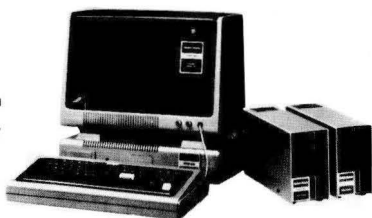


TRS-80® MODEL I DOUBLE- DENSITY MICRO- COMPUTER SYSTEM



Start-Up

When turning power to the Computer ON or OFF, all drives should be empty. Leaving the diskettes in the drives may cause information previously stored to be changed or even destroyed.

Do not turn a peripheral ON or OFF during a disk read/write operation (when the drive LED is illuminated). Work done on a currently open file may be lost. Also note that turning the peripherals ON and OFF while the computer is on may confuse the system and cause abnormal operation.

The power switch for each Mini Disk is on the rear of the unit. Power is ON when the toggle switch is in the up position, and OFF when the switch is down.

The Start-Up sequence is as follows:

1. Turn all peripherals (printer, disk drives, etc.) ON.
2. Turn the Expansion Interface ON.
3. Turn the CPU/keyboard ON. Wait until all disk drive motors have stopped, then carefully insert your double-density TRSDOS diskette into Drive 0. You may also want to insert formatted diskettes in the other drives. **Note:** It is normal for random "garbage" to be displayed on the video at this time.
4. Press the RESET button (located at the left rear side of the CPU/keyboard).
5. LOADING TRSDOS should now be displayed on the Video. If not, repeat Steps #3 and 4.

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TRS-80®

TRSDOS™

Commands and Utilities

APPEND, *source-file destination-file* Adds one disk file onto the end of another.

APPEND FTW/TXT TO NORTX/TXT

ATTRIB *filespec* Changes protection of specified file (I or N, ACC, UPD, PROT).

ATTRIB OLD/DAT (I, ACC=JUL14, UPD=MOUSE, PROT=READ)

AUTO :*d command-line* Automatically executes the specified TRSDOS command each time TRSDOS starts up. (AUTO by itself erases the automatic command.)

AUTO CLOCK AUTO BASIC AUTO

BACKUP :*source :destination* Duplicates a system or data diskette.

BACKUP BACKUP :0 :1

BLINK Turns blinking cursor ON and OFF.

BLINK (OFF) BLINK (ON) (If switch is omitted ON is assumed.)

BUILD *filespec* Creates an automatic command input file.

BUILD JOBFIL

CLEAR (START = *aaaa*, END = *bbbb*, MEM = *cccc*)

Clears user memory and sets top memory address.

CLEAR (START=9000, END=0A000, MEM=7000)

CLEAR

CLOCK (*switch*) Turns real-time clock display ON/OFF.

CLOCK (ON) CLOCK CLOCK (OFF)

CLS Clears the screen.

CLS

CONFIG :*d*(STEP = *x*, TRACK = *y*) Change the configuration of a disk drive by changing the stepping rate and number of tracks for that drive. (See *Model I Double-Density Disk Manual*).

CONFIG:1 (STEP=2) CONFIG:2 (STEP=1, TRACK=40)

COPY *oldfile newfile* Copies a file.

COPY FILE1/BAS TO UPDFL/BAS

COPY FILE/ATOFIL/A:1 COPY FILEA/BAS:0:1

CREATE *filespec*(LRL = *aaa*, REC = *bbb*) Creates a preallocated file.

CREATE JOBFIL (LRL=256, REC=50)

DATE *mm/dd/yy* Sets or displays the current date.

