DL850 Student Workbook



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Ex 01 – A Simple Acquisition on the DL850

The keystrokes listed below will step you through a simple waveform acquisition.

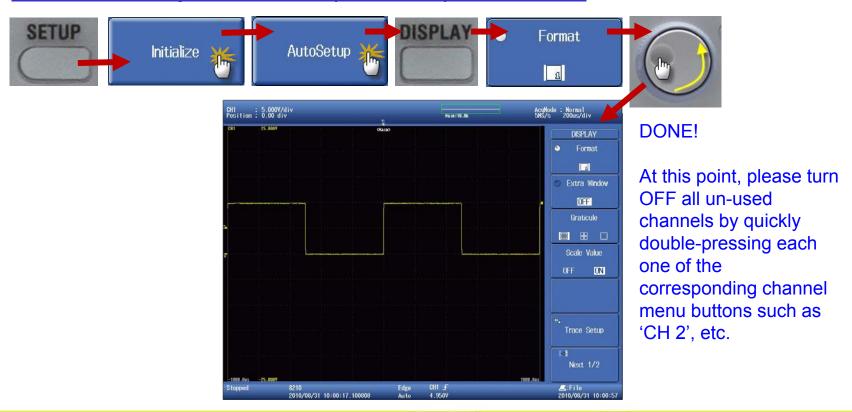
You may also use this exercise as a 'first step' before you do any of the other excercises.

Please connect CH1 to the PROBE COMP pins on the front of the ScopeCorder using a suitable 10:1 probe or 1:1 test lead. Leave all other channel inputs disconnected.

Press CH1 and adjust PROBE to either 10:1 / 1:1 as appropriate for the input lead-set being used.

You may wish to perform a 'Factory Reset' (Exercise 13) before Exercise 01, this will ensure that your ScopeCorder will match the setup of the recorder used in these exercises.

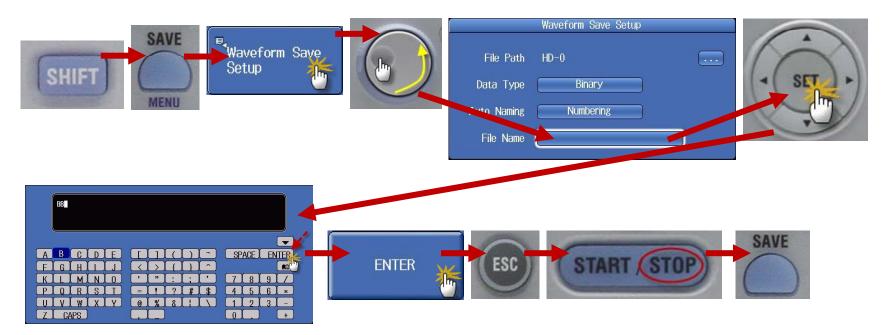
Follow these keystrokes to acquire a simple waveform:



Ex 02 - Save a Waveform

The keystrokes listed below will step you through saving a waveform. Perform Exercise 01 first, or else acquire a waveform before attempting these steps.

Follow these keystrokes to save a waveform to a binary file:



One Button Operation:

After you have performed the above setup, you simply press one button 'SAVE'. You can skip all but the last step, if you wish for the DL850 to name your file(s) for you.

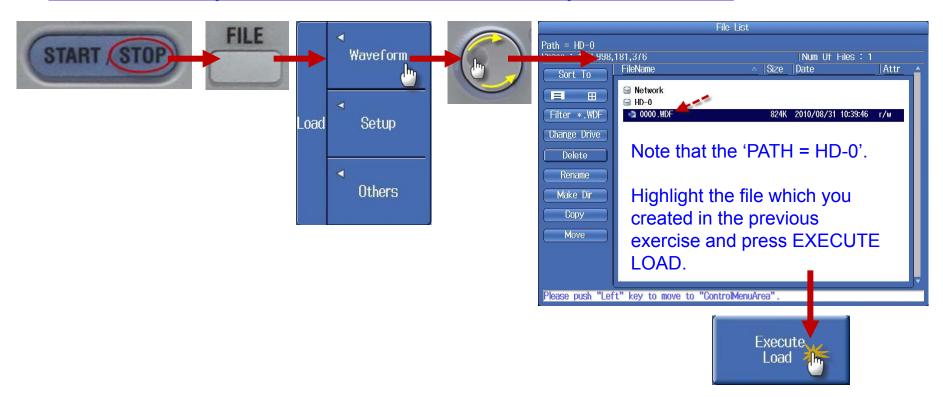
DONE!

