

AutoPilot®

Instruction Manual



Table of Contents

Introduction	1
Getting Started	2
Overview	2
Working with Docking Windows	2
 Resources	3
 Navigator	3
Default Views	6
Alarms Overview	10
 Adding Alarms	12
Events	14
Macros	15
Network Devices Overview	16
Adding Sites	17
 Adding ARC Plus or Arcturus Networks	17
 Adding ARC Solo Networks	21
 Adding ARC-16 Networks	23
 Adding GSC3000/VRC2500 Sites	28
 Adding Network Devices	31
Alarms on Network Devices	35
Creating Custom Views	36
Custom View Editor Overview	36
Adding, Positioning and Sizing Controls	39
Binding to Channels	40
Customizing Control Properties	42

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Using Charts.....	42
Editing and Deleting Custom Views	44
Using Custom View Templates.....	44
Creating Reports.....	45
 Using the Report Wizard	45
 Scheduling Reports.....	50
Viewing, Printing and Emailing Reports	51
In Depth.....	53
Program Options	53
Licensing.....	58
Connectivity.....	59
Connection Methods.....	59
Connecting and Disconnecting.....	59
Site Configuration Cache.....	61
 Sync Configuration.....	61
Backup Connections and Automatic Reconnection	61
Incoming Calls.....	64
Remote Control Specific Information	65
Warp Engine™ Polling	67
Alarm Management	70
 Network Alarm List	70
 Site Alarm List.....	70
Notifications and Sounds	70
 Alarm Relationships	71
 Alarm Muting	73
Logging.....	74

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Rev J

 Enabling Logging	74
Logging and Connections	75
 Logging on Demand	75
Databases	75
Text File Logging	75
SQL Server Logging	77
Captures.....	80
Enabling Capture Downloading	80
Configuring the Download Schedule	80
Taking an Immediate Capture	81
Viewing Captures	81
Data Management	82
Security.....	83
 Application Event List	84
Migration	85
AutoPilot Files and Folders.....	86
Network Names	86
Jet.....	87
 Jet Active Flowcharts	87
Active Flowcharts for AutoPilot.....	87
Active Flowcharts for ARC Plus and ARC Solo	89
Designing Active Flowcharts	91
 Scheduling Active Flowcharts	96
 Jet Status	97
 Virtual Channels	98
Overview	98
 Virtual Channel List	98

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Rev J

Renaming a Virtual Channel	99
Reference	101
Custom Views	101
Controls.....	101
Status Conditions	115
Actions	116
Database Schema	116
Tables.....	116
Jet Actions and Conditions.....	120
Virtual Channel Syntax.....	121
Operators and Constants	121
Functions	122
Appendix A – Notes for AutoPilot 3 Users	124
Appendix B – Notes for Lynx 5 Users.....	125

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Introduction

Thank you for purchasing AutoPilot.

AutoPilot's 64-bit architecture enables multi-site, PC-based facilities management for the entire line of Burk remote controls, including ARC Plus, ARC Solo, ARC-16, GSC3000 and VRC2500. AutoPilot's fully customizable interface makes managing remote sites easy for operators, engineers and managers. Built-in reports are easily tailored to individual needs, and can be printed automatically or emailed as a PDF to station personnel. AutoPilot also includes network management functionality, bridging the gap between broadcast and IT by including SNMP and ping with traditional I/O.

With AutoPilot, you can:

- Monitor and control ARC Plus, ARC Solo, ARC-16, GSC3000, and VRC2500 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
ARC-16	AutoLoad
GSC/VRC	AutoLoad GSC

For more information, visit www.burk.com.

Read the Getting Started section ([PAGE 2](#)) 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 ([PAGE 101](#)).

What happened to AutoPilot 2010?

Burk Technology registered the AutoPilot trademark 25 years ago for the DOS based program to use with ARC-16s. The product evolved, culminating in a universal version which carried the 2010 suffix. We continue to refine the product as part of our Continuous Improvement program, and have chosen to return to the original brand name, differentiating releases only by revision number.

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

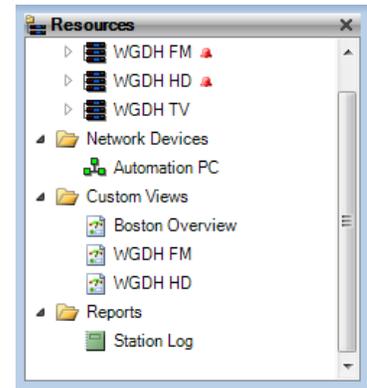
The function key F10 is mapped to the reset windows that have been docked. This option is also in the View menu of AutoPilot.

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 sites (including ARC Plus, ARC Solo, ARC-16, and GSC3000/VRC2500), 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.

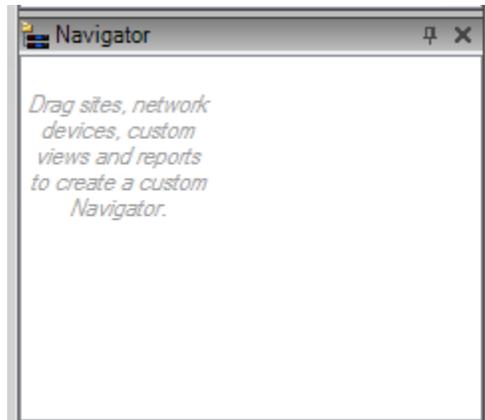
Navigator

The new 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.

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. The Navigator starts out unpopulated.

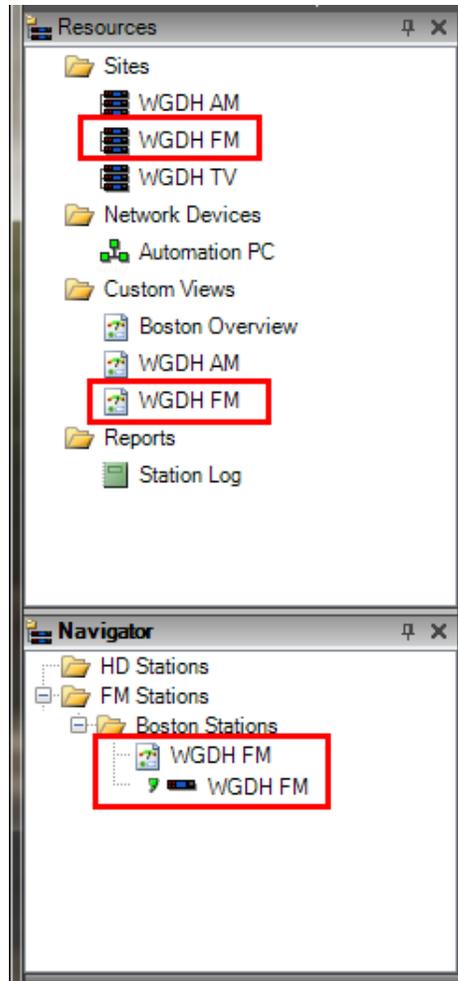


Unpopulated Navigator

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.

Note: You can drag ARC Plus and ARC Solo sites into the Navigator. Legacy sites (for example, ARC 16 or GSC3000 sites) must be accessed in the Resources window.

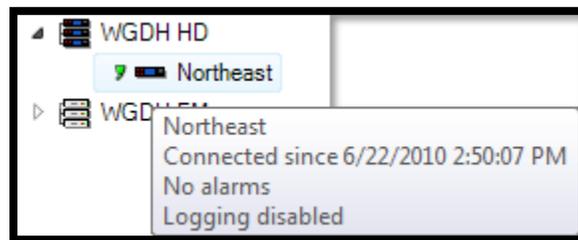
In this example, the main folder, FM Stations, contains a Boston Stations subfolder. The WGDH FM station sites and Custom Views are copied into the Navigator's Boston Stations folder.



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

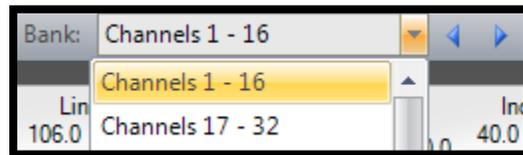
AutoPilot can display a Default View for each site without any additional configuration. To open a default view, click on the site's icon in the Resources window or Navigator. The Default View will show all of the channels on the selected site, using the labels and colors configured for the site.

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

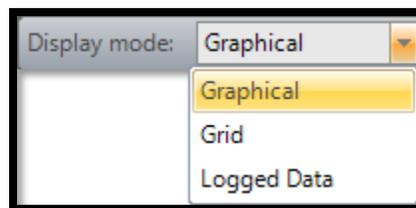
ARC Plus sites will also show a "channel bank" selector, breaking up the site in 16 channel pages. To view a different bank of channels, select the desired range from the drop-down list, or use the navigation buttons.



Channel bank selector for ARC Plus sites

Default View Display Modes

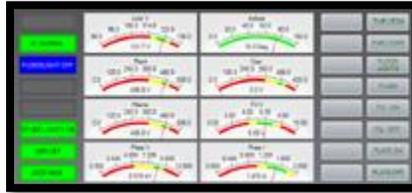
AutoPilot offers three types of default views: Graphical, Grid, and Log View. To select a display mode, use the drop-down in the Default View tool bar.



Display Mode Selector

Graphical View

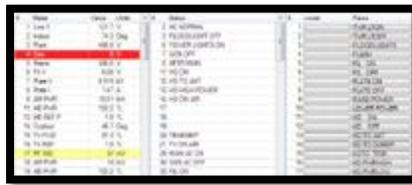
The Graphical View is the primary Default View. The Graphical View displays site data using realistic analog gauges and LEDs. Each type of remote control (ARC Plus, ARC Solo, ARC-16, and GSC3000/VRC2500) has a different Graphical View.



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.



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

Date / Time	1: TX-A FWD (Watt)	2: TX-A RFL (Watt)	3: TX-A PAV (V)	4: TX-A PAI (Amps)	5: TX-A TMP (Deg)	6: TX-B FWD (Watt)	7: TX-B RFL (Watt)	8: TX-B PAV (V)	9: TX-B PAI (Amps)	10: TX-B TMP (Deg)	11: TEMP OUT (Deg)	12: TEMP IN (Deg)	13: TEMP A/C (Deg)	14: UTIL V (V)	15: UPS-1 V (V)
1/25/2017 1:40:01 PM	500.4	0.00	37.1	15.9	105.5	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.8	117.8
1/25/2017 1:50:01 PM	500.3	0.00	37.1	15.9	105.5	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.7	118.0
1/25/2017 2:00:02 PM	500.4	0.00	37.1	15.9	105.5	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.8	117.8
1/25/2017 2:10:02 PM	500.0	0.00	37.1	15.9	105.5	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.5	117.9
1/25/2017 2:20:01 PM	500.0	0.00	37.1	15.9	105.5	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.5	117.9
1/25/2017 2:30:01 PM	500.0	0.00	37.1	15.9	105.5	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.5	117.9
1/25/2017 2:40:01 PM	500.4	0.00	37.1	15.9	105.5	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.8	117.8
1/25/2017 2:50:01 PM	500.1	0.00	37.0	15.9	105.5	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.6	117.7
1/25/2017 3:00:01 PM	500.4	0.00	37.1	15.9	105.5	0.0	0.00	0.0	0.0	70.2	54.6	68.6	51.2	118.8	117.8

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.

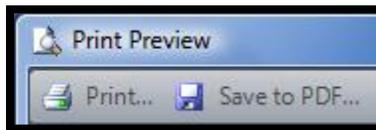
A Report in AutoPilot is a template, describing what data should be included and how it should look. Whenever you run a report, AutoPilot pulls the appropriate data from the database. Once you have created your Report, you can run it as often as needed, and do not need to edit it to update your data.

To learn how to create a report, read [Creating Reports \(SEE PAGE 45\)](#).



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.



"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.

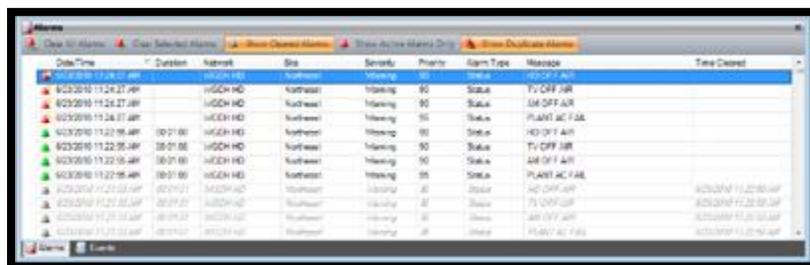
Alarms Overview

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



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.

 Clear All Alarms	Clears every alarms in the Alarm List.
 Clear Selected Alarms	Clears the icon or icons that are current selected in the Alarm List.
 Show Cleared Alarms	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.
 Show Active Alarms Only	When "Show Active Alarms Only" is enabled, the Alarm List will only show "active" alarms.
 Show Duplicate Alarms	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.

Note: Only ARC Plus, ARC Solo and SNMP alarms can be cleared individually (using "Clear Selected Alarms"). ARC-16 and GSC3000/VRC2500 sites only support clearing all alarms at once.

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

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

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

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 has a close button (X) in the top right corner. It contains the following fields:

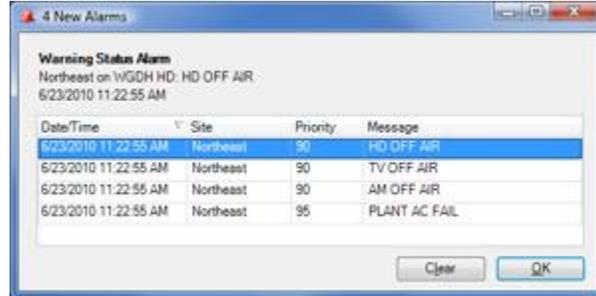
- Severity: A dropdown menu with "Warning" selected.
- Message: A text input field.
- Priority: A spin box with "100" selected and a range of "(1 - 255)".
- Buttons: "OK" and "Cancel" buttons at the bottom.

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 Notifications ([PAGE 54](#)).



New Alarm Dialog



New Alarm Desktop Alert

Device-Specific Features

	ARC Plus	ARC Solo	ARC-16	GSC3000 VRC2500	SNMP
Alarm Severity	✓	✓		✓	
Alarm Priority	✓				
Inactive Alarms	✓	✓	✓		✓
Clear Individual Alarms	✓	✓			✓
Add New Alarms	✓				

ARC-16 Notes:

The state of ARC-16 alarms is determined when AutoPilot connects to an ARC-16 site. Alarms can only be considered "inactive" when the alarm state changes while AutoPilot is connected.

Clearing alarms in AutoPilot will clear the ARC-16 alarm indicator, and instruct the ARC-16 to stop dialing its phone list to report current 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.

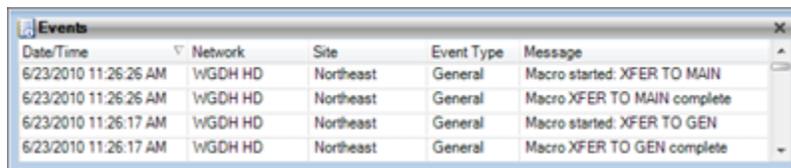
If the OID of the trap is found in the MIB for the Network Device, the description of that OID is used for the alarm message. If AutoPilot cannot find an entry in the MIB for the OID, it will use the OID value itself.

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.



