

# Log Graphing Tools for ClearView and RTM Systems

## Summary

Graphing tools are included in Video Clarity RTM and ClearView systems that make it very easy to visualize test log data in graphical form. Metric Log Grapher for ClearView or RTM will automatically produce sets of comparative graphs by metric type. RTM Grapher is provided for RTM and RTM Manager systems allowing time based average logs to be plotted and then manipulated to zoom into potentially large data sets produced by an RTM test run. Both RTM Grapher and Metric Log Grapher are generally used on the Video Clarity system running the test or may be applied to ClearView or RTM test logs that have been saved to any computer system running Windows.

## Metric Log Grapher

This graphing tool generates a set of graph plots and CSV files for metric log files. The result is a zip file containing PDF files of compare and summary graphs. It also contains a set of related comma separated value (CSV) files which can be used for further interpretation of the metric data.

A UI prompts for the folder containing the metric log files to process. All metric files with the following suffixes will be processed: afreq, apeak, dmos, jnd, lkfs, movie, peaq, psnr, ssim, tpeak

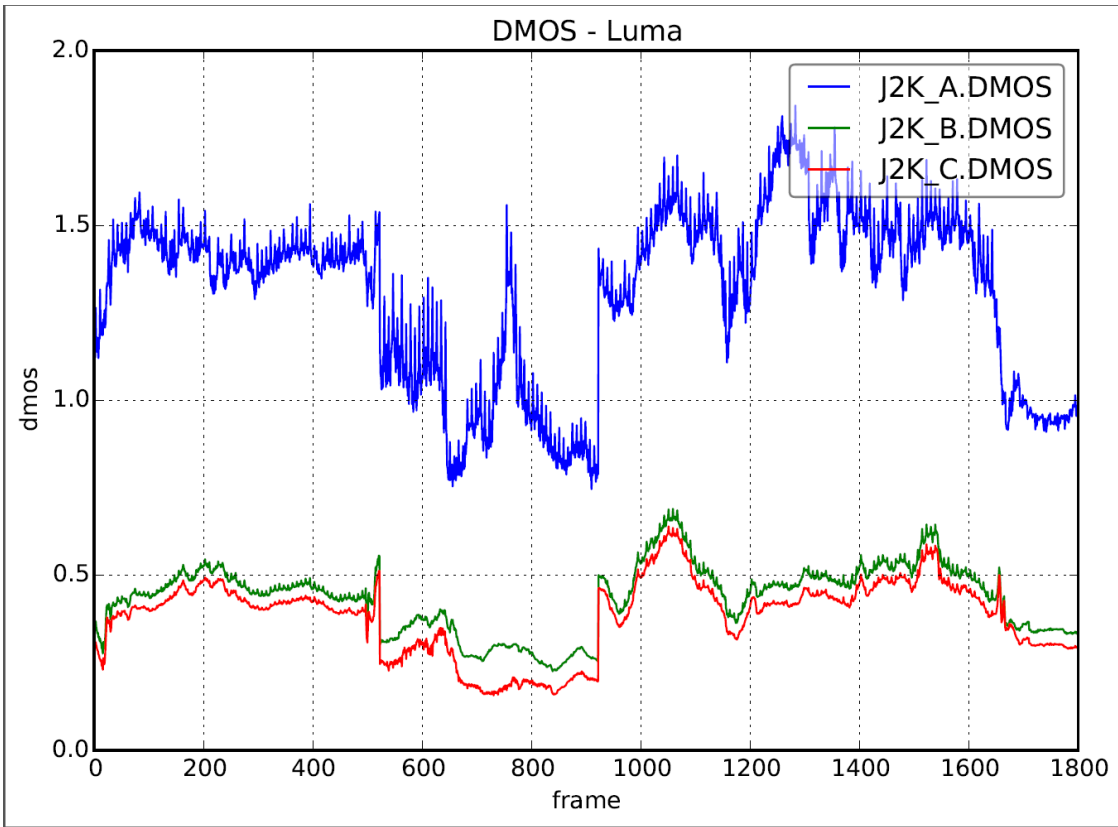
If MS-SSIM (.ssim) is detected in a DMOS file, MS-SSIM graph plots and csv files are also created. Comparison graph plots are generated for files having the same metric suffix.