To see a directory listing with your file, simply press: FILE, UTILITY, and using SET button and SHUTTLE-KNOB, set PATH= HDD, in this example.

Ex 03 - Load & View a Waveform

The keystrokes listed below will step you through loading and viewing a waveform. Perform Exercise 01 first, or else acquire a waveform before attempting these steps.

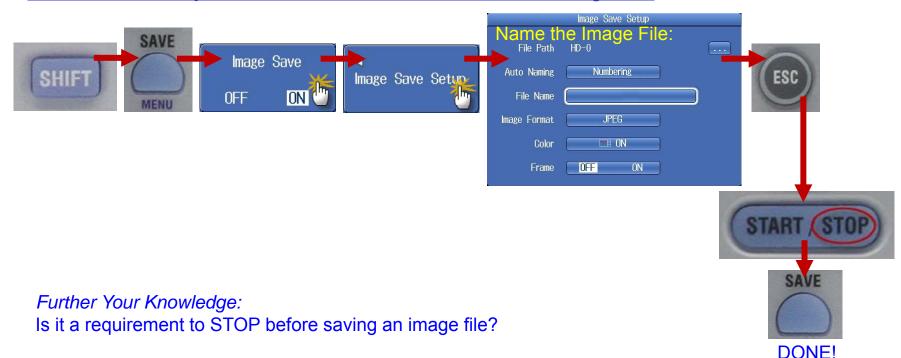
Follow these keystrokes to LOAD / VIEW a Binary waveform file:



Ex 04 - Save a Screen Image

The keystrokes listed below will step you through saving a screen image as JPEG, BMP, or PNG. Perform Exercise 01 first, or else acquire a waveform before attempting these steps. Some steps may be abbreviated.

Follow these keystrokes to save a waveform to a image file:

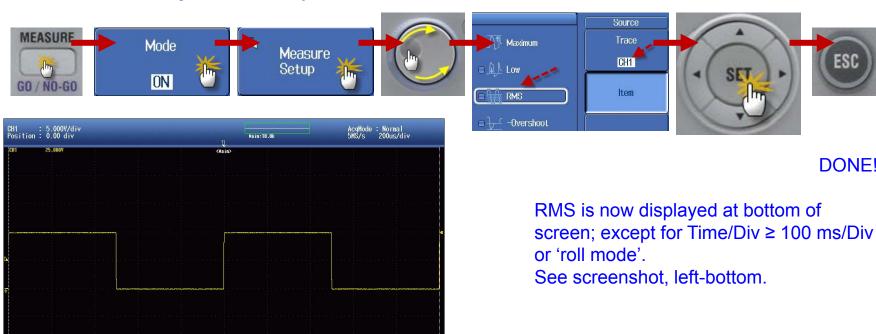


No. However, it is a requirement to hit STOP before saving a WAVEFORM file, and the Exercise #02 left the ScopeCorder in this mode. The end-user may (optionally) defeat this (SHIFT+SAVE) and saving image files can be performed *on the fly.*

Ex 05 - Make a Measurement

The keystrokes listed below will step you through performing a parametric measurement, such as RMS. Perform Exercise 01 first, or else acquire a waveform before attempting these steps.

Follow these keystrokes to perform a measurement:



DONE!

2010/08/31 16:33:31.343790

CH1-25 nony 6.29911V

Ex 06 - Make a Cursor Measurement

The keystrokes listed below will step you through a cursor measurement. Perform Exercise 01 first, or else acquire a waveform before attempting these steps.

Follow these keystrokes to perform a cursor measurement:



DONE!



