Commodore 64 standard KERNAL functions

Address	Function
$FF81	SCINIT. Initialize VIC; restore default input/output to keyboard/screen; clear screen; set PAL/NTSC switch and interrupt timer. Input: – Output: – Used registers: A, X, Y. Real address: $FF5B.
$FF84	IOINIT. Initialize CIA's, SID volume; setup memory configuration; set and start interrupt timer. Input: – Output: – Used registers: A, X. Real address: $FDA3.
$FF87	RAMTAS. Clear memory addresses $0002-$0101 and $0200-$03FF; run memory test and set start and end address of BASIC work area accordingly; set screen memory to $0400 and datasette buffer to $033C. Input: – Output: – Used registers: A, X, Y. Real address: $FD50.
$FF8A	RESTOR. Fill vector table at memory addresses $0314-$0333 with default values. Input: – Output: – Used registers: – Real address: $FD15.
$FF8D	VECTOR. Copy vector table at memory addresses $0314-$0333 from or into user table. Input: Carry: 0 = Copy user table into vector table, 1 = Copy vector table into user table; X/Y = Pointer to user table. Output: – Used registers: A, Y. Real address: $FD1A.
$FF90	SETMSG. Set system error display switch at memory address $009D. Input: A = Switch value. Output: – Used registers: – Real address: $FE18.
$FF93	LSTNSA. Send LISTEN secondary address to serial bus. (Must call LISTEN beforehands.) Input: A = Secondary address. Output: – Used registers: A. Real address: $EDB9.
$FF96	TALKSA. Send TALK secondary address to serial bus. (Must call TALK beforehands.) Input: A = Secondary address. Output: –

	Used registers: A. Real address: $EDC7.
$FF99	MEMTOP. Save or restore end address of BASIC work area. Input: Carry: 0 = Restore from input, 1 = Save to output; X/Y = Address (if Carry = 0). Output: X/Y = Address (if Carry = 1). Used registers: X, Y. Real address: $FE25.
$FF9C	MEMBOT. Save or restore start address of BASIC work area. Input: Carry: 0 = Restore from input, 1 = Save to output; X/Y = Address (if Carry = 0). Output: X/Y = Address (if Carry = 1). Used registers: X, Y. Real address: $FE34.
$FF9F	SCNKEY. Query keyboard; put current matrix code into memory address $00CB, current status of shift keys into memory address $028D and PETSCII code into keyboard buffer. Input: – Output: – Used registers: A, X, Y. Real address: $EA87.
$FFA2	SETTMO. Unknown. (Set serial bus timeout.) Input: A = Timeout value. Output: – Used registers: – Real address: $FE21.
$FFA5	IECIN. Read byte from serial bus. (Must call TALK and TALKSA beforehands.) Input: – Output: A = Byte read. Used registers: A. Real address: $EE13.
$FFA8	IECOUT. Write byte to serial bus. (Must call LISTEN and LSTNSA beforehands.) Input: A = Byte to write. Output: – Used registers: – Real address: $EDDD.
$FFAB	UNTALK. Send UNTALK command to serial bus. Input: – Output: – Used registers: A. Real address: $EDEF.
$FFAE	UNLSTN. Send UNLISTEN command to serial bus. Input: – Output: – Used registers: A. Real address: $EDFE.
$FFB1	LISTEN. Send LISTEN command to serial bus. Input: A = Device number. Output: –

