

ABB MEASUREMENT & ANALYTICS | 892J007MNAE

STAR Data Management System (DMS) Operating Instruction



Measurement made easy

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Additional information

Additional free publications are available for download at the STAR DMS product page.

Table 0-1: Related documentation	
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Documents	Document number
PGC5000 Series Operating instructions	OI/PGC5000-EN
PGC5000 Generation 2 Operating Instructions	OI/PGC5000/Gen 2-EN
VistaNET VN2300 Installation Guide	2300-IG
VistaNET VN2300 User's Guide	2300-UG
VistaNET VN2300 Administrator's Guide	2300-AG

Cyber security

This product is designed to be connected to and to communicate information and data via a network interface. It is the operator's sole responsibility to provide and continuously ensure a secure connection between the product and your network or any other network (as the case may be). The operator shall establish and maintain any appropriate measures (such as, but not limited to, the installation of firewalls, application of authentication measures, encryption of data, installation of antivirus programs, etc.) to protect the product, the network, its system, and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ABB and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

Although ABB provides functionality testing on the products and updates that it releases, the customer should institute its own testing program for any product updates or other major system updates (to include, but not limited to, code changes, configuration file changes, third party software updates or patches, hardware change out, etc.) to ensure that the security measures that the customer has implemented have not been compromised and that system functionality in the customer's environment is as expected.

It is recommended to implement rate limiter at the network level.

The Modbus protocol is an unsecured protocol. As such, the intended application should be assessed to ensure that these protocols are suitable before implementation.

The OPC-DA protocol is an unsecured protocol. As such, the intended application should be assessed to ensure that these protocols are suitable before implementation.

The ABB VistaNET protocol is an unsecured protocol. As such, the intended application should be assessed to ensure that these protocols are suitable before implementation.

The STAR Server uses an SA account (VistaSTARAdmin) for SQL Server. The default password is "RATSatsiV" for SQL Server 2008 R2, and "RATSatsiV!" for SQL Server 2022.

1 System overview

STAR DMS is the next generation of data system interface software designed to unify the legacy generation instrumentation that we have in the field with the current PGC5000 series analyzers. STAR DMS uses many of the existing instrumentation and applications found in VistaNET. STAR DMS introduces two additional applications: the STAR Client and the STAR Server.

1.1 Redundancy vs. concurrency

STAR DMS redundancy occurs when data is sent to a primary address, which does not acknowledge receipt before the specified time-out occurs. The sending device then sends the same data to a secondary address. This results in one copy of the data reaching the desired device.

There may be situations where this redundancy is not adequate. For example, a STAR DMS could have two PCs, each with a database management software application. Under such circumstances, it may be desirable to send the same information to both databases simultaneously; this is concurrency.

The STAR DMS achieves concurrency by having multiple entries of the same device type at the client's subscriber list, each entry with its own unique primary address. An analyzer's subscriber list configured in this manner and requiring database management services from software applications would send the same analysis results to both databases at the end of analysis.

1.2 Devices

This section provides a quick introduction to the devices and software applications that make up a STAR DMS. Before you can use any STAR DMS application, you must set it up. The System Administrator usually performs setup when installing the STAR DMS. If you have difficulty using STAR applications, verify their proper installation with the system administrator.

1.2.1 STAR client

The STAR Client is a Windows[™]-based application that provides a centralized launch point for the legacy VistaNET applications and current versions of RUI. It also allows the user to view trends and chromatograms that are historically stored in the STAR Server.

1.2.2 STAR server

The STAR Server is an appliance server that saves data from PGC5000 (version 4), PGC2000/3100, PGC5000 Generation 2, PGC1000/NGC, RVP, Multiwave, and OPC DA 2.0 compatible servers. The STAR Server comes in two different licensing levels: 1-15 and 1-50. If the 1-50 level is purchased, the server contains a drive array of eight terabytes in a RAID 5 configuration.

1.2.3 Reporter

The Reporter is a software application that serves multiple functions associated with event logging and analysis reports. The Reporter application:

- Displays selected analysis reports and event messages on the PC
- Logs selected events and analysis reports to send to a printer
- Saves selected analysis event reports and system event reports to local or network files
 The Benerter can also be set to run as a Windows Service

The Reporter can also be set to run as a Windows Service.

1.2.4 Remote user interface

The various Remote User Interfaces (RUIs) have similar functions: configuration, programming, control, and diagnostics of analytical devices or remote applications.

1.2.5 STAR Gateway

The STAR Gateway is a stand-alone assembly that delivers all analysis results and status changes to the DCS in a timely and orderly fashion. The STAR Gateway connects the DCS to the analytical devices and applications that make up the STAR DMS. This includes status, analysis results, and events generated by the device or application. The STAR Gateway can communicate to the DCS via OPC DA, Modbus TCP, or Modbus RTU.

1.2.6 PGC5000/PGC5000 generation 2

For PGC5000 and PGC5000 generation 2 process gas chromatographs, the controller's function in the system is to provide analysis results and status change information to other applications as needed. The PGC5000 connects to STAR DMS through its dual Ethernet connections.

1.2.7 Multiwave

The Multiwave is a stand-alone analyzer that makes continuous measurements. Its function within STAR is to transfer all the analysis results and status change information to other applications as needed.

1.2.8 RVP

The Reid Vapor Pressure (RVP) is a stand-alone analyzer that accurately measures Reid vapor pressure throughout the gasoline range and its feedstocks. It transfers the analysis results to various applications within the STAR DMS.

1.2.9 ABB OPC server

The OPC Server accepts analysis results from other instrument devices. Before a remote device can communicate with the OPC Server, the remote device must have entries in its subscriber list to route data to the IP address of the OPC Server. The OPC Server runs as a Windows service.

1.2.10 OPC concentrator

The OPC Concentrator collects data from any Data Access 2.0 compliant OPC Server. The OPC Concentrator runs as a Windows[™] Service. When it is activated, the OPC Concentrator will appear in the Devices tab of the STAR Client. The STAR Client is used to view the stored data and acts as the configuration tool.

1.2.11 PGC1000 concentrator

The PGC1000 Concentrator acts as a single collection point for data from PGC1000/NGC devices. The PGC1000 Concentrator runs as a Windows Service, appears in the Devices tab of the STAR Client, and is used as the configuration tool to get data from the PGC1000/NGC devices.

1.2.12 VNSA

VNSA provides the connection that allows legacy devices and applications to access the STAR DMS. The Access Control List, Device Definition Table, and Routing tables are also shared with STAR DMS. For more information on VNSA and VNSA-related issues, refer to Administration Guide 2300-AG or Installation Guide 2300-IG.



IMPORTANT NOTE: Version 4.x.x.x of the VNSA cannot contain entries for an OPC Server.

1.2.13 VN service

VN service is a Windows service that directs messages to their appropriate Windows application.

1.3 Passwords

If your system is set up with usernames and passwords, you must have the appropriate password to gain access to devices on STAR DMS. User passwords have three levels: read only, read/write, and supervisor. Only users with read/write and supervisor passwords can change data and save it. If you do not know your username or password, contact your System Administrator before proceeding.

The analyzer is shipped from the factory with no users configured. If the analyzer is added to an existing network with other PGC5000s or a STAR DMS, the analyzer's access control list (ACL) will be populated by another node in the network. If no other PGC5000s or STAR DMS servers exist in the network, the user can add a user if desired. The first user must be added as a supervisor level user.

User passwords should be strong passwords. Usernames and passwords should be limited to English keyboard characters, as other language characters are not visible on the PGC5000 LUI and RUI. You should always take great care when you select a password. A strong password has the following characteristics:

- Is between 8 and 20 characters long
- Combines letters, numbers, and English keyboard symbols within the password
- Is not found in a dictionary
- Is not the name of a person
- Is not the name of a user
- Is not the name of a computer
- Is changed regularly at least every 90 days

Is significantly different from previous passwords

Netlock analyzers permit read/write only at their own front panel; remote users have read only capability regardless of other permissions. These analyzers require the use of a supervisor password to change any data.



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IMPORTANT NOTE: To prevent unauthorized access, ABB highly recommends that you change any factory default passwords in your systems. Default passwords must be replaced with the customer's own private passwords. Private passwords must be saved and managed in safe locations by authorized personnel only.

1.4 Application communication ports

STAR DMS opens the following application ports:

	· · · · · · · · · · · · · · · · · · ·				
Port	Protocol	Description			
58921	TCP	Communication Port			
58921	UDP	Utility Port			
58922	TCP	STAR Server			
58923	TCP	ABB OPC Server			
2	UDP	Listening port for VNSA			
109	UDP	Port for legacy RD device communication			
59	UDP	Port for legacy SD device communication			
28	TCP	Port for RVP			
28	UDP	Port of legacy HIU device communication			
502	TCP	Port for Modbus			
1433	ТСР	Port for SQL Server			
1434	UDP	Port for SQL Server			
Other ports opened for OS level communication					
135	ТСР	Microsoft [®] Remote Procedure Call (RPC)			
137	ТСР	NetBIOS - Name Service			

Table 1-1: Open application ports

 445
 TCP
 NetBIOS - Session Service

 3389
 TCP
 Microsoft® Terminal Service

 49154
 TCP
 Microsoft® Remote Procedure Call (RPC)

 These ports must be opened through network equipment and firewalls. All other ports are explicitly

NetBIOS - Session Service

1.5 Multicast addresses

closed on STAR DMS products.

ТСР

The STAR DMS uses multicast messages to discover other devices on the network. A multicast message is used instead of a broadcast message to allow device discovery over multiple subnets. The STAR DMS allows up to 5 hops (time to live, TTL).

The Multicast address is defaulted to 239.1.1.1 for the primary address and to 239.1.1.2 for the secondary address. If a multicast address must be changed, ensure that all devices that need to communicate with it are on the correct multicast address. Contact the network administrator for available Multicast Addresses. The figure below shows address configuration. The table explains the Logging Enabled options.

Figure 1-1: Multicast addresses

Update Configuration	– 🗆 🗙
Primary IP =	192.168.126.141 ×
Secondary IP =	0.0.0.0 ~
Primary Multicast IP =	239.1.1.1
Secondary Multicast IP =	239.1.1.2
Logging Enabled =	● True ○ False
Reload File	Save to File
Edit Devices	Import Config
Save with Se	ervice Devices

Table 1	-2: VNSe	rvice Con	figuration	options
---------	----------	-----------	------------	---------

Option	Use		
Reload File	Resets the addresses to the defaults		
Save to File	To modify only the addresses		
Edit Devices	To add devices from foreign subnets into the local subnet if the analyzer network is segmented into multiple subnets and the Multicast feature is disabled at the switch/router level		
Import Config	To use the VNConfiguration.xml file if there are a lot of subnets. Configure one subnet and then use Import Config to import the devices from the file into the other subnets. The path is:		
	(%Install Path%)\STAR\Network\Config\VNConfiguration.xml		
Save with Service Devices	To save devices added with the Edit Button and devices from the local subnet		

2 Installation and startup

2.1 Wiring guidelines

Cabling should follow normal Ethernet cabling protocols (see Figure 2-1).

Figure 2-1: Ethernet cabling



2.2 Subscriber lists

Every STAR DMS device and most STAR DMS software applications have subscriber lists or server lists. A subscriber list identifies where a device will send its data, and on which domain (wire segment) it will be sent. Each entry in the subscriber list consists of at least a service provider type, its primary address and optional secondary address, and an optional time-out period associated with all service requests from this provider. The PGC5000 does not have a timeout setting in its subscriber list.

2.2.1 PGC5000 subscriber list

Figure 2-2 illustrates the PGC5000 subscriber list, with the attributes described below.

Figure 2-2: PGC5000 Subscriber Table

<u>A</u> bout								
Home Status	Schedule	Analysis	Setup Subscriber	Program	n Manua	al He	lp	
+			SECONDARY	1.000			STATUS	8
NAME	ТҮРЕ	IP ADDRESS	IP ADDRESS	ACTIVE	REPORT	EVENTS	CHANGE	_ U
star2012	STR	192.168.0.93	0.0.0					
star 169	STR	192.169.0.203	0.0.0		\boxtimes	\boxtimes	\boxtimes	
						Q		e Wir
						1		ion Cer
							Windows	
192.168.0.20					18 JUN	1 2015 10:1	7:44	ij

- NAME: the manually entered name for the specific device or application
- TYPE: identifies each device and software application in STAR DMS, except for the Remote User Interfaces (RUIs). The types for PGC5000 are abbreviated as follows (legacy instruments are not supported):
 - RD: Reporter
 - OPC: OPC Server
 - STR: STAR Server
 - MOD: Modbus Master
- IP ADDRESS: the first address to which an application sends data. If acknowledgement is not
 provided within the specified time-out period, the data will be sent to the secondary address (if
 one has been provided).



IMPORTANT NOTE: If the selected provider does not respond within the time-out period, a Time-Out alarm or warning will be displayed.

- SECONDARY IP ADDRESS: the address of the optional secondary service provider. This address
 may be the same address as the primary, but with a different domain, thereby providing
 redundant paths to the same device; or it may be a different device of the same type.
- ACTIVE: selecting this box makes the device or application active.
- REPORT: selecting this box activates a report for this device or application; it applies to STAR, OPC and RD.
- EVENTS: selecting this box activates event reports for this device or application; it applies to STAR and RD.
- STATUS CHANGE: selecting this box activates a status change; it applies to STAR and OPC.
- X: selecting this box deletes the line from the table.

2.2.2 Legacy subscriber list

Figure 2-3 illustrates the VistaNET VN2300 subscriber list, with the attributes described below.

Figure 2-3: Typical Legacy Subscriber Table

VistaNet D	ata Subscribe	r List		×
Туре	Timeout	Address	Description	_
SD	5 Sec	192.168.0.94	(STAR) STAR server at 94	_
HIU	20 Sec	192.168.0.94		
4			<u>•</u>	•
		New	Modify <u>D</u> elete	
		Update Table	<u>C</u> ancel Print	

- Type: identifies each device and software application in STAR DMS, except for the Remote User Interfaces (RUIs). The types are abbreviated as follows:
 - RD: Reporter
 - HIU: Host Interface Unit or STAR Gateway
 - SD: Storage Device
- Timeout: the period of time that a client application will wait before seeking service from the
 optional secondary address or aborting the service request. The default time for most applications
 is two seconds.
- Address: the first line indicates the first address to which an application sends data. If acknowledgement is not provided within the specified timeout period, the data will be sent to the secondary address (if one has been provided). The second line, if shown, is the address of the optional secondary service provider. This address may be the same address as the primary, but with a different domain, thereby providing redundant paths to the same device; or it may be a different device of the same type.



IMPORTANT NOTE: If the selected provider does not respond within the time-out period, a timeout alarm or warning will display.

— Description: a name supplied by the administrator to identify the specific device in the system.

2.3 Changing IP address of Windows device

When you are changing the IP addresses on a STAR DMS Windows device, the following configuration changes to the STAR products must be performed.

- 1. (%Install Path%)\STAR\Network\VNServiceConfiguration.exe
- 2. (%Install Path%)\Wiz.exe (This is the VistaNET 2.0 setup tool.)
- 3. (%Install Path%)\STAR\Server\ConfigurationManager.exe (if the device is a STAR Server)

2.4 Install the STAR Core

To install the STAR Core, all of the prerequisites are first installed, including the OPC. Then the full package of 26 products are installed. Follow the Wizard instructions.

- 1. From the installation media, run **setup.exe** selecting the **Run as administrator** option.
 - If this is an update to the existing installed STAR Core, select the **update** option and click **Next**.
 - If this is a new installation, it will go directly to the Installation prerequisites dialog box.
- 2. Click **Install** to continue.

Figure 2-4: Installation prerequisites

STAR Core - InstallShield Wizard	
STAR Core requires the following items to be installed on your computer. Click Install to begin installing these requirements.	
Status Requirement	
Pending PCCU 7	
Pending .net 3.5 SP1 Windows Feature	
Pending Microsoft ReportViewer 2010	
Pending OPC DA 2.0 x64	
Pending OPC DA 2.0 x86	
Install Cancel	

PCCU is the Remote User Interface for the NGC or PGC1000 analyzer. Only install it if needed for your system environment.

3. Click **Yes** for the InstallShield Wizard to proceed to install PCCU or click **No** to not install PCCU.

STAR Core	- InstallShield Wizard		\times
?	STAR Core optionally uses PCCU it now?	7. Would you like to install	
		Yes No	

- 4. After some of the prerequisites, you may be asked to reboot the machine. Please do so if requested.
- There will be two installations for the OPC Core Components Redistributable (x64 and x86). These will run back-to-back. Complete each. Agree to the OPC Core Components Redistributable agreement.
- 6. Leave the OPC Core default options and click **Next**.

