

<code>file=oRefNum</code>	File reference number for the FIFO's output file. You obtain this reference number from the Open operation used to create the file.
<code>note=noteStr</code>	Stores the note string in the file header. It is limited to 255 bytes.
<code>rdfile=rRefNum</code>	Like <code>rfile</code> but for review of raw data (use Open/R command). Channel data must match raw data in file. Offset from start of file to start of data can be provided using <code>doffset</code> given in same command. If data does not extend all the way to the end of the file, then the number of bytes of data can be provided using <code>dsize</code> in the same command.
<code>rfile=rRefNum</code>	File reference number for the FIFO's review file. Use a review file when you are using a FIFO to review existing data. Obtain the reference number from the Open/R operation used to open the file. File may be either unified header/data or a split format where the header contains the name of a file containing the raw data.
<code>size=s</code>	Sets number of chunks in the FIFO. The default is 10000. A chunk of data consists of a single data point from each of the FIFO's channels.
<code>start</code>	Starts the FIFO running by setting the time/date in the FIFO header, writing the header to the output file and marking the FIFO active.
<code>stop</code>	Stops the FIFO by flushing data to disk and marking the FIFO as inactive.
<code>swap</code>	Used only with <code>rdfile</code> . Indicates that the raw data file requires byte-swapping when it is read. This would be the case if you are running on a Macintosh, reading a binary file from a PC, or vice versa.

Details

Once **start** has been issued, the FIFO can accept no further commands except **stop**.

The FIFO must be in the valid state for you to access its data (using a chart control or using the **FIFO2Wave** operation). When you create a FIFO, using **NewFIFO**, it is initially invalid. It becomes valid when you issue the **start** command via the **CtrlFIFO** operation. It remains valid until you change a FIFO parameter using **CtrlFIFO**.

FIFOs are used for data acquisition.

See Also

The **NewFIFO** and **FIFO2Wave** operations, and **FIFOs and Charts** on page IV-313.

Cursor

```
Cursor [flags] cursorName traceName x_value
Cursor /F[flags] cursorName traceName x_value, y_value
Cursor /K[/W=graphName] cursorName
Cursor /I[/F][flags] cursorName imageName x_value, y_value
Cursor /M[flags] cursorName
```

The **Cursor** operation moves the cursor specified by *cursorName* onto the named trace at the point whose X value is *x_value*, or the coordinates of an image pixel or free cursor position at *x_value* and *y_value*.

Parameters

cursorName is one of ten cursors A through J.

Flags

<code>/A=a</code>	Activates ($a=1$) or deactivates ($a=0$) the cursor. Active cursors move with arrow keys or the cursor panel.
<code>/C=(<i>r,g,b</i>[,<i>a</i>])</code>	Sets the cursor color. <i>r</i> , <i>g</i> , <i>b</i> , and <i>a</i> specify the color and optional opacity as RGBA Values . The default is opaque black.

<i>/DF=format</i>	<p>Sets the format to use when displaying date/time data in the Graph Info Panel (see Info Panel and Cursors on page II-319).</p> <p>The /DF flag was added in Igor Pro 9.00.</p> <p>The values for format are:</p> <ul style="list-style-type: none"> 0: Compact format: YYMMDD HHMM. 1: Compact format with seconds added: YYMMDD HHMMSS. The seconds portion may optionally show fractions of seconds - see the /SDGT flag below. 2: Date and Time using a more readable format, the same format you get on a graph axis if you select the "short date" format. Time is formatted as HH:MM. 3: Date and Time with seconds added. Time is formatted as HH:MM:SS. The seconds portion may optionally show fractions of seconds - see the /SDGT flag below. 4: Time without the date. Time is formatted as HH:MM:SS. May optionally show fractions of seconds - see the /SDGT flag below.
<i>/DGTS=nd</i>	<p>Sets the number of digits precision to use when a cursor value is displayed in the Graph Info Panel (see Info Panel and Cursors on page II-319). The number of digits is set by <i>nd</i> and must be a value from 1 to 15.</p> <p>The /DGTS flag was added in Igor Pro 9.00.</p>
<i>/F</i>	<p>Cursor roams free. The trace or image provides the axis pair that defines x and y coordinates for the setting and readout. Use /P to set in relative coordinates, where 0,0 is the top left corner of the rectangle defined by the axes and 1,1 is the right bottom corner.</p>
<i>/H=h</i>	<p>Specifies crosshairs on cursors.</p> <ul style="list-style-type: none"> <i>h</i> =0: Full crosshairs off. <i>h</i> =1: Full crosshairs on. <i>h</i> =2: Vertical hairline. <i>h</i> =3: Horizontal hairline.
<i>/I</i>	<p>Places cursor on specified image.</p>
<i>/K</i>	<p>Removes the named cursor from the top graph.</p>
<i>/L=lStyle</i>	<p>Line style for crosshairs (full or small).</p> <ul style="list-style-type: none"> <i>lStyle</i>=0: Solid lines. <i>lStyle</i>=1: Alternating color dash.
<i>/M</i>	<p>Modifies properties without having to specify trace or image coordinates. Does not work with the /F or /I flags.</p>
<i>/N=noKill</i>	<p>Determines if the cursor is removed ("killed") if the user drags it outside of the plot area:</p> <ul style="list-style-type: none"> <i>noKill</i>=0: Remove the cursor (default). <i>noKill</i>=1: Do not remove the cursor.
<i>/NUML=n</i>	<p>Used in conjunction with /H when <i>h</i> is non-zero. Sets the number of crosshair lines to draw. <i>n</i> must be between 1 and 3. When <i>n</i> is greater than 1, the line separation is set by the /T=<i>t</i> flag. If <i>n</i> = 2 or 3 and <i>t</i> is less than 3, the line appears as if <i>n</i> is 1. If <i>n</i> = 3 and <i>t</i> is less than 5, the appearance reverts to <i>n</i> = 2. Lines are symmetrically disposed around the cursor position. When <i>n</i> = 3, <i>t</i> sets the separation of the outer pair of lines.</p> <p>/NUML was added in Igor Pro 7.00.</p>

