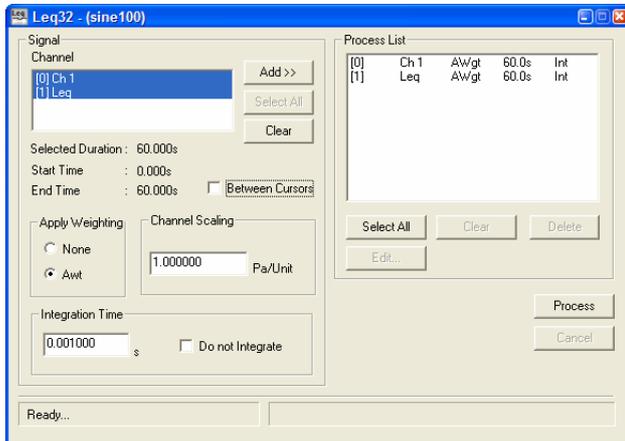


Leq Documentation V1.1

Leq

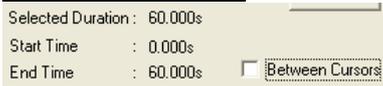


Leq is a single panel application that can generate a LEQ trace from an input signal. The stimulus can be in any unit but a scaling factor must be provided that will convert the signal to pascals.

The panel is divided into two groups – “Signal” and “Process List”. When a signal object is dropped on the module the “Signal” group will be enabled with the last used parameters set.

SIGNAL GROUP OPTIONS

Channel Cursor Duration



If the “Between Cursors” checkbox is checked then the Start and End times will reflect the time interval set between the dotted and solid cursors for the selected object. This will represent the interval over which the Leq will be calculated. The duration can be changed by using the “Trace” module.

If the “Between Cursors” is unchecked then the full signal channel duration will be used irrespective of cursor position.

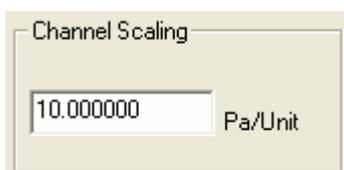
Apply Weighting



Leq should be calculated with A-Weighting applied. If the signal is already weighted by the acquisition system then “None” should be selected. If A-Weight is required then the signal sample rate must be 44.1KHz or greater. This is to ensure that the digital A-weight filter complied with the IEC651 standard for a Type 1 filter.

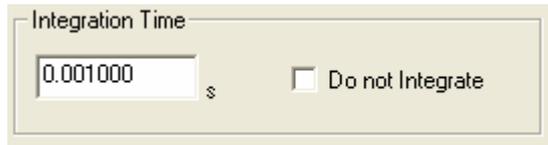
If the sample rate is less than 44.1KHz then A-Weight filter will be disabled.

Channel Scaling



Used to convert the signal to Pascals. This is required to correctly calculate Leq. As part of the Leq calculation the signal will be divided by the reference 20uPa.

Integration Time



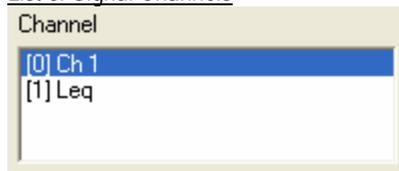
Integration Time

0.001000 s Do not Integrate

Specify the integration time for the Leq calculation. If an integration time of 1s is entered then a new Leq figure will be generated each second.

If the "Do not Integrate" option is checked then the signal will not be integrated and an Leq will not be produced. Instead a new time trace will be produced that is weighted according to the weighting option selected. The combination of "Do Not Integrate" and "Awt" will allow the user to produce an a-weighted time signal.

List of Signal Channels



Channel

[0] Ch 1
[1] Leq

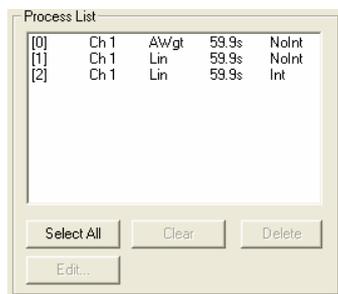
When a signal object is dropped on the LEQ module the list of available process channels will be displayed.

Add a channel



Select a channel, from the channel list, set the options you wish to apply and click on "ADD>>" to add this channel to the process list. This same channel can be processed multiple times with different processing options.

PROCESS GROUP OPTIONS



Process List

[0]	Ch 1	AWgt	59.9s	NoInt
[1]	Ch 1	Lin	59.9s	NoInt
[2]	Ch 1	Lin	59.9s	Int

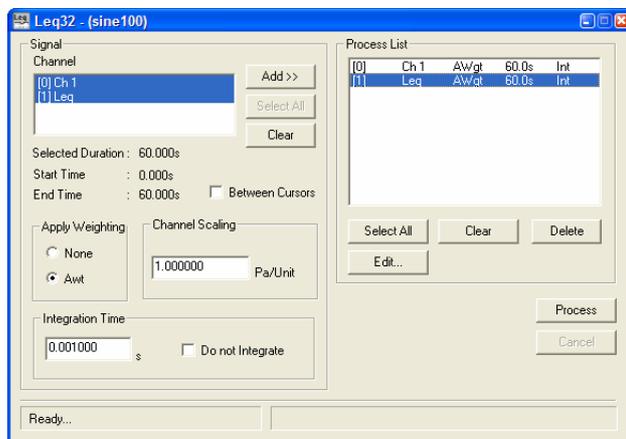
Select All Clear Delete

Edit...