Figure 2-5: OPC installation folder

🔀 OPC Core Components Redistributable (x64) 3.0.108.41		_		×
Select Installation Folder	FC			
The installer will install OPC Core Components Redistributable (x64) 3.0. folder. To install in this folder, click "Next". To install to a different folder, enter	108.4 it belo	l to the w or cli	e following ick ''Brow	se".
<u>F</u> older: C:\Program Files (x86)\OPC Foundation\Core Components 3.00\		F	Browse	
		D	isk Cost	
Install OPC Core Components Redistributable (x64) 3.0.108.41 for you this computer:	urself,	or for a	nyone wh	o uses
Everyone				
⊖ Just me				
Cancel < B	ack		Next	>

- 7. Click **Next** to confirm the OPC Core installation.
- 8. Click **Close** to complete the OPC Core installation.

The installation of the prerequisites is now complete. Upon closing the OPC Core Components Redistributable installation screen, the STAR Core Welcome screen appears.

Figure 2-6: STAR Core welcome screen

STAR Core		×
STAR Core	Welcome to the InstallShield Wizard for STAR Core It is strongly recommended that you exit all Windows programs before running this setup program.	
	Click Cancel to quit Setup and then close any programs that you have running. Click Next to continue.	
0 0 10010 0 0 1001		
	< Back Next > Cancel	

Proceed to continue to install the STAR Core.

- 1. To begin the InstallShield Wizard for STAR Core, click **Next**.
- 2. On the License Agreement screen, read the license agreement, and if acceptable, click **Yes**.
- 3. On the Customer Information screen, enter the applicable information and click **Next**.

4. On the Choose Destination screen, acknowledge the default locations or browse to select another location, and then click **Next**.



IMPORTANT NOTE: A delay of 5-10 minutes after Next is selected is normal.

- 5. On the Start Copying Files screen, click **Next**.
- 6. On the Setup Status screen, wait for Setup to perform its tasks.
- 7. When the Run VNSA screen appears, click **Yes** or **No**, as applicable.
- 8. When the OPC Concentrator screen appears, click **Yes** or **No**, as applicable.
- 9. When the PGC1000 Concentrator screen appears, click **Yes** or **No**, as applicable.
- 10. When the Vista Reporter appears, click **Yes** or **No**, as applicable.
- In the Update Configuration dialog box (see <u>Figure 2-7</u>), select the appropriate IP addresses, select the desired Logging Enabled button, and click **Save to File**. See table <u>Table 1-2</u> for details about VNService Configuration options.

Figure 2-7: Update Configuration dialog box

Update Configuration	– 🗆 X
Primary IP =	192.168.126.141 v
Secondary IP =	0.0.0.0 ~
Primary Multicast IP =	239.1.1.1
Secondary Multicast IP =	239.1.1.2
Logging Enabled =	● True ○ False
Reload File	Save to File
Edit Devices	Import Config
Save with Se	ervice Devices

- 12. On the Welcome to the VistaNET Configuration Wizard screen, enter the appropriate information for your system and click **Next**.
- 13. On the IP Address configuration page, enter the appropriate server/device information and click **Next**.

fiste <mark>NET</mark> :	C Use dynamic address Use static addresses Fixed IP Address(e Primary Ethernet	ses for client applic s below for servers s) Address	ations (no servers) and clients
	192 . 168 . Secondary Ethe 0 . 0 .	0 . 93	fick) Pick
	IP Net #1 (Fixed) IP Net #2	192.16	3.0.0
0 10010 0 1001	IP Net #3	0.0	. 0 . 0 . 0 . 0
	To continue, click Ne	xt.	
	< Back Next	Cancel	Finish

Figure 2-8: IP address Configuration Wizard screen

- 14. On the essential application IP Addresses screen, add addresses and then click **Next**.
- 15. On the completion VistaNET Configuration Wizard screen, click **Finish** to save your configuration.
- 16. The program will initialize your information while the Initializing Features screen displays.
- 17. When the Maintenance Complete screen appears (see <u>Figure 2-9</u>), click **Finish** to restart your computer.

Figure 2-9: Maintenance Complete screen

STAR Core	
STAR Core	Maintenance Complete InstallShield Wizard has finished performing maintenance operations on STAR Core.
	 Yes, I want to restart my computer now. No, I will restart my computer later. Please make sure you have removed the floppy disk from the drive.
	< Back Finish Cancel

2.5 Update STAR Server

If update of STAR Core is needed, complete that first before updating STAR Server.

To update the STAR server:

- 1. From the zip file or other media source, select **Setup.exe**, selecting the **Run as administrator** option.
- 2. At the Installer welcome screen, Select Update and click Next.

Figure 2-10: STAR Server Welcome

STAR Server - In	stallShield Wizard	×
Welcome Update, repa	air, or remove the program.	5
Welcome to current insta	the STAR Server Setup Maintenance program. This program lets you modify the allation. Click one of the ontions below.	
Update	Select new program features to add or select currently installed features to	
O Repair	Reinstall all program features installed by the previous setup.	
O Remove	Remove all installed features.	
Instalionield ——	<back next=""> Cancel</back>	

3. After the update completes, click **Finish**.

2.6 PGC1000 concentrator

The PGC1000 Concentrator collects data from any PGC1000 or NCG8200 series analyzer. The PGC1000 Concentrator runs as a Windows Service, and when activated as described in section <u>2.4</u>, the PGC1000 Concentrator will appear in the Devices tab of the STAR Client (see Figure 2-11).

Figure 2-11: PGC1000 Concentrator in Devices tab

Tre	eview	↓ ₽ ×
	Devices	STAR
⊿	PGC1000 PGC1000 PGC1000	^
4	PGC1000Concentrator A % ABB-PC\PGC1000 (Concentrator

The STAR Client can be used to view the stored data, and it acts as the configuration tool. To configure the PGC1000 Concentrator:

1. Right click on the PGC1000 Concentrator and the menu shown in <u>Figure 2-12</u> will appear.

Figure 2-12: PGC1000 Concentrator menu

ABB-PC\PGC1000 Concentrator
Type: PGC1000Concentrator
IP1: 10.1.0.149
IP2: 0.0.0.0
Version: V2.0.0.0
Add/Modify STAR Server

- To choose the STAR Server to be used for storing the data, select Add/Modify STAR Server and click on the desired server.
- 3. Enter the name of the STAR Server and click **OK**. The result will give you another level in the tree view (see Figure 2-13).

Figure 2-13: PGC1000 Concentrator sub-level

- VSS-PGC1000\OPCConcentrator
 VSS-PGC1000\VS-S
 10.127.184.26
- 4. To add a PGC1000 Server, right click on the STAR Server. The Add PGC1000 screen will appear (see <u>Figure 2-14</u>).

Figure 2-14: Add PGC1000 screen

10.1.0.217 Add PGC1000

- 5. Click **Add PGC1000**. This will allow you to choose the PGC1000 you wish to retrieve data.
- 6. In the Add PGC1K screen, enter the IP address of the PGC1000.
- 7. Select the PGC1000 and click **OK** (see Figure 2-15).

Figure 2-15: Add PGC1K screen

ŞÇ	Add PGC1K	-		x
Enter the IP Ade to add.	dress of the PGC10	00. Tł	nen c	lick OK
IP Address:				
	Ok	(C	ancel

This will result in another level in the tree view, as seen in Figure 2-16.

Figure 2-16: Third level in PGC1000 Concentrator tree view



8. Right click on a PGC1000/NGC. The Remove PGC1000 screen will appear (see Figure 2-17).

Figure 2-17: Remove PGC1000 screen

1	10.1.0.148
	Remove PGC1000

2.7 Startup

To start any application:

- 1. Locate and open the ABB STAR folder from the desktop, or click **Start**.
- 2. Select the application you want to run.

3 STAR client

The STAR Client provides access to analyzer functions and data. The STAR Client is the portal into the STAR DMS. When you launch the STAR Client, <u>Figure 3-1</u> appears, with its menus and views as shown.

Figure 3-1: STAR Client Window



3.1 Menu bar

The items in the menu bar (see <u>Figure 3-2</u>) have submenus to list together similar tasks to be done. Each menu item is described in the following sections.

Figure 3-2: Menu Bar



3.1.1 File

- Open: opens a file from a saved location on a local PC or other storage device. It allows you to open a file in a new window, or overlay a file onto a like-typed window. The files are filtered by device type with the default: "Report Files (*.rpt)".
- Save: saves the report or trend in the active view to the STAR Server; it only saves data opened from the STAR Server, not a local storage location.
- Save As: saves the report in the active view in its native format (e.g. *.rpt) to a storage location such as a local PC or other storage device. (You cannot use "Save As" for a trend.)
- Save As Image: saves the report or trend in the active view as an image file to a saved location on a local PC or other storage device
- Save Plant View: saves a plant view
- Print: prints content of the active view in the viewing area
- Login/Logout: provides security by allowing users different levels of access
- ACL Editor: allows a user with Supervisor access to assign usernames and passwords for different security levels
- Exit: closes the program

3.1.2 Edit

Log in as Normal or Supervisor as required.

- Add Note: adds a note to a chromatogram or trend (see Figure 3-1)
- Add Callout Box: adds an anchored callout box to a chromatogram or trend (see Figure 3-1)
- Clear Annotations: removes all notes and callout boxes

The STAR Client allows you to add notes and callout boxes to a chromatogram or trend. In this feature you can format text in a Note and Callout Box like a word processor. To see this feature, select an existing Note or Callout Box. You can highlight text and apply text format to that text, or you can select formats as you type. The Note box will remain in the same place you initially created, even when the chromatogram is resized. The Callout box will remain anchored to the position you originally created, but it may relocate on the screen during resizing.

To resize a text box:

- 1. Right click on the desired text box to open its dialog box.
- 2. Select **Resize**.
- 3. Drag the text box on its edges or corners to resize.
- 4. Right click on the desired text box to open its dialog box.
- 5. Click Lock Resize.



IMPORTANT NOTE: When you are resizing, the rotation menu item will be disabled. You must click **Lock Resize** to reenable the ability to select rotation. When you are using rotation, the Resize button will be disabled.

To edit text within a text box:

- 1. Right click on the desired text box to open its dialog box.
- 2. Select Edit Text.
- 3. In the text box that appears, highlight the text to be edited.
- 4. When you have completed the editing, click **OK**.

To rotate a text box:

- 1. Right click on the desired text box to open its dialog box.
- 2. Select Rotate.
- 3. Drag the text box on its edges or corners to rotate, then release.
- 4. Right click on the desired text box to open its dialog box.
- 5. Click Lock Rotation.

3.1.3 Templates

Templates are user-created text files that can be inserted into reports and chromatograms. It requires a user to log in as Normal or Supervisor to enable creating, editing and deleting templates.

- Apply Annotation Template: applies a saved annotation template to a chromatogram or trend
- Unapply Annotation Template: removes a saved annotation template from a chromatogram or trend
- Create New Annotation Template: allows creation of a new annotation template
- Edit Annotation Template: allows editing of a saved annotation template
- Delete Annotation Template: permanently removes a saved annotation template
- Create Annotation Template from Annotations: creates an annotation template from the annotations displayed in the current chromatogram or trend

3.1.4 Classic applications

- Configuration Wizard: Enables establishment/modification of the VistaNET configuration
- Client Configurator: Application used for the creation of configuration files for Gateway OPC clients, persist files for OPC server, and MODBUS configuration files for the PGC5000 series analyzers
- VNSimulator: Simulates instrument data for testing purposes only (not to be run in a functioning system). This is primarily used to simulate analyzer data through the STAR Gateway to a DCS prior to receiving the device on site.
- VistaReporter: Enables display, storage and printing of reports and events
- Browse: Enables search for files, documents, etc.

3.1.5 Tools

- Repeatability: Allows a check for repeatability within a requested time frame for a stream. The Repeatability option will only be active if you are logged in as supervisor and you are connected to at least one STAR Server. See section <u>3.11</u> for more information on repeatability.
- Reprocessing: Allows the user to reprocess a chromatogram in the chart viewing area by changing current TCF setting in method. The Reprocessing option will only be active if you are logged in as supervisor.
- Clear Event Log: Empties the current Live event log

- PGC5000 Config Converter: Allows the user to update PGC5000 Generation 1 version 3 files to run version 4
- PGC5000 Generation Converter: Allows the user to update a PGC5000 Generation 1 to a PGC5000 Generation 2 analyzer
- Get all Recovery Media: Creates a recovery media for all PGC5000 Generation 1 version 4, and PGC5000 Generation 2 analyzers
- Export Device List: Exports current device list to .csv file in a user-specified location. The device
 list will contain the name, type, IP addresses, and version of all devices in the tree view.
- Options: Allows modification of properties of Plant View, Charts, TCFs, and Peak Data Records.
 Changes will not take effect until a new chromatogram/trend is opened.

3.2 OPC Concentrator

The OPC Concentrator collects data from any Data Access 2.0 compliant OPC server. The OPC Concentrator runs as a Windows Service, and when activated as described in <u>section 2.4</u>, the OPC Concentrator will appear in the Devices tab of the STAR Client (see <u>Figure 3-3</u>).

Figure 3-3: OPC Concentrator in Devices Tab



The STAR Client can be used to view the stored data, and it acts as the configuration tool. To configure the OPC Concentrator:

1. Right click on the OPC Concentrator. The menu shown in Figure 3-4 appears.

Figure 3-4: OPC Concentrator Menu

WIN-8	510T0SA3R\OPCConc	entrator
Type: (PCConcentrator	
IP1: 19	2.168.0.93	
IP2: 0.0	.0.0	
Versio	: V2.0.0.0	

- 2. To choose the STAR Server to be used for storing the data, select **Add/Modify STAR Server** and click on the desired server.
- 3. Enter the name of the STAR Server and click **OK**. The result will give you another level in the tree view (see Figure 3-5).

Figure 3-5: OPC Concentrator Sub-level

⊿	opc C	DGKS8082\OPCConcentrator
	⊳	DGKS8082\VS-S

4. To add an OPC Server, right click on the STAR Server. The Add OPC Server screen appears (see <u>Figure 3-6</u>).

Figure 3-6: Add OPC Server Screen

DGKS8082\VS-S

Add OPC Server

- 5. Click **Add OPC Server**. This will allow you to choose the machine and OPC Server you wish to use to retrieve data.
- 6. In the DigAddOPCServer screen, enter the machine name or IP address of the machine hosting the OPC Server(s).
- 7. Select the OPC Server and click **OK** (see Figure 3-7).

Figure 3-7: DigAddOPCServer Screen

SC DIgAddOPCServer	_		\times
Set the machine name or I	P Address	and clic	k
Search. Then select the ser	ver to add	d.	
Machine Name/IP: 10.127	.184.26	Se	arch
Matrikon.OPC.Modbus.1			
Matrikon.OPC.Simulation.	1		
	OK	C	ancel
	- Cit		

This will result in another level in the tree view as seen in Figure 3-8.

Figure 3-8: Third Level in OPC Concentrator tree view



8. Right click on the OPC Server (e.g. Optima.OPCService) item to select the Set Frequency and Delay screen (see <u>Figure 3-9</u>). From this screen you can set the frequency of updates and the delay for restart if the OPC Server is no longer reachable (machine rebooted, network disconnect, etc.).

Figure 3-9: Set Frequency and Delay Screen

🕸 Set Frequency And Del 💻 🗖 🗙
Set the Report Frequency and the Reconnection Delay for the OPC Server.
Report Frequency (seconds): 10
Reconnection Delay (seconds): 300
OK Cancel

9. Expand the OPC Server to see the OPC tags available for subscription to the STAR Server (Figure 3-10).

Figure 3-10: Available OPC Tags



10. To select an OPC tag to be stored in the OPC Server, right click on the OPC item. A dialog box appears with the Add Tag To Concentrator option (see Figure 3-11).

Figure 3-11: OPC tag dialog box



To verify the action and to find the OPC tags being stored in the STAR Server, look for the green checkmark through the OPC item Icon, as seen in <u>Figure 3-12</u>.

Figure 3-12: OPC tags stored



3.2.1 Help

- STAR DMS Guide: launches the STAR DMS Operating Instructions
- About STAR Client: displays the current version of client software being used

3.3 Treeview

By default, the treeview pane is unpinned in the upper left corner of STAR Client. When you select treeview, a content pane appears, docked on the left side of the STAR Client by default (see Figure 3-13). This pane, with its sub-items, provides access to analytical functions and features.



Figure 3-13: Treeview Structure

On the Treeview pane, two tabs, a Filter icon, and a Window Position icon appear:

- Devices tab: displays a list of devices and applications currently participating in the STAR DMS. <u>Figure 3-13</u> shows this tab and section <u>3.4</u> provides detailed information on the Devices tab. Devices are grouped by their device type in a folder structure. If there is a red "X" over the icon and the device is flashing red, the device or application is no longer active. If the device or application has been removed from the STAR DMS, you can remove it with a context menu option.
- STAR tab: displays a list of STAR server devices and applications reporting to the server. Each
 entry can be expanded to display its own group of streams and components. Section <u>3.5</u> provides
 detailed information on the STAR tab.
- Filter icon: at the top left corner of the Treeview pane is used to filter the Treeview STAR tab (see Figure 3-14)

Figure 3-14: Filter Icon



When you click the Filter icon, the Filter Dialog box appears (see Figure 3-15). Select the desired data in the Filter dialog box and click **OK**. The Treeview will refresh and only the data types selected will be displayed in the Treeview STAR tab. If you select **All**, the Treeview STAR tab will contain data stored for all devices.