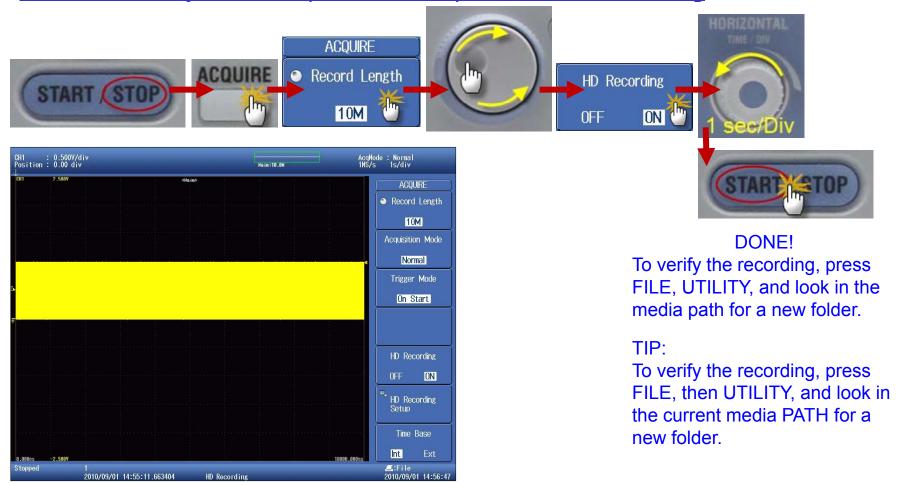
Cursor Measurement is now displayed at bottom of screen;

TIP:
Don't forget to use left-arrow and right-arrow to adjust the decimal position; this will allow for fine adjusment of each cursor.

Ex 07 - Setup & Create Realtime Recording

The keystrokes listed below will step you through acquiring via Realtime Recording. Perform Exercise 01 first, before attempting these steps.

Follow these keystrokes to perform a simple Realtime Recording:



Ex 08 - Load & View a Realtime Recording

The keystrokes listed below will step you through viewing a Realtime Recording. Perform Exercise 07 first, before attempting these steps.

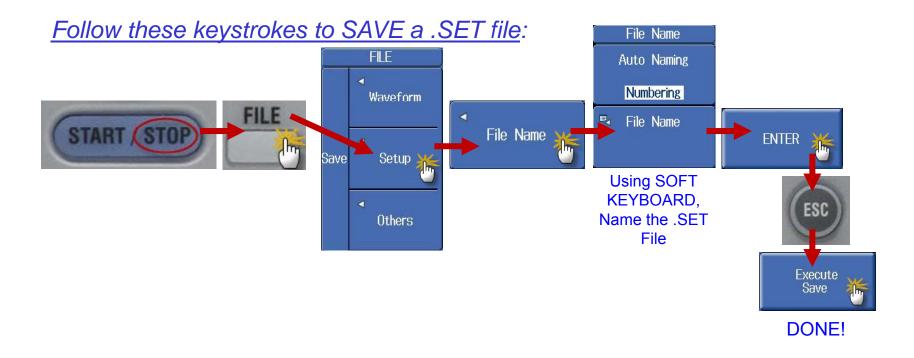
Follow these keystrokes to load and view a simple Realtime Recording:



TIP: For a closer look at the waveform, use the ZOOM function (button).

Ex 09 - How to SAVE a .SET file

The keystrokes listed below will step you through saving a filename. SET settings file.

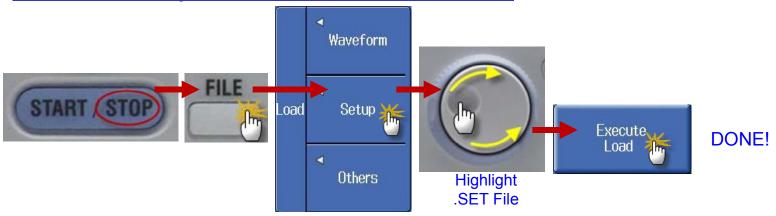


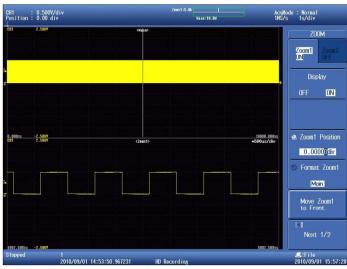
TIP: To verify the .SET file, press FILE, UTILITY, and browse for it.

Ex 10 - How to LOAD a .SET file

The keystrokes listed below will step you through loading a filename.SET settings file. Some steps may be abbreviated.

Follow these keystrokes to re-LOAD a .SET file:





Ex 11 – 'Action On Trigger'

The keystrokes listed below will step you through a simple 'Action On Trigger' Acquisition. Perform Exercise 01 first, before attempting these steps.

