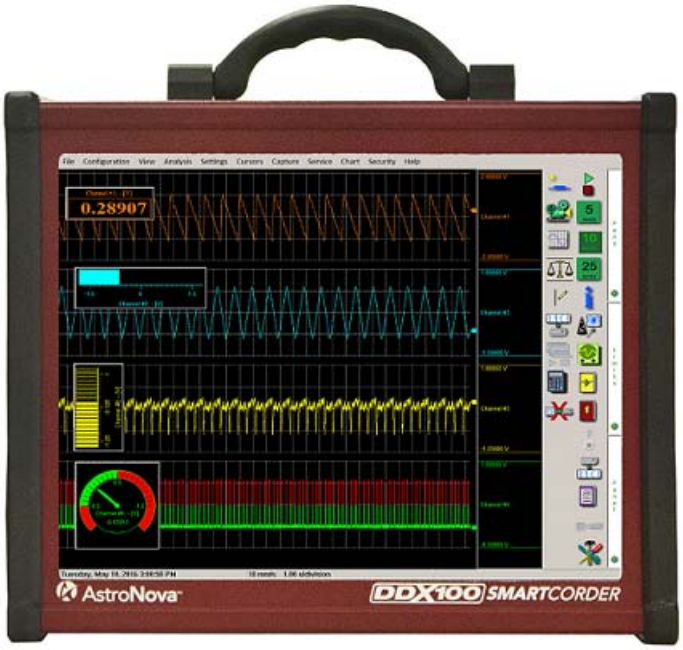
AstroNova™
Test & Measurement

DDX100 Smartcorder



QUICK START GUIDE

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1. Introduction

Thank you for choosing the DDX100 Multi-Channel Data Acquisition System from AstroNova. This Quick Start Guide was prepared to help the user become acquainted with the recorder as quickly as possible. Exercises are also included to assist in familiarizing the user with the basic functions that most customers use.

You will see some references to the Daxus. This is because the Daxus is a similar product that can be linked to the DDX100 in order to add channels.

The DDX100 is a powerful and versatile data acquisition recording system that provides the capability to display, record, and analyze waveform data. The DDX100 uses optional input modules for signal conditioning of various types of signals based on the application. The channels sample up to 200 Kilo samples/second/channel. The data is streamed directly to the 500GB hard drive.

ISEV-4 Module
250 VRMS or DC, Isolated Cat II
1 Megohm minimum input impedance
200 kHz maximum sample rate per channel
40 KHz (-3db) bandwidth

Univ-4 Module
Single Ended
250 VRMS or DC, Isolated Cat II
1 Megohm minimum input impedance
200 kHz maximum sample rate per channel
40 KHz (-3db) bandwidth
Differential (green mating connector)
1000 mv (20V maximum Transient)
300 KOhm minimum input impedance (150KOhms Balanced to isolated common)
200 kHz maximum sample rate per channel
35 KHz (-3db) bandwidth

IHVM-4 Isolated High Voltage Module
600 VRMS or DC, Cat III, 1000V DC, Cat II
10 Megohm input impedance
200 kHz maximum sample rate per channel
35 KHz (-3db) bandwidth

Please see section A in the back of the DDX100 Operations Manual for all the specifications.

2. Getting Started

Start-Up Kit: The DDX100 comes with a free startup kit. It includes the power cord, utility connector, and a crossover Ethernet cable.

Connect Power to the DDX100: The DDX100 can be connected to between 100 and 264VAC @ 47 to 63 Hz.

Power on the DDX100: The DDX100 is powered on by using the On/Off power switch, which is located on the left side near the fans. It will take about 30-40 seconds to initialize. In the event of an unexpected loss of power, the DDX100 contains an internal battery that will last about 40 minutes. The internal battery charges with the DDX100 on or off, as long as the cord is connected.

3. Display Area

Once the DDX100 has powered up, you will see that the display is divided into three main areas: the Waveform Display Area (shows the waveform signals typically drawn onto a grid pattern), the Menu bar at the top (drop-down menu commands), and the Control Panel area on the right of the display (rows of control Icons for one touch operation commands).

4. Menu Bar Summary

Menu Bar: The menu bar, located across the top of the display, allows access to a group of drop-down menus. All the DDX100 modes and features are accessible from this menu. Features available from the menu bar will vary based on the mode of operation (Configuration > Realtime, Scope, or Review) used. Adding icons to each configuration control panel will make your often-used choices easier to find and activate rather than searching the menu bar for what you want to accomplish.

File: Depending on the Configuration chosen, the File menu when in Realtime is used to save and load a View or when in Review, to load captured files. You can do a screen print to a connected printer or create a pdf of the screen.

Configuration: The Configuration menu is used to select the mode of operation (Realtime, Scope, or Review)

1. **Realtime Mode:** This mode provides Realtime waveform scrolling, monitoring, and data capture capabilities. The traces seen on the display now are not being saved. A data capture must be set up and armed before data is saved. This screen is used for setting up each channel and for monitoring your signals as they are happening Realtime.

2. **Scope Mode:** Scope mode provides time-base resolution for viewing high frequency signals along with waveform scrolling, monitoring, and data capture capabilities. The scope data is only saved if you stop it and save what is on the screen by archiving it as a dcr (data capture record). Unless, you choose to auto save with an ongoing capture.

3. **Review Mode:** This mode provides the capability to review and analyze saved data and scope captures.

View: The View menu is used to make changes to the way your signals are displayed. This includes placing IDs on the signals.

Analysis: The Analysis menu provides a way to add meters to each channel. There are more tools available when you are reviewing a saved data capture file.

Settings: The Setup menu is used to configure the Channel settings on the DDX100.

Cursors: Cursors are used in conjunction with the Channel Information window to view measurements.

Capture: This menu sets the data capture parameters.

Help: Utility port pin out, operations manual, unit information including software version and serial number, and the software version of the software on your computer.

DDX100 User Help: The operations manual is available to help the user operate the DDX100.

4A. Operations Manual:
It is handy to have the manual on your computer also, because you can use a better search function. Hit Shift, Control, and F simultaneously and a side panel will come up. Enter a key word or two on any subject into the search block and this side panel will show you a brief description of each area. You can make this panel wider/narrower by grabbing the right side. This panel information allows you to do a quick visual scan of each section to see what might answer your question the quickest. Clicking on any description will bring you to that section in the manual. Clicking on the manual moves the Search window to the bottom. Just click on Search at the bottom of your screen again to bring the Search window back up.

Call us at 877-867-9783 if you cannot find it and we will email the pdf manual to you.

4B. Icon Help: For help knowing what any Icon is, just scroll to and hold your cursor over it or hold your finger on it.

5. Adding Icons to the Control Panel

In **Configuration** > **Realtime** > click on **Settings** > **Control Panel**. Here you can add Icons to make setup and operation easier, if your Basic setup doesn't already include them. Below their purpose is also explained.

Move the green outline where you would like the next Icon, by clicking on that space. You can remove any Icons you do not use in one of 3 ways; by clicking on it and then select Edit > Clear, you can put the green outline around it, by clicking on it and putting a new Icon over it, or by clicking on it and hitting the Delete key, if you have a keyboard attached. You can click and drag the Icons to place them where you want them within the 4 available columns.

Add these Icons in the below order underneath the display speed keys you wish to keep. Adding these in this order will help you know what order to set the recorder up in. You can always remove some of the speed keys and add other Icons, but this is a good Basic panel.

