TANDBERG DATA

TDV 2100 SERIES

TOS 21 VERSION 1.4

SYSTEM DOCUMENTATION

NOT FOR INSTALLATION
OP. INSTR

TOS21 version 1.4 System Documentation.

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Overall description.

Release date: April 1,1978
Revision level: 2

This document amends the TOS21 Users Guide dated January 1977. The section on Utilities (section 3) of that document is completely replaced by the information given in this document EXCEPT FOR SPECIFIC references.

TOS21 version 1.4 is for all practical purposes upward compatible with version 1.2 (and also with 1.3 which have been available as a prerelease version on a limited basis for some time). The main modifications as compared to version 1.2 are:

- A new updated assembler is provided

- A new pageoriented Text Editor and a Text Writer are introduced. (For documentation see separate publications)

- IBM formatted diskettes (ASCII and EBCDIC coded) are fully available as a prerelease version.

- A number of new utilities are introduced , among others: initialization of diskettes, allocation/deallocation of datasets on IBM formatted diskettes, conversion from EBCDIC to ASCII of diskettes.

- Several utilities have been upgraded to be more user orientated in their application.

- A prerelease version of a relocatable assembler and linker is provided.

- A number of known errors in utilities and TOS has been corrected.

The currently available part numbers and revision levels related to TOS21 is as follows:

960431 TOS21 diskette Level 2
960432 TOS21 cartridge Level 2

Applicable firmware monitors:

960429 XMON/D (diskette only) Level 3
960430 XMON/C (cartridge only) Level 0
960459 XMON/CD (diskette and cartr.) Level 3
(Please note that support of the 8- diskette monitor XMON/DD has been withdrawn).

(Please note: XMON/CD level 3 is a MANDATORY replacement for XMON/CD level 2.)

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Note:

TOS21 version 1.4 (Revision level 2) may be used also with XMON/D revision levels 1 and 2, and XMON/CD level 1.

Summary of XMON changes.

Revision levels: XMON/D (2) and XMON/CD (1).

The jump table for user callable routines (page 9 and 10 in TOS manual) is amended as follows:

Replacements:

9A CBBS Backspace a block on cartridge
B5 CBBSW Backspace and wait for completion

Additions: (These will be further specified when the TOS manual is updated).

CD RD32 Read a cartridge header block
D0 VERIFY Check a header block type
D3 HXLOAD Receive a program for execution (XMON/S and XMON/SD only).

Expanded definition:

1. When RCVI is used to receive characters, the most significant bit (80H) of the character will be set to 1 if an error was detected in transmission (parity, overrun, framing).

2. The monitor now supports a printer with "busy" loop. Note that this will cause programs using :lp: solely to reduce output speed (e.g. (:co:,:lp:)) not to work anymore.

3. To enable a user to independently control transmission, an address may be put in location 277AH (XMINT). The user will then receive control on receive and transmit interrupts, and must handle both. Registers except BC may be used freely. Exit by RETinstruction.

Revision levels XMON/D (3) and XMON/CD (3).

Note: XMON/CD level 2 is obsolete. XMON/CD level 3 is a MANDATORY replacement.

In these levels, an error in the program loader from diskettes has been corrected. The error only caused a persistent error during load attempts for a few specific programs.

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The possibility of handling other printers than the standard one is now included. The user must write his own print handler, and store its address in (word) location 27B3 hex.

The handler is entered with the character to be printed in A. All registers must be saved and restored by the handling routine.

TOS Utilities.

ALIAS.

The description in section 3.6 of the TOS manual apply.

ALLOC.

ALLOC is used to allocate space for a file on an IBM formatted diskette.

It is invoked by:

ALLOC$unit filename

where 'unit' is of the form

:In: or :in: for IBM EBCDIC format :An: or :an: for IBM ASCII format

where 'n' is unit number (0 - 3).

'filename' is 1 through 8 letters and/or digits.

If no errors were detected in the command string, a pattern to be filled in by the user will be displayed on the screen:

```
FILENAME: unit filename
REPLACE/NEW:
RECORD LENGTH:
BOE (T/S):
EOE (T/S):


REMAINDER DEFAULT (Y/N):


BYPASS:
ACCESS CHAR:
PROTECT:
CREATION DATE:
EXPIRATION DATE:
VERIFY:
EOD (T/S):
```

FILENAME: Contains the unit and filename from the command string. Default unit is :I0: and default filename is DATA

REPLACE/NEW: The data set can replace an already existing one by the parameter R name where R means REPLACE and name is the existing filename.

