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### **KbdCharIn**

**Bindings**: C, MASM

This call returns a character data record from the keyboard.

KbdCharIn (CharData, IOWait, KbdHandle)

CharData (PKBDKEYINFO) - output Address of the character data structure:

asciicharcode (**UCHAR**) ASCII character code. The scan code received from the keyboard is translated to the ASCII character code.

scancode (**UCHAR**) Code received from the keyboard. The scan code received from the keyboard is translated to the ASCII character code.

status (**UCHAR**) State of the keystroke event:

Bit	Description
7-6 00	= Undefined
01	= Final character, interim character flag off
10	= Interim character
11	= Final character, interim character flag on.
5 1	= Immediate conversion requested.
4-2	Reserved.
1 0	= Scan code is a character.
1	= Scan code is not a character; is an extended key code from the keyboard.
0 1	= Shift status returned without character.

reserved (UCHAR) NLS shift status. Reserved, set to zero.

shiftkeystat (USHORT) Shift key status.

Bit	Description
15	SysReq key down
14	CapsLock key down
13	NumLock key down
12	ScrollLock key down
11	Right Alt key down
10	Right Ctrl key down
9	Left Alt key down
8	Left Ctrl key down
7	Insert on
6	CapsLock on
5	NumLock on
4	ScrollLock on
3	Either Alt key down
2	Either Ctrl key down
1	Left Shift key down

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Bit Description
0 Right Shift key down

time (**ULONG**) Time stamp indicating when a key was pressed. It is specified in milliseconds from the time the system was started.

IOWait (USHORT) - input Wait if a character is not available.

Value	Definition
0	Requestor waits for a character if one is not available.
1	Requestor gets an immediate return if no character is available.

KbdHandle (**HKBD**) - input Default keyboard or the logical keyboard.

rc (USHORT) - return Return code descriptions are:

0	NO_ERROR
375	ERROR_KBD_INVALID_IOWAIT
439	ERROR_KBD_INVALID_HANDLE
445	ERROR_KBD_FOCUS_REQUIRED
447	ERROR_KBD_KEYBOARD_BUSY
464	ERROR_KBD_DETACHED
504	ERROR_KBD_EXTENDED_SG

#### Remarks

- On an enhanced keyboard, the secondary enter key returns the normal character 0DH and a scan code of E0H.
- Double-byte character codes (DBCS) require two function calls to obtain the entire code.
- If shift report is set with KbdSetStatus, the CharData record returned reflects changed shift information only.
- Extended ASCII codes are identified with the status byte, bit 1 on and the ASCII character code being either 00H or E0H. Both conditions must be satisfied for the character to be an extended keystroke. For extended ASCII codes, the scan code byte returned is the second code (extended code). Usually the extended ASCII code is the scan code of the primary key that was pressed.
- A thread in the foreground session that repeatedly polls the keyboard with KbdCharln (with no wait), can prevent all regular priority class threads from executing. If polling must be used and a minimal amount of other processing is being performed, the thread should periodically yield to the CPU by issuing a DosSleep call for an interval of at least 5 milliseconds.

# **Family API Considerations**

Some options operate differently in the DOS mode than in the OS/2 mode. Therefore, the following restrictions apply to KbdCharln when coding in the DOS mode:

- The CharData structure includes everything except the time stamp.
- Interim character is not supported
- Status can be 0 or 40H
- KbdHandle is ignored.

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#### C bindings

```
typedef struct KBDKEYINFO { /* kbci */
                              /* ASCII character code */
 UCHAR
          chChar:
 UCHAR
          chScan:
                             /* Scan Code */
                             /* State of the character */
 UCHAR
          fbStatus;
 UCHAR
          bNlsShift;
                             /* Reserved (set to zero) */
 USH0RT
          fsState;
                             /* State of the shift keys */
 ULONG
          time;
                              /* Time stamp of keystroke (ms since ipl) */
}KBDKEYINF0:
#define INCL KBD
USHORT rc = KbdCharIn(CharData, IOWait, KbdHandle);
PKBDKEYINFO
                CharData:
                               /* Buffer for data */
USHORT
                IOWait;
                               /* Indicate if wait */
HKBD
                KbdHandle;
                               /* Keyboard handle */
USHORT
                               /* return code */
                 rc;
```

## **MASM** bindings

```
KBDKEYINFO struc
  kbci chChar
                db ? ; ASCII character code
  kbci chScan
                db ? ;Scan Code
  kbci fbStatus db ? ;State of the character
  kbci bNlsShift db ? ; Reserved (set to zero)
  kbci fsState
                dw ? ; state of the shift keys
  kbci time
                dd ? ;time stamp of keystroke (ms since ipl)
KBDKEYINFO ends
EXTRN KbdCharIn:FAR
                    E0U 1
INCL KBD
                             ;Buffer for data
PUSH@
      OTHER
              CharData
                             :Indicate if wait
PUSH
              IOWait
      WORD
PUSH
      WORD
              KbdHandle
                             ;Keyboard handle
CALL
      KbdCharIn
Returns WORD
```

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