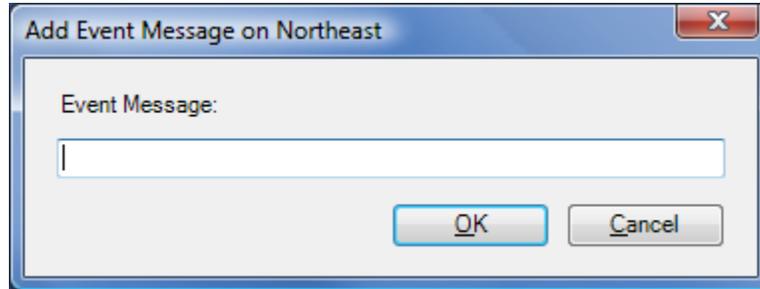
Date/Time	Network	Site	Event Type	Message
6/23/2010 11:26:26 AM	WGDH HD	Northeast	General	Macro started: XFER TO MAIN
6/23/2010 11:26:26 AM	WGDH HD	Northeast	General	Macro XFER TO MAIN complete
6/23/2010 11:26:17 AM	WGDH HD	Northeast	General	Macro started: XFER TO GEN
6/23/2010 11:26:17 AM	WGDH HD	Northeast	General	Macro XFER TO GEN complete

Event List

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

The ARC Plus and GSC3000/VRC2500 include onboard Macros. In AutoPilot, Macros can be run or stop 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, use the Jet Designer for ARC Solo, and use AutoLoad GSC for GSC3000/VRC2500.

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	
 Run	Runs the selected macro.
 Stop	Stops the selected macro.

Macro State Icons	
 Running	The macro is currently running.
 Error	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 31](#)).

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.

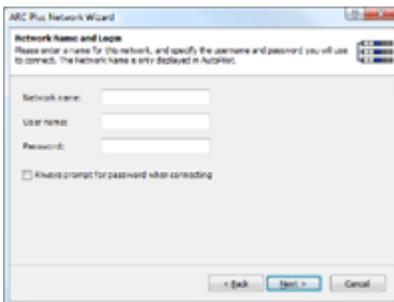
Once the wizard is complete, your ARC Plus Network (and its sites) will appear in the Resources window.

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

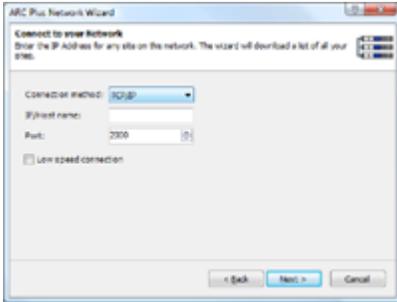


Welcome
Click "Next" to start the Wizard.



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

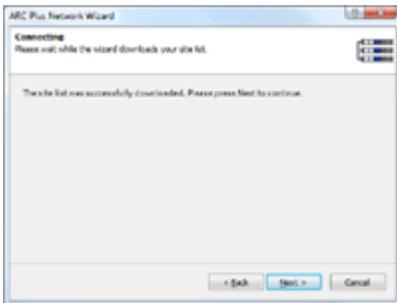
Enter your user name and password for this Network.



Connect to your Network

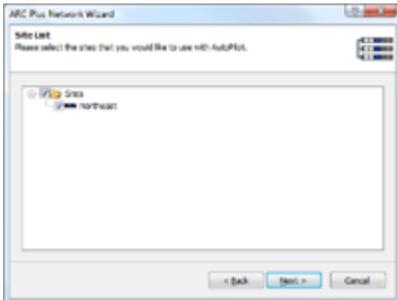
Select either TCP/IP or Modem as your connection method. For TCP connections, enter the IP address and Port of any ARC Plus site on this network. For modem connections, select your modem and enter the phone number of your ARC Plus.

Note: When using a modem connection with an ESI (Enhanced Speech Interface) or RSI(Recordable Speech Interface), enter a dialing pause to allow enough time for your greeting before the modem switches to data mode.



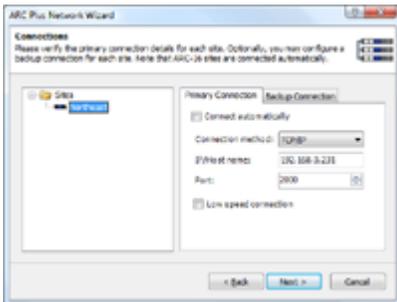
Connecting

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.

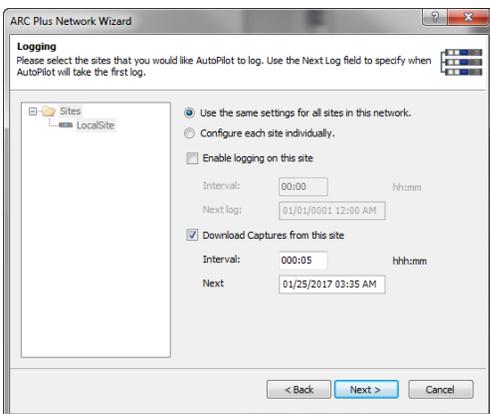
For any site, you can adjust the following connection settings:

Connect automatically

When checked, AutoPilot will automatically connect to this site on startup.

Connection method and settings

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



Low speed connection

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

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, or 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

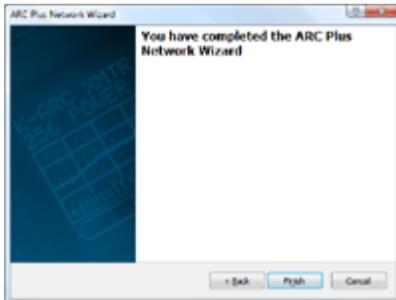
(snapshots) of a specified range of channel values locally on The ARC Plus Touch. You can create a download schedule on any AutoPilot system to automatically retrieve the captures.

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.





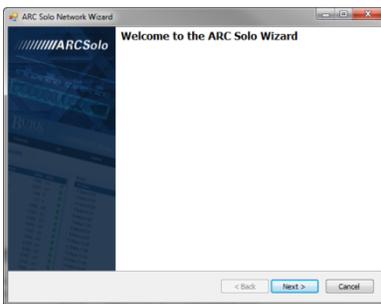
Adding ARC Solo Networks

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

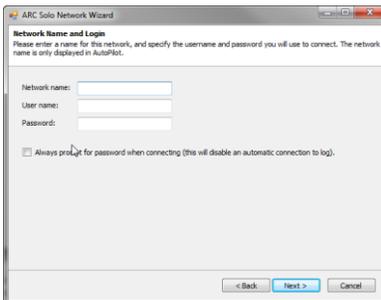
Once the wizard is complete, your ARC Solo Network (and its sites) will appear in the Resources window.

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

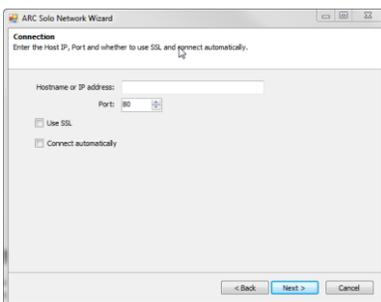


Welcome
Click "Next" to start the Wizard.



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.

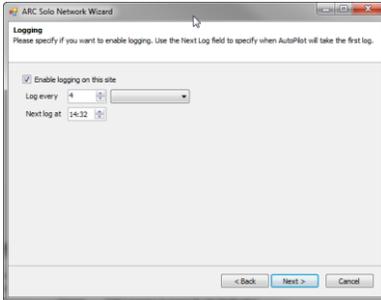


Connection
Enter the hostname or IP address of the host.
Select the host port.

Select settings for SSL and automatic connection.

Connect automatically

When checked, AutoPilot will automatically connect to this site on startup.



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 ARC-16 Networks

To add a new ARC-16 Network, click File -> New -> ARC-16 Network... to bring up the ARC-16 Network Wizard.

Note: ARC 16 sites can only be accessed in the Resources window; you cannot drag them into the Navigator.

Once the wizard is complete, your ARC-16 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-16 Network".

Important notes for modem connections:

The ARC-16's modem uses Bell 212A modulation. Many computer modems require special initialization strings to work with Bell 212A, and some do not support this method at all. Refer to your modem's documentation for more information.

If you do need to enter an initialization string, you can do so in the "Phone and Modems" section of the Windows Control Panel.

Important notes for direct connections:

The normal connection between a PC running AutoPilot and an ARC-16 is a full null modem cable, where AutoPilot 2 and 3 permitted a 3-wire cable.

Customers with older ARC-16s (Rev. A CPU boards) upgrading from AutoPilot 2 or 3 need to verify that a full null modem cable is being used.

For customers using ARC-16s with Rev. B boards, either use a full null modem cable or download a new SerialPorts.xml file to your AutoPilot directory. This will allow AutoPilot to communicate using only TX, RX & GND. A copy of the file can be downloaded from:

<http://www.burk.com/assets/burk/products/SerialPorts.xml>

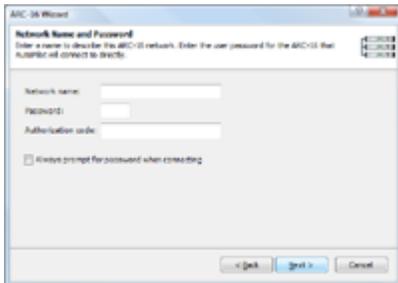
After you download the file:

1. Open the XML file with a text editor (Windows Notepad, for example). The file contains the name of the serial port on the PC that communicates with the ARC-16 (COM4 or COM1, for example). Edit the file to match the COM port you plan to use.
2. Save the file in C:\Program Files (x86)\Burk Technology\AutoPilot.

ARC-16 Network Wizard



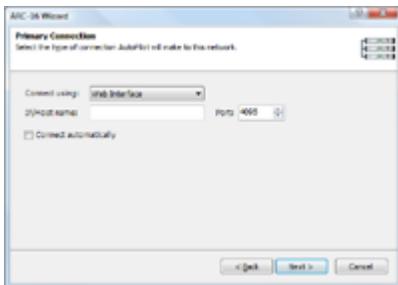
Welcome
Click "Next" to start the Wizard.



Network Name and Password
Enter a name to describe this ARC-16 Network. The name will be displayed through AutoPilot.

Enter your password for this network, and the Authorization Code for the ARC-16 that you are connecting to directly.

If you do not have an Authorization Code, contact Burk Technology at 978-486-0086, or on the web at www.burk.com.



Primary Connection
Select the method that you want to use to connect to this network. The following options are available:

Web Interface

Connect using an ARC-16 Web Interface. Enter the IP address (or host name) and TCP port for your Web Interface.

TCP/IP (other)

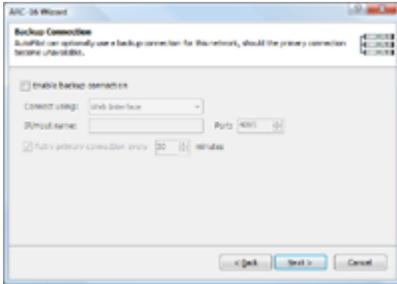
Connect using a 3rd party serial-to-Ethernet converter. Enter the IP address (or host name) and TCP port for your converter.

Direct

Connect using a COM port on this computer. Select the desired COM port from the list.

Modem

Connect using a modem. Select the desired modem from the list and enter the phone number for the ARC-16.

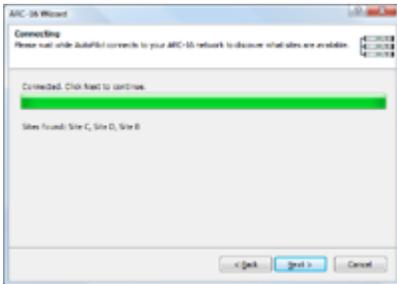


Backup Connection

(See above for descriptions of the different connection options).

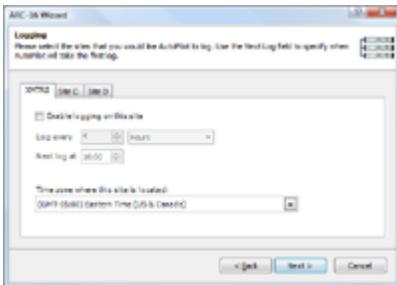
When enabled, AutoPilot will switch to the backup connection settings if the primary connection is unavailable.

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



Connecting

Click Next to continue after the ARC-16 Wizard connects to your site(s).



Logging

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

Logging can be configured for each site in this network. Using the tab for the desired site, configure the following:

Enable logging

Checking this box enables logging for the selected site.

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 site is located.



Channel Setup

Configure meter, status, and command channels for each site in this network.

Meters

Select "Meters" for the desired site from the site tree. The meter name and units label are set in the channel grid.

Name

Enter a name to describe this channel.

Units

Enter a units label for this channel.

Select a channel in the grid to load additional settings in the properties list on the right.

Min

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

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.

Max

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

Status

Select "Status" for the desired site from the site tree.

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".

Commands

Select "Commands" for the desired site from the site tree.

Raise Label

AutoPilot will use this label on raise buttons for this site.

Duration [raise]

The duration (in seconds) for which the raise command will be active.

Lower Label

AutoPilot will use this label on lower buttons for this site.

Duration [lower]

The duration (in seconds) for which the lower command will be active.



Finish

Click Finish to save your ARC-16 Network and close the wizard.

Adding GSC3000/VRC2500 Sites

Note: A VRC2500 appears in AutoPilot as a single I/O 16.

Voice Interface units are not used in AutoPilot, and will not appear as a part of your site.

A GSC3000 site may include up to 16 units of the following types:

- I/O 16
- I/O 8
- GT-4
- GX-128
- AC-4
- AC-8
- OneConnect

To add a new GSC3000/VRC2500 Site, click File → New → GSC/VRC Site... to bring up the GSC/VRC Site Wizard.

Once the wizard is complete, your site will appear in the Resources window.

Note: GSC3000 and VRC2500 sites can only be accessed in the Resources window; you cannot drag them into the Navigator.

To change your settings you can return to the wizard later by right-clicking a site in the Resources window and choosing "Edit GSC/VRC Site".

Important notes for direct connections:

The normal connection between a PC running AutoPilot and an GSC/VRC is a full null modem cable, where AutoPilot 2 and 3 permitted a 3-wire cable. Either use a full null modem cable or download a new SerialPorts 2.xml file to your AutoPilot directory. This will allow AutoPilot to communicate using only TX, RX & GND. A copy of the file can be downloaded from:

http://www.burk.com/assets/burk/products/SerialPorts_2.xml

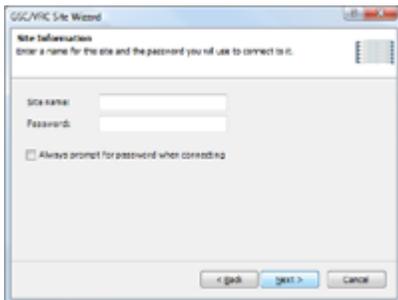
After you download the file:

1. Open the file with a text editor (Windows Notepad, for example). The file contains the name of the serial port on the PC that will communicate with the GSC/VRC (COM4 or COM1, for example). Edit the file to match the COM port you plan to use.
2. Save the file in C:\Program Files (x86)\Burk Technology\AutoPilot.

GSC/VRC Wizard



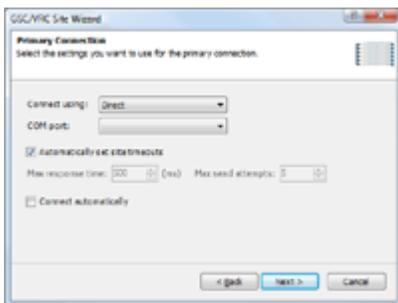
Welcome
Click "Next" to start the Wizard.



Site Information
Enter a name to describe this site. The name will be displayed through AutoPilot.

Enter your password and Authorization Code for this site.

If you do not have an Authorization Code, contact Burk Technology at 978-486-0086, or on the web at www.burk.com.



Primary Connection
Select the method that you want to use to connect to this site. The following options are available:

Direct

Connect using a COM port on this computer. Select the desired COM port from the list.

Dialup

Connect using a modem. Select the desired modem from the list and enter the phone number for the site.

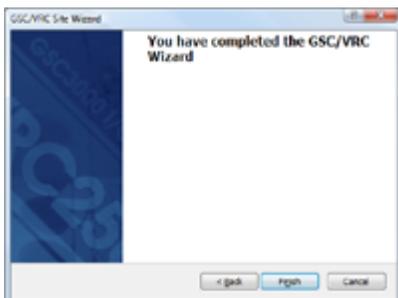
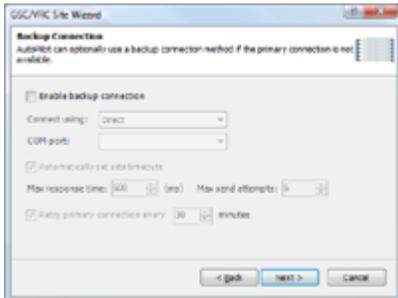
If your modem is connected to a Voice Interface, end the phone number with several commas followed by 020. The commas instruct the modem to pause, allowing for the Voice greeting. You may need to experiment to determine the correct number of commas to use for your greeting.