DATE 07/18/80 DATE

MODEL I DO

- DEBUG** Starts debug monitor.
DEBUG (turns monitor ON) Q (turns monitor OFF)
- DIR :d (INV, SYS, PRT)** Lists the diskette directory (INVisible or SYStem) on drive *d* on the Display or Printer (PRT).
DIR :1 (INV) DIR :0 (PRT)
- DO filespec** Begins auto command input from a BUILD file.
DO BEGIN
- DUAL (switch)** Duplicates output to video and printer.*
DUAL (ON) DUAL DUAL (OFF)
- DUMP filespec** Dumps content of RAM into a machine-language program disk file.
(START = *aaaa*, END = *bbbb*, TRA = *cccc*, RELO = *dddd*)
DUMP DATA/CIM:1 (START = 8000, END = 8050)
- ERASE filename** Erases file from Diskette.
ERASE TEST/BAS
- ERROR number** Displays an error message.
ERROR 47
- FILFIX** Loads and modifies contents of a file.
FILFIX
- FORMAT :d** Initializes a diskette into tracks and sectors.
FORMAT :1 FORMAT
- FREE :d (PRT)** Lists a diskette's allocation map to the Display or Printer (PRT).
FREE :1 FREE :0 (PRT)
- HELP command** Explanation of TRSDOS command.
HELP BACKUP
- KILL filespec or KILL/ext:d** Deletes a file from directory; frees space allocated to that file.
KILL FL/BAS:1 KILL /CMD:0 (KILLS all */CMD files)
- LIB** Lists library commands.
LIB
- LIST filespec (PRT, SLOW, ASCII)** Lists contents of a file to the Display or Printer.
LIST PROG1/TXT (PRT) LIST JOBIFILE/BLD (ASCII)
- LOAD filespec** Loads a machine-language file into memory.
LOAD GRAPHICS
- LPC** Special printer driver for some printers.
LPC
- MASTER (DRIVE=a)** Forces a drive to be the Master Read/Write drive. MASTER releases any drive defined as Master Drive.
MASTER (DRIVE=1) MASTER
- MEMTEST** Test memory (ROM and RAM).
MEMTEST

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- PATCH** Change the contents of a disk file.
PATCH VREAD (A=5200,F=0CD2D2SE5,
C=0000000009
- PAUSE *message*** Pauses for operator action or message.
PAUSE INSERT DISKETTE #21
- PROT :*d* (PW, LOCK)** Changes file and diskette passwords.
PROT :1 (PW, LOCK)
- PURGE :*d* (file-type)** Deletes files (SYS, MIN, ALL, INV).
PURGE :1 (INV) PURGE :0
- RELO *filespec* (ADD=aaaa)** Changes location where program loads into memory.
RELO JOBFIL/CMD (ADD=6578)
- RENAME *oldname newname*** Renames a file.
RENAME MRS/BAS TO MS/BAS
- SETCOM (WORD = *a*,BAUD = *b*,STOP = *c*, PARITY = *d*)**
Sets up RS-232-C communications or display status.
SETCOM (WORD=7,BAUD=300,STOP=1,
PARITY=0,WAIT) SETCOM
- SPOOL** Turns print spooler ON.
SPOOL 10000 SPOOL
- TAPE (S = *source*,D = *destination*)** Executes tape transfer operation.
TAPE (S=D,D=T)
- TIME *hh:mm:ss*** Resets or gets the time.
TIME 14:12:30 TIME
- TRACE (*switch*)** Displays PC register. If no switch is given, ON is used.
TRACE (ON) TRACE (OFF) TRACE
- UNKILL *filespec:d*** Recovers a file that has been KILLED. The drive number must be included.
UNKILL PAYROLL/DAT:1
- USER *command*** User-defined Library Command. If no command is given, previous user commands are cancelled.
USER SCHOOL USER
- VERIFY (*switch*)** Verifies disk writes. If *switch* is not given, ON is used.
VERIFY (ON) VERIFY (OFF) VERIFY
- WP (DRIVE = *d*)** Write-protects a diskette in drive *d*. If no drive number is given, all drives are unprotected.
WP (DRIVE=1) WP

*If no switch is given, OFF is used.

TRSDOS™ Error Messages

Code	Explanation
1	CRC Error During Disk I/O
2	Disk Drive Not In System
3	Lost Data During Disk I/O
4	CRC Error During Disk I/O
5	Disk Sector Not Found
6	Disk Drive Hardware Fault
7	File Already in Directory
8	Disk Drive Not Ready
9	Illegal I/O Attempt
10	Required Command Parameter Not Found
11	Illegal Command Parameter
12	Time Out On Disk Drive
13	I/O Attempt To Non-System Disk
14	Write Fault On Disk I/O
15	Write-Protected Disk
16	Illegal Logical File Number
17	Directory Read Error
18	Directory Write Error
19	Invalid File Name
20	GAT Read Error
21	GAT Write Error
22	HIT Read Error
23	HIT Write Error
24	File Not Found
25	File Access Denied
26	Directory Space Full
27	Disk Space Full
28	Attempt To Read Past EOF
29	Attempt To Read Outside of File Limits
30	No More Extents Available
31	Program Not Found
32	Invalid Drive Number
33	File Unrecoverable
34	Attempt To Use Non-Program File As a Program
35	Memory Fault During Program Load
36	**Undefined Error**
37	Improper Density Disk
38	I/O Attempt To Unopen File
39	Invalid Command Parameter
40	Attempt To Open File Already Open