To occupy an unused directory entry, answer: N where N means NEW.

RECORD LENGTH: Specifies the logical block length, may be from 1 to 128. No default allowed if NEW. If REPLACE, default (i.e. only CR answer) will be the old value (of the replaced data set).

BOE (T/S): Beginning of extent. Identifies the address of the first sector of the dataset. The address format is T/S where T means track (0-76) S means sector (1-26) Both comma (,) and slash (/) are accepted as the separator. No default is allowed if NEW. If REPLACE, default will be the old value.

EOE (T/S): End of extent. Identifies the address of the last sector reserved for this dataset, using the same format as BOE. No default value allowed if NEW. If REPLACE, default will be the old value.

REMAINDER DEFAULT (Y/N): The remaining part of the parameters may be default. This is indicated by the answer Y. If any of the values should not be default, answer should be N. Default for this parameter is Y.

BYPASS: Bypass indicator. Indicates that a data set should be skipped during exchange or copy operations when trans mitting or transferring data sets on the volume. The format is B the data set is not transferred space the data set is transferred When default, the old parameter will be used.
Note: TOS does not support BYPASS in its operations.

ACCESS CHAR: Data set security. Space indicates that the data set is not secured (can be accessed). Nonblank character indicates restricted access. When default, the old value is used.
Note: TOS does not support check of ACCESS CHAR.

PROTECT: Write protect. If P, the data set is readonly. This field must contain a space to allow both read and write.
Note: TOS does not support check of PROTECT character.

CREATION DATE: May be used to record the date when the data set was created. The format is 6 digits: YYMMDD where YY is the loworder two digits of the year, MM is a twodigit representation of the month and DD is the date in the month. Space indicate that the CREATION DATE is not significant. When default, the old value is used.

EXPIRATION DATE: May be used to contain the date the data set may be deleted. The format is the same as for CREATION DATE.
Note: TOS will accept a DELETE command regardless of the contents of this field.

VERIFY: Verify/copy indicator. This field must contain a space, V or C. When default the old value is used. Note: TOS does not support the use of this field.

EOD (T/S): End of data. Identifies the address of the next unused sector within the data set extent, using the same format as BOE. Default will be the old value if REPLACE, and BOE if NEW.

If the allocation was successful, the message

filename, ESTABLISHED

is displayed.

The following five special error messages are given from this program:

FILENAME ERROR - illegal parameter in the command string

UNRECOGNIZED LABEL ID - No coincidence between the label id on the diskette and the format identifier in the command string

filename, ALREADY EXISTS - Attemp to create a dataset name which already exists on the diskette.

filename, NOT FOUND - The specified data set name was not found.

DIRECTORY PACKED - No more data set space in the diskette directory.

When entering reply to questions asked by ALLOC, the cursor left key may be used to backspace within the line. Using the home key will cause the program to start with the parameter entry again.

ANALYZ.

ANALYZ will check a diskette to locate sectors with errors (usually CRC errors).

The program produces a list on SO of sectors where errors were found. The list may be used subsequently as input to DROP to mark these sectors as 'in use' so that they will no longer be allocated to files.

Note that DROP applies to Intel formatted diskettes only, and that the use of REMAP again will release the sectors for use.

The program is invoked by:

ANALYZ SO=outputfile$n unit

or

ANALYZ $n unit

Where 'unit' is in the form of an assignment (e.g. :Fi:, :Ai: etc) The unit may be omitted of it is :FO:.

'n' indicates the number of times a sector will be read. If omitted, n is set equal to 10.

The assignment for SO may be omitted, and SO=/CO is then used as default.

Note: Sectors with deleted data is not considered as being in error, even through the occurrence of such sectors on an Intelformatted diskette is illegal.

ASM.

The format of the assembly listing has been greatly improved. Refer to TDV2100 Assembler Manual for details.

The following description gives a rough outline of the changes:

Some assebly directives may be included in the source:

$TITLE All printable information found in the source statement after $TITLE will appear in the assembly listing page headings.

$PL xx Page length. xx is the overall number of print lines on each page.

$PW xx Paper width. xx is the maximum number of print positions to be used.

$E Page eject. Next statement will appear on top of a page.

Assignments

If the <list file> is assigned, it will receive all listing, including error lines.

If <list file> is not assigned, but <error list file> is assigned, this file will receive all error lines.

If no list files are assigned, error lines will appear on the console.

