

# AutoPilot®

---

*Instruction Manual*



*Manual Rev P*  
*Software Version 4.3.39*





## Table of Contents

Introduction .....	1
Getting Started .....	1
Overview .....	1
Working with Docking Windows.....	1
 Resources .....	2
 Navigator .....	3
Default Views .....	5
Alarms Overview .....	9
 Adding Alarms.....	11
Events .....	13
Macros .....	14
Network Devices Overview .....	15
Adding Sites.....	15
 Adding ARC Plus or Arcturus Networks.....	15
 Adding ARC Solo Networks .....	19
 Adding Network Devices.....	21
Alarms on Network Devices .....	25
Creating Custom Views.....	25
Custom View Editor Overview .....	26
Adding, Positioning and Sizing Controls.....	29
Binding to Channels .....	30
Customizing Control Properties .....	32
Using Charts.....	32
Editing and Deleting Custom Views .....	34
Using Custom View Templates.....	34

*Copyright © 1995-2021 Burk Technology, Inc.*

*7 Beaver Brook Rd  
Littleton, MA 01460  
978-486-0086  
www.burk.com*








*Rev P*

Scaling Custom Views to Fit Screen Size .....	35
Creating Reports .....	37
 Using the Report Wizard .....	37
 Scheduling Reports .....	42
Viewing, Printing and Emailing Reports .....	42
In Depth .....	44
Program Options .....	44
General .....	44
Resources .....	45
Alarm Notification .....	46
Logging .....	46
SQL Server .....	47
Text File Logging .....	47
Security .....	48
Email .....	48
Jet .....	49
Licensing .....	50
Connectivity .....	50
Connection Methods .....	50
Connecting and Disconnecting .....	51
Site Configuration Cache .....	53
Backup Connections and Automatic Reconnection .....	53
Remote Control Specific Information .....	56
Warp Engine™ Polling .....	57
Alarm Management .....	60
 Network Alarm List .....	60
 Site Alarm List .....	60

Copyright © 1995-2021 Burk Technology, Inc.

7 Beaver Brook Rd  
Littleton, MA 01460  
978-486-0086  
www.burk.com




Rev P

Notifications and Sounds .....	60
 Alarm Relationships .....	62
 Alarm Muting .....	63
Logging.....	64
 Enabling Logging.....	64
Logging and Connections.....	65
 Logging on Demand .....	65
Databases .....	65
Text File Logging.....	66
SQL Server Logging .....	68
Captures.....	69
Enabling Capture Downloading.....	69
Configuring the Download Schedule .....	70
Taking an Immediate Capture .....	70
Viewing Captures .....	71
Data Management .....	71
Security.....	73
 Application Event List .....	74
Migration .....	75
AutoPilot Files and Folders.....	75
Network Names .....	76
Jet.....	76
 Jet Active Flowcharts .....	76
Active Flowcharts for AutoPilot.....	76
Active Flowcharts for ARC Plus and ARC Solo .....	79
Designing Active Flowcharts .....	81
 Scheduling Active Flowcharts .....	85

Copyright © 1995-2021 Burk Technology, Inc.

7 Beaver Brook Rd  
Littleton, MA 01460  
978-486-0086  
www.burk.com

Rev P

 Jet Status .....	86
 Virtual Channels .....	87
Overview .....	87
 Virtual Channel List .....	87
Renaming a Virtual Channel .....	88
Reference .....	90
Custom Views .....	90
Controls.....	90
Status Conditions .....	104
Actions .....	105
Database Schema .....	105
Tables.....	105
Jet Actions and Conditions.....	109
Virtual Channel Syntax.....	110
Operators and Constants .....	110
Functions .....	111

Copyright © 1995-2021 Burk Technology, Inc.

7 Beaver Brook Rd  
Littleton, MA 01460  
978-486-0086  
www.burk.com

Rev P

## Introduction

Thank you for purchasing AutoPilot.

AutoPilot enables multi-site, PC-based facilities management for Burk Technology ARC Plus and ARC Solo remote control systems. The customizable user interface in AutoPilot makes site management easy for engineers, managers, and NOC operators. Built-in reports are easily tailored to individual needs and can be printed automatically or emailed as a PDF to station personnel. AutoPilot's 64-bit architecture harnesses the full power of the PC for control of large and small networks.

*With AutoPilot, you can:*

- Monitor and control ARC Plus and ARC Solo sites in real-time.
- Automatically log site parameters using the onboard log or Microsoft SQL Server.
- Automatically print or email reports to station personnel.
- Build custom screens to tailor the software to your exact needs.
- Manage network devices using SNMP and ping.

To configure the onboard parameters for your remote control, please use the appropriate configuration tool:

ARC Plus	AutoLoad Plus
ARC Solo	Web Page

*For more information, visit [www.burk.com](http://www.burk.com).*

Read the **Getting Started** section for help setting up AutoPilot for the first time. To get the most out of the AutoPilot software, see the **In Depth** section. For detailed information about specific topics, see the **Reference** section.

## Getting Started

### Overview


#### Working with Docking Windows

##### *Moving Docking Windows*

The position of each toolbar can be changed by clicking on the title area and dragging it. The toolbars can be undocked into a floating window, or docked to the top, bottom, and sides of the screen. Dropping one toolbar on top of another combines the two into the same space, allowing selection of

one toolbar at a time with tabs. To separate tabbed toolbars, click and hold the tab and drag away from the toolbar.

### Auto Hide

 Docking windows have an auto hide feature, allowing them to disappear from view when unneeded to maximize the available screen space for monitoring and control.

To turn auto hide on or off, click the pushpin icon in the upper right of a toolbar's title bar. A vertical pushpin indicates that auto hide is off and the toolbar is locked into place until you move it or turn auto hide on. A horizontal pushpin means auto hide is on. When you remove the mouse from the toolbar area, the toolbar will collapse into a tab on the perimeter of the screen. To display the toolbar again, simply move your mouse over the tab.

Auto hide does not close the windows – they collapse into tabs on the sides or bottom (depending on docked location) of the AutoPilot Plus window. To have the window reappear, simply move your mouse over the tab. This causes the window to expand, allowing you to use it. To hide the window again, move the mouse away from the window and it will collapse after a few seconds.

When Auto Hide is enabled, clicking the window's title area or icon tab will lock focus on the window, and the toolbar will not hide again until you click a different area in the program to change focus.

### Reset Docking Windows

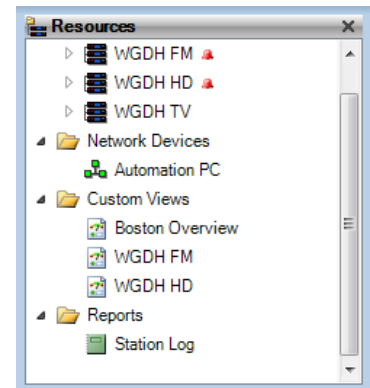
The function key F10 is mapped to reset the windows that have been docked. This option is also in the View menu of AutoPilot.

### Resources

The Resources window (known as the Navigator in versions prior to 2.10.47) is the main tool used for selecting items to work with in AutoPilot. The Resources window shows your ARC Plus and ARC Solo sites, Network Devices, Custom Views, and Reports.

To view an item, click on its icon. By default, Reports require a double-click to open. You can change this behavior in the Options dialog.

Each item in the Resources window has a context menu, accessed by a right-click, that shows a list of actions that can be performed on that item.



By default, the Resources window is docked to the left-hand side of the screen. You can move, hide, or close the window to suit your needs.

New items (sites, network devices, custom views, etc.) are created in the Resources window. Once created, these items are available to drag into the Navigator to group them into categorized views that you define, as described in the next section. To completely delete an item, delete it from the Resources window.

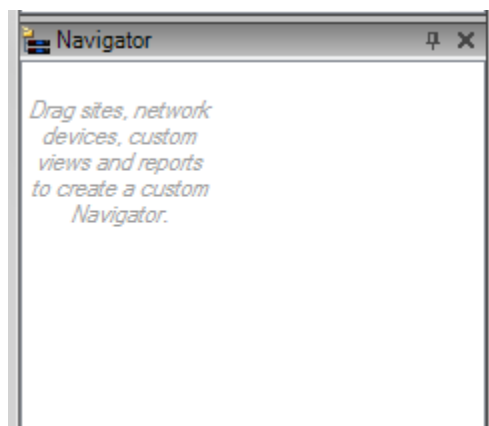
## Navigator

The Navigator lets you organize items from the Resources window into groups. Using a hierarchical network view, similar to a Windows-style file system, you can create new folders and drag in sites, custom views and reports from the Resources window wherever you like.

These groupings make it easy for you to view your site data in a way that is meaningful to you. For example, you could group all stations managed by a certain engineer together or put all AM stations in one group, all FM stations in a second group and all TV stations in a third group. Or you could create regional groups for east coast, central and west coast, with subgroupings by market.

The Navigator starts out unpopulated. Create as many views within the Navigator as you like. Multiple copies of sites, custom views and reports can be displayed in the Navigator, giving you complete flexibility in displaying your assets. The original, underlying data remains unchanged and is displayed in the Resources window.

To completely delete an item, delete it from the Resources window. All instances of the item are automatically removed from the Navigator..

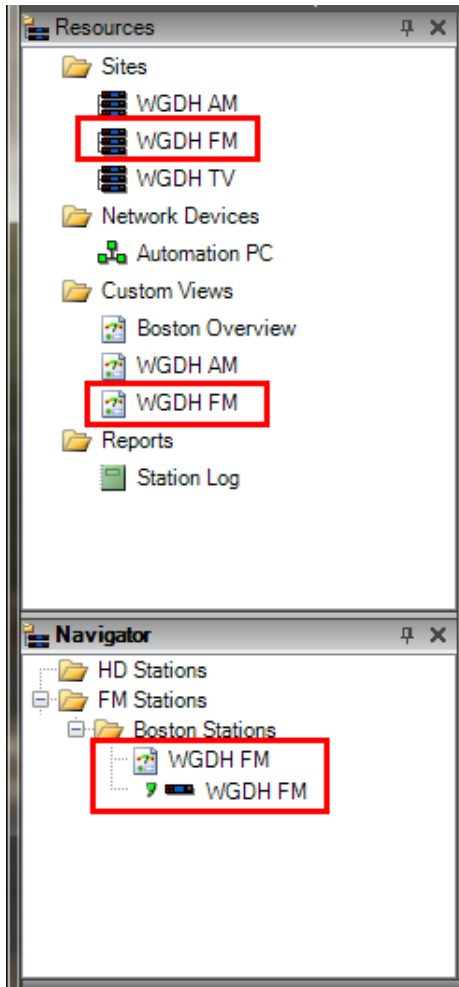


Unpopulated Navigator

To create a network topology within the Navigator, add new folders and drag sites, network devices, custom views, and reports from the Resources window. You can nest folders within folders to create hierarchies.

In this example, the main folder, FM Stations, contains a Boston Stations subfolder. The WGDH FM station sites and Custom Views are copied into the Navigator's Boston Stations folder.

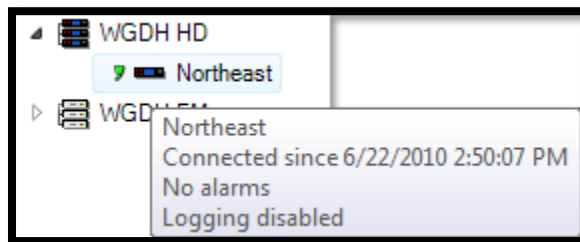




Copies of Items Dragged from Resources Window to Navigator

### Resources Tool Tips

Tool tips are available for most Resources window and Navigator icons. Hover over an icon to see more information about it.



Navigator Tool Tip

## Default Views

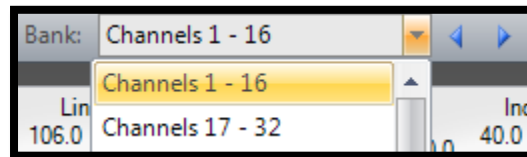
AutoPilot can display a Default View for each site without any additional configuration. To open a default view, click on the site's icon in the Resources window or Navigator. The Default View will show all of the channels on the selected site, using the labels and colors configured for the site.

Opening Default Views with a single click can be disabled in the Options dialog. To open a default view when this is the case, double-click on the site or right-click and select "Default View".

Default Views may also be opened in a new window by right-clicking on the site and selecting "Default View in New Window".

## ARC Plus Channel Banks

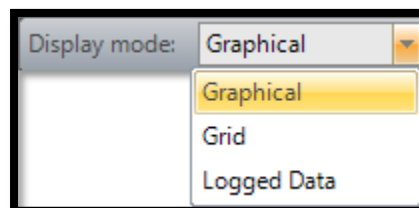
ARC Plus sites will also show a "channel bank" selector, breaking up the site in 16 channel pages. To view a different bank of channels, select the desired range from the drop-down list, or use the navigation buttons.



Channel bank selector for ARC Plus sites

## Default View Display Modes

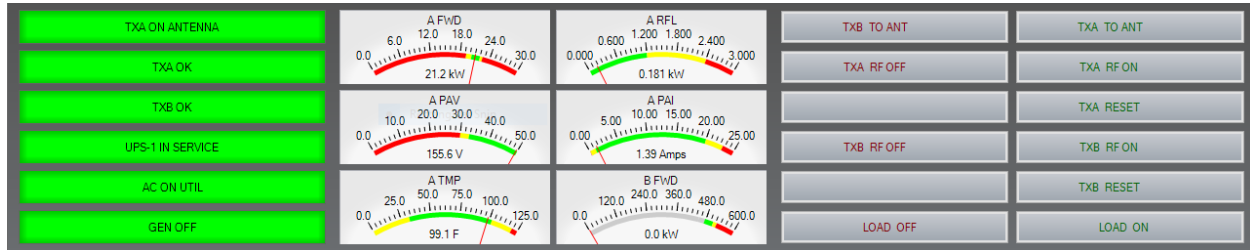
AutoPilot offers three types of default views: Graphical, Grid, and Log View. To select a display mode, use the drop-down in the Default View tool bar.



Display Mode Selector

## Graphical View

The Graphical View is the primary Default View. The Graphical View displays site data using realistic analog gauges and LEDs.



ARC Plus Graphical View

## Grid View

The Grid View displays all of the site's channels in a three-pane grid (metering, status, and commands). Warning conditions are highlighted in yellow and critical conditions in red. This allows an operator to quickly assess site conditions and maximizes the amount of data that can be easily read on one page.

#	Meter	Value	Units	#	Status	#	Lower	Raise
1	A FWD	21.7	kW	1	TXA ON ANTENNA	1	TXB TO ANT	TXA TO ANT
2	A RFL	0.186	kW	2	TXA OK	2	TXA RF OFF	TXA RF ON
3	A PAV	155.6	V	3	TXB OK	3		TXA RESET
4	A PAI	1.39	Amps	4	UPS-1 IN SERVICE	4	TXB RF OFF	TXB RF ON
5	A TMP	99.1	F	5	AC ON UTIL	5		TXB RESET
6	B FWD	0.0	kW	6	GEN OFF	6	LOAD OFF	LOAD ON
7	B RFL	0.0	kW	7	FM ON PRIMARY AUDIO	7	TX-B TO AIR	TX-A TO AIR
8	B PAV	0.0	V	8	DUMMY LOAD OFF	8	MANUAL	AUTO
9	B PAI	0.0	Amps	9	TX-A LOAD OK	9		TRANSFER-1
10	B TMP	70.2	F	10	TX-B NO LOAD	10	PRESET 2	IPRESET 1
11	TEMP OUT	54.6	Deg	11	TXA RF ON	11	PRESET 4	IPRESET 3
12	TEMP IN	68.6	Deg	12	TXB RF OFF	12	PRESET 6	IPRESET 5
13	TEMP AC	51.2	Deg	13	ON AIR	13	PRESET 8	IPRESET 7
14	UTIL V	118.7	V	14	MANUAL	14	SELECT IP STL	SELECT RF STL
15	UPS1	117.8	V	15	NO SMOKE	15	INT LIGHTS OFF	INT LIGHTS ON

Grid View

## Logged Data View

The Logged Data View shows the site data that AutoPilot has captured and/or logged, (including telemetry, status conditions, alarms, and events). This view allows easy access to the log without needing to run a report. There are several options that control the behavior of the log view:

Options	
<b>Date Range</b>	AutoPilot can show the most recent data limited by a number of days, or all of the data in a specific date range.
<b>Messages</b>	The Log View always shows telemetry. Additionally, AutoPilot can include status conditions, alarms, and events.

Date / Time	1: A FWD (kW)	2: A RFL (kW)	3: A PAV (V)	4: A PAI (Amps)	5: A TMP (F)	6: B FWD (kW)	7: B RFL (kW)	8: B PAV (V)	9: B PAI (Amps)	10: B TMP (F)	11: TEMP OUT (Deg)	12: TEMP IN (Deg)	13: TEMP A/C (Deg)	14: UTIL V (V)	15: UPS1 (V)	16: UPS2 (V)
12/08/2021 2:33:02.624 PM	21.0	0.179	155.2	1.37	98.8	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.4	117.5	0.0
12/08/2021 2:28:03.325 PM	21.3	0.182	155.9	1.40	99.3	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.9	118.0	0.0
12/08/2021 2:23:03.083 PM	21.8	0.186	155.4	1.38	98.9	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.5	117.6	0.0
12/08/2021 2:18:02.723 PM	21.2	0.181	155.1	1.37	98.7	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.3	117.4	0.0
12/08/2021 2:13:02.411 PM	21.4	0.183	155.2	1.37	98.8	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.4	117.5	0.0
12/08/2021 2:08:22.176 PM	21.4	0.183	155.7	1.40	99.1	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.8	117.9	0.0
12/08/2021 2:08:14.541 PM	21.7	0.186	154.7	1.35	98.3	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.0	117.1	0.0
12/08/2021 2:06:44.588 PM	21.8	0.186	155.7	1.40	99.2	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.8	117.9	0.0
12/08/2021 2:05:51.861 PM	21.0	0.179	154.7	1.35	98.3	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.0	117.1	0.0
12/08/2021 2:05:51.75 PM	21.0	0.179	154.7	1.35	98.3	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.0	117.1	0.0
12/08/2021 2:05:51.607 PM	21.0	0.179	154.7	1.35	98.3	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.0	117.1	0.0
12/08/2021 2:05:10.09 PM	21.4	0.183	155.2	1.37	98.8	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.4	117.5	0.0

### Logged Data View

### Custom Views Overview

Custom Views allow you to completely customize the look and feel of AutoPilot to suit your needs. For more information about creating Custom Views, read [Creating Custom Views](#).

Custom Views offer a wide variety of onscreen components to display site data. Custom Views can include any number of channels of any type, from multiple sites (even using different models of remote control).

*Popular uses of Custom Views include:*

- Interfaces specifically designed for operators, engineers, managers, etc.
- Summary screens showing high-level site data from multiple sites.
- "Drill-down" interfaces allowing users to click on status indicators to learn more about alarm conditions.
- Map views to show status indicators on state, regional, or national maps, corresponding with the location of the site.

To open a Custom View, click on the desired view in the Resources window or Navigator (Custom Views appear in the "Custom Views" folder in the Resources window). Note that single-clicking to open a Custom View can be disabled in the Options dialog. If this is the case, double-click on the Custom View, or right-click and select "Show View".

To open a Custom View in a new Window, right-click on the Custom View in the Resources or Navigator window and select "Show View in New Window".

**Note:** *You can open a Custom View outside of AutoPilot by double-clicking the Custom View file in Windows.*

### Linking Sites to Custom Views

To use a Custom View instead of the Default View for a site, right-click on the site in the Resources window or Navigator and select "Link Custom View". AutoPilot will prompt you for the desired Custom View file. Once you have linked a site to a Custom View, clicking on the site in the Resources window or Navigator will open the Custom View instead of the Default View.

To restore the default behavior, right-click on the site and select "Unlink Custom View".

*Note: You can still access a Default View for a site when linked to a Custom View by right-clicking on the site and selecting "Default View".*

## Reports Overview

AutoPilot Reports allow you to format and print/display your logged data from one or more sites. Reports can be viewed onscreen, printed to paper, or saved as a PDF file. AutoPilot can automatically print a report on a regular basis, as well as automatically email a PDF of the report to one or more email addresses.

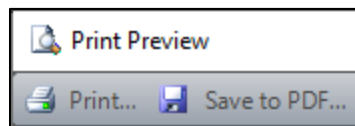
A Report in AutoPilot is a template, describing what data should be included and how it should look. Whenever you run a report, AutoPilot pulls the appropriate data from the database. Once you have created your Report, you can run it as often as needed, and do not need to edit it to update your data.

To learn how to create a report, read [Creating Reports](#).

### Running Reports

To run a report, you can print it directly, or view a print preview (either in AutoPilot's main window or in a new window). The print preview display also allows you to save to PDF.

	WDHH A FWD (kW)	WDHH A RFL (kW)	WDHH A PAV (V)	WDHH A PAI (Amps)	WDHH A TMP (F)	WDHH B TMP (F)	WDHH TEMP (Deg)	WDHH TEMP (Deg)	WDHH TEMP (Deg)
Wednesday, December 8, 2021									
12:00:00 AM	21.8	0.186	155.7	1.40	99.2	70.2	54.6	68.6	51.2
1:00:00 AM	21.8	0.186	155.7	1.40	99.2	70.2	54.6	68.6	51.2
2:00:00 AM	21.0	0.179	154.7	1.35	98.3	70.2	54.6	68.6	51.2
3:00:00 AM	21.4	0.183	155.2	1.37	98.8	70.2	54.6	68.6	51.2
4:00:00 AM	21.0	0.179	154.7	1.35	98.3	70.2	54.6	68.6	51.2
5:00:00 AM	21.7	0.186	155.6	1.39	99.1	70.2	54.6	68.6	51.2
6:00:00 AM	21.8	0.186	155.7	1.40	99.1	70.2	54.6	68.6	51.2
7:00:00 AM	21.8	0.186	155.7	1.40	99.2	70.2	54.6	68.6	51.2
8:00:00 AM	21.0	0.179	154.7	1.35	98.3	70.2	54.6	68.6	51.2
9:00:00 AM	21.9	0.187	155.9	1.40	99.3	70.2	54.6	68.6	51.2
10:00:00 AM	21.4	0.183	155.2	1.37	98.9	70.2	54.6	68.6	51.2
11:00:00 AM	21.5	0.184	155.4	1.38	98.9	70.2	54.6	68.6	51.2
12:00:00 PM	21.0	0.179	154.7	1.35	98.3	70.2	54.6	68.6	51.2
1:00:00 PM	21.3	0.182	155.1	1.37	98.7	70.2	54.6	68.6	51.2
2:00:00 PM	21.0	0.179	154.7	1.35	98.3	70.2	54.6	68.6	51.2
2:05:10 PM	21.4	0.183	155.2	1.37	98.8	70.2	54.6	68.6	51.2
2:05:51 PM	21.0	0.179	154.7	1.35	98.3	70.2	54.6	68.6	51.2
2:05:51 PM	21.0	0.179	154.7	1.35	98.3	70.2	54.6	68.6	51.2
2:05:51 PM	21.0	0.179	154.7	1.35	98.3	70.2	54.6	68.6	51.2
2:06:44 PM	21.8	0.186	155.7	1.40	99.2	70.2	54.6	68.6	51.2
2:08:14 PM	21.7	0.186	154.7	1.35	98.3	70.2	54.6	68.6	51.2
2:08:22 PM	21.4	0.183	155.7	1.40	99.1	70.2	54.6	68.6	51.2
2:13:02 PM	21.4	0.183	155.2	1.37	98.8	70.2	54.6	68.6	51.2
2:18:02 PM	21.2	0.181	155.1	1.37	98.7	70.2	54.6	68.6	51.2
2:23:03 PM	21.8	0.186	155.4	1.38	98.9	70.2	54.6	68.6	51.2
2:28:03 PM	21.3	0.182	155.9	1.40	99.3	70.2	54.6	68.6	51.2
2:33:02 PM	21.0	0.179	155.2	1.37	98.8	70.2	54.6	68.6	51.2
2:38:03 PM	21.8	0.186	155.6	1.39	99.1	70.2	54.6	68.6	51.2
3:18:03 PM	WDHH	00:00:07	Priority 100	Critical	Low Limit Alarm on A FWD (Ch 1)				
3:18:03 PM	WDHH	00:00:07	Priority 100	Critical	Status Alarm : OFF AIR (Ch 13)				
3:24:21 PM	WDHH	DOOR OPEN							
3:24:33 PM	WDHH	00:00:14	Priority 100	Warning	Status Alarm : DOOR OPEN (Ch 16)				
3:24:34 PM	WDHH	DOOR CLOSED							
3:24:40 PM	WDHH	00:00:04	Priority 100	Critical	Low Limit Alarm on A FWD (Ch 1)				
3:24:40 PM	WDHH	00:00:04	Priority 100	Critical	Status Alarm : OFF AIR (Ch 13)				



"Save to PDF" from the Print Preview window

*Note: AutoPilot requires that you have a default printer selected in Windows to run a report - even if you are not printing to paper. If you do not have a printer installed, you can add a printer to Windows even if one is not connected to your computer.*

To print directly, select the Report in the Resources window or Navigator and select "Print..." from the File menu.

To run a print preview, select the Report in the Resources window or Navigator and select "Print Preview" from the File menu. You can also simply double-click on the Report in the Resources window or Navigator.

To open a print preview in a new window, select the Report in the Resources window or Navigator and select "Print Preview in New Window" from the File menu.

*Note: If desired, you can set AutoPilot to automatically open a print preview when you select a Report in the Resources window or Navigator. To enable this feature, access it from the Options dialog.*

### Alarms Overview

Alarms are generated by the remote control and reported to AutoPilot either via an existing connection or dialup call. Any time an alarm is received, AutoPilot logs the alarm to the database – even if logging is disabled.

Terminology	
<b>Active Alarm</b>	An alarm whose channel is presently still in an alarm state is active.
<b>Inactive Alarm</b>	An alarm whose channel is no longer in an alarm state is inactive.
<b>Incidental Alarm</b>	If an alarm does not have a state that will cause it to become inactive, it is an incidental alarm.
<b>Cleared Alarm</b>	An alarm can be cleared by a user running AutoPilot, or by another source (such as a Web Interface user).
<b>System Alarm</b>	A system alarm is generated by the remote control to indicate an internal error or problem.
<b>Duplicate Alarm</b>	An alarm is a duplicate if it has the same source channel as another alarm.
<b>Root Alarm</b>	A root alarm is an alarm caused by a condition that may also cause one or more other (subordinate) alarms.
<b>Subordinate Alarm</b>	A subordinate alarm is an alarm caused by a chain reaction resulting from a different condition (a root alarm).
<b>Alarm Severity</b>	Alarms are either warning or critical conditions. AutoPilot displays the alarm severity and uses it to color code alarms in Reports.
<b>Alarm Priority</b>	Alarm priority is a numeric value assigned to an alarm condition to help an AutoPilot user determine which alarms are the most or least important.

### The Alarm List

The Alarm List displays all alarms on all currently connected sites. By default, the Alarm List is docked on the bottom of the screen. This is the primary means by which AutoPilot displays alarm information and allows you to clear alarm conditions.

Date/Time	Duration	Network	Site	Severity	Priority	Alarm Type	Message	Time Cleared
12/8/2021 3:32:39 PM		ARC Plus Network..	WDHH	Critical	100	Low Limit	A FWD (Channel 1) 0 kW	
12/8/2021 3:32:39 PM		ARC Plus Network..	WDHH	Critical	100	Status	OFF AIR	
12/3/2021 3:01:13 AM	00:00:03	ARC Plus Network..	WDHH	Critical	100	Low Limit	STL RX LEVEL (Channel 75) 0 mV	
12/3/2021 3:01:13 AM	00:00:02	ARC Plus Network..	WDHH	Warning	100	Status	IRD SILENCE	
12/3/2021 3:01:13 AM	00:00:02	ARC Plus Network..	WDHH	Warning	100	Status	IRD NO LOCK	
12/3/2021 3:01:13 AM	00:00:02	ARC Plus Network..	WDHH	Critical	100	Status	PPM LOSS	

### Alarm List

#### Tool Bar Buttons

The Alarm List has its own tool bar, allowing you to clear one or more alarms and change how alarms are displayed.