Disk BASIC Functions

CVD(*exp*\$) Converts to double-precision after GET.
A#=CVD (GRSPAY\$)

CVI(*exp*\$) Converts to integer after GET.
PRINT CVI (I1\$)

CVS(*exp*\$) Converts to single-precision after GET.
FK=CVS (T\$)

EOF(*nmexp*) End-of-file detector for buffer *b*.
IF EOF (3) THEN CLOSE 3

INSTR(*pos*, *mainstr*, *substr*) Returns number which indicates the position of the main string where the substring begins. If substring not in main string, zero is returned. If *pos* is omitted, *pos* = 1.
PRINT INSTR (S\$, "VA") X=INSTR (S\$, Q\$)
Y1=INSTR (B, S\$, Q)

LOC(*file number*) Gets current record number.
PRINT LOC (1)

LOF(*nmexp*) Determines number of last (highest-numbered) record in specified file.
Y=LOF (5)

MKD\$(*nmexp*) Makes double-precision number ready for disk write (random access).
LSET AVG\$=MKD\$(3000.00001)

MKI\$(*nmexp*) Makes integer number ready for disk write (random access).
LSET AVG\$=MKI\$(3000) LSET Y\$=MKI\$(Y%)

MKS\$(*nmexp*) Makes single-precision number ready for disk write (random access).
LSET AVG\$=MKS\$(3000.1) LSET M\$=MKI\$(N)

TIME\$ Gets value of real-time clock
TIME\$ A\$=TIME\$

USR*n*(*x*) Calls any one of up to 10 machine-language subroutines, *n* = 0-9. If *n* is omitted, zero is used.
X=USR0 (T1) F=USR7 (Y)

Disk BASIC Statements

- CMD "A"** Returns to TRSDOS with error message.
CMD "A"
- CMD "B", "switch"** Enables/Disables **(BREAK)** key.
CMD "B", "ON" CMD "B", "OFF"
- CMD "C", options** Deletes program remarks (R) or spaces (S).
CMD "C", R CMD "C", S CMD "C"
- CMD "D:d"** Displays directory listing for specified drive. *d* is not optional.
CMD "D:1"
- CMD "E"** Displays previous TRSDOS error.
CMD "E"
- CMD "I", "command"** Executes a TRSDOS command.
CMD "I", "HELP" CMD "I", A\$
- CMD "J", "input, output"** Converts calendar date. mm/dd/yy can be changed to yy/ddd — yy/ddd can be changed to mm/dd/yy
CMD "J", "08/12/81", D\$
CMD "J", "-64/201", D\$
- CMD "K", "switch"** Turns ON/OFF clock display.
CMD "K", "ON" CMD "K", "OFF"
- CMD "L", routine** Loads Z-80 subroutine or program file into RAM.
CMD "L", "JOBFILE" CMD "L", P\$
- CMD "O", x, array (start)** Alphabetizes (sorts) contents of a string array. *x* is the number of items to be sorted; *start* is where the sorting process begins.
CMD "O", 50, A(1)
- CMD "P", string** Checks printer status. *status* is a string variable.
CMD "P", X\$
- CMD "R"** Enables real-time clock interrupts.
CMD "R"
- CMD "S"** Returns control to TRSDOS.
CMD "S"
- CMD "T"** Disables real-time clock interrupts.
CMD "T"
- CMD "X", target** Cross-references program lines and line numbers. *target* can be a reserved word, string, or string variable.
CMD "X", GOTO CMD "X", "HELLO"

ROM Subroutines

Name	Entry Address	Description
\$ASTBLK	556/X'022C'	Blinks asterisk in upper-right corner of video.
\$CASSON	530/X'0212'	Turns cassette drive ON.
\$CSIN	565/X'0235'	Inputs a byte.
\$CSOFF	504/X'01F8'	Turns cassette drive OFF.
\$CSOUT	612/X'0264'	Writes a byte to cassette.
\$DELAY	96/X'0060'	Delays for a specified interval.