A zip file is created that contains plot images and CSV data files. Depending on the size of the input files, this may take several seconds to several minutes. Progress is tracked in a log file. A resulting zip file is created in the same directory containing the original metric files.

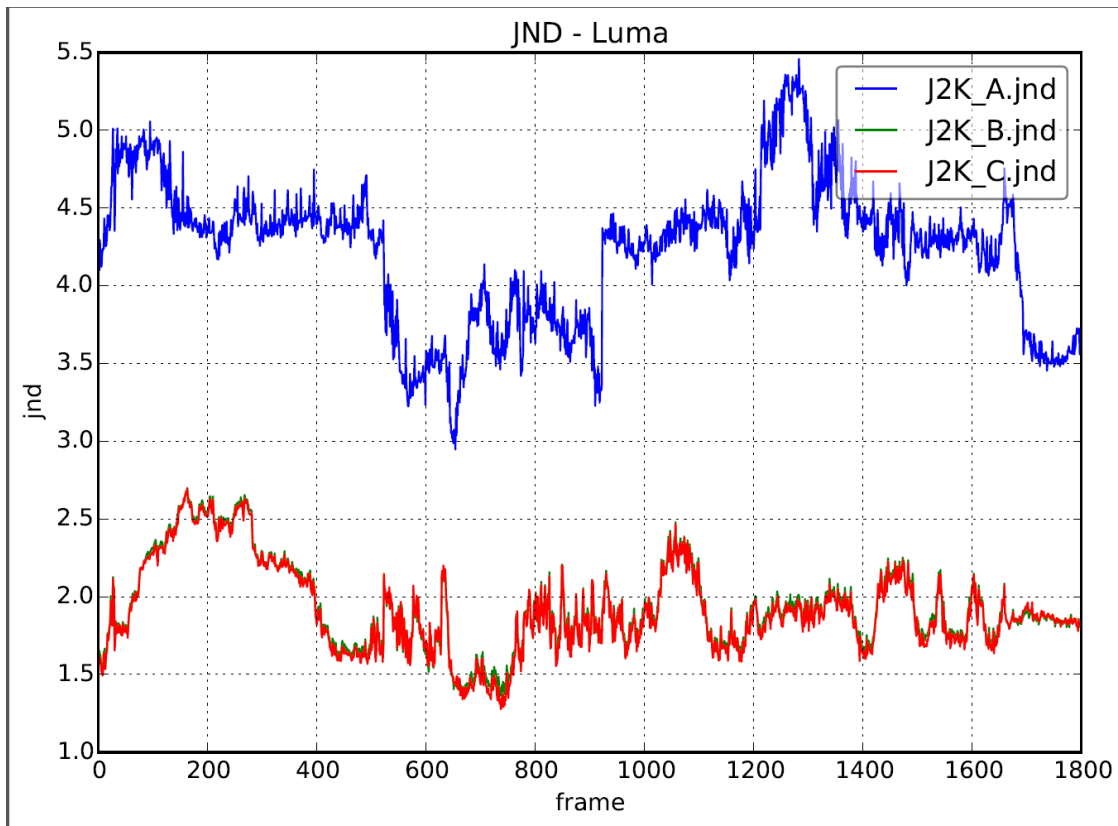
For example, suppose a folder contains these metric files generated by ClearView using three different sources:

J2K_A.DMOS	DMOS File	65 KB
J2K_A.jnd	JND File	65 KB
J2K_A.psnr	PSNR File	195 KB
J2K_A_22.5KHz.PEAQ	PEAQ File	155 KB
J2K_B.DMOS	DMOS File	65 KB
J2K_B.jnd	JND File	65 KB
J2K_B.psnr	PSNR File	195 KB
J2K_B_16KHz.PEAQ	PEAQ File	155 KB
J2K_C.DMOS	DMOS File	65 KB
J2K_C.jnd	JND File	65 KB
J2K_C.psnr	PSNR File	195 KB
J2K_C_8KHz.PEAQ	PEAQ File	155 KB