	<b>Clear All Alarms</b>	Clears every alarm in the Alarm List.
	<b>Clear Selected Alarms</b>	Clears the icon or icons that are current selected in the Alarm List.
	<b>Show Cleared Alarms</b>	When "Show Cleared Alarms" is enabled, the Alarm List will include alarms that have already been cleared. Cleared alarms are show in gray, italicized text.
	<b>Show Active Alarms Only</b>	When "Show Active Alarms Only" is enabled, the Alarm List will only show "active" alarms.
	<b>Show Duplicate Alarms</b>	When "Show Duplicate Alarms" is enabled, the Alarm List will show every instance of an alarm. When not enabled, the Alarm List will hide duplicate alarms, and display "More..." next to an alarm if duplicates exist.







*To clear alarms on a single site only, use the Site Alarms dialog.*

Fields	
<b>Date/Time</b>	The date and time (in the local time zone) when the alarm occurred.
<b>Duration</b>	For inactive alarms, the duration (hours, minutes, and seconds) for which the alarm was active.
<b>Network</b>	The name of the Network in AutoPilot where this alarm occurred.
<b>Site</b>	The name of the Site where this alarm occurred.
<b>Severity</b>	The severity (warning or critical) of the alarm.
<b>Priority</b>	The priority of the alarm (1 – 255).
<b>Alarm Type</b>	Describes the source of the alarm (meter, status, system, user, etc).
<b>Message</b>	Describes the alarm condition.
<b>Time Cleared</b>	For cleared alarms, the date and time (in the local time zone) when the alarm was cleared.

*Note: To sort alarms by one of the fields above, click on the field in the list's header. Click again to sort in the opposite direction.*

## Icons

The following icons are displayed in the Alarm List to describe the type and state of an alarm:

 <b>Active Alarm</b>	This alarm is active, not cleared, and occurred before AutoPilot connected to the site.
 <b>New Active Alarm</b>	This alarm is active, not cleared, and happened after AutoPilot connected to the site.
 <b>Inactive Alarm</b>	This alarm is no longer active.
 <b>Incidental Alarm</b>	This is an incidental alarm that occurred before AutoPilot connected to the site.
 <b>New Incidental Alarm</b>	This is an incidental alarm that occurred after AutoPilot connected to the site.
 <b>Cleared Alarm</b>	

## Root and Subordinate Alarms

When Alarm Relationships are defined, the Alarm List will display an expansion icon next to a root alarm, and "roll up" subordinate alarms.



		6/23/2010 11:26:26 AM	WGDH HD	Northeast
		6/23/2010 11:26:26 AM	WGDH HD	Northeast
		6/23/2010 11:26:26 AM	WGDH HD	Northeast

Root Alarm, shown expanded with subordinate alarms below it

## Adding Alarms

The ARC Plus supports user-generated alarms. To add an alarm to the ARC Plus, right-click the icon for the desired site in the Resources window or Navigator and select "Add Alarm Message...". Select an alarm severity and priority and enter a message for the alarm. Click OK to create the alarm.



The dialog box is titled "Add Alarm Message on Northeast" and contains the following fields:

- Severity: Warming (dropdown menu)
- Message: (text input field)
- Priority: 100 (spin box) (1 - 255)
- Buttons: OK, Cancel

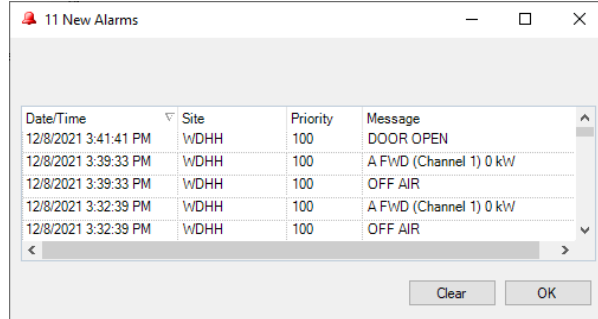
Add Alarm Message Dialog

*Note: Critical alarms will cause the ARC Plus to dial out, if an ESI or RSI is installed.*



## Alarm Notifications

In addition to the Alarm List, AutoPilot can notify you of alarm conditions using the New Alarm dialog, the New Alarm Desktop Alert, and sounds. For more information on configuring alarm notifications, see [Alarm Notification](#).



New Alarm Dialog



New Alarm Desktop Alert

## Device-Specific Features

	ARC Plus	ARC Solo	SNMP
Alarm Severity	✓	✓	
Alarm Priority	✓		
Inactive Alarms	✓	✓	✓
Clear Individual Alarms	✓	✓	✓
Add New Alarms	✓		

### SNMP Notes:

SNMP alarms are created when AutoPilot receives an SNMP trap from a Network Device. The message for an SNMP alarm is determined by the OID (Object Identifier) reported by the trap.

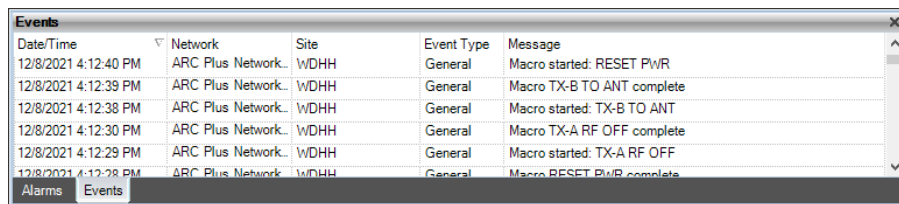
If the OID of the trap is found in the MIB for the Network Device, the description of that OID is used for the alarm message. If AutoPilot cannot find an entry in the MIB for the OID, it will use the OID value itself.

### Events

The ARC Plus includes an onboard Event List. The Event List displays site activity such as commands, macro activity, connections, etc. The kinds of events stored in the log can be configured using AutoLoad Plus.

#### Event List

The Event List in AutoPilot is, by default, displayed docked to the bottom of the screen in a tabbed group with the Alarm List.



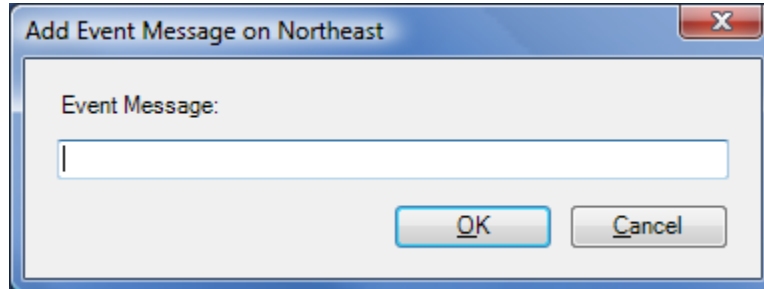
Date/Time	Network	Site	Event Type	Message
12/8/2021 4:12:40 PM	ARC Plus Network...	WDHH	General	Macro started: RESET PWR
12/8/2021 4:12:39 PM	ARC Plus Network...	WDHH	General	Macro TX-B TO ANT complete
12/8/2021 4:12:38 PM	ARC Plus Network...	WDHH	General	Macro started: TX-B TO ANT
12/8/2021 4:12:30 PM	ARC Plus Network...	WDHH	General	Macro TX-A RF OFF complete
12/8/2021 4:12:29 PM	ARC Plus Network...	WDHH	General	Macro started: TX-A RF OFF
12/8/2021 4:12:28 PM	ARC Plus Network...	WDHH	General	Macro RESET PWR complete

Event List

Fields	
<b>Date/Time</b>	The date and time (in the local time zone) when the event occurred.
<b>Network</b>	The name of the Network in AutoPilot where this event occurred.
<b>Site</b>	The name of the Site where this event occurred.
<b>Event Type</b>	Describes the source of the event (macro, command, error, etc).
<b>Message</b>	Describes the event.

### Adding Events

The ARC Plus and ARC Solo support user-generated events. To add an event to the ARC Plus or ARC Solo, right-click on the icon for the desired site in the Resources window or Navigator and select "Add Event Message...". Enter a message for the event and click OK.



Add Event Message Dialog

### Macros

ARC Plus and ARC Solo include onboard Macros. In AutoPilot, Macros can be run or stopped using the Macro List or buttons in Custom Views.

*Note: To add, edit, or remove macros from a site, use AutoLoad Plus or the Jet Designer in AutoPilot for ARC Plus, and use the Jet Designer for ARC Solo.*



#### Macro List

The Macro List, by default, is docked to the right side of the screen and set to auto hide.

The Macro List shows all of the macros on the selected site, and allows you to run or stop macros, and displays the current state of each macro using the icons below. The Macro List includes Jet Flowcharts that have been created to run directly on ARC Plus or Arc Solo.

*Note: If a Custom View or Report is selected instead of a site, the Macro List will display nothing.*

Tool Bar Icons	
 <b>Run</b>	Runs the selected macro.
 <b>Stop</b>	Stops the selected macro.

Macro State Icons	
 <b>Running</b>	The macro is currently running.
 <b>Error</b>	The macro has stopped running due to an error.

## Network Devices Overview

A Network Device is any device on your LAN, WAN, or Internet that can be pinged or queried via SNMP (Simple Network Management Protocol). AutoPilot will periodically query Network Devices, and can use parameters from these devices in logs, reports, and Custom Views.

For more information on configuring Network Devices, see Adding Network Devices ([PAGE 22](#)).

### Default View

When a Network Devices is selected in the Resources window or Navigator, AutoPilot shows a grid-style Default View with the response time and other parameters for the selected device.

Parameter	Value
Response Time	< 1 ms
Forward Power	98.7 %
Reflected Power	0.1 %
VSWR	1 : 1.2

## Adding Sites

### Adding ARC Plus or Arcturus Networks

*Note: One or more ARC Plus or Arcturus sites configured for site-to-site communication are an ARC Plus Network.*

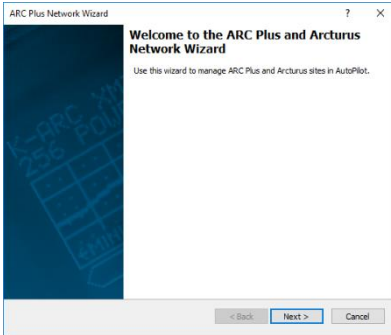
*AutoPilot can connect to some or all of the sites in an ARC Plus Network.*

To add a new ARC Plus network, click File -> New -> ARC Plus Network... to bring up the ARC Plus Network Wizard.

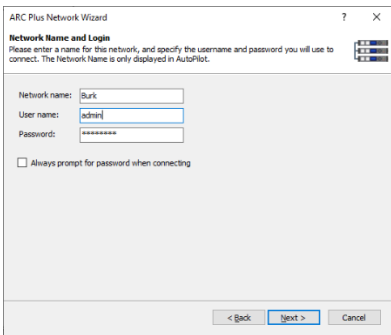
Once the wizard is complete, your ARC Plus Network (and its sites) will appear in the Resources window.

To change your settings, or add/remove sites from the network, you can return to the wizard later by right-clicking a network in the Resources window and choosing "Edit ARC Plus Network...".

## ARC Plus Network Wizard

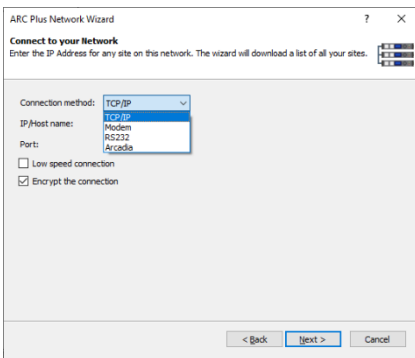


Welcome  
Click "Next" to start the Wizard.



Network Name and Login  
Enter a name to describe this ARC Plus Network. The name will be displayed through AutoPilot.

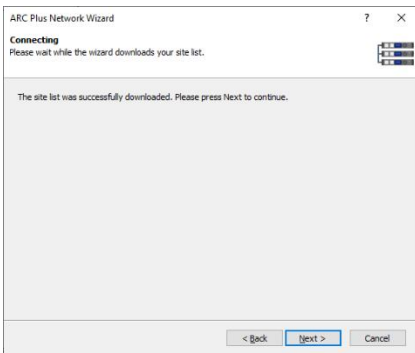
Enter your user name and password for this Network.



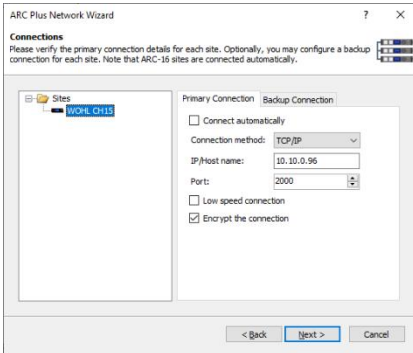
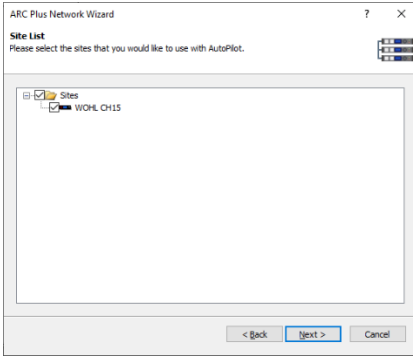
Connect to your Network  
Select either TCP/IP or Arcadia as your connection method. For TCP connections, enter the IP address and Port of any ARC Plus site on this network.

For Arcadia connection, enter the IP address of the Arcadia Server. The Port number should be set to **Port 6379**. For more information, visit [www.burk.com/downloads](http://www.burk.com/downloads), select the Arcadia page, and download the Arcadia User Guide.

Check the Encrypt the connection check box when connecting to an ARC Plus unit running firmware 5.1.0.4 or higher.



Connecting  
Click Next to continue after the ARC Plus Wizard connects to your site.



## Site List

Using the site tree, click the checkbox next to each site in this network that you want AutoPilot to use. Click the checkbox next to the "Sites" folder to select all sites.

## Connections

By default, each site you have selected is configured to a TCP/IP connection using its assigned IP address.

For any site, you can adjust the following connection settings:

### *Connect automatically*

When checked, AutoPilot will automatically connect to this site on startup. If this option is enabled, Warp Engine connections will be disabled for this site.

### *Connection method and settings*

Each site's primary connection can be configured to use TCP/IP or Arcadia

### *Low speed connection*

When checked, AutoPilot will adjust its timeout settings to allow for a low speed connection (such as Satellite).

### *Encrypt the connection*

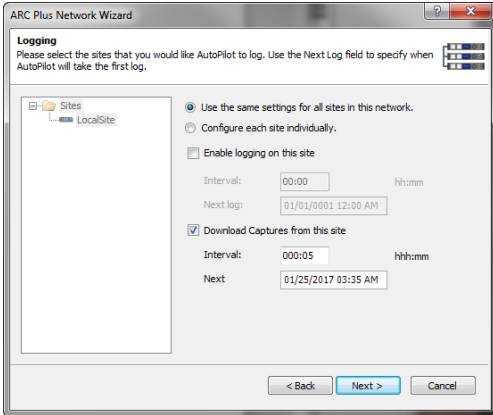
When checked, AutoPilot will make a secure TCP/IP connection. This requires an ARC Plus running firmware version 5.1.0.4 or higher.

### *Backup Connection*

When enabled, AutoPilot will switch to the backup connection settings if the primary connection is unavailable.

### *Retry primary*

When a backup connection is enabled, AutoPilot can retry the primary connection periodically.



## Logging

If desired, AutoPilot can automatically log all or some of the sites on this network.

Logging can be configured individually for each site, or all sites in this network can use the same settings. Using either method you can configure the following:

### *Enable logging on this site*

Checking this box enables logging for the selected site(s).

### *Configure all sites or individual sites*

Select *Configure each site individually* if you want to customize settings for each site. Select *Use the same settings for all sites in the network* to apply the settings to all sites.

### *Interval*

This is the frequency, in minutes or hours, at which AutoPilot will take its log.

### *Next log*

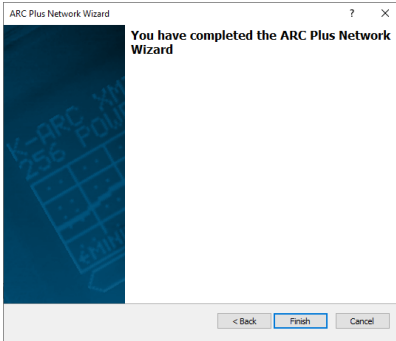
This is the time of day when AutoPilot will take its first log. AutoPilot will always add the logging interval to the next log time to determine when it is time to log again. By doing so, AutoPilot can keep to a regular "pattern" for its log (such as every hour on the hour).

### *Download Captures from this site*

Select the *Download Captures from this site* option to enable the Captures feature, available on ARC Plus Touch units with firmware 5.0.8.1 or newer, allows you to configure the ARC Plus Touch to store periodic captures (snapshots) of a specified range of channel values locally on The ARC Plus Touch. You can create a download schedule on any AutoPilot system to automatically retrieve the captures. If this setting is disabled and re-enabled it will force AutoPilot to download all captures available on the ARC Plus at the next specified download time.

### *Interval*

The download **Interval** (the frequency, in minutes or hours), at which AutoPilot will download its next captures from the ARC Plus.



**Finish**  
Click Finish to save your ARC Plus Network and close the wizard.



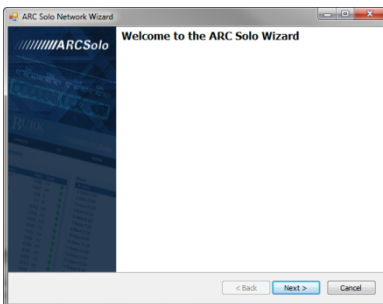
### Adding ARC Solo Networks

To add a new ARC Solo network, click File -> New -> ARC Solo Network... to bring up the ARC Solo Network Wizard.

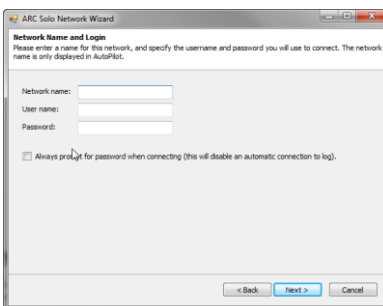
Once the wizard is complete, your ARC Solo Network (and its sites) will appear in the Resources window.

To change your settings, or add/remove sites from the network, you can return to the wizard later by right-clicking a network in the Resources window and choosing "Edit ARC Solo Network...".

### ARC Solo Network Wizard



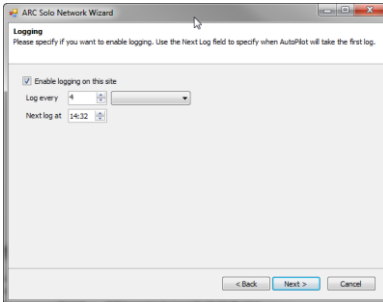
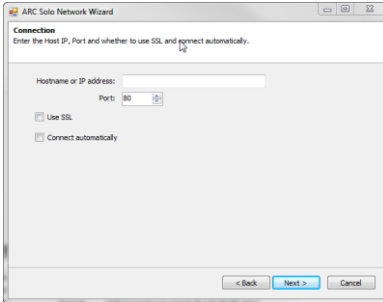
**Welcome**  
Click "Next" to start the Wizard.



**Network Name and Login**  
Enter a name to describe this ARC Solo Network. The name will be displayed through AutoPilot.

Enter your user name and password for this Network.  
Enable Always prompt for password when connecting if you want to disable an automatic connection to log.





## Connection

Enter the hostname or IP address of the host.  
Select the host port.

### *Connect automatically*

When checked, AutoPilot will automatically connect to this site on startup. If this is enabled, Warp Engine connections will be disabled for this site.

## Logging

If desired, AutoPilot can automatically log all or some of the sites on this network.

Logging can be configured individually for each site, or all sites in this network can use the same settings. Using either method you can configure the following:

### *Enable logging*

Checking this box enables logging for the selected site(s).

### *Log every*

This is the frequency, in minutes or hours, at which AutoPilot will take its log.

### *Next log*

This is the time of day when AutoPilot will take its first log. AutoPilot will always add the logging interval to the next log time to determine when it is time to log again. By doing so, AutoPilot can keep to a regular "pattern" for its log (such as every hour on the hour).

## Finish

Click Finish to save your ARC Solo Network and close the wizard.

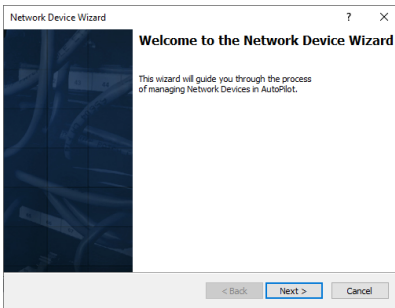
## Adding Network Devices

To add a new Network Device, click File -> New -> Network Device... to bring up the Network Device Wizard.

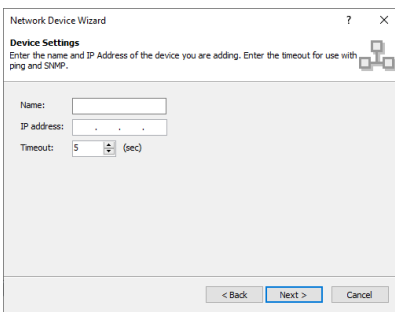
Once the wizard is complete, your device will appear in the Resources window and you can drag it into Navigator.

To change your settings, you can return to the wizard later by right-clicking a device in the Resources window or Navigator and choosing "Edit Network Device".

### Network Device Wizard



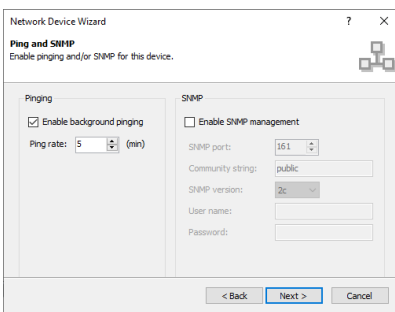
Welcome  
Click "Next" to start the Wizard.



Device Settings  
Enter a name to describe this device. The name will be displayed through AutoPilot.

Enter the IP address for this device.

If desired, adjust the timeout (the number of seconds AutoPilot will wait for a response to a ping or SNMP GET request).



Ping and SNMP  
You can enable ping and/or SNMP management for this device.

When using ping, enter the rate (in minutes) at which you want to ping this device.

For SNMP management, the following parameters are available:

#### *SNMP port*

The port used by this device's SNMP agent (161 by default)

#### *Community string*

The read only community string for the SNMP agent.

#### *SNMP version*

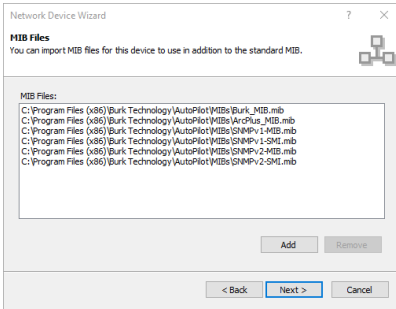
The version of SNMP used by the SNMP agent (1, 2c, or 3).

### User name

(For SNMP v3 only) your user name on the SNMP agent.

### Password

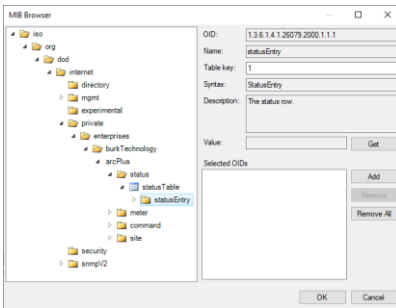
(For SNMP v3 only) your password on the SNMP agent.



### MIB Files

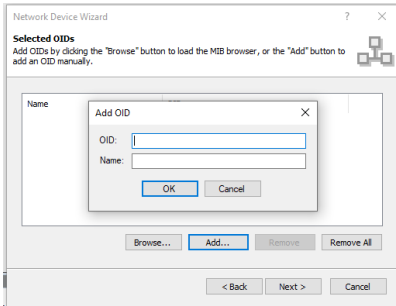
By default, AutoPilot includes standard MIB files and ARC Plus MIB files. You can add additional MIB files for device or vendor specific parameters by clicking the "Add" button.

AutoPilot uses the MIB to facilitate selecting parameters (see below), and for reading SNMP traps.



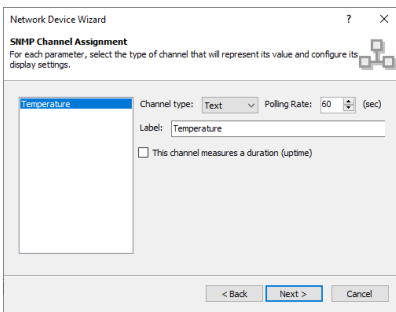
### MIB Browser

Use the MIB browser to select the parameters you want AutoPilot to use. When you select a parameter in the tree, AutoPilot will display its name, OID (Object Identifier) and description. Click "Get" to read this value.



### Add OIDs

To add OIDs that are not available in your device's MIB, click "Add..." then enter the OID value and assign it a name.



### SNMP Channel Assignment

For each parameter you have chosen, you can assign the following:

#### Channel type

Parameters can be interpreted as meters, status, or text channels.

#### Polling rate

This is the rate at which AutoPilot will request the value for this parameter.

Each type of channel has different configuration options. You can configure how the channel behaves and how it is displayed in AutoPilot.

### *Meter*

#### *Settings*

##### Label

Assign a label to describe this meter.

##### Units

The units label for this meter.

##### Decimal places

The number of decimal places to show for this meter's value.

##### Meter min

The minimum value shown on a graphical meter for this channel.

##### Meter max

The maximum value show on a graphical meter for this channel.

##### Multiplier

AutoPilot will multiply the value received from the SNMP agent by the multiplier.

### *Limits*

##### 2nd Low [color]

The color displayed for the second lower limit of a graphical meter.

##### 2nd Low [value]

The value where the second lower limit of the meter begins.

##### 1st Low [color]

The color displayed for the first lower limit of a graphical meter.

##### 1st Low [value]

The value where the second first limit of the meter begins.

##### Normal

The color displayed for the "normal" range of a graphical meter.

##### 1st High [color]

The color displayed for the first upper limit of a graphical meter.

1st High [value]

The value where the second first upper of the meter begins.

2nd High [color]

The color displayed for the second upper limit of a graphical meter.

2nd High [value]

The value where the second upper of the meter begins.

### *Status*

On Label

The label that will be displayed when the status is "on".

Off Label

The label that will be displayed when the status is "off".

On Color

The color that will be displayed for a status indicator when the status is "on".

Off Color

The color that will be displayed for a status indicator when the status is "off".

On string

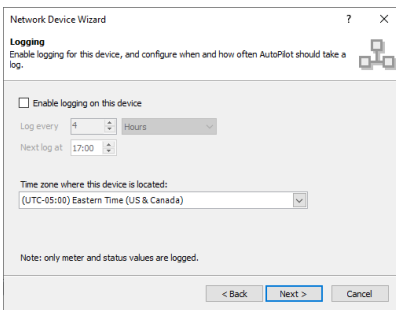
AutoPilot will consider this status channel to be "on" when the value received from the SNMP agent matches the "on string".

### *Text*

Label

The label describing this channel.

If this channel is used to measure a duration (such as "uptime"), check the corresponding checkbox. AutoPilot will read the value of this parameter as a duration and display it appropriately.



### *Logging*

If desired, AutoPilot can automatically log this device. The following logging parameters can be configured:

#### *Enable logging*

Checking this box enables logging for the device.

#### *Interval*

This is the frequency, in minutes or hours, at which AutoPilot will take its log.

