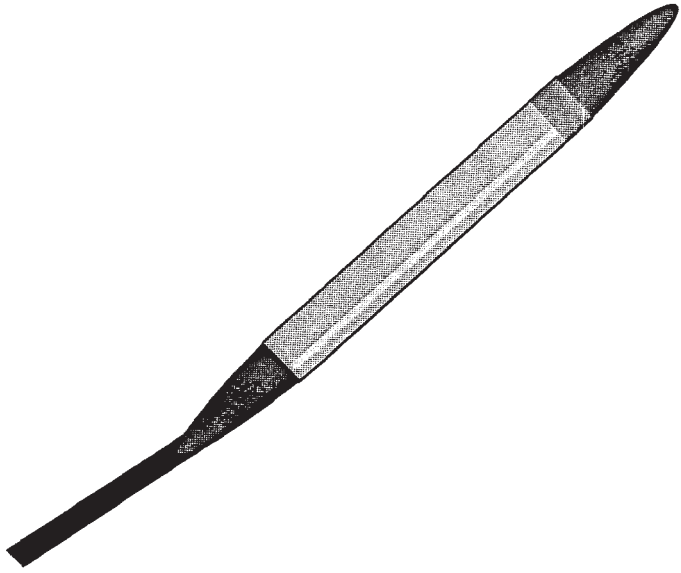
Using the Light Pen



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To the Reader

This document describes how to connect and use the light pen with your IRIS. The light pen is a device that works like the optical mouse for selecting locations described as pairs of x and y coordinates on the IRIS screen.

Put *Using the Light Pen* in your *IRIS Series 3000 Owner's Guide* or *IRIS Series 2000 Workstation Guide* binder, behind the tab labelled "Options".

Checklist

Before you install the light pen make sure you have:

- a light pen box
- a light pen and coil cord
- a 10-foot or 75-foot cable to connect the light pen box to the IRIS
- an auxiliary I/O panel with light pen option on your workstation or 2300, 2300T, and 3010 terminal
- version GL2-W2.4, GL2-W3.4, GL2-T2.4, GL2-T3.4, or more recent software on your system

1. Connecting the Light Pen

1. Attach the light pen box anywhere on the monitor enclosure with the double-stick tape. You can leave the light pen box loose if you want to, but it's more convenient to attach it to the monitor.
2. Connect the modular end of the 10-foot or 75-foot cable to the mating connector on the light pen box. Connect the external male nine-pin "D" connector to the IRIS auxiliary I/O panel, in the connector labelled LIGHTPEN.
3. Connect the plug on the light pen cable to the mating connector on the light pen box.

2. Using the Light Pen

Initializing the Light Pen

The light pen interface to the graphics library is similar to the interface between the mouse and the graphics library.

The *LPENX* valuator is very sensitive to delays in the exact timing characteristics of the printed circuit board and cables of the light pen. Because of this sensitivity, you may have to adjust the offset value to get the cursor exactly under the light pen. The offset value for the 10-foot light pen cable is zero (0).

If you have the 75-foot cable connecting the light pen box to the IRIS, you must initialize a non-standard offset value on your IRIS. The offset value is fourteen (14) for the 75-foot cable. This value may be adjusted by two pixels (+/– 2) to get the cursor exactly under thee light pen.

To initialize the offset value, run the following program after booting the IRIS and before using the light pen.

```
main()
{
                ginit();
                gl_lpenset(14) ;
                gexit();
}
```

If you want to run this program automatically every time you boot the IRIS, edit the file */etc/rc*. See the manual page *brc*(1M) in the *UNIX Programmer's Manual, Volume IA*.

Using the Light Pen with the Graphics Library

The light pen generates four pieces of information: two valuators, *LPENX* and *LPENY*, and two software buttons, *LPENVALID* and *LPENBUT*.

The valuators *LPENX* and *LPENY* give the screen coordinates where the light pen is positioned. These valuators are accessed the same way as the valuators for the optical mouse. These valuators always contain a value. If the light pen is not positioned in front of the screen, the values are the x and y coordinates of the last position of the light pen on the screen. (See the *IRIS User's Guide* for more information on valuators.)

The two software buttons on the light pen behave like the buttons of the dial and button box option. (See the *IRIS User's Guide* for more information on buttons.)

LPENVALID — Value 1 indicates the light pen is sensing light and is in a valid operating position. Value 0 indicates the light pen is not sensing light or is not in a valid operating position. When *LPENVALID* is 0, the valuators *LPENX* and *LPENY* do not contain valid values.

LPENBUT — Value 1 indicates the tip switch is depressed. Value 0 indicates the tip switch is not depressed.

For example, you can access the light pen using these Graphics Library commands:

- `attachcursor(LPENX, LPENY)` attaches the cursor to *LPENX* and *LPENY*
- `qdevice(LPENX)`, `qdevice(LPENY)`, `qdevice(LPENBUT)` or `qdevice(LPENVALID)` enters changes in the valuators or buttons into the event queue
- `tie(LPENBUT, LPENX, LPENY)` ties the two valuators (*LPENX* and *LPENY*) to the queued light pen button

These commands are described in detail in the *IRIS User's Guide*.