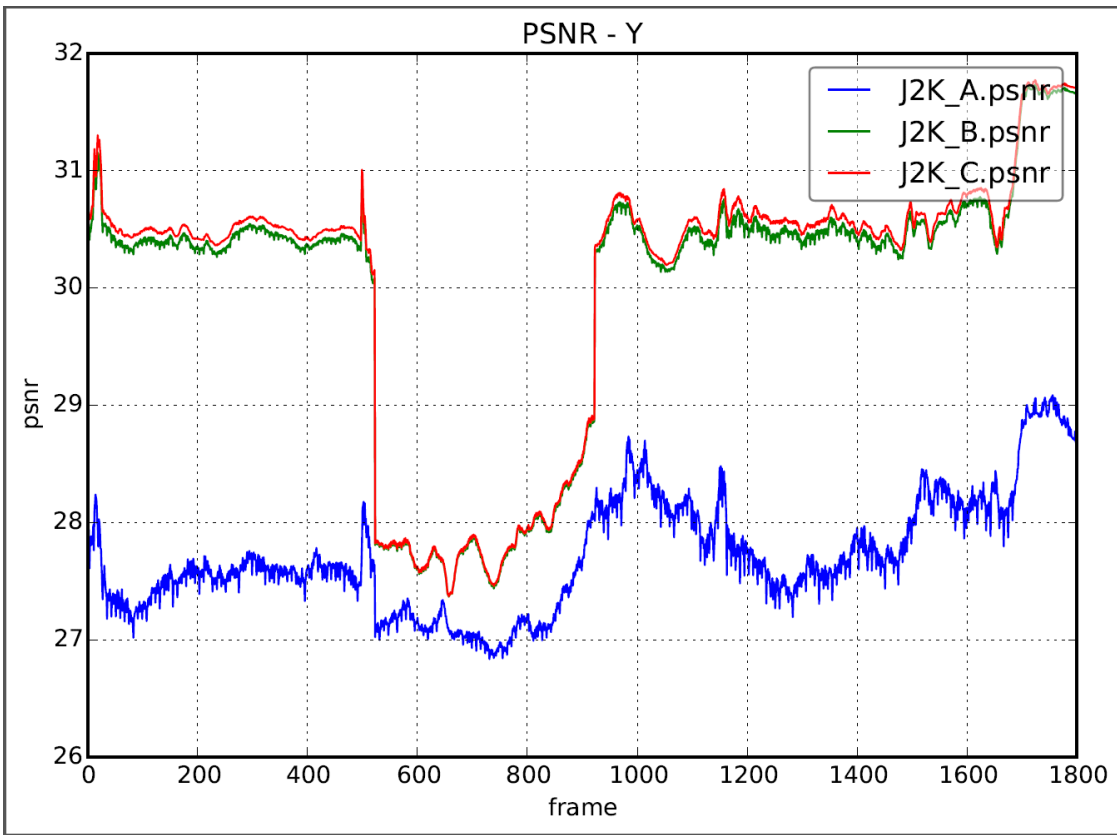
Metric Log Grapher generates graphs and consolidated CSV files comparing each video component and audio channel.