Figure 3-15: Filter Dialog Box

×
Report Data
Report
✓ Process Value
Peak Data
Cancel

 Window Position icon: displays a list of positions the user can utilize for the Treeview pane, including Floating, Dockable, Tabbed Document, and Auto Hide. Right click in the title bar to return from Floating to other options.

3.4 Treeview: Devices tab

The Devices tab shows all devices and applications currently participating in the STAR DMS. If a device is offline (powered off, or has a network issue), it will appear with a red "X" over the icon and will flash red.

At the device type folder level 1, the PGC5000 and PGC5000 Generation 2 devices allow for the creation of a recovery media backup of all devices of its type. Right click and select **Get All Recovery Media**. Select the desired device and then click **Accept**. Browse to select the folder in which to save the current configuration.

3.4.1 Context menu, various applications

- 1. Open the Treeview.
- 2. Click **Devices**.
- 3. Click the desired folder.
- 4. Right click on the desired device.
- 5. The Devices dialog box shows the available options (see Figure 3-16).

Figure 3-16: Context Menu, Various Applications

STAR Client[™] - (Logged in: abb - Supervisor) Expert Mode

File	Edit	Templates	Classic Applications	Tools H
			– 4 ×	New Ann
	De	vices	STAR	Pct 10 \ SD
	PGC10 PGC10 PGC10 PGC50	oncentrator 000 000Concentrat 000_GENERAT	tor ION_2	447.96
	STAR STAR	S ICISA S Type: IP1: 1 IP2: 1 Versio	UAE (Unsecured) PGC5000GENERATION 0.127.186.80 92.168.55.5 pn: V4.2.1.23	1_2
		Launo Get Li Upgra Rebo	:h RUI og Files ade BIN ade Configuration ot Analyzer	,
		Add t Retrie Creat	o Plant View eve Reports e Recovery Media	,
		Docu Get C	ments onfiguration	,

All devices have the following information:

- Name of Device
- Device Type
- IP Address Primary
- IP Address Secondary Version

3.4.2 Context menu, PGC5000 ver. 4 and PGC5000 Generation 2

- 1. Open the Treeview.
- 2. Click **Devices**.
- 3. Click on the desired folder.
- 4. Right click on the desired device.
- 5. The Devices dialog box shows the available options (see Figure 3-16).

3.4.3 **Open a report directly from PGC5000**

To open a report from the Devices tab (PGC5000 only):

- 1. Open the Treeview.
- 2. Click **Devices**.
- 3. Click on the desired folder.
- 4. Right click on the desired device (PGC5000 or PGC5000 Generation 2).



IMPORTANT NOTE: This will open a context menu, which differs according to the devices and applications being used. All devices and application other than PGC5000 Version 4 and PGC5000 Generation 2 analyzers have a shorter selection menu. See sections <u>3.4.1</u> and <u>3.4.2</u> for illustrations of these context menus.

5. Click **Retrieve Reports**. This will retrieve all available reports directly from the device.



IMPORTANT NOTE: For the PGC5000, it will provide 24 hours of reports. For the PGC5000 Generation 2, a dialog box will appear and allow the user to select a time range up to seven days.

- 6. Navigate down the tree to locate the desired report.
- 7. There are two ways to retrieve a report.
 - Double-click on **Report** for two hours of reports.
 - Right-click on **Report** to open a dialog box.
- 8. If you right-click on Report, a Report dialog box appears.
 - a. Click **Select Range** and wait for the dialog box or click **Quick Reports**.
 - b. When the Select Range dialog box appears, choose the desired range and click **OK**.
 - c. Select the desired report.
 - d. Right-click on **Create New View** to display a new view or click **Add to Active View** to overlay the new view onto an existing view.

The chromatogram will appear on the screen in the viewing area.

3.5 Treeview: STAR tab

To open a report from the STAR tab:

- 1. Open the Treeview.
- 2. Select a STAR server.
- 3. Connect if needed.
- 4. From the STAR tab, select the desired analyzer (see <u>Figure 3-17</u>). This example shows PGC5000s, PGC2000s, and Multiwaves.

Figure 3-17: STAR Tab



PlantView - Local Live PlantView - WIN-7P1PS

- 5. If the device is a PGC5000, select the schedule.
- 6. Select the desired stream.
- 7. Select the desired analysis.
- 8. There are two ways to retrieve a report:
 - a. Right click **Report**. This will retrieve all available reports (within the selected range) from the server.
 - b. Double click on **Report** for two hours of reports.
- 9. If you right-click on **Report**, a Report dialog box appears.
 - a. Click Select Range and wait for the dialog box or click Quick Reports.
 - b. When the Select Range dialog box appears, choose the desired range and click **OK**.
 - c. Select the desired report.
 - d. Right click Create New View or Add to Active View or double-click to create a new view.
- 10. The chromatogram will appear on the screen (see Figure 3-18).

Figure 3-18: Chromatogram Example

🔅 STAR Client™ - (Logged in: abb - Supervisor) Expert Mode



3.6 Properties

By default, the Properties pane is unpinned in the upper right corner of STAR Client. When you select Properties, a content pane appears, docked on the right side of the STAR Client by default (see <u>Figure</u> <u>3-19</u>). Changes to chart properties can be made from this pane. Any changes made will take immediate effect.

Figure 3-19: Properties

Properties 🔹 👻
Chart Properties
Name: PGC5K - Report Data 6
Show Gridlines Show Minor Gridlines
Show Crosshairs
Offset: ONone O Automatic Manual
♥ TCFs to Display
Chromatogram Item Properties
STD20211215154020.rpt Select
Selected Visible Raw Report
Show Baseline Show TCFs 🗸 Show Peak Data
c Line
Color Thickness
Offset 0 %
Saus to Options Postors from Options
Save to Options Restore from Options

3.7 PlantView

The PlantView gives a graphical view of their plant's control rooms and shelters. From the main menu, select **Tools**>**Options**. On the **General** tab (see <u>Figure 3-20</u>), configure the background for the PlantView, Control Room and Shelters by selecting the background using the **Browse** button. The background can be in most graphical formats (BMP, JPG, PNG).

Figure 3-20: Typical PlantView Screen

Canada Canada Ters Por		
General	Plant View Background Image DefaultPlantViewImage	Browse
	PlantYiew Control Room Shelter Save Restore from Defaults Cancel	

Each STAR Client has a local PlantView. This PlantView can be customized for each STAR Client to contain devices needed for this STAR Client. Once the backgrounds have been chosen, add control rooms and shelters on the PlantView background as needed. To add devices/applications to the control rooms or shelters, either drag-and-drop the device onto its destination or use the Add to PlantView context menu option from the Treeview Device tab. Once the devices/applications are in the control rooms or shelters, the same context menu items are available on the Treeview Device tab.

3.8 Live

When you select **Live**, the current event log appears for viewing only (see <u>Figure 3-21</u>). Click on another function to close the event log.

Figure 3-21: STAR Client showing Event Log

STA	AR Clier	nt™			
ile	Edit	Templates	Classic Applications	Tools	Help
ve					
5/12	/2017 0	7:17:10: Cmd	GetAssocFiles from 'DG	KS8082\VS	-S' sent
5/12	/2017 0	5:37:10: Cmd	SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/12	/2017 0	3:57:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/12	/2017 0	2:17:10: Cmd(SetAssocFiles from 'DGI	KS8082\VS	-S' sent
5/12	/2017 0	0:37:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 2	2:57:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 2	1:17:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 1	9:37:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 1	7:57:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 1	6:17:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 1	4:37:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 1	2:57:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 1	1:25:03: Serve	r Event: DGKS8082\VS-	S - PGC500	00 Val Started - Schedule 1
5/11	/2017 1	1:25:03: Serve	r Event: DGKS8082\VS-	S - PGC500	00 Cal Completed - Schedule 1
5/11	/2017 1	1:17:10: Cmd(GetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 0	9:37:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 0	7:57:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 0	6:17:10: Cmd(GetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 0	4:37:10: Cmd(GetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 0	2:57:10: Cmd(GetAssocFiles from 'DG	KS8082\VS	-S' sent
5/11	/2017 0	1:17:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 2	3:37:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 2	1:57:10: Cmd	SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 2	0:17:10: Cmd0	SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 1	8:37:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 1	6:57:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 1	5:17:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 1	3:37:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 1	1:57:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 1	0:17:10: Cmd0	SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 0	8:37:10: Cmd	SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 0	6:57:10: Cmd	GetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 0	5:17:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 0	3:37:10: Cmd(SetAssocFiles from 'DG	KS8082\VS	-S' sent
5/10	/2017 0	1:57:10: Cmd	SetAssocFiles from 'DG	KS8082\VS	-S' sent
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5/09	/2017 1	5:57:10: Cmd(GetAssocFiles from 'DG	KS8082\VS	-S' sent
5/09	/2017 1	4:56:27: Cmd(GetTrendData complete	d, status =	Complete
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5/00	/2017 1	1:25:07: Serve	r Event: DGKS8082\VS-	S - PGC500	00 Val Started - Schedule 1

3.9 Viewing area

When the viewing area has a PGC5000 analyzer report selected at the top of the screen, subtabs at the bottom of the screen show: Report, Alarms, Peak Data, TCFs, and Components. These are described in the following paragraphs. If you have multiple detectors, you can open each one separately from its subtab.

3.9.1 Report

When you click on the PGC5000 report subtab, an analysis report will appear across the bottom of the screen (see Figure 3-22). This is the standard analysis report. Clicking on the viewing area will close this report.

Figure 3-22: Standard Analysis Report

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To access a more detailed report:

1. Open the **Properties** view (see Figure 3-23).



Figure 3-23: Properties View

- 2. Select the desired report.
- 3. Check Raw Report.
- 4. Click on the **Report** subtab and the raw report will appear (see Figure 3-24).

Figure 3-24: Raw Analysis Report

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5. Click the viewing area to close this report.

3.9.2 Alarms

When you click on the Alarms subtab, an alarms report will appear across the bottom of the screen (see <u>Figure 3-25</u>). The Alarms subtab is not available on some instruments.

Figure 3-25: Alarms Report



Click the viewing area to close this report.

3.9.3 Peak data

When you click on the Peak Data subtab, a Peak Data report will appear across the bottom of the screen (see Figure 3-26).

Figure 3-26: Peak Data Report



When you open a specific column in this report (apply a check mark), that column's information will appear in the appropriate boxes in the viewing area if you have the Show Peak Data box checked in the Properties window.

Click on the viewing area to close this report.

3.9.4 TCFs

When you click on the TCFs subtab, a TCF report will appear across the bottom of the screen (see Figure 3-27).

Figure 3-27: TCF Report

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When you open a specific column in this report (apply a check mark), that column's information will appear in the appropriate boxes in the viewing area if you have the Show TCFs box checked in the Properties window.

Click on the viewing area to close this report.

3.9.5 Components

When you click on the Components subtab, a Components report will appear across the bottom of the screen (see Figure 3-28).
Figure 3-28: Components Report



When you open a specific column in this report (apply a check mark), that column's information will appear in the appropriate boxes in the viewing area.

Click on the viewing area to close this report.

3.10 Viewing Area Tabs

When you have multiple tabs open in the viewing area, you can split the windows vertically or horizontally. Right click on a tab and select the following options: Close, Close All But This, Tabbed Document, New horizontal Tab Group, or New Vertical Tab Group.

Figure 3-29: Viewing options



- Close closes the current tab
- Close All But This –closes all tabs except the current one
- Tabbed Document indicates that the tab is a single document, not part of a tabbed group
- New Horizontal Group moves the tab to a separate tabbed Horizontal group

Figure 3-30: Horizontal group view

🔅 STAR Client™ - (Logged in: abb - Supervisor) Expert Mode



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— New Vertical Group - moves the tab to a separate tabbed Vertical group

Figure 3-31: Vertical group view



3.11 Repeatability

Repeatability is only available if a STAR Server exists in the STAR DMS.

To use the Repeatability feature, you must have Supervisor access.

- 1. At the top left of the screen, click File.
- 2. Click **Login** from the drop-down menu (see Figure 3-32).

Figure 3-32: Login Dialog Box



- 3. Enter the User and Password information.
- 4. Click **Tools** at the top of the screen.
- 5. Click Repeatability.
- 6. The Repeatability View dialog box appears with devices that are currently searching for the Repeatability criteria. These devices and streams will stay populated in the Repeatability View dialog box until they are removed by the user. To remove a current Repeatability request from the dialog box, select the device you want to remove from the list and select **Stop** on the right side of the Repeatability View dialog box.
- To add a new device to the Repeatability View dialog box, click Add at the right side of the Repeatability View dialog box (see <u>Figure 3-33</u>).

Figure 3-33: Repeatability View Dialog Box

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8. On the Repeatability Criteria dialog box (see <u>Figure 3-34</u>), enter the desired information as explained below.

Figure 3-34: Repeatability Criteria Dialog Box

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- 9. Select the STAR Server and Device: if the Device has a stream associated with it, select **Stream**.
- 10. Select the Component and desired value.

- 11. Select the Acceptance Criteria:
 - % Full Scale uses the input Low and High range of the component, based on their unit of measure, and compares against trended data in the +/- limit percentage defined in search criteria
 - # of Standard Deviation uses mean average of data points and allows certain number of step outs/rejections about the mean
 - % of Standard Deviation uses mean average of data points and allows certain percentage of drifting from mean data points
- 12. Select the Rejection Rules:
 - Three Sigma one point in trend falls beyond the Upper or Lower trend limits
 - Three Successive Points two out of three consecutive points fall on the same side of the centerline at Uppermost or Lowermost trend limits
 - Five Successive Points four out of five consecutive points fall on the same side of the centerline of trend that is >50% of trend limits
 - Run seven consecutive points fall on one side of the centerline
 - Trend seven consecutive points either increase or decrease
 - Zig Zag fourteen successive points alternate in an up-down pattern
 - Hugging fifteen successive points fall on one side of centerline
- 13. Select Add.
- 14. In the Start Search box, select the **Start Time**.
- 15. Select the Min. Acceptance Time.
- 16. If the Repeatability needs to continuously search for the best time (defined by the Minimum Acceptance time), leave the Define End Search box unchecked. This will allow Repeatability to continuously look for the best time frame defined by the Minimum Acceptance time. If you have a specific time that the Repeatability needs to fall within, you must select a Start and End Search time.
- 17. Select Send.
- 18. The device with customized search criteria should now appear in the Repeatability View window. If the Repeatability trend is within specifications, the Repeatability Found column will display a TRUE message. If the Repeatability trend was rejected by one of the rules of Acceptance Criteria, the Repeatability Found column will display a FALSE message. Select **Refresh** to update the status of the Repeatability search.

3.12 Groups

The Groups feature allows you to add analyzers and devices associated to a STAR Server into groups. These associated analyzers and devices appear under a connected STAR Server under the STAR tab in the Treeview. Each STAR Server connected to the STAR Client contains a Groups folder. It is within this folder that you can add a custom group folder containing analyzer(s) that are associated with the given STAR Server. The Groups folder is automatically generated by the STAR Client in the STAR Server that is connect to the STAR Client. You can create new groups and access existing groups.

To create a group:

- 1. On the STAR Client, open the Treeview pane.
- 2. Select **STAR** in the Treeview pane.
- 3. Select Groups.
- 4. Right click to display a dialog box.
- 5. Select Add Group from the dialog box.
- 6. From the Rename dialog box, insert a name and click **OK**.
- 7. From the device list in the Treeview pane, right click on the desired device(s).
- 8. In the dialog box, right click **Add to Group**.
- 9. Select the group to use.

To view an existing group:

1. On the STAR Client, open the Treeview pane.

- 2. Select **STAR** in the Treeview pane.
- 3. Select Groups.
- 4. Click **Groups** to display the existing groups.
- 5. Click on the desired group to use.
- To add an analyzer to a group:
 - 1. Right click on the analyzer you wish to add to a group.
 - 2. Click Add to Group.
 - 3. Click on the desired group.

To remove an analyzer from a group:

- 1. Expand a group folder.
- 2. Right click on the analyzer you wish to remove from the group.
- 3. Click Remove From Group.
- 4. Click **Yes** to remove the analyzer or click **No** to retain it.

To remove all analyzers from a group:

- 1. Right click the desired group folder.
- 2. Click Remove All From Group.
- 3. Click **Yes** to remove all analyzers or click **No** to retain them.

To delete a group folder:

- 1. Right click the group folder you want to delete.
- 2. Click Delete Group Folder.
- 3. Click **Yes** to remove the Group folder or click **No** to retain it.

To rename a group folder:

- 1. Right click the desired group folder.
- 2. Click Rename Group.
- 3. Enter the new name for the folder and click **OK**.

3.13 Availability

Availability is accessed from the STAR Client, but the STAR DMS must have STAR Server for this function to operate. Availability is set to one week of data by default, but the user can select other optional time periods. The Availability function operates only with PGC5000 Generation 2 analyzers with report and status subscriptions. It is based on configured schedules. The Availability chart shows cumulative availability if more than one schedule is selected. Availability is expressed both in percentage and in hours.