If source is divided into more than one file, the composite file option may be used (See TOS User's Guide). Example: The three files SRCA, SRCB and SRCC are to be assembled as one concatenated file:

```
ASM SI=(SRCA,(SRCB,SRCC)),SO= ...
```

Memory

The assembler program occupies RAM from C200H. Symbol tables are placed in the lowest part of user's RAM.

Assembly listing

On each page, a heading with page numbers will he given.

Source statement numbers are printed, making the use of the utility program XREF valid.

The symbol table is sorted.

Page length may be specified in the command line by entering $xx immediately following the assignments. xx is the overall numbers of print lines per page. This will override the $PLdirective.

ASSIGN.

The description in section 3.19 of the TOS manual apply.

ATTRIB.

The description in section 3.7 of the TOS manual apply.

COPY. (THIS PROGRAM IS NO LONGER AVAILABLE).

This program is replaced by the new MOVE program, see below.

DCONVA.

The DCONVA program will convert an EBCDIC formatted diskette to a corresponding ASCII formatted diskette. This is achieved by conversion from EBCDIC to ASCII of all diskette sectors.

The program is invoked by:

DCONVA

The diskette must be mounted on unit 0. A message is given to the operator prior to the start of conversion. This must be answered by Y by the operator to start the conversion.

If an error is detected during conversion, a message is given to the operator to inform him that the diskette is only partly converted.

NOTE: DUE TO THE FACT THAT AN ERROR IS INCORRECTABLE IF IT OCCURS DURING EXECUTION OF THIS PROGRAM, BE SURE THAT A BACKUP DISKETTE IS AVAILABLE IF THE DISKETTE TO BE CONVERTED CONTAINS RELEVANT DATA.

DCOPY.

This program confirms to the definition in TOS Users Guide with the following additions:

At the end of one copy, return is not made directly to TOS. Instead, the operator is asked whether another copy is desired. Any answer except Y will cause return to TOS. This is to facilitate multiple copies of the same diskette.

The program is now buffered. If a diskette copy on a single diskette drive (0) is desired, the start question should be answered with S rather than Y. The program will then guide the programmer in when to change diskettes.

NOTE: Please THINK before changing diskettes in Single Copy Mode.

DDUMC.

The program will dump the entire contents of the diskette on unit 0 onto track 0 of the cartridge on unit 0. The format is 13 sectors per block. (Note that this diskette format may not be read by the filehandling routines in TOS directly. It is only intended for backup purposes).

It is invoked by:

DDUMC

DEBUG.

This program conforms to the description in TOS Users Guide section 3.18.

DELETE.

This program conforms to the description in the TOS Users Guide section 3.3.

Please note that the utility SYS might be used to release a protected file for deletion (see below).

DGEN.

This program may be used to add to one Intel formatted diskette from another Intel formatted diskette. The datasets of the diskette (with the exception of formatting datasets) will be copied from the diskette on unit 0 to the diskette on unit 1. Datasets whose name is already found on unit 1 diskette will not be copied.

The program is invoked by:

DGEN

The operator must answer a message to start program execution

DIR.

DIR will produce a listing of the names and characteristics of the non-deleted files on a diskette or cartridge.

The program is invoked by:

DIR SO=outputfile$I unit

or

DIR$I unit

where 'unit' is in the form used in assignment (:Fi:,:Ai: etc). The unit may be omitted if it is :F0:.

The I shown in the invocations above may be omitted. If present, the files having the 'invisible' attribute set will also be listed in the directory list.

When the assignment is omitted, the output will be given on the screen, and only the first 24 lines will be shown. Use of any key on the keyboard except the Q key will give the next 24 lines of the directory.

The Q key will return to TOS.

The listing contains for an Intelformatted diskette:

- the volume name
- the name of each file
- the number of blocks in the file
- the file length in bytes
- the attributes of the file (see ATTRIB program description for details).

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- 'alias' names will be listed as such

- the total number of blocks (sectors) in use on the diskette

- the total number of blocks (sectors) occupied in the diskette map

Note: When the two last numbers disagree, and the I option was used in the invocation, abnormal termination may have caused sectors to be 'lost'. Use of REMAP will reclaim these. Note further that if sectors have been released by use of DROP, then the two numbers will not agree.

The listing contains for an IBM formatted diskette:

- the volume name

- the name of each file

- track/sector of beginning and end of the space allocated to the file, and end of information written in the file

- listing of file flags (see IBM publication describing the diskette format)

For a cartridge, the listing contains:

- the volume name

- the name of each file

- the number of blocks in the file

- the attributes of the file (see ATTRIB program description)

- the track and file number of the file

- the number of files and number of blocks used on each of the tracks 1 thru 3.