Connect using TCP/IP (including GSC/VRC Web Interface)

Enter the IP address (or host name) and TCP port number for your site.

Timeouts

By default, AutoPilot will automatically determine appropriate timeout values for use with your site, and adjust those values as



site conditions change. If you would rather specify these settings manually, you may do so here.

Backup Connection

(See above for descriptions of the different connection options).

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

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

Logging

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

Enable logging

Checking this box enables logging for this site.

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 site is located.

Logging method

AutoPilot can log either by taking readings directly, or by using the GSC3000/VRC2500's onboard captures.

Finish

Click Finish to save your site 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



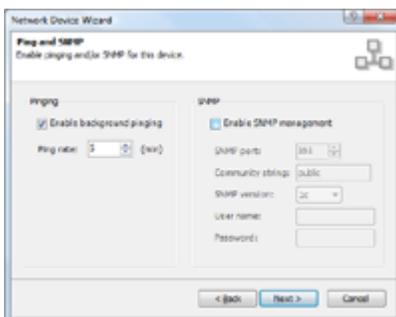
Welcome
Click "Next" to start the Wizard.



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

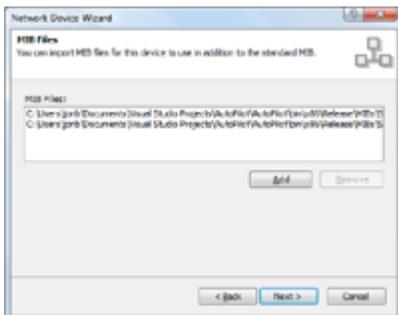
The version of SNMP used by the SNMP agent (1, 2c, or 3).

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

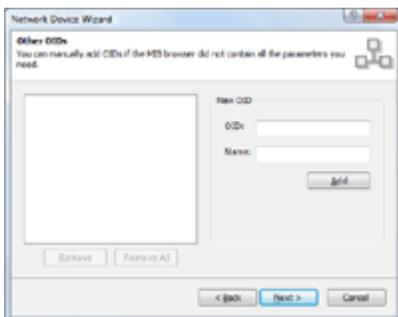
By default, AutoPilot includes the standard MIB files. You can add additional MIB files for device or vendor specific parameters by clicking the "Add" button.

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



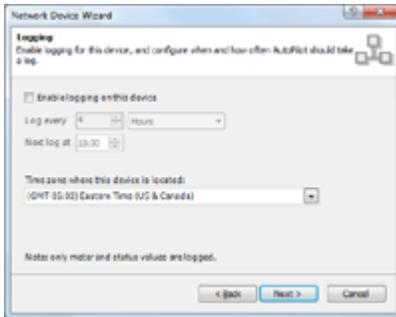
MIB Browser

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.



Other OIDs

To add OIDs that are not available in your device's MIB, 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

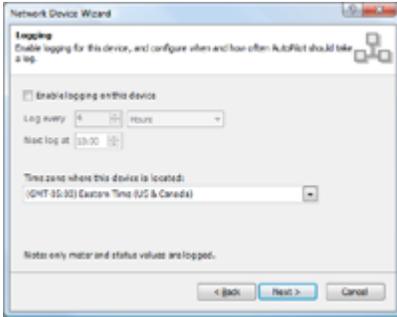
AutoPilot will consider this status channel to be "on" when the value received from the SNMP agent matches the "on string".

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.

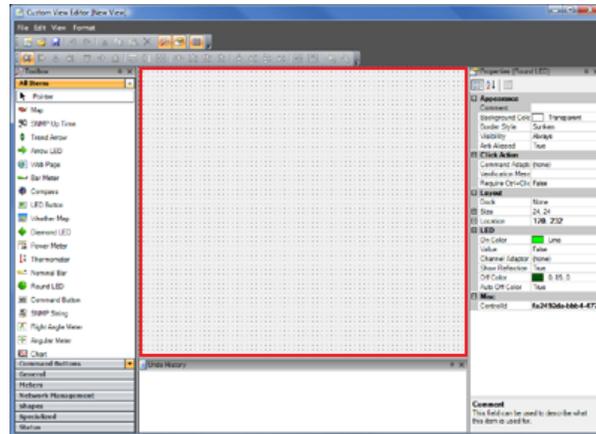
Terminology	
Custom View Control	A Custom View Control is an onscreen element such as a graphical meter, status LED, or command button.
Binding	Binding a Custom View Control to a remote control channel or other parameter creates a link between that parameter's value or associated action and the behavior 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.
Control Properties	A control's properties are attributes that define its appearance and behavior, such as colors, limits, and labels.
Custom View Template	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.
Selection Handles	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

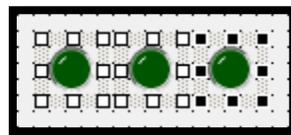
By default, the Custom View Editor displays grid dots on the canvas. The grid is useful for aligning and positioning controls.

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.

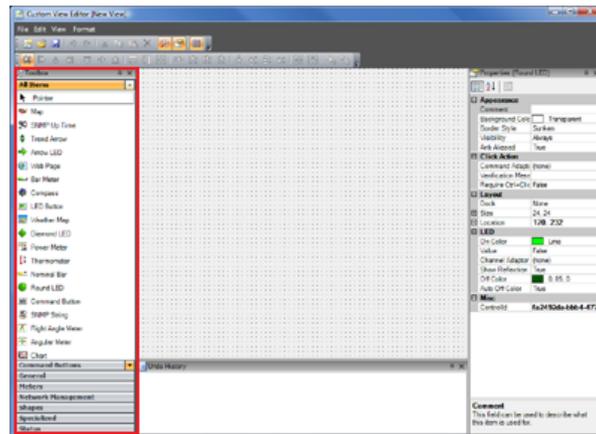


Multiple controls selected. The primary control is shown with black selection handles.

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

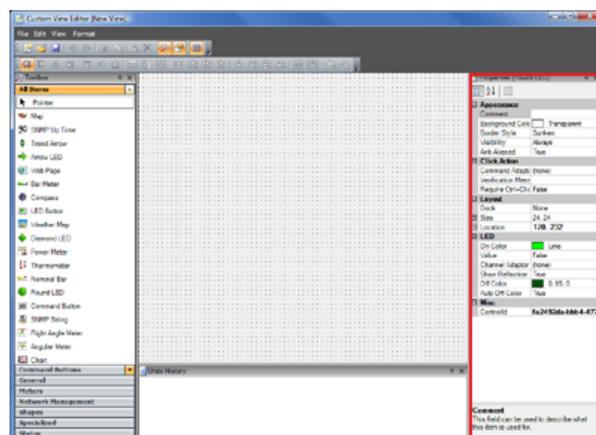
Properties

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.

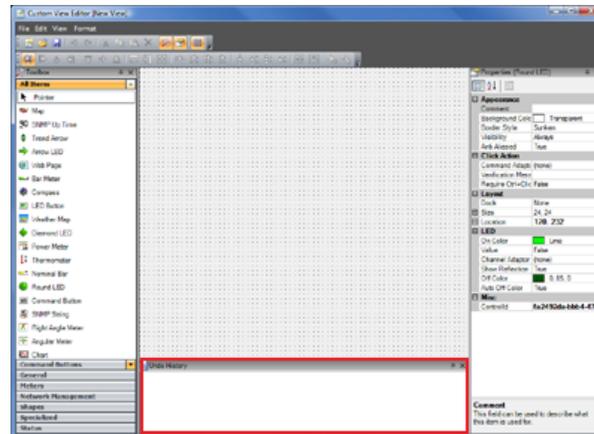
Note: If more than one control is selected, the properties grid uses the primary control (see above).



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.

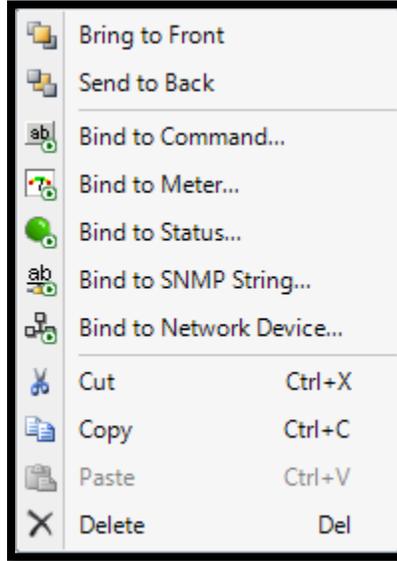
 Align Lefts	Aligns all the controls on the left hand side.
 Align Centers	Aligns all the controls in the center.
 Align Rights	Aligns all the controls on the right hand side.
 Align Tops	Aligns all the controls on the top.
 Align Middles	Aligns all the controls in the middle.
 Align Bottoms	Aligns all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

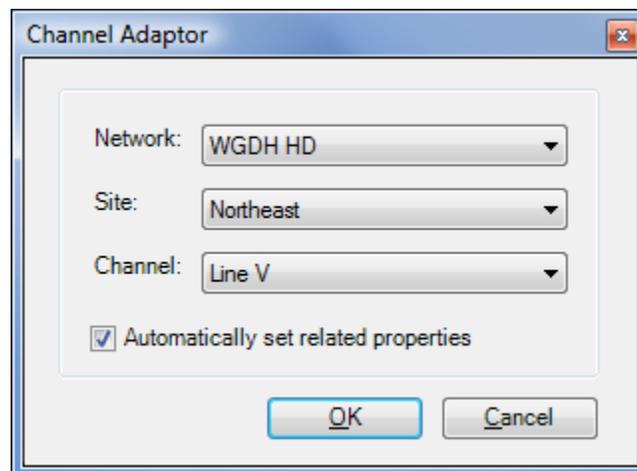


Context menu used to bind channels. Normally, unavailable channel types are grayed out.

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

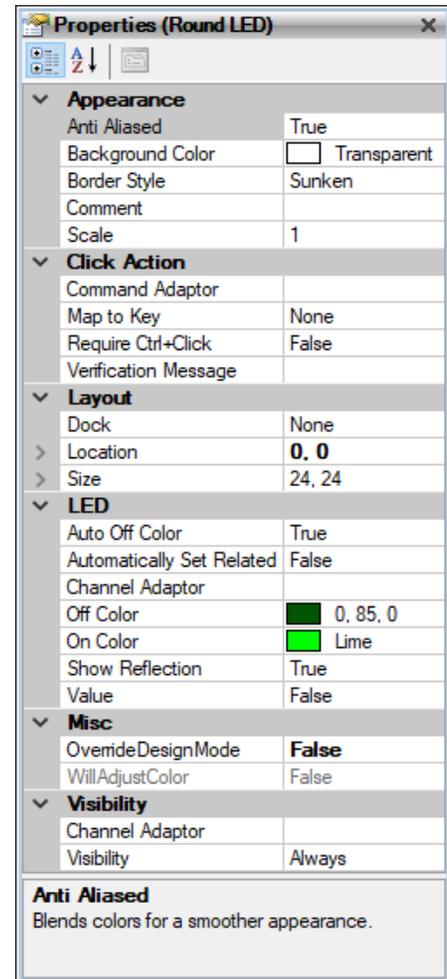
- The pane at the bottom of the property grid used for the description can be resized to show more or less of the text.
- The columns of the property grid can be resized by clicking on the vertical dividing line between them.
- The properties listed in the grid can be sorted alphabetically, or organized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

Using Charts

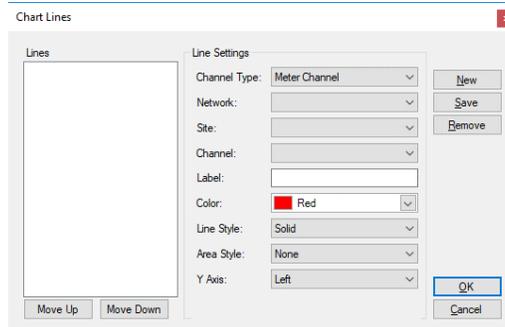
The Custom View Chart control allows you to plot one or more meter channels on a strip chart. Because the chart control can support multiple lines, using it is different from other metering controls.

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:

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

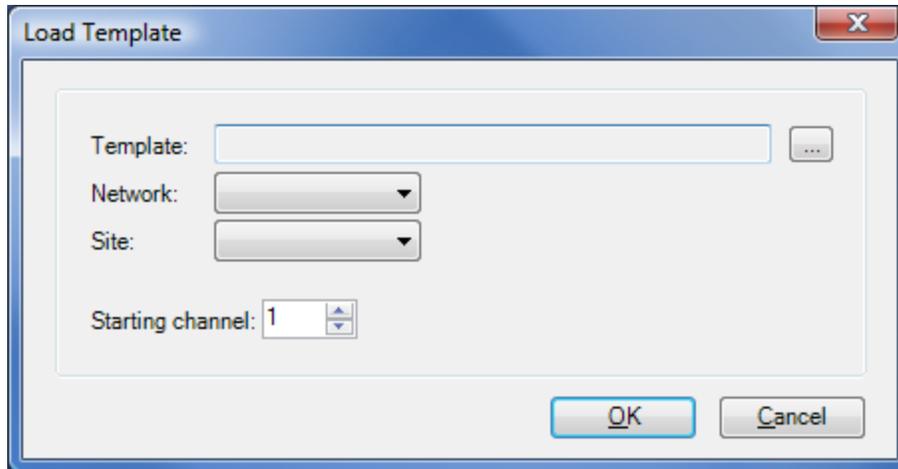
Custom View Templates allow you to quickly configure a pre-defined Custom View to work with one of your sites. A template that resembles the Default View is available, as well as templates for PlusConnect™ transmitter interfaces.

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:

Template	Click the browse button ("...") to locate the template you want to use.
Network	Choose the network containing the site that you want to use for this Custom View.
Site	Choose the site that you want to use in this Custom View.
Starting channel	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.

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.

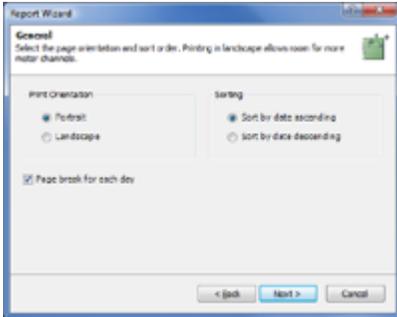


Using the Report Wizard

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



Welcome
Click "Next" to start the Wizard.

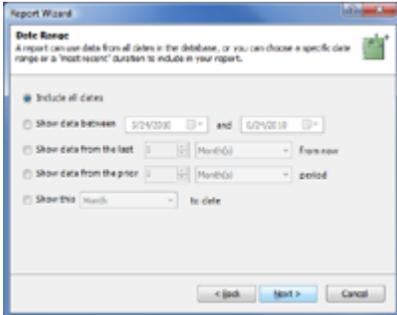


General

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.

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



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...

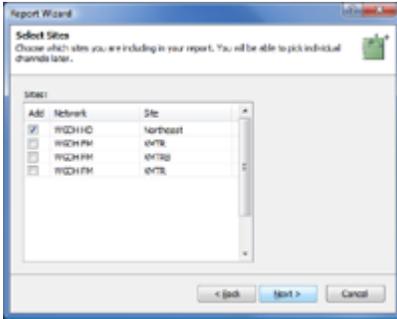
This option will use range of dates that ends today (the day the report is run, not the day it is created) and begins a certain amount of time before today. For example, if you enter "10 Days", the report will include data starting 10 days ago and ending today.

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.

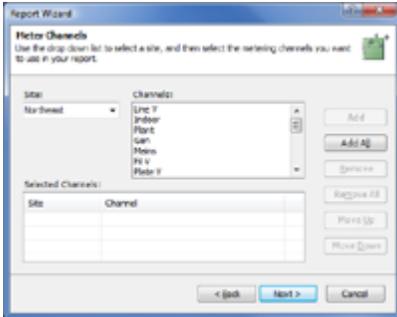
Show this ... to date

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.