<code>/P</code>	<p>Interpret <i>x_value</i> as a point number rather than an X value. If the cursor is on a trace representing a subrange of a wave, the point numbers are “trace” point numbers. See Details below.</p> <p>When used with the <code>/I</code> flag, <i>x_value</i> and <i>y_value</i> are row and column numbers.</p> <p>When used with the <code>/F</code> flag, <i>x_value</i> and <i>y_value</i> are relative graph coordinates (0-1).</p>
<code>/S=s</code>	<p>Sets cursor style.</p> <p><code>s=0:</code> Original square or circle.</p> <p><code>s=1:</code> Small crosshair with letter.</p> <p><code>s=2:</code> Small crosshair without letter.</p>
<code>/SDGT=nd</code>	<p>Set the number of places to the right of the decimal point to be displayed in the Graph Info Panel (see Info Panel and Cursors on page II-319) when the display is in one of the date/time modes that includes seconds, or if the corresponding axis is showing elapsed time. <i>nd</i> is a value from 0 to 6.</p> <p>The <code>/SDGT</code> flag was added in Igor Pro 9.00.</p>
<code>/T=t</code>	<p>Sets the thickness of crosshair lines for <code>/H</code> when <i>h</i> is non-zero. If <code>/NUML</code> sets the number of lines greater than 1 then <code>/T</code> sets the separation of the outer pair of lines.</p> <p><i>t</i> is the line thickness or separation distance in units of pixels. The default is <code>/T=1</code>.</p> <p>The form <code>/T={mode, t1, t2}</code> provides finer control.</p> <p><code>/T</code> was added in Igor Pro 7.00.</p>
<code>/T={mode,t1,t2}</code>	<p>Sets the thickness of crosshair lines for <code>/H</code> when <i>h</i> is non-zero. If <code>/NUML</code> sets the number of lines greater than 1 then <code>/T</code> sets the separation of the outer pair of lines.</p> <p>If <i>mode</i>=1 then <i>t1</i> and <i>t2</i> are in units of screen pixels. <i>t1</i> is the vertical line thickness or separation distance and <i>t2</i> is the horizontal line thickness or separation distance.</p> <p>The default crosshair appearance is equivalent to <code>/T={1,1,1}</code>.</p> <p>If <i>mode</i>=0 then <i>t1</i> and <i>t2</i> are in units of axis coordinates and consequently track changes in axis range and graph size. Normally <i>t1</i> is the vertical line thickness or separation distance and <i>t2</i> is the horizontal line thickness or separation distance but they are swapped if the trace or graph is in swap XY mode.</p> <p><code>/T</code> was added in Igor Pro 7.00.</p>
<code>/W=graphName</code>	<p>Specifies a particular named graph window or subwindow. When omitted, action will affect the active window or subwindow.</p> <p>When identifying a subwindow with <i>graphName</i>, see Subwindow Syntax on page III-92 for details on forming the window hierarchy.</p>

Details

Usually *traceName* is the same as the name of the wave displayed by that trace, but it could be a name in instance notation. See **ModifyGraph (traces)** and **Instance Notation** on page IV-20 for discussions of trace names and instance notation.

A string containing *traceName* can be used with the \$ operator to specify the trace name.

x_value is an X value in terms of the X scaling of the wave displayed by *traceName*. If *traceName* is graphed as an XY pair, then *x_value* is *not* the same as the X axis coordinate. Since the X scaling is ignored when displaying an XY pair in a graph, we recommend you use the `/P` flag and use a point number for *x_value*.

cursorName is a name, *not* a string.

To get a cursor readout, choose ShowInfo from the Graph menu.

If a cursor is attached to a trace that represents a subrange of a wave, the `/P` flag causes *x_value* to be interpreted as a trace point number, not as a wave point number. For instance, if the trace was created by the command

```
Display yWave[4,25;3]
```