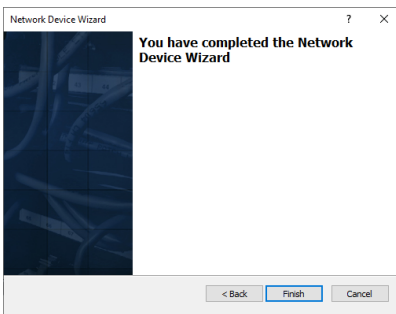
#### *Next log*

This is the time of day when AutoPilot will take its first log. AutoPilot will always add the logging interval to the next log time to determine when it is time to log again. By doing so, AutoPilot can keep to a regular "pattern" for its log (such as every hour on the hour).

#### *Time zone*

Select the time zone where this device is located.

*Note: AutoPilot only logs meter and status channel on Network Devices. "Text" channels are not included in the log.*



#### Finish

Click Finish to save your device and close the wizard.

## Alarms on Network Devices

AutoPilot will automatically treat incoming SNMP traps as alarms for the Network Devices you have added. Be sure to include the appropriate MIB files to be sure AutoPilot is able to correctly identify alarms.

*Note: To configure your SNMP agent to send traps to AutoPilot, refer to the documentation for the device, or contact your network administrator.*

*AutoPilot uses UDP port 162 to receive SNMP traps.*

Only one program on your computer can operate as an SNMP manager using the standard port numbers. If you have another SNMP manager running already, you must first disable it before you can use SNMP management in AutoPilot.



**Only one program on your computer can operate as an SNMP manager using the standard port numbers. If you have another SNMP manager running already, you must first disable it before you can use SNMP management in AutoPilot.**

## Creating Custom Views

Custom Views allow you to tailor AutoPilot's interface to suit your operation's needs. You can create Custom Views using built-in templates, or from scratch with the Custom View Editor.

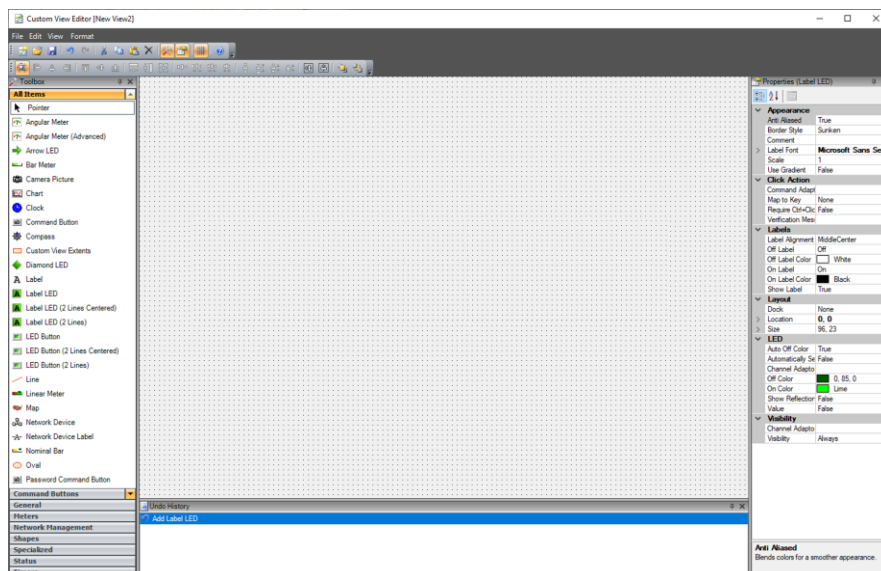
Terminology	
<b>Custom View Control</b>	A Custom View Control is an onscreen element such as a graphical meter, status LED, or command button.
<b>Binding</b>	Binding a Custom View Control to a remote control channel or other parameter creates a link between that parameter's value or associated action and the behavior of the control. Binding to a meter channel causes the control to display the meter's value. Binding to a status condition causes the control to display the status condition (on or off). Binding to a command causes the control to execute that command when clicked.
<b>Control Properties</b>	A control's properties are attributes that define its appearance and behavior, such as colors, limits, and labels.
<b>Custom View Template</b>	A Custom View Template is a pre-defined Custom View that you can associate with your site. You can edit the resulting Custom View to tailor it to your specific needs.
<b>Selection Handles</b>	Selection handles are squares that appear around a selected control. Selection handles are used to indicate which control or controls are selected, and to resize the control.

## Custom View Editor Overview

The Custom View Editor allows you to create and edit Custom Views. The components of the editor are described below.

### Canvas

The canvas is where you will arrange your Custom View controls. When you display your Custom View in AutoPilot, only the canvas is shown.



Canvas

## Grid

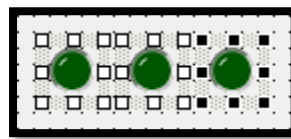
By default, the Custom View Editor displays grid dots on the canvas. The grid is useful for aligning and positioning controls.

You can turn the grid on or off by clicking "Show Grid" from the View menu in the Custom View Editor.

## Primary Control Selection

When more than one control is selected, one control is the primary control. Some actions in the Custom View Editor only apply to the primary selection, or otherwise relate to it.

The primary control is indicated by normal selection handles (black, by default). Secondary selection handles are shown using a reverse color scheme.

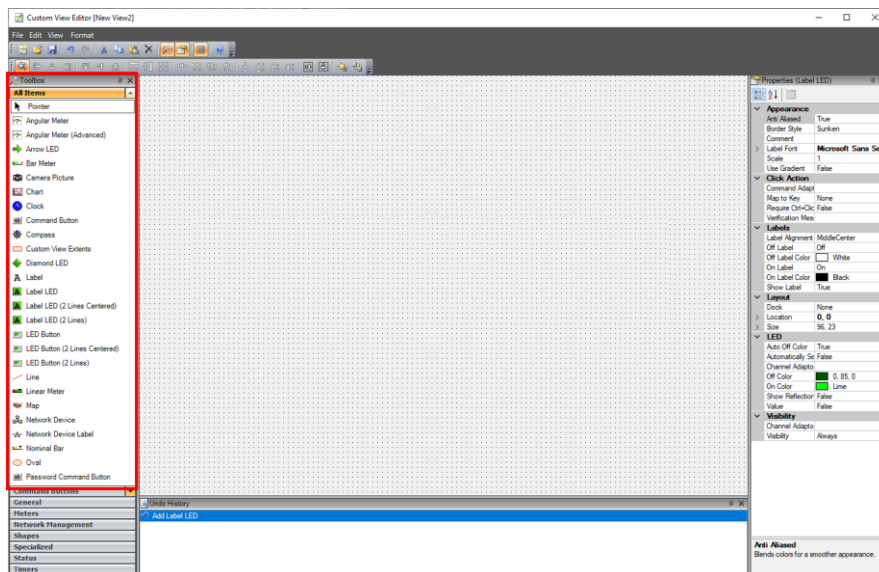


Multiple controls selected. The primary control is shown with black selection handles.

*Note: When displayed in AutoPilot, your Custom View will not show the grid.*

## Toolbox

The toolbox is a categorized list of all the Custom View controls available to you. Each control appears in its associated category (Meters, Status, etc), as well as in the "All Items" category. To add a control to the canvas, click and drag the control to the desired location. When you release the mouse button, the Custom View Editor will add a new instance of the selected control to the canvas.



Toolbox



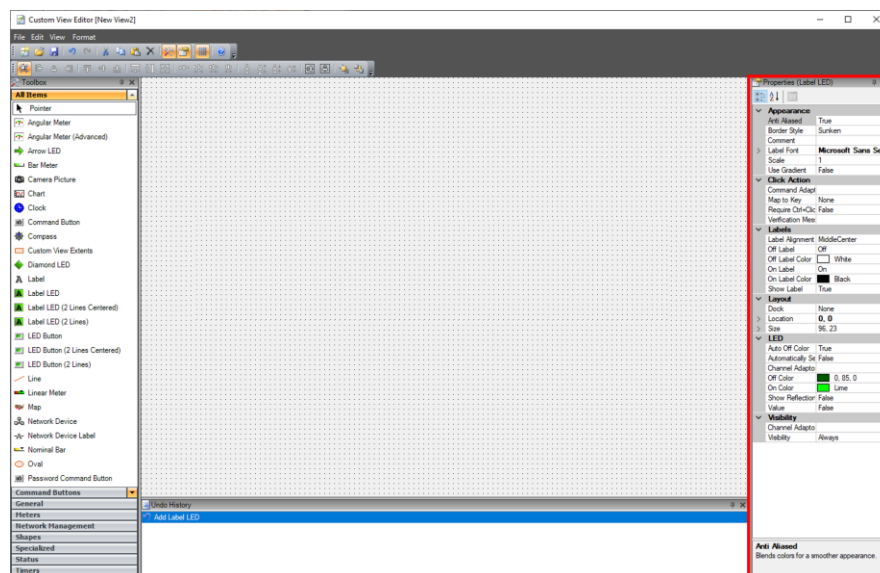
## Properties

The properties grid displays and allows you to edit all of the properties for the selected control.

To change a property, select its value in the grid and replace it with the desired value. Some properties use pull down menu or popup dialog (indicated by a "..." button).

A description of each property appears at the bottom of the property grid when a property row is selected.

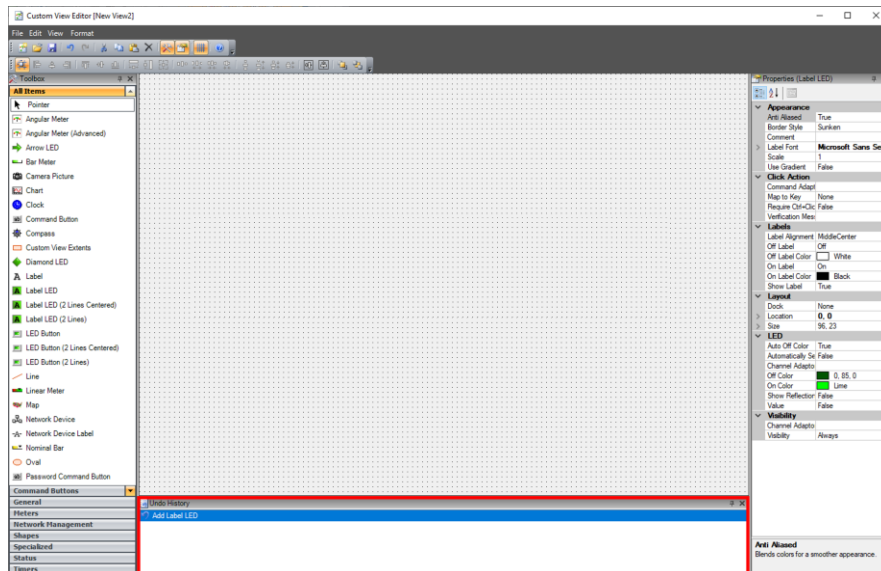
*Note: If more than one control is selected, the properties grid uses the primary control (see above).*



Properties

## Undo History

The undo history list displays recently performed actions that you can undo (or redo). Double-clicking on an item in the list will undo or redo that action.



### Undo History

### Adding, Positioning and Sizing Controls

To add a control to the Custom View canvas, click and drag the control from the toolbox and drop it onto the canvas.

To move a control already on the canvas, simply click and drag to reposition it.

To resize a control, select the control by clicking on it and use the grab handles to resize it. Control can be resized horizontally or vertically, or diagonally using the corner handles.

### Snap to Grid

To make it easier to align and position controls, the Custom View Editor can force controls to conform to the grid as they are moved and sized. This functionality is enabled by default, and can be toggled by selecting "Snap to Grid" from the Format menu.




















### Positioning Controls on Top or Below Other Controls

Use "Send to Back" and "Bring to Front" from the Format menu to position controls above or below other controls on the canvas.

### Sizing and Aligning Controls Relative to Other Controls

The Custom View Editor has several tools that allow you to size and align controls relative to other controls on the canvas. These are useful tools to help create Custom Views with a polished, professional appearance.

To use these tools, select multiple components at once by using Ctrl+Click or clicking and dragging a selection rectangle around the desired controls.

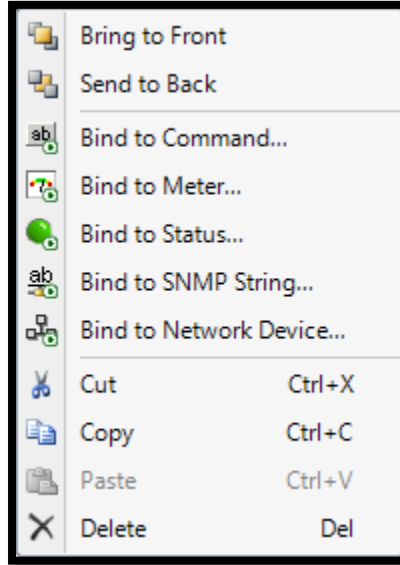
 <b>Align Lefts</b>	Aligns all the controls on the left-hand side.
 <b>Align Centers</b>	Aligns all the controls in the center.
 <b>Align Rights</b>	Aligns all the controls on the right-hand side.
 <b>Align Tops</b>	Aligns all the controls on the top.
 <b>Align Middles</b>	Aligns all the controls in the middle.
 <b>Align Bottoms</b>	Aligns all the controls on the bottom.
 <b>Make Same Width</b>	Sets all the controls to the same width.
 <b>Make Same Height</b>	Sets all the controls to the same height.
 <b>Make Same Size</b>	Sets all the controls to the same size.
 <b>Make Horizontal Space Equal</b>	Spaces all the controls so that horizontal spacing is equal between each control.
 <b>Increase Horizontal Space</b>	Increases the horizontal spacing between each control.
 <b>Decrease Horizontal Space</b>	Decreases the horizontal spacing between each control.
 <b>Remove Horizontal Space</b>	Removes all horizontal spacing between the controls.
 <b>Make Vertical Space Equal</b>	Spaces all the controls so that vertical spacing is equal between each control.
 <b>Increase Vertical Space</b>	Increases the vertical spacing between each control.
 <b>Decrease Vertical Space</b>	Decreases the vertical spacing between each control.
 <b>Remove Vertical Space</b>	Removes all vertical spacing between the controls.
 <b>Center Horizontally in View</b>	Positions the controls in the center of the view horizontally.
 <b>Center Vertically in View</b>	Positions the controls in the center of the view vertically.

### Binding to Channels

Binding a control to a channel connects its value or action to the selected channel. Controls can be bound to the following:

- Commands (relays on a remote control or actions performed in AutoPilot).
- Meters
- Status (remote control status channels or other site conditions).
- SNMP strings
- Network Device state

To bind a control, right click on the control and select the type of channel to which you want to bind.

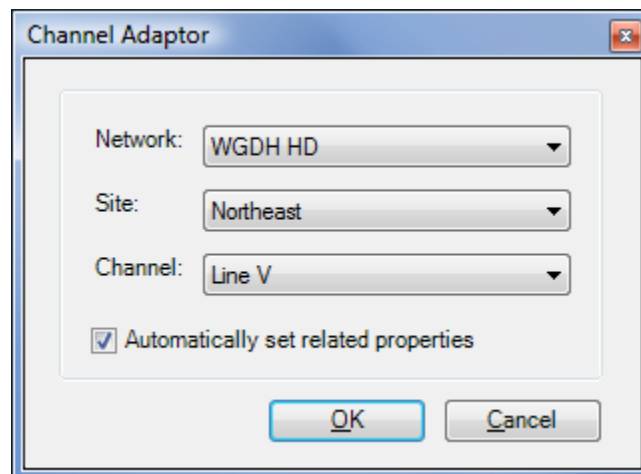


Context menu used to bind channels. Normally, unavailable channel types are grayed out.

### *Binding Dialogs*

To finish binding a channel, use the binding dialog to select the channel (or other data) to which you want to bind.

Check "Automatically set related properties" if you want the properties for this control to match the settings for the target channel as configured in AutoLoad Plus. For example, if you are binding a graphical meter to a meter channel, checking this box will set the min and max values and colors to match the configuration of the meter channel.



An example of a binding dialog. The dialog varies based on the type of channel and other selections.

## Customizing Control Properties

Every Custom View control has its own set of properties that you can use to customize its appearance and behavior. These properties are displayed in the properties window, docked, by default, to the right side of the screen.

To adjust a property, simply select it in the grid and enter the desired value.

Some properties use a drop-down display or popup dialog to support more advanced editing. Some properties have expand/collapse buttons to show more/less to expose/hide additional settings related to a property (such as "Size" and "Location").

A brief description of each property is available at the bottom of the property grid.

*Note: For objects that have a customizable image property, the image size must be smaller than 3MB.*

### Map to Key Property

The Click Action group for each Custom View control includes a property called "Map to Key". This property makes it possible to activate the control's click action by pressing the configured keyboard key.

### Adjusting the Property Grid Display

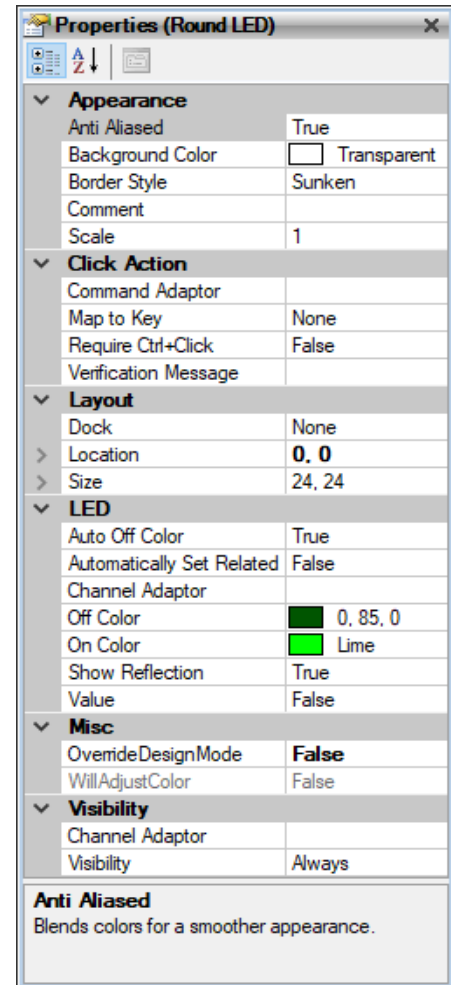
- The pane at the bottom of the property grid used for the description can be resized to show more or less of the text.
- The columns of the property grid can be resized by clicking on the vertical dividing line between them.
- The properties listed in the grid can be sorted alphabetically or organized by group. Use the buttons in the property grid tool bar to change the order.

## Using Charts

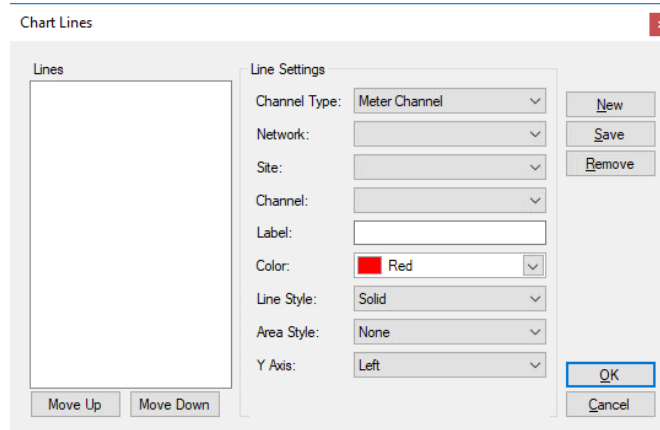
The Custom View Chart control allows you to plot one or more meter channels on a strip chart. Because the chart control can support multiple lines, using it is different from other metering controls.

### Creating a New Chart

Begin by dragging and dropping a chart onto the Custom View canvas, as you would any other control. To add a meter channel to the chart, use the "Chart Lines" property, found in the "Data" category in the property grid. Click the [...] button to open the editor dialog.



Select the network, site, and channel for the line you want to add. Click "Save" to add the line to the chart. You may add as many lines as you like, and can specify the color and style (solid, dotted, etc) for each line.



The Chart Lines dialog

The following fields are available for each chart line:

<b>Channel Type</b>	The type of channel to be plotted.
<b>Network</b>	The network containing this meter channel.
<b>Site</b>	The site containing this meter channel.
<b>Channel</b>	The meter channel you want to plot.
<b>Label</b>	The label to use for line name.
<b>Color</b>	The color the chart will use to draw this line.
<b>Line Style</b>	The style of the line (solid, dotted, etc).
<b>Area Style</b>	The area fill style to use (solid or none).
<b>Y Axis</b>	The axis (left or right) that this line will use as its Y-axis.

#### Using the Secondary Y-Axis

If you want to use a single chart to plot channels that use two different units – such as forward power as a percentage and reflected power in Watts – you can use both the left and right Y-axes. To do so, simply pick "Left" or "Right" as desired for each line in the Chart Lines dialog.

#### Adjusting the Y-Axis Range

By default, AutoPilot will automatically scale the y-axis range to suit the data plotted on the chart. This range will continue to change over time as new values arrive. If you would prefer to configure a static range, you may do so using the "Left Y Axis" and "Right Y Axis" properties for the chart.

First, set the "Auto Scale" property of the axis to "False". Then set the "Minimum Value" and "Maximum Value" properties to suit your needs.

## Adjusting the Time Span

The duration of the chart is configured using the "Duration (sec)" property of the chart. This specifies the time span represented by the x-axis. Although this property uses seconds, the chart supports months or even years of data.

## *Pre-Loading Data and Background Caching*

When AutoPilot first loads a chart, it will use your logged data to pre-load values into the chart. The amount of data available for this feature depends on your logging settings and the range of the chart.

When AutoPilot starts, it will immediately begin "caching" data for your charts, even if they are not on screen.

## Editing and Deleting Custom Views

### Editing Existing Custom Views

To edit an existing Custom View, right-click on the Custom View in the AutoPilot Resources window or Navigator and select "Edit Custom View...". AutoPilot will open the Custom View in the Custom View Editor.

You can also use the File -> Open dialog in the Custom View Editor to open a Custom View file directly.

### *Deleting Custom Views*

To delete a Custom View, right-click on the Custom View in the AutoPilot Resources window and select "Delete". If you delete a Custom View from the Navigator, only that instance of the view is deleted. To completely remove the Custom View, it must be deleted in the Resources window.

*Note: If you delete a Custom View file directly in Windows, AutoPilot will automatically remove that Custom View from the Resources window and Navigator.*

## Using Custom View Templates

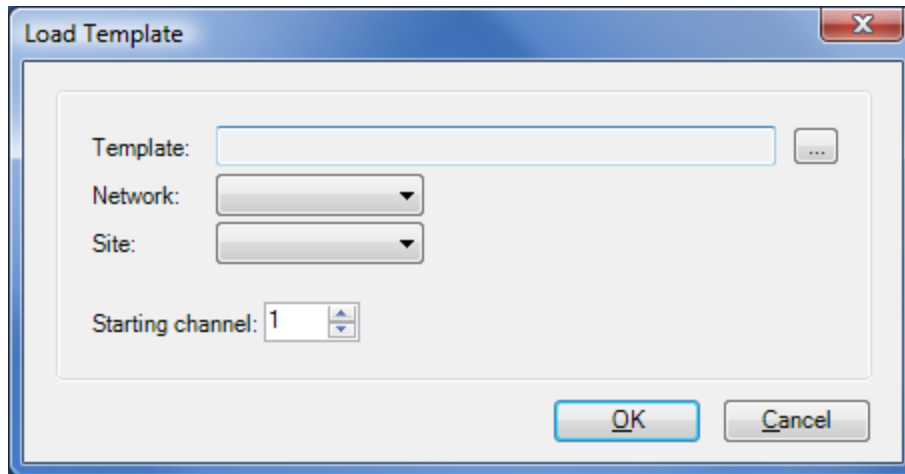
Custom View Templates allow you to quickly configure a pre-defined Custom View to work with one of your sites. A template that resembles the Default View is available, as well as templates for PlusConnect™ transmitter interfaces.

To create a new Custom View from a template, open the Custom View Editor (File → New Custom View) and select "New From Template" from the File menu in the editor.

The "Load Template" dialog will prompt you for the following information:

<b>Template</b>	Click the browse button ("...") to locate the template you want to use.
<b>Network</b>	Choose the network containing the site that you want to use for this Custom View.
<b>Site</b>	Choose the site that you want to use in this Custom View.
<b>Starting channel</b>	Templates are designed to work with a sequential set of channels. For example, to use channels 17-32 on the selected site, enter "17" as the starting channel.

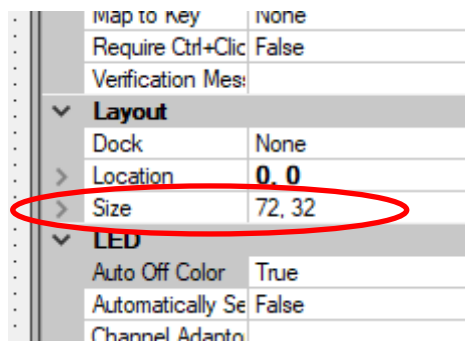
*Note: When using Custom View Templates for PlusConnect channels, use the same "starting channel" value that you used in AutoLoad Plus when you set up the PlusConnect.*



The Load Template dialog prompts you for the template and site information necessary to configure your new Custom View.

### Scaling Custom Views to Fit Screen Size

Each Custom View control has a "Size" property as shown in the screen segment below:



Size Property

The Size property defines the size of the control in pixels. In this example the control is 72 pixels wide and 32 pixels high. The size of the control can be modified by editing the Size property or by clicking and dragging the handles on the control on the custom view editor canvas.

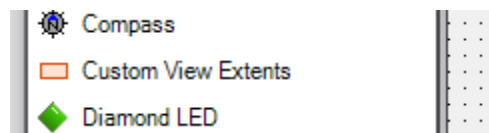
The overall pixel size of a Custom View is determined by the sizes and locations of the controls making up the Custom View. The control located farthest to the right side of the Custom View determines the width of the Custom View. You can calculate the Custom View width by adding the horizontal location of the far-right control with its horizontal size. Similarly, the height of the Custom View is determined by the control located farthest toward the bottom of the Custom View.

After you create and save a Custom View, it will be displayed in its native size as defined in the preceding paragraph. If the Custom View is smaller than the available screen size, there will be blank space to the right of and/or below the Custom View on the screen. If the Custom View is larger than the



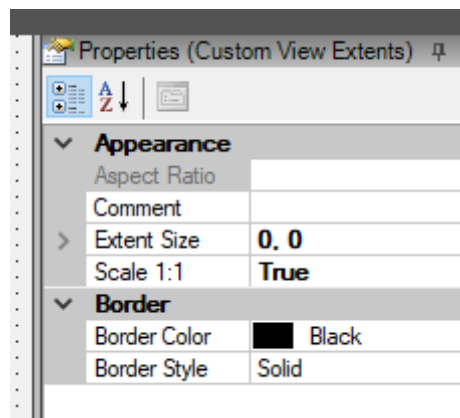
available screen size, only a portion of the Custom View will be visible and scroll bars will be provided to scroll the Custom View within the display space.

It is possible, however, to configure a custom view so that it will automatically scale larger or smaller to make the best use of available screen space. Custom View scaling is configured using a special Custom View control called "Custom View Extents". The Custom View Extents control is shown below in the Custom View Editor Toolbox.



The Custom View Extents control shown in the Custom View Editor toolbox.

When you first create a Custom View you can drag a Custom View Extents control onto the canvas. If you don't manually add a Custom View Extents control, one will be automatically added to the Custom View the next time the view is opened in the Custom View Editor. The Properties for the Custom View Extents control are shown below.



Custom View Extents Properties

When the Scale 1:1 property is set to "True" as shown above, the Custom View Extents control has no effect. The Custom View will be displayed in its native resolution as if there were no Custom View Extents control on the canvas.

If the Scale 1:1 property is set to "False" the Custom View will automatically scale to fit the available screen space. The behavior of the scaling can be configured using the "Extent Size" property. If the Extent Size property is left at its default setting of "0,0" the Custom View will be scaled so that every control in the Custom View is completely displayed on the target screen. Depending on the relative shapes of the display and the Custom View, this may result in blank space on the screen below or to the right of the custom view.

