK” on page 279.

**WRDISK
Parameter Table**

Table 14. lists the function and **modiFy** command parameters available for **WRDISK**.

Table 14. WRDISK Parameters

Function Parameters	Modify Command Parameters	Parameter Abbreviations
BLKSIZE		
	CMDLIST	
COMPARE	COMPARE	
DATA		
	DFW	
DFWOFF	DFWOFF	
DFWON	DFWON	
DUMP		
DUMPART	DUMPART	
ELIMIT		
IOLIMIT	IOLIMIT	
LOOP		
	NOCOMPARE	
	NODUMPART	
SEQUENTIAL		
SUMMARY		

Operation Considerations for WRDISK

The following information must be taken into consideration when running the **WRDISK** function:

- **WRDISK** requires a type 2, 3, or 4 device definition for each device that is to be tested. For additional information on device definition types refer to the *MPST/PC Installation and User's Guide*.
- If more than one device is to be tested, the devices to be tested must be defined as UUT01 through UUT08. UUT (unit under test) numbers are assigned to the test devices during device definition.
- The **BLKSIZE** and **DATA** parameters can be used to change random length/random data to fixed length/fixed data.
 - Random length data records have random key length fields.
 - Fixed length data records have no key fields.

All defined test devices will use the same fixed length/fixed data if these parameters are used.

Testing Sequence for WRDISK

If the number of tracks to be tested on a device is equal to or greater than the number of tracks in one cylinder (for that device) and the sequential option is not specified, testing operations 1, 2, 3, and 4 are performed simultaneously.

If the number of tracks to be tested is less than the number of tracks in one cylinder (for that device), testing operations 1, 2, 3, and 4 are performed sequentially.

Device	Model	Tracks
3330	Models 1 and II	19
3350	–	30
3380	–	15
3390	–	15

Testing continues on each device until either the **IOLIMIT** is reached or the number of permanent errors on the device exceeds **ELIMIT**. **WRDISK** does not test the CE tracks.

Sequential Test Sequence

If the sequential parameter is selected or the number of tracks to be tested is less than the number of tracks in one cylinder, testing operations 1, 2, 3, and 4 are performed sequentially on each track, one track at a time.

Simultaneous Test Sequence

Testing operations 1, 2, 3, and 4 are performed on a group of four tracks, at the same time, if the number of tracks to be tested on a device is equal to or greater than the number of tracks in one cylinder. Each of these four tracks is under test at a different point in the operation resulting in random seek, read, and write activity.

Sequential tracking can be forced using the **SEQUENTIAL** parameter.



Note: **WRDISK** uses a set sector command in all CCW chains to verify that the device properly executes this command. This is *not* done to minimize rotational delay. The hexadecimal sector values are:

- 00 for Operation 1
- 1F for Operation 2
- A random number between 00 and 7F for Operation 3
- 61 for Operation 4

Testing Operations

WRDISK performs the following sequence of operations on each track tested:

Operation 1—Write a number of random length records with random data until the track is filled or the block size specified will not fit.

Operation 2—Read all records written in operation 1.

Operation 3—Update the key and data fields of randomly selected records with different random data.



Note: If the sequential option is in effect, all records on the track are updated in sequential order.

Operation 4—Read all records written in operations 1 and 3.

WRDISK Function Parameters

BLKSIZE The **BLKSIZE** parameter specifies fixed length records are to be written.

The default is random length records.

WRDISK BLKSIZE=*size*

size is a decimal number from 1–99999.

COMPARE The **COMPARE** parameter reports any differences found during a complete comparison of the data read with the data written.

The default is no data comparison.

WRDISK COMPARE

See Appendix B. “Dumped Data Format” on page 303 for a description of the format of the data dumped.

DATA The **DATA** parameter specifies a fixed data pattern is to be written and that the specified pattern will be repeated as necessary to fill the record being written.

The default is to write random data patterns.