Follow these keystrokes to perform a simple 'Action On Trigger':



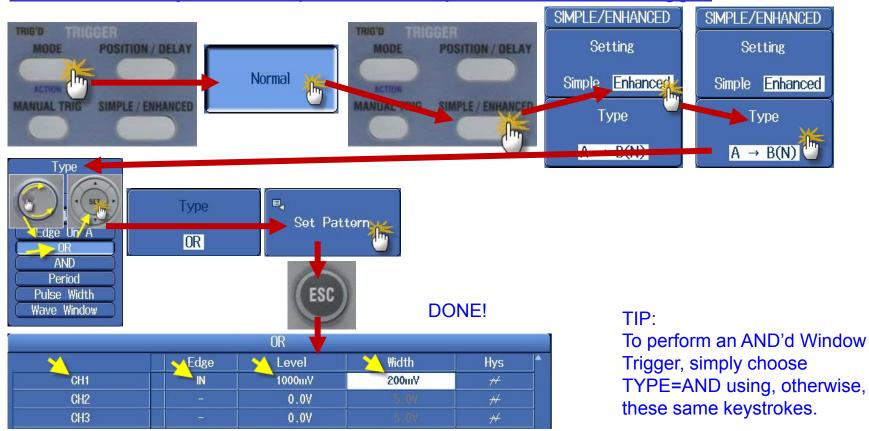
Ex 12 - Setup a OR'd Window Trigger

The keystrokes listed below will step you through setting up a OR'd Window Trigger.

The window trigger is a simple and effective trigger which can trigger when a waveform goes IN or OUT a user-specified range of voltage:

Perform Exercise 01 first, before attempting these steps.

Follow these keystrokes to perform a simple OR'd Window Trigger:



Ex 13 - How to perform a 'Factory RESET'

A Factory RESET may be performed if the set-up status of the ScopeCorder is unknown; this may be useful before performing these exercises, or before beginning a new test procedure.

Follow these keystrokes to perform a factory reset:

- 1. Turn OFF ScopeCorder.
- 2. Hold RESET button while turning ON ScopeCorder.
- 3. Continue to hold RESET button.
- 4. Wait for confirmation message: 'Turned on pressing the RESET key. Will initialize'.
- 5. Release RESET button.
- 6. Press ESC button.
- 7. Factory Reset has been completed.



Ex 14 - a Simple 'Dual Capture'

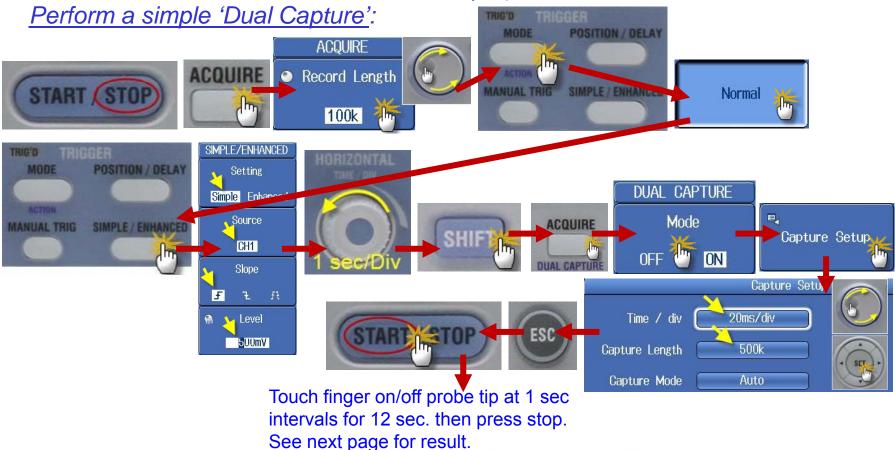
The keystrokes listed below will step you through setting up a simple 'Dual Capture'.

'Dual Capture' is a feature which will sample at a low-rate until a trigger condition or event is detected and then the sample-rate is increased. 'Dual Capture' can also 'Auto Save' and is compatible with other 'Action' features.