If a non-zero Extent Size is entered, the Custom View will be scaled so that the specified Extent Size is fully displayed on the target screen. If the entered Extent Size is smaller than the native Custom View

size, one or two scroll bars will be provided to scroll the Custom View making it possible to see the parts of the view that are outside the specified extents.

## Creating Reports

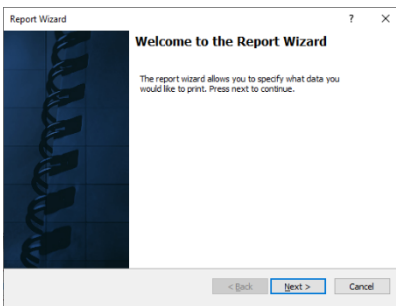
AutoPilot reports allow you to view and archive site data in a readable, professional format. Reports can contain data from any number of sites, even when each site uses a different type of remote control.

When you create a report in AutoPilot, you are creating a "template" to describe what data a report should include, and how it should be presented. When you run a report, AutoPilot reads the data directly from the onboard database. Once you create a report, you can run it any time you need to in the future without having to make any edits to update data.

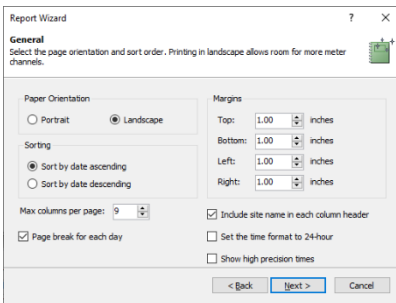
*Note: For best performance, AutoPilot reports always read data from the computer's local database, even when SQL Server logging is enabled.*

### Using the Report Wizard

To create a new report using the Report Wizard, select File → New → Report... in AutoPilot.



Welcome  
Click "Next" to start the Wizard.



General  
Select the desired page orientation. Reports can use portrait or landscape orientation.

Select the desired sort order for your site data. Data can be sorted in ascending or descending order.

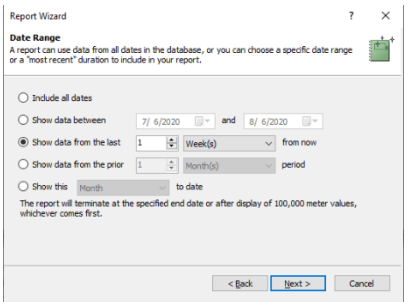
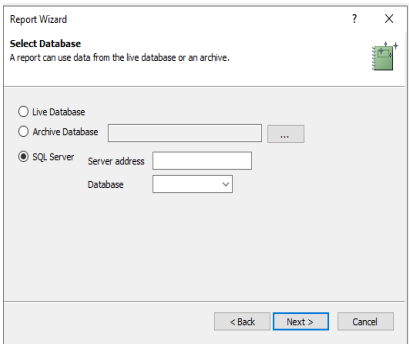
Select the maximum number of columns to display on page.

Check the "Page break for each day" checkbox if you want each day's data to begin on a new page.

Set the desired margins for the page layout.

Other options available:

- Include the site name in each column header.
- Set the time format to 24-hour.



- Show high precision time stamps with resolution in milliseconds.

### Select database

A live or archived database can be selected to run reports.

Furthermore, a specific SQL server can be identified to run reports. Enter the address and database name of the SQL server.

### Date Range

This page allows you to select the dates that will be included in the report. Because AutoPilot reads from the database each time you run a report, it will always use the most current data.

There are several ways AutoPilot can filter data by date:

#### *Include all dates*

AutoPilot will use all of your logged data. This is not recommended if you have been logging for a long time.

#### *Show data between...*

This option allows you to select specific start and end dates (inclusive) to include in the report. Because AutoPilot will use these exact dates, this is useful for "one-off" reports, and not reports that you intend to reuse.

#### *Show data from the last...*

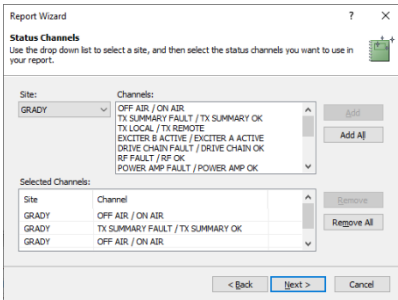
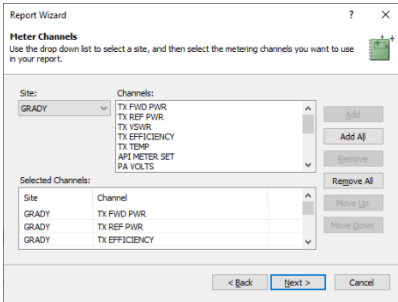
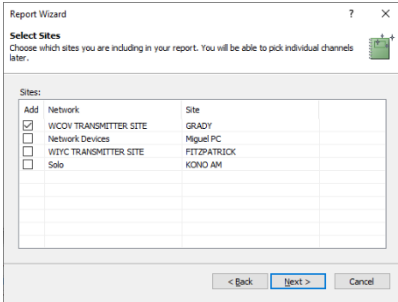
This option will use range of dates that ends today (the day the report is run, not the day it is created) and begins a certain amount of time before today. For example, if you enter "10 Days", the report will include data starting 10 days ago and ending today.

#### *Show data from the prior...*

This option uses an even block of time, ending no later than the day the report is run. For example, if you enter "1 Week" the report will include data from last week. This option is useful for reports that you intend to run on a regular basis, where you want the date range to fall on even boundaries.

#### *Show this ... to date*

This option shows the current block of time (month, week, etc) up through the current date (the date the report is being run).



For example, if you select "Month" and run the report on April 20, the report will show April 1 through April 20.

### Select Sites

Place a checkmark in the list next to each site that you want to include in the report. You must include at least one site.

### Meter Channels

This page allows you to select the meter channels that you want to include in the report. Meter channel values are displayed in columns on the report. For best results, limit the number of meter channels you include in your report to what will fit cleanly on the page. If there is not enough room for all of your channels, the report will span multiple pages with different sets of channels on each page.

To add channels, select the site from the "Site" drop-down and then select the desired channel(s) in the "Channels" list. Click "Add" to add the selected channel(s), or click "Add All" to add all channels.

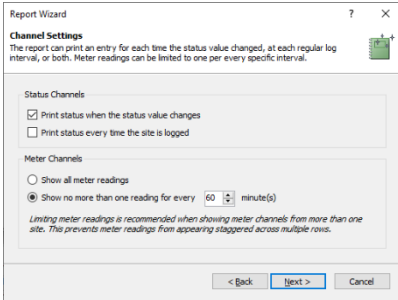
The channels you have selected appear in the "Selected Channels" list. You can select channels in this list and click "Remove" to remove them from the report, or click "Remove All" to start over.

Use the "Move Up" and "Move Down" buttons to control the order in which the channels appear. Your report will use this order to arrange the meter value columns across the page.

### Status Channels

This page allows you to select the status channels that you want to include in the report. There are a couple of different ways that status channel values may appear in the report – this is configured on the next page.

To add channels, select the site from the "Site" drop-down and then select the desired channel(s) in the "Channels" list. Click "Add" to add the selected channel(s) or click "Add All" to add all channels.



The channels you have selected appear in the "Selected Channels" list. You can select channels in this list and click "Remove" to remove them from the report or click "Remove All" to start over.

## Channel Settings

### Status

Your report can print status values using one or both of two methods:

#### *Print status when the status value changes*

Status messages will appear in the report as events. A message will print in the report showing the new status value and the time when it changed. Status channels that remain unchanged will not print at all.

#### *Print status every time the site is logged*

The report will show a line for each status value for every time when the site was logged. This works best only when a small number of status channels are included in the report.

### Meters

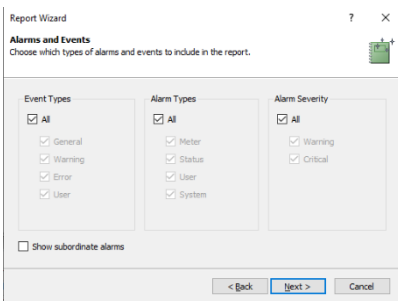
Meter readings will appear all on one line (space permitting) with the exact time (to the second) of each reading. When a report comprises multiple sites, this can cause readings to "stagger" across multiple lines if the timestamps differ at all. Use one of the following options to optimize your report:

#### *Show all meter readings*

This is the default choice and is recommended for single-site reports.

#### *Show no more than one reading for every ... minute(s)*

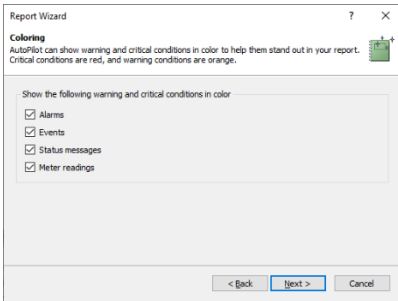
This option is recommended when including more than one site in a report. Meter readings that happen within the specified period of time are merged onto one line. If two sites log at slightly different times (for example, 1:00:05 and 1:00:42), this will prevent the meter readings from breaking up into more than one line on the report.



## Alarms and Events

Select the types of events, alarms, and alarm severities that you want to include in the report.

If you are using Alarm Relationships, use the "Show subordinate alarms" checkbox to control whether or not subordinate alarms

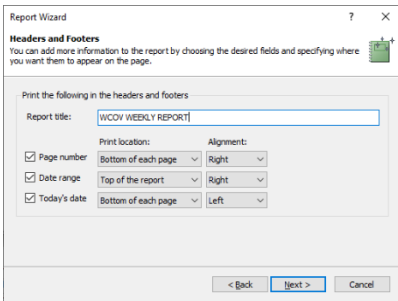


are included in the report. If you are not using this feature, this checkbox is unimportant.

### Coloring

Certain kinds of data can be highlighted in color to help call attention to serious conditions. "Warning" conditions will appear in orange, and "critical" conditions will appear in red.

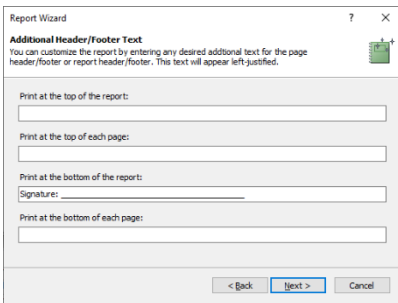
Use the checkboxes on this page to specify what kinds of data should use this coloring feature.



### Headers and Footers

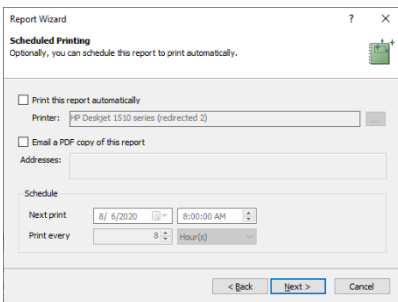
If desired, enter a title for your report. This will appear at the top of the report in large print.

You may also include page numbers, the date range of the report, and today's date (the date you are running the report, not the date you created it). For each of the options, you can specify where on the report/page it will appear.



### Additional Header/Footer Text

To further customize the report to suit your needs, you can add additional text to the top and bottom of each page, the top of the first page, and the bottom of the last page. For example, you can a signature line, contact information, station details, etc.



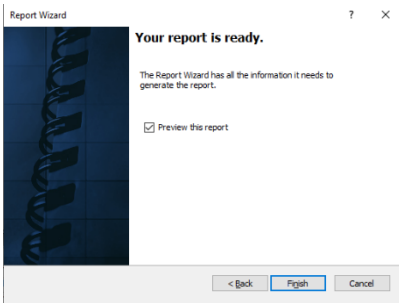
### Scheduled Printing

You can schedule your report to be printed or emailed automatically.

For automatic printing, select the printer you want to use.

For email, enter your email address, or a list of addresses separated by commas (engineer@example.com, gm@example.com).

Select the date and time you want AutoPilot to print, and the frequency with which you want it to repeat the print job. Each time AutoPilot prints this report, it will read current values from the database.



*Note: When using automatic printing, it is strongly recommended that you not use a specific date range, as this would cause an identical report to print each time.*

#### Finish

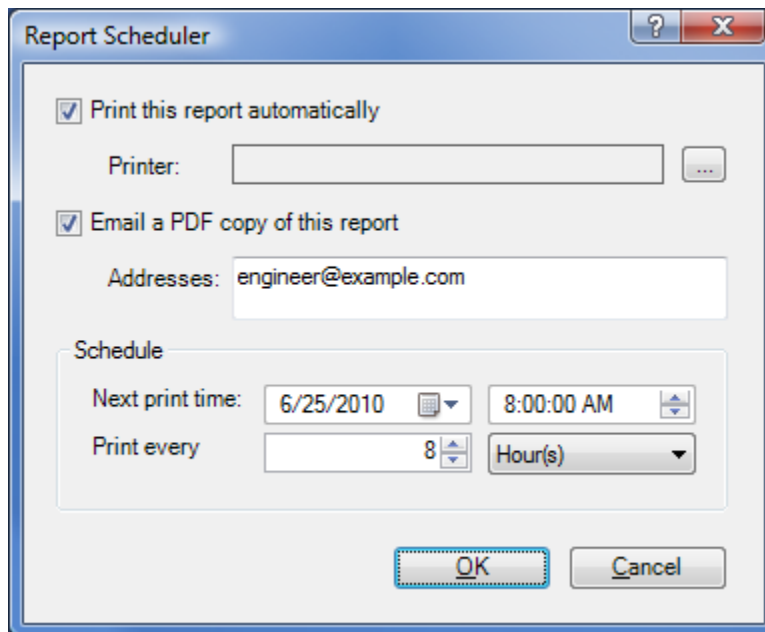
Check "Preview this report" if you want to open a print preview now.

Click Finish to save your report and close the wizard.

## Scheduling Reports

You can schedule reports to automatically print on a regular basis, or have AutoPilot automatically send a PDF copy of the report to one or more email addresses.

You can configure the report scheduling options using the Report Wizard, or by right-clicking on a report in the Resources window and choosing "Schedule Report...".



Report Scheduler dialog

## Viewing, Printing and Emailing Reports



**AutoPilot requires that you have a default printer configured in Windows, even if you are only using print preview or PDF reports.**

## Print Preview

You can open a print preview in a separate window or directly in AutoPilot.

To open a print preview window, select a report from the Resources window or Navigator and click "Print Preview" from the File menu.

To open a print preview directly in AutoPilot, double-click the report's icon in the Navigator.









*Note: You can configure AutoPilot to run a print preview from the Resources window using a single click by changing the options in the Options dialog.*

## Saving to PDF

You can save a report to a PDF file by first opening a print preview and then clicking the "Save to PDF..." button in the tool bar.



"Save to PDF..." in the print preview tool bar.


Print Preview Tool Bar	
 <b>Print...</b>	Prints the report after prompting for a printer.
 <b>Save to PDF...</b>	Saves the report to a PDF file.
<b>Page #</b>	Displays the current page number. Typing a number in this field will jump to that page.
 <b>First Page</b>	Moves to the first page of the report.
 <b>Previous Page</b>	Moves to the previous page.
 <b>Next Page</b>	Moves to the next page.
 <b>Last Page</b>	Moves to the last page of the report.
<b>Size</b>	Displays the relative size of the report (% of full size). Only enabled when not using the "Auto" feature (see below).
 <b>Zoom In</b>	Increases the size of the report.
 <b>Zoom Out</b>	Decreases the size of the report.
<b>Auto</b>	When enabled, the report is automatically sized to fit the current window. Turning this feature off allows you to scale the report manually.

*Note: The report size settings available in the tool bar have no effect on the printed appearance of the report.*

## Printing


To print a report, select the report's icon in the Navigator and click "Print..." from the File menu.

To print from a print preview window, use the "Print..." icon from the print preview tool bar (see above).

To print automatically, see  [Scheduling Reports](#).



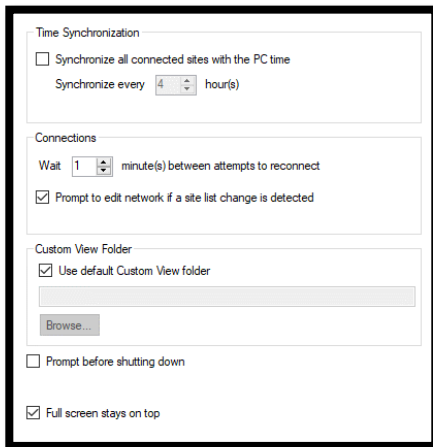
## Emailing Reports

AutoPilot can automatically email reports to one or more addresses. See  [Scheduling Reports](#) for more information.

## In Depth

### Program Options

The Options dialog allows you to customize and enable many of the features in AutoPilot. Open the Options dialog by clicking "Options" from the Tools menu.



#### General

##### *Time Synchronization*

To have AutoPilot synchronize the time on each remote control with the PC's clock, enable Time Synchronization. Specify the how often you want AutoPilot to perform this action.

*Note: AutoPilot will automatically compensate for any differences in time zone between the PC and the remote control.*

##### *Connections*

*Wait ... minute(s) between attempts to reconnect*

This setting adjusts how long AutoPilot waits before attempt to reconnect to a site after a connection was lost.

*Prompt to edit network if a site list change is detected*

For ARC Plus networks, AutoPilot can notify you if the site list has changed (sites were added or removed), and prompt you to use the ARC Plus Network Wizard to make any edits you may need as a result.

##### *Custom View Folder*

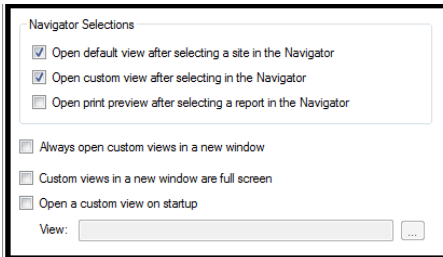
*Use default Custom View folder*

If unchecked, users can specify the directory where they wish the Custom View files to be stored. The default location is:

C:\ProgramData\Burk Technology\AutoPilot\Custom Views

*Prompt Before Shutting Down*

If you enable this feature, AutoPilot will display a confirmation dialog when you close the program, giving you a chance to cancel if you were closing by mistake.



### *Full screen stays on top*

When this is checked, Custom Views that are full screen will always be the top layer. Users will need to exit full screen mode to access other sections of AutoPilot when this is checked. To toggle full screen mode press **ESC, F11** or right click on the AutoPilot canvas for a context menu to toggle full screen mode.

## Resources

### *Navigator Selections*

#### *Open default view after selecting a site in the Navigator*

When checked, AutoPilot will open the Default View for a site when you single-click on its icon in the Navigator.

#### *Open custom view after selecting in the Navigator*

When checked, AutoPilot will open a Custom View when you single-click on its icon in the Navigator.

#### *Open print preview after selecting a report in the Navigator*

When checked, AutoPilot will automatically generate and display a print preview for a report when you single-click on its icon in the Navigator.

#### *Always Open Custom Views in a New Window*

When checked, all custom views will open in their own window, rather than in the main AutoPilot window.

#### *Custom Views in a New Window are Full Screen*

When enabled, AutoPilot opens Custom Views in a New Window in full-screen mode.

#### *Open a Custom View on Startup*

When enabled, AutoPilot will open the selected Custom View when the program starts. This is most commonly used for map or overview displays employed by network operation centers.

**Alarm Sound**

Play a sound when a new alarm occurs

Play sound for all alarms

Play sound for critical alarms only

Sound File:

Loop the sound

Wait  ms between each loop

Stop looping after  minute(s)

**Email Notifications**

Email alarm notifications

Email all alarms

Email critical alarms only

Master Email Addresses:

[Configure selective alarm email lists](#)

Show New Alarms dialog

Show desktop alert

## Alarm Notification

For more information on alarm notifications, see Alarm Notifications ([PAGE 12](#)).

### Alarm Sound

Enable this feature if you want AutoPilot to play a sound file when it receives a new alarm from any site.

Optionally, AutoPilot can loop the sound file. You can specify how long to wait (in milliseconds) between each iteration of the loop and can have AutoPilot stop looping the sound after a certain number of minutes.

### Email Alarm Notifications

Enable this feature if you want AutoPilot to send an email to the specified address(es) when a new alarm is received. You can choose to receive email notifications on all alarms or just critical alarms.

To enter a list of addresses, separate each address with a comma (,) or semicolon (;).

*Note: This feature requires correct setup of email settings.*

### Show New Alarms Dialog

When enabled, AutoPilot will open the New Alarms dialog when a new alarm is received.

### Show Desktop Alert

When enabled, AutoPilot will show a "desktop alert" when a new alarm is received. The desktop alert displays in the lower right corner of the screen and fades away after a few seconds. This is a useful way to display alarm notifications without interrupting the operator.

Log hidden channels

Take a log after a critical alarm

Take a log after a warning alarm

Wait  seconds after the alarm before logging.

Wait  minutes before retrying a log if unable to take a log.

Use default Log location

Available Drives:

C:\	264.5 GiB
D:\	820.94 MB
M:\	361.71 GiB
O:\	361.71 GiB
P:\	6.44 TiB
R:\	6.44 TiB
S:\	361.71 GiB
T:\	6.44 TiB
U:\	35.32 GiB
V:\	6.44 TiB

Maximum Log File Size:  MB

## Logging

### Log hidden channels

When enabled, AutoPilot will log channels even if they are hidden. Otherwise, AutoPilot will not log data for hidden channels.

### Take a log after a critical alarm

When enabled, AutoPilot will take a telemetry snapshot after it receives a critical alarm.

### *Take a log after a warning alarm*

When enabled, AutoPilot will take a telemetry snapshot after it receives a warning alarm.

### *Wait ... seconds after the alarm before logging*

Specifies the number of seconds AutoPilot will wait before taking a telemetry snapshot after receiving an alarm.

### *Wait ... minutes before retrying a log if unable to take a log*

Specifies the number of minutes AutoPilot will wait before retrying to take a log on a site when the previous attempt was unsuccessful.

### *Use default Log location*

When unchecked, users can specify a location to store the logged data. The default location is:  
C:\ProgramData\Burk Technology\AutoPilot\Databases

### *Available drives*

A list of available drives to select from to store the logged data.

### *Maximum log file size*

The maximum file size of the log database before AutoPilot warns you that the file is too big and should be archived. The default setting is 1024MB.

*Note: AutoPilot will always log the alarm. The settings in this section only affect telemetry logging when alarms occur.*

Log using SQL Server

Server address:

Database:

Use integrated Windows security

Specify a user name and password

User name:

Password:

You will need to restart AutoPilot before these settings take effect.

Enable text file logging

Comma separated values  Tab separated values

File Maintenance

Never delete or archive log files

Automatically delete log files

Automatically archive log files

Delete / archive files after  Days

Note: Text file logs contain up to 255 meter channels. Hidden channels are never logged. You will need to restart AutoPilot before these settings take effect.

## SQL Server

See [SQL Server Logging](#).

## Text File Logging

See [Text File Logging](#).

Password protect AutoPilot configuration

Password:

Confirm:

Require ctrl+click to issue commands on default views

SMTP server:

Port:

From address:

Use authentication

Use SSL / TLS

User name:

Password:

## Security

### *Password protect AutoPilot configuration*

When checked, AutoPilot will require a password to unlock configuration settings. For more information, see Security.

### *Require ctrl+click to issue commands on default views*

When checked, AutoPilot will not issue a command from a Default View unless you hold down the Control key on the keyboard while clicking. AutoPilot will display a prompt if you click on a command without holding the Control key.

*Note: Requiring ctrl+click on Default Views does not affect Custom Views. However, each Custom View command can be configured to require ctrl+click in the Custom View Editor.*

## Email

Email settings are required if you plan to use any of the email features in AutoPilot, such as emailing alarms or PDF reports.

Note: to enable alarm emails, refer to the [Alarm Notification](#) tab.

If you are unsure of your email settings, consult your network administrator or Internet Service Provider.

### *SMTP server*

Enter the IP address or host name of your email server.

### *Port*

The port number used by your SMTP server. This is typically 25.

### *From address*

AutoPilot will use this for the "from address" field in email messages. This setting is not critical but may affect how a spam filter treats messages sent by the software.

### *Use authentication*

Check this box if your SMTP server requires a user name and password, and enter those values in the fields beneath the checkbox.

### *Use SSL / TLS*

Check this box if your SMTP server requires SSL or TLS encryption. Typically, SMTP ports of 465 and 587 require SSL/TLS encryption.

Delay Jet at startup for 60 seconds.  
Leave sites connected after use for 30 seconds.  
Wait 2500 ms before requesting new status/value.  
Allow up to 10000 ms for Jet to receive a response from a site.  
Poll for new data if readings are older than 300 seconds.

## Jet

Jet options control the timing and behavior of Jet Active Flowcharts.

### *Delay Jet startup for [n] seconds.*

When AutoPilot starts, it will delay running Jet Active Flowcharts for the specified number of seconds. Note that you can still run flowcharts manually before Jet starts running.

### *Leave sites connected after use for [n] seconds.*

Jet will automatically connect to sites as needed. When no further interaction is required with a particular site, Jet will disconnect from that site after the specified number of seconds. Note that Jet will not disconnect sites that are connected automatically at startup or connected manually.

### *Wait [n] ms before requesting new status/value.*

When requesting a new status or value from a site, Jet will wait the specified number of milliseconds before polling for data. This allows time for the site's readings to update.

### *Allow up to [n] ms for Jet to receive a response from a site.*

Jet will wait up to the specified number of milliseconds to receive a response from a site when it polls for data. If the site does not respond in the time allowed, the flowchart will show an error.

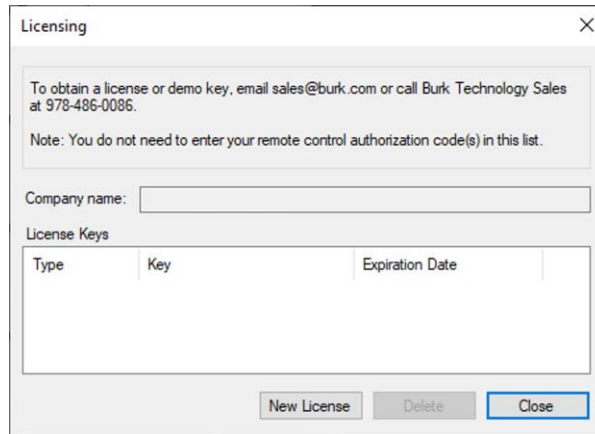
### *Poll for new data if readings are older than [n] seconds.*

When Jet requires site data, it will use the last known value from the site. If the last known value was received more than [n] seconds ago, Jet will poll for new data. Note that Jet will always poll when using the "New Status" and "New Value" commands.

## Licensing

To add license keys for AutoPilot add-ons, or to use a demo key, access the Licensing dialog from the Help menu.

*Note: The Licensing dialog is only used for add-ons and demos. You do not need to enter your remote control's authorization code in this dialog.*



Licensing Dialog

To add a new license, click New License. AutoPilot will prompt you for your company name and license key.

After you enter a license key it will take effect immediately (you do not need to restart the software).





*Note: Each license key you add to AutoPilot must be for the same company name.*




Although it is not normally necessary to remove a license key, you can do so by selecting the license from the list and clicking the Delete button.

## Connectivity

### Connection Methods





AutoPilot supports the following connection methods giving users an indication on the type of connection to the ARC systems.

	<b>Connected</b>	Full connection using the TCP/IP protocol
	<b>Warp Engine connection</b>	Efficient low bandwidth protocol (UDP) via the Burk Technology Warp Engine.
	<b>Not connected</b>	No connection established with the site.
	<b>Connected</b>	Full TCP connection to Arcadia Server for Arcadia NOC Connections.

	<b>Secure Connection</b>	Full connection using a secure Burk Technology TCP/IP protocol.
	<b>Unsecured Connection</b>	Full connection using the standard TCP/IP protocol. A remote control firmware update is required to make the connection secure.
	<b>Unsecured Connection</b>	Full connection using the standard TCP/IP protocol. A remote control hardware upgrade is required to make the connection secure.