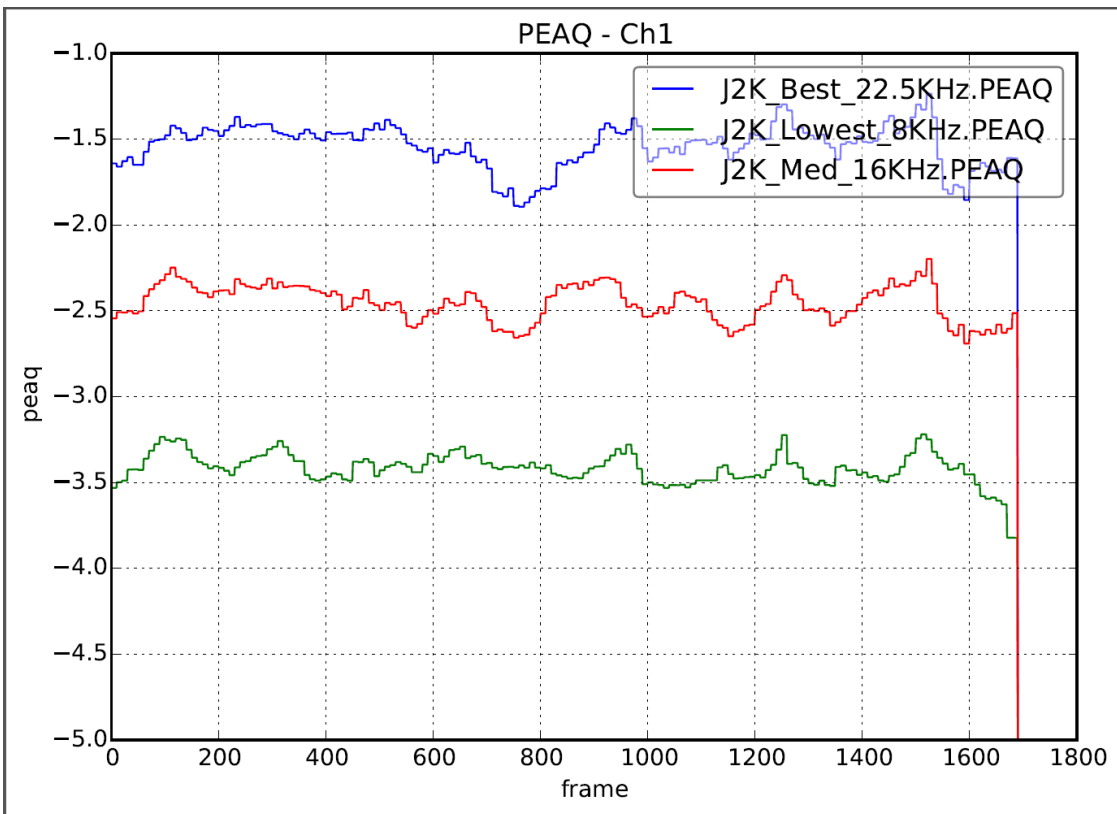
**Example 1 — DMOS Luma J2K of Three J2K Encoded Bit Rates**