Availability has three functional levels: Device, STAR Server, and Group. These levels, which will be explained later in this section, are defined as follows:

- Device: a PGC5000 Generation 2 Analyzer
- Server: all devices on a connected STAR Server (STAR Client can accommodate up to four STAR Servers)
- Group: a selected group of devices

3.13.1 Accessing availability: device

- 1. On the STAR Client, open the Treeview pane.
- 2. Select **STAR** in the Treeview pane.
- 3. Select the desired connected server.
- 4. Select the device.
- 5. Right click to display a dialog box.

6. Select **View Availability** from the dialog box and the Availability screen will appear (see Figure <u>3-35</u>). This chart will show the availability for the last week, by default. At the bottom of the screen are the categories applying to the availability pie chart.

- n ×

Figure 3-35: Availability Screen

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Treeview + 0 ×	Avail 22 Chromatogram Methane Concentration		· × Pro
			H × pert
Devices STAR	ICISALIAE	12/29/2021 3:30:39 PM - 1/5/2022 3:30:39 PM	2
Cover SiAR S	Color Met 18.7	1/2/3/2021 3:30:39 PM - 1/5/2022 3:30:39 PM	8

The categories, which define the various sectors within the availability chart, are as follows:

- Unknown—percentage/time for which there is no data for this device
- Online Valid—percentage/time logging valid data from the device
- Online Invalid—percentage/time logging data that invalidated at the device
- Maintenance—percentage/time spent in maintenance
- Calibration—percentage/time spent in calibration
- Validation—percentage/time spent in validation
- Offline—percentage/time the schedule is not running

Note the three subtabs at the bottom of the screen: Range, Schedule, and Alarms.

The Range subtab allows you to select a different range instead of the default range (see <u>Figure</u> <u>3-36</u>).



Figure 3-36: Availability Screen showing range selection

You can either select a preset range or enter a range manually. After you enter the desired range, click **Refresh**.

You can select different schedules to view by selecting the Schedule subtab (see <u>Figure 3-37</u>). There can be up to 12 schedules defined in a PGC5000 Generation 2 analyzer. When the schedule view appears, select the desired schedule(s) by ensuring there is a check mark in the Display column. To eliminate a schedule from the chart, clear its check mark in the Display column.

Figure 3-37: Availability Screen, showing schedule selection



Alarms data will only appear when there are active alarms that have been configured in scope to invalidate an analysis run. When you select the Alarms subtab, the Alarms listing appears at the bottom of the screen, showing all active alarms (see <u>Figure 3-38</u>).



Figure 3-38: Availability Screen, showing alarms selection

To display the report associated with a given alarm, click **Show Report**.

3.13.2 Accessing availability: server

- 1. On the STAR Client, open the Treeview pane.
- 2. Select **STAR** in the Treeview pane.
- 3. Select the desired connected server.
- 4. Right click to display a dialog box.
- 5. Select **View Availability** from the dialog box and the Availability screen will appear (see <u>Figure</u> <u>3-35</u>).
- 6. From the Select Analyzer dialog box, select the desired device(s) and click **OK**.
- 7. Follow the Range, Schedule, and Alarms steps in section <u>3.13.1</u>.

3.13.3 Accessing availability: groups

From the Groups folder, you can access availability by following these steps:

- 1. Select the desired group.
- 2. Right click to display a dialog box.
- 3. Select View Availability and the Availability screen will appear (see Figure 3-35).
- 4. Follow the Range, Schedule, and Alarms steps in section <u>3.13.1</u>.

3.14 Maintenance Logbook

The Maintenance Logbook allows you to track the activity of the associated device. All information in the Logbook must be entered by the user. You can enter maintenance already performed, maintenance in progress, maintenance required, and notes for future reference.

3.14.1 Accessing maintenance logbook: device

- 1. On the STAR Client, open the Treeview pane.
- 2. Select **STAR** in the Treeview pane.
- 3. Select the desired connected server.
- 4. Select the device.

- 5. Right click to display a dialog box.
- 6. Select **View Logbook** from the dialog box and the Logbook will appear.

Figure 3-39: Maintenance Logbook

9					Logbook				-	
earch:										
Device	Problem Type	Problem Description	Repair Made	Time To Repair	Problem Occured	Problem Resolved	Parts Required	Tools Required	U	Add
										Edit
										Refrest
										View
										View
										View Export
										View Export Print

The Logbook entries show the information for each entry, as entered by the user. The buttons on the right are used as follows:

- Add: click to enter information.
- Edit: can only be accessed by a supervisor, who can edit the information on the selected line.
- Refresh: if some information has been added or edited, this will update the log entry.
- View: brings up the Info form, which is the same as that for Add.
- Export: allows you to export the entire logbook to a .csv file.
- Print: allows you to print the entire logbook to a user-selected printer.

3.14.2 Accessing maintenance logbook: groups

- 1. On the STAR Client, open the Treeview pane.
- 2. Select **STAR** in the Treeview pane.
- 3. Select Groups.
- 4. Click **Groups** to display the existing groups.
- 5. Click on the desired group to use.
- 6. Select **View Logbook** from the dialog box and the Logbook will appear.

3.14.3 Entering information

To add information to the Logbook, click **Add** and enter information on the Add Entry screen as follows (see <u>Figure 3-40</u>). This screen has four sections: Problem Description, Problem Type, Resolution, and Associated Files.

Figure 3-40: Add Entry Dialog Box

Resolution
Problem Resolved:
Tools Required: Time to repair: HR: Min:
Associated Files

Problem Description:

- Problem Occurred: insert the date the problem occurred
- User: enter the user's name
- Problem Description: enter a brief statement of the problem
- Work Order: enter the work order number, if applicable
- Warranty: click True or False, as applicable

Problem Type:

 Problem Type: click the appropriate box and select the location of the problem. The items in the location box will change according to the problem type selected.

Resolution:

- Problem Resolved: enter the date the problem was resolved
- Repair Made: enter a brief statement of the repairs performed
- Parts Required: List the parts used
- Tools Required: List the tools used in the repair
- Time to repair: enter the time needed to complete the repairs in hours and minutes.

Associated Files

 Associated Files: add any files of importance to this problem. You can only add files that have been saved in the STAR Server for the device for which you are creating the Maintenance Log.

When you have completed all information on the Add Entry screen, click **Submit**.

3.15 Barometric Pressure Compensation

The STAR Server has built-in Barometric pressure compensation when needed using the iOmega iBTX-D meter. It is din rail mounted and can be setup at a customer site preferably near the analyzer shelter. This option can be used for any analyzer that is open to atmospheric pressure. This function will compensate for barometric pressure changes during the time of the displayed concentration trend.

With a trend open, right click and select "Barometric pressure". The following dialog will appear.

Pressure Comper	nsation — 🗆 🗙
Start Time:	04/18/2024 01:19:38
End Time:	04/18/2024 09:19:38
Exponent:	1.0
Stream:	OV1 Calib 1
Analysis:	ANLYS_3273418-20
Report:	~
🗌 Use Manual	04/18/2024 01:19:38 AM
	OK Cancel

The fields to be configured are as follows:

- "Start Time:" comes from the trend parameters.
- "End Time:" comes from the trend parameters.
- "Exponent:" should remain at 1.0. However, under certain circumstances you may want to change the exponent.
- "Stream:" will be the calibration stream to determine the barometric pressure at the time of calibration.
- "Analysis:" will be the analysis ran on the calibration stream at the time of calibration.

- "Report:" will be the calibration reports from the calibration stream at the time of calibration.
- "Use Manual" is used when there are no calibration analysis reports that are present or too old to be relevant. This allows for the user to select a date and time for the barometric pressure at the time of calibration.

The following equation is used for barometric pressure compensation:

 $Cc = Cuc * (Pc / Pa)^x$

where

- Cc = Corrected concentration for barometric pressure
- Cuc = Concentration straight from the analyzer (uncorrected)
- Pc = Barometric pressure at the time of calibration (obviously this will be a different time stamp for each GC)
- Pa = Barometric pressure at the start of the analysis cycle (Within 5 minutes)
- x = Exponent factor: Used if barometric pressure is determined to be non-linear

4 STAR server

4.1 Introduction

The STAR Server is a storage device for storing reports, report data, and device status from multiple devices (listed below) for a minimum of 30 days. There are two levels of capacity for the STAR Server: 1 to 15 devices, or 1 to 50 devices. The STAR Server comes as an appliance: a Dell[®] rack-mounted computer with the factory-installed STAR server.

The STAR Server supports:

- PGC5000 family
- PGC2000/3100
- PGC1000
- Multiwave analyzer (MW)
- Reid Vaper Pressure analyzer (RVP)
- Data Access 2.0 OPC Servers

For the PGC5000 Generation 1 Version 4, PGC5000 Generation 2, PGC2000, MW and RVP devices, simply add a STAR Server to the subscriber list in the device and the reports will be sent to the STAR Server at the end of the next analysis cycle. For other subscription types, refer to the Subscriber Lists in section 2.2.

The STAR Server can be configured using the Configuration Manager. The Configuration Manager is also used to perform several maintenance tasks required for modifying and maintaining the STAR Server. Once it is initially configured, the main portal to the STAR Server is through the STAR Client. See the section <u>3</u>, STAR Client, for usage and functionality.

4.2 Configuration manager

The Configuration Manager can be launched by double clicking the

C:\ABB\Analytics\STAR\Server\Configuration Manager.exe file (see <u>Figure 4-1</u>). This screen has two menu options at the top of the screen and four sections on the screen.

onfiguration Manager	- 0
ls <u>H</u> elp	
letwork IP Address(es)	Logging
	Log Level: (2) Errors and Warnings ~
Primary: 10.127.184.73 ~	Log Hours: 72
Secondary: 10.127.186.9	Capture TCP Blobs
	Capture Pipe Blobs
evice and Port Configuration	
New	Apply Delete
Internet Protocol	
Port	TCP
Type: Device IP Address: U	Port: 0
Device	UFV0 UDF
Barometric Pressure Meter	
Barometric Pressure Meter	
Barometric Pressure Meter	
Barometric Pressure Meter Name: Minutes between samples:	
Barometric Pressure Meter Name: Minutes between samples: 0	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name =	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP nPort = 28; IPv4; TCP	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP nPort = 28; IPv4; UDP nPort = 59; IPv4; UDP	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP nPort = 28; IPv4; TCP nPort = 59; IPv4; IDP nPort = 58922; IPv4; TCP	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP nPort = 28; IPv4; TCP nPort = 58922; IPv4; TCP	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP nPort = 28; IPv4; UDP nPort = 59; IPv4; UDP nPort = 58922; IPv4; TCP	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP nPort = 28; IPv4; UDP nPort = 59; IPv4; UDP nPort = 58922; IPv4; TCP	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP nPort = 28; IPv4; TCP nPort = 59; IPv4; UDP nPort = 58922; IPv4; TCP cense Information	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP nPort = 28; IPv4; TCP nPort = 58922; IPv4; TCP cense Information Database	
Barometric Pressure Meter Name: Minutes between samples: 0 nPort = 0; nMinutes = 0; IP Address = 0.0.0.0; Name = nPort = 28; IPv4; UDP nPort = 28; IPv4; UDP nPort = 59; IPv4; UDP nPort = 58922; IPv4; TCP icense Information Database	License File

_. 4 4. CTAD C **~** - -

Menu options 4.2.1

The two menu options at the top of the Configuration Manager screen are Tools and Help.

Tools: has several features for modifying the STAR Server and providing diagnostic information for service engineers (see Figure 4-2).

Figure 4-2: Tools Dialog Box

🚖 Co	nfiguration Manager
Tools	Help
1	Export System Information
1	mport License File
l	Update Computer Name
1	Perform Database Upgrade
I	Resurrect Database
1	Dump Diagnostic Log
1	Restore Factory Defaults

— Export System Information: collects system information for the licensing feature of the STAR Server. If the user changes Mother Board, NIC, or SQL Server on the STAR Server, a new license file will need to be generated by ABB Service.

- Import License File: allows the user to load the license file into the STAR Server. When ABB Service generates a new License File, the user installing the license will need to select the License File.
- Update Computer Name: If the name of the device where STAR Server is installed changes, select this option to change the name throughout the STAR Server. If this is not done, the STAR Server will not store data from the analyzers.
- Perform Database Upgrade: will typically be done by the installer during an upgrade procedure.
 However, if needed, the upgrade to the Database can be done by selecting this option.
- Resurrect Database: Use this option to delete the existing Database and install a blank Database.
 This should only be done as a last resort or if instructed to do so by an ABB Service Engineer.
- Dump Diagnostics Log: will create a DiagnosticsRecords.CSV file in the C:\ABB\Analytics\STAR\Server\ folder. This file will contain diagnostic information needed by support personnel to troubleshoot issues with the STAR Server. Support personnel will ask for this file if needed.
- Restore Factory Defaults: resets all configuration options to factory defaults

Help: displays the version information for the Configuration Manager.

4.2.2 Screen sections

The four sections of the Configuration Manager screen are: Network IP Address(es), Logging, and Device and Port Configuration, and License Information.

Network IP Address(es): is used to enter the Primary and Secondary IP Addresses. The user is presented a list of configured IP addresses for the server. Once the IP Addresses have been chosen, click **Apply** to save the information.

Logging: is used for troubleshooting the STAR Server.

— Log Level: The default Log Level is set to (1) Errors. <u>Figure 4-3</u> shows the available choices.

Figure 4-3: Log Level Dialog Box

Logging	2	<u>a.</u>
Log Level:	(1) Errors	•
	(1) Errors	
Log Hours:	(2) Errors and Warnings	
Canture T	(3) Errors, Warnings, and Information	
	(4) Errors, Warnings, Information, and Del	bug
Capture Pi	pe Blobs	

- Log Hours: is a slider to define how much logging, in hours, of the diagnostic messages is saved.
 This is limited based on the amount of disk space that can be consumed during a troubleshooting session. It is set to 72 hours by default. The range is 0 to 168 hours.
- Capture TCP Blobs and Capture Pipe Blobs should never be enabled unless directed to do so by ABB Service Engineers.
- Analyzers button (see <u>Figure 4-1</u>) will call up the dialog box shown in <u>Figure 4-4</u>. Type the name
 of the device to which you want to save additional data and select the Log Level. This allows the
 STAR Server to save additional log information for specific analyzer(s).

Figure 4-4: Analyzer Log Levels

ł	Analyzer-Specific Diagnostic Log Levels				
Name = AT101; Lo	Name = AT101; Logging Level = (1) Errors				
Name:	AT102				
Log Level:	(1) Errors				
	Delete New/Apply				

When you have completed the entries in the Logging section, click **Apply** to save them.

License Information: This section is used to display the license information for the STAR Server. The Database and License file should match the Level (15 or 50) and the Feature Set of the STAR Server. If these do not match, contact ABB Service. The Database section will also display the number of licenses that are currently consumed by the STAR Server. If this number matches the License Level, then the STAR Server cannot accept new devices.

Device and Port Configuration: are configured by default. Ports can be modified by the user. If a barometric pressure meter was purchased, the IP address and frequency of the polls can be configured in the Barometric Pressure Meter subsection. The default IP Address for the Barometric Pressure Meter is 192.168.0.225.

4.3 Connecting to a STAR Server

For a STAR Client to connect to a STAR Server, right click on the STAR Server entry in the Treeview pane and select **Connect** from the context menu (see <u>Figure 4-5</u>).

Figure 4-5: Context Menu

Connect
Version: V4.2.0.23
IP2: 0.0.0.0
IP1: 10.1.0.182
Type: STARServer
VistaSTARServer\VS-S

Once selected, Connect will be replaced in the Context menu by Disconnect. You can disconnect by selecting Disconnect in this menu.

A STAR Client can be connected to as many as four STAR Servers at a time.



IMPORTANT NOTE: The STAR Server cannot be run on the same server computer as the STAR Gateway if any legacy devices are present in the STAR System. If the STAR System is composed of only PGC5000 version 4 or higher analyzers, the STAR Server and STAR Gateway can reside on the same server platform.

5 Reporter

The Reporter displays, stores and prints event messages and analysis reports. The Reporter can be run as an application or as a Windows Service. If run as an application, it can be accessed from the desktop or from the STAR Client (see below for instructions). If run as a Windows Service, enable the Vista Reporter Windows Service. The Vista Reporter Windows Service is disabled by default. You must be an Administrator on the machine to enable the Windows Service.

5.1 Access from the desktop

To access the Reporter from the desktop:

- 1. Click on the **ABB STAR** folder on the desktop.
- 2. Select the **Reporter** shortcut. The Report Device Reporter window appears (see Figure 5-1).

Figure 5-1: Reporter Window

📴 Report Device - VistaReporter	
<u>File View Reports Help</u>	
08:46:03 02-May-11 RD at 192 168:0.185 VistaReporter Start-up	System Event File Status: C:\Program Files\ABB\VistaNET 2.0\SystemEvents.srf Analyzer Event Files Status: C:\Program Files\ABB\VistaNET 2.0\TA804EVT.EVT Analysis Results Files Status: C:\Program Files\ABB\VistaNET 2.0\TA804.TXT C:\Program Files\ABB\VistaNET 2.0\TTEST.TXT
ABB, Inc.	