Channels to be displayed – **View** > **Wizard** 

Voltage going to channels and location of zero – **Settings** > **Channel** 

How you want data stored – **Capture** > **Settings** 

What trigger do you want the capture to start storing data on –

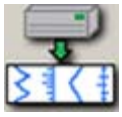
Capture > **Trigger/Abort Settings** 

Trigger test – **Capture** > **Trigger Indicator** 

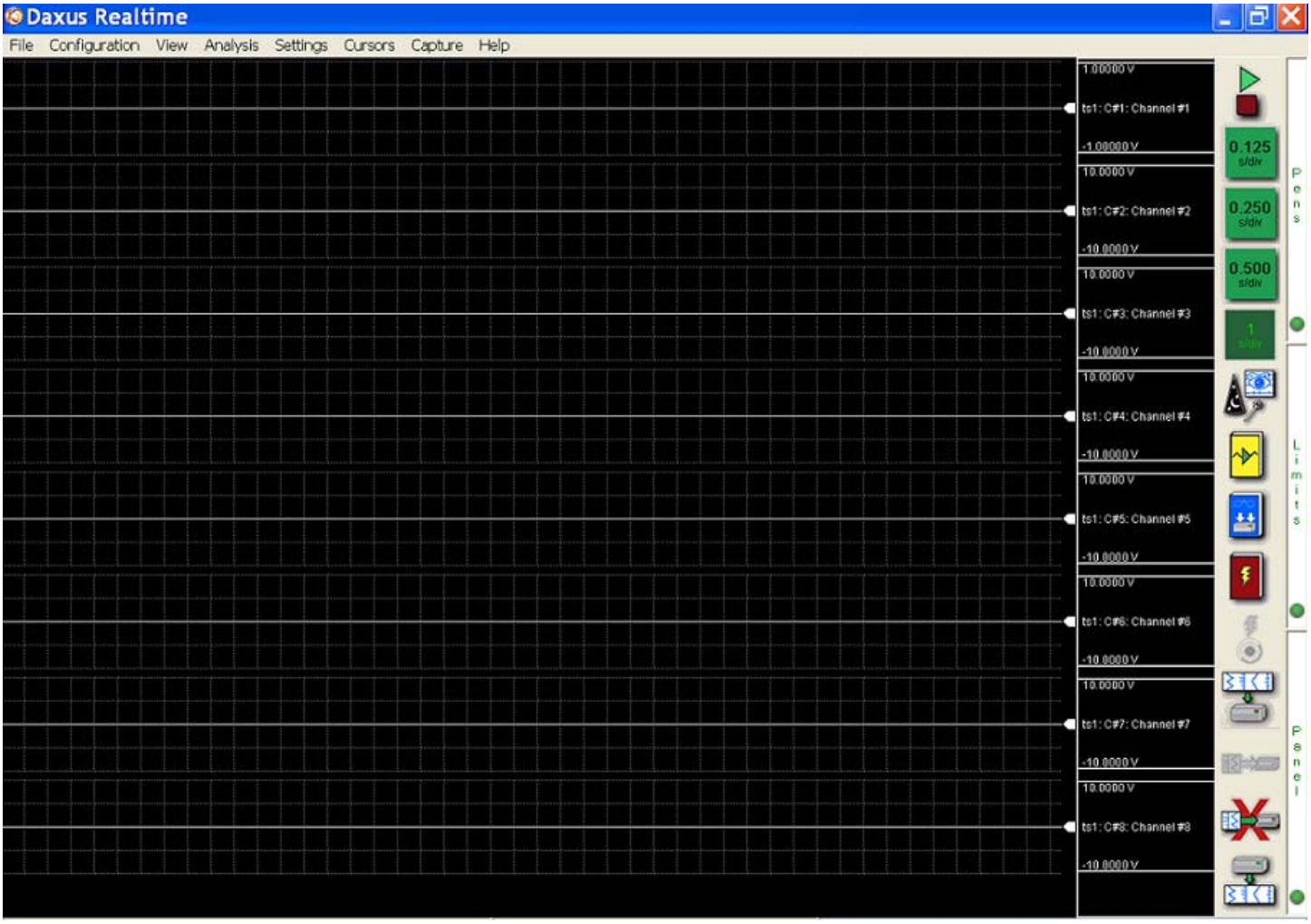
Start storing data – **Capture** > **Arm** 

Is capture still ongoing – **Capture** > **Capture Indicator** 

When you wish to stop storing data – **Capture** > **Manual Abort** 

When you wish to review a capture file – **Configuration** > **Review** 

Your control panel will now look like the one on the Realtime screen example below.



IMPORTANT: Add Icons for any other functions that you do on a regular basis during your testing. You can have up to 4 columns. This will make using the DDX100 easier, rather than searching the menu bar choices each time you go to look for a function. Just like you have added Icons to the Realtime Control Panel, you can also add Icons to the screen when you are reviewing a stored Data Capture file or to the Scope screen. Each Configuration already has some Icons, but you can add the Icons you want or delete the Icons that you do not use for that configuration.

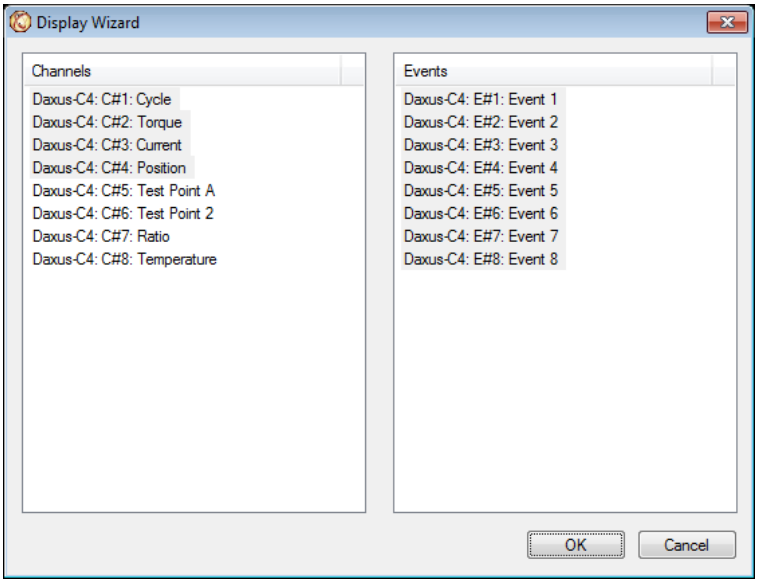
Note: When you click on OK, these Icons will be now seen on your Realtime screen. However, you will notice that now both the Trigger indicator and the Capture Indicator are gray instead of being in color. They will only turn to color when a trigger condition is met (for the Trigger Indicator) and a capture is in progress (for the Capture Indicator).

6. Channel Choices

Configuration > Realtime *(this is the default configuration when the DDX100 comes up)*

First choose the number of channels that you wish to see on the display by clicking on the Wizard Icon. 

1. The Display Wizard window will open.



When selecting channels and events in this window, you can select multiple items in a list by choosing them individually or by using the following method using an attached keyboard.

- To select multiple consecutive items, press and hold the Shift key. Then click the first and last items in the range you want to select.

2. Select the channels to display by choosing them from the Channels list block.

3. Select the events to display by choosing them from the Events list block.

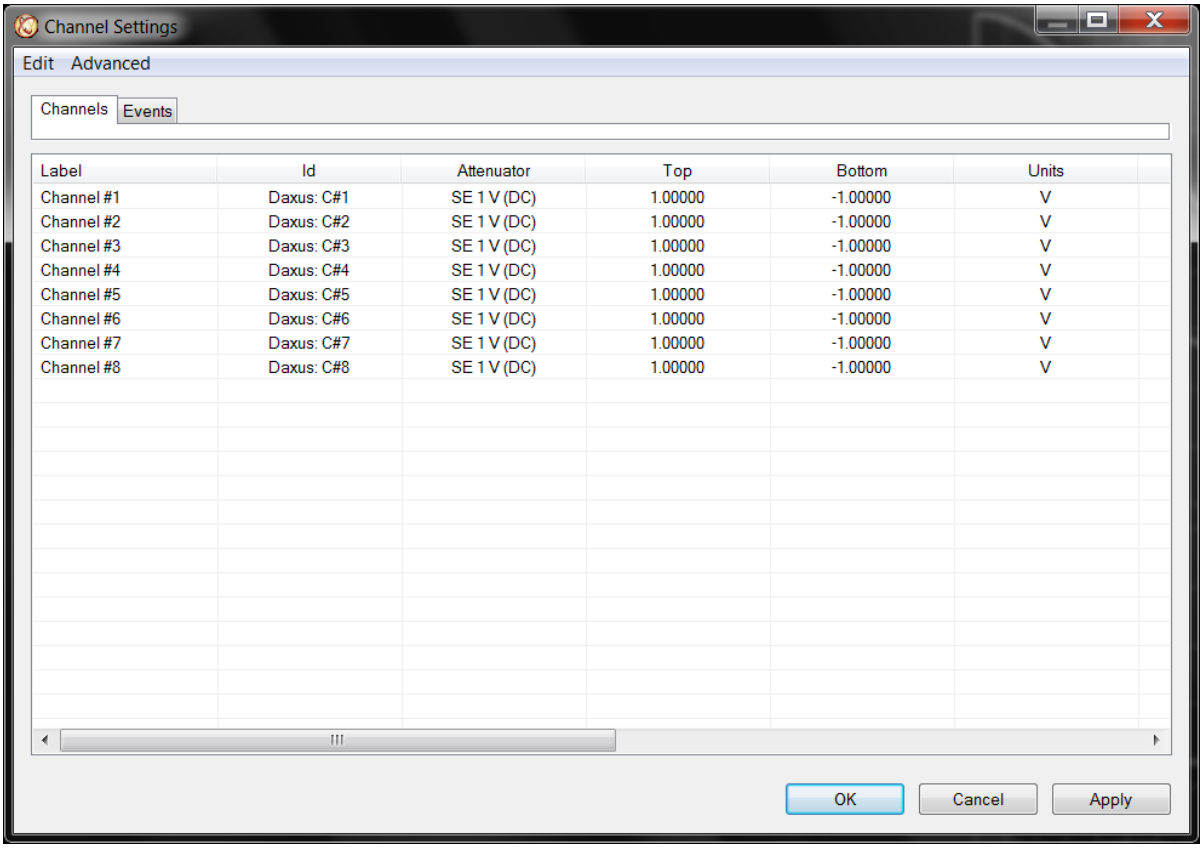
4. Choose OK

7. Channel Setup

Note: This section will use the ISEV-4 or Univ-4 PCB for the following setup explanations.