Examples:

```
DIR$:F1:
```

will produce a listing on the screen for the Intel formatted diskette on unit 1.

```
DIR SO=:LP:$:A2:
```

will produce a listing on printer for the IBM (ASCII code) formatted diskette on unit 2.

```
DIR SO=CAR1$:M1:
```

will produce a listing as a file on unit :F0: named CAR1 for the cartridge on unit 1.

DIRPAC.

This program conforms to the description of section 3.27 in the TOS Users Guide.

DROP.

This program conforms to the description of section 3.9 in the TOS Users Guide.

DRSTC.

The program will restore the entire contents of the diskette on unit 0 from track 0 of the cartridge on unit 0. The cartridge is assumed to have been created by DRSTC.

It is invoked by:

DRSTC

EDIT. (NEW PROGRAM - NAME OF OLD ALTERED).

The program named EDIT is the new page oriented editor. The old line editor is available under the name SEDIT (see below).

For information about the new editor refer to publication no. 5003, parts no. 367594.

EXEC.

This program conforms to the description of section 3.17 in the TOS Users Guide.

FF. (THIS PROGRAM IS NO LONGER SUPPORTED).

FORMAT.

This program conforms to the description of section 3.1 in the TOS Users Guide.

HEXBIN.

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This program conforms to the description of section 3.14 in the TOS Users Guide.

HEXLST. (THIS PROGRAM IS NO LONGER AVAILABLE).

This program has been replaced by the MOVE program, see separate description below.

INIT.

INIT will initialize a diskette. It is invoked by

INIT$unit

where 'unit' is a unit designator (e.g. :I1: etc.).

If the unit designator is omitted, unit 0 is assumed.

If initialization is requested on unit 0, the operator must for safety reasons answer a program query.

LINK. (THIS IS A PRERELEASE ONLY).

The LINK program will read files created by the relocatable assembler (see RASM, below) and produce an absolute file ready for execution. A listing of the relevant data of the file creation is listed.

The linker is invoked by:

LINK SO=<absfile>,SL=<listfile>,AI=<linkinfo>

where the desired name of the absolute file is substituted for <absfile>, and the desired name (or specific unit) of the (optional) listfile is substituted for <listfile>.

The optional <linkinfo> file may be used to prepare a file of control information for the linker. Input will be taken from this file (rather than CI) until end-of-file is reached. If the file ends without / or externals still remains unresolved when the end-of-file is reached, further entries may be given from the keyboard.

Once loaded, the program will prompt for keyboard input by issuing >.

The following 6 types of entries are accepted from the keyboard (and from the <linkinfo> file):

1) Code segment base address: *C=nnnn

2) Data segment base address: *D=nnnn

Note: If it is desired to interleave the code and datasegments, either omit 2) or enter *D=*C

3) Absolute module starting address: *S=nnnn

Note: If any of the assembled modules have a label in the END statement, the first one encountered will be used. If a starting address is entered from the keyboard, it will take precedence.

4) Program module names (relocatable files):

<filename> or :Fn:<filename> or :Mn:<filename>

5) Terminating symbol: /

6) Return to TOS: *Q (output file closed).

In the above description "nnnn" designates a 4 digit hexadecimal number. Note that "H" should not be used at the end of the number.

More than one keyboard entry may be given at one line. Entries should be separated by comma. The line is terminated by CR.

The entries may be given in any desired sequence, and new base addresses may be given between module names.

The LINK program provides no checking for double usage of memory.

WARNING: DISKETTES MUST NOT BE REMOVED DURING LINK OPERATION.

MDUP.

The program will copy the contents of the cartridge on unit 0 to the cartridge on unit 1. The program may be used on cartridges with any blocksize (within the limit of 2048 characters imposed by the drive).

It is invoked by:

MDUP

MEMDMP. (MAJOR MODIFICATION)

The current MEMDMP program is replaced by this new program.

MEMDMP may be used to dump RAM area(s) on to cartridge or diskette as binary files which may subsequently be loaded for execution.

It is invoked by:

MEMDMP SO=outputfile $ parameters

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where SO specifies the file on which the dump is to be made.

'parameters' is a sequence of 3 numbers, all of which are taken to be hexadecimal. (H suffix must n o t be used). The numbers are separated by comma.