Message View

File Status View

5.2 Access from the STAR client

To access the Reporter from the STAR Client:

- 1. Click **Classic Applications** on the Client menu bar.
- 2. Select **Reporter** and click **Launch**. The Report Device Reporter window appears (see Figure <u>5-1</u>).

5.3 Reporter window

The Report Device - Reporter window (see <u>Figure 5-1</u>) consists of a Menu Bar across the top, a Message View on the left side, and a File Status View on the right side.

- The Message View contains a list of the reports and events occurring while the Reporter is running.
- The File Status View provides a list of files, together with the status of each file.
- The items in the Menu Bar have submenus to help divide the various tasks to be done, as explained in the following sections.



IMPORTANT NOTE: If running the Reporter as a Windows Service, the Vista Reporter RUI (VnRUIrptr.exe) will call up the Reporter window.

5.3.1 File

The File menu enables you to exit the Reporter.

5.3.2 View

The View menu lists the various tools you can use in Reporter: Toolbar, Status Bar, Time Stamp, Originator, Options, Controls, and Local Setup. You can also configure reports from the View menu.

5.3.2.1 Toolbar

To display the toolbar:

- 1. Click **View** on the menu bar.
- 2. Click **Toolbar** to turn it ON (check mark appears). The toolbar will appear at the top of the screen.

5.3.2.2 Status bar

To display the status bar:

- 1. Click **View** on the menu bar.
- 2. Click the Status Bar to turn it ON (check mark appears). The status bar will appear at the bottom of the screen.

5.3.2.3 Timestamp

You can configure reports to contain the date and time at the top of each report and to identify the device providing the data for each report.

To enable the timestamp functions:

- 1. Click **View** on the menu bar.
- 2. Click **Timestamp** to turn it ON (check mark appears).

5.3.2.4 Originator

To identify the device providing the data for each report:

- 1. Click **View** on the menu bar.
- 2. Click **Originator** to turn it ON (check mark appears).

5.3.2.5 Options: report colors

The Report Colors function enables the user to change the colors for different report types. To access Report Colors:

- 1. Click **View** on the menu bar.
- 2. Select Options.
- 3. Select Report Colors.
- In the Report Colors dialog box (see <u>Figure 5-2</u>), select the desired colors in the boxes next to each report type.

Figure 5-2: Report Colors Dialog Box

Report Colors			
REPORT TYPE	COLOR		OK
Informational	BLACK	•	
System Event	RED	-	Cancel
Application Event	RED	-	Restore Defaults
Host Event	RED	•	
Analysis Event	BLUE	•	
Analysis Results	MAGENTA	•	
Benchmark Results	GREEN	-	
Calibration Results	GREEN	•	

- 5. When the changes are complete, click **OK** to save, or click **Cancel** to retain the previous settings.
- 6. To revert to the default colors, click **Restore Defaults** and then click **OK**.

5.3.2.6 Options: analyzer reports

The Analyzer Reports function allows the user to add, edit, or remove configured analyzers.

- 1. Click **View** on the menu bar.
- 2. Select Options.
- 3. Select Analyzer Reports.

To add an analyzer:

- 1. Select **Add**. The Add Analyzer dialog box appears.
- 2. Enter the necessary data.

3. Click **OK** to add this analyzer to the list, or click **Cancel**.

To edit an analyzer:

- 1. Select the desired analyzer from the Configured Analyzers box.
- 2. Click Edit.
- 3. On the next screen, enter the desired changes and click **OK** to save the changes, or click **Cancel** to retain the previous values.

To remove an analyzer from the list:

- 1. Select the desired analyzer from the Configured Analyzers' box.
- 2. Click **Remove**. The analyzer will be removed from the list.

5.3.2.7 Options: system reports

The System Reports function allows the user to change a system name or to clear the entries in a selected file.

- 1. Click **View** on the menu bar.
- 2. Select **Options**.
- 3. Select System Reports.

To change a system name:

- 1. In the System Event File dialog box, edit the name shown.
- 2. Click **OK**. The revised name is entered into the list.

To clear all entries in a system file:

- 1. Note the file name shown in the dialog box.
- 2. Click **Clear File**. All entries in that file will be removed. (The system file remains to collect new data.)

5.3.2.8 Controls: system event file

The event files are circular. When the maximum number of files has been reached, a new file forces the oldest file to be erased. The report generation function in Reporter converts the circular event file to a plain text file that can be viewed and printed with any text editor (such as NotePad or WordPad).

Choosing System Event File enables or disables Reporter to save System Event messages. This file is a circular binary file with up to 5000 entries. System Event messages include application errors and system events.

To enable System Event File:

- 1. Click **View** on the menu bar.
- 2. From Controls, click **System Event File** to turn it ON (check mark appears).

5.3.2.9 Controls: analyzer event files

The event files are circular. When the maximum number of files has been reached, a new file forces the oldest file to be erased. The report generation function in Reporter converts the circular event file to a plain text file that can be viewed and printed with any text editor (such as NotePad or WordPad).

Choosing Analyzer Event Files enables or disables Reporter to save Analyzer Event messages. Since this is a global choice, enabling the feature will enable all Analyzer Event files. You cannot select individual files from this menu item. Each Analyzer Event file is a circular binary file with up to 5000 entries.

To enable Analyzer Event Files:

- 1. Click **View** on the menu bar.
- 2. From Controls, click Analyzer Event Files to turn it ON (check mark appears).

5.3.2.10 Controls: analyzer results files

Choosing Analyzer Results Files enables or disables Reporter to save Analyzer Results files. Since this is a global choice, enabling the feature will enable all Analyzer Results files. You cannot select

individual files from this menu item. Each Analyzer Results file is a plain text file with a user-defined maximum size. Analyzer Results files include analysis, benchmark, and calibration results.

To enable Analyzer Results Files:

- 1. Click **View** on the menu bar.
- 2. From Controls, click Analyzer Results Files to turn it ON (check mark appears).

5.3.2.11 Controls: printer

Reporter will print to the selected Windows default printer. It will print either all files or only those files selected by the user.

To enable printing:

- 1. Click **View** on the menu bar.
- 2. From Controls, click **Printer** to turn it ON (check mark appears).

5.3.2.12 Local setup

To perform Local Setup:

- 1. Click **View** on the menu bar.
- 2. Select Local Setup.
- 3. On the Local Setup dialog box (see <u>Figure 5-3</u>), enter the appropriate information and click **OK** to save the data, or click **Cancel**.

Figure 5-3: Local Setup Dialog Box

VistaREPORTER Configuration	×
	ОК
[Tag] Name:	Cancel
Address:	
[Tag] Name:	[
Address:	
Network Timeout (sec.): 6	

5.3.3 Reports

Three types of reports are supported: Analyzer Events, System Events, and Configuration. Event messages are stored in a circular binary format. Report generation for system and analyzer events creates ASCII plain text files with events numbered and stamped for time received and the originating device (if enabled). Report generation for configuration summarizes the Reporter configuration in an ASCII plain text file.

5.3.3.1 Analyzer events report

To create an Analyzer Events report:

- 1. Click **Reports** on the menu bar.
- 2. Select Analyzer Events and the Event Report Generation dialog box appears (see Figure 5-4).

Figure 5-4: Event Report Generation Dialog Box

Event Report Generation	×
Source:	OK Cancel
Destination:	

- 3. Select the desired source filename from the list of available files.
- 4. Enter a filename for the destination file.
- 5. Click **OK** to generate the report or click **Cancel**.

5.3.3.2 System events report

To create a System Events report:

- 1. Click **Reports** on the menu bar.
- 2. Select **System Events**. The Event Report Generation dialog box appears (see Figure 5-4).
- 3. Select the desired source filename from the list of available files.
- 4. Enter a filename for the destination file.
- 5. Click **OK** to generate the report or click **Cancel**.

5.3.3.3 Configuration report

To create a Configuration report:

- 1. Click **Reports** on the menu bar.
- Select Configuration. The Configuration Report Generator dialog box appears (see Figure <u>5-5</u>).

Figure 5-5: Configuration Report Generator Window

Configuration Report C	ienerator	
Filename:		
ОК	Cancel	

- 3. Enter a filename for the configuration file.
- 4. Click **OK** to generate the configuration report or click **Cancel**.

6 Multiwave RUI

6.1 Functional description

The Multiwave Remote User Interface (RUI) provides remote access across the network between a specific software application and the analytical device. The RUI window initially shows two items on the menu bar: File and Help.

6.2 Launch a Multiwave analyzer

To launch a Multiwave RUI from the STAR Client:

- 1. Open the Treeview.
- 2. Click **Devices**.
- 3. From the device list, double-click on the desired Multiwave. The Multiwave status display will appear (see Figure 6-1).

Figure 6-1: Multiwave Status Display Screen



Report Pane

This screen displays data in four panes which function as follows:

- Status Pane: displays the current operating status of the remote Multiwave; this pane emulates the screen of the remote analyzer
- Alarm Pane: displays the same alarm data as the remote analyzer
- SQC Pane: displays up to eight sets of statistical data
- Report Pane: displays the selected report

The title bar identifies the specific device to which the RUI has connected.

6.3 Loading tables

Before you can view or work with analytical tables, they must be loaded into the RUI. To load tables:

- 1. Click File at the menu bar.
- 2. Click Load Tbls.
- 3. On the Multiwave Setup dialog box (see <u>Figure 6-2</u>), select the location from which to restore the tables (Remote RAM refers to MW RAM; Local Disk File refers to PC storage).

Figure 6-2: Loading MW Tables Dialog Box

Multiwave Setup	×
Restore all Multiwave Tables From:	×.
• Remote <u>B</u> AM	
C Local Disk <u>F</u> ile	
	6
<u>OK</u> <u>Cancel</u>	

4. Click **OK** to load the tables.

6.4 Saving tables

Tables can be saved for future reference. To save tables:

- 1. Click **File** at the menu bar.
- 2. Click Save Tbls.
- 3. On the Multiwave Setup dialog box (see <u>Figure 6-3</u>), select the location to which you want to save the tables (Remote RAM refers to MW RAM; Local Disk File refers to PC storage).

Figure 6-3: Saving MW Tables Dialog Box

Multiwave Setup	
Save all Multiwa	ave Tables To:
	• Remote BAM
	C Local Disk <u>F</u> ile
<u> </u>	
<u>0</u> K	Cancel

!

NOTICE – Loss of data. When you click **OK** to save tables to Remote RAM, this action overwrites the existing tables on the Remote RAM.

4. Click **OK** to save the tables.

6.5 Printing tables

You can print all analytical tables, or you can specify types of tables to print. To print tables:

- 1. Click **File** at the menu bar.
- 2. Click Print Tbls.
- 3. When the Print dialog box appears (see <u>Figure 6-4</u>), verify the printer name and select the print range and number of copies to print.

Figure 6-4: MW Print Dialog Box

Print	? 🔀
Printer <u>Name:</u> <u>Microsoft Office Document Im</u> Status: Ready Type: Microsoft Office Document Imaging W where: Microsoft Document Imaging W	age Writer Properties ge Writer Driver /riter Port:
Comment: Print range C All C Pages from: 1 to:	Copies Number of <u>c</u> opies: 1 ÷
Help	OK Cancel

4. Click **OK** to print the tables.

6.6 Printing reports

You can print all analytical reports, or you can specify types of reports to print. To print reports:

- 1. Click **File** at the menu bar.
- 2. Click Print Report.
- 3. When the Print dialog box appears (see <u>Figure 6-4</u>), verify the printer name and select the print range and number of copies to print.
- 4. Click **OK** to print the reports.

6.7 Multiwave offline or online

To take the Multiwave offline:

- 1. Click **Control** at the menu bar.
- 2. Click Go Off-Line.
- 3. The Verify Action dialog box appears with the question: "Take the Multiwave Off-line?"
- 4. Click **Yes** to go off-line or click **No** to stay on-line.

To put the Multiwave online:

- 1. Click **Control** at the menu bar.
- 2. Click Go On-Line.
- 3. The Verify Action dialog box appears with the question: "Put the Multiwave On-line?"
- 4. Click **Yes** to go on-line or click **No** to stay off-line.

6.8 Analyzer setup

This screen enables you to access various Multiwave parameters and functions as described in the following paragraphs.

- 1. Click **Setup** at the menu bar.
- 2. Click Analyzer.
- 3. When the Analyzer Setup screen appears (see <u>Figure 6-5</u>), change the desired parameter on the screen or click on the desired function box to access its screen.

Figure 6-5: MW Analyzer Setup Screen

Temperature Setpoints	· · · · · · · · · · · · · · · · · · ·	12.85
Cell:	50 c	Limits
Casting:	55 0	Analog Trends
AutoCal		<i></i>
Furge Time: 60	Enable Remote	- Factory Settings
		Analysis
Period: 24	Hrs.	Temp/Pressure
Time til Next: 160	0 Hrs.	
Zero	Span	Alarms
C Disabled	C Disabled	Input Definitions
 Benchmark Calibration 	Benchmark C Calibration	Output Definitions

4. If you changed a setting on the Analyzer Setup screen, click **OK** to save the change or click **Cancel** to retain the original value.

- 5. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 6. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.1 Operational limits

- 1. From the Analyzer Setup screen, click Limits.
- 2. When the Operational Limits screen appears (see <u>Figure 6-6</u>), select the desired parameters to change.

Figure 6-6: MW Operational Limits Screen

	Warning Limits		Alarm Limits	
	Low	High	Low	High
tector DC Voltage (VDC)	4	9.4	3.3	10
ctor AC Voltage (Volts)	0	2.6	0	2.7
ADC Input 1	0	10	0	10
ADC Input 2 (VDC)	0	10	0	10
Cell Temperature (Deg C)	52	68	50	70
Cell Pressure (PSIA)	0	30	0	30

- 3. When you have completed the changes, click **OK** to save the changes or click **Cancel** to retain the original values.
- 4. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 5. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.2 Analog outputs

- 1. From the Analyzer Setup screen, click **Analog Trends**.
- 2. When the Analog Outputs screen appears (see Figure 6-7), select the desired parameters to change.

Figure 6-7: MW Analog Outputs Screen

			R	ange			Baseline	Leve
	Source		Low	High	Action on	AutoCal	Offset	on Ala
1	CARBON DIOXIDE HIGH	•	0	1000000	Track	C Hold	(4 ma)	20 ma
2	CARBON DIOXIDE LOW	•	0	10000	Track	C Hold	Г	20 ma
3	C3	•	0	1000	Track	C Hold	Г	20 ma
4	C4	-	0	1000000	Track	C Hold	v	20 ma
5	C5	•	0	1000000	Track	C Hold	V	20 ma
6	C6	•	0	1000000	Track	C Hold		20 ma
7	C7	•	0	1000000	Track	C Hold		20 ma
8	C8	•	0	1000000	Track	C Hold	v	20 ma
9	Not Used	•	0	1000000	🕫 Track	C Hold		20 ma
10	Not Used	•	0	1000000	🖸 Track	C Hold	•	20 ma
11	Not Used	•	0	1000000	🖲 Track	C Hold		20 ma
12	Not Used	•	0	1000000	🕫 Track	C Hold	~	20 ma

- 3. When you have completed the changes, click **OK** to save the changes or click **Cancel** to retain the original values.
- 4. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 5. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.3 Factory settings: analysis

- 1. From the Analyzer Setup screen, click **Analysis** in the Factory Settings box.
- 2. When the Analysis Factory Settings screen appears (see <u>Figure 6-8</u>), select the desired parameters to change.

Respor	nse Time:		Optics	€ I-B C U-V	@ 44 Re	Filter Wheel ference Filter	C 8-Filter W	/heel
EEPROM Wri	s to RAM ev ite is Disable	∕en if :d	-Valve T	ahles	-			
Concentration Display 2 Digits to Right of Decimal			Analysis		Benchmark Zero		Zero	
				Benchma	ark Span	Calibration (opan	
	Filter 1	2	MATRIX 3	COEFFICIENT	S 5	6	7	8
CARBON DIOXIDE	0	1	0	0	0	0	Ð	-0.163
CARBON DIOXIDE	0	1	0	0	0	0	0	0
C3	0	0	0	0	0	0	0	0
C4	0	0	0	0	0	0	0	0
C5	0	0	0	0	0	0	0	0
C6	0	0	0	0	0	0	0	0
C7	0	0	0	0	0	0	0	0
C8	0	0	0	0	0	0	0	0

Figure 6-8: MW Analysis Factory Settings Screen

- 3. When you have completed the changes, click **OK** to save the changes or click **Cancel** to retain the original values.
- 4. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 5. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.4 Factory settings: temperature and pressure

- 1. From the Analyzer Setup screen, click **Temp/Pressure** in the Factory Settings box.
- 2. When the Pressure & Temperature Control screen appears (see <u>Figure 6-9</u>), select the desired parameters to change.