1. Click on the yellow book Icon  or on the menu bar Choose Settings > Channels. The Channel Settings window will open.

2. Choose the Channels tab.



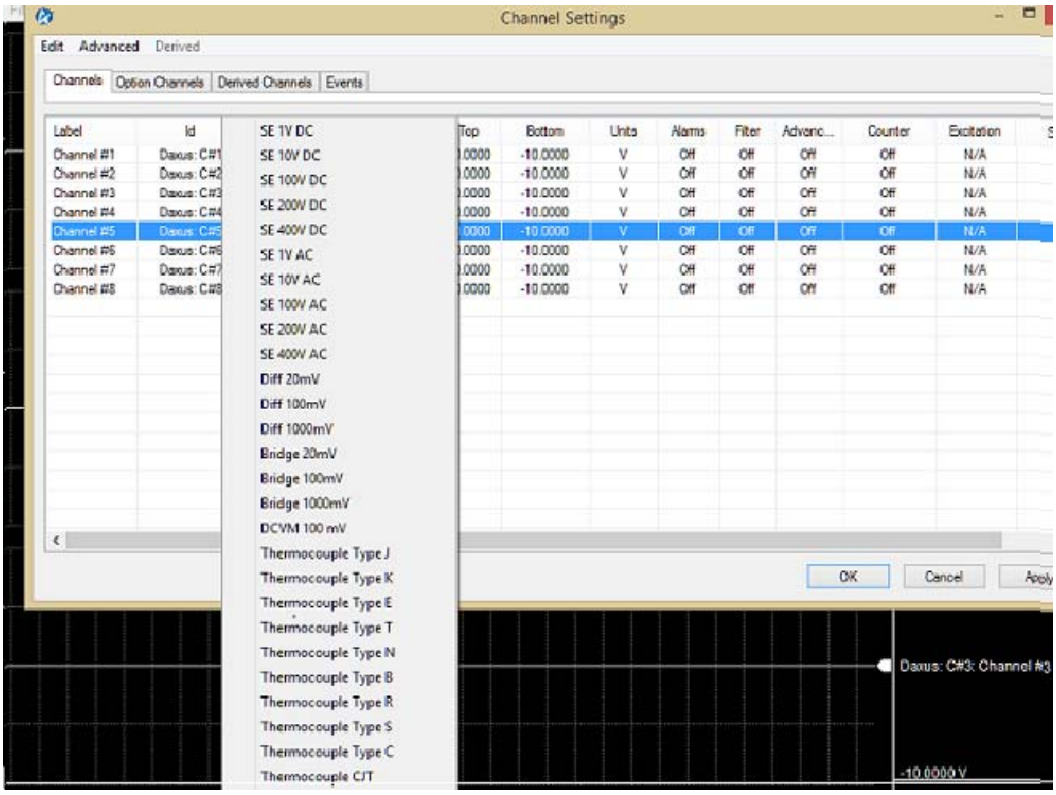
3. Select a channel.

4. To edit a channel label right now it is necessary to have a USB mouse and keyboard attached. If the channel is already highlighted, just left click once. If not, double left click on the channel. You will now be able to place your cursor and change the label. If you start typing

immediately, it will delete all that is highlighted. You may want to leave at least the number of the channel, so you know which channel that input is going into.

5. To set the channel up for your signal (Note: you can do this for more than one channel if you have several signals that are the same.) first choose a channel or channels.
Then choose the Attenuator column heading to specify the attenuator type. This determines your Span choices and limits the input signal to the selected maximum voltage. For some modules, it also determines what input connections you would use on the side of the module.
You will see below the choices you will see when clicking on a channel and then on the Attenuator heading. These are the choices for the UNIV-4, since it is also for differential, bridge, thermocouple, plus other choices. The ISEV-4 has just the upper SE choices. The SE DC choices will allow you to see both the DC and AC components of your signal. The AC choices will allow you to see only the AC component of your signal.

Choose the best attenuator for your signal. The closer the attenuator the better the specs will be, because the accuracy spec is a percentage of the Attenuator. If your signal is 5V, then choose the 10V attenuator. Then you can set your Span or Top to 5V.



6. Choose whether to define the channel in terms of top/bottom or span/center. Use the Advanced (up on the top menu bar) > Range Display menu to switch methods.

• Top/Bottom - If you select this method, choose the Top and Bottom column headings to enter the highest and lowest channel values. This is good if your signals are DC and they only go in a positive direction or RMS, which goes only in a positive direction.

As an example: you could set your top to 5V and your bottom to Zero.

• Span/Center - If you select this method, choose the Span and Center column headings to enter the total span of the channel and the center value. The center value would usually be zero, unless you require some offset. This is a good choice if your signal is AC or your DC signal goes positive and negative.

As an example: you could set your Span to 5V and center to zero, it would show +/-2.5V each side of zero.

8. Engineering Units

Note: It isn't necessary to set up Engineering Units if you just want to see a voltage reading.

Engineering units provide the capability to display user-selected units instead of voltage.

All signal information enters the recorder as voltage. However, converting the voltage unit to an alternative unit of measure may be desirable in applications that measure pressure, strain, or any other non-voltage unit.

Note: The relationship between the voltage and the engineering unit is assumed to be linear, characterized by a slope and offset (y = mx + b).

After engineering units are defined and enabled, all appropriate menus will be displayed in the designated engineering unit values. For example, if pounds per square inch (PSI) are used as the engineering units, the PSI label and value will be displayed instead of voltage.

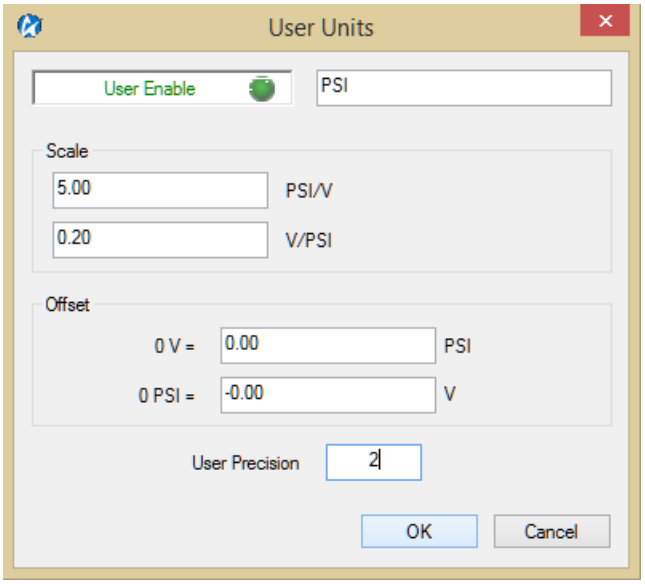
Setting up engineering units.

Always set up your channel first for the actual voltage level that you will be inputting to the channel. This will help you know fairly easily if your scaling makes sense, once you go back to the Channel Settings screen from the User Units setup window.

1. Click on the Channel Settings Icon  or on the menu bar and choose Settings > Channels. The Channel Settings window will open.

2. Select a channel.

3. Choose the Units column heading. The Units window will open. Choose the User Enable button to activate engineering units. Other engineering units options will be displayed now.



4. Choose the Engineering Units field to the right of the User Enable block and enter your Units label. For example, PSI would be an appropriate label denoting pounds per square inch.

5. Enter a Scale for the engineering units by using one of the 2 Scale blocks. Scale can be specified as either of the following:

• The waveform change in engineering units that is equal to one voltage unit.

• The waveform change in voltage units that is equal to one engineering unit. Only one scale entry is required; the other is derived automatically.

6. ONLY if Necessary > enter an offset for the engineering units by using one of the Offset fields. Offset can be specified as either of the following:

•The number of engineering units equivalent to zero voltage units.

• The number of voltage units equivalent to zero engineering units. Only one offset entry is required; the other is derived automatically.

7. Enter the number of decimals that you wish to see in the User Precision field.

8. Choose OK.

9. Verify that your Top and Bottom or Span and Center PSI numbers (or whatever units you use) make sense. If not, your scaling could be off. If your scaling is correct, do not change it. However if your signal is smaller or larger than expected, you can always adjust your Top and Bottom or Span and Center settings.

9. Data Capture Setup and 9V Battery Exercise

Note: If you are going to be there to start and stop the capture, you do not have to set up a trigger. If you choose to do a capture without a Trigger, you can choose No Trigger. Then hit the Arm Icon after, setting up everything else in the Capture Settings window shown below. When you hit ARM you will see the Progress Window will show you are capturing Post Trigger Data immediately. This is because there is no Trigger involved.