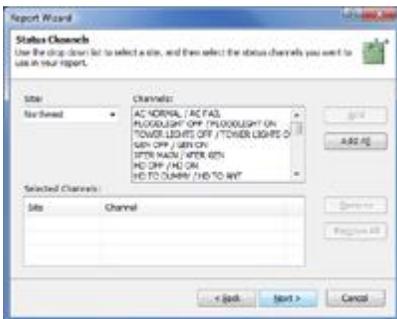
Meter Channels

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

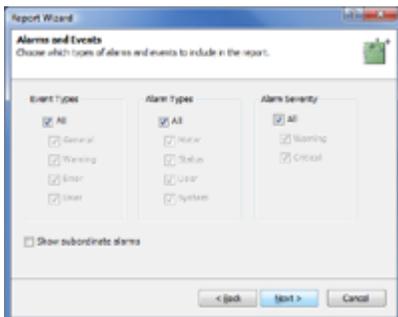
Meter readings will appear all on one line (space permitting) with the exact time (to the second) of each reading. When a report comprises multiple sites, this can cause readings to "stagger" across multiple lines if the timestamps differ at all. Use one of the following options to optimize your report:

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)

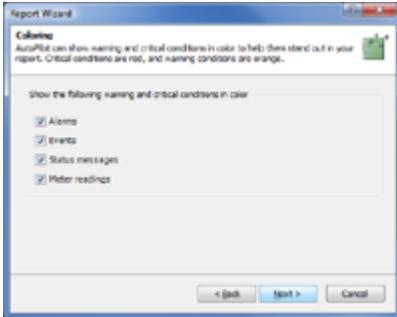
This option is recommended when including more than one site in a report. Meter readings that happen within the specified period of time are merged onto one line. If two sites log at slightly different times (for example, 1:00:05 and 1:00:42), this will prevent the meter readings from breaking up into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

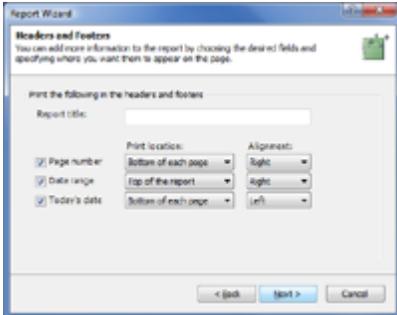
If you are using Alarm Relationships, use the "Show subordinate alarms" checkbox to control whether or not subordinate alarms are included in the report. If you are not using this feature, this checkbox is unimportant.



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.

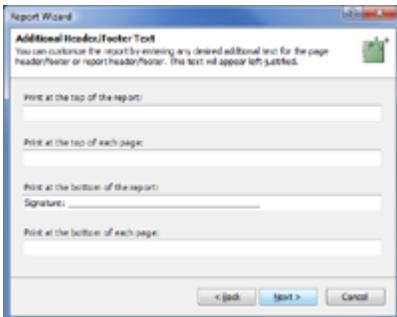
Use the checkboxes on this page to specify what kinds of data should use this coloring feature.



Headers and Footers

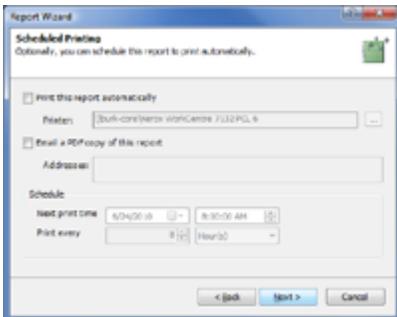
If desired, enter a title for your report. This will appear at the top of the report in large print.

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 add a signature line, contact information, station details, etc.



Scheduled Printing

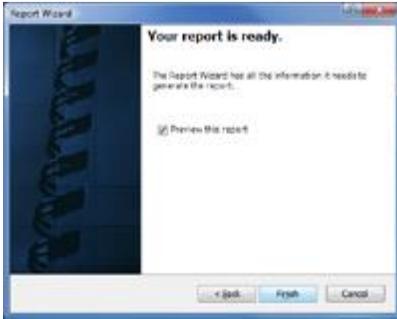
You can schedule your report to be printed or emailed automatically.

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.

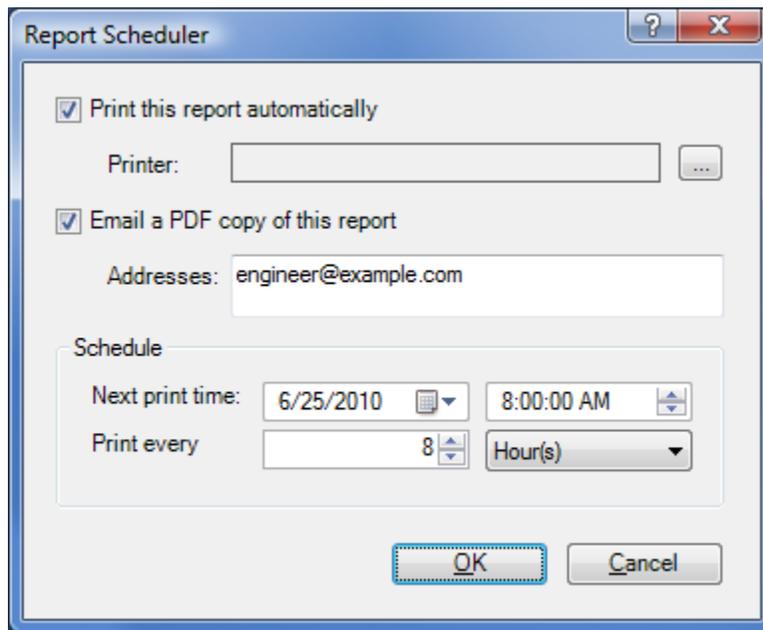


Finish
Check "Preview this report" if you want to open a print preview now.
Click Finish to save your report and close the wizard.

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	
Print...	Prints the report after prompting for a printer.
Save to PDF...	Saves the report to a PDF file.
Page #	Displays the current page number. Typing a number in this field will jump to that page.
First Page	Moves to the first page of the report.
Previous Page	Moves to the previous page.
Next Page	Moves to the next page.
Last Page	Moves to the last page of the report.
Size	Displays the relative size of the report (% of full size). Only enabled when not using the "Auto" feature (see below).
Zoom In	Increases the size of the report.
Zoom Out	Decreases the size of the report.
Auto	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 ([PAGE 50](#)).

Emailing Reports

AutoPilot can automatically email reports to one or more addresses. See Scheduling Reports ([PAGE 50](#)) 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

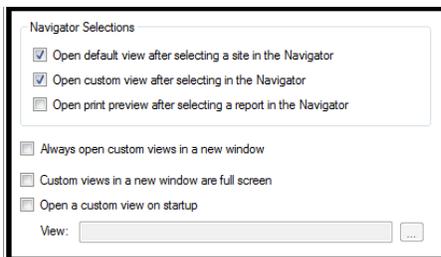
This setting adjusts how long AutoPilot waits before attempt to reconnect to a site after a connection was lost.

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.

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.



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.

The screenshot shows a settings dialog box with two main sections: "Alarm Sound" and "Email Notifications".

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](#)

At the bottom, there are two checked checkboxes:

- Show New Alarms dialog
- Show desktop alert

Alarm Notification

For more information on alarm notifications, see Alarm Notifications ([PAGE 13](#)).

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 Notifications

Enable this feature if you want AutoPilot to send an email to the specified address(es) when a new alarm is received.

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

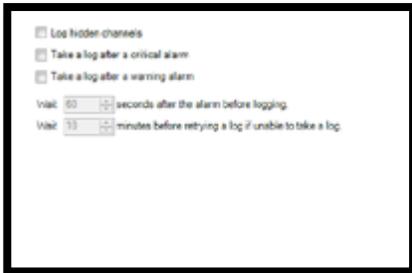
Note: This feature requires correct setup of email settings.

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.

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

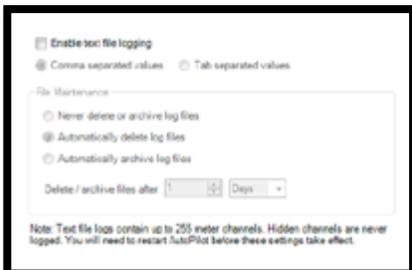
Specifies the number of minutes AutoPilot will wait before retrying to take a log on a site when the previous attempt was unsuccessful.

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



SQL Server

See SQL Server Logging ([PAGE 77](#)).



Text File Logging

See Text File Logging ([PAGE 75](#)).



Security

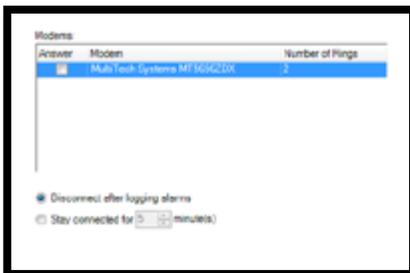
Password protect AutoPilot configuration

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.



Incoming Calls

For more information, see Incoming Calls ([PAGE 64](#)).

The Modems list displays all of the modems (if any) installed on your PC. Check the "Answer" column next to each modem that you want AutoPilot to use to answer incoming calls.

If AutoPilot is configured to answer calls on a modem, that modem will be unavailable to other applications while AutoPilot is running.

After answering a call, AutoPilot will automatically disconnect from the site to free the phone line. AutoPilot can either do so immediately after logging the site's alarms, or after the specified number of minutes.

Note: When AutoPilot is configured to disconnect after a number of minutes, the software will first display a prompt giving you the option to remain connected. If you choose to remain connected, AutoPilot will keep the connection open until you manually disconnect.



Email

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

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

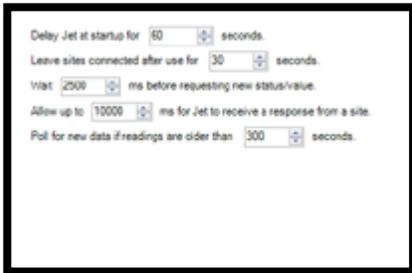
The port number used by your SMTP server. This is typically 25.

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.



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 Jet no flowcharts have required one of these sites for the specified number of seconds, Jet will disconnect from the site. 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.

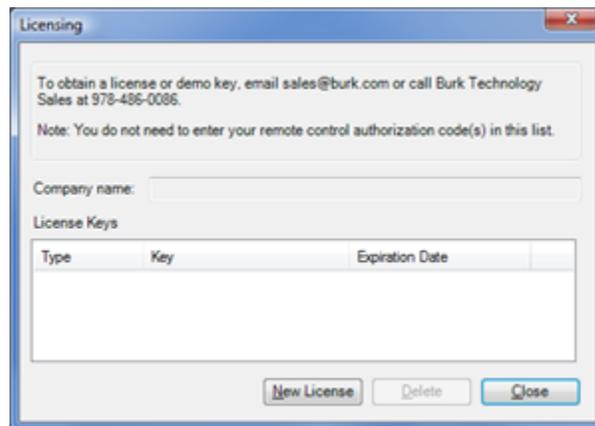
When Jet requires site data, it will use the last known value from the site. If the last known value was received more than

[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 communication methods giving users an indication on the type of connection to the ARC systems.

 Full Communication	Full communication using a connection-oriented protocol (TCP).
 Warp Communication	Efficient communication using a connectionless protocol (UDP) via the Burk Technology Warp Engine protocol..
 No Communication	No communication established with the site..

Connecting and Disconnecting

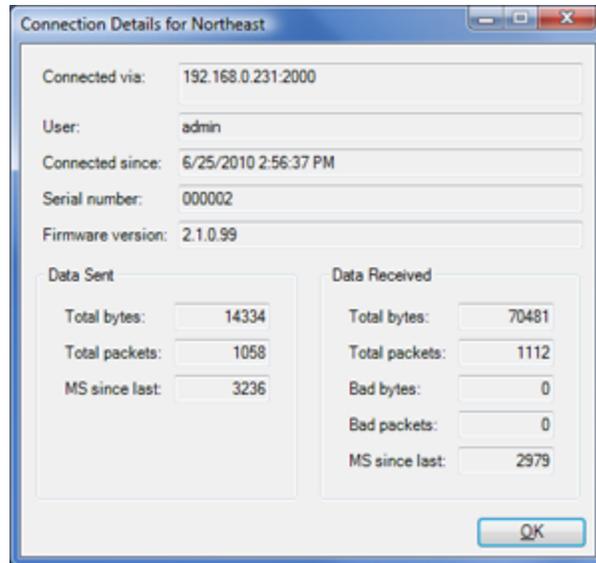
To connect to, or disconnect from, any site, select its icon in the Resources window or Navigator and use the appropriate option from the main menu, tool bar, or context menu (accessed by right-clicking on the site icon). These options are explained below:

 Connect	AutoPilot will connect using the primary connection settings.
 Connect As...	AutoPilot will prompt you for connection settings and a user name and password before connecting.
 Connect to Backup	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.
 Disconnect	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	
Connected via	The IP address or host name plus TCP port, COM port, or modem name and phone number used to connect to this site.
Connected since	The date and time the connection was established.

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

GSC3000/VRC2500	
Local unit	The I/O unit that AutoPilot is directly connected to. For VRC2500 sites, this is always unit 0.

Connection Statistics

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

Data Received	
Total bytes	The total number of bytes sent from the site to AutoPilot.

Total packets	The total number of packets sent from the site to AutoPilot.
Bad bytes	The number of bytes received from the site that AutoPilot could not parse into a valid packet.
Bad packets	The number of packets received from the site that AutoPilot could not interpret as valid.
MS since last	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, ARC Solo and GSC3000/VRC2500 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.

Sync Configuration

You can update AutoPilot's cached configuration by right-clicking on a site in the Resources window or Navigator and selecting "Sync Configuration"

Backup Connections and Automatic Reconnection

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

Terminology	
Primary Connection	Your primary connection to a site is the connection that you consider "normal", and will use in most cases.
Backup Connection	A backup connection is an alternative method that AutoPilot can use to connect to a site. Often times this uses a dialup modem.
Automatic Connection	A connection is automatic when AutoPilot connected without requiring an user interaction. When a site is configured to connect at startup, AutoPilot will automatically connect to it when the program starts.
Connection Recovery	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.
Retrying a Connection	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).
Manual Connection	Whenever you connect to a site by clicking one of the connect icons, you are connecting manually.
Manual Disconnection	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.