### Connecting and Disconnecting

To connect to, or disconnect from, any site, select its icon in the Resources window or Navigator and use the appropriate option from the main menu, tool bar, or context menu (accessed by right-clicking on the site icon). These options are explained below:

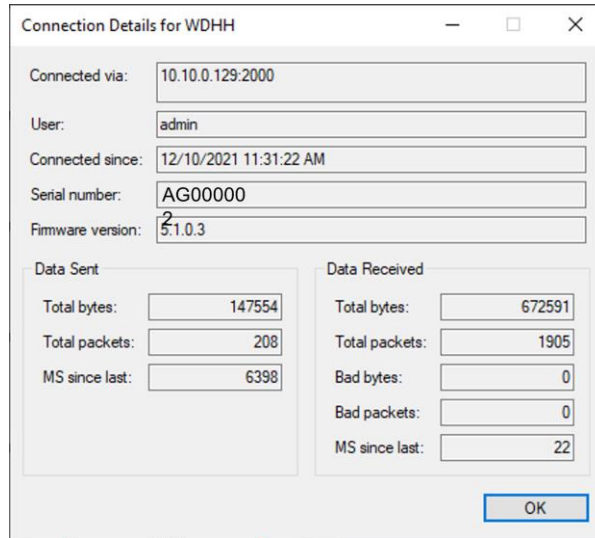
	<b>Connect</b>	AutoPilot will connect using the primary connection settings.
	<b>Connect As...</b>	AutoPilot will prompt you for connection settings and a user name and password before connecting.
	<b>Connect to Backup</b>	AutoPilot will connect using the backup connection settings. AutoPilot will not switch to a primary connection when you manually establish a backup connection in this manner.
	<b>Disconnect</b>	AutoPilot will disconnect from the site. AutoPilot will not restore this connection after you manually disconnect.

*Note: If you have configured a site to not save the password, AutoPilot will always prompt for a password when connecting to that site.*



### Connection Details Dialog

The Connection Details dialog shows connection statistics and other data about your sites. To access this dialog, select a site in the Resources window or Navigator and click "Connection Details" from the File menu.



Connection Details dialog for an ARC Plus

The Connection Details dialog shows the following parameters, depending on what remote control you are connected to:

For All Remote Controls	
<b>Connected via</b>	The IP address or host name plus TCP port.
<b>Connected since</b>	The date and time the connection was established.

ARC Plus	
<b>User</b>	The user name that is logged onto this site.
<b>Serial number</b>	The serial number of the remote control unit.
<b>Firmware version</b>	The version of firmware running on the remote control unit.

### Connection Statistics

Data Sent	
<b>Total bytes</b>	The total number of bytes sent from AutoPilot to the site.
<b>Total packets</b>	The total number of packets sent from AutoPilot to the site.
<b>MS since last</b>	The number of milliseconds since AutoPilot last sent a packet to the site.

Data Received	
<b>Total bytes</b>	The total number of bytes sent from the site to AutoPilot.
<b>Total packets</b>	The total number of packets sent from the site to AutoPilot.

<b>Bad bytes</b>	The number of bytes received from the site that AutoPilot could not parse into a valid packet.
<b>Bad packets</b>	The number of packets received from the site that AutoPilot could not interpret as valid.
<b>MS since last</b>	The number of milliseconds since AutoPilot last received a valid packet from the site

### Site Configuration Cache

AutoPilot saves a copy of your ARC Plus and ARC Solo site configuration files in its onboard cache. This allows AutoPilot to avoid downloading site configuration when it already has the current files.

Although it is never necessary to do so, you can clear these cache files by selecting "Clear Saved Site Configuration" from the File menu.

*Note: After clearing the site configuration cache, you must restart AutoPilot before your ARC Plus or ARC Solo sites will respond to this change.*

### Backup Connections and Automatic Reconnection

AutoPilot has several built-in options to help you stay connected to your sites 24x7.

Terminology	
<b>Primary Connection</b>	Your primary connection to a site is the connection that you consider "normal" and will use in most cases.
<b>Backup Connection</b>	A backup connection is an alternative method that AutoPilot can use to connect to a site.
<b>Automatic Connection</b>	A connection is automatic when AutoPilot connected without requiring any user interaction. When a site is configured to connect at startup, AutoPilot will automatically connect to it when the program starts.
<b>Connection Recovery</b>	When a connection is lost, AutoPilot will first attempt to recover it. AutoPilot does this immediately after a connection loss. If the connection is recovered successfully, AutoPilot will not note a warning in the Application Event List.
<b>Retrying a Connection</b>	Except under certain circumstances (explained below), AutoPilot will retry a connection periodically after a connection loss. This happens only after connection recovery is unsuccessful (see above).
<b>Manual Connection</b>	Whenever you connect to a site by clicking one of the connect icons, you are connecting manually.
<b>Manual Disconnection</b>	Whenever you disconnect from a site by clicking the disconnect icon, you are disconnecting manually.

### Automatically Reconnecting After a Connection is Dropped

AutoPilot will automatically reconnect to a site after a connection is lost. There are two phases to this process:

1. AutoPilot will attempt to recover the connection immediately. If this is successful, AutoPilot will not log a warning in the Application Event List.

2. AutoPilot will periodically retry the connection. The timing of this process is adjustable using the Options dialog.

*Note: If a connection recovery is unsuccessful, AutoPilot will log a warning in the Application Event List. AutoPilot will not log additional warnings if reconnection attempts are unsuccessful, as this would "flood" the log over a period of time.*

*If a connection is restored but then lost again, AutoPilot will log a warning again.*

AutoPilot will not reconnect to a site under the following circumstances:

- You manually disconnected from a site.
- You connected to a site using "Connect As...".
- Your site is configured to prompt for a password.

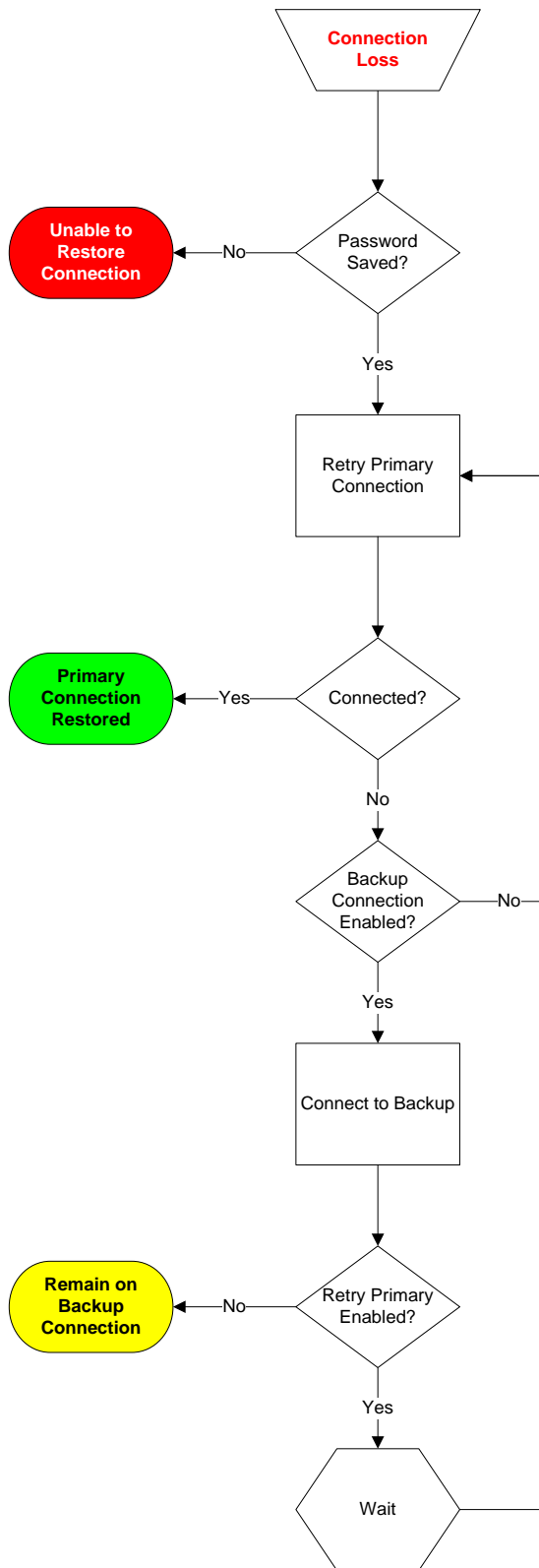
### *Switching to a Backup Connection*

You can configure sites in AutoPilot to use a backup connection. AutoPilot will use the backup connection in the event that the primary connection is lost and cannot be restored.

### Restoring the Primary Connection

Optionally, AutoPilot can periodically try to restore the primary connection. If this is not successful, AutoPilot will return to the backup connection. AutoPilot will repeat this process until the primary connection is successfully restored.

## Automatic Connection Flowchart

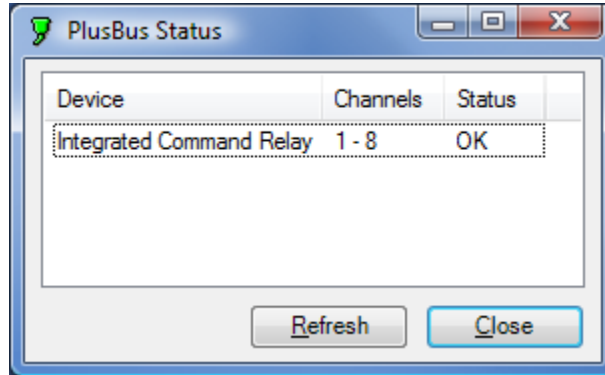


## Remote Control Specific Information

### ARC Plus

#### PlusBus Status

To access the PlusBus Status dialog, select an ARC Plus site in the Resources window or Navigator and click "PlusBus Status" from the File menu.

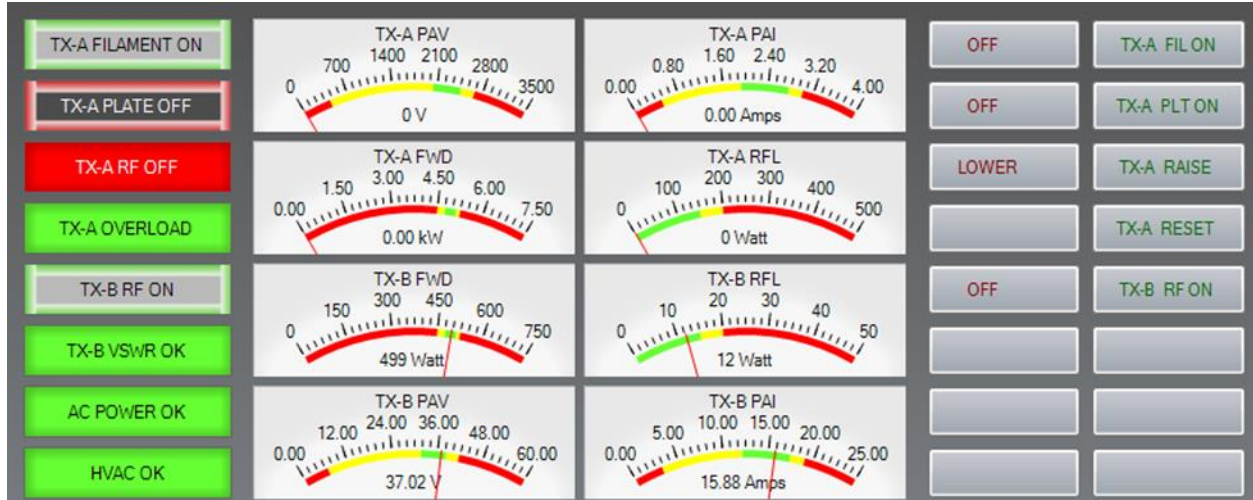


PlusBus Status dialog

Fields	
<b>Device</b>	The type of device on the PlusBus (Integrated Input Unit or Integrated Command Relay)
<b>Channels</b>	The range of channel numbers this device is occupying.
<b>Status</b>	The status of this device on the PlusBus (OK or Missing)

## Warp Engine™ Polling

The previous section described the process of establishing connections to ARC Plus and ARC Solo remote control units. While connected, all status and meter channels in the remote control unit are available for display in AutoPilot default views and custom views.



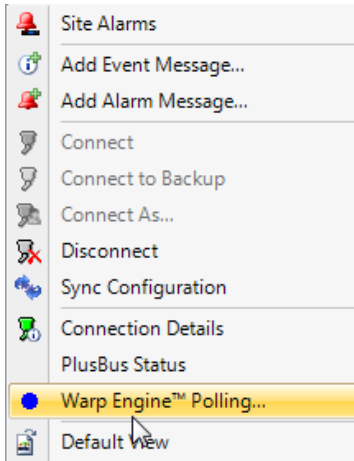
Default View of a Connected Site

The AutoPilot Warp Engine provides an alternative option for monitoring Version 5 ARC Plus Touch or SL units with firmware 5.0.3.5 or later and ARC Solo units with firmware 1.0.29 or later. Warp Engine polling is fast, enabling real-time monitoring and reporting for all selected status, meter and command channels.

Warp Engine polling is efficient in its use of communications bandwidth. It uses very small packets, sending only required data and minimizing communications overhead. Polling 32 parameters from 100 sites requires only 37,800 bytes per second of IP capacity at the central site, and only 378 bytes per second at each remote site. If communications bandwidth is at a premium cost, it can be further reduced by selection of a slower polling rate.

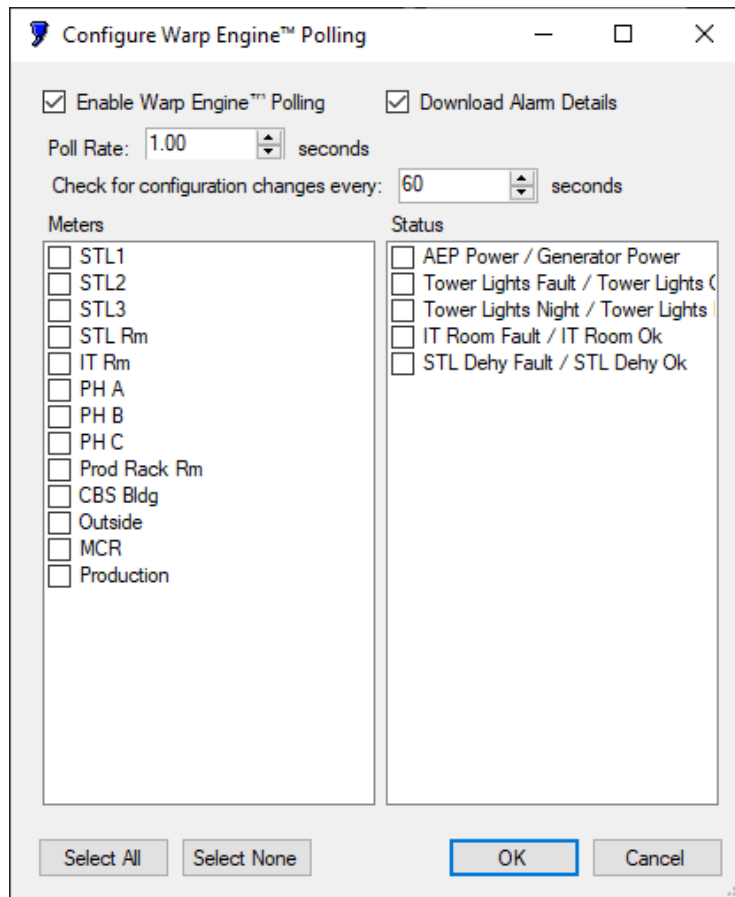
**Note:** Warp Engine Polling uses UDP protocol on the ARC Plus assigned data port to communicate with the ARC Plus. You must verify that the port and protocol are open between the PC running AutoPilot and the ARC Plus on your network.

To configure Warp Engine polling, right-click a connected ARC Plus or ARC Solo site in the Resources window or Navigator -> click Warp Engine™ Polling.



Warp Engine Polling Menu Choice


The Configure Warp Engine Polling dialog box will be displayed:

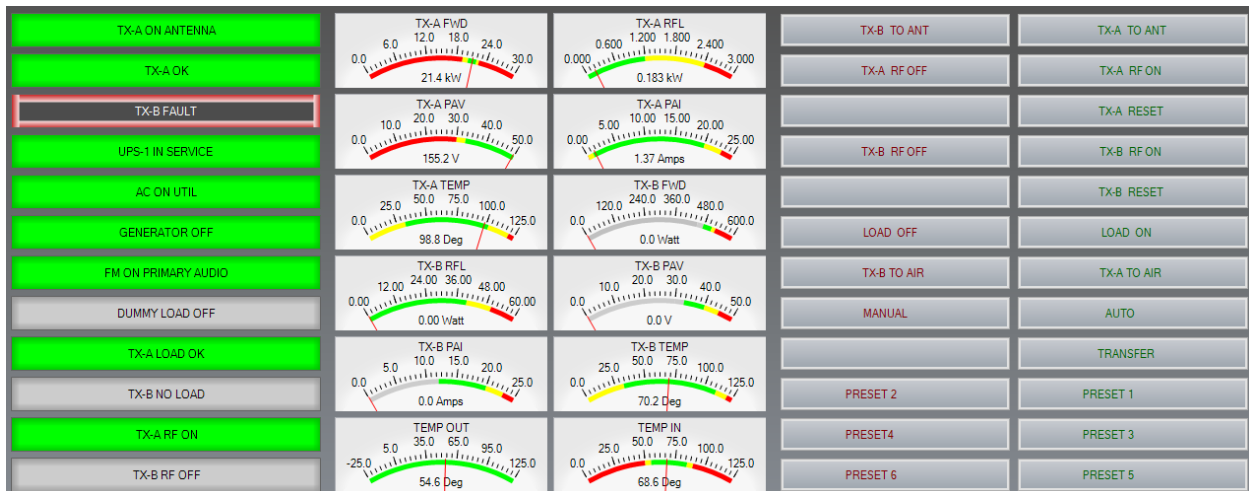


Configuring Warp Engine™ Polling

Click the Enable Warp Engine™ Polling checkbox, select a Poll Rate and select the metering and status channels you want to poll with Warp Engine. Only channels that are configured and unhidden on the ARC Plus unit will be available for selection. It is not necessary to select command channels. By default,

all command channels are active with Warp Engine. User alarm messages configured using AutoPilot are also received over sites connected via Warp Engine. Alarm details like duration and cleared time can be downloaded by checking the Download Alarm Details checkbox. AutoPilot will make a brief TCP connection to download the alarm detail information and drop back to Warp Engine polling automatically. Warp Engine will also detect configuration changes at a user configured time interval. The default is 60 seconds. If set to zero warp engine will detect changes and download them immediately.

To enable Warp Engine, first confirm that "Connect automatically" is disabled (unchecked) for this network in the ARC Plus Network wizard, then disconnect from the site. From the File menu, select Disconnect or click on the disconnect icon . Metering and status channels selected for Warp Engine Polling and all configured command channels will appear in color.



Meters, Status and Commands Shown in Color

Click on the Download Alarm Details checkbox if a full alarm log for the site is desired. If this box is checked, each time Warp Engine detects that an alarm has occurred it will briefly establish a full connection to the site to download the alarm information. When the download is completed, the connection is automatically dropped and Warp Engine polling resumes.

It is necessary to establish a connection to each ARC Plus or ARC Solo at least once prior to enabling Warp Engine polling for that system. This allows AutoPilot to download channel and configuration information from each system, and to establish credentials for secure Warp Engine communications.

ARC Solo systems must be enabled for Warp Engine Polling via the ARC Solo web-browser interface. Navigate to the System->Warp Engine page and select the "Enable Warp Engine Polling" checkbox. See the ARC Solo User Guide for additional information.

**Note:** Warp Engine polls all site alarm conditions regardless of which channels are being actively polled.

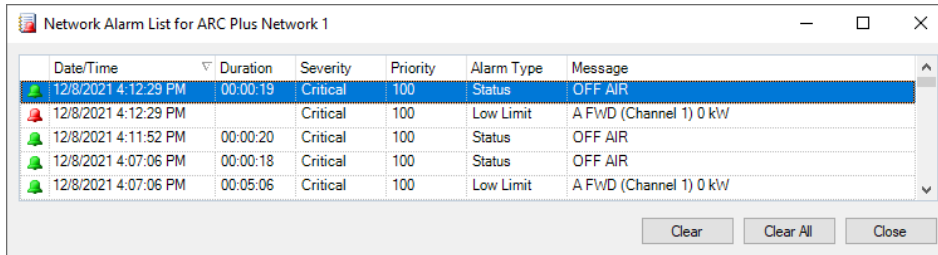


## Alarm Management

### Network Alarm List

To view alarms from a single network only, right-click on the network's icon in the Resources window and select "Network Alarms".

The network alarm list displays all the uncleared alarms for the selected network.



The screenshot shows a window titled "Network Alarm List for ARC Plus Network 1". It contains a table with the following data:

Date/Time	Duration	Severity	Priority	Alarm Type	Message
12/8/2021 4:12:29 PM	00:00:19	Critical	100	Status	OFF AIR
12/8/2021 4:12:29 PM		Critical	100	Low Limit	A FWD (Channel 1) 0 kW
12/8/2021 4:11:52 PM	00:00:20	Critical	100	Status	OFF AIR
12/8/2021 4:07:06 PM	00:00:18	Critical	100	Status	OFF AIR
12/8/2021 4:07:06 PM	00:05:06	Critical	100	Low Limit	A FWD (Channel 1) 0 kW

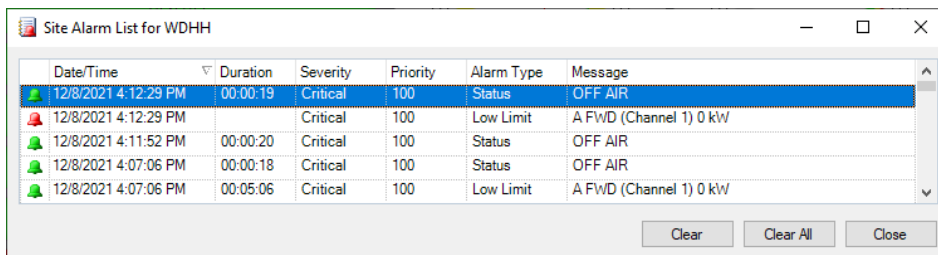
At the bottom of the window are three buttons: "Clear", "Clear All", and "Close".

Network Alarm List

### Site Alarm List

To view alarms from a single site only, right-click on the site's icon in the Resources window or Navigator and select "Site Alarms".

The site alarm list displays all the uncleared alarms for the selected site.



The screenshot shows a window titled "Site Alarm List for WDHH". It contains a table with the following data:

Date/Time	Duration	Severity	Priority	Alarm Type	Message
12/8/2021 4:12:29 PM	00:00:19	Critical	100	Status	OFF AIR
12/8/2021 4:12:29 PM		Critical	100	Low Limit	A FWD (Channel 1) 0 kW
12/8/2021 4:11:52 PM	00:00:20	Critical	100	Status	OFF AIR
12/8/2021 4:07:06 PM	00:00:18	Critical	100	Status	OFF AIR
12/8/2021 4:07:06 PM	00:05:06	Critical	100	Low Limit	A FWD (Channel 1) 0 kW

At the bottom of the window are three buttons: "Clear", "Clear All", and "Close".

Site Alarm List

## Notifications and Sounds

AutoPilot can notify you of new alarms in several ways, described below:

### *Alarm List*

The Alarm List is the main place where AutoPilot displays information about alarms. New alarms are differentiated by their icon ( ).

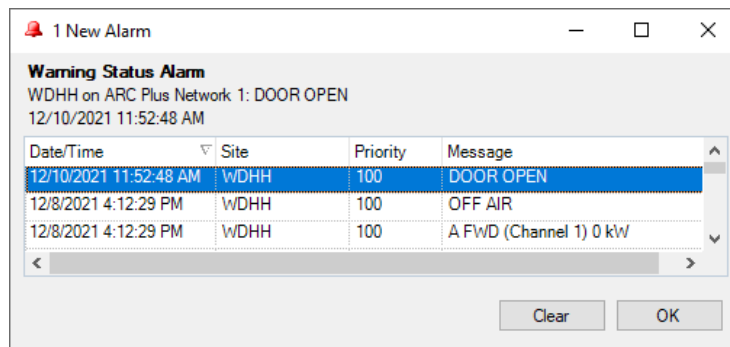
For more information on the Alarm List, see [Alarms Overview](#).

Date/Time	Duration	Network	Site	Severity	Priority	Alarm Type	Message	Time Cleared
12/8/2021 3:32:39 PM		ARC Plus Network..	WDHH	Critical	100	Low Limit	A FwD (Channel 1) 0 kW	
12/8/2021 3:32:39 PM		ARC Plus Network..	WDHH	Critical	100	Status	OFF AIR	
12/3/2021 3:01:13 AM	00:00:03	ARC Plus Network..	WDHH	Critical	100	Low Limit	STL RX LEVEL (Channel 75) 0 mV	
12/3/2021 3:01:13 AM	00:00:02	ARC Plus Network..	WDHH	Warning	100	Status	IRD SILENCE	
12/3/2021 3:01:13 AM	00:00:02	ARC Plus Network..	WDHH	Warning	100	Status	IRD NO LOCK	
12/3/2021 3:01:13 AM	00:00:02	ARC Plus Network..	WDHH	Critical	100	Status	PPM LOSS	

Alarm List

### New Alarms Dialog

The New Alarms dialog, enabled using the Options dialog, will pop up whenever a new alarm occurs.



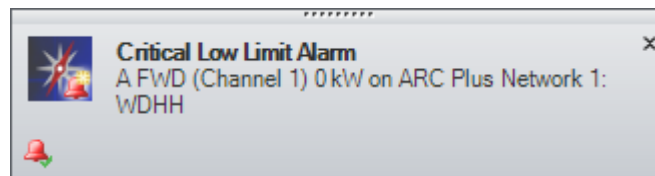
New Alarm Dialog

If there is more than one new alarm, the New Alarms dialog will show all of the new alarms.

Clicking on an alarm in the list will display more information about the alarm at the top of the dialog. Clicking "Clear" will clear the selected alarm.

### New Alarm Desktop Alert

A "desktop alert" is a small notification that appears in the lower right corner of the screen. The notification will automatically disappear after a few seconds. This kind of notification is a useful way to make an operator aware of new alarm condition with causing an interruption.



New Alarm Desktop Alert

Hovering over the desktop alert will prevent it from closing.

Clicking the "Clear Alarm" icon (🔔) in the lower left corner of the alert will clear the alarm.

## Sounds

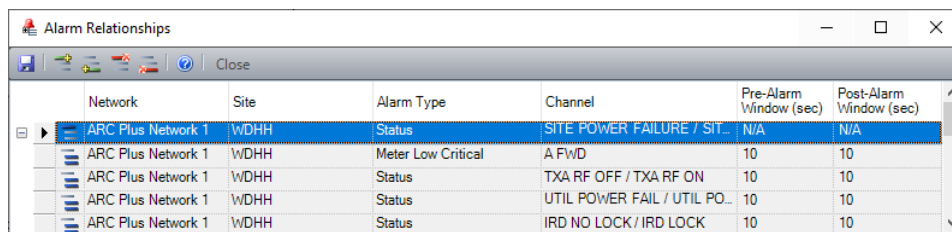
If desired, AutoPilot can play a sound when a new alarm is received. This option is configured in the Options dialog.

## Alarm Relationships

Alarm Relationships allow you to define cause and effect relationships between different alarm conditions.

For example, a loss of power may also cause a transmitter to power down, which in turn may cause a "low power" alarm. By defining the relationships between these conditions, AutoPilot can focus the operator's attention on the root cause condition, facilitating speedier problem resolution.

To set up Alarm Relationships, click "Alarm Relationships..." in the Tools menu.