The first number specifies the starting address of the area to be dumped. The second specifies the last address, and the third number specifies a starting address.

If it is desired to dump more than one block, the program may be invoked by:

```
MEMDMP SO=outputfile
```

In this case, the program will show a prompt symbol on the screen. The user may enter pairs of addresses, each pair representing an area to be dumped. One address pair is given per line, and the addresses are separated by comma.

For the last area to be dumped, the operator enter a triple of addresses, the third of which is the starting address. The program will after dumping that area return to TOS.

MOVE. (MAJOR MODIFICATION).

This program replaces both the COPY program, the MOVE program and the HEXLST program of earlier TOS21 releases.

MOVE will transfer information from one file to another.

It is invoked by:

```
MOVE SI=<input>,SO=<output>$<info>
```

During the move operation, typing Q will cause the program to quit and return to TOS immediately. Opened files will be closed.

If the output is wanted in hexadecimal form, an H should be supplied in the <info> part of the command.

It is possible to copy files from one diskette to another, using only diskette unit 0. See example 3 below.

If SO=:LP:, a page length may be specified in the info part of the command. This will give paging of the printout, and the print head should initially be placed just below the paper perforation.

If SO=:CO:, a full screen at a time is displayed. The user must type space (or any key except Q) to obtain the next page.

If the output file is :LP: or :CO:, and the file is not ASCII code, the program will ask for an additional command: H (hexadecimal) or A (ASCII).

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Examples:

1) Copy the file PROG.SRC from diskette unit 0 to diskette unit 1:

```
MOVE SI=PROG.SRC,SO=:F1:PROG.SRC
```

2) Print the contents of file AAA from cartridge unit 1, the paper in use being 12 inches high. The printout is wanted in hexadecimal format:

```
MOVE SI=:M1:AAA,SO=:LP:$72H
```

3) Copy the file ABC from one diskette to another, using on one diskette drive:

```
MOVE SO=ABC$ABC
```

NOTE: The diskette on which the output file is desired should be running when the command is given. The program will type 'Change diskette' when necessary. Depending on the amount of available RAM, it may be necessary to change diskettes several times.

If $inputfile is not given in the command, the program will request it.

This function is only possible when diskette unit 0 is used, and the input file specification should n o t contain any unit specification. (ABC is OK, :F0:ABC is not).

4) Concatenate the three files AA, BB and CC into one file ABC, all on diskette unit 0.

```
MOVE SI=(AA,(BB,CC)),SO=ABC
```

NOTE: As the Double File specification only allows for two files, double parentheses must be used in order not to violate the format specification. When using this recursive form of format specification, there is no limit (except for storage space for buffers) on how many files may be concatenated.

MYLOAD.

This program conforms to the description in section 3.10 in the TOS Users Manual.

PROM.

The PROM prtogram may be used to transfer data to and from a DATA I/O or similar PROM programmer unit connected to the USART of the TDV2114. The transfer is in BNFF format.

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The program is invoked by:

PROM

Upon entry of the program, it will prompt by a colon (:). It is then expecting a command from the keyboard. The following commands are available:

E - EXIT

Exit to monitor. Program may be restarted by G.

Q - QUIT

Return to TOS21. To restart, the program must be reloaded from diskette.

L - LOAD DATA FROM DISKETTE

Lname,offset

will load the specified binary file into memory with the specified offset.
Name is in the format usual for Intel formatted files under TOS

P - PROGRAM

Pstart,stop

will transfer the contents of memory from address start up to and including the address stop. The addresses are taken to be hexadecimal.

After receiving the command, the program prompts: MAKE PROGRAMMER READY. After setting up the programmer to receive (LOAD, I/O+EXECUTE) type CR. Note that the 2114 must be ONLINE.

T - TRANSFER

Tstart

will transfer from programmer to 2114 memory, starting in the specified (hex) address. Set up the programmer to transmit by: (PROGRAM, I/O+EXECUTE)

When a DATA I/O is used, the following switch settings are standard:

- No parity
- Two stop bits
- 8 data bits
- 9600 baud
- Online

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RASM. (PRERELEASE ONLY).

This program is a prerelease of the new relocatable assembler.

It is invoked by:

RASM SI=<source>,SO=<relocatable>,SL=<list>

where the name of the source file is substituted for <source>, the desired name of the relocatable file is substituted for <relocatable> and the desired name (or specific device) of the list file for <list>. If SO is omitted, no relocatable file is created.