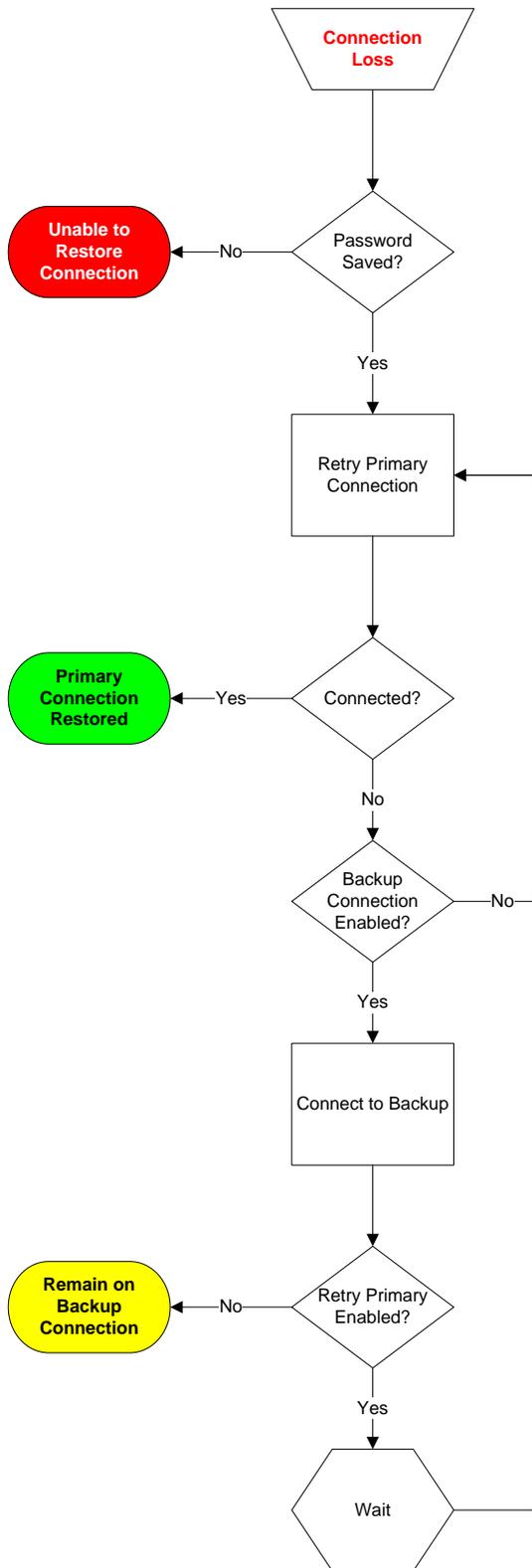
Switching to a Backup Connection

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

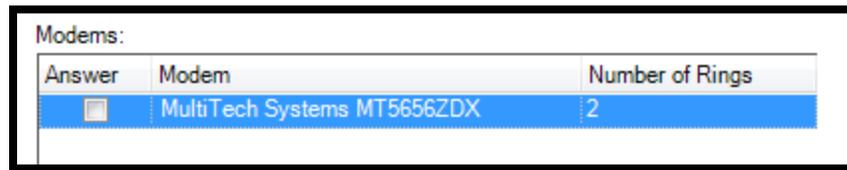


Incoming Calls

Note: To configure your remote control to dial out to the AutoPilot computer, consult the documentation for your remote control. Visit www.burk.com for manuals and other documentation.

If you have at least one modem installed on your PC, AutoPilot can answer incoming calls from your sites.

To answer incoming calls, first enable the "Answer" ability on at least one modem using the Options dialog.



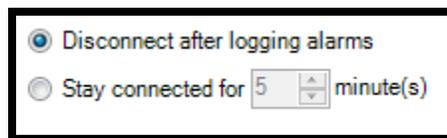
The "Modems" list from the Incoming Calls section of the Options dialog.

Note: You must make a connection to your site at least once in AutoPilot before it can accept an incoming call from that site.



AutoPilot cannot answer incoming calls from sites if they are configured to prompt for a password.

After answering an incoming call, AutoPilot will automatically disconnect from the site. You can configure AutoPilot to either disconnect immediately after taking a log, or after a period of time.



Modem disconnection options from the Incoming Calls section of the Options dialog.

If you select the option to remain connected for a period of time, AutoPilot will prompt you to hang up or stay connected when the specified period of time has elapsed.



The Disconnect Warning dialog gives you an opportunity to stay connected to a site that called into AutoPilot.

If you do not press a button on the Disconnect Warning dialog, AutoPilot will disconnect when the timeout expires.

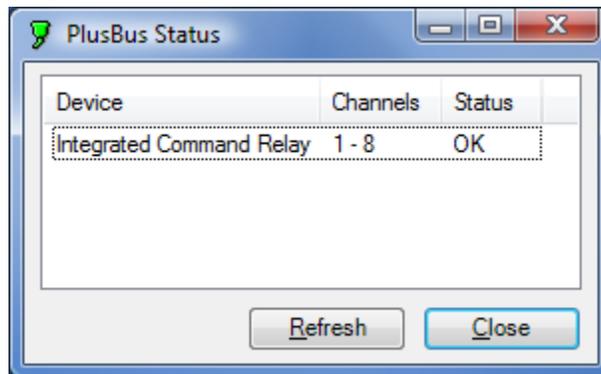
If you choose to stay connected to the site, AutoPilot will not disconnect until you do so manually.

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.



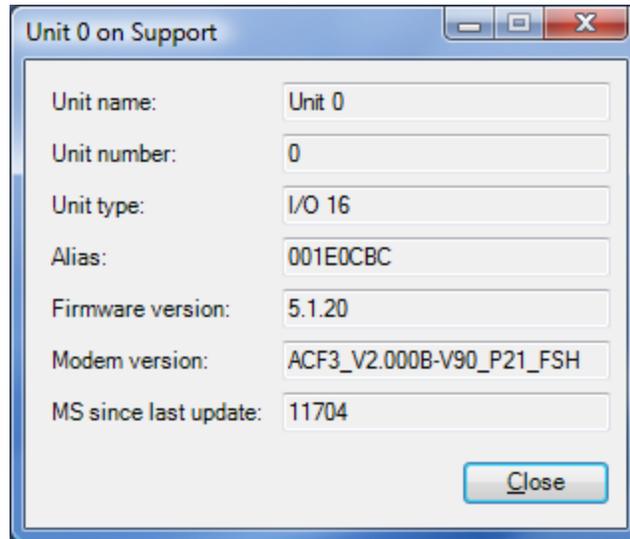
PlusBus Status dialog

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

GSC3000/VRC2500

Unit Properties

To access the Unit Properties dialog, select a GSC/VRC Unit icon from the Resources window or Navigator and click "Unit Properties" from the File menu.



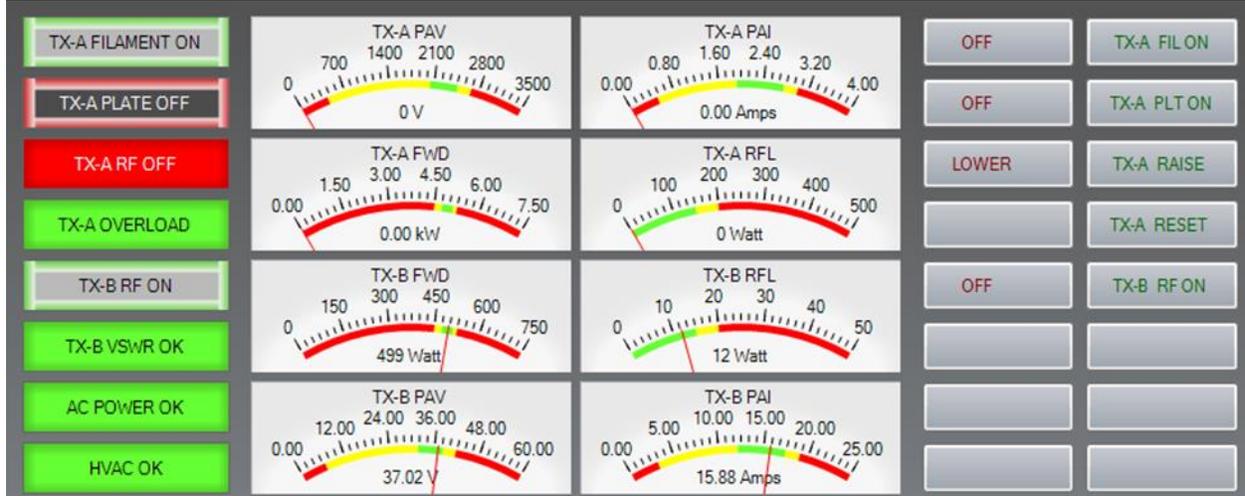
Unit Properties dialog

The following parameters are displayed on the Unit Properties dialog:

Unit name	The name assigned to this unit.
Unit number	The unit number (0–16)
Unit type	What type of device this unit is (I/O 16, I/O 8, AC-4, AC-8, GT-4, GX-128, or OneConnect)
Alias	The alias uniquely identifies this unit on the G-Bus.
Firmware version	What version of firmware this unit is running.
Modem version	If this unit is connected to a dialup mode, this field reports the version information as stated by the modem.
MS since last update	The number of milliseconds since AutoPilot last received an update from this unit.

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.



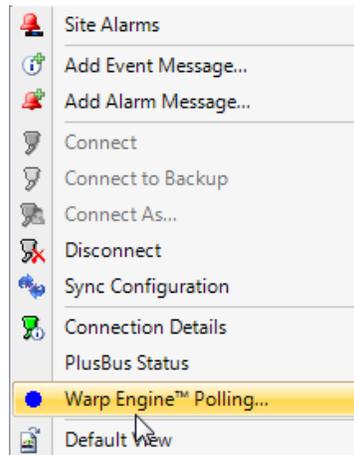
Default View of a Connected Site

The AutoPilot Warp Engine provides an alternative “connectionless” 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 of up to 100 sites per second, with each site reporting as many as 32 status and/or meter values. Larger networks just take a little longer, for example polling up to 500 sites in 5 seconds.

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 channels 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.

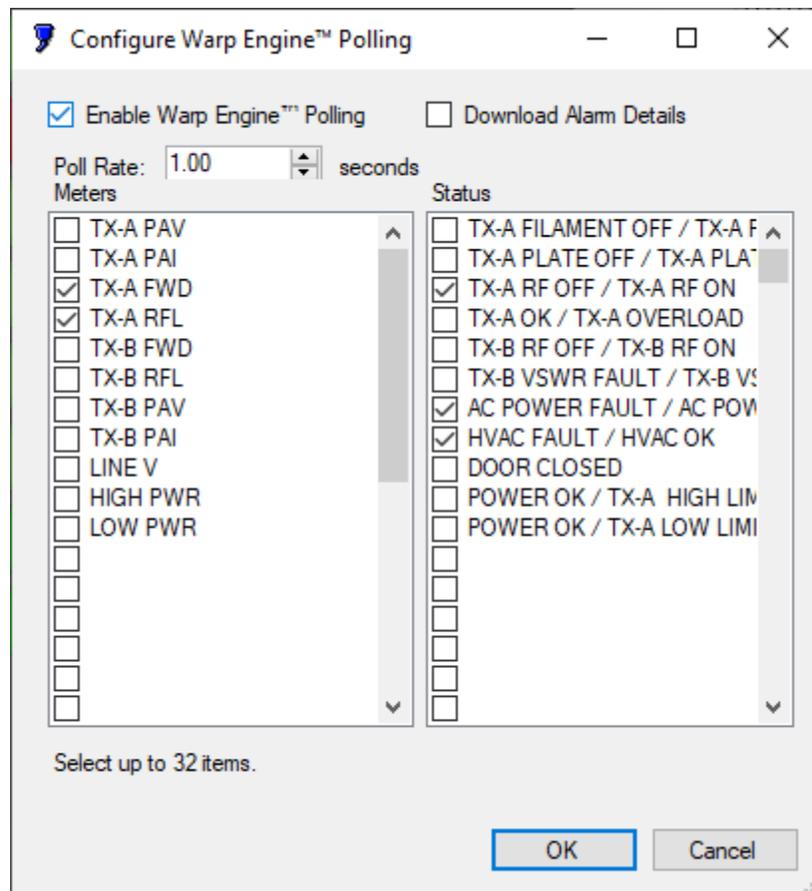
Note: The AutoPilot Warp Engine polls status and meter values, but does not permit control of command channels. To control a channel you must first reconnect to the site.

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

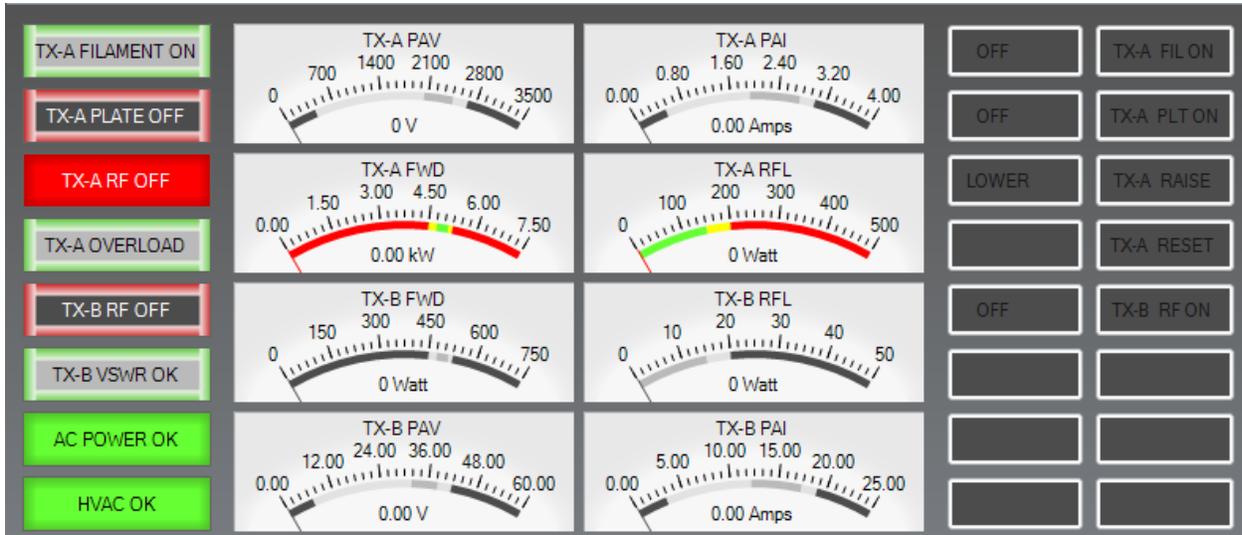
The Configure Warp Engine Polling dialog box will be displayed:



Configuring Warp Engine™ Polling

Click the Enable Warp Engine™ Polling checkbox, select a Poll Rate and select the metering and status channels (up to 32 total channels) you want to poll with the Warp Engine. Warp Engine polling consumes very little bandwidth. However, if communications bandwidth is at a premium it can be further reduced by selecting a slower polling rate.

Warp Engine uses connectionless polling. To enable it, you must disconnect from the site. From the File menu, select Disconnect or click on the disconnect icon . Metering and status channels monitored at warp speed will appear in color. All others are shown in grey.



TX-A FWD and TX-A RFL Warp Enging Polling Meters 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 connectionless 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.

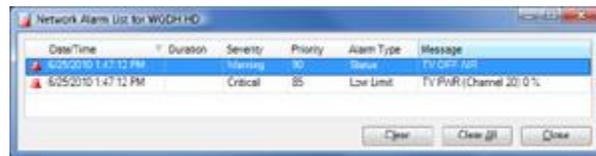
Note: Warp Engine polls all site alarm conditions regardless of which channels are being actively polled.

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.



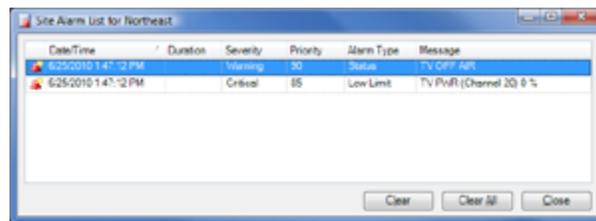
Date/Time	Duration	Severity	Priority	Alarm Type	Message
6/25/2010 1:47:10 PM		Warning	80	Status	TV OFF AIR
6/25/2010 1:47:12 PM		Critical	85	Low Limit	TV PWR (Channel 20) 0%

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.



Date/Time	Duration	Severity	Priority	Alarm Type	Message
6/25/2010 1:47:10 PM		Warning	80	Status	TV OFF AIR
6/25/2010 1:47:12 PM		Critical	85	Low Limit	TV PWR (Channel 20) 0%

Site Alarm List

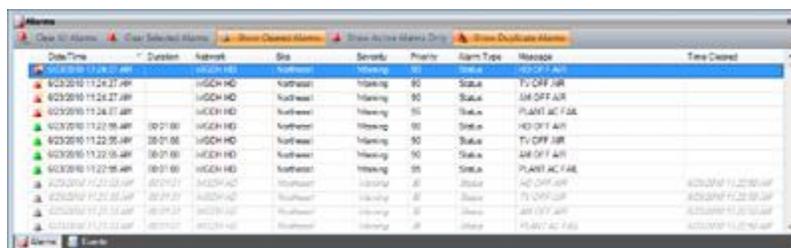
Notifications and Sounds

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 ([PAGE 10](#)).

