

keyboard

COLLABORATORS

| | | | |
|---------------|----------------------------|---------------|------------------|
| | <i>TITLE :</i> keyboard | | |
| <i>ACTION</i> | <i>NAME</i> | <i>DATE</i> | <i>SIGNATURE</i> |
| WRITTEN BY | | July 18, 2024 | |

REVISION HISTORY

| NUMBER | DATE | DESCRIPTION | NAME |
|--------|------|-------------|------|
| | | | |

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Chapter 1

keyboard

1.1 keyboard.doc

| | | |
|---------------------|----------------|----------------------|
| CMD_CLEAR | KBD_READEVENT | KBD_REMRESETHANDLER |
| KBD_ADDRESETHANDLER | KBD_READMATRIX | KBD_RESETHANDLERDONE |

1.2 keyboard.device/CMD_CLEAR

NAME

CMD_CLEAR -- Clear the keyboard input buffer.

FUNCTION

Remove from the input buffer any keys transitions waiting to satisfy read requests.

IO REQUEST

| | |
|------------|---|
| io_Message | mn_ReplyPort set if quick I/O is not possible |
| io_Device | preset by the call to OpenDevice |
| io_Command | CMD_CLEAR |
| io_Flags | IOB_QUICK set if quick I/O is possible |

1.3 keyboard.device/KBD_ADDRESETHANDLER

NAME

KBD_ADDRESETHANDLER -- Add a keyboard reset handler.

FUNCTION

Add a function to the list of functions called to clean up before a hard reset generated at the keyboard. The reset handler is called as:

```
ResetHandler(handlerData)
    al
```

IO REQUEST

| | |
|------------|----------------------|
| io_Message | mn_ReplyPort set |
| io_Device | preset by OpenDevice |

| | |
|------------|---|
| io_Unit | preset by OpenDevice |
| io_Command | KBD_ADDRESETHANDLER |
| io_Data | a pointer to an interrupt structure. |
| is_Data | the handlerData pointer described above |
| is_Code | the Handler function address |

NOTES

Few of the Amiga keyboard models generate the communication codes used to implement this reset processing. Specifically, only the Euro a1000 (rare), and the B2000 keyboard generate them.

The interrupt structure is kept by the keyboard device until a RemResetHandler command is satisfied for it, but the KBD_ADDRESETHANDLER command itself is replied immediately.

1.4 keyboard.device/KBD_READEVENT

NAME

KBD_READEVENT -- Return the next keyboard event.

FUNCTION

Read raw keyboard events from the keyboard and put them in the data area of the IORequest. If there are no pending keyboard events, this command will not be satisfied, but if there are some events, but not as many as can fill IO_LENGTH, the request will be satisfied with those currently available.

IO REQUEST

| | |
|---------------------------------------|--|
| io_Message | mn_ReplyPort set if quick I/O is not possible |
| io_Device | preset by the call to OpenDevice |
| io_Command | KBD_READEVENT |
| io_Flags | IOB_QUICK set if quick I/O is possible |
| io_Length | the size of the io_Data area in bytes: there are sizeof(inputEvent) bytes per input event. |
| io_Data | a buffer area to fill with input events. The fields of the input event are: |
| ie_NextEvent | links the events returned |
| ie_Class | is IECLASS_RAWKEY |
| ie_Code | contains the next key up/down reports |
| ie_Qualifier | only the shift and numeric pad bits are set |
| ie_SubClass, ie_X, ie_Y, ie_TimeStamp | are not used, and set to zero |

RESULTS

This function sets the error field in the IORequest, and fills the IORequest with the next keyboard events (but not partial events).

1.5 keyboard.device/KBD_READMATRIX

NAME

KBD_READMATRIX -- Read the current keyboard key matrix.

FUNCTION

This function reads the up/down state of every key in the key matrix.

IO REQUEST INPUT

| | |
|------------|---|
| io_Message | mn_ReplyPort set if quick I/O is not possible |
| io_Device | preset by the call to OpenDevice |
| io_Command | KBD_READMATRIX |
| io_Flags | IOB_QUICK set if quick I/O is possible |
| io_Length | the size of the io_Data area in bytes: this must be big enough to hold the key matrix. |
| io_Data | a buffer area to fill with the key matrix: an array of bytes whose component bits reflect each keys state: the state of the key for keycode n is at bit (n MOD 8) in byte (n DIV 8) of this matrix. |

IO REQUEST OUTPUT

| | |
|-----------|---|
| io_Error | IOERR_BADLENGTH - the io_Length was not exactly 13 bytes. The buffer is unchanged. This is only returned by V33/V34 kickstart. |
| io_Actual | the number of bytes filled in io_Data with key matrix data, i.e. the minimum of the supplied length and the internal key matrix size. |

NOTE

For V33/V34 Kickstart, io_Length must be set to exactly 13 bytes.

RESULTS

This function sets the error field in the IORequest, and sets matrix to the current key matrix.

1.6 keyboard.device/KBD_REMRESETHANDLER

NAME

KBD_REMRESETHANDLER -- Remove a keyboard reset handler.

FUNCTION

Remove a function previously added to the list of reset handler functions with KBD_ADDRESETHANDLER.

IO REQUEST

| | |
|------------|---|
| io_Message | mn_ReplyPort set |
| io_Device | preset by OpenDevice |
| io_Unit | preset by OpenDevice |
| io_Command | KBD_REMRESETHANDLER |
| io_Data | a pointer to the handler interrupt structure. |

1.7 keyboard.device/KBD_RESETHANDLERDONE

NAME

KBD_RESETHANDLERDONE -- Indicate that reset handling is done.

FUNCTION

Indicate that reset cleanup associated with the handler has completed. This command should be issued by all keyboard reset handlers so that the reset may proceed.

IO REQUEST

| | |
|------------|---|
| io_Message | mn_ReplyPort set |
| io_Device | preset by OpenDevice |
| io_Unit | preset by OpenDevice |
| io_Command | KBD_RESETHANDLERDONE |
| io_Data | a pointer to the handler interrupt structure. |

NOTES

The keyboard processor itself performs the hardware reset, and will time out and perform the reset even if some reset handlers have not indicated yet that the reset may proceed. This timeout is several seconds.