This exercise will use a trigger. Set up a single data capture on all 8 channels for only 30 seconds and 50% Pre-Trigger Percent. Of the total capture time, fifteen seconds of the capture will be the pre-trigger time, because the pre-trigger time is part of the total time. The pre-trigger data will show what the signal looked like before the trigger condition happened (before the 9V was applied). The sample rate will be 100 samples per second, which is more than enough for a low frequency signal like this battery test.

1. Click on Capture Settings Icon 

2. Highlight Waveform 1. Be sure the Status for Waveform 1 is Rate 1. If not, click on Channel#1 the Rate heading and select Rate 1.

Note: To reduce the size of the data capture, it is recommended that unused channels be turned off. This makes a smaller file that will save room on your drive. We will capture all the channels for this Example. Here are some instructions if you ever wish to shut off some channels and the events:
To turn off unused channels in the Capture Setup window, click on all the unwanted channels, including the Events. All channels should be highlighted with the exception of the wanted channels now. Click the Rate heading and select Off. The Rate of channels being saved should be Rate 1 in most cases unless some of the channels are a much lower frequency, while the remaining not required waveforms and events should have a Rate of Off.

3. In the Storage area, Click on the top white block where DCR is probably there now. Type over the name DCR (stands for Data Capture Record) and type in > 9V Battery Test.

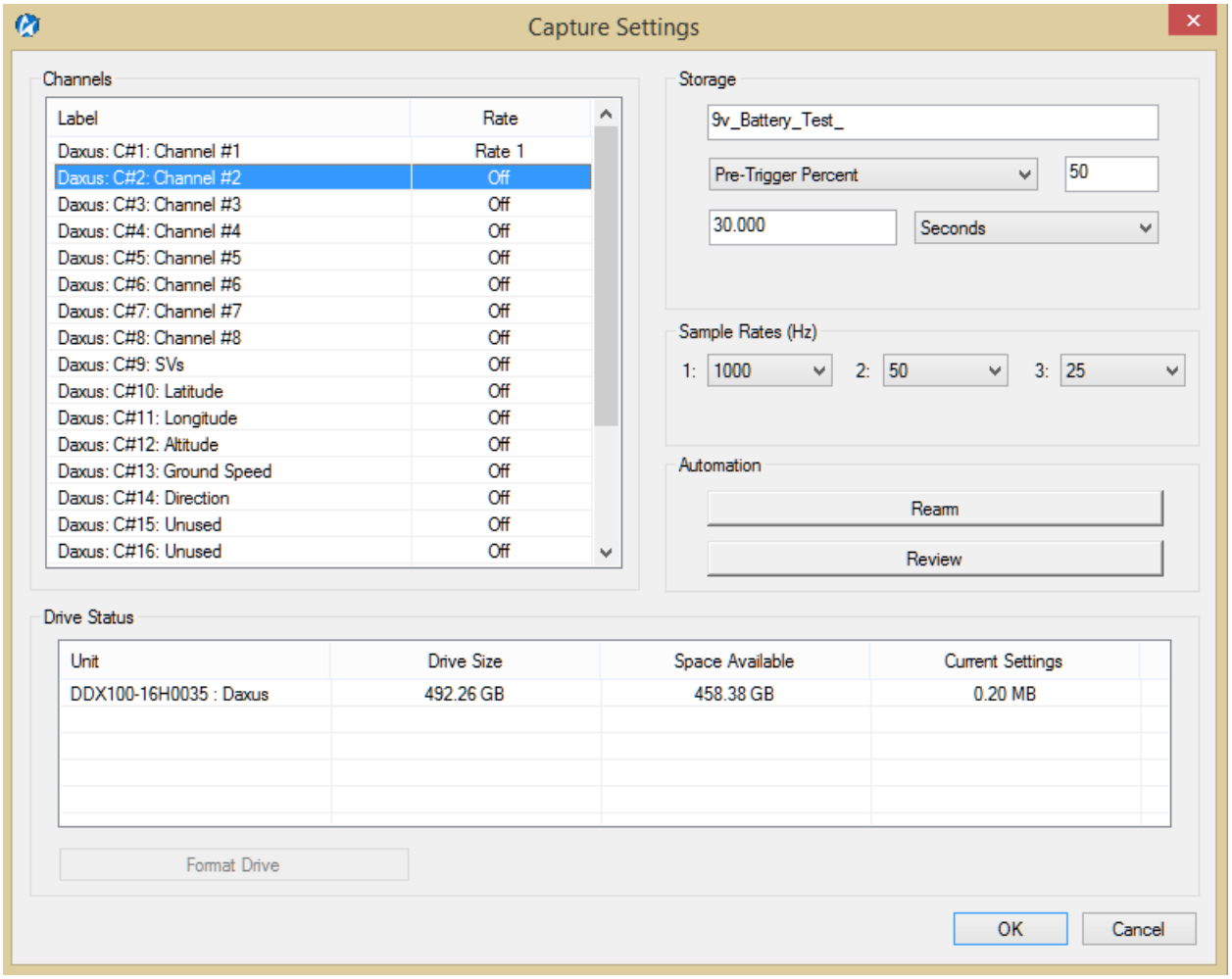
4. Then click on the No Trigger box pull down underneath the name and choose Pre-Trigger Percent. Click to the right of the Pre-trigger Percent box and a keypad will come up. Enter 50 and press OK.

5. In the Storage area of the Capture Setup window, press the Units pull-down box and select Seconds. (Other choices are minutes and hours). Press the value box located to the left of the units pull down menu to open the Seconds Window. Enter 30 seconds and press OK.

6. In the Sample Rates (Hz) section, press the down menu beside 1 (for Rate1) and choose 1000. You will be saving 1000 samples per second, per channel.

7. In the Automation Box be sure that Rearm and Review are not checked. At this point, your Capture Settings Window should look like the below image. (Except you will see that the DDX that was used for this screen shot has extra channels, because it has the GPB/IRIG option). You will probably see just 8 channels.

8. Press OK

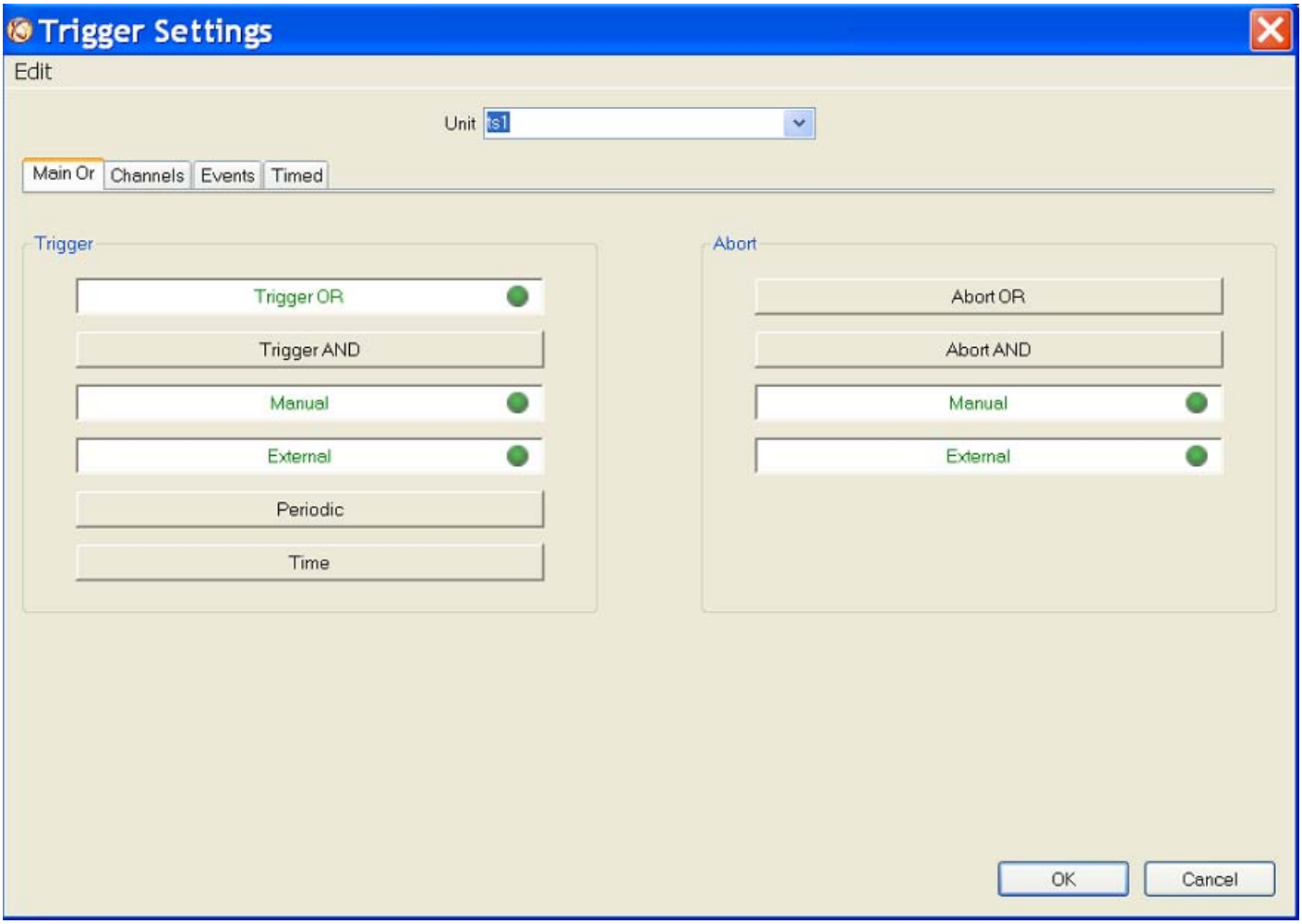


10. Trigger Setup

In the Data Capture Settings section above, a thirty-second capture was set up with 15 seconds of pre-trigger (data before the trigger). In this section, a trigger level of 8 Volts will be set with a rising edge type trigger, so as the signal rises and reaches 8 Volts, the data capture will be triggered. While this is not a real life test, this does simulate a real voltage and it does show how to set up a real life test. It is just a matter of setting different levels in these same screens

