

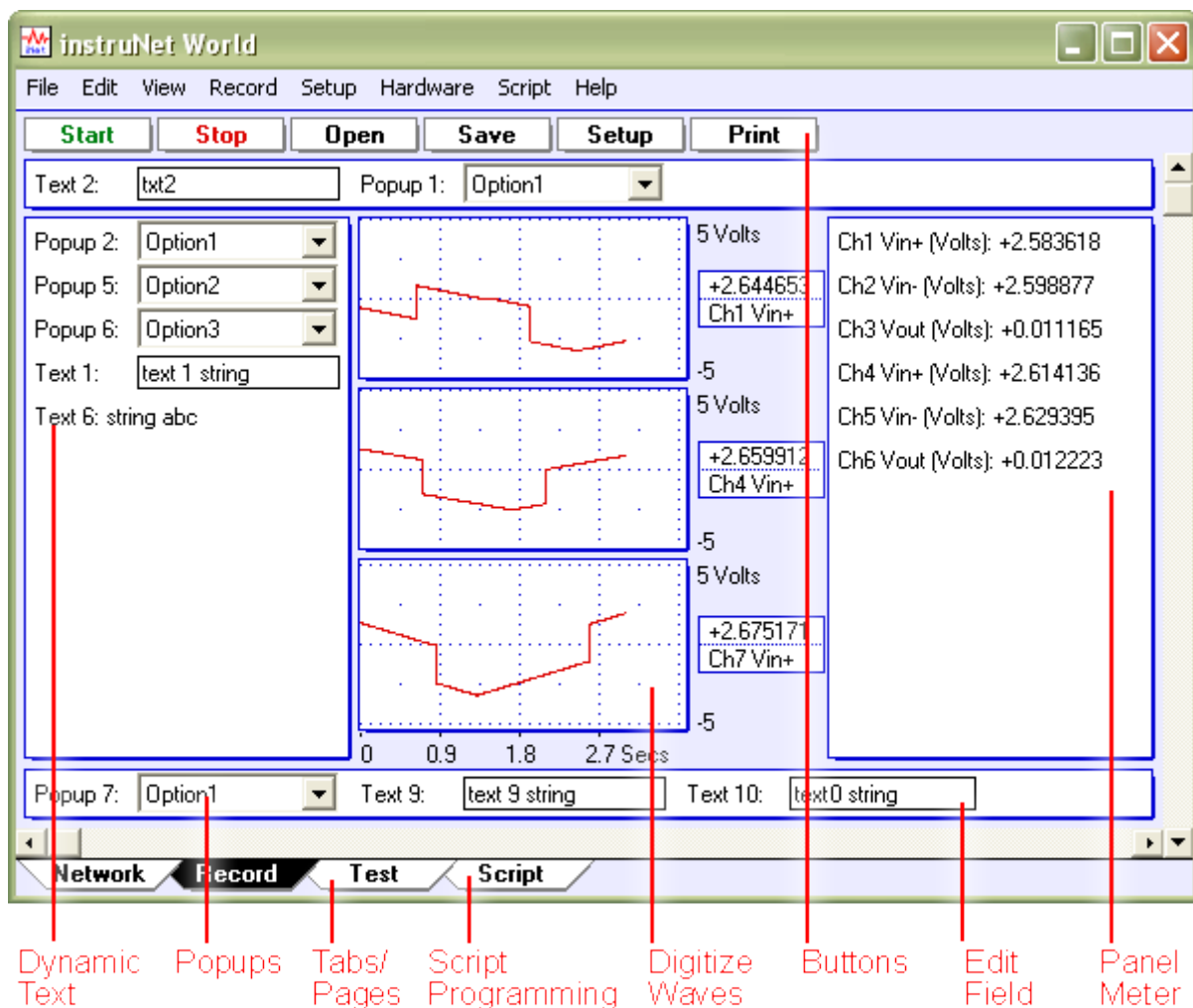
# iNET-iWPLUS software FEATURES

## instruNet World Plus (iW+)

Below is a list of features available in iW+ that are not available in the free instruNet World (not +) software.