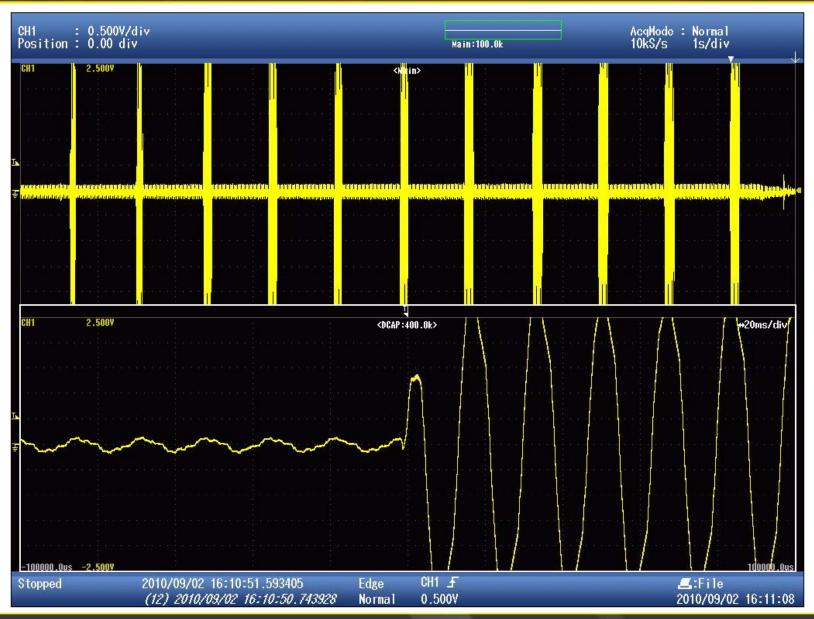
Please Factory Reset and perform Exercise 01 first, before attempting these steps.

Disconnect the PROBE TIP from PROBE COMP and proceed ...

Leave Probe GROUND LEAD Connected – this is very important.



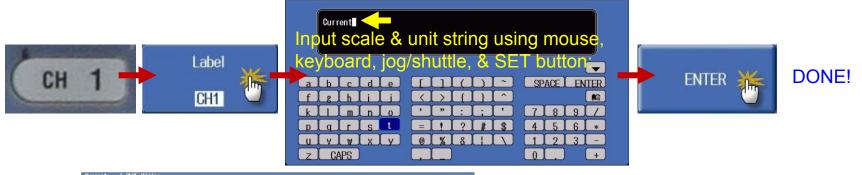
Ex 14 - 'Dual Capture' Result:



Ex 15 - Labeling Each Channel

The keystrokes listed below will step you through a Label and a Unit exercise. Perform Exercise 01 first, before attempting these steps.

Follow these keystrokes to label a channel:







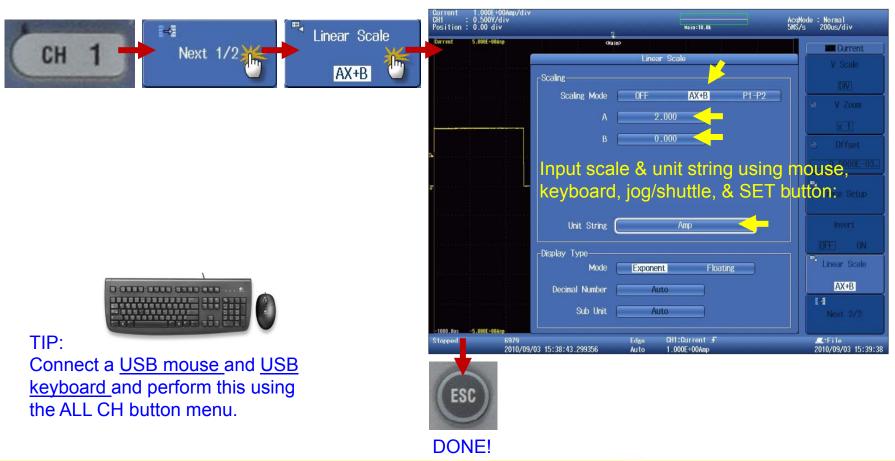
TIP:
Connect a <u>USB mouse</u> and <u>USB keyboard</u> and perform this using the ALL CH button menu.

Ex 16 - Scaling & Units

The keystrokes listed below will step you through a Scaling & Units exercise. Perform Exercise 01 first, before attempting these steps.

The keyboard entering process is abbreviated, use the jog/shuttle knob and SET button or a USB keyboard and mouse.

