KOBETEK SYSTEMS LIMITED
PRESENTS:

THE COCKROACH TURBO-ROM

FOR THE C64, 128 AND SX64 COMMODORE COMPUTERS
LETS YOUR 1541/1571 FLY!!
FAST LOAD, FAST SAVE, FAST VERIFY, FAST FORMAT AND FAST WEDGE

COCKROACH TURBO-ROM

by Stu Burrows and Ralph Down

The COCKROACH TURBO-ROM is an enhanced Kernel ROM which may be installed in place of the original Kernal in the Commodore 64, 128 or SX-64.

In order to provide these enhancements, some extra room was required within the ROM (Read Only Memory). The easiest way to make some extra room was to leave out some of the existing code. The decision was made to leave out all of the cassette code and all of the RS232 code. This causes no problem in practice because the original Kernal is also present within our TURBO-ROM and accessible simply by flicking a switch.

Unlike many fast load systems, the COCKROACH TURBO-ROM will function correctly with additional serial devices e.g. printer or second drive with a different device number.

The TURBO-ROM is compatible with the VIC SWITCH network. Schools can equip one or more computers in a network with the TURBO-ROM (note that only the computers thus equipped will load faster).

Installation is very simple. The old Kernal ROM is unplugged and the TURBO-ROM module is plugged in with the switch protruding through the cassette aperture in the rear of the plastic casing. (For a more permanent installation the switch may be mounted by drilling a 1/4 inch hole in the plastic).

Some Commodore 64s have the Kernal ROM soldered onto the board. In this case the ROM must be unsoldered and a 24 pin socket fitted. (This is a job for an experienced solderer; we suggest you consult a technician).

The enhancements provided by the TURBO-ROM are primarily for disk users. (There is no cassette facility when switched to TURBO mode .

LOADING

Most LOADs are approximately 5 times faster although this depends upon the length of the program. Long programs load proportionally faster than short ones.

Some programs change the LOAD vector within the computer and consequently these LOADs are not significantly improved. (EASY SCRIPT is an example of this type).

The syntax for LOADing is unchanged e.g. LOAD"prog name",8 <RTN>. However, TURBO-ROM doesn't need the trailing quotation mark or the ,8 so if you wanted to abbreviate, you can use:
          L <shifted O>"prog name <RTN>.

If you are using two 1541 drives, you must use the full syntax for load commands.

If you are using machine code programs which need to be LOADed with ,8,1 <RTN> then you must also use the full syntax.

LOAD"*",8,1

This type of LOADING instruction is often seen on commercial software. In TURBO-ROM, simply press * followed by <RTN> . LOAD":*",8,1 will appear on the screen and the 1st program on the disk will be loaded. If it is an autostart program then it will LOAD and start without any further intervention.

Note: The colon ensures that the 1st program is always loaded. If the colon is left out, the previously loaded program will be loaded again.

VERIFYING

VERIFY is speeded up by a factor of about 5. The syntax is VERIFY"prog name",8 <RTN> or <V shifted E>"prog name <RTN> (unless using two drives or using ,1 <RTN>).

SAVING

SAVING is speeded up by a factor of about 5. The syntax is SAVE"prog name",8 <RTN> or S <shifted A>"prog name <RTN> (unless using two drives or using ,8,1 <RTN>).

A useful enhancement of the TURBO SAVE command is that the disk is checked first to ascertain that there is sufficient room to store the current program, unlike Commodore's system which leaves an unclosed short file on the disk just waiting to corrupt the RAM. If there is insufficient room on the disk, the error light of the drive will flash to indicate a 52, FILE TOO LARGE error.

SAVE WITH REPLACE

There have been numerous debates concerning whether
SAVE"@0:progname",8 <RTN> causes disks to become scrambled. (See
TRANSACTOR July 85). COCKROACH TURBO-ROM short-circuits this
problem by automatically SCRATCHING the old file and then reSAVING
the new file. This means that SAVE with REPLACE will work on a
disk which has only a few blocks free. (Provided that the new
program is not larger than the old program plus the number of free
blocks).

If wildcards are used (* or ?) in the program name, then the
original slow SAVE@0: will be executed. This is because you cannot
SAVE a program using wildcards in the name.

SCREEN DUMP

To get a printout of the screen at any time, (even during program
execution), simply hold down the COMMODORE key and tap F7. Please
ensure that a printer is plugged in and turned on otherwise
unpredictable things may happen!