Network	Site	Alarm Type	Channel	Pre-Alarm Window (sec)	Post-Alarm Window (sec)
ARC Plus Network 1	WDHH	Status	SITE POWER FAILURE / SIT.	N/A	N/A
ARC Plus Network 1	WDHH	Meter Low Critical	A FWD	10	10
ARC Plus Network 1	WDHH	Status	TXA RF OFF / TXA RF ON	10	10
ARC Plus Network 1	WDHH	Status	UTIL POWER FAIL / UTIL PO.	10	10
ARC Plus Network 1	WDHH	Status	IRD NO LOCK / IRD LOCK	10	10

Alarm Relationships dialog

Every alarm relationship comprises one root alarm and one or more subordinate alarms. When a root alarm and subordinate alarm occur at the same time, AutoPilot will hide the subordinate condition.

When a subordinate alarm occurs by itself (without the root alarm), AutoPilot will treat it normally and does not hide it.

*Note: You can still view subordinate alarm conditions in the Alarm List. See [ALARMS OVERVIEW](#) for more information.*

## Cascading Alarm Relationships

It is possible for root and subordinate alarms to "cascade", where a subordinate alarm is also a root alarm with its own subordinates. For example, an alarm for an off air condition may be a subordinate of a power loss alarm, but may itself cause a low power alarm. In this case the off air alarm is also a root alarm.

To configure cascading alarm relationships, simply add the appropriate condition as a new root alarm and add its subordinates under it. AutoPilot will automatically hide both the original subordinate as well as its subordinate when the highest level root alarm is present.

## Alarm Window

When related alarms occur, there may be some delay between the root alarm and the subordinate alarms that it causes. In some cases, the subordinate alarms may occur after the root alarm, and in other cases they may happen before it.






AutoPilot allows you to control the window of time around the root alarm in which subordinate conditions are considered to have been caused by the root alarm condition. This is called the alarm window.

The pre-alarm window specifies the number of seconds before the root alarm during which time a subordinate alarm is counted as such.



The post-alarm window specifies the number of seconds after the root alarm during which time a subordinate alarm is counted as such.

### Alarm Relationships Dialog Tool Bar

To add and edit alarm relationships, use following buttons found on the Alarm Relationships tool bar:

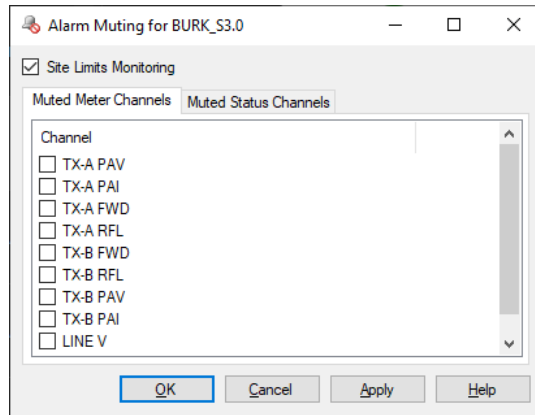
 <b>Save</b>	Saves your alarm relationships.
 <b>Add Root Alarm</b>	Creates a new root alarm in the Alarm Relationships grid.
 <b>Add Subordinate Alarm</b>	Adds a new subordinate alarm under the selected root alarm.
 <b>Remove Root Alarm</b>	Removes the selected root alarm and all of its subordinates.
 <b>Remove Subordinate Alarm</b>	Removes the selected subordinate alarm.
<b>Close</b>	Closes the Alarm Relationships dialog.

### Alarm Relationships Grid Fields

<b>[Row Type]</b>	This column identifies the type of row using an icon:   Root alarm  Subordinate alarm
<b>Network</b>	Select the network containing the channel you want to use for this row.
<b>Site</b>	Select the site containing the channel you want to use for this row.
<b>Alarm Type</b>	Select the alarm type (status or a metering limit) that you want to use for this alarm definition.
<b>Channel</b>	Select the channel whose alarm you are using for this row.
<b>Pre-Alarm Window (sec)</b>	Enter the number of seconds that AutoPilot should use for the pre-alarm window (Subordinate rows only).
<b>Post-Alarm Window (sec)</b>	Enter the number of seconds that AutoPilot should use for the post-alarm window (Subordinate rows only).

### Alarm Muting

The Alarm Muting dialog allows you to access the alarm muting feature of the ARC Plus. To open the Alarm Muting dialog, click "Alarm Muting" from the Tools menu.



Alarm Muting dialog

To turn alarm monitoring on and off for the entire site, use the "Site Limits Monitoring" checkbox. When this box is checked, alarm monitoring is enabled.

To mute individual channels, place a checkmark next to the desired channel on the Muted Meter Channels or Muted Status Channels tab.

Your settings will go into effect when you click OK or Apply.

## Logging

AutoPilot logs the following types of data:

- Telemetry (meter and status readings)
- Status changes
- Alarms
- Events

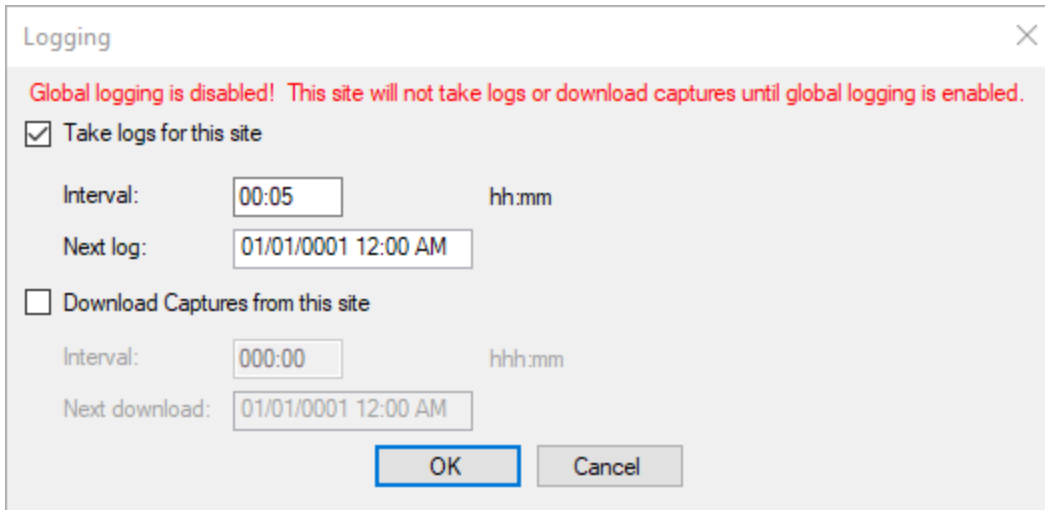
### Enabling Logging

AutoPilot will always log alarms and events for all sites. Telemetry logging is enabled individually for each site, and can be enabled/disabled for the entire application.

When logging for the application is disabled, the message shown in red below will be displayed in the Configure Logging dialog box, and AutoPilot will not log telemetry on any sites. When logging for the application is enabled, AutoPilot will log telemetry on all sites for which logging is enabled at the site level.

To enable logging for AutoPilot, click "Enable Logging" from the Tools menu.

To adjust logging settings for a site, right-click on the site's icon in the Resources window or Navigator and select "Configure Logging...".



Logging Configuration Dialog

## Logging and Connections

If you are not connected to a site that is due to be logged, AutoPilot will automatically connect to the site for you. When AutoPilot is finished logging the site, it will automatically disconnect.

*Note: Logging will never cause AutoPilot to disconnect from a site that was already connected.*

### 📌 Logging on Demand

To force AutoPilot to immediately take a log, click "Log Now" from the tools menu.

*Note: You must already be connected to a site to use the "Log Now" feature.*

## Databases

### Onboard Database

AutoPilot stores its logs and captures in the onboard database. AutoPilot always logs to the onboard database, even when other databases are enabled (see below).

For more information on exporting and archiving your logged data, see Data Management ([PAGE 73](#)).

The onboard log uses an SQLite Database format. When AutoPilot starts up, it will create this file automatically if it does not already exist.

The onboard database file is located here:

Windows 8 and Windows 10:

**%AllUsersProfile%\Burk Technology\AutoPilot\Databases\Log.db**



While it is possible to open this file using a third-party SQL browser, it is strongly recommended that you instead export your data or use Text File Logging.

**Never open this file while AutoPilot is running.**

#### Other Databases

In addition to the onboard log, AutoPilot can optionally be configured to use one or both of the following types of logs:

- *Text File Logging*
- *SQL Server Logging*

#### Text File Logging

In addition to using the onboard database, AutoPilot can log to a simple text file. This is often useful when integrating log data with 3rd party applications.

Text File Logging will create a log file in the following location:

Windows 8 and Windows 10:

```
%AllUsersProfile%\Burk Technology\AutoPilot\Logs
```

Each site will have its own file. The file name is generated automatically, and follows the following format:

```
[Network Name] - [Site Name] ([Unit ID])
```

When AutoPilot automatically archives a Text File Log (see below), the archive file will be stored in the following location:

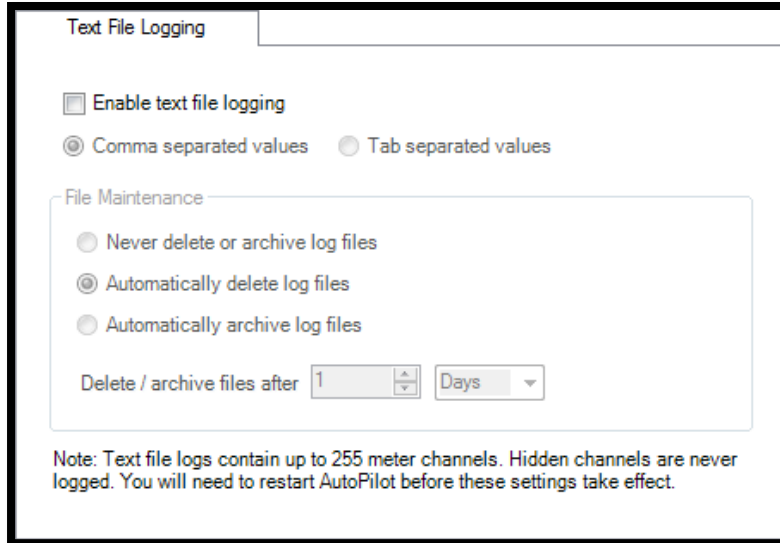
Windows 8 and Windows 10:

```
%AllUsersProfile%\Burk Technology\AutoPilot\Logs\Archive
```

To enable and configure Text File Logging, use the Options dialog.



**You must restart AutoPilot after enabling or disabling Text File Logging before your changes will go into effect.**



Text File Logging Settings in the Options Dialog

The following parameters are available:

<b>Enable text file logging</b>	Use this checkbox to turn Text File Logging on and off
<b>Comma separated values</b>	Select this option to have AutoPilot write to the text file using commas to separate each field.
<b>Tab separated values</b>	Select this option to have AutoPilot write to the text file using tabs to separate each field.

File Maintenance Options	
<b>Never delete or archive log files</b>	AutoPilot will not perform any file maintenance tasks. You may delete/archive files manually in Windows if desired.
<b>Automatically delete log files</b>	AutoPilot will delete your log files according to the specified schedule.
<b>Automatically archive log files</b>	AutoPilot will move your log files to the archive location (see above) according to the specified schedule.
<b>Delete / archive files after...</b>	AutoPilot will delete or archive files after they have reached the specified age.



**File maintenance is strongly recommended. Letting a Text File Log grow too large may cause performance problems in AutoPilot or in 3rd party applications.**



## SQL Server Logging

In addition to using the onboard database, AutoPilot can log to a server running Microsoft SQL Server. This is often useful for organizations running multiple AutoPilot logging computers and can also be used to integrate AutoPilot's logged data with other databases used throughout the operation.

For information on what tables and fields are included in the AutoPilot SQL Server database, see Database Schema ([PAGE 107](#)).

To enable and configure SQL Server Logging, use the Options dialog.



**It is strongly recommended that you contact your database administrator before configuring SQL Server Logging in AutoPilot.**



**You must restart AutoPilot after enabling or disabling SQL Server Logging before your changes will go into effect.**

SQL Server

Log using SQL Server

Server address:

Database:

Use integrated Windows security

Specify a user name and password

User name:

Password:

You will need to restart AutoPilot before these settings take effect.

SQL Server Logging settings in the Options dialog

The following parameters are available:

<b>Log using SQL Server</b>	Check this box to enable/disable SQL Server logging.
<b>Server address</b>	The host name or IP address of the computer running Microsoft SQL Server.
<b>Database</b>	The name of the AutoPilot database on your SQL Server. Use the drop-down list to select an existing AutoPilot database.

	<i>See below for instructions on how to create a new database.</i>
<b>Use integrated Windows security</b>	Select this option if your Windows user account has permission to write to the AutoPilot database.
<b>Specify a user name and password</b>	Select this option and enter your user name and password to use a specific account on the SQL Server.

*Note: Your account must have permission to read and write to the AutoPilot database. Consult your database administrator to make sure you have the correct permissions.*

## Creating a New Database on the SQL Server

There are two ways you can create a new database on the SQL Server for AutoPilot.

### Let AutoPilot Create a Database

1. Open the SQL Server tab in the Options dialog (see above).
2. Enter your server address and security information.
3. Enter the desired name for the AutoPilot database in the "Database" field.
4. Click the "New" button. AutoPilot will automatically create your database.

A message box will confirm that this was successful, or state what error caused it to fail.

### Use the Supplied SQL Script

AutoPilot ships with a .sql script that a database administrator can use to create a new database. The script is found here:

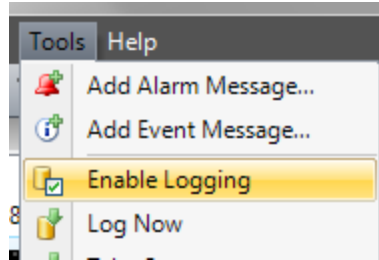
```
%ProgramFiles%\Burk Technology\AutoPilot\AutoPilot.sql
```

## Captures

The Captures feature, available on ARC Plus Touch and SL units with firmware 5.0.8.1 or newer, allows you to configure the ARC Plus to store periodic captures (snapshots) of a specified range of channel values locally on The ARC Plus. You can create a download schedule on any AutoPilot system to automatically retrieve the captures. Captures and logs are stored in the same onboard database and are displayed in the Logged Data View.

### Enabling Capture Downloading

Select "Enable Logging" from the **Tools** menu.

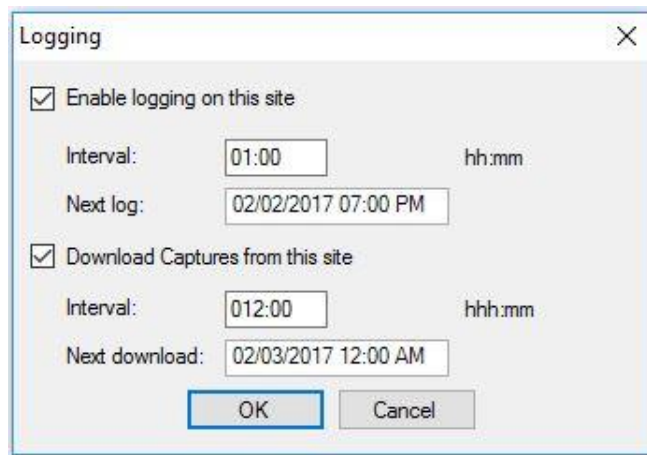


Tools>Enable Logging

If you are not connected to a site that is due for a download, AutoPilot will automatically connect to the site for you. When AutoPilot is finished downloading from the site, it will automatically disconnect.

### Configuring the Download Schedule

1. Select "Configure Logging" from the Edit menu.
2. Enable the "Download Captures from this site" checkbox.



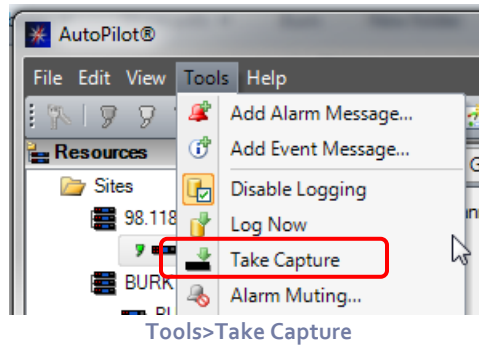
Edit>Logging

3. Specify the download "Interval" (the frequency, in minutes or hours, at which AutoPilot will download its next captures from the ARC Plus).
4. Specify the "Next download" (the time of day when AutoPilot will download its next set of captures).
5. Click "OK".

**Note:** If AutoPilot fails to take a log or download captures, it waits 10 minutes and then tries again. You can configure the waiting interval in Tools > Options > Logging.

### Taking an Immediate Capture

In addition to the captures scheduled to be performed automatically on the ARC Plus, you can perform an immediate capture from the remote AutoPilot system. This capture is stored on the ARC Plus system and downloaded to AutoPilot as specified in the download interval



## Viewing Captures

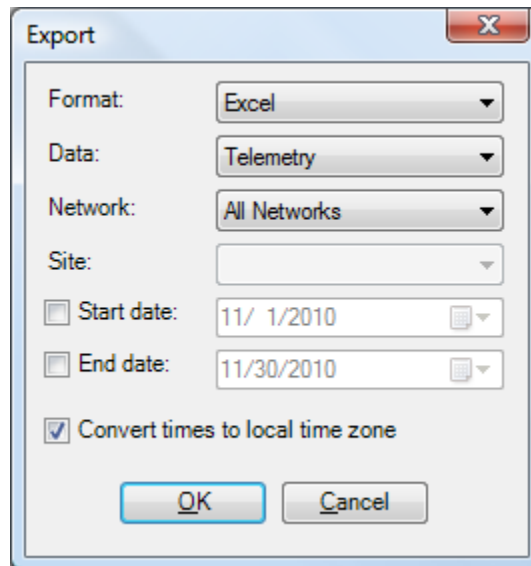
Captures appear in the Logged Data View. See Logged Data View(PAGE 6).

## Data Management

### Exporting Data

AutoPilot has a built-in export feature that allows you to export your logged data in a variety of different formats, each suitable for analysis in 3rd party applications.

To export your data, click "Export Logged Data..." in the Tools menu.



Export dialog

The following options are available on the Export dialog:

<b>Format</b>	AutoPilot supports the following formats: Excel, CSV (comma separated values), Tab (tab delimited values), and XML (extensible markup language).
<b>Data</b>	Select the database table that you want to export: Telemetry, Alarms, Events, or Status Changes.
<b>Network</b>	Choose the network whose data you want to export, or choose "All Networks".
<b>Site</b>	Choose the site whose data you want to export, or choose "All Sites"
<b>Start date</b>	Check the "Start date" checkbox and select a date if you want to export data only from dates on or after the selected date.
<b>End date</b>	Check the "End date" checkbox and select a date if you want to export data only from dates on or before the selected date.
<b>Convert times to local time zone</b>	When this option is checked, AutoPilot will convert all timestamps to use the local time zone instead of UTC.

*Note: Exporting data does not remove it from the database.*

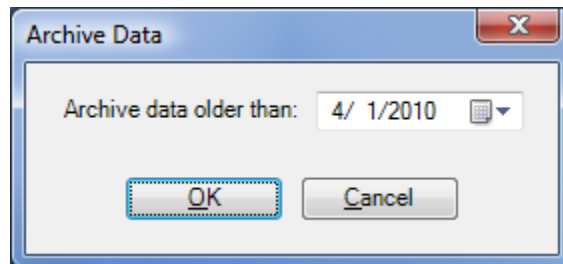
### Archiving Data

Over time and depending on the number of sites you have added to AutoPilot, your onboard database may grow very large. Archiving data will remove it from the database and store in an archive file that you can access later.



**While the technical limit to the size of the database is 2GB, it is highly recommended that you periodically archive your data to optimize performance.**

To archive your data, click "Archive Logged Data..." in the Tools menu.



Archive Data dialog

Enter the date that you want to use to archive your data. Any data older than this date will be removed from the database and stored in the archive.

Archived data is stored in XML format. AutoPilot will prompt you for the location where you want to store this file.

## Security

### *Security Overview*

#### Password Encryption

There are several places throughout AutoPilot where the software will prompt you for a password. AutoPilot never stores your passwords in "plain text". Passwords are encrypted using standard encryption methods whenever it is necessary to save to a file.

#### Remote Control Permissions

Your remote control has built-in security mechanisms, varying by model. Remote control security prevents unauthorized users from reading your data or issuing commands.

#### Maintenance Mode

Your remote control also has a "maintenance mode" or "remote/local" mode feature. This feature locks out remote commands for safety reasons during maintenance operations. The remote control will not permit AutoPilot to issue commands when in maintenance mode.

*Note: AutoPilot will gray out commands that are unavailable due to insufficient permissions or maintenance mode.*

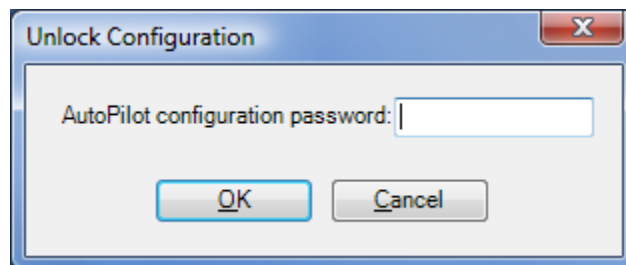
***Even if a command were to appear available, the remote control itself would not allow AutoPilot to issue the command.***

#### Locking AutoPilot Configuration

If desired, you can password protect AutoPilot's configuration options. This is useful to prevent operators from making undesired changes.

To enable this feature, use the "Security" tab in the Options dialog.

Once you have enabled password protection and set a password, click "Lock AutoPilot Configuration" in the File menu to lock or unlock the configuration.

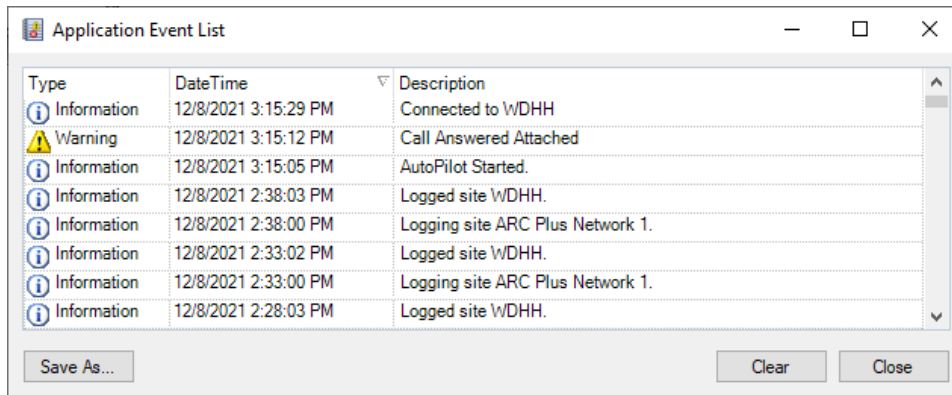


Unlock Configuration password prompt

## Application Event List

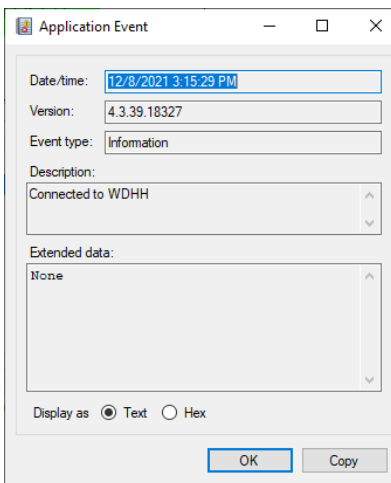
AutoPilot logs various activities using the Windows Application Event Log. While you can access this log directly in Windows, AutoPilot makes it available in the program as well.

To access the Application Event List, click "Application Event List" from the View menu.



Application Event List




To see more information about an event, double-click on its entry in the event list.



Application Event details

**Note:** The Application Event dialog includes a "Copy" button that will copy the event details to the clipboard. You can then paste this information into a file or email.

There are three types of events logged in the list:

 <b>Information</b>	Information events are a record of some of the regular operations that AutoPilot performs. These events are normal, and do not indicate any kind of a problem.
 <b>Warning</b>	Warning events indicate that an operation was unsuccessful, due to foreseeable circumstances (such as a connection loss).
 <b>Error</b>	An error condition is an abnormal failure. Under normal circumstances, error conditions should never occur.

*Note: AutoPilot will notify you of new Error conditions by showing an icon in the Status Bar.*

## Migration

Migrating your AutoPilot installation from one computer to another – or cloning your configuration for use on second PC – is relatively easy. All of your files are stored in one folder on the computer:

Windows 8 and Windows 10:

`%AllUsersProfile%\Burk Technology\AutoPilot`

To completely clone your installation onto another computer, simply copy the files from this folder onto the new computer. If desired, you may copy only certain files. See below for more information.



**You must still install AutoPilot on your new computer. Copying this folder does not install the software for you.**

## AutoPilot Files and Folders

Folders	
<b>Cache</b>	The cache folder stores local copies of your site configuration. These files can be safely deleted or omitted during data migration.
<b>Custom Views</b>	This folder contains all of your Custom View files
<b>Databases</b>	This folder contains your onboard logging and captures database (Log.db). If you delete or omit this file, AutoPilot will create a new one on startup.
<b>Jet</b>	This folder contains your Jet™ Active Flowcharts for AutoPilot as well as your Virtual Channels.
<b>Licensing</b>	This folder contains your licensing information for add-ons and demos.
<b>Logs</b>	This folder contains your Text File Logs (if enabled).
<b>Reports</b>	This folder contains your report files.
<b>Settings</b>	This folder contains various files that store settings, sites, etc. See below for more details.

## Settings Files

The following files are found in the Settings folder (see above). If you delete one of these files, or omit it during data migration, AutoPilot will create a new – **blank** – copy.

<b>cfgsec.dat</b>	This file stores a one-way hash of your configuration password (if you have set one). See Security for more information.
-------------------	--



<b>NetworkDevices.xml</b>	This stores your Network Devices.
<b>Networks.xml</b>	This stores your site data.
<i>This is the most critical file to copy when cloning your setup.</i>	
<b>SubordinateAlarms.xml</b>	This stores your Alarm Relationships configuration.

### Network Names

If you plan to share Custom Views or other site-related data between multiple computers, **it is important that you use the same network name on each computer for your sites. AutoPilot uses the network name to identify your sites.**

*Note: You can rename a network within AutoPilot. AutoPilot will display a prompt asking if you want to update your Custom Views, etc.*

## Jet

### 📄 Jet Active Flowcharts

Jet Active Flowcharts allow you to describe automatic remote control functionality using simple, easy to read flowcharts.

#### Licensing

To purchase a license for Jet, please contact Burk Technology at 978-486-0086, or via email at sales@burk.com.

#### Active Flowcharts for AutoPilot

Jet™ Active Flowcharts for AutoPilot allow you to control any site or Network Device in AutoPilot.

To run an Active Flowchart in AutoPilot, use the Jet Status window.



**Jet Active Flowcharts for AutoPilot will only run when AutoPilot is running.**

#### Starting Jet

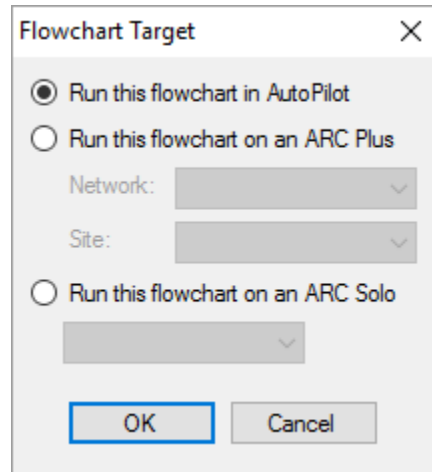
To start Jet, select Jet from the Tools menu in AutoPilot.

*Note: If you have not installed your license for Jet Active Flowcharts, please do so now.*

*See Licensing (PAGE 51) for more information.*

### 📄 Create a New Flowchart

From the Jet Designer, select New from the File menu. Jet will prompt you for a flowchart target. Choose the "Run this flowchart in AutoPilot" option.



