Memotech MTX512

Tape Reader and Merge Program

Version 2.1

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INSTRUCTIONS

The Tape Reader and Merge Program (TRAMP) can be used in two ways. The first way, using the Function Keys F1 - F4, will allow you to load System Variables or programs from tape into an area of RAM independent of any other program that is loaded in memory. You can examine this code by use of the MTX Panel mode. The second way, using the Function Key F5, is used to add routines that are held on tape to the program TRAMP or merge these routines with your program currently loaded in memory.

TRAMP has been designed to run on the Memotech MTX512 computer, it will not run on the MTX500 computer or with the CP/M version of Basic.

To use the program LOAD the TRAMP tape into your computer and enter the command RUN, you will be prompted for all the required commands.

Basic or machine code lines can be merged but a machine code line must have a maximum length of no greater than 16k. Lines greater than 16k will cause an error message to be issued and the line will not be merged. Lines are merged into the correct position in your program and if the line number already exists then it is replaced with the new line.

The program TRAMP is contained in line number zero and the code is held in the DS machine code instructions. This line number must never be changed to any other number. If the program being merged contains a line zero then that line will not be merged.

After use the line number zero may be deleted from the merged code.

Summary of Function Key Commands

The options available are selected by use of the function keys F1 - F5 and are used as follows.

To review the contents of a tape

F1 READ HEADER

Read the program name from tape and display the start address of the system variables. The tape name is loaded at address #C000 and the start address of the system variables is contained at address #C020.

F2   LOAD SYSTEM VARS

Load the system variables from tape. The system variables are loaded from the address (variable start address - #C000).
e.g.   The system variable #FACE would be found at the address #CACE.

F3   LOAD TAPE

Load the program from tape into an area of memory independent of the the program TRAMP and any other program that may be loaded into memory. The code can be examined using the MTX front panel.

F4   MERGE CODE

Merge the code that was loaded with option F3 into your program. The program loaded using the Function Key F3 can be modified using the MTX Panel prior to being merged. This is the only time that programs should be merged using the Function Key F4. Function Key F5 should be the normal method of megring programs. When this option is used then it **MUST** follow the use of the Function Key F3. Any other Function Key sequence may cause the merge to fail and cause the computer to lock up.

To merge a program from a tape

F5   MERGE TAPE

Read in a program from tape and add it to the program TRAMP or merge it into your program held in memory. The merge process is automatic and the steps it takes are as follows:

A) It will read the tape name and from this will find the start address to load the System Variables.

B) The System Variables are then loaded into memory and the values required by the program TRAMP are then stored in it's own variable area.

C) The code is now loaded into memory. The System Variables loaded in the previous step are now no longer required.

D) Each line of code is taken in turn and merged with your program.

General Notes

1)   The tape name must be entered without quotation marks, if required a null entry may be used. The program to be loaded must have been saved using the MTX SAVE routine.

2)   The delete, backspace, or left arrow key will delete characters input from the keyboard.

3)   The break key will take you back to the previous level of the menu. If the tape is being loaded then the ROM tape loader routine will

return you back to Basic.

4) Code can be loaded at any address from the top of Basic to #F000, and you may enter the load address in either decimal or hex format, (22136 or #5678). This address consists of 5 characters and all 5 characters must be entered before you will be allowed to continue. If code is loaded into the address #C000 then the ROM will replace the contents with the value #FF. When the code is merged with your program then the value #FF is replaced with the correct code. The correct code value is held at address #491C.

5) If the length of your program plus the length of code being merged is greater then #8000, (32k), then the code will pass address #C000. Load the program to be merged at address #C000 or above, and the next RAM page will be switched in and the code will be loaded into the correct position in RAM. In this case the maximum length of code that can be loaded is #3000, (12k).

6) Tramp uses values contained in the system variables loaded from tape and commercial programs often overwrite these locations with zeros. TRAMP will be able to load these programs into memory using the Function Key F3 but it may not be able to merge the code into your program using the Function Key F5.

7) Noddy pages will be added to your program but no check is made to see if the Noddy name already exists. Repeated merges will cause duplicate Noddy pages to be added to your program.

8) When lines of code are to be merged into the middle of your program then, if the line number does not exist, a gap at least equal to the length of the longest line must be left between the top of Basic and the load address of the code to be merged. This gap is to allow part of your program to be moved up prior to the new line being inserted. If insufficient room is left then your program could be corrupted by the merge process.
If the line number exists and the new line is longer than the existing line then the gap must be at least equal to the largest difference in length between the old line and the line that will replace it.

Correct size gap between Basic and code to be merged

```
        Basic Prog.           gap      New code
   !----------------------!            !========!     New code loaded

   !-------       -------------!       !========!     Make room in prog.

   !-----------========-------------!                 Code merged in prog.
```

Too small a gap between Basic and the code to be merged

```
         Basic Prog.        gap New code
!-----------------------!    !========!           New code loaded

!-------            ----------****=====!           Make room in prog.
                            ^
                            ^

                    The gap is too small so the code
                    has been corrupted at this point
```

9)   ***** WARNING *****

SDX disc users should take care that if code is loaded above the
address #D700 then this will overwrite the disc driver routines.
After the code has been merged then before the discs are used
the disc routines must be reloaded using the ROM command. Failure
to do this could cause your disc to become corrupt.

                          ***** WARNING *****

                    RAM locations used by TRAMP

        #48FB - #48FC Start address to load the code
        #48FF - #4900 End of your Basic program
        #4903 - #4904 Length of program to merge
        #4907 - #4908 Address to load System Variables
        #4909 - #490A End address of program to merge
        #4911 - #4912 Length of Noddy Pages
                #491C Value of code saved from address #C000
        #491F - #4946 Buffer used for keyboard input