**Example 2 — JND Luma of Three J2K Encoded Bit Rates**

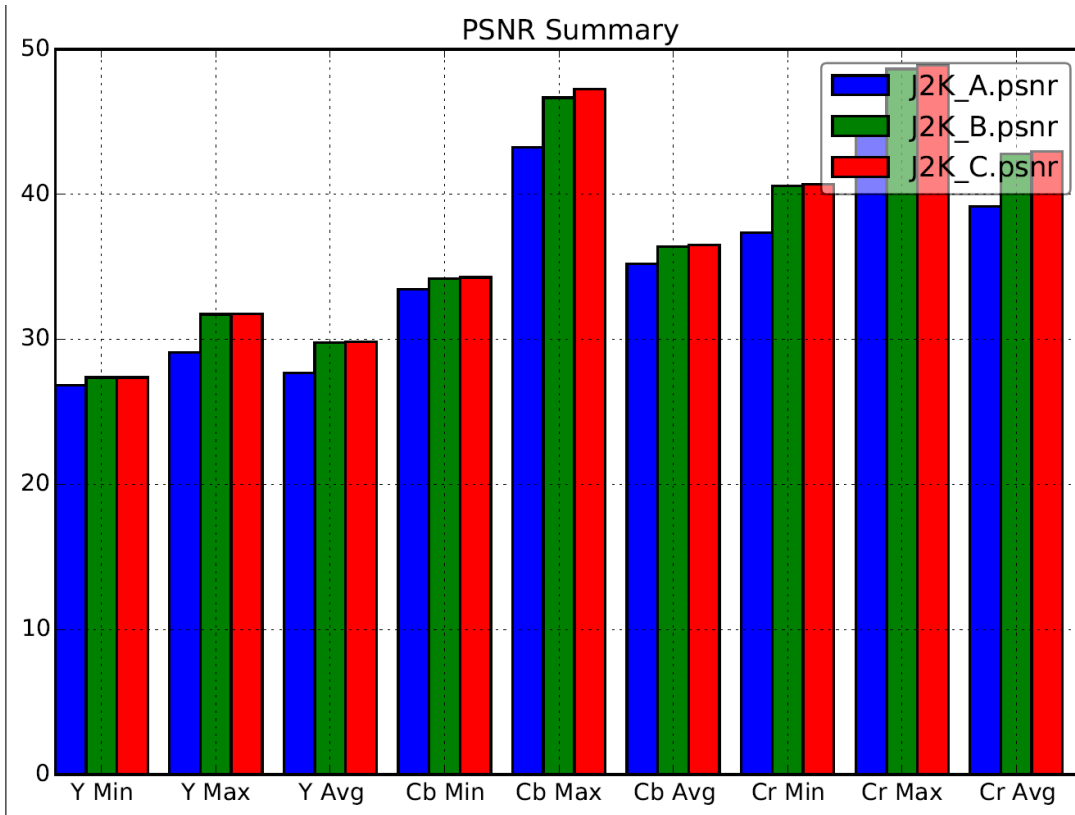


**Example 3 – PSNR Luma of Three J2K Encoded Bit Rates**

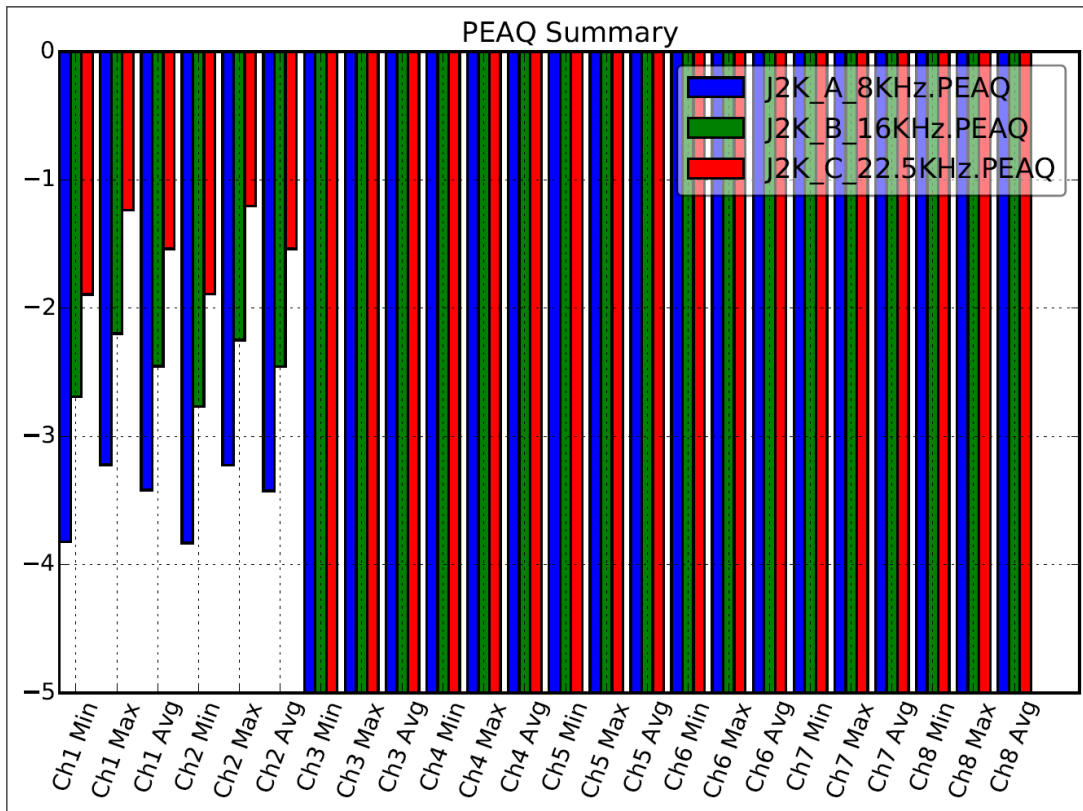


**Example 4 – PEAQ of Three Encoded Bit Rates**

Summary charts are also generated comparing minimum, maximum, and averages.