WRDISK DATA=*hex*

hex is 1 to 64 hexadecimal characters; up to a total of 32 bytes can be specified. If an odd number of characters is specified, a zero is appended to make the number even.

DFWOFF The **DFWOFF** parameter specifies the system address of the disks that will have their DASD fast write (DFW) function turned off.

WRDISK DFWOFF=*addr* | (*addr...*) | **ALL**

The **DFWOFF** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: (*addr, addr*)
 - A range of addresses: (*addr-addr*)
 - A combination: (*addr addr addr-addr*)

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified.

List items must be separated by a space or a comma and the hyphen must be typed when specifying a range. Both lists and ranges must be enclosed in parentheses.

- **ALL**: all defined devices will have DFW turned off.

DFWON The **DFWON** parameter specifies the system address of the disks that will have their DASD fast write (DFW) function turned on.

WRDISK DFWON=addr | (addr...) | ALL

The **DFWON** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: (*addr, addr*)
 - A range of addresses: (*addr-addr*)
 - A combination: (*addr addr addr-addr*)

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified.

List items must be separated by a space or a comma and the hyphen must be typed when specifying a range. Both lists and ranges must be enclosed in parentheses.

- **ALL**: all defined devices will have DFW turned on.

DUMP The **DUMP** parameter specifies that any track on which an unrecoverable I/O error occurs is to be dumped.

WRDISK DUMP

See Appendix B. “Dumped Data Format” on page 303 for a description of the format of the data dumped.

DUMPART The **DUMPART** parameter changes the number of bytes dumped for a data compare error. This parameter specifies that 100 bytes of expected and actual data is to be dumped starting eight bytes, if possible, previous to where the data-compare error occurred.

WRDISK [COMPARE] DUMPART

COMPARE must be active before this option is to be in effect. The default allows the entire record of expected and actual data to be dumped.

ELIMIT The **ELIMIT** parameter specifies the maximum number of unrecoverable I/O errors allowed on each device.

WRDISK ELIMIT=err_num

err_num is a decimal number from 0–999. If 0 is specified, an infinite number of errors is allowed. **10** is the default setting for *err_num*.



Note: If the maximum number of unrecoverable I/O errors is exceeded on a device, that device is dropped from testing and testing continues on all other devices.

IOLIMIT The **IOLIMIT** parameter specifies the maximum number of I/O operations to be executed on each device.

WRDISK IOLIMIT=num

num is a decimal number from 1–99999999. The default setting for *num* is either **10000** or its 100 times the number of tracks to be tested, whichever is the smaller value.

LOOP The **LOOP** parameter specifies the maximum number of times an I/O operation, terminating with an error, will be retried. The failing CCW chain will be retried until either the loop count is reached or the CCW chain executes successfully.

WRDISK LOOP=retry

For **LOOP=** the variable:

retry is a decimal number from 1–100. **1** is the default value for *retry*.

SEQUENTIAL The **SEQUENTIAL** parameter specifies testing will be done one track at a time regardless of the number of tracks available for testing.

The default is simultaneous testing of four tracks, at a time, if enough tracks are available.

WRDISK SEQUENTIAL

SUMMARY The **SUMMARY** parameter sends a summary message to the operator's console as testing of each device is completed.

The default is no message sent to the operator's console.

WRDISK SUMMARY

MODIFY Command Parameters for WRDISK

modiFy commands issue new or alter existing MPST/PC control cards and are entered by the operator while MPST/PC is running. Multiple parameters, for the same function, can be entered on a single **modiFy** command. If **modiFy** is entered without **FUNC** being specified, the **modiFy** command is passed to the function that is currently running.

Refer to “Run-time Commands” on page 285 for additional information on **modiFy** commands.