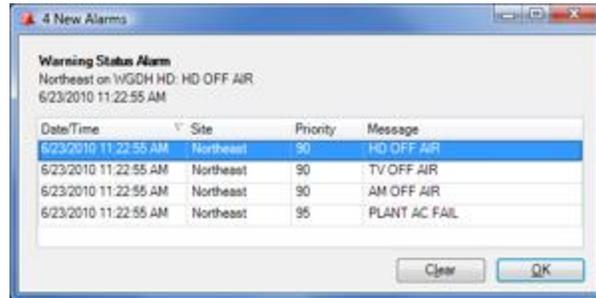


Date/Time	Duration	Network	Site	Severity	Priority	Alarm Type	Message	Time Cleared
6/25/2010 11:28:01 AM		WGDH HD	Northeast	Warning	80	Status	TV OFF AIR	
6/25/2010 11:28:27 AM		WGDH HD	Northeast	Warning	80	Status	IM OFF AIR	
6/25/2010 11:28:27 AM		WGDH HD	Northeast	Warning	85	Status	PLANT AC FAN	
6/25/2010 11:28:58 AM	00:01:00	WGDH HD	Northeast	Warning	80	Status	HD OFF AIR	
6/25/2010 11:28:58 AM	00:01:00	WGDH HD	Northeast	Warning	80	Status	TV OFF AIR	
6/25/2010 11:28:58 AM	00:01:00	WGDH HD	Northeast	Warning	85	Status	PLANT AC FAN	
6/25/2010 11:28:58 AM	00:01:00	WGDH HD	Northeast	Warning	80	Status	AC OFF AIR	6/25/2010 11:28:58 AM
6/25/2010 11:28:58 AM	00:01:00	WGDH HD	Northeast	Warning	80	Status	TV OFF AIR	6/25/2010 11:28:58 AM
6/25/2010 11:28:58 AM	00:01:00	WGDH HD	Northeast	Warning	80	Status	IM OFF AIR	6/25/2010 11:28:58 AM
6/25/2010 11:28:58 AM	00:01:00	WGDH HD	Northeast	Warning	80	Status	PLANT AC FAN	6/25/2010 11:28:58 AM

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.

Alarm Relationships Dialog Tool Bar

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

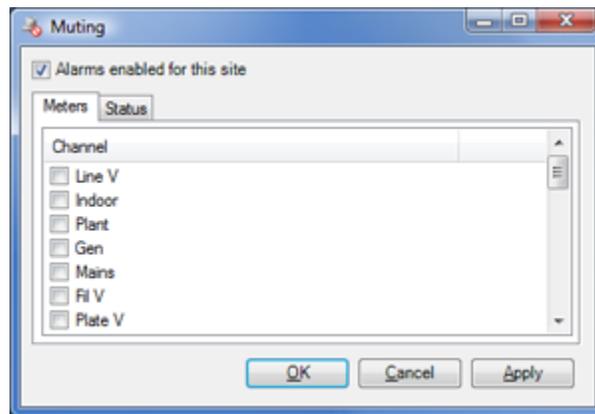
 Save	Saves your alarm relationships.
 Add Root Alarm	Creates a new root alarm in the Alarm Relationships grid.
 Add Subordinate Alarm	Adds a new subordinate alarm under the selected root alarm.
 Remove Root Alarm	Removes the selected root alarm and all of its subordinates.
 Remove Subordinate Alarm	Removes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

Alarm Relationships Grid Fields

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

To mute individual channels, place a checkmark next to the desired channel on the Meters or Status 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

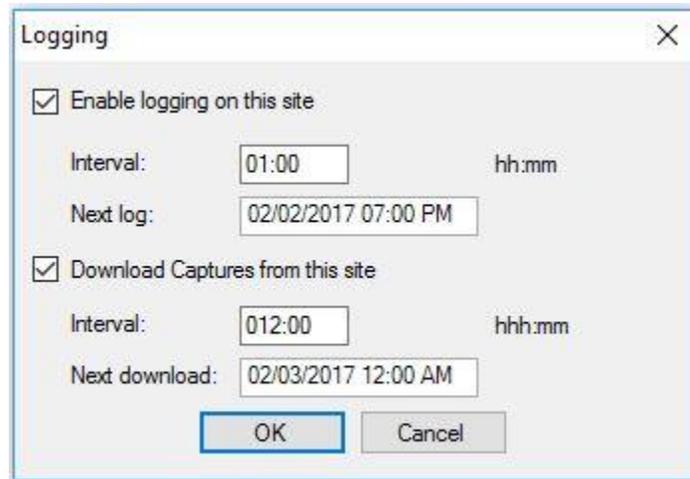
Enabling Logging

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, AutoPilot will not log telemetry on any sites. When 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

Enable logging on this site

Interval: 01:00 hh:mm

Next log: 02/02/2017 07:00 PM

Download Captures from this site

Interval: 012:00 hhh:mm

Next download: 02/03/2017 12:00 AM

OK Cancel

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 82](#)).

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 7 through 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 ([SEE PAGE 75](#))
- SQL Server Logging ([SEE PAGE 77](#))

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 Vista and Windows 7 through 10:

%AllUsersProfile%\Burk Technology\AutoPilot\Logs

Windows XP:

%AllUsersProfile%\Application Data\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 Vista and Windows 7 through 10:

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

Windows XP:

%AllUsersProfile%\Application Data\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:

Enable text file logging

Use this checkbox to turn Text File Logging on and off

Comma separated values	Select this option to have AutoPilot write to the text file using commas to separate each field.
Tab separated values	Select this option to have AutoPilot write to the text file using tabs to separate each field.

File Maintenance Options	
Never delete or archive log files	AutoPilot will not perform any file maintenance tasks. You may delete/archive files manually in Windows if desired.
Automatically delete log files	AutoPilot will delete your log files according to the specified schedule.
Automatically archive log files	AutoPilot will move your log files to the archive location (see above) according to the specified schedule.
Delete / archive files after...	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 116](#)).

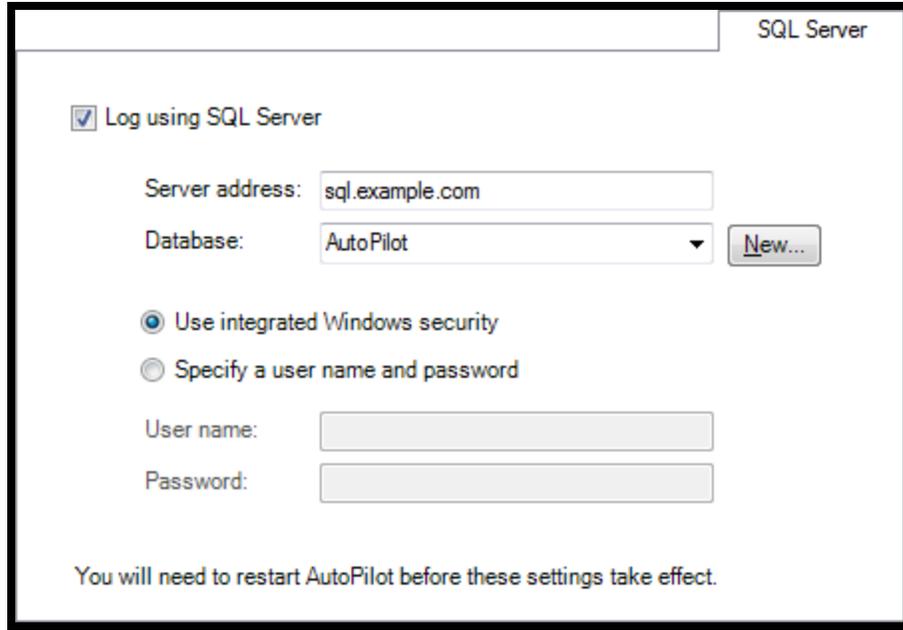
To enable and configure SQL Server Logging, use the Options dialog.



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 Logging settings in the Options dialog

The following parameters are available:

Log using SQL Server	Check this box to enable/disable SQL Server logging.
Server address	The host name or IP address of the computer running Microsoft SQL Server.
Database	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>
Use integrated Windows security	Select this option if your Windows user account has permission to write to the AutoPilot database.
Specify a user name and password	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:

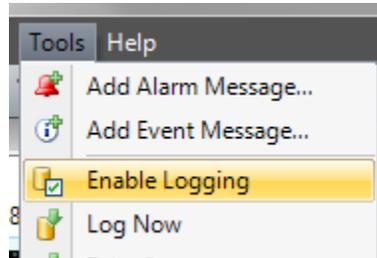
```
%ProgramFiles%\Burk Technology\AutoPilot\AutoPilot.sql
```

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.

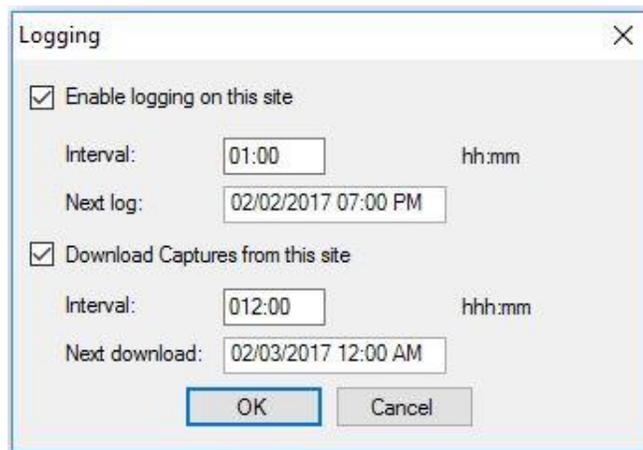


Tools>Enable Logging

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.



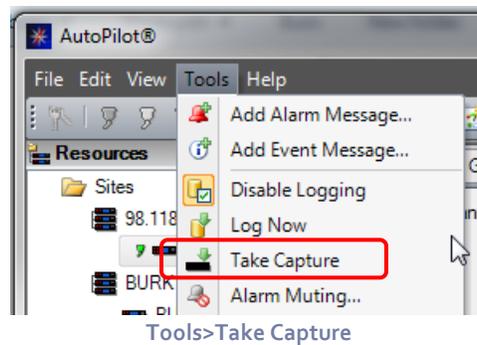
Edit>Logging

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

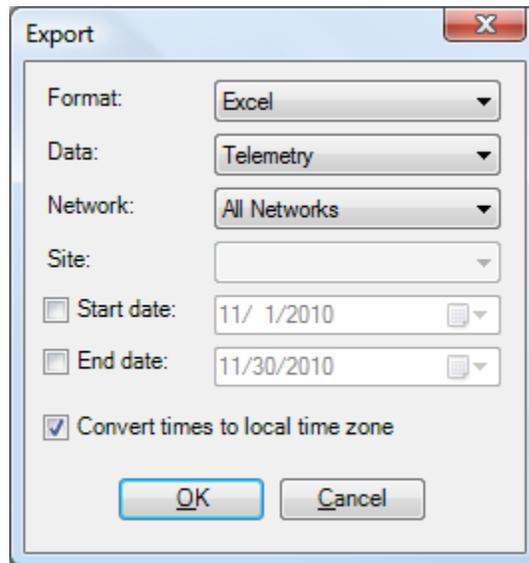
Captures appear in the Logged Data View. See Logged Data View(PAGE 7).

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:

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

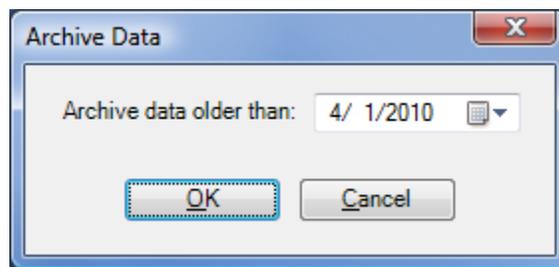
Archiving Data

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.

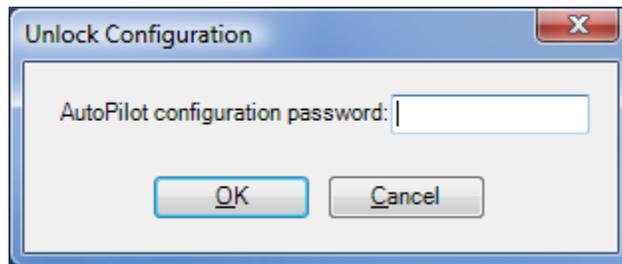
Even if a command were to appear available, the remote control itself would not allow AutoPilot to issue the command.

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.

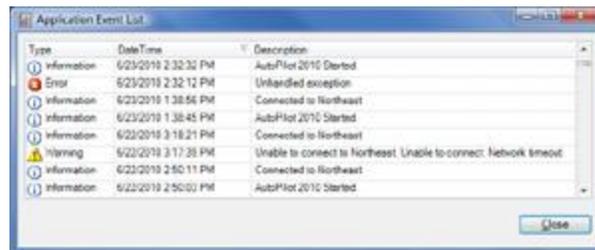


Unlock Configuration password prompt

Application Event List

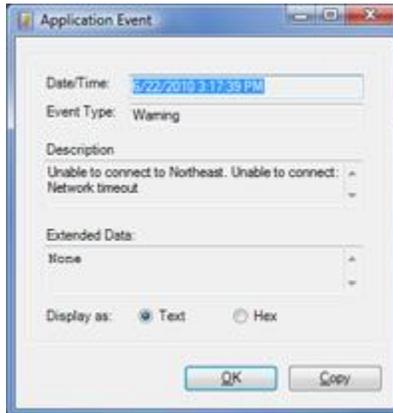
AutoPilot logs various activities using the Windows Application Event Log. While you can access this log directly in Windows, AutoPilot makes it available in the program as well.

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:

 Information	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.
 Warning	Warning events indicate that an operation was unsuccessful, due to foreseeable circumstances (such as a connection loss).
 Error	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 Vista and Windows 7 through 10:

%AllUsersProfile%\Burk Technology\AutoPilot

Windows XP:

%AllUsersProfile%\Application Data\Burk Technology\AutoPilot

Note: By default, %AllUsersProfile%\Application Data is a hidden folder in Windows XP.

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	
Cache	The cache folder stores local copies of your site configuration. These files can be safely deleted or omitted during data migration.
Custom Views	This folder contains all of your Custom View files
Databases	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.
Jet	This folder contains your Jet™ Active Flowcharts for AutoPilot as well as your Virtual Channels.
Licensing	This folder contains your licensing information for add-ons and demos.
Logs	This folder contains your Text File Logs (if enabled).
Reports	This folder contains your report files.
Settings	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.

cfgsec.dat	This file stores a one-way hash of your configuration password (if you have set one). See Security for more information.
IncomingCallSettings.xml	This stores your incoming call handling settings. Because computer-specific modem information is stored in this file, it may not be useful if copied to a new computer (although doing so is harmless).
NetworkDevices.xml	This stores your Network Devices.
Networks.xml	This stores your site data. <i>This is the most critical file to copy when cloning your setup.</i>
SubordinateAlarms.xml	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

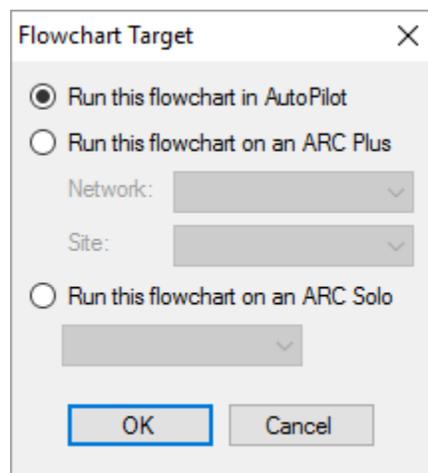
To start Jet, select Jet from the Tools menu in AutoPilot.

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

See Licensing (PAGE 58) 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.



The dialog box titled "Flowchart Target" has a close button (X) in the top right corner. It contains three radio button options: "Run this flowchart in AutoPilot" (which is selected), "Run this flowchart on an ARC Plus", and "Run this flowchart on an ARC Solo". Below the "ARC Plus" option are two dropdown menus labeled "Network:" and "Site:". Below the "ARC Solo" option is one dropdown menu. At the bottom of the dialog are "OK" and "Cancel" buttons.