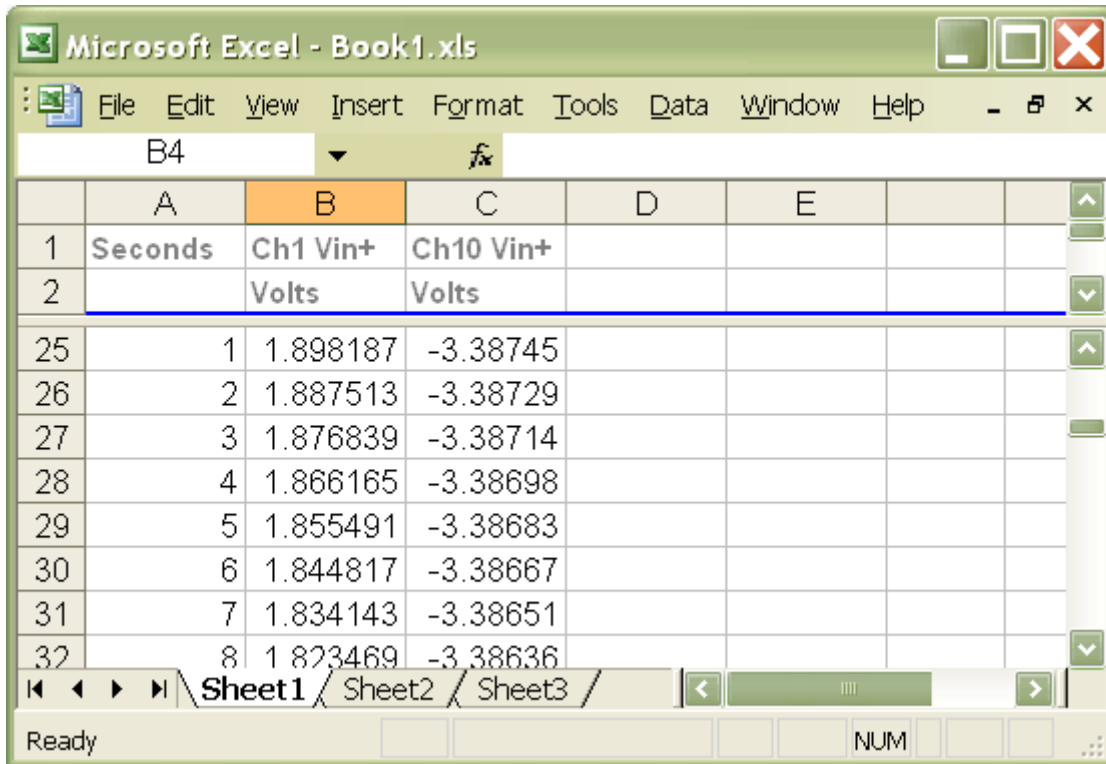
### Create a Custom Instrument

Create buttons, popup menus, edit fields, dynamic text fields, text edit regions, and pages to build a custom application program; as illustrated below.



## iW+ includes digitize Direct To Excel software

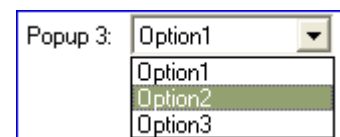
iW+ includes the Digitize Direct To Excel program, which populates an Excel  $\geq 2010$  (e.g. Microsoft Office  $\geq 2010$ ) spreadsheet, shown below, while digitizing.



	A	B	C	D	E
1	Seconds	Ch1 Vin+	Ch10 Vin+		
2		Volts	Volts		
25	1	1.898187	-3.38745		
26	2	1.887513	-3.38729		
27	3	1.876839	-3.38714		
28	4	1.866165	-3.38698		
29	5	1.855491	-3.38683		
30	6	1.844817	-3.38667		
31	7	1.834143	-3.38651		
32	8	1.823469	-3.38636		

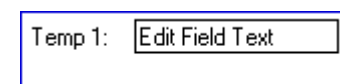
## Create Popup Menus

Front panel popup menus allow the selection of one of several choices in a list, as illustrated to the right. One line of script code reads or sets the position of the popup (i.e. 1 refers to the upper-most item, 2 the one below it, etc). The position, label, and list options are easily set.



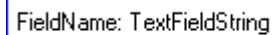
## Create Edit Fields

Front panel edit fields allow one to select, view and edit segments of text; as shown to the right. One line of script code reads or sets the text in the same way one would read or write to a string variable. The position, label, and initial text are easily set.



### Create Dynamic Text Fields

Front panel dynamic text fields allow one to view non-editable segments of text, as shown to the right. One line of script code sets the text in the same way one would write to a string variable. The position, label, and initial text are easily set.



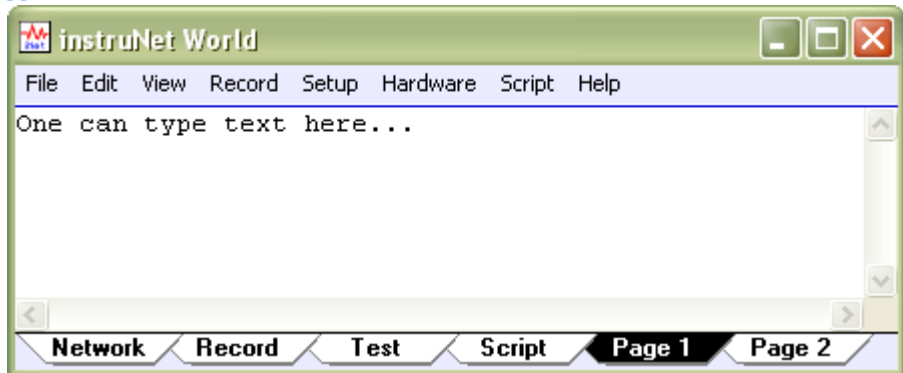
### Create Buttons

One can easily create buttons that execute script code when pressed (e.g. "Button 1" shown on the right). The position, label, and script text are easily set.