Summary Example 1 – PSNR Components Min, Max, Average



Summary Example 2 – PEAQ Audio Measurement Per Channel Min, Max, Average

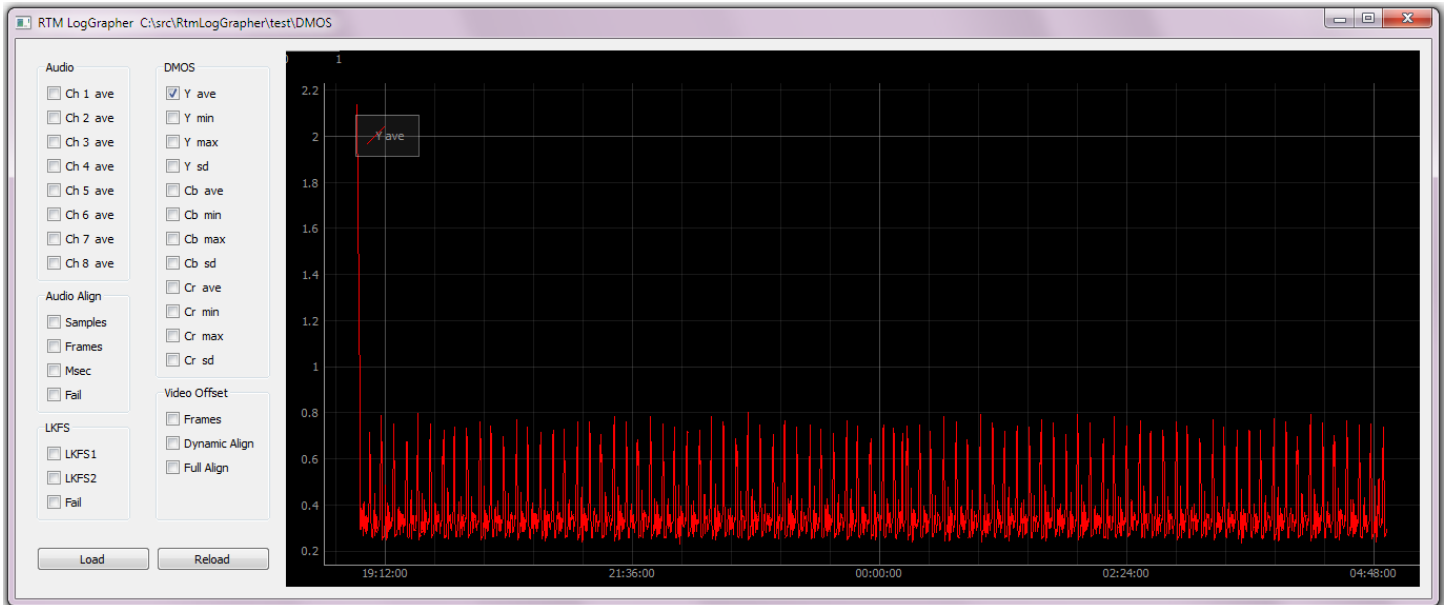
## RTM Log Grapher

This interactive graphing tool plots scores generated into logs the RTM systems including average logs and logs associated with test threshold breaks and recordings.

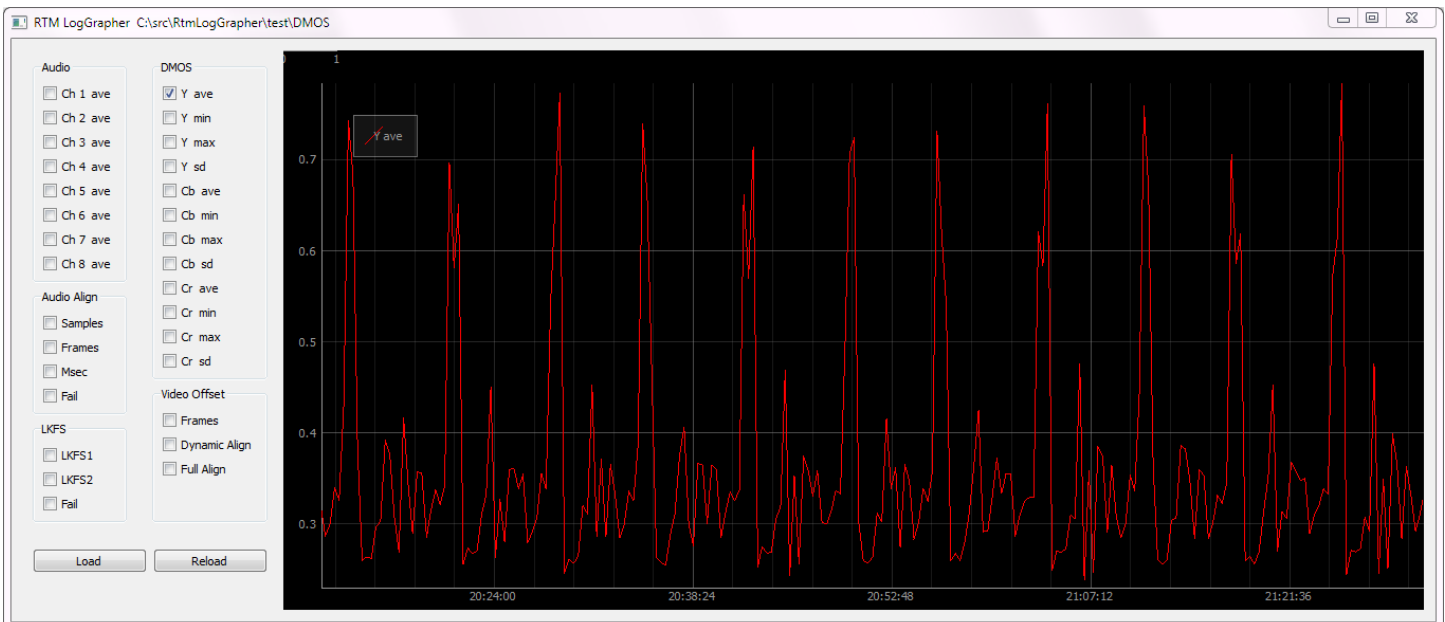
This includes:

