# GenRef
# v1.00

# MDOS Reference guide.

# KeyScan Library

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**KeyScan - OVERVIEW**

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The KeyScan management routines in MDOS are provided to aid a programmer in writing applications requiring keyboard and joystic input.   The Geneve supports keyboards utility up to 12 function keys and a separate keyboard.

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**CALLING KEYSCAN FUNCTIONS**

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The MDOS KeyScan Library must be called from within a machine code program running as a task under MDOS. You pass arguments to the KeyScan Library via the calling registers.

The MDOS KeyScan Library is invoked from a machine code program when software trap number zero (XOP 0) is called with a library number of 5. The calling program's R0 must contain the 16-bit subprogram at the time of the XOP.

```
SCAN    LI     R0,>0004     Scan Mode
        LI     R1,>FF00
        XOP    @FIVE,0      Access subprogram
        JNE    SCAN         Wait for keypress

        ANDI   R1,>FF00

        CI     R1,>FF00
        JEQ    SCAN

      * Check Keypress

        ANDI   R1,>7F00     Codes (usually) never higher than >F

      * Note – If you do NOT perform the ANDI, control codes may start at >80 - >9F

        MOVB   R1,@STR      Let's display the character – place in buffer

        LI     R0,>0027     Write Text Routine
        LI     R1,STR1      String to write
        CLR    R2           Null terminated string
        XOP    @SIX,0       Access subprogram

        BLWP   @0           Exit

FIVE    DATA   >0005
SIX     DATA   >0006
STR1    BYTE   >00
        BYTE   >0D,>0A,0       CR/LF/Null terminated
        EVEN
```

In the preceding example, three hidden assumptions were made.  First it is assumed that STR1 is located on a page which is currently mapped into a memory page which has the same 16-bit address page number as its Virtual address page number (read the section on Memory Management.) The second assumption is that FIVE and SIX are actually at the virtual address FIVE and SIX, not in some overlay segment with a different virtual address.

# KeyScan Mode Library

## KeyScan Mode

| | |
|---|---|
| **Function** | Returns key press from selected key mode. |
| **Parameters** | R0x = Keyboard Mode |
| **Results** | R0l = Returned mode (same as >8374 in TI-99/4A mode) |
| | R1h = Returned scan code (same as >8375 in TI-99/4A mode) |
| | R2l = Joystick X value (same as >8377 in TI-99/4A mode) |
| | R2h = Joystick Y Value (same as >8376 in TI-99/4A mode) |

EQ   bit in status register set if there's a new key in R0

| | |
|---|---|
| Mode 7 | EQ = 1 if Break On |
| Mode 8 | Raw scan code returned in R1h |
| | Raw code returned is >FF if no code in buffer |

**Parameter Description**

| | | |
|---|---|---|
| Keyboard Mode | >0000 | USE LAST KEYBOARD MODE (MUST BE GOOD!) |
| | >0001 | USE LEFT SIDE OF KEYBOARD |
| | >0002 | USE RIGHT SIDE OF KEYBOARD |
| | >0003 | STANDARD MODE |
| | >0004 | PASCAL MODE |
| | >0005 | BASIC MODE |
| | >0006 | Reserved for Abasic |
| | >0007 | BREAK KEY CHECK |
| | >0008 | RAW KEY CHECK |

Left (>0001) and Right (>0002) side of Keyboard Modes
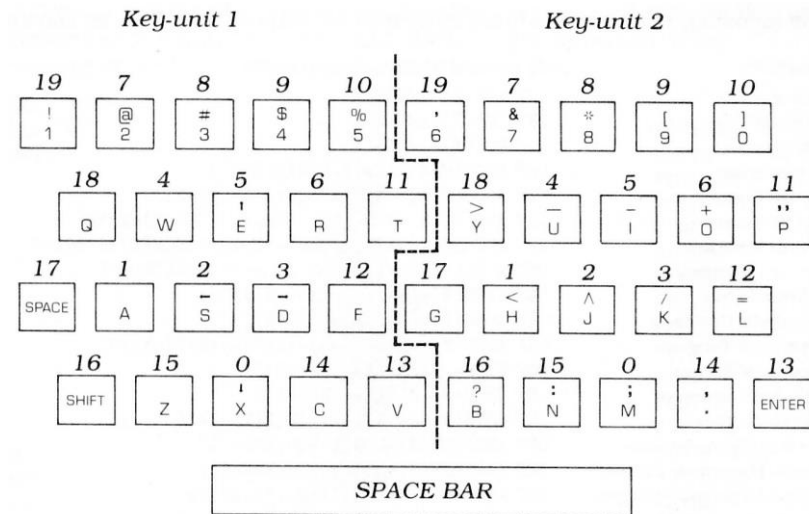
KeyMode    0      Console keyboard, in mode previously specified by the calling subprogram.

1      Only the left side of the keyboard is active.

2      Only the right side of the keyboard is active.

3      Places keyboard in standard TI-99/4A mode. (Most command module software used this mode.) Both upper and lower case alphabetical characters are returned as upper-case only, and the function keys (BACK, BEGIN, etc) return codes 1 through 15. No control characters are active. If code > 96 and Code < 123 then add ->20. If Code > 126, then Kill it. If Code < 32 and Code > 15 then Kill it.

4      Remaps the keyboard n the PASCAL mode. Both upper and lower case alphabetical character codes are returned by the computer, and the function keys return codes from 129 through 143. The control character codes are 1 through 31.

5      Places the keyboard in 99/4A BASIC mode. Both upper and lower case alphabetical character codes are returne by the computer. The function key codes are 1 through 15, and the control key codes are 128 through 159 (and 187).

6      This mode is reserved for MYARC Advanced BASIC mode and is not available to any MDOS programs other than ABasic. In addition to the normal ASCII codes returned in keyboard mode 5, the following additional Extended Codes are also returned in keyboard mode 6.

| Extended Code (Hex) | Function |
| --- | --- |
| 3 | NUL Character |
| F | Back Arrow |
| 10-19 | ALT Q,W,E,R,T,Y,U,I,O,P |
| 1E-26 | ALT A,S,D,F,G,H,J,K,L |
| 2C-32 | ALT Z,X,C,V,B,N,M |
| 3B-44 | F1-F10 Function Keys (Base Case) |
| 47 | Home |
| 48 | Up Arrow |
| 49 | Page Up |
| 4B | Left Arrow |
| 4D | Right Arrow |
| 4F | End |
| 50 | Down Arrow |
| 51 | Page Down |
| 52 | INS |
| 53 | DEL |
| 54-5D | F11-F20 (Upper Case F1-F10) |
| 5E-67 | F21-F30 (CTRL F1-F10) |
| 68-71 | F31-F40 (ALT F1-F10) |
| 72 | CTRL PRTSC (Start/Stop Echo to Printer) |
| 73 | CTRL Right Arrow (Reverse Word) |
| 74 | CTRL Left Arrow (Advance Word) |
| 75 | CTRL END (Erase to End of Line) |
| 76 | CTRL PG DN (Erase to End of Screen) |
| 77 | CTRL HOME (Clear Screen and Home) |
| 78-83 | ALT 1,2,3,4,5,6,7,8,9,0,-,= |
| 84 | CTRL PG UP (Top 25 lines of Text and Home Cursor |