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.



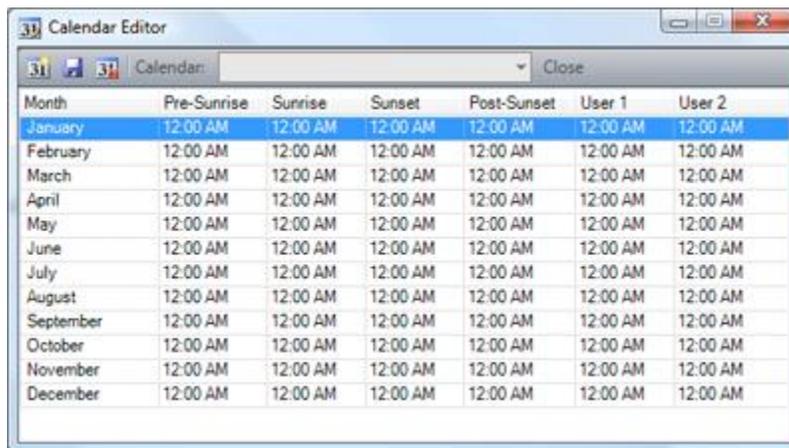
Saving a flowchart that is running will cause Jet to stop the flowchart. If the flowchart is not scheduled to run, you will need to restart it manually.

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.



Month	Pre-Sunrise	Sunrise	Sunset	Post-Sunset	User 1	User 2
January	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
February	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
March	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
April	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
May	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
June	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
July	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
August	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
September	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
October	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
November	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM
December	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM

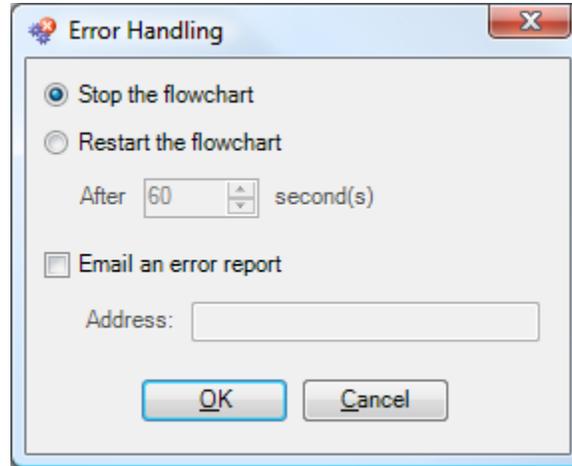
Jet Calendars

 New Calendar	Creates a new calendar.
 Save	Saves changes made to the selected calendar.
 Delete Calendar	Deletes the selected calendar.
Calendar	Select a calendar from the drop down list to display it in the editor.
Close	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	
Stop the flowchart	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.
Restart the flowchart	If the flowchart experiences an error, Jet will restart the flowchart after waiting for the specified number of seconds.
Email an error report	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 can not 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.

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

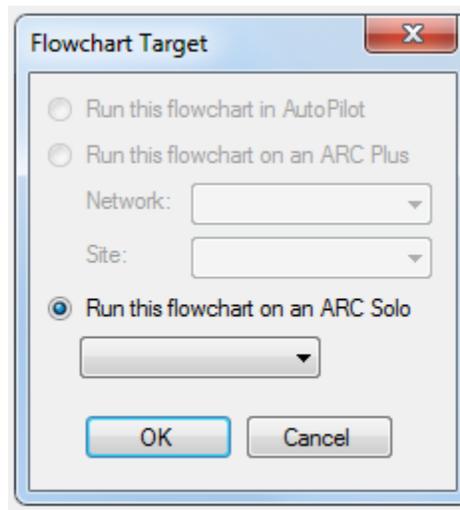
To start Jet, select Jet from the Tools menu in AutoPilot.

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 \(PAGE 58\)](#) for more information.

Create a New Flowchart

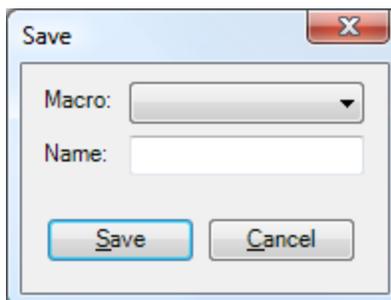
From the Jet Designer, select New from the File menu. Jet will prompt you for a flowchart target. Choose the "Run this flowchart on an ARC Plus" option or the "Run this flowchart on an ARC Solo" and select the network and site for which you want to create a new flowchart.



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.

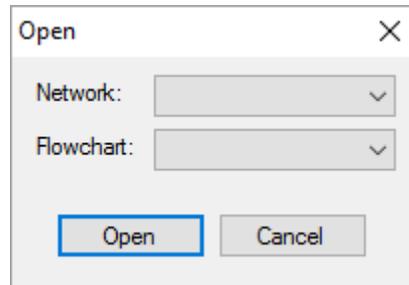


Save a flowchart to an ARC Plus

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:

 Start Flowchart	Specifies the beginning of a flowchart. All flowcharts must have a start.
 End Flowchart	Specifies where the flowchart stops running. Flowcharts may have more than one end, or no end if execution should continuously.
 Action	A flowchart action performs an operation and then moves to the next object. Actions always have one output.
 Conditional	A conditional moves to either of two objects, depending on whether the condition evaluates to true (T) or false (F). Conditionals always have two outputs.
 Line Joint	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.
 Junction	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

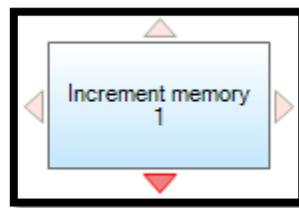
To add a component to a flowchart, simply drag it from the Toolbox and drop it onto the canvas. You can click and drag a component on the canvas to move it around, and use the sizing handles to resize it as desired.

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.

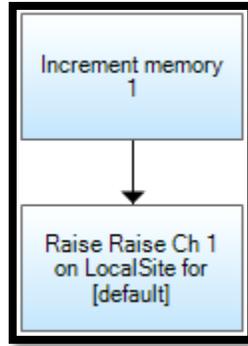
To draw a line connecting two components, hover over the first component to bring up the connection arrows.



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.

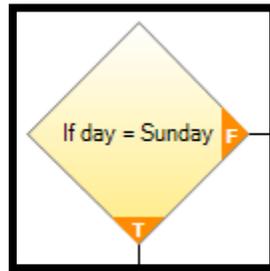


Connected flowchart objects

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

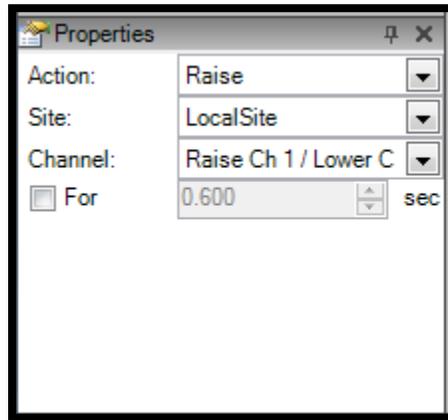
Conditionals always have two outputs: one for the "True" condition, and one for the "False". The first line you draw out of a conditional is for the True condition. True conditions are identified with a "T", and false conditions with an "F".



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

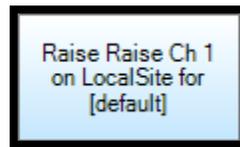
Configuring Component Settings

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.



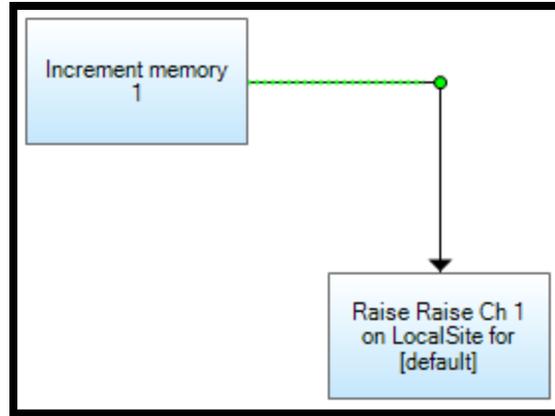
A flowchart component with its properties set

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.



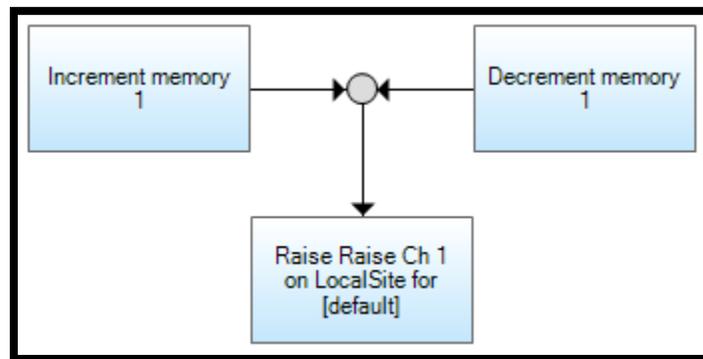
A line joint

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.

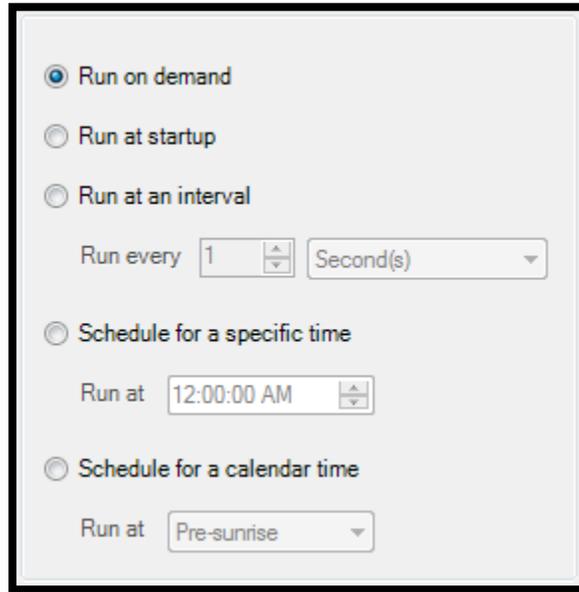
Line Types

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

 Straight Line	A straight line is drawn directly from one point to another.
 Routed Line	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.



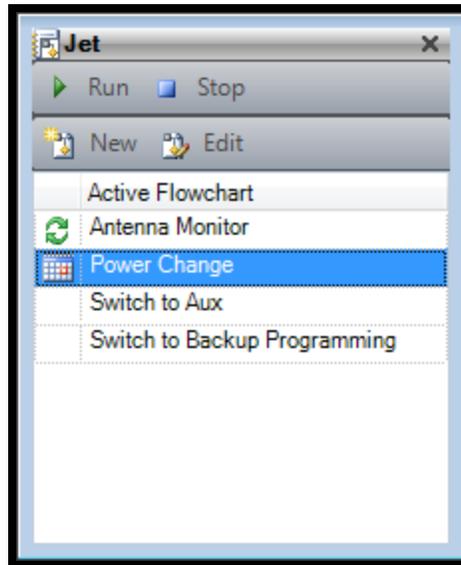
Schedule

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

 Run	Runs the selected Active Flowchart.
 Stop	Stops the selected Active Flowchart.
 New	Create a new Active Flowchart for AutoPilot.
 Edit	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.

 Delete	Deletes the selected Active Flowchart.
Rename	Allows you to rename the selected Active Flowchart.
 Properties	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.

 Running	The flowchart is currently running.
 Reading Data	The flowchart is reading data from a site.
 Waiting	The flowchart is running a Wait command.
 Scheduled	The flowchart is not running, but is scheduled to run in the future.
 Error	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.

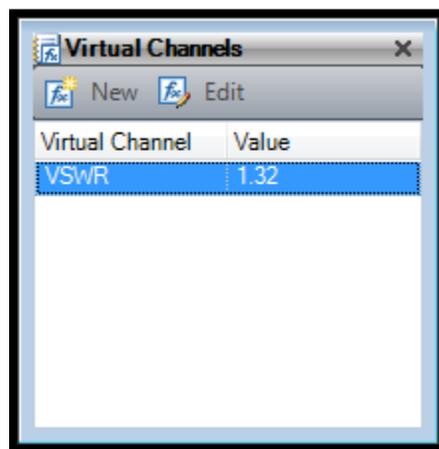
Licensing

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.

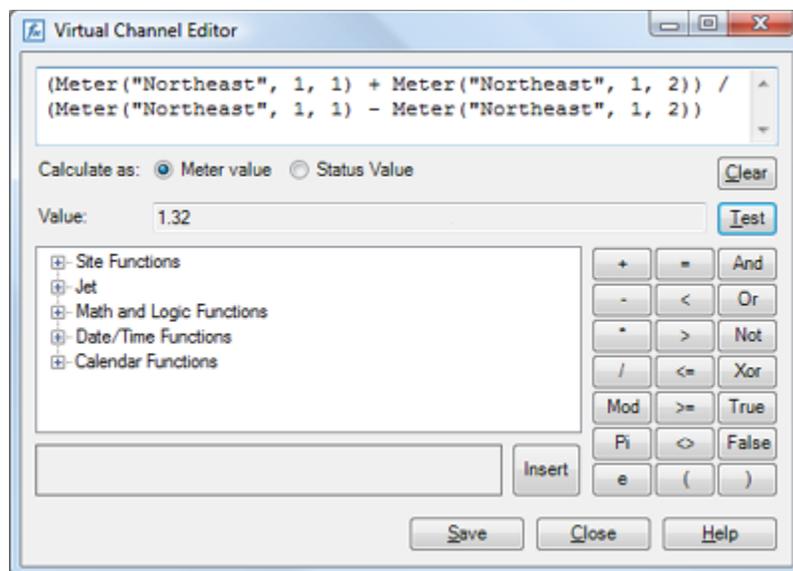
A Virtual Channel is defined using real channels, constant values, operators and functions. You can type a Virtual Channel definition directly into the editor if you are already familiar with the syntax. Otherwise, use the operator buttons and function list to build your channel.

For a complete description of Virtual Channel syntax, please see the Virtual Channel Syntax Reference ([PAGE 121](#)).

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

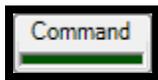
 Command Button (See also Password Command Button, below)

A standard command button.



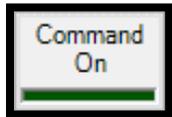
 LED Button

A command button with an embedded LED.



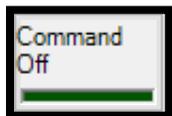
 LED Button (2 Lines Centered)

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



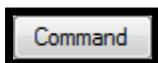
 LED Button (2 Lines)

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

Set the aspect ratio for auto scaling of custom views.



A Label

A basic, general purpose label control.



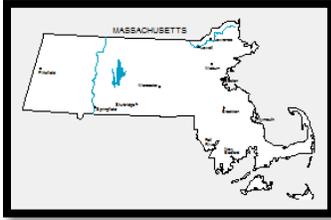
 Line

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 Connectionn properties for this custom view element are as follows:

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



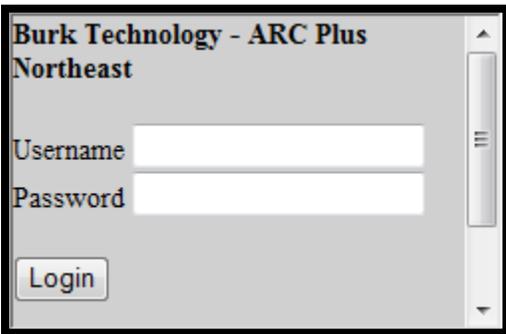
Weather Map

A weather map from the National Weather Service. Can be displayed as a static image or animation.