1. Click on Trigger Setup Icon 

2. Click on the **Main Or** Tab and click on **Trigger OR**. You can leave Manual and External On and the bottom two Abort choices. The manual abort is necessary, so you can stop a capture using the abort Icon, especially if you ever choose Rearm under automation. Your Main Or screen will look like the screen below.

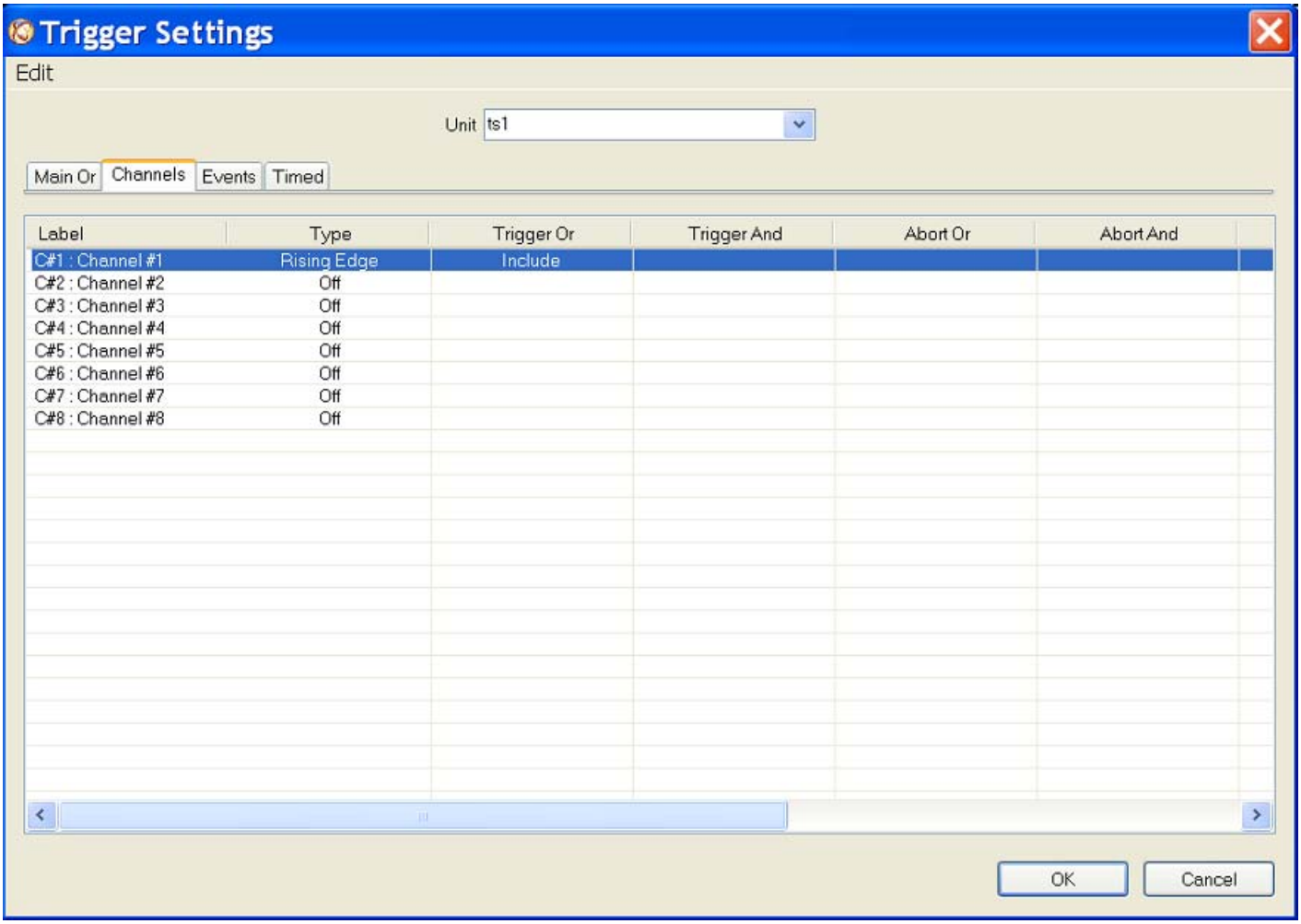


3. Click on the **Channels** Tab.

4. Click on **Channel #1**, for this test.

5. Click on **Type** and choose **Rising Edge.**
   Note: You can trigger off several channels and have each type and or trigger level different.

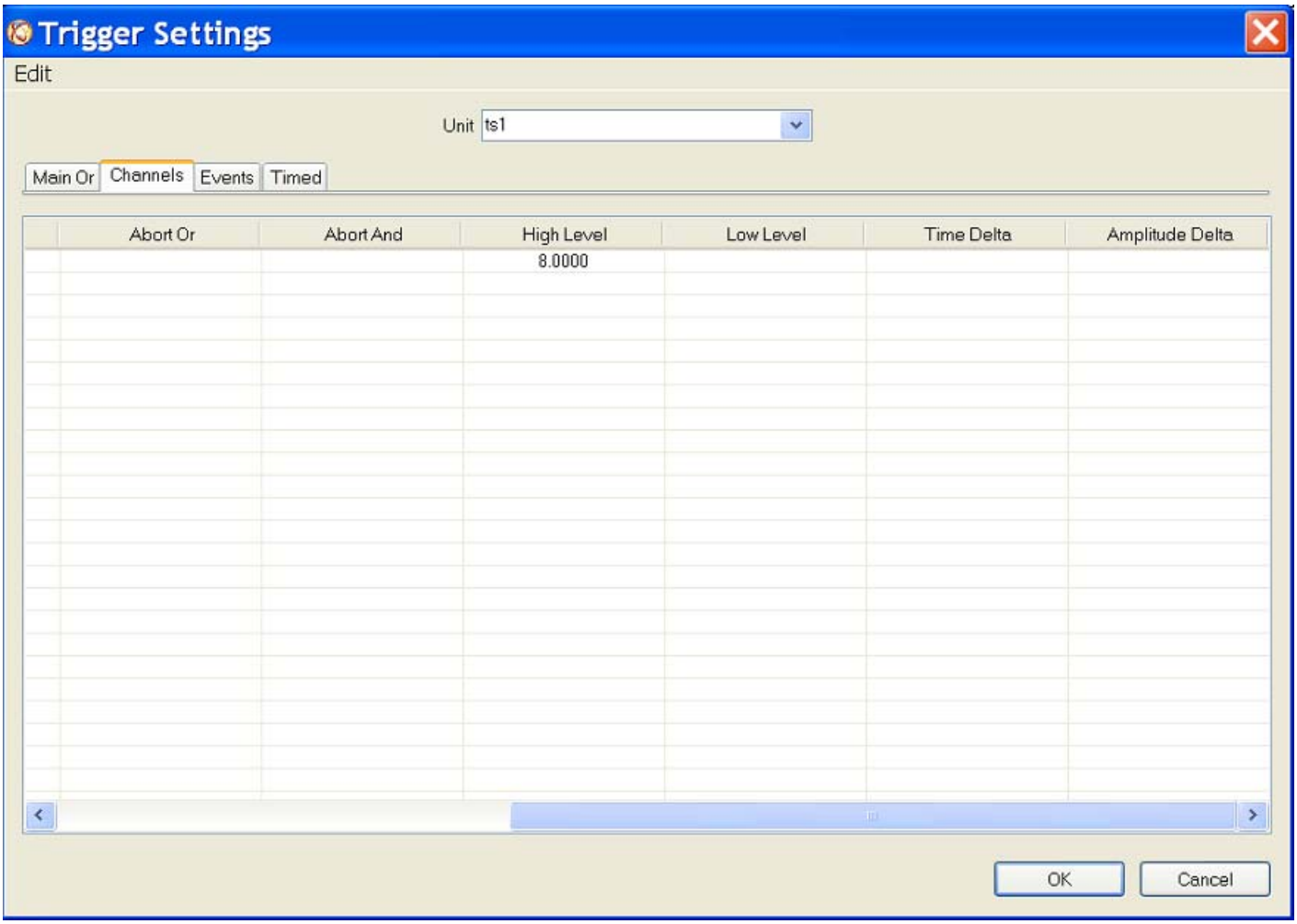
6. Click on **Trigger Or** and choose **Include** and it will look like the next screen.