Pressure/Calibration Co	nstants —		20
Enable Pressure Display		Full Scale Pressure: (psia)	30
		Calibration Pressure: (% of Full Scale)	100
	C	alibration Temperature:	50
Cell Temperature Contro	d	Casting Tempera	ture Control
🔽 Enable		🔽 Enable	
Integral (minutes)	}	- Integ (minut	gral 3 es)
Derivative ((minutes)	2	Deriva (minu	ative 2 tes)
Proportional Band (Celsius)		Proportional B (Celsi	land 1 us)

Figure 6-9: MW Pressure & Temperature Control Screen

- 3. When you have completed the changes, click **OK** to save the changes or click **Cancel** to retain the original values.
- 4. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 5. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.5 Factory settings: alarms

- 1. From the Analyzer Setup screen, click **Alarms** in the Factory Settings box.
- 2. When the Alarm Configuration screen appears (see <u>Figure 6-10</u>), select the desired parameters to change.

Figure 6-10: MW Alarm Configuration Screen

Condition	Track/Hold	Clearable by In	Output #1	Output #2	Outj
Alarm-USER 1 .	Hold until Clear	NO	DO 1	DO 0	DO
Alarm-USER 2	Hold until Clear	NO	DO 1	DO 0	DO
Alarm-USER 3	Hold until Clear	NO	DO 1	DO 0	DO
Alarm-USER 4	Hold until Clear	NO	DO 1	DO O	DO
Alarm-USER 5	Hold until Clear	NO	DO 1	DO 0	DO
Alarm-FUSE FAILURE.	. Hold until Clear	NO	DO 1	DO 0	DO
Alarm-SOURCE FAILU.	Hold until Clear	NO	DO 1	DO 0	DO 🔹
					>

- 3. When you have completed the changes, click **OK** to save the changes or click **Cancel** to retain the original values.
- 4. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 5. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.6 Factory settings: digital inputs

- 1. From the Analyzer Setup screen, click **Input Definitions** in the Factory Settings box.
- 2. When the Digital Inputs screen appears (see <u>Figure 6-11</u>), select the desired parameters to change.

Figure 6-11: MW Digital Inputs Screen

Digital Inputs		
User Named Alarms	Digital Input	Active State
USER 1	6	🖲 Low 🔿 High
USER 2	7	
USER 3	8	• Low C High
USER 4	9	
USER 5	10	• Low C High
FUSE FAILURE, SOURCE BOARD	1	C Low 💽 High
SOURCE FAILURE	2	C Low 💽 High
CABINET PURGE PRESSURE ALARM	5	C Low 🗭 High
AutoCal Start:	3	⊙ Low ⊂ High
Enable 🧮 Clear Alarms	0	C Low C High
OK	Cancel	

- 3. When you have completed the changes, click **OK** to save the changes or click **Cancel** to retain the original values.
- 4. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 5. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.7 Factory settings: digital outputs

- 1. From the Analyzer Setup screen, click **Output Definitions** in the Factory Settings box.
- 2. When the Digital Outputs screen appears (see <u>Figure 6-12</u>), select the desired parameters to change.

Figure 6-12: MW Digital Outputs Screen

In Calibratio Offlir	Digital Output on 3 ne 4	Active C OFF C OFF	State © ON © ON	
Digital Output	Condition on Res	:et	Condition on Alarm	^
Digital Output #1	OFF		ON	
Digital Output #2	OFF		ON	
Digital Output #3	OFF		ON	
Digital Output #4	OFF		ON	
Digital Output #5	OFF		ON	~
<				>

- 3. When you have completed the changes, click **OK** to save the changes or click **Cancel** to retain the original values.
- 4. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 5. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.8 Component setup

- 1. Click **Setup** at the menu bar.
- 2. Click Components.
- 3. Click the desired component.

4. When the Component Description screen appears (see <u>Figure 6-13</u>), change the desired parameter or click on the desired function box to access its screen.



		Component Description	on
✔ Enable	Name: C2 Range: R2		Display I Concentration I Units ● 2 C ppm
		MATRIX C Equation	Compensation
-Zero			Pressure Coefficients
Auto Z Concentrati (ppm	ero Enabled 🗔 on: 0	Auto Span Enabled Concentration: 1000000 (ppm)	Linearization Factors
ABS Factor (ABS)	0	Resp Factor: 10000 (ppm/ABS)	Limits

- 5. When you have completed the changes, click **OK** to save the changes or click **Cancel** to retain the original value.
- 6. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 7. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.9 Component limits

- 1. From the Component Description screen, click Limits.
- When the Component Limits screen appears (see <u>Figure 6-14</u>), select the desire parameters to change.

	Low		Hiah	Low		High
Concentration:	1		1000000	0		1000000
(ppm)	Expected		Tolerance	Expected		Tolerance
Benchmark Zero:	0	+/-	10000	0	+/-	10000
Benchmark Span:	1000000	+/-	10000	1000000	+/-	10000
Calibration Zero:	0	+/-	10000	0	+/-	10000
Calibration Span:	1000000	+/-	10000	1000000	+/-	10000

Figure 6-14: Components Limits

- 3. When you have completed the changes, click **OK** to save the changes or click **Cancel** to retain the original value.
- 4. If you click **OK**, the Tables Have Been Changed screen appears with the question: "Download Method to Multiwave?"
- 5. Click **Yes** to save the changes to the Multiwave or click **No** to retain the original values.

6.8.10 Subscriber setup

- 1. Click **Setup** at the menu bar.
- 2. Click Subscriber.
- 3. When the Subscriber List screen appears (see <u>Figure 6-15</u>), you can modify or delete a specific subscriber, or add a new subscriber.

Figure 6-15: Subscriber List

VistaNet I	Data Subscrib	er List		×
Туре	Timeout	Address	Description	
RD	2 Sec	192.168.0.199	(RD 199) Reporter at 199	1
		192.169.0.199	(RD 199) Reporter at 199	
RD	2 Sec	192.169.0.200	(RD 200) Reporter 200	
		192.169.0.200	(RD 200) Reporter 200	
				el.
•				Þ
	C	New	Modify Delete	
		Update Table	Cancel	

To modify a subscriber:

- 1. Highlight the desired subscriber.
- 2. Click Modify.
- 3. When the Subscriber Entry screen appears (see Figure 6-16), enter the changes.
- 4. Click **OK** to save the changes or click **Cancel** to retain the original values.
- 5. When you return to the Subscriber List screen, you can make other changes as needed.

Figure 6-16: Modify Subscriber Screen

Subscriber Entry	×
Target Application Type: HIU Timeout (Secs): 2	
Primary Address List:	
192.168.0.79	_
(hiu 181)vn2300 dm 181	
Secondary Address List:	
(hiu 181)vn2300 dm 181 0.77.0.181	
n/a (bit 101) as 2000 des 101	
OK Cancel	

To delete a subscriber:

- 1. Highlight the desired subscriber.
- 2. Click **Delete** to remove the selected subscriber from the list.
- 3. Click **Update Table** to delete the subscriber permanently or click **Cancel** to reinstate the subscriber.

To add a new subscriber:

- 1. Click **New** on the Subscriber List screen.
- 2. On the Subscriber Entry screen (see <u>Figure 6-17</u>), enter the desired information.
- 3. Click **OK**. The new subscriber will appear on the Subscriber list.

Figure 6-17: Adding a New Subscriber

VistaNet D	ata Subscribe	r List		×	
Туре	Timeout	Address	Description		
HIU	2 Sec	192.168.0.217 192.169.0.217			
HIU	2 Sec	192.168.0.167 192.169.0.167			
				Subscriber Entry	×
				Target Application Type: RD Timeout	(Secs): 2
				Primary	Address List:
				0.0.0	
				(RD#6)Report Device at 6	
				(RD#185jReport Device at 185 (RD#167)Report Device 167	
1				_ Secondary	Address List:
		New	Modify Delete		
				OK Cancel	

When you have completed all subscriber changes and entries, click **Update Table** to save the changes, or click **Cancel** to retain the original values.

7 PGC5000 RUI

NOTICE – Loss of data. The is a quick delete button. Clicking on any screen will immediately delete configuration or other settings. Be certain of the outcome desired before clicking.

7.1 Functional description

The RUI provides remote access across the network between a specific software application and the PGC5000.

Figure 7-1 illustrates the basic PGC5000 Master Controller display layout and functionality.

Figure 7-1: Basic Analyzer Screen Layout



- 1. Tabs Select a tab using the cursor to navigate between system operational and configuration displays.
- 2. Function Selector displays buttons and action icons relative to the selected tab
- 3. Subtab Display Area provides specific information relating to the tab or subtab selected
- 4. Subtabs -display additional information applicable for the main tab selected
- 5. System Information Bar displays current PGC5000 information
- 6. Zoom Control increases or decreases the scale of the display
- 7. Status Indicator indicates the status of the system
 - Green: normal
 - Yellow: warning
 - Red: alarm
 - Blue: information only

7.1.1 Action icons

Action icons represent action commands. <u>Figure 7-2</u> shows the action icons with a brief description of each one.

Figure 7-2: Action Icons

Icon	Meaning/Function	lcon	Meaning/Function
¥	Power Failure Recovery Setup (Schedule Tab)		Backup to USB Flash Drive (Setup Tab)
\sim	Maintenance Mode (Schedule Tab)		Restore Settings (Setup Tab)
	Schedule Abort (Schedule Tab)		Start (Schedule Tab)
	Schedule Stop – Clears queue (Schedule Tab)	$\left \times \right $	Delete/Remove
	Save – Replaces saved information after editing		Apply Response Factor (Setup Tab > Component)
	Save As – Saves as a new file		Pause – Pauses schedule execution
	Add New – Creates new	5	Routing Table Configuration
+	Add – Adds existing item from library		Line Up; Page Up
∇	Page Down; Line Down		Access Control List

7.1.2 Function/navigation buttons

Function/navigation buttons complete an action. <u>Figure 7-3</u> shows the function/navigation buttons with a brief description of each one.

Figure 7-3: Function/Navigation Buttons

lcon	Meaning/Function	Icon	Meaning/Function
\bigcirc	Add to a scope Status Tab)	\bigcirc	Start Schedule/Add to queue (Schedule Tab)
Ø	Accept		Abort – Cancel Entry
0	Reset – Resets single indicator	0	Reset – Reset all displayed indicators
×	Disconnect from remote Master Controller	ð	Connect to a remote Master Controller
۲	Go Back – Returns to the last input		Next
۲	Shift Down – Virtual Keyboard Control	Ð	Unblock a locked chromatogram
\otimes	Login to a Master Controller	0	Lock a chromatogra m

7.1.3 System information bar

The System Information Bar (see <u>Figure 7-4</u>), located along the bottom of the screen, gives a variety of information as noted in the following list.

Figure 7-4: System Information Bar



1. System Status Indicator – The color of the indicator reflects the overall health of the system. If the light is anything other than green, check the Status tab. The indicator colors signify the following:

- Green: Normal
- Yellow: Warning
- Red: Alarm
- Blue: Information Only

2. Network Connect Icon – allows connection to a Master Controller (from the RUI or from the Master Controller) to another Master Control by entry of an IP address.

- 3. Security Login options for user restriction enforcement
- 4. Information Area provides system messages
- 5. Date and Time shows date and time

7.2 Naming conventions

The following special characters may not be used in any software edit fields (e.g., component names, Master Controller name):

- . Period
- / Forward Slash
- \ Back Slash
- & Ampersand
- ~ Tilde
- " Double Quote (Quotation Mark)
- ' Single Quote (Apostrophe)
- , Comma
- ? Question Mark
- ! Exclamation Point
- @ At Symbol
- \$ Dollar Sign



IMPORTANT NOTE: When you are using the analyzer with a STAR server, all special characters other than "_" (underscore), "-" (minus or hyphen), or "+" (plus sign) will be converted to "_" (underscore) for storage in the STAR server.

7.3 Connecting to a PGC5000

To launch an RUI from the STAR Client:

- 1. Right click on the Treeview.
 - From the Function Selector, find the desired analyzer.
- 2. To select the analyzer, do one of the following:
 - Double click on the analyzer (the RUI screen will appear, connected to the configured Primary IP Address).
 - Right click on the analyzer and click Launch RUI.
 - Select the Launch RUI options and chose to connect to the configured Primary or configured Secondary IP Address.

For more information about PGC5000 RUI, see the Operating Instructions listed in the <u>Additional</u> <u>information</u> section.

8 STAR Gateway (OPC server)

The OPC Server application communicates with STAR devices to collect and distribute data that may be of interest to various OPC Clients. Paired with the appropriate clients, OPC can supply data to Data Historians, Control Systems, Monitor Displays, etc. Any OPC DA-2.0 Client application can access the data via OPC Tags from the OPC Server.

8.1 STAR Gateway installation

The OPC Server installs and runs as a Windows service. The operating system automatically starts and restarts the OPC Server. As a service, it runs continuously and unattended (in the background) and therefore requires the OPC Remote User Interface (OPCRUI) application to provide user monitoring and remote control functions. The OPC Installer installs both applications and their supporting files.

8.1.1 Installation prerequisites

The STAR Core must be installed before you install the STAR Gateway Applications. See section 2.4.

8.1.2 STAR Gateway Installer procedure

- 1. From the zip file or other media source, select **Setup.exe**.
- 2. Right click and select **Run as Administrator**.

The Installer welcome screen opens

3. At the installer Welcome screen, click **Next** to continue.

Figure 8-1: STAR Gateway Welcome screen

STAR Gateway V4 - InstallShield Wizard	×
Welcome to the InstallShield Wizard for STAR Gateway V4 It is strongly recommended that you exit all Windows programs before running this setup programs. Click Cancel to quit Setup and then dose any programs that you have running. Click Next to continue with the	
< Back Next > Cancel	

4. Accept the license agreement

Figure 8-2: License agreement

License Agreement	
Please read the following license agreement carefully.	
Please read the following license agreement. Use the scroll b the rest of this agreement.	par to view
This is a legal agreement between you (entity or individual) VistaNET software products. By installing, copying, or using you agree to be bound to the terms of this license agreement	and ABB, Inc. for the ABB, Inc. for the ABB, Inc. for the software products, ent.
SOFTWARE LICENSE	
SOFTWARE LICENSE The software products are protected by copyright laws and treaties. The software products are licensed, not sold. The applications, documentation, configuration files, utilities, ar ABB, Inc. grants you the license to use the software produ	d international copyright software products include ind technical information. icts to access a VistaNET
SOFTWARE LICENSE The software products are protected by copyright laws and treaties. The software products are licensed, not sold. The applications, documentation, configuration files, utilities, ar ABB, Inc. grants you the license to use the software produ Select Yes to accept the agreement. Select No to cancel the setup.	d international copyright software products include d technical information. icts to access a VistaNET
SOFTWARE LICENSE The software products are protected by copyright laws and treaties. The software products are licensed, not sold. The applications, documentation, configuration files, utilities, ar ABB, Inc. grants you the license to use the software produ Select Yes to accept the agreement. Select No to cancel the setup. tallShield	d international copyright software products include ind technical information ccts to access a VistaNET Print

5. Complete the customer information and click **Next.**

Figure 8-3: Customer Information

STAR Gateway V	4 - InstallShield Wizard			×
Customer Inf	ormation			
Please enter	your information.			
User Name:				
Windows Us	er			
Company Na	ne:			
Install this ap	plication for:			
	Anyone who us	ses this computer (all users)	
	Only for me (W	/indows User)		
nstallShield ——				

6. Select the installation folder. Click **Next.**

Figure	8-4:	Select	folder
--------	------	--------	--------

TAR Gateway V4 - InstallShield Wizard			
Choose Destination Location			
Select folder where setup will install files.			
Setup will install STAR Gateway V4 in the	following folder.		
To install to this folder, click Next. To inst another folder.	tall to a different fold	ler, click Brow	se and select
Destination Folder			
Destination Folder C: \ABB \Analytics \			Browse
Destination Folder C:\ABB\Analytics\ 1stallShield			Browse

7. Start copying files. Click **Next**.
Figure 8-5: Copy files

STAR Gateway V4 - InstallShield Wiz	zard		×
Start Copying Files			
Review settings before copying file	es.)	
Setup has enough information to s change any settings, click Back. I copying files.	start copying the program fil f you are satisfied with the s	es. If you want t settings, dick Nex	o review or t to begin
nstallShield			
	< Back	Next	Cancel

8. Click **Yes** to install the Modbus client.

Figure 8-6: Run Modbus client

STAR Gateway V4 - InstallShield Wizard				
Run the ABB Mod	bus Client Service on t	his machine?		
	Vac	No		

9. Select to reboot now.

Figure 8-7: Reboot now

STAR Gateway V4 - InstallShield	Wizard
	Maintenance Complete InstallShield Wizard has finished performing maintenance operations on STAR Gateway V4. (Yes, I want to restart my computer now. No, I will restart my computer later. Please make sure you have removed the floppy disk from the drive. Click Finish to exit STAR Gateway V4 setup.
	< Back Finish Cancel

8.2 Configuration

Before a remote device can communicate with the OPC Server, the device must have an entry in its subscriber list to transmit data to the address of the OPC Server. The PGC5000 will send data as an OPC type in regard to their subscriber list services. All Multiwave analyzers are configured to report to the OPC Server as HIU device types. Legacy analyzers are configured to report to the OPC Server as

HIU device types and/or SD device types. The installer appropriately registers your OPC service (ABB VistaNET Process Analyzer OPC Server) with Windows.