Web Page

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



Web Picture

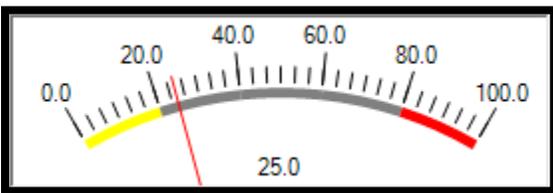
Embeds any image from a web site. Can be set to periodically refresh.

Meters



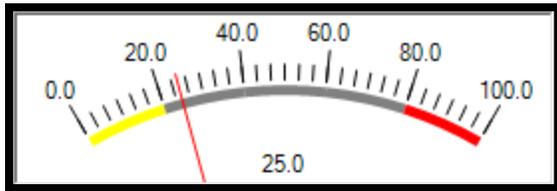
Angular Meter

A classic gauge.



 Angular Meter (Advanced)

A classic gauge with additional Labels and Meter properties.



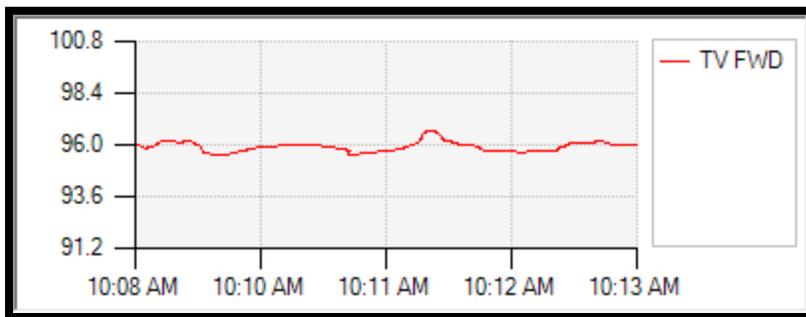
 Bar Meter

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



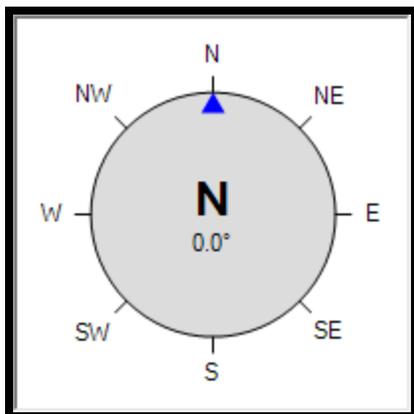
 Chart

A strip chart control that supports multiple lines. See Using Charts ([PAGE 42](#)) for more information.



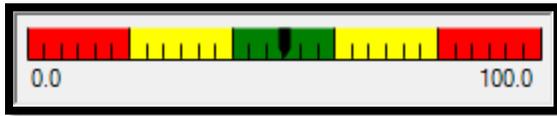
 Compass

Use the *compass* control to display direction.



 Linear Meter

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



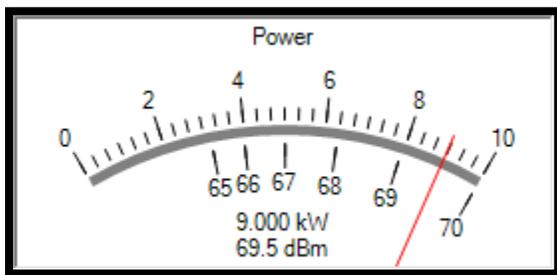
 Nominal Bar

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.



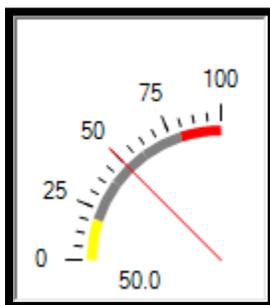
 Power Meter

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



 Right Angle Meter

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



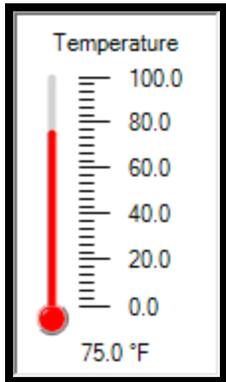
 Text Meter

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.



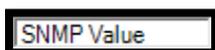
Network Device Label

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

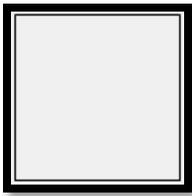
Displays *up time* data received from an SNMP agent, formatted as a duration.



Shapes

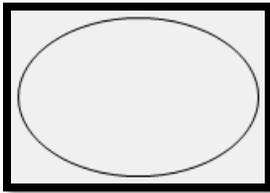
📏 Rectangle

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

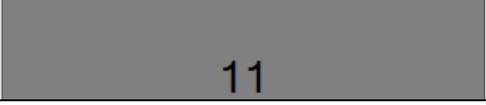
The Summary Site Status control shows the name of the site and a color bar that represents one of five states, as described in the following table. If the site has critical or warning alarms, the total number of alarms is shown in the red or yellow box.

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.	<table border="1"> <tr><td colspan="2">BOSTON</td></tr> <tr><td colspan="2">3</td></tr> <tr><td colspan="2">1</td></tr> </table>	BOSTON		3		1	
BOSTON							
3							
1							
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.	<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							
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.	<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						

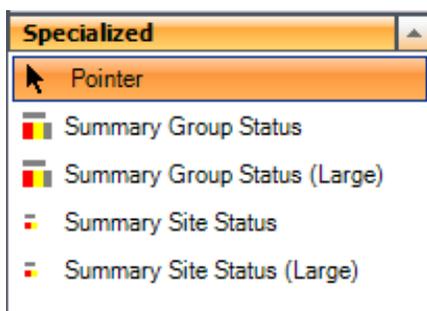
When some of the sites in the group are not communicating with Autopilot, the right-most (grey) column displays the number of sites that are not communicating. The two-left columns display green, red and yellow columns, as described in the previous table.

BOSTON		
1	3	
1	2	3

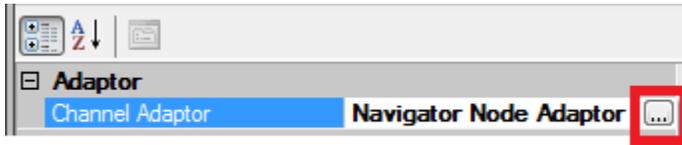
In this example, the following conditions exist:

- 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.

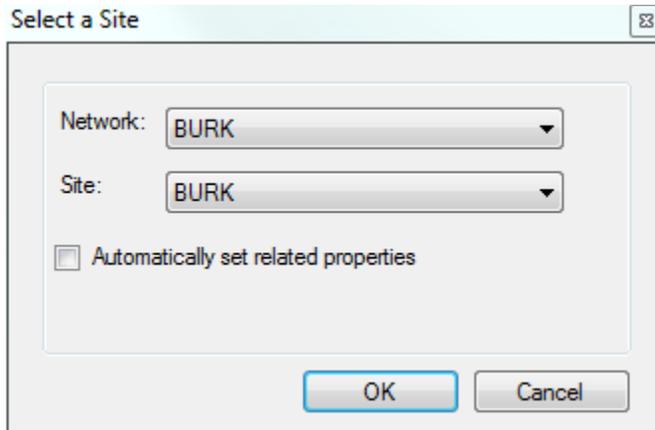


In the Properties panel, click on the three-dot icon next to Channel Adaptor .

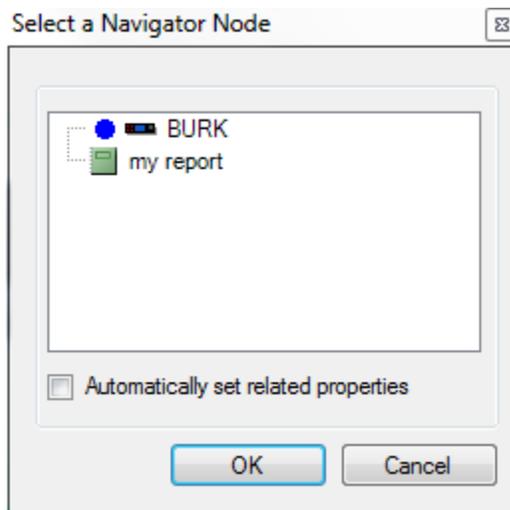


Select a Channel Adaptor to link the control to a Site or a Group.

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.



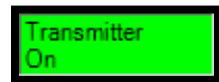
A Label LED (2 Lines Centered)

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.

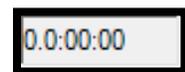
The status sound control does not appear on your Custom View, except in the Custom View Editor.

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.

Status Channel	A status channel on a remote control unit.
Raise Relay Active	"ON" when the specified raise relay is engaged.
Lower Relay Active	"ON" when the specified lower relay is engaged.
Macro Running	"ON" when the specified macro is running.
Meter Below Low Critical	"ON" when the specified meter is below the second lower limit.
Meter Below Low Warning	"ON" when the specified meter is below the first lower limit.
Meter Above High Warning	"ON" when the specified meter is above the first upper limit.
Meter Above High Critical	"ON" when the specified meter is above the second upper limit.
Meter Out of Tolerance	"ON" when a meter is outside of its "normal" range (above either upper limit or below either lower limit).
Site in Alarm	"ON" when the specified site has at least one uncleared alarm.
Network in Alarm	"ON" when any site in the specified network has at least one uncleared alarm.
Site Connected	"ON" when the specified site is connected to AutoPilot.
Site in Maintenance Mode	"ON" when the specified site is in maintenance mode (or "Local" mode on a GSC3000 or VRC2500).
Active Flowchart Running	"ON" when the specified Jet Active Flowchart is running.
Virtual Channel	"ON" when the specified virtual channel evaluates to true.
Any Network in Alarm	"ON" when any connected site on any network has an alarm condition.
Site Connected On Primary	"ON" when the specified site is connected over the primary connection.
Site Connected On Backup	"ON" when the specified site is connected over the backup connection.

Actions

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

Raise	Issues the specified <i>raise</i> command.
Lower	Issues the specified <i>lower</i> command.
Navigate	Opens the specified Custom View in the current window.
Run Macro	Starts the specified macro.
Stop Macro	Stops the specified macro.
Clear Alarms	Clears alarms on the specified site or network.
Connect	Connects to the specified site using the primary connection.
Disconnect	Disconnects from the specified site.
Run Application	Runs the specified command in Windows to launch an application.
Open URL	Opens a web browser with the specified URL.
Print Report	Prints the specified report using the default printer.
Ping	Pings the specified Network Device.
Navigate (New Window)	Opens the specified Custom View in a new window.
Show Default View	Opens the Default View for the specified site in the current window.
Show Default View (New Window)	Opens the Default View for the specified site in a new window.
Run Active Flowchart	Runs the specified Jet Active Flowchart.
Stop Active Flowchart	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
Alarms	Stores alarms.
Events	Stores events.
StatusChanges	Stores a record for each time a status channel changed.
Telemetry	Stores a snapshot of meter and status channels for each time AutoPilot takes a log.

Alarms

Field	Data Type	Description
UTCDateTime	Date/Time	The date and time of the alarm using UTC time.
NetworkName	String	The name of the network on which the alarm occurred.
UnitName	String	The name of the site on which the alarm occurred.
UnitID	Integer	The unique ID identifying the remote control unit.
AlarmTypeID	Integer	Indicates what type of alarm this is: <ul style="list-style-type: none"> 0 High Limit 1 Low Limit 2 Status 3 System 4 User
AlarmSeverityID	Integer	Indicates the severity of the alarm: <ul style="list-style-type: none"> -1 Normal 0 Warning 1 Critical
ChannelNumber	Integer	The channel number on which this alarm occurred. This value is 0 for non-channelized alarms.
ChannelName	String	The label of the channel on which this alarm occurred. This value is blank for non-channelized alarms.
AlarmMessage	String	The message associated with the alarm.
TimeZoneOffset	Integer	The time zone offset (number of minutes from UTC) for this site.
AlarmClass	Integer	Describes the type of source for the alarm. Used internally by AutoPilot.
SourceIndex	Integer	Used along with the Alarm Class to uniquely identify the alarm. Used internally by AutoPilot.
UTCInactiveTime	Date/Time	The time (UTC) when the alarm became inactive. Not applicable for incidental alarms or active alarms.
Disposition	Integer	The current disposition of the alarm: <ul style="list-style-type: none"> 0 Incidental 1 Active 2 Inactive
Priority	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
UTCDateTime	Date/Time	The date and time of the event using UTC time.
NetworkName	String	The name of the network on which the event occurred.
UnitName	String	The name of the site on which the event occurred.
UnitID	Integer	The unique ID identifying the remote control unit.
EventTypeID	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> Using the field is not recommended.
EventMessage	String	Describes the event.
TimeZoneOffset	Integer	The time zone offset (number of minutes from UTC) for this site.

Status Changes

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

Telemetry

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

Jet Actions and Conditions

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

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

Virtual Channel Syntax

Operators and Constants

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

Functions

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

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

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

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

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

Appendix A – Notes for AutoPilot 3 Users

AutoPilot will wait for all channel values before completing a connection.

When you connect to an ARC-16 in AutoPilot, the software now waits until it has received a value for every channel. By doing so, it will never display "NO DATA" for a meter channel.

ARC-16 "Groups" are now ARC-16 "Networks"

You no longer need to create ARC-16 "Groups" as a separate step in setup. You now add a "Network" of ARC-16s, which will automatically load the parent and child sites including in the network.

Configuring connections is no longer a separate process.

Configuring connections is now part of site setup ([SEE ADDING ARC-16 NETWORKS, PAGE 23](#)). AutoPilot allows you to configure two connections for each ARC-16 Network – primary and backup.

You no longer need to write a script/macro to restore a lost connection or switch to a backup.

AutoPilot now automatically restores a connection if it has been dropped. If you configure a backup connection for your network, AutoPilot will automatically switch to the backup should the primary become unavailable.

"Alarm History" and "Active Alarms" are now both found in the Alarm List.

All ARC-16 alarms are included in the Alarm List. Cleared and inactive alarms are differentiated by icon color. To view a list of older alarms, use Log View.

Charting is now part of Custom Views

Charts are now part of Custom Views, and are configured directly in the Custom View Editor.

AutoPilot does not require individual accounts for each user.

You no longer need to create accounts for each person who will use AutoPilot. For security, you can configure your sites to require password entry before connecting ([SEE ADDING ARC-16 NETWORKS, PAGE 23](#)), and you can require a password to unlock the configuration options in AutoPilot ([SEE SECURITY, PAGE 83](#)).

Scripts and Macros are now part of Jet™.

Jet uses a simple flowchart interface to design automatic functionality, replacing the VBS scripting and Macros used in previous versions.

Jet Active Flowcharts do not require you to connect/disconnect specific sites or test for a connection.

Jet will automatically connect to any sites that an Active Flowchart requires, and will disconnect when it no longer needs that site. You do not need to manually connect/disconnect in your flowcharts, nor do you need to test for connection status.

Appendix B – Notes for Lynx 5 Users

AutoPilot does not require software activation.

AutoPilot uses a different licensing model than Lynx, and no longer requires activation. There is no restriction to how many computers you can install AutoPilot on.

Site configuration is now part of AutoLoad GSC.

To configure your GSC3000, VRC25000, Voice Interface, or G-Link™ unit, use AutoLoad GSC. See www.burk.com for more information.

Voice Interface units are not displayed in AutoPilot.

Because your Voice Interface does not have any channels, it is not displayed in AutoPilot.

AutoPilot only downloads the parts of your configuration that it needs.

You may notice that AutoPilot does not download all of your site configuration when it connects. To improve performance, AutoPilot only downloads the parts of the configuration that it needs.

AutoPilot will automatically restore a dropped connection to your site.

You no longer need to specifically configure the software to reconnect to a site after a link loss. AutoPilot will do so automatically.

AutoPilot can automatically "tune" your connection settings to optimize performance.

By default, AutoPilot will automatically adjust your site's connection settings to optimize communications performance ([SEE ADDING GSC3000/VRC2500 SITES, PAGE 28](#)). When this feature is enabled, AutoPilot will increase and decrease timeout durations based on actual response times. If desired, you can still set these parameters manually.

Charting is now part of Custom Views

Charts are now part of Custom Views, and are configured directly in the Custom View Editor.