CMDLIST The **CMDLIST** parameter displays the available **modiFy** commands for the **WRDISK** function.

modiFy [FUNC WRDISK] CMDLIST

COMPARE The **COMPARE** parameter specifies that a complete comparison of the data read with the data written will be done and that any differences are to be reported.

modiFy [FUNC WRDISK] COMPARE

DFW The **DFW=** parameter displays the DASD fast write (DFW) status of all DFW capable DASD devices defined to **WRDISK**.

modiFy [**FUNC WRDISK**] **DFW=**

DFWOFF The **DFWOFF** parameter specifies the system address of the disks that will have their DASD fast write (DFW) function turned off.

modiFy [**FUNC WRDISK**] **DFWOFF=addr | (addr...) | ALL**

The **DFWOFF** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: (*addr, addr*)
 - A range of addresses: (*addr-addr*)
 - A combination: (*addr addr addr-addr*)

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified.

List items must be separated by a space or a comma and the hyphen must be typed when specifying a range. Both lists and ranges must be enclosed in parentheses.

- **ALL**: all defined devices will have DFW turned off.

DFWON The **DFWON** parameter specifies the system address of the disks that will have their DASD fast write (DFW) function turned on.

modiFy [**FUNC WRDISK**] **DFWON**=*addr* | (*addr...*) | **ALL**

The **DFWON** variable can be specified as:

- A single address: *addr*
addr is a 3 or 4 character hexadecimal address.
- Multiple addresses:
 - A list of addresses: (*addr, addr*)
 - A range of addresses: (*addr-addr*)
 - A combination: (*addr addr addr-addr*)

addr is a 3 or 4 character hexadecimal address. Up to eight device addresses can be specified.

List items must be separated by a space or a comma and the hyphen must be typed when specifying a range. Both lists and ranges must be enclosed in parentheses.

- **ALL**: all defined devices will have DFW turned on.

DUMPART

The **DUMPART** parameter changes the number of bytes dumped for a data compare error. This parameter specifies that 100 bytes of expected and actual data is to be dumped starting eight bytes, if possible, previous to where the data-compare error occurred.

modiFy [FUNC WRDISK] **DUMPART**

COMPARE must be active before this option is to be in effect. The default allows the entire record of expected and actual data to be dumped.

IOLIMIT

The **IOLIMIT** parameter specifies the maximum number of I/O operations to be executed on each device.

modiFy [FUNC WRDISK] **IOLIMIT**=[*num*]

- If **IOLIMIT**=*num* the difference between the number entered and the I/O limit is subtracted from a counter. This counter is counting from the **IOLIMIT** value to zero. *num* is a decimal number from 1–99999999.



Note: If the counter is zero or negative, device operation stops.

- If **IOLIMIT**= is entered without *num* being specified, the I/O limit is displayed.

NOCOMPARE The **NOCOMPARE** parameter specifies that a comparison of the data read with the data written will not be done.

modiFy [FUNC WRDISK] NOCOMPARE

NODUMPART The **NODUMPART** parameter resets the number of bytes dumped for a data compare error. This parameter allows the entire record of expected and actual data to be dumped.

modiFy [FUNC WRDISK] NODUMPART

Appendix A. Run-time Commands

Overview

Run-time commands can be used to cancel or stop MPST/PC operation, request information, and issue new or alter existing control cards. All run-time commands can be entered at the operator console while MPST/PC is running.

A few of the commands in this appendix can also be entered during function selection or when building a predefined Input file. Both function selection and predefined Input file usage requires these commands to be preceded by the **CMD** command. Additional information on function selection and on predefined Input files is located in the *MPST/PC Installation and User's Guide*.

Run-time Command Table

Table 15. lists in alphabetical order all the commands found in this appendix.