8.3 Operation

The OPC Server operates unattended and performs the following functions:

8.3.1 Subscriber list builder

OPC maintains a subscriber list. The subscriber list is used to poll devices (PGC5000 is not polled). When a device responds to the poll request, status information is returned. If the device does not respond, that information is collected as well. The subscriber list can be manipulated by the OPCRUI application. In addition, each device should have the OPC Service configured into its subscriber list as an HIU device type (HIU/SD for Multiwave, OPC for PGC5000).

As each device reports, OPC checks to see if that device already has an entry in its subscriber list. If no entry exists, OPC checks for address and naming information for this device, then adds all significant information to the subscriber list. This effectively self-subscribes any device that is reporting to OPC. The subscriber list is persisted for future invocations.

8.3.2 Polling

For Multiwave analyzers and legacy analyzers, OPC cycles through each device in the subscriber list at the configured poll interval (default is five seconds). If the device is configured with redundant addresses in OPC's subscriber list, OPC alternates poll requests between address1 and address2. Based on poll requests and poll responses, OPC updates IsConnected1 and IsConnected2 tags accordingly for each device.

Analytical devices respond to poll requests with an online/offline status for each detector. The tags associated with this device (e.g. MW*.Online) are updated from the poll response message. If there is no poll response on either configured channel for a Multiwave, all MW*.Online tags for that particular controller are set to "FALSE".

The PGC5000 does not respond to poll requests from the OPC Server. The OPC Server updates the IsConnected tags based on status updates from the PGC5000.

8.4 Tag names

Tag names used by the OPC represent data from various connected devices. There are four types of instrument controllers configured to operate with the OPC: PGC2000/3100, PGC5000, RVP, and MW. For any given controller, there may be multiple analysis streams and/or components. The following tag lists define the names used and the types of data available for each device.

Placeholders within tag name definitions allow for the compact expression of similar tag names that could occur multiple times within the namespace of the OPC Server.

- The "<" character signifies the beginning of a placeholder.</p>
- The ">" character signifies the ending of a placeholder.
- Text within the placeholder in bold signifies text common to all instances of a similar tag name.
- Text within the placeholder in italics signifies a number that may vary in instances of tag names.
- Text within the placeholder in normal format is a description of the text that will occur in the tag.
- The "." and "/" characters are not used in names communicated to the OPC Server.

8.5 Access rights

Access rights may either be in Read Only (RO) or Read Write (RW).

8.6 Origin of tag data

- AR: Tag is updated by analyzer-reported Analysis Report message (PGC5000 analyzers only)
- ASU: Tag is updated by RVP-reported ASU Results message (RVP only)
- Client: Tag is updated by a connected OPC Client
- CR: Tag is updated by analyzer-reported Calibration Report message (PGC5000 analyzers only)
- Events: Tag is updated by RVP-reported RVP Events message (RVP only)
- HIU: Tag is updated by analyzer-reported HIU message (Multiwave only)
- ISL: Tag is updated by analyzer-reported Instrument Status message (PGC5000 analyzers only)
- OPC: Tag is updated by the OPC Server based on a timer or internal event
- PR: Tag is updated by analyzer poll response to the OPC Server Status Poll Request
- RVP: Tag is updated by RVP-reported RVP Results message (RVP only)
- SC: Tag is updated by analyzer-reported Status Change message (Multiwave only)

- SHS: Tag is updated by analyzer-reported Sample Handling System message (PGC5000 analyzers only)
- SS: Tag is updated by analyzer-reported Stream Status message (PGC5000 analyzers only)
- VR: Tag is updated by analyzer-reported Validation Report message (PGC5000 analyzers only)

8.7 Server level tags

Table 8-1: Server level tags

Server Level OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
SetAnalyzerClock	RW	Date Time	DD/MM/YYYY HH:MM:SS	Client
Watchdog	RW	Boolean	True/False	Reset Client, Set within 2 seconds by OPC
TraceFlags	RW	Integer	Variable-must be in decimal	Client

Table 8-2: TraceFlag values

Trace Flag	Hex Value	Decimal	Definition
DEBUG_TCP_SERVER	0x0000001	1	Incoming and outgoing byte streams
DEBUG_TCP_CLIENT	0x0000002	2	TCP Connection Timeout
DEBUG_PGC5000_REPORT	0x00000004	4	Breakdown of Reports (Analysis, Calibration, and Maintenance) Not implemented
DEBUG_PGC5000_ANALYZER_STATUS	0×0000008	8	Breakdown of Instrument status message
DEBUG_PGC5000_STREAM_STATUS	0x0000010	16	Breakdown of Stream status message
DEBUG_PGC5000_SHS_STATUS	0x00000020	32	Breakdown of Sample Handling System status message
DEBUG_CLIENT_CALLS	0x00000040	64	All client calls thru the WtOPCSvr.dll
DEBUG_HIU_SERVER	0x0000080	128	Not Implemented yet
DEBUG_HIU_CLIENT	0x00000100	256	MW and CAC IsConnected issues
DEBUG_PGC2000	0x00000200	512	Not Implemented
DEBUG_MW	0x00000400	1,024	Not Implemented
DEBUG_CAC	0x00000800	2,048	Not Implemented
DEBUG_OPC_SERVER	0x00001000	4,096	Not Implemented
DEBUG_SHELL_TAG	0x00002000	8,192	Not Implemented
DEBUG_SD_SERVER	0x00004000	16,384	PGC2000 SD Message notification
DEBUG_MISC	0×00008000	32,768	Miscellaneous debug information writes once every 10 minutes. Includes: — Connection Count — Active Tag Count — Subscriber Tag Count — Device Count — PageFaultCount — PageFaultCount — PeakWorkingSetSize — WorkingSetSize — QuotaPeakPagedPoolUsage — QuotaPeakNonPagedPoolUsage — QuotaNonPagedPoolUsage — PagefileUsage — PeakPagefileUsage
DEBUG_SHUTDOWN	0x00010000	65,536	Not Implemented

8.8 PGC5000 tags

Naming Conventions for PGC5000 Tags:

- d A value between 1 and 12 representing the detector number.
- t A value between 1 and 2 representing the DTC number.
- m A value between 1 and 5 representing the DTC Zone number
- e A value between 1 and 10 representing the EPC Zone number.
- n A value between 1 and 4 representing the Sample Handling System (SHS) number.
- i A value between 1 and 12 representing the SHS Digital Valve Module (DVM) number.
- j A value between 1 and 1 representing the SHS Atmospheric Reference Vent DMT (ARV) number.
- k A value between 1 and 12 representing the SHS Fast Loop DMT (FLP) number.
- x A value between 1 and 12 representing the SHS Flow System (FlowSys) number.

Names listed in OPC tags are exact text matches to names in the PGC5000. If you change names in the PGC5000, the system will create new OPC tags to match the new PGC5000 names. The original OPC tags will not be forwarded to the new tags.

Table 8-3: PGC5000 OPC tags

PGC5000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<name>.ActionRequest</name>	RW	String		Client
<name>.Name</name>	RO	String		IS SS SHS AR CR VR
<name>.IsConnected1 (See Note 1)</name>	RO	Boolean	True/False	OPC
<name>.IsConnected2 (See Note 1)</name>	RO	Boolean	True/False	OPC
<name>.MasterScopeRollup</name>	RO	Long	0 = Normal - green 1 = Indicate - blue 2 = Warning - yellow 3 = Alarm - red 4 = Unknown - none	AS
<name>.RunScript</name>	RW	String	Valid Script Name	Client
<name>.WatchDogIn</name>	RW	Boolean	True/False	OPC
<name>.WatchDogOut</name>	RW	Boolean	True/False	OPC
<name>.ALARMS.Comm Failure Oven1</name>	RO	Boolean	True/False	IS
<name>.ALARMS.Comm Failure Oven2</name>	RO	Boolean	True/False	IS
<name>.ALARMS.Comm Failure Oven3</name>	RO	Boolean	True/False	IS
<name>.ALARMS.Comm Failure Oven4</name>	RO	Boolean	True/False	IS
<name>.ALARMS.Compile Error</name>	RO	Boolean	True/False	AR CR VR IS
<name>.ALARMS.Missing Report</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.Network Comm Failure</name>	RO	Boolean	True/False	IS
<name>.ALARMS.POST Failure</name>	RO	Boolean	True/False	IS
<name>.ALARMS.Power Fail</name>	RO	Boolean	True/False	IS
<name>.ALARMS.Purge Fail MC</name>	RO	Boolean	True/False	IS
<name>.ALARMS.Runtime Error</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.Runtime Exceeded</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.Script Not Found</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #1</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #2</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #3</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #4</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #5</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #6</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #7</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #8</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #9</name>	RO	Boolean	True/False	AR CR VR
<name>.ALARMS.User Error #10</name>	RO	Boolean	True/False	AR CR VR

PGC5000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<name>.<oven name="">.ALARMS.CAN Comm Failure</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.ALARMS.DET Failure</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.ALARMS.DTC Failure</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.ALARMS.EPC Failure</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.ALARMS.Extended I/O Fault</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.ALARMS.Purge Fail Oven</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.ALARMS.Software Error</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<detd>.Hardware Error</detd></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<detd>.Software Error</detd></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<detd>.<channel Name>.Autoignite Limit</channel </detd></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<detd>.<channel Name>.Autozero Conflict</channel </detd></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<detd>.<channel Name>.DETECTOR Fault</channel </detd></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<detd>.<channel Name>.Flame Out</channel </detd></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 1</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 2</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 3</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 4</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 5</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 6</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 7</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 8</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 9</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 10</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 11</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 12</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 13</dtct></oven></name>	RO	Boolean	True/False	IS
<pre><name>.<oven name="">.<dtct>.DTC Digital Input 14</dtct></oven></name></pre>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 15</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.DTC Digital Input 16</dtct></oven></name>	RO	Boolean	True/False	IS

PGC5000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<name>.<oven name="">.<dtct>.Online</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven Name>.<dtct>.ALARMS.DTC Zone 1</dtct></oven </name>	RO	Boolean	True/False	IS
<name>.<oven Name>.<dtct>.ALARMS.DTC Zone 2</dtct></oven </name>	RO	Boolean	True/False	IS
<name>.<oven Name>.<dtct>.ALARMS.DTC Zone 3</dtct></oven </name>	RO	Boolean	True/False	IS
<pre><name>.<oven name="">.<dtct>.ALARMS.HardwareError</dtct></oven></name></pre>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.ALARMS. SoftwareError</dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven Name>.<dtct>.ALARMS.T-RatingConflict</dtct></oven </name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.<zone m>.Setpoint</zone </dtct></oven></name>	RO	Float		IS
<name>.<oven name="">.<dtct>.<zone m>.Temperature</zone </dtct></oven></name>	RO	Float		IS
<name>.<oven name="">.<dtct>.<zone m>.ALARMS. High Temperature</zone </dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.<zone m>.ALARMS. Low Temperature</zone </dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.<zone m>.ALARMS. Out of Control</zone </dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.<zone m>.ALARMS. Ramp Out of Control</zone </dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.<dtct>.<zone m>.ALARMS. Temp Sensor Fault</zone </dtct></oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.Online</oven></name>	RO	Boolean	True/False	IS
<name>.<oven Name>.EPC.ALARMS.HardwareError</oven </name>	RO	Boolean	True/False	IS
<name>.<oven Name>.EPC.ALARMS.SoftwareError</oven </name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 1</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 2</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 3</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 4</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 5</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 6</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 7</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 8</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 9</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC.ALARMS.EPC Zone 10</oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC<zone e>.Current Pressure</zone </oven></name>	RO	Float		IS
<name>.<oven name="">.EPC<zone e>.Setpoint</zone </oven></name>	RO	Float		IS
<name>.<oven name="">.EPC<zone e>.ALARMS.High Pressure</zone </oven></name>	RO	Boolean	True/False	IS

PGC5000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<name>.<oven name="">.EPC<zone e>.ALARMS.Low Pressure</zone </oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC<zone e>.ALARMS.Out of Control</zone </oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC<zone e>.ALARMS.Prsr Sensor Fault</zone </oven></name>	RO	Boolean	True/False	IS
<name>.<oven name="">.EPC<zone e>.ALARMS. Ramp Out of Control</zone </oven></name>	RO	Boolean	True/False	IS
<name>.<shsn>.ALARMS.Node Loss</shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.ALARMS.Node Addition</shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.ALARMS.Address Conflict</shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<dvmi>.ALARMS.Invalid State</dvmi></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Vol Flow Low Low</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Vol Flow Low</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Vol Flow High</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Vol Flow High High</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Pressure Low Low</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Pressure Low</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Pressure High</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Pressure High High</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Temp Low Low</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Temp Low</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Temp High</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<arvj>.A LARMS.Temp High High</arvj></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Vol Flow Low Low</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Vol Flow Low</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Vol Flow High</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Vol Flow High High</flpk></flowsysx></shsn></name>				
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Pressure Low Low</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Pressure Low</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Pressure High</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Pressure High High</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Temp Low Low</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Temp Low</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS

PGC5000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
LARMS.Temp High				
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Temp High High</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Loop DP Low Low</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Loop DP Low</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Loop DP High</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<shsn>.<flowsysx>.<flpk>.A LARMS.Loop DP High High</flpk></flowsysx></shsn></name>	RO	Boolean	True/False	SHS
<name>.<schedule name="">.Idle (See Note 2)</schedule></name>	RO	Boolean	True/False	IS
<pre></pre>	RO	Boolean	True/False	IS
<name>.<schedule name="">.Maintenance</schedule></name>	RO	Boolean	True/False	IS
<name>.<schedule Name>.MaintenanceRequest (See Note 3)</schedule </name>	RW	Boolean	1 = Maintenance 2 = Normal	Client
<name>.<schedule name="">.Offline</schedule></name>	RO	Boolean	True/False	IS
<name>.<schedule name="">.StopRequest (See Note 4)</schedule></name>	RW	Boolean	True = Idle False = Rim	Client
<name>.<schedule name="">.Validating</schedule></name>	RO	Boolean	True/False	IS
<name>.<schedule name="">.<stream Name>.AnalysisValid</stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.CycleTime</stream </schedule></name>	RO	Short Integer	0 - 32767	AR CR VR
<name>.<schedule name="">.<stream Name>.LastAnalysisName</stream </schedule></name>	RO	String	Valid Analysis Name	AR CR VR
<name>.<schedule name="">.<stream Name>.LastReportType</stream </schedule></name>	RO	Integer	 0 - Unknown 1 - Standard 2 - Calibration 3 - Cali Norm 4 - Validation 5 - Alarm 6 - Standard Alarm 7 - Calibration Alarm 8 - Cal Norm Alarm 9 - Validation Alarm 	AR CR VR
<name>.<schedule name="">.<stream Name>.NewDataReady (See Note 5)</stream </schedule></name>	RW	Boolean	True/False	Client AR CR VR A
<name>.<schedule name="">.<stream Name>.Online</stream </schedule></name>	RO	Boolean	True/False	SS
<name>.<schedule name="">.<stream Name>.REQUEST AnalysisName (see Note 7)</stream </schedule></name>	RW	Boolean	True/False Value reset once requested Analysis name reports.	Client
<name>.<schedule name="">.<stream Name>.SampleTime</stream </schedule></name>	RO	Date Time		AR CR VR
<name>.<schedule name="">.<stream Name>.SoftwareVersion</stream </schedule></name>	RO	String	`xxx.xxx.xxx.xxx'	AR CR VR
<name>.<schedule name="">.<stream Name>.StreamValid</stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.ALARMS.Offline</stream </schedule></name>	RO	Boolean	True/False	SS AR
<name>.<schedule name="">.<stream Name>.ALARMS. Missing Component</stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.ALARMS. Unknown Component</stream </schedule></name>	RO	Boolean	True/False	AR CR VR

PGC5000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<name>.<schedule name="">.<stream Name>.ALARMS. Sample Flow Lost (See Note 6)</stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.ALARMS. Dig In Check TCF</stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.ALARMS. Prsr Check TCF</stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.ALARMS. Temp Check TCF</stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.ALARMS. Invalid Analysis</stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.ALARMS. Analysis Aborted</stream </schedule></name>				
<name>.<schedule name="">.<stream Name>.CHROMATOGRAMS.NewChromatRe ady (See Note 5)</stream </schedule></name>	RW	Boolean	True/False	Client AR CR VR
<name>.<schedule name="">.<stream Name>.CHROMATOGRAMS.<detector Name.></detector </stream </schedule></name>	RO	String		AR CR VR
<name>.<schedule name="">.<stream Name>.<component name="">.AmplitudeEOB</component></stream </schedule></name>	RO	Integer		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.AmplitudeEOI</componentname></stream </schedule></name>	RO	Integer		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.AmplitudeSOB</componentname></stream </schedule></name>	RO	Integer		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.AmplitudeSOI</componentname></stream </schedule></name>	RO	Integer		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.BaselineEnd</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.BaselineStart</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.Benchmark Deviation</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.Concentration</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.CrestAmplitud e</componentname></stream </schedule></name>	RO	Integer		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ExpectedConc entration</componentname></stream </schedule></name>	RO	Float		CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ExpectedRT</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.IntegrationEnd</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.IsValid</componentname></stream </schedule></name>	RO	Boolean	True/False	AR
<name>.<schedule name="">.<stream Name>.<componentname>.Name</componentname></stream </schedule></name>	RO	String		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.NegativeArea</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.OldResponseF actor</componentname></stream </schedule></name>	RO	Float		CR
<name>.<schedule name="">.<stream Name>.<componentname>.PeakFound</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream< td=""><td>RO</td><td>Float</td><td></td><td>AR CR VR</td></stream<></schedule></name>	RO	Float		AR CR VR

PGC5000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
Name>. <componentname>.PositiveArea</componentname>				
<name>.<schedule name="">.<stream Name>.<componentname>.RespnseFactor</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.RetentionTime</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.RFUpdated</componentname></stream </schedule></name>	RO	Boolean	True/False	CR
<name>.<schedule name="">.<stream Name>.<componentname>.TotalArea</componentname></stream </schedule></name>	RO	Float		AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.UnitsOfMeasur e</componentname></stream </schedule></name>	RO	String	Percent PPM PPB None	AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ALARMS.High Concentration</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ALARMS.High- High Conc</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ALARMS.Low Concentration</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ALARMS.Low- Low Conc</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ALARMS.Reten tion Time High</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ALARMS.Reten tion Time Low</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ALARMS.RF High Limit</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ALARMS.RF Low Limit</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR
<name>.<schedule name="">.<stream Name>.<componentname>.ALARMS.Valid ation</componentname></stream </schedule></name>	RO	Boolean	True/False	AR CR VR

Note 1 – The IsConnected1 and IsConnected2 tags are determined by the channel that is on and the configure IP Address in the STAR DMS.