7. Click and drag the light blue scroll bar at the bottom to the right. Click on **High Level** and set the High Level to 8 Volts. The Low Level will not be a choice for a level trigger.

   Note: If your battery is less than 8 volts (use either a DVM or this DDX to determine the actual battery voltage), then set this to less than your battery voltage. It is important to know your trigger level. The new trigger settings will look like the next screen.

8. Click on OK.



11. Trigger Check

Input the battery voltage into channel one. If all is set up correctly, the trigger indicator Icon will turn yellow just for a second as it passes 8V. It will stay on if your voltage is exactly 8V. If not, check your settings and make sure your battery voltage is equal or greater than your trigger level. If it is yellow all the time, it will be triggering all the time, so again you should check your trigger setup.

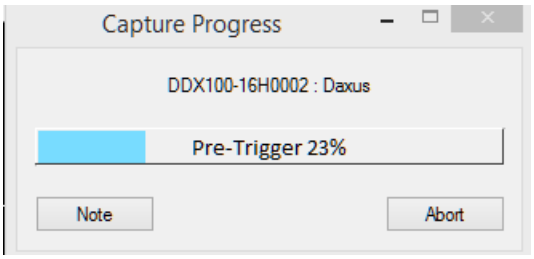
 This Trigger Icon is strictly a visual check to make sure your trigger is set up properly before you start a data capture.

Note: Always do this to verify your trigger is working the way it should in order to capture your data. If your trigger indicator is yellow all the time you will capture too much data. However, if it never turns yellow, when you cause or simulate a trigger condition; you will never capture any data. This trigger indicator is the best way to visually test your trigger without actually doing a data capture**.**

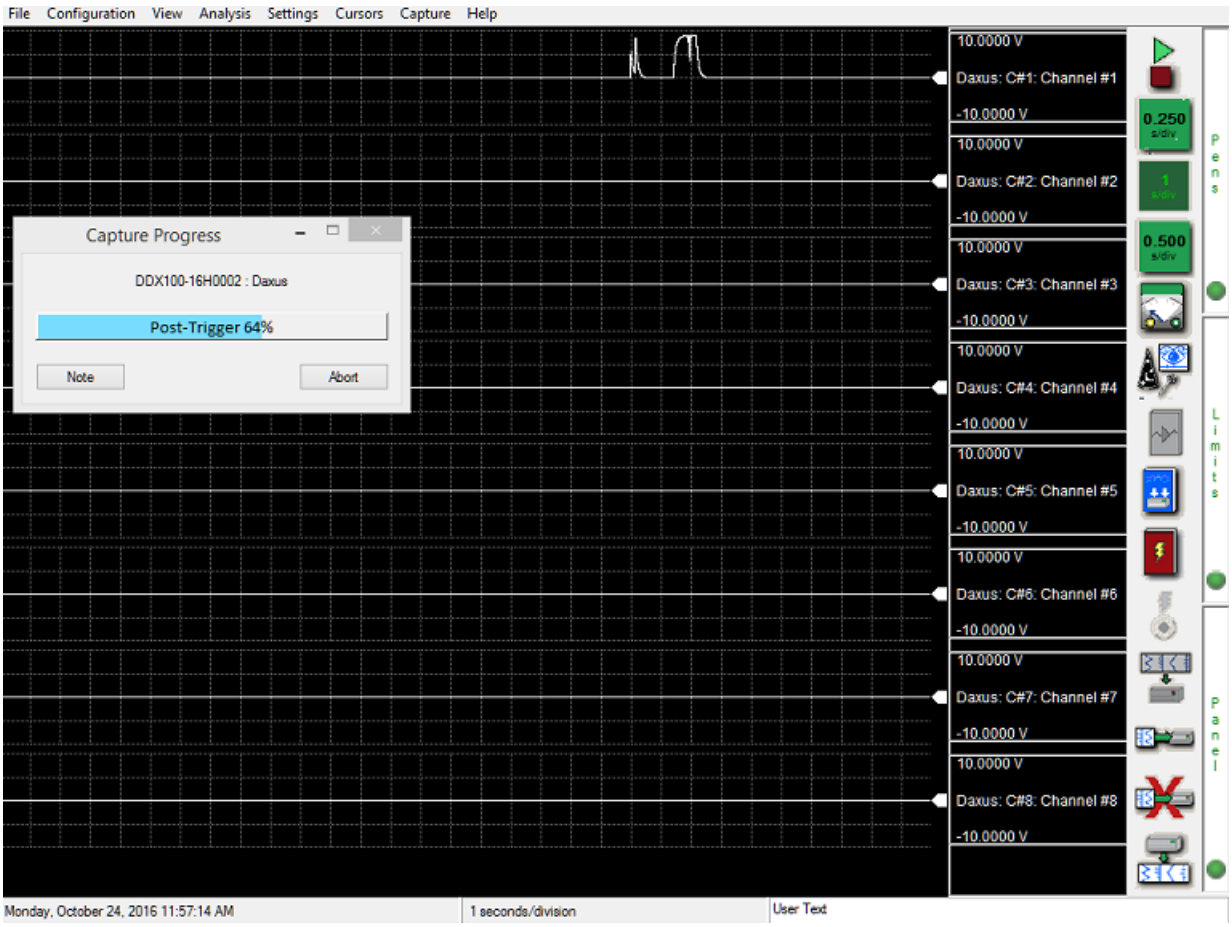
12. Start Data Capture and trigger using 9V Battery

Click on the **Arm Capture** Icon. 

A Capture Progress window will come up showing the Pre-Trigger data progress. It will take 15 seconds for the progress window to fill. This is the initial 15 seconds only. It is a circular buffer that will keep overwriting itself until a trigger is seen. Then once the trigger condition occurs, just the last 15 seconds will be saved as the Pre-Trigger data for this data capture.



Input the 9V battery voltage into channel A01. Once the trigger is seen, the Capture Progress window will now go from Pre-Trigger to Post Trigger and it will take 15 seconds to finish the capture. The post capture screen will look like the below screen.



13. Data Capture Indicator

You can tell a capture is going on by the Progress window. You can always minimize this window if you wish. If you do, there are 2 other ways to tell a Capture is still going on in the background. One is that the Capture Arm Icon is dimmer, after you click on it to start a capture. The other way is the Capture Indicator is now in color. If you want to hide the progress window, just click off to the side of it. If hidden, you can bring the Progress window back by clicking on the Arm Capture Icon again.

Capture Indicator when capture is in progress

14. Stop Data Capture

If you know you that you have captured all the data you need, before the capture time is up, you can stop the capture. Just click on the Capture Abort Icon.