Table 15. MPST/PC Run-time Commands

Page 1 of 2

Run-time Commands	Function Selection	Predefined Input
CANCEL	No	No
CCWTRACE CCWtrace HELP CCWtrace ON CCWtrace ON CCWtrace DC	No	No
DISPLAY Display HELP Display Active Display Monitor num Display Monitor END	Yes	Yes
LMU LMU num LMU num OFF	Yes	Yes
LMU2 LMU2 num LMU2 OFF	Yes	Yes
LOG	No	No
MIH MIH CMDLIST MIH LIST MIH SET DEFAULT ALL MIH SET DEFAULT A U T C D MIH SET U T C D num	No	No
MODIFY modiFy COMMANDS modiFy FUNC modiFy FUNCNAME modiFy FUNC SIO modiFy HELP modiFy QUERY modiFy RESET	No	No
REWIND	No	No

Table 15. MPST/PC Run-time Commands

Run-time Commands	Function Selection	Predefined Input
REWUNLD	No	No
STOP	No	No
VARY VARY HELP VARY DPRINT ON OFF VARY PRINT ON OFF VARY CPrint ON OFF VARY MPrint ON OFF VARY PPrint ON OFF VARY TPrint ON OFF	Yes	Yes
WTM	No	No

MPST/PC Run-time Commands

Cancel The **Cancel** command simulates the operating system cancel command and immediately terminates all MPST/PC functions.

The **Cancel** command can only be entered as command line input while a function is running.

CCWtrace The **CCWtrace** command enables/disables tracing on test devices. It can also be used to list the the current dump count.

The **CCWtrace** command can only be entered as command line input while a function is running.

CCWtrace [ON|OFF [*euu*|ALL]] | [DC [*num*]] | [HELP]



Note: Either **DPRINT** or **PRINT** must be varied **ON** for **CCWtrace** to be enabled.

CCWtrace ON

The **CCW ON** command enables tracing on all specified test devices.

CCWtrace ON [ALL|*euu*]

- If you issue the **CCW ON** command, **ALL** will be assumed.
- If you issue the **CCW ON ALL** command, CCW tracing will be enabled on all test devices and the CCW data will be printed to the MPST/PC print device.
- If you issue the **CCW ON euu** command, CCW tracing will be enabled on all defined test devices and the CCW data will be printed to the MPST/PC print device. *euu* is the emulator unit address.

CCWtrace OFF The **CCW OFF** command disables tracing on all specified test devices.

CCWtrace OFF [*euu*|**ALL**]

- If you issue the **CCW OFF** command, **ALL** will be assumed.
- If you issue the **CCW OFF ALL** command, CCW tracing will be disabled on all test devices.
- If you issue the **CCW OFF euu** command, CCW tracing will be disabled on all defined test devices. *euu* is the emulator unit address.

CCWtrace DC The **CCW DC** command lists the current dump count.

CCWtrace DC [*num*]

- If you issue the **CCW DC** command, the current dump count is listed.
- If you issue the **CCW DC num** command, the maximum number of bytes specified by *num* will be dumped for all CCW data areas. *num* must be between 1 and 32767. The default count for *num* is **64**.

CCWtrace Status The **CCWtrace** command displays current **CCWtrace** status.
This command can only be entered while a function is running.

CCWtrace HELP The **CCW HELP** command displays the HELP Dialog Box for **CCWtrace**.

CCWtrace HELP

Display The **Display** command is used to start/cancel display of the
current active status of devices.

Display Active | Monitor *num*|END | HELP

Display Active The **D A** command displays the current status of all active
devices.

Display Active

Display Monitor The **D M** *num* command enables the monitor function and a **Display Active** command is issued every *num* minutes. *num* is a decimal number between 1 and 99.

Display Monitor *num*

Canceling the
Monitor Function The **D M END** command cancels the monitor function.

Display Monitor **END**

Displaying HELP for
Display The **D HELP** command displays the HELP Dialog Box for **Display**.

Display **HELP**

CMD Display
Command The **Display** command may also be entered during function selection or when building a predefined Input file using the following syntax:

CMD Display *parameter*

LMU The **LMU** command specifies that the LMU at terminal address *num* will be varied on or off.

LMU *num* [**OFF**]

- If you issue the **LMU** *num* command, the LMU at terminal address *num* is varied on.
- If you issue the **LMU** *num* **OFF** command, the LMU at terminal address *num* is varied off.