CMD "Z", "switch" Duplicates output to Printer and Display (dual routing).
 CMD "Z", "ON" CMD "Z", "OFF"

DEF FN Defines a user-created function.
 DEF FNA\$(X)=STRING\$(X,"45")

DEFUSR_n Defines entry point for machine-language sub-routine called by USR_n. If *n* is omitted, zero is used.
 DEFUSR=&H5500 DEFUSR4=&H7D7E

LINE INPUT "prompt"; variable Inputs a line from keyboard; ENTER ends input.
 LINE INPUT A\$ LINE INPUT "ENTER YOUR NAME?" ;N\$

MID\$(old, pos, len)=repl Replaces one portion of a target string with another. If length option is omitted, same number of characters in the old string will be changed as the number of characters in the replacement string.
 MID\$(A\$,3,4)="USAFX" MID\$(A\$,5)="01"

NAME newline, startline, increment Renumbers program line numbers. *newline* is the new number of the first line which is to be renumbered. If omitted, 10 is used. *startline* is the line number where renumbering is to begin. If omitted, entire program will be renumbered. *increment* is the increment between successive renumbered lines. If omitted, 10 is used.
 NAME 100, 10, 100 NAME NAME, 5

*If no options are given, both (R) and (N) are used.

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Name	Entry Address	Description
\$KBCHAR	43/X'002B'	Gets a character, if available.
\$KBLINE	64/X'0040'	Waits for a line.
\$KBWAIT	73/X'0049'	Waits for a character.
\$PRCHAR	59/X'003B'	Prints a character.
\$READY	6681/X'1A19'	Jumps to Level II BASIC "Ready."
\$RESET	0/X'0000'	Resets Computer.
\$VDCHAR	51/X'0033'	Displays a character.
\$VDCLS	457/X'01C9'	Clears the screen.

Debug Monitor Commands

- D** Displays memory contents.
D ADDRESS? = *aaaa* where *aaaa* is a hexadecimal number.
- X** Half-screen display.
- S** Full-screen display.
- M** Modify RAM. M ADDRESS? = *aaaa* where *aaaa* is a hexadecimal number.
- R** Change Register contents.
Raa,bbbb (SPACEBAR) where *aa* is one of the register pairs AF, BC, DE, HC, PC and *bbbb* is a hexadecimal value.
- I** Single-step.
- C** Single-step executing call.
- U** Up-dates display.
- ;** Increment the first location on a half-screen display by 16; on full-screen, by 256.
- Decrement the first location on a half-screen display by 16; on full-screen, by 256.
- J** Jump the transfer of control from one location to another.
J ADDRESS? = *aaaa,bbbb* where *aaaa* specifies the hexadecimal location where execution begins and *bbbb* specifies the hexadecimal location of the breakpoint.
- Q** Quits or exits from debug.
- F** Disk file utility which allows you to load disk file into memory and change it.

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Disk BASIC Error Codes

51	Field Overflow
52	Internal Error
53	Bad File Number
54	File Not Found
55	Bad File Mode
58	Disk I/O Error
62	Disk Full
63	Input Past End
64	Bad Record Number
65	Bad File Name
67	Direct Statement in File
68	Too Many Files
69	Disk Write-Protect
70	File Access

Disk BASIC Abbreviations & Special Characters

&H	Indicates following number is a hexadecimal constant.
&O	Indicates following number is an octal constant.
⬆	Lists previous line.
⬇	Lists next line.
⬇	Lists current line.
⬇	Edit current line.
SHIFT ⬆	Lists first line.
SHIFT ⬇ Z	Lists last line.
Lxx	List line xx.
Exx	Edit line xx.
Dxx	Delete line xx.
Axxx, xxx	Automatic line numbering beginning at line xxx, incrementing by xxx.

Y DISK