If SL is omitted, but AL is defined, error messages only will be give on AL.

If neither SL nor AL is specified, error messages will be given on CO.

IMPORTANT:

THE RELOCATABLE ASSEMBLER USES 6 CHARACTERS OF AN IDENTIFIER WHILE THE ORDINARY ONE ONLY USES 5. THIS MEANS THAT CERTAIN MODIFICATIONS TO THE SOURCE PROGRAM MAY BE REQUIRED WHEN TRANSFERRING A PROGRAM FROM USING THE OLD ASSEMBLER TO THE NEW ONE.
NOTE ALSO THAT lower case CODES IN THE SOURCE FILE ARE NOT CONVERTED TO UPPER CASE IN STRING CONSTANTS. (Inside ' ').

The new mnemonic applicable to the production of relocatable code are: PUBLIC, EXTRN, CSEG and DSEG.

PUBLIC <symbol>,<symbol>,.....

defines entrypoints within module

EXTRN <symbol>,<symbol>,.....

defines references to other modules

CSEG

starts generating in code segment

DSEG

starts generating in data segment

The usual ORG command may be used to generate with absolute addresses.

If no DSEG, CSEG or ORG is given, CSEG will be assumed.

Modules created by the relocatable assembler is linked together by us of the LINK program. See separate description above.

RELEAS.

This program conforms to the description of section 3.20 in TOS Users Guide.

REMAP.

If the diskette map is destroyed, REMAP will attempt to re-establish it by going through the file directory.

The program is invoked by:

REMAP$

or

REMAP$unit

It depends on the condition of the directory whether the attempt will be successful. If any illegal track or sector number is detected, the operation will be aborted.

RENAME.

This program conforms to the description of section 3.5 of TOS Users Guide.

RESCUE.

This program conforms to the description of section 3.4 of TOS Users Guide.

SEDIT. (NEW NAME - OLD PROGRAM).

This program conforms to the description of 'EDIT' in section 3.22 of TOS Users Guide.

SYS.

The program SYS may be used to allow deletion of protected files. It is called before use of DELETE or RENAME.

It is invoked by:

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SYS$S

SYSTEM.

This is not really a utility program. It is the name given to TOS on a system diskette, and is included in this list for explanation only.

TPGEN.

The program TPGEN will copy all files (except formatting files) from the diskette on unit 0 to the cartridge on unit 0.

It is invoked by:

TPGEN

TXW (PRERELEASE ONLY)

TXW is a Text Writer to be used in conjunction with the text editor. It interprets certain control information to provide edited reports.

See separate description.

XREF

XREF will create a symbol cross reference list out of a source file.

The program is invoked by:

XREF SI=inputfile,SL=outputfile

or

XREF SI=inputfile

In the latter case, SL=/CO is used as the default output file.

The input is assumed to be in Intel 8080 Assembly Language format. (See "TDV2100 Assembler User's Manual" for reserved words).

All words which are not reserved words in the assembly language, are included in the cross reference list.

The output file contains the symbol name and the line numbers where it is used. To distinguish the line where a symbol was defined, that line number is succeeded by # (23 hex).

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Error reporting.

Errors should preferably be reported on standard forms issued by Tandberg for this purpose. A sample form is attached. These may be ordered through your Tandberg representative.

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SOFTWARE ERROR REPORT

If software errors occur, this form should be completed and delivered to your local service representative or mailed to TANDBERGS RADIOFABRIKK A/S, DATASERVICE, P.O.BOX 9, KORSVOLL, OSLO 8, NORWAY.

Submitted by:

Name .....

Company .....

Address .....

.....

Phone ..... Date .....

Check one item in each category:

Product	Product type			Hardware
☐ Software	☐ Monitor	☐ Editor	☐	☐ TDV2114
☐ Software	☐ Assembler	☐ Utility		☐ TDV2116
Doc.	☐ Compiler	☐ System prog.		☐ .....

Exact product/manual name .....

.....

Version number (if not known, give date of receipt) .....

ENCLOSED DOCUMENTATION OF THE PROBLEM:

☐ Output listing ☐ Diskette ☐ .....

☐ Program listing ☐ Cartridge

PROBLEM DESCRIPTION:

If necessary, continue description on separate sheet(s).

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FOR TANDBERG USE ONLY:

Received date .....

Reg. no.: .....

Person responsible .....

Correction date .....

Replied date .....

PROBLEM ANALYSIS:

REPLY:

Part. no.: 374051

Publ. no.: 5041

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