Flowchart target

### *Saving the Flowchart*

After designing your flowchart, click Save from the File menu to save your flowchart. Enter a file name for this flowchart. AutoPilot will use the file name to identify this flowchart.



**Jet will only run flowcharts from the Jet directory. Do not save flowcharts in any other location.**



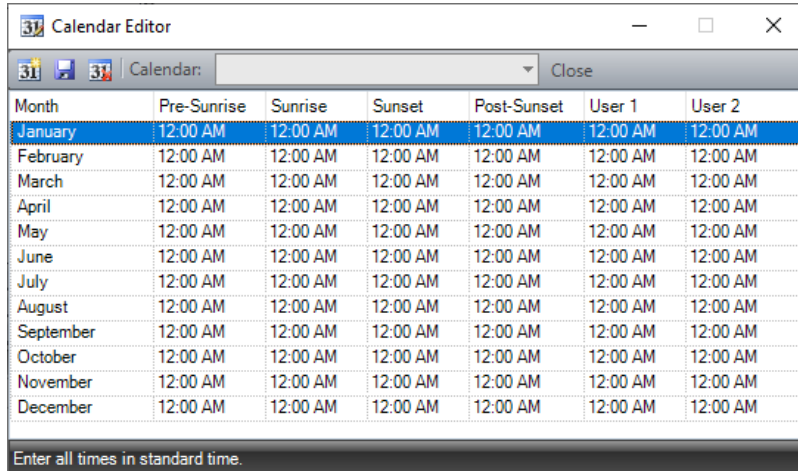
**Saving a flowchart that is running will cause Jet to stop the flowchart. If the flowchart is not scheduled to run, you will need to restart it manually.**

### *Opening an Existing Flowchart*




To open an existing AutoPilot Active Flowchart, click AutoPilot Active Flowchart... from the Open submenu under the File menu.

## Calendars

You can schedule flowcharts to run at different calendar times. Jet allows you to define multiple calendars. To add, remove or edit a calendar, click Manage Calendars... from the Tools menu in Jet.



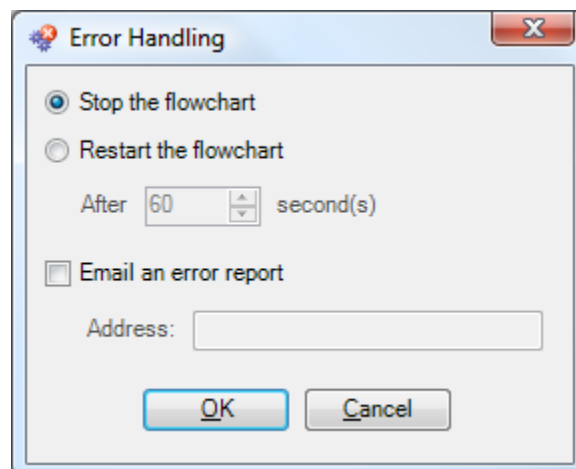
Jet Calendars

 <b>New Calendar</b>	Creates a new calendar.
 <b>Save</b>	Saves changes made to the selected calendar.
 <b>Delete Calendar</b>	Deletes the selected calendar.
<b>Calendar</b>	Select a calendar from the drop down list to display it in the editor.
<b>Close</b>	Closes the calendar editor.

*Note: Jet calendar times are always in Standard Time for the time zone configured on the PC.*

## Error Handling

To specify how Jet should respond should a flowchart experience an error, click Error Handling... on the File menu.



## Error Handling

Options	
<b>Stop the flowchart</b>	If the flowchart experiences an error, Jet will stop the flowchart. Jet will not run the flowchart again unless it is scheduled to run later, or if you run it manually.
<b>Restart the flowchart</b>	If the flowchart experiences an error, Jet will restart the flowchart after waiting for the specified number of seconds.
<b>Email an error report</b>	When this option is checked, Jet will email the specified email address if the flowchart experiences an error.

### Active Flowcharts for ARC Plus and ARC Solo

Jet™ Active Flowcharts for ARC Plus run as macros on the ARC Plus. You can run flowcharts on the ARC Plus the same way you can run macros (AutoPilot, front panel, ESI, RSI, Web Interface, etc).



**Active Flowcharts on the ARC Plus cannot be edited using the Macro Editor in AutoLoad Plus.**

*Note: Jet requires ARC Plus firmware 2.2 or newer. To obtain the latest ARC Plus firmware, visit [www.burk.com](http://www.burk.com).*

Jet™ Active Flowcharts for ARC Solo are run as macros on the ARC Solo. You can run flowcharts on the ARC Solo from AutoPilot or from the ARC Solo RSI or Web Interface.

### Starting Jet

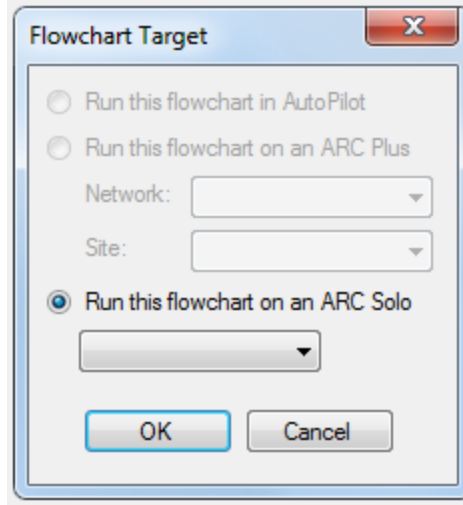
To start Jet, select Jet from the Tools menu in AutoPilot.

*Note: If you have not installed your license for Jet Active Flowcharts, please do so now. Licensing is not required for creation of Active Flowcharts on the ARC Solo.*

See [LICENSING](#) for more information.

### Create a New Flowchart

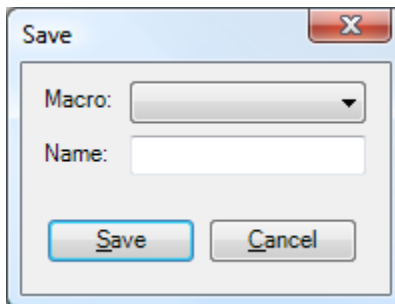
From the Jet Designer, select New from the File menu. Jet will prompt you for a flowchart target. Choose the "Run this flowchart on an ARC Plus" option or the "Run this flowchart on an ARC Solo" and select the network and site for which you want to create a new flowchart.



Flowchart target

### Saving the Flowchart

After designing your flowchart, click Save from the File menu to save your flowchart. Select the macro location where you want to save the flowchart and give it a name. Jet Active Flowcharts created to run on the ARC Plus are automatically backed up to the local AutoPilot PC when they are saved to the ARC Plus. A backup copy of the flowchart is stored in the default location: C:\ProgramData\Burk Technology\AutoPilot\JetBackup.



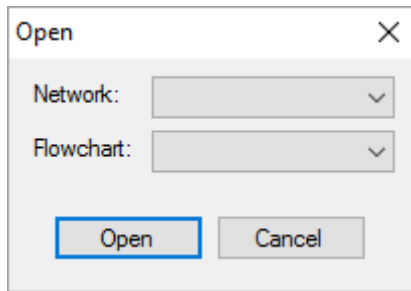
Save a flowchart to an ARC Plus



### Opening an Existing Flowchart on ARC Plus or ARC Solo

To open an existing Active Flowchart, click ARC Plus or ARC Solo Active Flowchart... from the Open submenu under the File menu. Select the network and site, and then select the desired flowchart.

Open a flowchart on an ARC Plus









Open a flowchart on an ARC Solo

## Designing Active Flowcharts

### Flowchart Components

Flowchart components are objects that you can add to the flowchart's canvas. The following components are available for use in Jet:

 <b>Start Flowchart</b>	Specifies the beginning of a flowchart. All flowcharts must have a start.
 <b>End Flowchart</b>	Specifies where the flowchart stops running. Flowcharts may have more than one end, or no end if execution should continuously.
 <b>Action</b>	A flowchart action performs an operation and then moves to the next object. Actions always have one output.
 <b>Conditional</b>	A conditional move to either of two objects, depending on whether the condition evaluates to true (T) or false (F). Conditionals always have two outputs.
 <b>Line Joint</b>	Line joints are used to route flowchart lines around the canvas of the flowchart. Using line joints is optional. Line joints do not affect the functionality of a flowchart.
 <b>Junction</b>	Junctions allow multiple output lines to converge on a single target. Junctions are useful for making the intention of the flowchart clear, but do not affect functionality. Using junctions is optional, as multiple lines can be connected to a single target without using a junction.

### Adding and Connecting Components

#### Adding Components to the Canvas

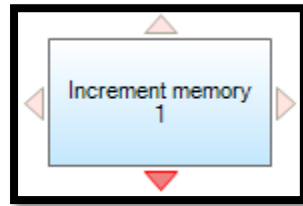
To add a component to a flowchart, simply drag it from the Toolbox and drop it onto the canvas. You can click and drag a component on the canvas to move it around. Use the sizing handles to resize it as desired.

*Note: Remember to add a Start object to your flowchart. All flowcharts require a start.*

## Drawing Lines to Connect Components

Drawing lines between flowchart components instructs the flowchart to execute conditions and actions in the desired order.

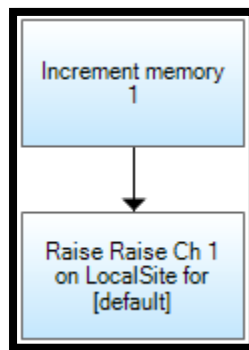
To draw a line connecting two components, hover over the first component to bring up the connection arrows.



Connection arrows

*Note: One connection point cannot serve as both an input and an output. When used as inputs, multiple connections may share the same point. When used as outputs, each connection can only support one connection.*

Flowchart lines may start and end at any of the arrow positions displayed. Hover over the desired arrow and note that it turns dark red to indicate that it is selected. To begin drawing a line, click and hold the mouse, then drag the mouse to the desired target object. Hover over the target object (with the mouse button still held down) to display its input selection arrows. Hover over the desired arrow (note that it turns dark red) and release the mouse button. Jet will draw a line between the two objects using the points you selected.

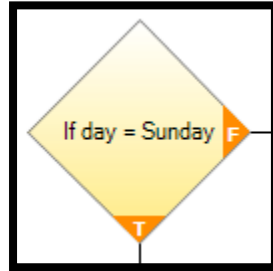


Connected flowchart objects

*Note: If desired, a line can connect an object back to itself. This instructs the flowchart to execute the component continuously in a loop. Carefully consider what you want the flowchart to do when using this technique.*

## Connecting Conditionals

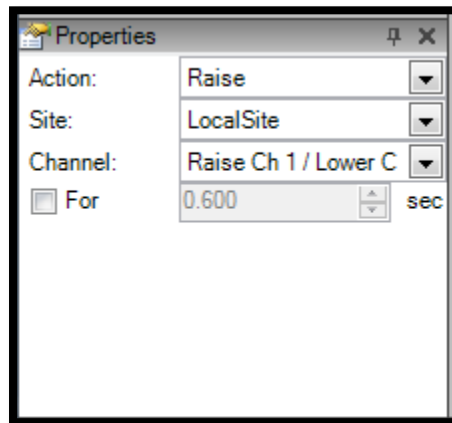
Conditionals always have two outputs: one for the "True" condition, and one for the "False". The first line you draw out of a conditional is for the True condition. True conditions are identified with a "T", and false conditions with an "F".



The "T" and "F" connections for a conditional

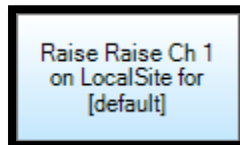
## Configuring Component Settings

Each action and conditional component is configurable for a wide variety of operations. To configure a component, click on it to select it, and use the Properties tool window.



Flowchart component properties

Once you have configured the component's properties, it will show a description of its settings on the canvas.



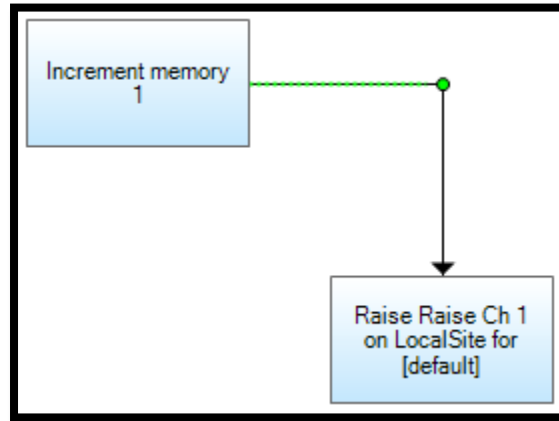
A flowchart component with its properties set



## Using Line Joints and Junctions

### Line Joints

Routed lines on the flowchart canvas automatically create a path between two objects. There may be times when this path conflicts with other objects on the canvas or is otherwise undesirable. The line joint allows you to route a line along a specific path. To use the line joint, drag and drop it onto the canvas and connect it as you would any other component. When the line is selected, the line joint will display a small green dot. When the line is not selected, the line joint will be invisible.



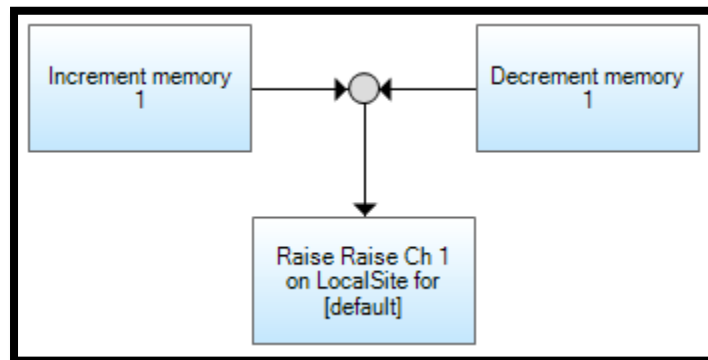
A line joint

*Note: The line joint does not add any functionality to the flowchart.*

*Note: Jet will automatically create line joints for you when you are drawing lines if you drop the line on the canvas instead of connecting it to another component.*

### Junctions

Junctions are a convenient way to connect the output lines from multiple components to a single input. The junction does not add any functionality to the flowchart — it simply makes the intention more clear.





A junction

*Note: Using junctions for many-to-one connection is not required. If desired, you can connect multiple objects directly to a single destination. The junction is purely for convenience and readability.*

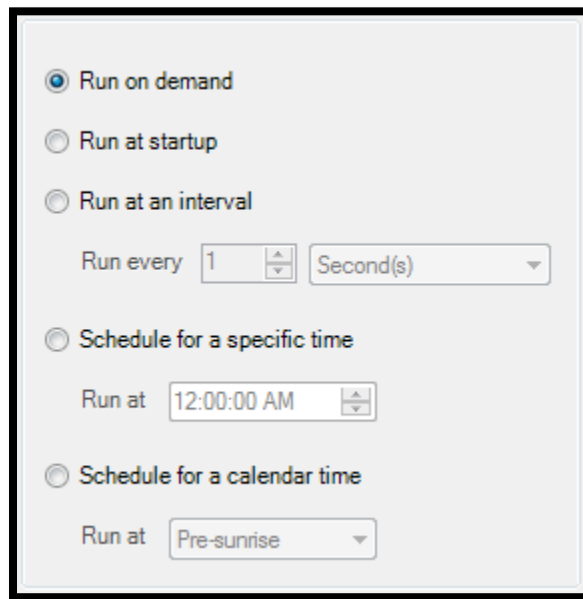
### Line Types

Jet supports two types of lines for connecting components together. To choose a line type, select it from the Tools menu.

	<b>Straight Line</b>	A straight line is drawn directly from one point to another.
	<b>Routed Line</b>	Routed lines use right angles to draw a path between two objects.

### Scheduling Active Flowcharts

To schedule a flowchart, select the Schedule... option from the File menu.



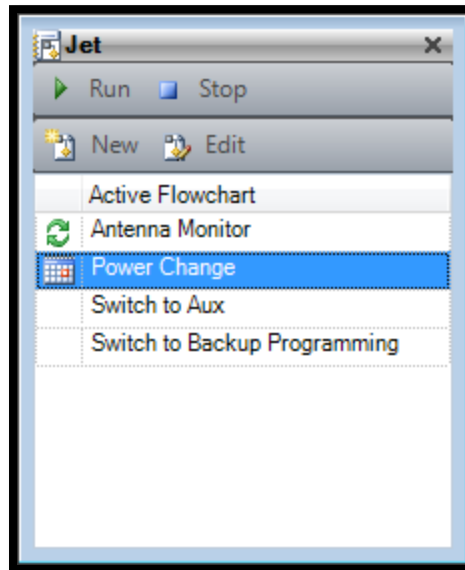
Schedule

<b>Run on demand</b>	The flowchart will only run when executed specifically. It will not run automatically.
<b>Run at startup</b>	The flowchart will run when the system starts up.
<b>Run at an interval</b>	The flowchart will run periodically at the specified interval.
<b>Schedule for a specific time</b>	The flowchart will run daily at the specified time.
<b>Schedule for a calendar time</b>	The flowchart will run daily at the specified calendar time.

*Note: Active Flowcharts for AutoPilot include an additional option to select from multiple calendars.*

## Jet Status





The Jet Status window in AutoPilot allows you to run, stop and view the status of your Active Flowcharts for AutoPilot.



Jet Status



*Note: The Jet Status window only shows Active Flowcharts for AutoPilot. Active Flowcharts for ARC Plus and ARC Solo appear as Macros in the Macro List.*

### Tool Bar Icons

 <b>Run</b>	Runs the selected Active Flowchart.
 <b>Stop</b>	Stops the selected Active Flowchart.
 <b>New</b>	Create a new Active Flowchart for AutoPilot.
 <b>Edit</b>	Opens the selected Active Flowchart in the editor.






### Context Menu Icons

In addition to the tool bar icons above, the following items are available by right-clicking on a flowchart in the status window.

 <b>Delete</b>	Deletes the selected Active Flowchart.
<b>Rename</b>	Allows you to rename the selected Active Flowchart.
 <b>Properties</b>	Displays the properties of the selected Active Flowchart, including the time the flowchart last ran, and additional information about the most recent error the flowchart reported (if any).

### Status Icons

When a flowchart is running or scheduled to run, the status window will display an icon next to the flowchart to indicate its status. Flowcharts that are not running and not scheduled to run will display no icon.

 <b>Running</b>	The flowchart is currently running.
 <b>Reading Data</b>	The flowchart is reading data from a site.
 <b>Waiting</b>	The flowchart is running a Wait command.
 <b>Scheduled</b>	The flowchart is not running but is scheduled to run in the future.
 <b>Error</b>	The flowchart reported an error on its last execution. Right-click on the flowchart and choose Properties for more information.

### Virtual Channels

#### Overview

Virtual Channels allow you to create new channel values using real channels, operators and functions. Virtual Channels are a useful way to add calculated channel data such as VSWR and efficiency, as well as complex status indicators that combine the values of multiple channels and conditions.

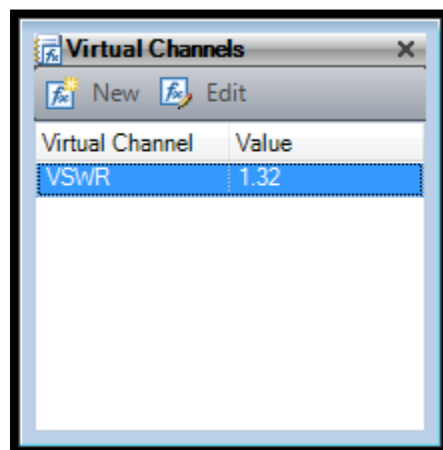
#### Licensing

Virtual Channels are a part of Jet™. To purchase a license for Jet, please contact Burk Technology at 978-486-0086, or via email at sales@burk.com.

### Virtual Channel List

The Virtual Channel List displays the name and live value of each Virtual Channel. From this list you can add, edit, delete, and rename Virtual Channels.

The Virtual Channel List, by default, is docked to the right side of the screen and set to auto hide.



Virtual Channel List

## Creating a New Virtual Channel

To create a new Virtual Channel, click the New toolbar button on the Virtual Channel List.

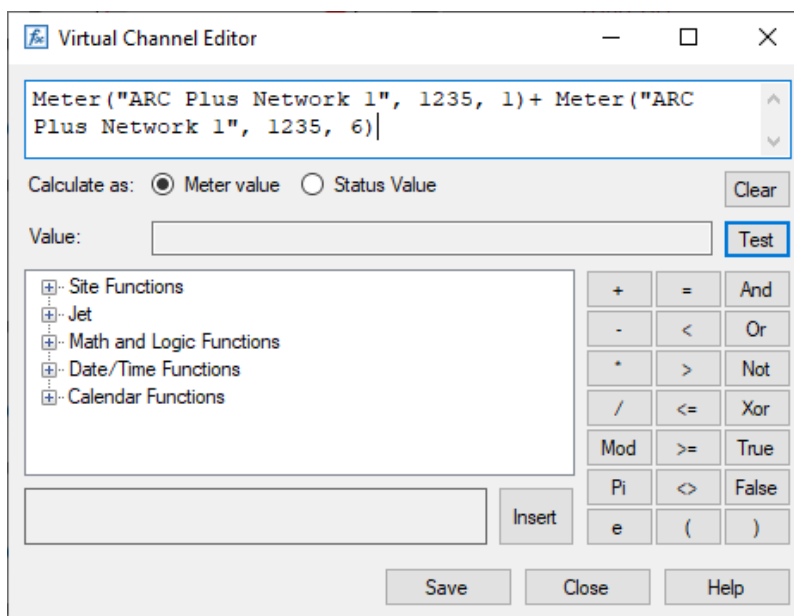
A Virtual Channel is defined using real channels, constant values, operators and functions. You can type a Virtual Channel definition directly into the editor if you are already familiar with the syntax. Otherwise, use the operator buttons and function list to build your channel.

For a complete description of Virtual Channel syntax, please see the [Virtual Channel Syntax](#).

Virtual Channels are interpreted as either Meter or Status channels. Use the option buttons for Meter and Status on the Virtual Channel Editor to select the appropriate channel type. Meter channels are reported as a numeric value. Status channels are reported as a Boolean (true/false) value.

*Note: To see the value of your Virtual Channel while you are editing it, click the Test button.*

When you have completed your Virtual Channel definition, click the Save button. The Virtual Channel Editor will prompt you to name your new channel.



Virtual Channel Editor

## Editing a Virtual Channel

To edit an existing Virtual Channel, select it in the Virtual Channel List and click the Edit button on the toolbar. AutoPilot will open the channel in the Virtual Channel Editor, allowing you to make changes to its definition.

### Renaming a Virtual Channel

To rename an existing Virtual Channel, right-click on the channel in the Virtual Channel List and select Rename from the context menu. Each Virtual Channel must have a unique name.

## Deleting a Virtual Channel

To delete a Virtual Channel, right-click on the channel in the Virtual Channel List and select Delete from the context menu.

## Reference

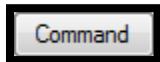
### Custom Views

#### Controls

##### *Command Buttons*

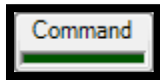
 Command Button (See also Password Command Button, below)


A standard command button.



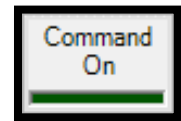
 LED Button

A command button with an embedded LED.



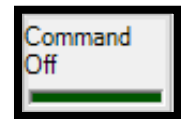
 LED Button (2 Lines Centered)

A commands button with an embedded LED and a 2 line centered caption label.



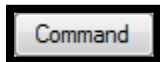
 LED Button (2 Lines)

A commands button with an embedded LED and a 2 line caption label.



 Password Command Button

This command button requires a password for activation. A password must be entered for this control using the Custom View Editor. When the Password Command Button is clicked in a Custom View, a password confirmation dialog box is displayed requiring entry of the correct password before the corresponding action is taken.



## ☰ Sticky Button

The *Sticky Button* remains "stuck" down when its status condition is "ON". This control works best when used in mutually exclusive pairs.



## General

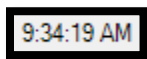
### 📷 Camera Picture (See also Video, below)

Embeds a web cam picture in your Custom View.



### 🕒 Clock

A simple clock with adjustable time zone offset and flexible display format.



The Format property can be used to define how the date and/or time will be displayed by the Clock object. The default format, shown in the image above, is displayed if the Format property is left blank. This format could also be specified by entering the following text string for the Format property: "h/m/s tt" where "h" specifies the current hour shown as 1 through 12, "m" specifies the current minute shown as 0 through 59, "s" specifies the current second shown as 0 through 59, and "tt" specifies the display of AM or PM.

A different display format can be specified by combining elements from the table below into a text string defining the desired representation of date and/or time and entering that string for the Format property.

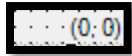
Format Specifier	Description
"d"	The day of the month, from 1 through 31.
"dd"	The day of the month, from 01 through 31.
"ddd"	The abbreviated name of the day of the week.
"dddd"	The full name of the day of the week.
"h"	The hour, using a 12-hour clock from 1 to 12.
"hh"	The hour, using a 12-hour clock from 01 to 12.
"H"	The hour, using a 24-hour clock from 0 to 23.



Format Specifier	Description
"HH"	The hour, using a 24-hour clock from 00 to 23.
"m"	The minute, from 0 through 59.
"mm"	The minute, from 00 through 59.
"M"	The month, from 1 through 12.
"MM"	The month, from 01 through 12.
"MMM"	The abbreviated name of the month.
"MMMM"	The full name of the month.
"s"	The second, from 0 through 59.
"ss"	The second, from 00 through 59.
"t"	The first character of the AM/PM designator.
"tt"	The AM/PM designator.
"y"	The year, from 0 to 99.
"yy"	The year, from 00 to 99.
"yyyy"	The year as a four-digit number.
":"	The time separator.
"/"	The date separator.

▣ Custom View Extents

Configures auto scaling of custom views. See [Scaling Custom Views to Fit Screen Size](#) for a detailed description of this control.



**A** Label

A basic, general purpose label control.



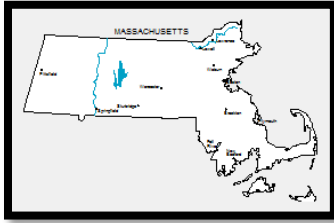
 Line

Draws a straight line.



## Map

A resizable map. State maps are available, as well as a map of the US.

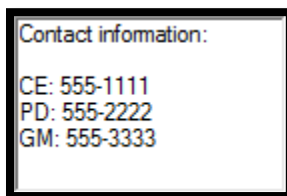


## Picture

Embeds an image in your custom view. The image is saved with your Custom View, and will work even if the view is loaded on another computer.

## Text File

Shows the contents of any text file on your computer.



## Video

The Video object displays the video stream from a webcam using the RTSP protocol.



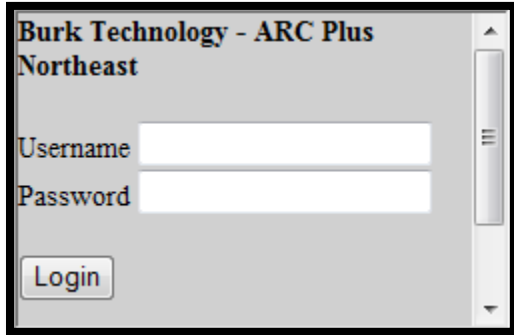
The Connection properties for this custom view element are as follows:

Complete URL	Complete URL to camera image path
Host	The IP address or URL of the camera
Password	The password assigned to the camera
Path	This can be left blank unless required by the camera
Port	The RTSP port number used by the camera. Setting to -1 applies the default value of 554.
Query	This can be left blank unless required by the camera
Scheme	Must be set to RTSP

**Username**      The username assigned to the camera

 Web Page

The *Web Page* control allows you to embed a web page directly in your Custom View.



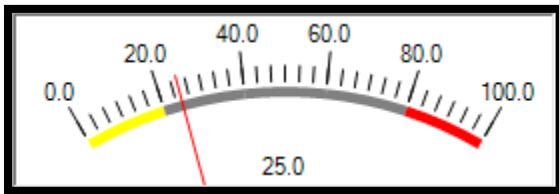
 Web Picture

Embeds any image from a web site. Can be set to periodically refresh.