CMD LMU Command The **LMU** command may also be entered during function selection or when building a predefined Input file using the following syntax:

CMD LMU *parameter*

The **CMD LMU** *num* command must be entered for **LIBLOOK**, **LIBMOUNT**, or **LSMEXER** to run.

LMU2 The **LMU2** command specifies that the standby LMU at terminal address *num* will be varied on or off.

LMU2 *num* [**OFF**]

- If you issue the **LMU2** *num* command, the standby LMU at terminal address *num* is varied on.
- If you issue the **LMU2** *num* **OFF** command, the standby LMU at terminal address *num* is varied off.

CMD LMU2 The **LMU2** command may also be entered during function selection or when building a predefined Input file using the following syntax:

CMD **LMU2** *parameter*

LOG The **LOG** command allows the user to hard code comments to the display while MPST/PC is running.

LOG *text*

MIH The **MIH** command is used to display or set the missing interrupt handler timeout before invoking MIH.

The **MIH** command can only be entered as command line input while a function is running.

MIH [**CMDLIST**] | [**List**] | [**Set DEF ALL|U|T|C|D**] |
[**Set U|T|C|D num**]

Displaying MIH
Status

The **MIH** command displays the status of the missing interrupt handler.

Listing MIH modify
commands

The **MIH CMDLIST** command displays the modify commands available for **MIH**.

MIH CMDLIST

Listing Device Type
Timeouts

The **MIH L** command lists the timeouts for each device type.

MIH List

Setting Default
Timeouts

The **MIH S DEF ALL|U|T|C|D** command specifies that the default timeouts will be used.

MIH Set DEFault ALL|Unit-record|Tape|Cartridge|Dasd

- If you issue the **MIH S DEF ALL** command, the default timeouts will be loaded for all devices.
- If you issue the **MIH S DEF U|T|C|D** command, the default timeout will be loaded for the specified device.

Setting Specified
Timeouts

The **MIH S U|T|C|D num** command sets specified timeouts (*num*) for devices. *num* is 1 to 9999999 seconds.

MIH Set Unit-record|Tape|Cartridge|Dasd num

modiFy The **modiFy** command is an operator command used to issue additional MPST/PC control card parameters, alter control cards that were set when MPST/PC started, or request information. Both general **modiFy** commands and function-specific **modiFy** commands can only be entered as command line input while a function is running.

Function-specific **modiFy** commands are not documented in this appendix they are documented in the function chapters of this manual.

modiFy
COMMANDS The **COMMANDS** parameter requests that MPST/PC list all valid **modiFy** commands for the currently running function.

modiFy COMMANDS

modiFy FUNC The **FUNC** parameter defines the MPST/PC function that **modiFy** parameters are passed to. If other functions of MPST/PC are running when the **modiFy FUNC *function*** command is issued, they are ignored.

modiFy FUNC *function_name*

modiFy
FUNCNAME The **FUNCNAME** parameter requests that MPST/PC display the name of the currently running function.

modiFy FUNCNAME

modiFy FUNC~~S~~I~~O~~ The **FUNC~~S~~I~~O~~** parameter requests that MPST/PC display the SIO count of the currently running function.

modiFy FUNC~~S~~I~~O~~

modiFy QU~~E~~R~~Y~~ The **QU~~E~~R~~Y~~** parameter lists the current **modiFy** command, if one is queued.

modiFy QU~~E~~R~~Y~~

modiFy RE~~S~~E~~T~~ The **RE~~S~~E~~T~~** parameter resets pending **modiFy** commands.

modiFy RE~~S~~E~~T~~ *num*

num is the number of the queued **modiFy** command to be reset.

Run **QU~~E~~R~~Y~~** to obtain a list of queued commands and their queue numbers.

Displaying HEL~~P~~ for
modiFy The **modiFy HEL~~P~~** command displays the HEL~~P~~ Dialog Box for **modiFy**.

modiFy HEL~~P~~

REWind The **REW** *addr* command causes the specified tape drive to rewind. *addr* is a 3 or 4 character hexadecimal address for the tape drive.