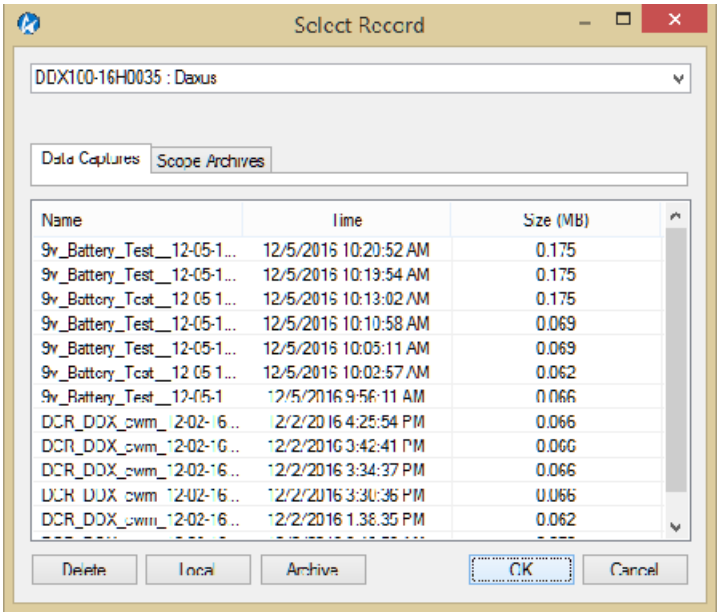
Capture Abort

15. Data Review

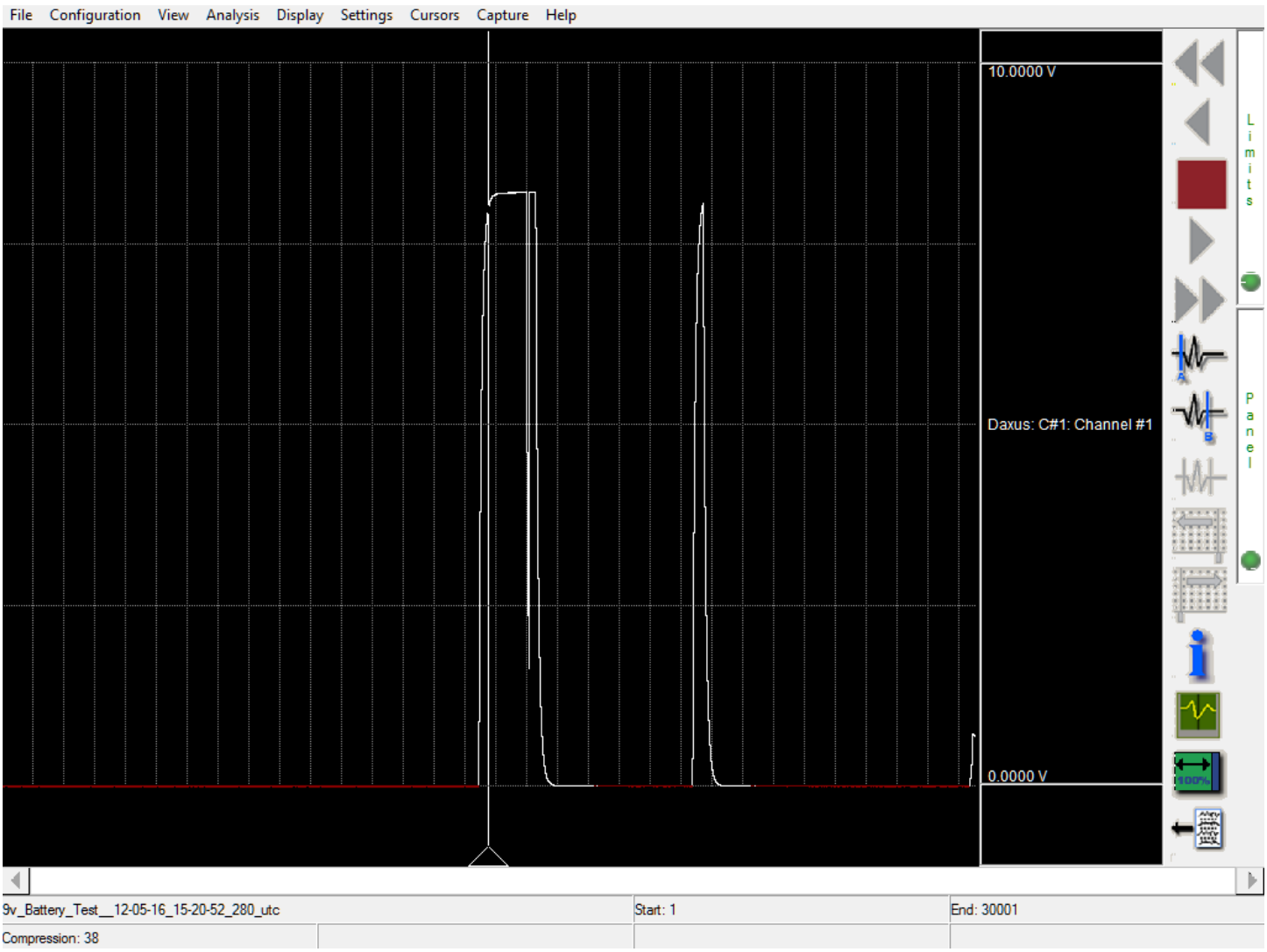
Data capture records can be reviewed on the DDX100 display. DVD-like control icons allow for convenient scrolling through the data. Cursors can be placed on the data for measurements.

Choose **Configuration** > **Review** from the menu bar to enter Review Mode or click on the Review Icon.

Click on the file that you just created by date and time. It may be at the bottom or the top.
You may have several files with the same file name, but each will have a different date and time beside the file name. The file name will remain 9V Battery Test until it is changed.



Click on the file and then press **OK** and the chosen file will automatically open for review.



If you had captured 8 channels you would see 8 equal grids, like seen on page 17. However, if you only want to see one channel, you can do that by bringing it up by itself, so it takes up the full screen.

Choose **View** > **Wizard** > highlight only **Channel #1** from the menu bar and click on OK. You will now see only Channel #1, as in the above screen shot.

Click on the show **Trigger Line** Icon 
Note: The trigger point is just a white triangle in the lower Cursor letter area until the trigger line is shown. If the trigger line is already shown, a check mark will be next to the **Show Trigger Line** choice in the **View** pull-down menu.

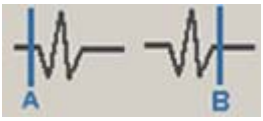
Click on **Display** > choose **Compression** or **Expansion** and enter a number using the keypad that comes up. **Note:** The Compression number is located in the lower left hand corner of the review screen shown above (Compression 38 is shown). Display > Show All File was used, so the entire file is in that screen shot. To spread the data out, choose a lower compression rate. In this case a compression rate of only 10 is used. To spread it out even more, choose a lower number or an expansion rate. Be aware, that you can also click on that Compression block in the lower left hand corner, to bring up the choices of either Compression or Expansion.

Change the compression rate to 10 for the following instructions.

Then use the **Scroll** icons to move through the file slow or fast.  (These are grayed out if the entire file is on the display).

You can scroll forward or backwards through the data. You can stop at any point of interest. Experiment scrolling forwards and backwards. Continue to scroll and stop the display when you have the trigger point (white vertical line) in the middle of the display. Then Scroll to the end of this file.

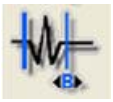
Click on **Display** > **Go to** > **Trigger** (Note the other choices also). This will bring you back to the trigger point easily if you ever lose its location.

Put down both cursors. 

Press the **A** cursor icon. Slide the cursor just to the left of the trigger point, by clicking and dragging the letter **A** block at the bottom.
Press the **B** cursor icon. Click on the B block and slide the cursor just to the right of the trigger point.

You can also just press on the display for a second, where you want a cursor and choose which cursor you want there.

Note: The yellow arrow Icons will help you fine tune the active cursor location when needed. 

If you want to move either or both again it is necessary to make one or both active first.  Use this Icon to either activate one or both cursors, it toggles 3 ways. A active, B active, and A&B active.

Click on **View** > **Status Text Format** > **Absolute Time** (this is actual time) and you will now see the time the recorder captured this data at the bottom, Start & End as well as the date & time of each cursor location.

Samples: just gives you sample numbers
Relative time: gives you – (negative) time before trigger and + (Positive) time after the trigger
Percent: You see just percentage of the total capture at the bottom.

Click on the blue **I** Channel Information Icon.  If you did not add this Icon to your Review control panel, you can find and add it under **Settings** > **Control Panel** > **Analysis > Channel Information**

Click on **Measurement Type** near the top of the information window 

You will have several choices and this screen shot shows the possibilities. For this exercise choose **Average** and **Min-Max.**

Each Channel and type measurement will have a + or – sign beside it. Click on the **+** sign beside the channel to see the measurements choices for that channel. Then click on the **+** sign to see each type measurement for that channel. Hit the **–** sign if you want to hide any channel or type measurement.

You can grab the lower right hand corner to make this window larger or smaller.
You can grab the **Channel Information** title bar and drag it where you want it located on the screen. This way you can move it, so it isn't blocking an important section of your data.