### Create Text Editor Pages

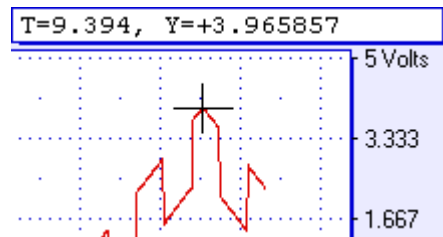
In iW+, a "page" is similar to a "sheet" in Microsoft Excel. One clicks on a tab at the bottom of the window (note the tabs in the illustrations to the right)



to show a different set of front panel items (e.g. popup menus, text editor, edit fields, etc). For example, in a simple case, one might create a page called "Help" that when selected, displays documentation on how to use the instrument. The above illustration shows 2 user defined pages, labeled "Page 1" and "Page 2", where Page 1 is currently selected and contains a text editor region that shows the text "One can type .".

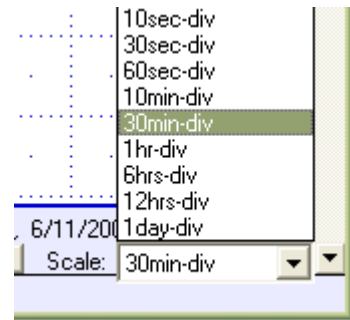
### Examine Waveform Values with a Cursor

Use the mouse to move a waveform cursor while numerically viewing the time and waveform value at that cursor position, as illustrated to the right.



### Adjust Horizontal Scale While Digitizing

A front panel popup menu adjusts the displayed horizontal scale (i.e. time per plotted horizontal division) while digitizing. In the non-PLUS version if iW, this is set automatically, or via the Record Setup dialog.



### Powerful Script Programming Language

iW+ is programmed with a simple BASIC-like script language that provides many feedback/control, waveform generation, math, file, hardware, and user interface functions as summarized below.

add, subtract, multiply, divide, Modulo, cos, sin, tan, acos, atan, atan2, cosh, sinh, tanh, bAnd, bOr, bEor, shift left, shift right, 1's complement, getbit, setbit, clearbit, And, Or, Not, <, >, <=, >=, ==, !=, absolute value, e'th power, natural log, log10, reciprocal, square, square root, x to y'th power, integer, round down, round up, fractional part, minimum, maximum, average, string length, string compare, string search, string to ascii, Sinewave, TriangleWave, SquareWave, PID, PIDL, OnOff, Limit, Alarm, For Next, Goto, If/Elseif/Endif, If...then, Loop, Synchronize, While, Close, Create, Flush, Open, SetMasterDir, SetPointer, SetSize, Write, Read, Debug, End, Execute, Calibrate Hardware, Calibrate Gages, Calibrate Bridges, Calibrate VDividers, Calibrate Vinit, Calibrate Init, Read Channel, Digitize, SetChannel, SetChannelBit, SetField, SetTrigger, Table, Append, Copy, Clear, Define, Delete, Alert, Beep, Delay, Erase, Print, Question, NewPage, NewButton, Press, Select, Show/Hide page, Show/Hide button, CtoF, FtoC, CtoK, FtoK, KtoF

### Generate Analog and Digital Output Waveforms

Define an analog or digital output channel mathematically (e.g. sine wave, square wave, pulse train, etc) that updates in realtime (e.g. every 100ms).

### Run Feedback/Control Loops

Define an analog or digital output channel as a realtime function of analog and/or digital input channels (e.g. PID control, on/off control, etc).

### Save Waves to Excel

iW+ provides a menu command called "Save Waveforms To Excel" that saves all waves into one large text file that can be loaded by Microsoft Excel, post-acquisition, where each wave is given its own column.

### Print Waves and Text On Hard Copy Printer

Print text and waveforms directly to a printer.

### Display Time of Day Under Waves

Display waveforms relative to the Date and Time of Day. For example, in the above picture, the first grid



corresponds to June 11, 2003, 6:12pm + 31 seconds. Without PLUS, waves are always displayed relative to the start of digitization.

### Copy the Setup of One Channel to Many Channels

Setting up many channels manually can be somewhat laborious. iW+ automates this with a command that copies the setup of one channel (e.g. to a thermocouple, strain gage, etc) to multiple other channels.

### Digitize in Background while Working in other Programs

Digitize and implement feedback/control loops in instruNet World while working in other application programs. For example, one can type in a Microsoft Word window while iW+ digitizes and controls outputs. Also, one can minimize the iW+ window (i.e. click on window title bar upper right corner "\_ " icon to place minimized iW+ window on desktop application bar) while it operates in the background.