1. PSNR Y, Cr, Cb
2. DMOS Y
3. Audio Channels
4. LKFS
5. Audio alignment
6. Video Offset for both dynamic realignment and full alignment

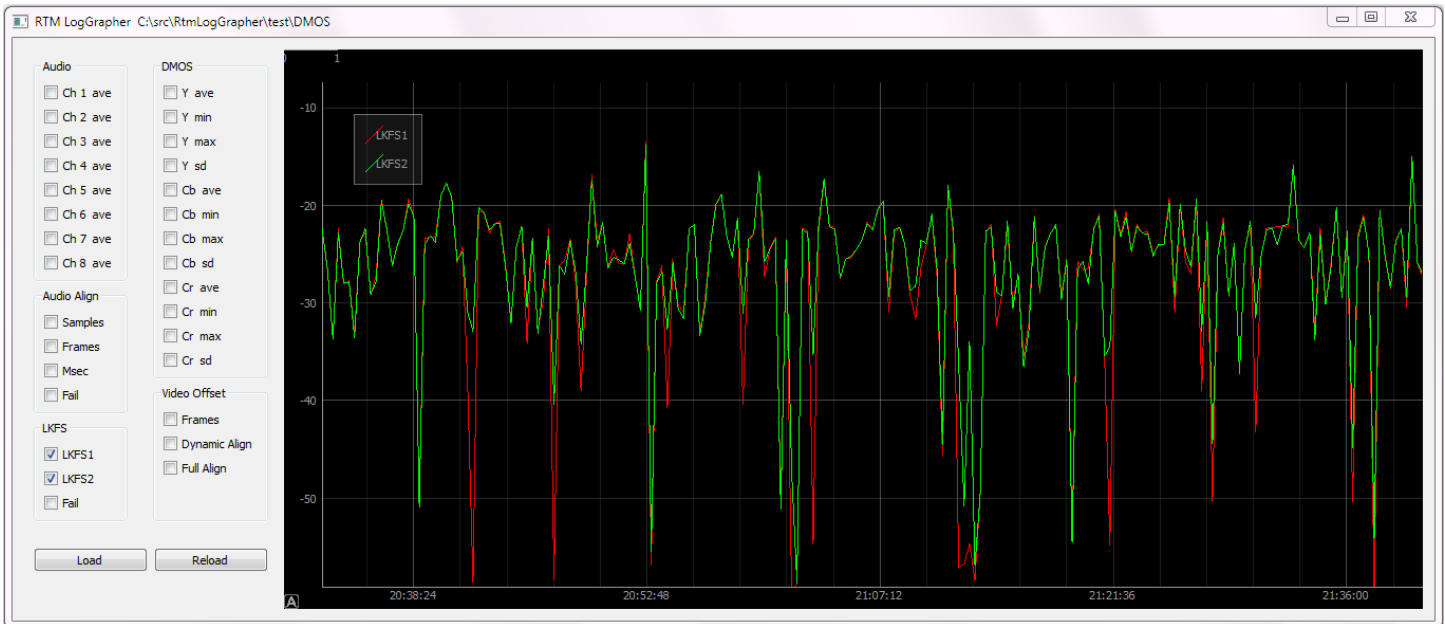
For example, to view DMOS Y average over time: Select check box of DMOS Y ave