When a signal channel is added to the process list it will appear in the "Process List" listbox. Each entry will display the following information:

- Channel name
- Weighting that will be applied – "AWgt" or "Lin"
- Process signal duration
- Whether integration will be used "Int" or "NoInt"

Entries in the process list can be selected using either the "Select All" or by clicking on the entries you wish to work with. When entries have been selected the "Clear" and "Delete" buttons will be enabled.



Leq32 - (sine100)

Signal

Channel

[0] Ch 1
[1] Leq

Add >> Select All Clear

Selected Duration : 60.000s
Start Time : 0.000s
End Time : 60.000s Between Cursors

Apply Weighting Channel Scaling

None Awt

1.000000 Pa/Unit

Integration Time

0.001000 s Do not Integrate

Ready...

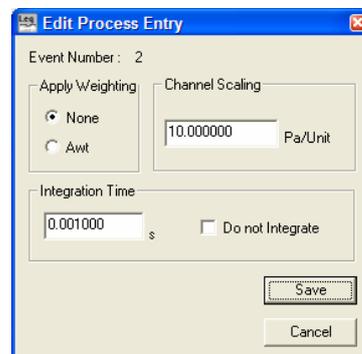
Process List

[0]	Ch 1	AWgt	60.0s	Int
[1]	Leq	AWgt	60.0s	Int

Select All Clear Delete

Edit...

Process Cancel



Edit Process Entry

Event Number : 2

Apply Weighting Channel Scaling

None Awt

10.000000 Pa/Unit

Integration Time

0.001000 s Do not Integrate

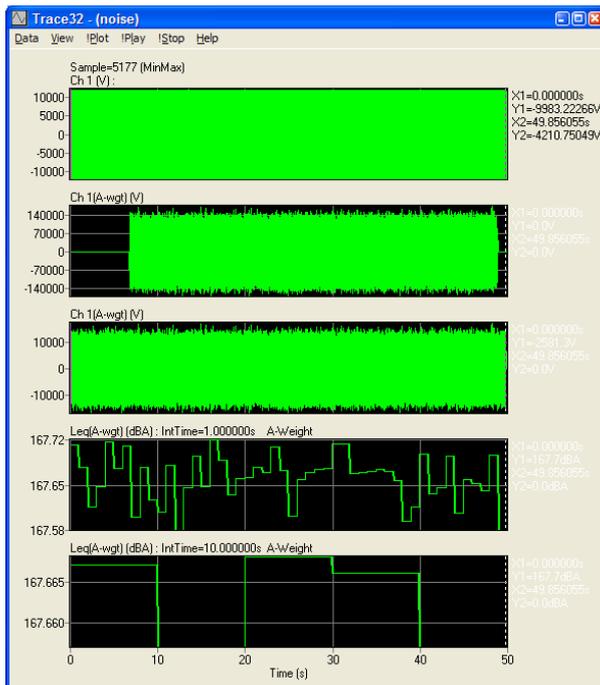
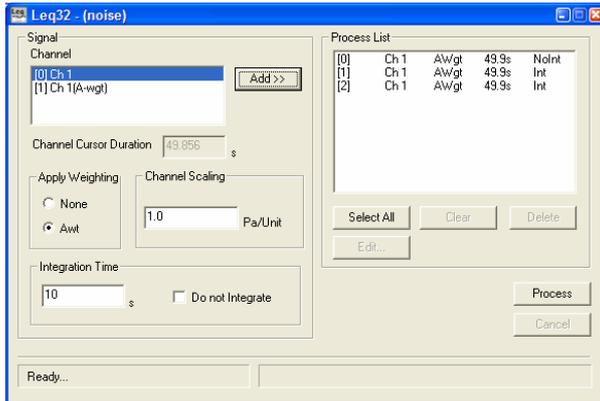
Save Cancel

When a single entry is selected the "Edit..." Button will be enabled. This will invoke a dialog that will allow options relating to the process entry to be modified.

Any changes made to a process entry will be reflected in the Process List once "Save" is clicked.

PROCESSING DATA

When all process channels have been defined - click on the "Process" button to generate the LEQ traces. The process results will be added to the signal object as new channels.



Processed channels will be added to the signal object. Parameters relating to the processing will be displayed in the channel info line. If this is not displayed it can be turned on from the options menu within the Trace module.