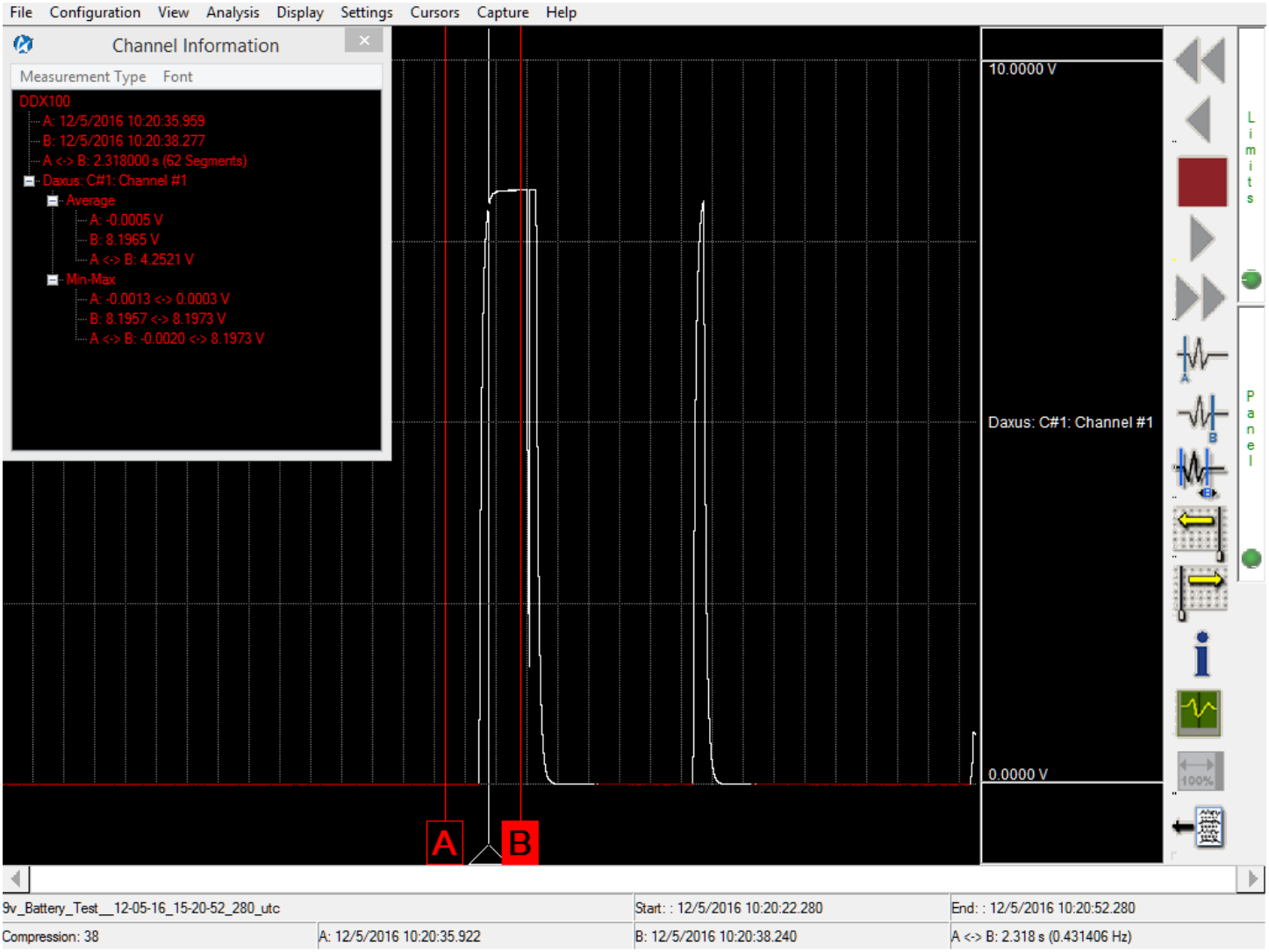
You will have an Average of all the data points sitting behind Cursor A and another average value for all the data points sitting behind Cursor B. Then the Average of all the points between A <-> B.

The Min-Max reading will also consider all the data points behind each cursor. It will give you the Min-Max voltage behind cursor A and also behind Cursor B. Plus, the Min-Max voltage between cursors A & B.

You will notice that the time of each cursor will change at the bottom of the Review screen as you move the cursors. Also, in the bottom right hand corner, it will show the amount of time in between the 2 cursors. This is great if you need to know the timing between two events.

Press the **A** cursor icon and **B** cursor icon to remove them.

Press the blue **I** Information Icon to remove this window or click on the X in the upper right corner of the Channel Information window.



16. Saving your Unit and View setup files

If you are happy with your setup, you can save it for future use. If one of your next tests is similar to this one, you could start with this same setup and just make the necessary changes. If you will use the DDX100 for both tests again, save the changes as a new name. You could save it as the old name, if it was just a change to the original settings and you would not use it the way it was originally.

There are 2 setups you can save. The way your display is set up and also how your testing parameters are set up. Here is what each saves and how to save them:

View is about display settings like the Waveform view (# of channels & colors), Meters, and the Control Panel.

Save it by going to: File > Save View

Unit Settings are about the testing setup – Attenuators, Units, Filtering, Capture, Triggering, etc.

Save it by going to: Settings > Unit Settings > Settings Files > Save Current Settings

17. Recorder Defaults

When you start a new setup, it would be a good idea to give the recorder defaults, because you do not know how the previous changes that you or someone else made could affect your new set up.

View settings are for how your display looks. Waveform view, Meters, and the Control Panel.
Load Basic View File File > Load View > Basic

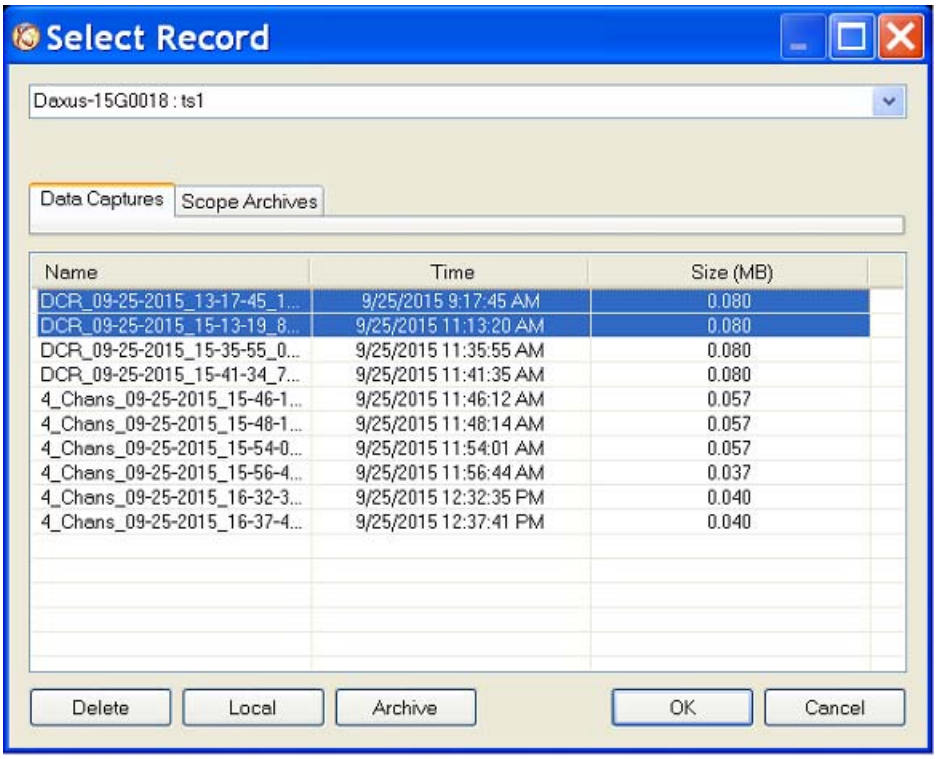
Unit Settings are for the settings you would find under Channel Settings like Attenuators, Units, Filtering, Capture, Triggering, etc.
Load Unit Basic File: Settings > Unit Settings > Setting Files > Default Settings (bottom choice)

This could also be done by loading the Basic file that the DDX100 shipped with. Your other choice, once you have created one or more of either the View or Unit Settings is to load a file that you previously created and saved. You might want to start with a previously saved file, if it is close to your new test setup, with only minor changes required.

18. Archiving Data Records

There is one 500GB hard drive inside the DDX100 for saving data captures. During data capture, the data is always streamed to this drive. Once the data capture is complete, the file can be reviewed on the DDX100 itself. Then if you wish, it can be archived to your laptop drive, a USB drive, or a network drive. You can manually archive one or more files (or just a section) directly to the System drive or a plugged in USB drive from the DDX100 capture drive.

Click on the **Go to Review** Icon to enter the Review mode 



Then once you have chosen the file or files you wish to archive, click on the Archive button and choose where you want the file or files to be archived.

19. Advanced Features

The DDX100 has many advanced features not discussed in this quick start guide. Please refer to the DDX100 Operations manual for additional information. It is handy to have the manual on your computer, because you can use the search function. To bring up the Search function: hit Shift, Control, and F simultaneously and a side search panel will come up. Enter a key word or two on any subject in the Search block and this side panel will show you a brief description of each area. You can make this panel wider/narrower by grabbing the right side. This allows you to do a quick visual scan of each section to see what might answer your question the quickest. Clicking on any description will bring you to that section in the manual. Clicking on the manual moves the Search window to the

bottom. Just click on Search at the bottom of your screen again to bring the Search window back up. If you do not have the manual on your computer, call 877-867-9783 and we will email it to you.

20. Powering Down

The only proper way to shut off the DDX is to use the On/Off switch. When the power switch is set to the off position, the DDX100 begins the power down sequence. The green power LED will flicker for about 10 seconds while it is shutting down. It is very important not to turn the power switch back to the on position during the power down stage. The DDX100 recorder must be allowed to complete the power down sequence to insure proper operation. If the DDX100 loses power, it will run off the internal battery for about 40 minutes, or until the On/Off switch is shut off.

This completes the ***DDX100*** Quick Start Guide.