	Used registers: A. Real address: $ED0C.
$FFB4	TALK. Send TALK command to serial bus. Input: A = Device number. Output: – Used registers: A. Real address: $ED09.
$FFB7	READST. Fetch status of current input/output device, value of ST variable. (For RS232, status is cleared.) Input: – Output: A = Device status. Used registers: A. Real address: $FE07.
$FFBA	SETLFS. Set file parameters. Input: A = Logical number; X = Device number; Y = Secondary address. Output: – Used registers: – Real address: $FE00.
$FFBD	SETNAM. Set file name parameters. Input: A = File name length; X/Y = Pointer to file name. Output: – Used registers: – Real address: $FDF9.
$FFC0	OPEN. Open file. (Must call SETLFS and SETNAM beforehands.) Input: – Output: – Used registers: A, X, Y. Real address: ($031A), $F34A.
$FFC3	CLOSE. Close file. Input: A = Logical number. Output: – Used registers: A, X, Y. Real address: ($031C), $F291.
$FFC6	CHKIN. Define file as default input. (Must call OPEN beforehands.) Input: X = Logical number. Output: – Used registers: A, X. Real address: ($031E), $F20E.
$FFC9	CHKOUT. Define file as default output. (Must call OPEN beforehands.) Input: X = Logical number. Output: – Used registers: A, X. Real address: ($0320), $F250.
$FFCC	CLRCHN. Close default input/output files (for serial bus, send UNTALK and/or UNLISTEN); restore default input/output to keyboard/screen. Input: – Output: – Used registers: A, X. Real address: ($0322), $F333.

$FFCF	CHRIN. Read byte from default input (for keyboard, read a line from the screen). (If not keyboard, must call OPEN and CHKIN beforehands.) Input: – Output: A = Byte read. Used registers: A, Y. Real address: ($0324), $F157.
$FFD2	CHROUT. Write byte to default output. (If not screen, must call OPEN and CHKOUT beforehands.) Input: A = Byte to write. Output: – Used registers: – Real address: ($0326), $F1CA.
$FFD5	LOAD. Load or verify file. (Must call SETLFS and SETNAM beforehands.) Input: A: 0 = Load, 1-255 = Verify; X/Y = Load address (if secondary address = 0). Output: Carry: 0 = No errors, 1 = Error; A = KERNAL error code (if Carry = 1); X/Y = Address of last byte loaded/verified (if Carry = 0). Used registers: A, X, Y. Real address: $F49E.
$FFD8	SAVE. Save file. (Must call SETLFS and SETNAM beforehands.) Input: A = Address of zero page register holding start address of memory area to save; X/Y = End address of memory area plus 1. Output: Carry: 0 = No errors, 1 = Error; A = KERNAL error code (if Carry = 1). Used registers: A, X, Y. Real address: $F5DD.
$FFDB	SETTIM. Set Time of Day, at memory address $00A0-$00A2. Input: A/X/Y = New TOD value. Output: – Used registers: – Real address: $F6E4.
$FFDE	RDTIM. read Time of Day, at memory address $00A0-$00A2. Input: – Output: A/X/Y = Current TOD value. Used registers: A, X, Y. Real address: $F6DD.
$FFE1	STOP. Query Stop key indicator, at memory address $0091; if pressed, call CLRCHN and clear keyboard buffer. Input: – Output: Zero: 0 = Not pressed, 1 = Pressed; Carry: 1 = Pressed. Used registers: A, X. Real address: ($0328), $F6ED.
$FFE4	GETIN. Read byte from default input. (If not keyboard, must call OPEN and CHKIN beforehands.) Input: – Output: A = Byte read. Used registers: A, X, Y. Real address: ($032A), $F13E.
$FFE7	CLALL. Clear file table; call CLRCHN. Input: – Output: –

	Used registers: A, X. Real address: ($032C), $F32F.
$FFEA	UDTIM. Update Time of Day, at memory address $00A0-$00A2, and Stop key indicator, at memory address $0091. Input: – Output: – Used registers: A, X. Real address: $F69B.
$FFED	SCREEN. Fetch number of screen rows and columns. Input: – Output: X = Number of columns (40); Y = Number of rows (25). Used registers: X, Y. Real address: $E505.
$FFF0	PLOT. Save or restore cursor position. Input: Carry: 0 = Restore from input, 1 = Save to output; X = Cursor column (if Carry = 0); Y = Cursor row (if Carry = 0). Output: X = Cursor column (if Carry = 1); Y = Cursor row (if Carry = 1). Used registers: X, Y. Real address: $E50A.
$FFF3	IOBASE. Fetch CIA #1 base address. Input: – Output: X/Y = CIA #1 base address ($DC00). Used registers: X, Y. Real address: $E500.