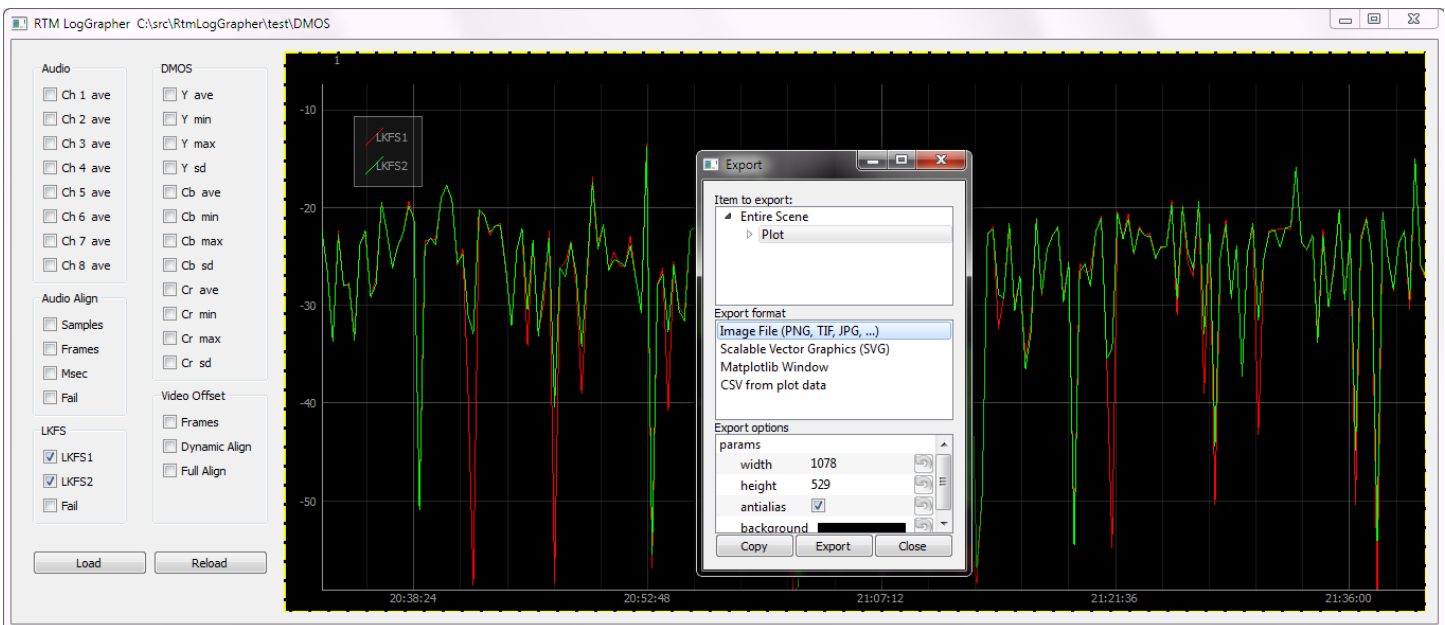
Panning and zooming are supported using a mouse. The example below shows a zoomed portion of the above graph into a time interval of interest.



## Comparing LKFS from both input channels:



To save the graph to a file, use the mouse to pull up the save menu:



Using a mouse to interact with the graphing canvas:

- Dragging with the left button will pan.
  - Dragging with the right button scales as follows:
    - dragging left/right scales horizontally
    - dragging up/down scales vertically
  - Mouse wheel spin zooms the scene in and out.
  - Right button click shows a context menu with several options.
    - A common menu option is called "View All". This option attempts to adjust the display so that multiple graphs are visible at the same time, even though their Y axis ranges may not overlap.
    - Another common menu option is called "Export". This option exports the graph display area as an image file.
- After panning or zooming, the original display context is viewable again by selecting the lower left corner of the display area.