Follow these keystrokes to scale and apply a 'unit string' to a channel:



Ex 17 - Phase Msm't (two channels)

The keystrokes listed below will step you through a Phase Measurement exercise.

This is *advanced exercise* and assumes that the student is able to acquire two phase-shifted 60 Hz waveforms to CH1 and CH2, and at 5 milliseconds/DIV, as an example. Each step is somewhat abbreviated.

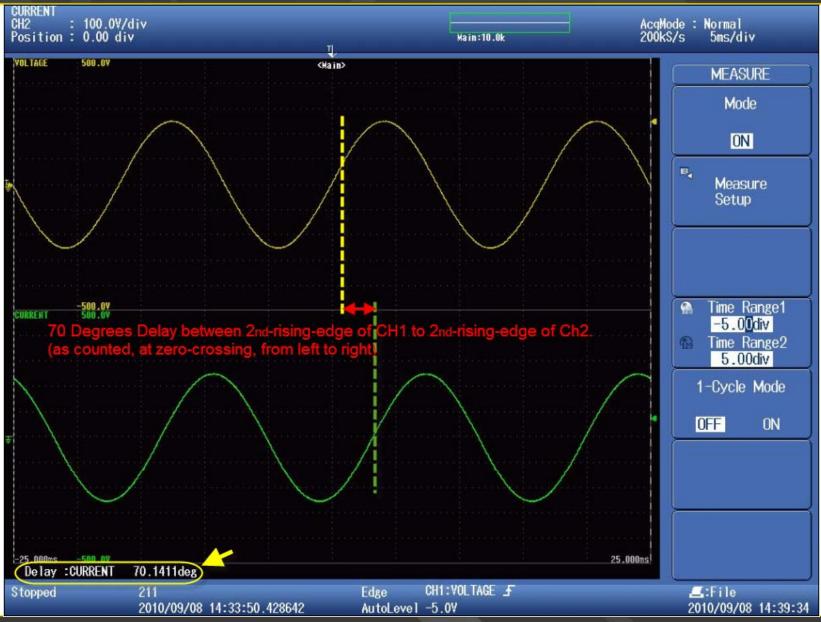
Follow these keystrokes to measure phase, in degrees, in this example:



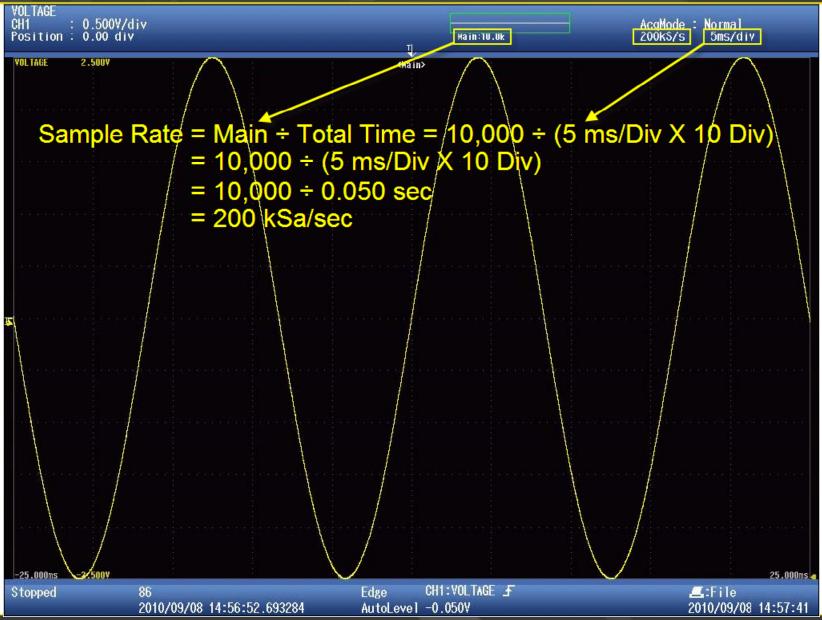
See Result on Next Page:



Ex 17 – Phase Msm't RESULT:



Ex 18 - How Sample Rate is Calculated



Appendix - Vertical Resolution

Please study this section so that you have a thorough understanding of how to use ZOOM in order to get both a full-screen display of your acquired waveform and simultaneously acquire the data using most of the ADC capability.