The **REWind** command can only be entered as command line input while a function is running.

REWind *addr*

RewUNId The **RUN** *addr* command causes the specified tape drive to rewind and unload. *addr* is a 3 or 4 character hexadecimal address for the tape drive.

The **RewUNId** command can only be entered as command line input while a function is running.

RewUNId *addr*

stoP The **stoP** command simulates the operating system stop command. When **stoP** is detected, the current function ends and the next function runs normally.

The **stoP** command can only be entered as command line input while a function is running.

Vary The **Vary** command is used to display or vary printer options on or off while MPST/PC is running.

Vary [DPRINT|PRINT|CP|MP|PP|TP ON|OFF] | [HELP]

Printing to the
Default Disk File

The **V DPRINT ON** command specifies information that would normally print only to the printer will also be sent to the default disk file specified in the `MPCUSTOM.INI` file.

For additional information on the `MPCUSTOM.INI` file refer to the *MPST/PC Installation and User's Guide*.

Vary DiskPRINT ON|OFF

Use the **V DPRINT OFF** command to cancel this option.

Sending Information
to the Printer

The **V PRINT ON** command specifies information be sent to the printer.

Vary PRINT ON|OFF

Use the **V PRINT OFF** command to cancel this option.

Printing to the Default Printer

The **V CP ON** command specifies information that would normally print only to the console will also be sent to the default printer specified in the `MPCUSTOM.INI` file.

For additional information on the `MPCUSTOM.INI` file refer to the *MPST/PC Installation and User's Guide*.

Vary ConsolePrint ON|OFF

Use the **V CP OFF** command to cancel this option.



Note: If the printer is not turned on and the **Vary DiskPRINT ON** command has not been specified, the **Vary CP ON** command will be rejected.

Printing System Messages to the Default Printer

The **Vary MP ON** command specifies that system messages that would normally print only to the console will also be sent to the default printer specified in the `MPCUSTOM.INI` file.

For additional information on the `MPCUSTOM.INI` file refer to the *MPST/PC Installation and User's Guide*.

Vary MessagePrint ON|OFF

Use the **V MP OFF** command to cancel this option.



Note: If the printer is not turned on and the **Vary DiskPRINT ON** command has not been specified, the **Vary MP ON** command will be rejected.

Sending Information
to the Console

The **V PP ON** command specifies information that would normally print only to the printer will also be sent to the console.

Vary ParallelPrint ON|OFF

Use the **V PP OFF** command to cancel this option.

Sending CCWtrace
Information to the
Console

The **V TP ON** command specifies CCWtrace information that would normally print only to the printer will also be sent to the console.

Vary TracePrint ON|OFF

Use the **V TP OFF** command to cancel this option.

Displaying HELP for
Vary

The **V HELP** command displays the HELP Dialog Box for **Vary**.

Vary HELP

Displaying the
Status of Variables

The **Vary** command displays the status of each of the variables. **Vary** can be entered any time command line is available.

**CMD Vary
Command**

The **Vary** *parameter* command may also be entered during function selection or when building a predefined Input file using the following syntax:

CMD Vary *parameter*

WTM

The **WTM** *addr* command writes a tape mark on the specified tape drive. Each time this command is issued a tape mark will be written on the current point on the tape. *addr* is a 3 or 4 character hexadecimal address for the tape drive.

The **WTM** command can only be entered as command line input while a function is running.

WTM *addr*

Appendix B. Dumped Data Format

Data Printing Formats

There are two formats for all data printed by MPST/PC: memory format and record format. The format is determined by the current setting of the **DATAFMT** parameter of the **OPTION** function.

If **DATAFMT=R**, data is dumped in record format.

If **DATAFMT=M**, data is dumped in memory format.