### Meters

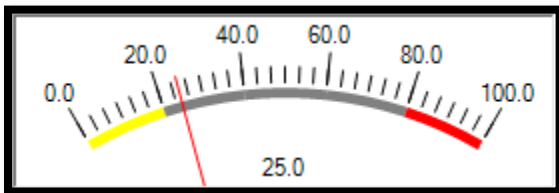
 Angular Meter

A classic gauge.



 Angular Meter (Advanced)

A classic gauge with additional Labels and Meter properties.



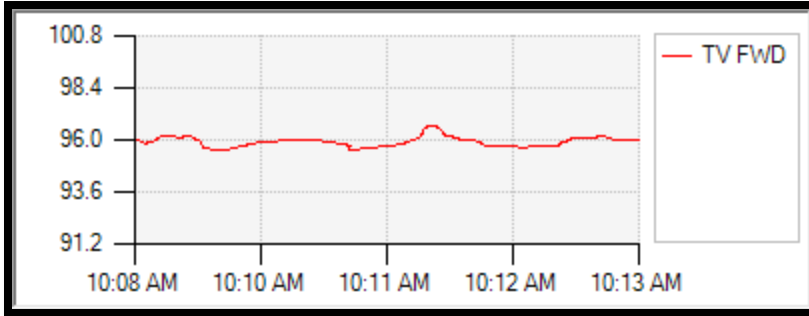
 Bar Meter

Displays a meter on a linear meter that fills in with color to indicate value.



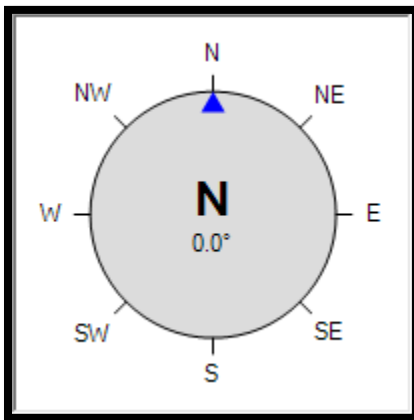
 Chart

A strip chart control that supports multiple lines. See Using Charts ([PAGE 33](#)) for more information.



 Compass

Use the *compass* control to display direction.



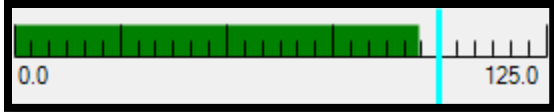
 Linear Meter

Displays a meter value on a linear indicator. Can be oriented horizontally or vertically.



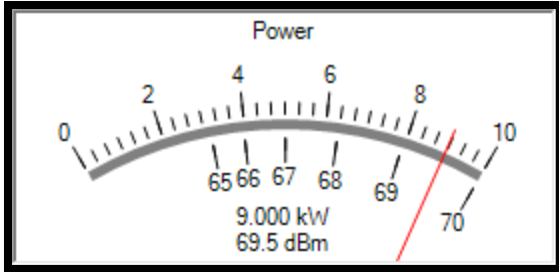
 Nominal Bar

The *nominal bar* displays a meter value relative to a specified nominal value. This allows an operator to quickly determine what parameters are out of tolerance.



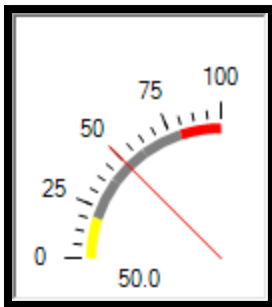
 Power Meter

Displays power using both W (or kW) and dBm.



 Right Angle Meter

A gauge-style meter starting on the left and spanning 90°.



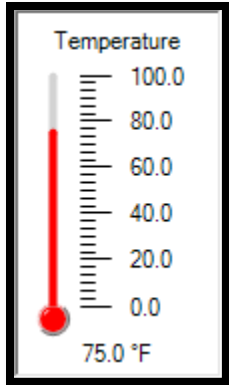
 Text Meter

A simple non-graphical meter display.



 Thermometer

Displays temperature values.



◆ Trend Arrow

Indicates whether a meter channel is trending up or down, or is steady.



Ⓜ VSWR Meter

The *VSWR meter* automatically calculates VSWR using forward and reflected power.



### Network Management

🖨 Network Device

Represents a network device. The color of the icon indicates the state of the device. Icons are available for a wide range of standard equipment.



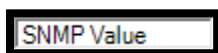
Ⓜ Network Device Label

Displays the name of a Network Device. The background color represents the status of the device.



SNMP String

Displays the text received from a text parameter on an SNMP agent.



🕒 SNMP Up Time

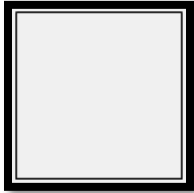
Displays *up time* data received from an SNMP agent, formatted as a duration.

3 Days, 04:21:00

### Shapes

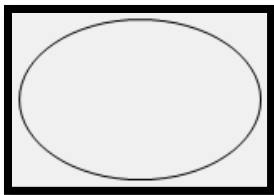
 Rectangle

A rectangle or square.



 Oval





An oval or circle.



### Specialized






#### Summary Site Status and Summary Group Status Controls

The Summary Site Status and Summary Group Status controls make it possible to display a summary of alarm conditions for a single site, or for a group of sites, in a single graphical element. These graphical elements use a color grid of consisting of one to four colors, depending on the type of alarms associated with the group. The four color categories are as follows:

-  Green – No critical or warning alarms
-  Yellow – Warning alarms
-  Red – Critical alarms
-  Grey – Site is not communicating with AutoPilot

#### Sites


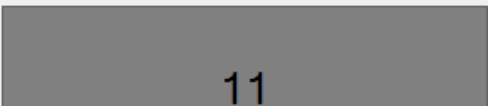
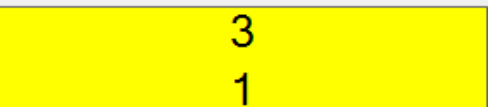
The Summary Site Status control shows the name of the site and a color bar that represents one of five states, as described in the following table. If the site has critical or warning alarms, the total number of alarms is shown in the red or yellow box.

Green – Site is connected with no critical alarms or warnings.	BURK-TV 
Grey— Site is not communicating with AutoPilot.	BURK-TV 
Yellow – Site has warning alarms.	BURK-TV 2 
Red – Site has critical alarms.	BURK-TV 1 
Split red/yellow – Site has critical alarms and warnings. In this example, the site has 7 critical alarm and 2 warnings.	BURK-TV 7 2 

### Groups

The Summary Group Status control shows the group name on the top line. Below the text, a color bar represents the group states along with the number of sites in a group (in cases where a single number appears). For alarms, (yellow and red), the number of alarms appears, followed by the number of sites that are reporting the alarms.

To get detailed information on a group, click its control.

Green – All sites are communicating, with no alarms or warnings.	BOSTON  11
Grey— None of the sites in the group are communicating with AutoPilot.	BOSTON  11
Yellow – At least one site in the group has one or more warning alarms. In this example, three alarms are occurring at one site.	BOSTON 3 1 



<p>Red – At least one site in the group has one or more critical alarms. In this example, a total of four critical alarms are occurring at two sites.</p>	<table border="1"> <tr><td colspan="2">BOSTON</td></tr> <tr><td colspan="2">4</td></tr> <tr><td colspan="2">2</td></tr> </table>	BOSTON		4		2	
BOSTON							
4							
2							
<p>Red/Yellow – At least one site in the group has one or more critical alarms <i>and</i> at least one site has one or more warning alarms. In this example, one site is reporting a critical alarm and three warning alarms are occurring among two sites.</p>	<table border="1"> <tr><td colspan="2">BOSTON</td></tr> <tr><td>1</td><td>3</td></tr> <tr><td>1</td><td>2</td></tr> </table>	BOSTON		1	3	1	2
BOSTON							
1	3						
1	2						

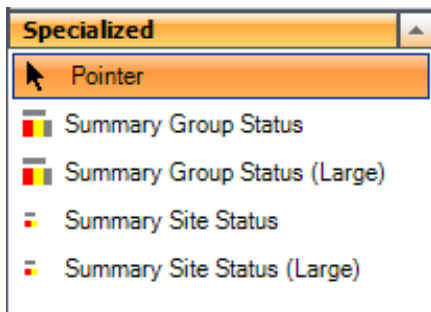
When some of the sites in the group are not communicating with Autopilot, the right-most (grey) column displays the number of sites that are not communicating. The two-left columns display green, red and yellow columns, as described in the previous table.

BOSTON		
1	3	
1	2	3

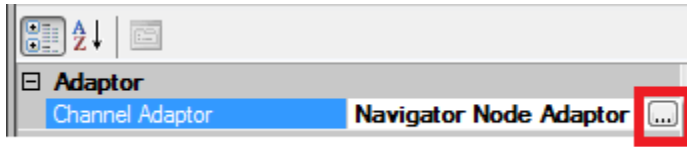
In this example, the following conditions exist:

- Three sites (grey) are not communicating with Autopilot
- One site (red) is reporting a critical error.
- Three warning errors are occurring between two sites (yellow).

To add a Summary Site Status or Summary Group Status control, drag one of the following items from the Specialized list in the Custom View Editor.

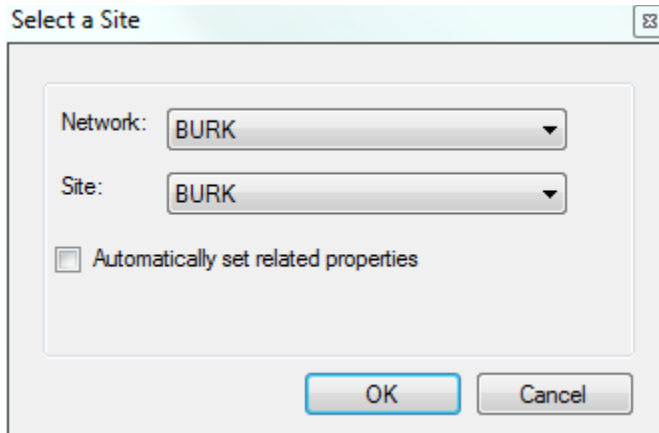


In the Properties panel, click on the three-dot icon next to Channel Adaptor .

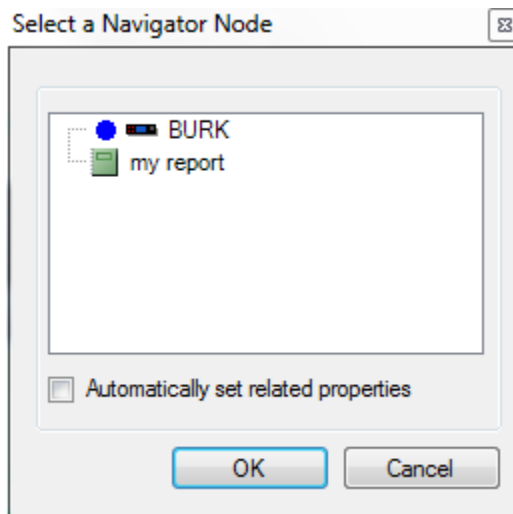


Select a Channel Adaptor to link the control to a Site or a Group.

To link to a Site, select the Network that contains the Site and the Site you want to link to this control.



To link to a Group, select a Node from the list.



If you check "Automatically set related properties", the site or group name will automatically populate based on the selected item. In the Properties panel, you can specify additional settings that define the appearance of the Summary Site Status or Summary Group Status control (such as color mapping for alarm levels, caption text, etc.) or you can accept the default settings.

## Status

### ➔ Arrow LED

Displays an arrow pointing up, down, left, or right.



### ◆ Diamond LED

A diamond-shaped LED.



### A Label LED

A rectangular LED that includes a caption. The caption changes based on the status condition.



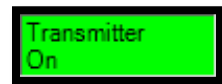
### A Label LED (2 Lines Centered)

A rectangular LED that includes a 2 line caption centered on the object. The caption changes based on the status condition.



### A Label LED (2 Lines)

A rectangular LED that includes a 2 line caption. The caption changes based on the status condition.



### ■ Rectangular LED

A rectangular LED.



### ● Round LED

A round LED.



### Status Label

The *status label* control displays different labels for "ON" and "OFF".



### Status Line

A line that changes color based on the status condition.



### Status Panel

The *status panel* is used to provide a background that changes color based on status for part or all of your Custom View.

### Status Picture

The *status picture* shows one picture when "ON" and another picture when "OFF".

### Status Sound

The *status sound* plays a sound file based on a status condition, as long as the Custom View hosting the control is on screen.

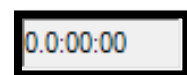
**The status sound control does not appear on your Custom View, except in the Custom View Editor.**

## Timers

### Timer Channel

Displays the value of one of the 64 available timer channels.

(Available only on the ARC Plus Touch firmware version 5.0.14.1 or greater)



## Status Conditions

Available status conditions for the Channel Adapter property of status custom view objects.

<b>Status Channel</b>	A status channel on a remote control unit.
<b>Raise Relay Active</b>	"ON" when the specified raise relay is engaged.
<b>Lower Relay Active</b>	"ON" when the specified lower relay is engaged.
<b>Macro Running</b>	"ON" when the specified macro is running.
<b>Meter Below Low Critical</b>	"ON" when the specified meter is below the second lower limit.
<b>Meter Below Low Warning</b>	"ON" when the specified meter is below the first lower limit.
<b>Meter Above High Warning</b>	"ON" when the specified meter is above the first upper limit.
<b>Meter Above High Critical</b>	"ON" when the specified meter is above the second upper limit.
<b>Meter Out of Tolerance</b>	"ON" when a meter is outside of its "normal" range (above either upper limit or below either lower limit).
<b>Site in Alarm</b>	"ON" when the specified site has at least one uncleared alarm.
<b>Network in Alarm</b>	"ON" when any site in the specified network has at least one uncleared alarm.
<b>Site Connected</b>	"ON" when the specified site is connected to AutoPilot.
<b>Site in Maintenance Mode</b>	"ON" when the specified site is in maintenance mode
<b>Active Flowchart Running</b>	"ON" when the specified Jet Active Flowchart is running.
<b>Virtual Channel</b>	"ON" when the specified virtual channel evaluates to true.
<b>Any Network in Alarm</b>	"ON" when any connected site on any network has an alarm condition.
<b>Site Connected On Primary</b>	"ON" when the specified site is connected over the primary connection.
<b>Site Connected On Backup</b>	"ON" when the specified site is connected over the backup connection.

## Actions

Available actions for custom view objects with a command adapter property.

<b>Raise</b>	Issues the specified <i>raise</i> command.
<b>Lower</b>	Issues the specified <i>lower</i> command.
<b>Navigate</b>	Opens the specified Custom View in the current window.
<b>Run Macro</b>	Starts the specified macro.
<b>Stop Macro</b>	Stops the specified macro.
<b>Clear Alarms</b>	Clears alarms on the specified site or network.
<b>Connect</b>	Connects to the specified site using the primary connection.
<b>Disconnect</b>	Disconnects from the specified site.
<b>Run Application</b>	Runs the specified command in Windows to launch an application.
<b>Open URL</b>	Opens a web browser with the specified URL.
<b>Print Report</b>	Prints the specified report using the default printer.
<b>Ping</b>	Pings the specified Network Device.
<b>Navigate (New Window)</b>	Opens the specified Custom View in a new window.
<b>Show Default View</b>	Opens the Default View for the specified site in the current window.
<b>Show Default View (New Window)</b>	Opens the Default View for the specified site in a new window.
<b>Run Active Flowchart</b>	Runs the specified Jet Active Flowchart.
<b>Stop Active Flowchart</b>	Stops the specified Jet Active Flowchart.

## Database Schema

*Note: The onboard database and SQLite Server database use the same schema.*

***Directly accessing the onboard database is not recommended.***

## Tables

The following tables are included in the database:

Table Name	Description
<b>Alarms</b>	Stores alarms.
<b>Events</b>	Stores events.
<b>StatusChanges</b>	Stores a record for each time a status channel changed.
<b>Telemetry</b>	Stores a snapshot of meter and status channels for each time AutoPilot takes a log.

## Alarms

Field	Data Type	Description
<b>UTCDateTime</b>	Date/Time	The date and time of the alarm using UTC time.
<b>NetworkName</b>	String	The name of the network on which the alarm occurred.
<b>UnitName</b>	String	The name of the site on which the alarm occurred.
<b>UnitID</b>	Integer	The unique ID identifying the remote control unit.
<b>AlarmTypeID</b>	Integer	Indicates what type of alarm this is:  <ul style="list-style-type: none"> <li>0 High Limit</li> <li>1 Low Limit</li> <li>2 Status</li> <li>3 System</li> <li>4 User</li> </ul>
<b>AlarmSeverityID</b>	Integer	Indicates the severity of the alarm:  <ul style="list-style-type: none"> <li>-1 Normal</li> <li>0 Warning</li> <li>1 Critical</li> </ul>
<b>ChannelNumber</b>	Integer	The channel number on which this alarm occurred. This value is 0 for non-channelized alarms.
<b>ChannelName</b>	String	The label of the channel on which this alarm occurred. This value is blank for non-channelized alarms.
<b>AlarmMessage</b>	String	The message associated with the alarm.
<b>TimeZoneOffset</b>	Integer	The time zone offset (number of minutes from UTC) for this site.
<b>AlarmClass</b>	Integer	Describes the type of source for the alarm. Used internally by AutoPilot.
<b>SourceIndex</b>	Integer	Used along with the Alarm Class to uniquely identify the alarm. Used internally by AutoPilot.
<b>UTCInactiveTime</b>	Date/Time	The time (UTC) when the alarm became inactive. Not applicable for incidental alarms or active alarms.
<b>Disposition</b>	Integer	The current disposition of the alarm:  <ul style="list-style-type: none"> <li>0 Incidental</li> <li>1 Active</li> <li>2 Inactive</li> </ul>
<b>Priority</b>	Byte	The user-defined priority of this alarm. A value of 0 is used when no priority is set.  <p><i>Note: A value of 1 may be either the highest or lowest priority. Within AutoPilot, this value is only used for sorting purposes and does not otherwise impact functionality.</i></p>

### Events

Field	Data Type	Description
<b>UTCDateTime</b>	Date/Time	The date and time of the event using UTC time.
<b>NetworkName</b>	String	The name of the network on which the event occurred.
<b>UnitName</b>	String	The name of the site on which the event occurred.
<b>UnitID</b>	Integer	The unique ID identifying the remote control unit.
<b>EventTypeID</b>	Integer	Describes the type of event. Used internally by AutoPilot.  <i>Note: The values available for this field are numerous and subject to change.</i>  <b>Using this field is not recommended.</b>
<b>EventMessage</b>	String	Describes the event.
<b>TimeZoneOffset</b>	Integer	The time zone offset (number of minutes from UTC) for this site.

### Status Changes

Field	Data Type	Description
<b>UTCDateTime</b>	Date/Time	The date and time of the status change using UTC time.
<b>NetworkName</b>	String	The name of the network on which the status change occurred.
<b>UnitName</b>	String	The name of the site on which the status change occurred.
<b>UnitID</b>	Integer	The unique ID identifying the remote control unit.
<b>ChannelNumber</b>	Integer	The channel number whose status changed.
<b>StatusValue</b>	Boolean	The value of the status channel after the change.
<b>StatusMessage</b>	String	The status label associated with the new value.
<b>StatusStateID</b>	Integer	The alarm state of the status channel: -1 Normal 0 Warning 1 Critical
<b>TimeZoneOffset</b>	Integer	The time zone offset (number of minutes from UTC) for this site.



## Telemetry

Field	Data Type	Description
<b>UTCDateTime</b>	Date/Time	The date and time of the snapshot using UTC time.
<b>NetworkName</b>	String	The name of the network on which the snapshot occurred.
<b>UnitName</b>	String	The name of the site on which the snapshot occurred.
<b>UnitID</b>	Integer	The unique ID identifying the remote control unit.
<b>ChannelNumber</b>	Integer	The channel number included in this snapshot.
<b>ChannelName</b>	String	The meter label for this channel.
<b>MeterValue</b>	Single	The calibrated value of the meter channel.
<b>Units</b>	String	The units label for the meter channel.
<b>AnalogStateID</b>	Integer	The alarm state of this meter channel:  -1 Normal 0 Warning 1 Critical
<b>StatusValue</b>	Boolean	The value of the status channel.
<b>StatusMessage</b>	String	The status label associated with the status value.
<b>StatusStateID</b>	Integer	The alarm state of the status channel:  -1 Normal 0 Warning 1 Critical
<b>TimeZoneOffset</b>	Integer	The time zone offset (number of minutes from UTC) for this site.

## Jet Actions and Conditions

Actions	
<b>Alarm</b>	(ARC Plus and ARC Solo) Creates a new alarm on the ARC Plus or ARC Solo.
<b>Clear Alarms</b>	(AutoPilot only) Clears all alarms on the selected ARC Plus or ARC Solo.
<b>Close Custom View</b>	(AutoPilot only) Closes the selected custom view on the AutoPilot computer.
<b>Decrement</b>	Subtracts 1 from the specified memory variable.
<b>Email Report</b>	(ARC Plus and ARC Solo) Emails a report using a template.
<b>Increment</b>	Adds 1 to the specified memory variable.
<b>Log Message</b>	(AutoPilot only) Adds the specified message to the Event Log on the selected ARC Plus or ARC Solo.
<b>Lower</b>	Issues a <i>Lower</i> command for the specified channel.
<b>Message</b>	(ARC Plus and ARC Solo) Adds the specified message to the unit's Event Log.
<b>Open Custom View</b>	(AutoPilot only) Opens the selected custom view on the AutoPilot computer.
<b>Raise</b>	Issues a <i>Raise</i> command for the specified channel.
<b>Reset Timer</b>	(ARC Plus firmware 5.0.14.1 or greater) Resets one of the 64 independent timers on the selected site.
<b>Send Email</b>	Sends an email message.
<b>Set</b>	(ARC Plus only) Sets a meter channel value, a status channel value or a memory value.
<b>Set Flowchart</b>	(AutoPilot only) Starts or stops a flowchart.
<b>Set Limit</b>	(ARC Plus and ARC Solo) Sets a meter limit to the specified value.
<b>Set Macro</b>	Starts or stops a macro.
<b>Set Memory</b>	Sets a memory variable to the specified value.
<b>Set Mute</b>	(ARC Plus and ARC Solo) Mutes or unmutes a channel.
<b>Speak Phrase</b>	(ARC Plus and ARC Solo) Causes the ESI/RSI to speak the specified phrase when configured for audio output.
<b>Start Timer</b>	(ARC Plus firmware 5.0.14.1 or greater) Starts one of the 64 independent timers on the selected site.
<b>Stop Timer</b>	(ARC Plus firmware 5.0.14.1 or greater) Stops one of the 64 independent timers on the selected site.
<b>Take Capture</b>	(ARC Plus only) Captures channel values locally on the ARC Plus.
<b>Take Log</b>	(AutoPilot only) Logs the specified site.
<b>Wait</b>	Pauses the flowchart for the specified duration.

Conditions	
<b>If</b>	Evaluates a meter, status or memory variable to a specified constant.
<b>If Alarm</b>	Evaluates the number of alarms on the specified site.
<b>If Calendar Time</b>	Determines if the current time matches the specified calendar time.
<b>If Date</b>	Determines if the current date matches the specified date.
<b>If Day</b>	Determines if the current weekday matches the specified weekday.
<b>If Day of Month</b>	Determines if the current day the month matches the specified day.
<b>If Flowchart</b>	(AutoPilot only) Evaluates the state of the specified flowchart.
<b>If Macro</b>	Evaluates the state of the specified macro.
<b>If Maint mode</b>	Determines if a site is in maintenance mode.
<b>If Memory</b>	Evaluates the specified memory variable.
<b>If Month</b>	Determines if the current month matches the specified month.
<b>If New Status</b>	Evaluates a status channel after waiting for a new reading.
<b>If New Value</b>	Evaluates a meter channel after waiting for a new reading.
<b>If Relay State</b>	Evaluates the relay state of the specified channel.
<b>If Status</b>	Evaluates the specified status channel.
<b>If Time</b>	Determines if the current time matches the specified time.
<b>If Value</b>	Evaluates the specified meter channel.

## Virtual Channel Syntax

### Operators and Constants

<b>+</b>	Addition
<b>-</b>	Subtraction
<b>*</b>	Multiplication
<b>/</b>	Division
<b>Mod</b>	Modulo
<b>Pi</b>	The constant $Pi$ ( $\pi$ )
<b>E</b>	The constant $e$
<b>=</b>	Equals
<b>&lt;</b>	Less than
<b>&gt;</b>	Greater than
<b>&lt;=</b>	Less than or equal
<b>&gt;=</b>	Greater than or equal
<b>&lt;&gt;</b>	Not equal
<b>(</b>	Open paren
<b>)</b>	Close paren
<b>And</b>	Logical <i>and</i>
<b>Or</b>	Logical <i>or</i>
<b>Not</b>	Logical <i>not</i>
<b>Xor</b>	Logical <i>exclusive or</i>
<b>True</b>	The constant <i>true</i>
<b>False</b>	The constant <i>false</i>

## Functions

Site Functions	
<b>Meter</b>	Returns the value of a meter channel.
<b>Status</b>	Returns the value of a status channel.
<b>RelayRaised</b>	Returns true if the command channel is raised.
<b>RelayLowered</b>	Returns true if the command channel is lowered.
<b>InAlarm</b>	Returns true if the site is in alarm.
<b>MaintMode</b>	Returns true if the site is in maintenance (local) mode.

Jet	
<b>MemoryVariable</b>	Returns the value of a flowchart memory variable.
<b>VirtualMeter</b>	Returns the value of a virtual meter channel.
<b>VirtualStatus</b>	Returns the value of a virtual status channel.

Math and Logic Functions	
<b>Abs</b>	Absolute value
<b>Acos</b>	Arccosine
<b>Asin</b>	Arcsine
<b>Atan</b>	Arctangent
<b>Atan2</b>	Arctangent (angle from the x-axis to the specified point)
<b>Ceiling</b>	Returns the smallest integer greater than or equal to the specified number.
<b>Cos</b>	Cosine
<b>Exp</b>	Returns the constant e raised to a power.
<b>Floor</b>	Returns the greatest integer less than or equal to the specified number.
<b>Iff</b>	Evaluates a condition and returns one value if true and the other if false.
<b>Log</b>	Returns the log of a number using the specified base.
<b>Log10</b>	Log base 10
<b>Max</b>	Returns the largest value from a list.
<b>Min</b>	Returns the smallest value from a list.
<b>Ln</b>	Natural log
<b>Pow</b>	Returns the value of a number raised to a specified power.
<b>Round</b>	Returns a number rounded to the nearest integer.
<b>Sin</b>	Sine
<b>Sqrt</b>	Square root
<b>Tan</b>	Tangent

Date/Time Functions	
<b>Now</b>	The current date and time.
<b>Weekday</b>	The current weekday.
<b>Today</b>	The current date.
<b>Sunday</b>	The constant value for <i>Sunday</i> .
<b>Monday</b>	The constant value for <i>Monday</i> .
<b>Tuesday</b>	The constant value for <i>Tuesday</i> .
<b>Wednesday</b>	The constant value for <i>Wednesday</i> .
<b>Thursday</b>	The constant value for <i>Thursday</i> .
<b>Friday</b>	The constant value for <i>Friday</i> .
<b>Saturday</b>	The constant value for <i>Saturday</i> .

Calendar Functions	
<b>PreSunrise</b>	Returns the date/time for <i>Pre-Sunrise</i> for the current month.
<b>Sunrise</b>	Returns the date/time for <i>Sunrise</i> for the current month.
<b>Sunset</b>	Returns the date/time for <i>Sunset</i> for the current month.
<b>PostSunset</b>	Returns the date/time for <i>Post-Sunset</i> for the current month.
<b>User1</b>	Returns the date/time for <i>User 1</i> for the current month.
<b>User2</b>	Returns the date/time for <i>User 2</i> for the current month.