Appendix - DL850 - Vertical Resolution

- Green Region –LCD, 10 Divisions
- Yellow Region 5 additional divisions, both above and below the LCD's 10 divisions, for a total of 20 divisions.
- Pink Region additional "head room".
- Red Region Waveform will "clip" and cannot enter the red region.
- This information describes only the DL850/DL750/DL750P/SL1400.

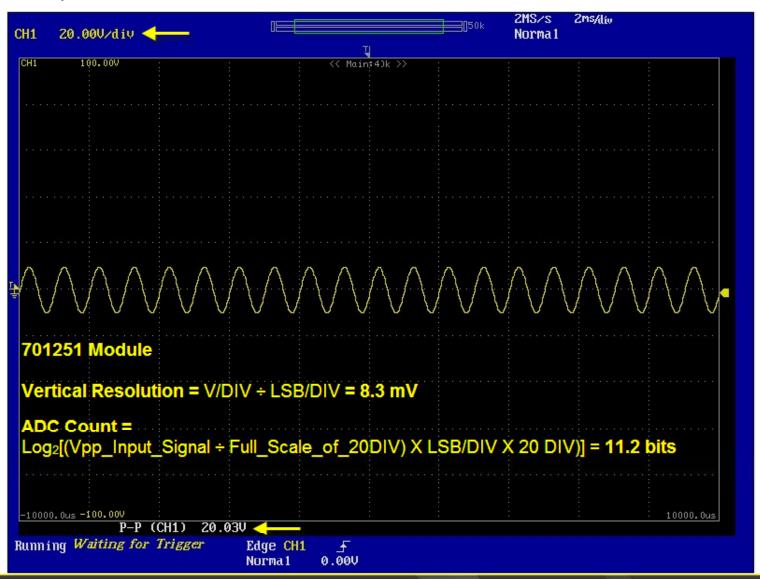
The 20 div can be utilized to best advantage:

- by using V-ZOOM less than 'one'.
- View data in Xviewer or post-process
- And, in order to increase resolution by one or even several bits.
- Using OFFSET for AC measurements in DC Coupling mode.

Pink Region: 'Head Room' area not intended for waveforms. Yellow Region: A useful additional 5 Div area "above" the main display area over which waveforms may be acquired; Yellow Region: A useful additional 5 Div ara "below" the main display area over which waveforms may be acquired; Pink Region: 'Head Room' area not intended for waveforms

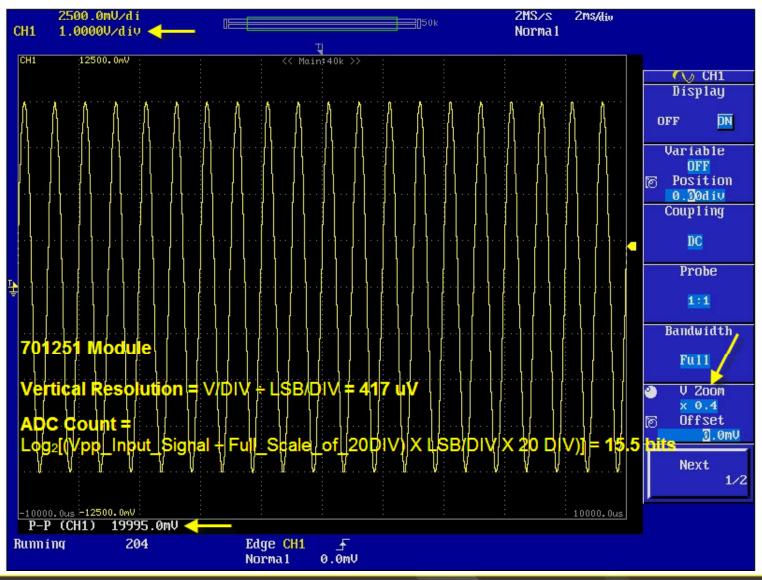
Appendix - DL850 - Vertical Resolution

Example 1: Poor Utilization of the Module's 16-bit Vertical Resolution



Appendix - DL850 - Vertical Resolution

Example 2: Excellent Utilization of the Module's 16-bit Vertical Resolution



For More Information

For technical support for the ScopeCorder:

E-mail: Barry.Bolling@us.yokogawa.com

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Customer Service: 1-800-888-6400 Ext. 5212

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