Record Format

In record format four lines are required to print for each 50 bytes of data. For example, the data "THIS IS AN EXAMPLE OF RECORD FORMAT" would appear in record format, as shown below:

```
+00000 C THIS IS AN EXAMPLE OF RECORD FORMAT
      Z ECCE4CE4CD4CECDDDC4DC4DCCDDC4CDDDC
      N 38920920150571473506609536940669413
      S 0 . 1 . 2 . 3
```

- One line for the character representation of the data byte.
- One line for the zone portion (upper four bits) of the data byte.
- One line for the numeric portion (lower four bits) of the data byte.
- One line for a scale line, similar to the data display format used by some utilities such as DITTO.
- The offset into the data is printed in decimal on the left side of the first line of each group of four lines (+00000 to +99999).
- The letters C, Z, N, and S stand for character, zone, numeric, and scale.

Memory Format

In memory format one line is required to print for each 16 bytes of data. For example, the data "THIS IS AN EXAMPLE OF MEMORY FORMAT" would appear in memory format, as shown below:

```
+0000 E3C8C9E2 40C9E240 C1D540C5 E7C1D4D7 *THIS IS AN EXAMP *
+0010 D3C540D6 C640D4C5 D4D6D9E8 40C6D6D9 *LE OF MEMORY FOR *
+0020 D4C1E3 *MAT *
```

- This one line contains the hexadecimal data on the left side and the character representation on the right side. Similar to an operating system dump.
- The offset into the data is printed in hexadecimal to the left side of each line (+0000 to +FFFF).

Data Compare Error Formats

Many MPST/PC functions compare the actual data read with the data expected to be read and then dumps the data if a compare error occurs. A data compare error is reported as an I/O error using the standard MPST/PC error message.

There are two formats for data printed when a compare error occurs: memory format and record format. The format is determined by the current setting of the **DATAFMT** parameter of the **OPTION** function.

If **DATAFMT=R**, data is dumped in record format.

If **DATAFMT=M**, data is dumped in memory format.

Record Format In record format four lines are required to print for each 50 bytes of data. An example of this format is shown below:

```
MPSTxxxx DATA COMPARE ERROR AT +00008 ...
...
... (Standard Error message data)
...
CCW 007 0E-20-4A70 *FAILED*
EXPECTED DATA--
+00000 C .....R
        Z 5D42A20D
        N E0D6AF29
        S 0 .
ACTUAL DATA (INCORRECT BYTES ARE FLAGGED WITH *)--
+00000 C          ****
        Z 5DF2A20DFFFA20D5DF2
        N E0D6AF2912341F29E0D6
        S 0 . 1 .
```

- One line for the compare error flag, an asterisk (*).
- One line for the zone portion (upper four bits) of the data byte.
- One line for the numeric portion (lower four bits) of the data byte.
- One line for a scale line, similar to the data display format used by some utilities such as DITTO.
- The offset into the data is printed in decimal on the left side of the first line of each group of four lines (+00000 to +99999).
- The letters C, Z, N, and S stand for character, zone, numeric, and scale.

Memory Format In memory format one line is required to print for each 16 bytes of data. An example of this format is shown below:

```
MPSTxxxx DATA COMPARE ERROR AT +00008 ...
...
... (Standard Error message data)
...
CCW 007 0E-20-4A70 *FAILED*
EXPECTED DATA--
+00000 5ED0FD26 A12F02D9          .....R          *
ACTUAL DATA (INCORRECT BYTES ARE FLAGGED WITH *)--
+00000 5ED0FD29 A12F02D9 F1F2F3F4 A12F02D9*.....****.....*
```

- This one line contains the hexadecimal data on the left side and the compare error flag, an asterisk (*), on the right side.
- The offset into the data is printed in hexadecimal to the left side of each line (+0000 to +FFFF).

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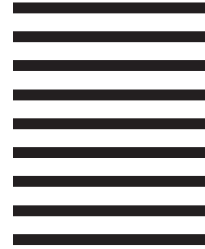
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