If hires or multicolour screens are present, this feature is
disabled.

COCKROACH DOS WEDGE

@ <RTN> - Read & dislplay disk status (error channel)

@$ <RTN> - Display disk directory without disturbing program in
memory. Hold SPACE to pause listing, STOP terminates listing.

@$?TITLE <RTN> - Display all directory listings containing TITLE
preceded by any character. e.g. 1TITLE, 2TITLE etc.

@$TITLE* <RTN> - Display all directory listings starting with TITLE
e.g. TITLE1, TITLE2, TITLES etc.

@$?TITLE* <RTN> - Display all directory listings starting with any
character followed by TITLE and ending with any other characters.
e.g. 1TITLE.ANYTHING.

@$: <RTN> - Display only the name and ID of the disk and the number
of free blocks.

@I <RTN> - Initialise the disk

@V <RTN> - Validate the disk

@S:NAME <RTN> - Scratch the file "NAME"

@R:NEWNAME=OLDNAME <RTN> - Rename a file

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@N:NAME,ID <RTN> - Standard FORMAT command

@N:NAME <RTN> - Clear directory and free BAM of previously formatted disk.

@F:NAME,ID <RTN> - Fast format of disk (30 seconds - erase, format and verify).

@9 <RTN> - Change the device number of the 1541 from 8 to 9. This function has been included to allow the use of two drives without hardware modification.
Follow this procedure:

    1) Connect both drives but switch on only one.
    2) Type @9 <RTN>. This is now device 9.
    3) Turn on second drive. This is device 8.
    4) When issuing commands, use the full syntax.
            e.g. LOAD "prog name",9.

The COCKROACH DOS Wedge still addresses device 8 unless a command is sent to device 9. e.g. OPEN1,9,15:CLOSE1. The DOS Wedge will now access device 9. To return access to device 8 use OPEN1,8,15:CLOSE1. (Any command such as LOAD"$",8 will have the same effect). To reset the 1541 back to device 8, either switch it off and back on again or send @UJ. (This reset will only affect the current DOS device). Another way of specifying which device is currently active is to POKE 186,d - where d is 8 or 9.

@P <RTN> - Same as OPEN 4,4:CMD4. Opens a channel to the printer. Subsequent output from the computer will be printed on the printer instead of on the screen. This is useful for LISTing BASIC programs. e.g. Type @P <RTN>, then type LIST. If there is a program in memory and a printer connected, the listing will automatically go to the printer.

@O <RTN> - Same as PRINT#4:CLOSE4. Use after @P to properly close the channel to the printer.

<SHIFT-RUN/STOP>
Use @$ to get a directory listing on the screen. Move the cursor to the program to be loaded, hold down the SHIFT key and press RUN/STOP. LOAD will appear before the program name and ,8,1 will appear after the name. Note that the cursor is flashing over the 2nd comma. This is so that you can decide whether to load with a ,8 or a ,8,1. To load a BASIC program, press <RTN> or use the SPACE bar to rub out the following ,1 and press <RTN>. Most programs will load if loaded with a ,8,1 but beware of programs written on the a computer, as these will load onto the screen if loaded with ,8,1. Note: This function does not work on the top line of the screen.

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ZAP <RTN> - Cold start - same as SYS 64738 <RTN>.

OLD <RTN> - Restores BASIC program after reset or NEW.

MON <RTN> - This may be customised to suit your own requirements but normally checks for MONAD (a M/C monitor by Paul Blair) or DRVMON64 (a M/C monitor by Starpoint Software) at $8000 or $C000 and if present jumps to it - $8000 priority.

NOTES

a) If @$ is used to load the directory of a non-formatted disk, or when a disk is not present in the drive, the error light will naturally flash to indicate an error. However, subsequent attempts to format using @F:NAME,ID will result in the error light flashing at the end of the process. Using @ to read and display the error channel will show 00,OK,00,00. Don't believe it - the format is not complete and the directory will appear to be full of capital A's. This situation is easily prevented - simply send @UJ before using the fast format to ensure that the drive is reset.

b) When using SAVE with REPLACE (SAVE"@:NAME",8) make sure there is sufficient room left on your disk. A situation can arise where the existing file will be scratched and then the error light will flash to indicate FILE TOO LARGE. If this happens to you, don't panic as your program is still in memory. Simply save it onto another disk. Always VERIFY after SAVING to ensure integrity.