PROTECTIVE RELAYS

BECKWITH - - ® ELECTRIC - -

IPSplot[®] *PLUS* Oscillograph Analysis Software M-3801D



- Provides a quick and easy-to-use commissioning and forensic engineering tool
- Analyze data in both the time and phasor domains simultaneously
- Observe the phasor, impedance, and PQ plots change dynamically
- Easily view and analyze harmonic quantities (2nd, 3rd, 4th, and 5th)



The M-3801D IPSplot[®] *PLUS* Oscillograph Analysis Software operates in conjunction with all IPScom[®] Communications Software on any IBM PC-compatible computer. IPSplot *PLUS* allows the user to plot and print waveform data downloaded from Beckwith Electric Integrated Protection Systems (IPS). IPSplot *PLUS* is also capable of plotting and printing waveform data files in COMtrade format, including files downloaded from the Handspring[™] Visor[™] or Palm[®] Handheld.

Installation and Setup

IPSplot *PLUS* operates under the Microsoft Windows operating system, version 95/98 or later, and is available on CD-ROM.

Overview

When IPSplot *PLUS* is started, a menu and tool bar are displayed (see Figure 2). This brochure describes each IPSplot *PLUS* menu selection and explains each IPSplot *PLUS* command in the same order that they are displayed in the software program. When starting IPSplot *PLUS*, the menu commands that are initially available are File/Open (to open a file to be analyzed) and File/Print Setup (to identify the target printer).



■NOTE: Cursor bars may be dragged to any location by positioning the cursor arrow on a bar and dragging the mouse. Double click the left key to position one cursor bar and Shift-Double Click or left mouse down and click the right key to position the other cursor bar at the current cursor arrow time position.

Figure 1 Example of IPSplot PLUS Oscillographic Data



Figure 2 Settings Submenu Callouts

File		
Open	Ctrl+O	
Close		
Print	Ctrl+P	
Print Preview		
Print Setup		
1 Test.osc		
Exit		

The File menu allows the user to open an oscillograph file previously downloaded by IPScom[®]. It supports both Beckwith oscillograph files (file extension *.osc) and COMTRADE format data files (file extension *.cfg). The File menu also permits the user to preview and print selected oscillographs. Exit closes the IPSplot *PLUS* program.

View Menu

View		
Primary		
Original Waveform		
Frequency		
RMS Value		
Power		
Power Factor		
Zero Sequence Current		
Tripped Functions		
Device Information		
Fundamental Magnitude		
2nd Harmonic Magnitude		
3rd Harmonic Magnitude		
4th Harmonic Magnitude		
5th Harmonic Magnitude		
Impedance Diagram		
Phase Diagram		
PQ Diagram		
Zoom In +		
Zoom Out –		
View All		
Toolbar		
Status Bar		

The View menu allows the user to select time domain waveforms, and allows phasor domain diagrams to be displayed. Several of these items may also be activated by selecting the corresponding toolbar icon.

File Menu

Settings Menu

Settings

Select Waveform Select Color Change Scale

The Settings menu allows the selection of the waveforms to be displayed, the formatting of display colors, and the ability to change the waveform scaling.

Select Waveforms allows the selection of voltages, currents, inputs, and outputs to be plotted or printed.

Analog Input Output Vab In1 In2 Vca In3 Out3 Vg In4 Out5 IB In6 Out6 IC In6 Out8 Ib Ic Clear All Select All
Cancel OK

Figure 3 Select Waveforms Dialog Box

Change Colors allows the user to change waveform colors for customized plotting.

M3XXX: Select Color X						
System Color: Selected Bar 1 Selected Bar 2 Tripped Bar Time Label Frequency Power Input Output Vab	Foreground Change					
Vbc Vca Vg	Change					
Apply Cancel OK						

Figure 4 Change Colors Dialog Box

Change Scale allows the individual designation of a magnitude scale for voltage and current traces.

Default sets all similar waveforms to the same scale (largest).

Auto All allows IPSplot[®] PLUS to set the scale for each individual waveform.

N	134XX:	Change	e Scale			X	
(Channel S	Scale:					
	Name	Unit	Max	Min		Default	
	VA	(V)	0.5	0.0		Auto All	
	VB	(V)	0.5	0.0			
	VC	(V)	0.5	0.0		- Max — — — — — — — — — — — — — — — — — — —	
	VX	(V)	0.5	0.0			
	VN	(V)	0.5	0.0			
	IA	(A)	0.50	0.00			
	IB	(A)	0.50	0.00		Auto	
	IC	(A)	0.50	0.00			
	IN	(A)	0.50	0.00	—		
	la	(A)	0.50	0.00		– Min — — — — — — — — — — — — — — — — — — —	
	lb	(A)	0.50	0.00			
	lc	(A)	0.50	0.00			
						Auto	
1							
	Арр	iy		L	0		

Figure 5 Change Scale

Window Menu/Help Menu

Window

Cascade Arrange Icons (Windows File Path)

The Window menu enables the positioning and arrangement of multiple IPSplot *PLU*S windows at the same time. Selecting any displayed window activates that frame, allowing manipulation of the data.

Help

Contents About IPSplot PLUS

The Help menu provides information about IPSplot *PLUS* menus and commands. The About command provides version information for IPSplot *PLUS*.



Figure 6 IPSplot^{*} *PLUS Toolbar*



■ NOTE: Cursor bars may be dragged to any location by positioning the cursor arrow on a bar and dragging the mouse. Double click the left key to position one cursor bar and Shift-Double Click or double click the right key to position the other cursor bar at the current cursor arrow time position.

Figure 7 IPSplot PLUS Screen with Callouts

IPSplot[®] *PLUS* makes use of shortcut key commands for many functions, making IPSplot *PLUS* as easy as clicking your mouse and touching a few keys.

Key Strokes	Action
Left-Mouse button down and drag, or select zoom in icon on toolbar menu	Magnify the selected area in main display, impedance diagram, PQ diagram, and phasor diagrams
Left-mouse double click	Move Marker #1 to current position in main display
Shift + Left-mouse double-click or left-mouse down and right-mouse double click	Move Marker #2 to current position in main display
Align cursor on Marker #1 and drag	Drag Marker #1 in main display
Align cursor on Marker #2 and drag	Drag Marker #2 in main display
	Current and voltage selection menu in main display and phasor diagrams
Right-mouse down	Impedance in the Impedance diagram
	Voltage and Current in the Phase diagram
	Real and Reactive Power in PQ diagram
Left key or select left scroll icon in toolbar menu	Move left in main display
Right key or select right scroll icon in toolbar menu	Move right in main display
Home key or select move to beginning icon in toolbar menu	Move to the beginning of the record in the main display
End key or select move to end icon in toolbar menu	Move to the end of the record in the main display

Table 1 Shortcut Keys

Patent and Warranty

The M-3801D IPSplot PLUS software is covered by a five year warranty from date of shipment.

Specification is subject to change without notice.

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