Note 2 – Cannot be set via OPC Client. This is controlled by the StopRequest tag. Instrument Status resets the Idle tag when the schedule is finished.

Note 3 – Reflects last sent request; does not track Maintenance item.

- Note 4 Reflects last sent request; does not track Idle item.
- Note 5 Set by OPC. Reset by Client, by OPC with configured timer.
- Note 6 Currently not working.

Note 7 – The OPC Server can request multiple Ad-hoc analyses. The REQUEST_AnalysisName OPC tag must be set to a 1, then transitioned back to a 0 before requesting a second Ad-hoc request.

8.9 MW tags

Naming Conventions for MW2000 Tags:

- n a value between 1 and 255 representing a unique device number for a MW2000 on a STAR device network. Numbers over 99 represent simulated analyzers.
- c a value between 1 and 8 representing a unique component number.

Table 8-4: MW tags

MW2000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<mwn>.ActionRequest</mwn>	RW	String	Benchmark Zero Benchmark Span Benchmark Both Calibrate Zero Calibrate Span Calibrate Both Clear Warnings Clear Alarms Go Offline Go Online	Client
<mwn>.AnalyzerType</mwn>	RO	String	MW2000	OPC
<mwn>.CycleTime (in seconds)</mwn>	RO	Short Integer	0 - 65525	HIU
<mwn>.InBench</mwn>	RO	Boolean	True/False	PR SC HIU
<mwn>.InCal</mwn>	RO	Boolean	True/False	PR SC HIU
<mwn>.IsConnected1</mwn>	RO	Boolean	True/False	PR
<mwn>.IsConnected2</mwn>	RO	Boolean	True/False	PR
<mwn>.IsValid</mwn>	RO	Boolean	True/False	HIU
<mwn>.Name</mwn>	RO	String		HIU
<mwn>.NewDataReady (See Note 1)</mwn>	RW	Boolean	True/False	HIU May be reset OC or by OPC with configured timer
<mwn>.Online</mwn>	RO	Boolean	True/False	PR
<mwn>.SampleTime</mwn>	RO	Date/ Time	MM/DD/YYY HH:MM:SS AM/PM	HIU
<mwn>.TotalUnknown (See Note 2)</mwn>	RO	Float		HIU
<mwn>.ValidationCode</mwn>	RO	Unsigned Short Integer	0 – Valid 1 – Warning 2 - Invalid	HIU
<mwn>.CONTROL.Register1 (see Note 3)</mwn>	RW	Unsigned Short Integer		Client
<mwn>.CONTROL.Register2 (see Note 3)</mwn>	RW	Unsigned Short Integer		Client
<mwn>.CONTROL.Register3 (see Note 3)</mwn>	RW	Unsigned Short Integer	 Benchmark Zero Benchmark Span Benchmark Both Calibrate Zero Calibrate Span Calibrate Both Clear Warnings Clear Alarms Go Offline Go Online 	Client
<mwn>.CONTROL.Command</mwn>	RW	Boolean	True/False	Client
<mwn>.ALARMS.CastingTemperatur e</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.CellPressure</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.CellTemperature</mwn>	RO	Boolean	True/False	HIU

MW2000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<mwn>.ALARMS.CheckSum</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.ChopperSignal</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.CmptBenchmark</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.CmptCalibration</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.CmptConcentration</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.CommFailure</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.DetectorACVoltage</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.DetectorDCVoltage</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.DetectorVoltage</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.ExtInput#1 Voltage</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.ExtInpurt#2 Voltage</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.Initialization</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.MicroProcessor</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.Overrange</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.PowerSupply</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.PowerFail</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.TempControl</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.UserSensor#1</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.UserSensor#2</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.UserSensor#3</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.UserSensor#4</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.UserSensor#5</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.UserSensor#6</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.UserSensor#7</mwn>	RO	Boolean	True/False	HIU
<mwn>.ALARMS.UserSensor#8</mwn>	RO	Boolean	True/False	HIU
<mwn>.<cmptc>.Concentration</cmptc></mwn>	RO	Float		HIU
<mwn>.<cmptc>.Name</cmptc></mwn>	RO	String		HIU
<mwn>.<cmptc>.SlopeFactor</cmptc></mwn>	RO	Float		HIU
<mwn>.<cmptc>.ZeroOffset</cmptc></mwn>	RO	Float		HIU
<mwn>.<cmptc>.BenchmarkSpan</cmptc></mwn>	RW	Float		HIU
<mwn>.<cmptc>.BenchmarkZero</cmptc></mwn>	RO	Float		HIU

Note 1 – May be reset by the client or by OPC with configured timer.

Note 2 – The OPC Server creates this tag and sets it to 0. There is no information coming from the MW for unknown components, but older Host Links need this tag to be present.

Note 3 – To issue a command to an analytical device, the DCS must first fill the defined register set with the appropriate values (which represent the desired action) and then initiate the request by setting the command coil. The setting of the command coil interprets the contents of the command registers and transmits the request to the appropriate analytical device. To initiate a new command, the DCS must first clear the command coil by writing a zero. The transition of the command coil status from zero to one initiates the action.

8.10 RVP tags

Naming Conventions for RVP Tags

— n A value between 1 and 255 representing the 4th octet of the IPv4 address

RVP OPC Tag Name	Access Bights	Native Data Type	Valid Data	Origin
RVPn.Alarm Code	RO	Signed Char	0 = No Alarm 1 = Temperature - out of analysis range 2 = Temperature - out of instrument range 3 = Temperature - heater runaway 4 = Level sensor - zero limits exceeded 5 = Transducer - zero limits exceeded 6 = Overpressure - cycle Aborted 7 = Air purge pressure - out of specification 8 = Leaking cell - cell Pressure changing 9 = Level sensor - cell not filled 10 = Level sensor - cell filled too fast 11 = AirSat temperature - out of instrument range 12 = AirSat temperature - out of analysis range (high) 13 = AirSat temperature - out of analysis range (low) 14 = AirSat limit sensor: push failed 15 = AirSat sample fill failed 17 = AirSat level sensor dry	RVP Events
<rvpn>.AnalyzerType</rvpn>	RO	String	RVP	Client
<rvpn>.ASU Temperature</rvpn>	RO	Float		ASU Results
<rvpn>.Fill Time</rvpn>	RO	Float		RVP Results
<rvpn>.Level</rvpn>	RO	Short Integer	0 - 65525	RVP Results
<rvpn>.Name</rvpn>	RO	String	RVPn where n = 4th octet of IPv4 address	Client
<rvpn>.Purge Pressure</rvpn>	RO	Float		RVP Results
<rvpn>.RVP</rvpn>	RO	Float		RVP Results
<rvpn>.RVP Temperature</rvpn>	RO	Float		RVP Results
<rvpn>.Zero Pressure</rvpn>	RO	Float		RVP Results

Table 8-5: RVP tags

8.11 PGC2000/3100 tags

Naming Conventions for PGC2000 Tags:

- n A value between 1 and 255
- d A value between 1 and 2
- s A value between 1 and 32
- c A value between 1 and 32

Table 8-6: PGC2000/3100 tags

PGC2000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<gcc<i>n>.ActionRequest</gcc<i>	RW	String	Calibrate Method # Benchmark Method # Start Analysis Start Detector # Stop Analysis Stop Detector # Activate Stream # Deactivate Stream # Analyze Stream #	Client

PGC2000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
			Assign Method # to Stream # Clear Alarms Stop Analysis Now Stop Detector Now # Save Tables to E2 Change RealTime Basic State	
<gccn>.AnalyzerType (Hardcoded)</gccn>	RO	String	PGC2000	OPC
<gccn>.IsConnected1 (See Note 1)</gccn>	RO	Boolean	True/False	PR
<gccn>.IsConnected2 (See Note 1)</gccn>	RO	Boolean	True/False	PR
<gccn>.Name</gccn>	RO	String (10 bytes)	Valid PGC2000 Name	HIU
<gccn>.RefreshTime</gccn>	RO	Unsigned Short Integer	0 - 65535	HIU
<gccn>.CONTROL.Command</gccn>	RW	Boolean	True/False	Client
<gccn>.CONTROL.Register1 (see Note 3)</gccn>	RW	Unsigned Short Integer	Command Detector	Client
<gccn>.CONTROL.Register2 (see Note 3)</gccn>	RW	Unsigned Short Integer	<i>Commanded Stream/Method</i>	Client
<gccn>.CONTROL.Register3 (see Note 3)</gccn>	RW	Unsigned Short Integer	 Start Analysis Activate Stream Request Analysis Request Analysis Request Calibration Request Benchmark Assign Method to Stream Stop Analysis Bypass Stream Clear Alarms Stop Analysis NOW Save Tables to E2 Change RealTime Basic State 	Client
<gccn>.ALARMS.AutoZero</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.CarrierGas</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.CommFailure</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.CommonHardware</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.CommonSoftware</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.FlameOut</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.HighConc</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.HighOvenTemp</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.HydrogenPressure</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.Idle</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.LowConc</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.LowOvenTemp</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.LowStandard</gccn>	RO	Boolean	True/False	HIU

PGC2000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<gccn>.ALARMS.MissingCmpt</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.PowerFail</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.PressureBoard</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.PressureBoardZone1</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.PressureBoardZone2</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.PressureBoardZone3</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.PressureBoardZone4</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS PressureBoardZone5</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.PurgeAir</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.ResponseFactor</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.SampleFlow</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.TCF</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.TemperatureBoard</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.TemperatureBoardZone1</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.TemperatureBoardZone2</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.TemperatureBoardZone3</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.TemperatureBoardZone4</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.TemperatureBoardZone5</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.UnknownCmpt</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.UserSensor#1</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.UserSensor#2</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.UserSensor#3</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.UserSensor#4</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.UserSensor#5</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#1</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#2</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#3</gccn>	RO	Boolean	True/False	HIU
<pre><gccn>.ALARMS.VistaBasic#4</gccn></pre>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#5</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#6</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#7</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#8</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#9</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#10</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#11</gccn>	RO	Boolean	True/False	HIU
<pre><gccn>.ALARMS.VistaBasic#12</gccn></pre>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#13</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#14</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#15</gccn>	RO	Boolean	True/False	HIU
<gccn>.ALARMS.VistaBasic#16</gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetAutoZero</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetCarrierGas</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetCommFailure</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetCommonHard</detectord></gccn>	RO	Boolean	True/False	HIU
ware				
<gccn>.<detectord>.DetCommonSoftw</detectord></gccn>	RO	Boolean	True/False	HIU
are				
<gccn>.<detectord>.DetFlameOut</detectord></gccn>	RO	Boolean	True/False	HIU

PGC2000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<gccn>.<detectord>.DetHighConc</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetHighOvenTem p</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetHydrogenPress ure</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetIdle</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetLowConc</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetLowOvenTemp</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetLowStandard</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetMissingCmpt</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetPowerFail</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetPressureBoard</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetPressureBoard Zone1</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetPressureBoard Zone2</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetPressureBoard Zone3</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetPressureBoard Zone4</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetPressureBoard Zone5</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetPurgeAir</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.RefreshTime</detectord></gccn>	RO	Unsigned Short Integer	0 - 65535	HIU
<gccn>.<detectord>.DetResponseFacto r</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetSampleFlow</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetTCF</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetTemperatureB oard</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetTemperatureB oardZone1</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetTemperatureB oardZone2</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetTemperatureB oardZone3</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetTemperatureB oardZone4</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetTemperatureB oardZone5</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetUnknownCmpt</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetUserSensor#1</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetUserSensor#2</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetUserSensor#3</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetUserSensor#4</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetUserSensor#5</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#1</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#2</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#3</detectord></gccn>	RO	Boolean	True/False	HIU

PGC2000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<gccn>.<detectord>.DetVistaBasic#4</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#5</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#6</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#7</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#8</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#9</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#10</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#11</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#12</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#13</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#14</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#15</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.DetVistaBasic#16</detectord></gccn>	RO	Boolean	True/False	HIU
<gccn>.<detectord>.InBench</detectord></gccn>	RO	Boolean	True/False	PR SC
<gccn>.<detectord>.InCal</detectord></gccn>	RO	Boolean	True/False	PR SC
<gccn>.<detectord>.Online</detectord></gccn>	RO	Boolean	True/False	PR SC
<gccn>.<strms>.Active</strms></gccn>	RO	Boolean	True/False	PR SC HIU
<gccn>.<strms>.CycleTime</strms></gccn>	RO	Unsigned Short Integer	0 - 65535	SD HIU
<gccn>.<strms>.IsValid</strms></gccn>	RO	Boolean	True/False	HIU
<gccn>.<strms>.LastReportType</strms></gccn>	RO	String		HIU
<gccn>.<strms>.NewDataReady (See Note 2)</strms></gccn>	RW	Boolean	True/False	Client
<gccn>.<strms>.SampleTime</strms></gccn>	RO	Date Time		HIU
<gccn>.<strms>.TotalPeakArea</strms></gccn>	RO	Float		HIU
<gccn>.<strms>.TotalUnknown</strms></gccn>	RO	Float		HIU
<gccn>.<strms>.ValidationCode</strms></gccn>	RO	Integer	0 - Valid 1 – Warning 2 - Invalid	HIU
<gccn>.<strms>.<cmptc>.Concentratio</cmptc></strms></gccn>	RO	Float		SD HIU
<gccn>.<strms>.<cmptc>.Name (10 bytes)</cmptc></strms></gccn>	RO	String		HIU
<gccn>.<strms>.<cmptc>.PeakArea</cmptc></strms></gccn>	RO	Float		SD
<gccn>.<strms>.<cmptc>.PeakCrestAm plitude</cmptc></strms></gccn>	RO	Float		SD
<gccn>.<strms>.<cmptc>.PeakEndAmp litude</cmptc></strms></gccn>	RO	Float		SD
<gccn>.<strms>.<cmptc>.PeakEndTime</cmptc></strms></gccn>	RO	Float		SD
<gccn>.<strms>.<cmptc>.PeakHeight</cmptc></strms></gccn>	RO	Float		SD
<gccn>.<strms>.<cmptc>.PeakStartAm plitude</cmptc></strms></gccn>	RO	Float		SD
<gccn>.<strms>.<cmptc>.PeakStartTi me</cmptc></strms></gccn>	RO	Float		SD
<gccn>.<strms>.<cmptc>.ResponseFac tor</cmptc></strms></gccn>	RO	Float		SD
<gccn>.<strms>.<cmptc>.RetentionTim e</cmptc></strms></gccn>	RO	Float		SD

PGC2000 OPC Tag Name	Access Rights	Native Data Type	Valid Data	Origin
<gccn>.<strms>.<cmptc>.UncorrectedP eakArea</cmptc></strms></gccn>	RO	Float		SD

Note 1 – The IsConnected1 and IsConnected2 reflect the true connected status of the channel based on the configured IP Addresses. By default, the PGC2000 will attempt to send all communications to the OPC Server via channel 1. And likewise, the OPC Server will attempt to make all requests via channel 1. The IsConnected tags are set by the status of the Poll Response.

Note 2 – Set by OPC. May be reset by Client or OPC Timer.

Note 3 – To issue a command to an analytical device, the DCS must first fill the defined register set with the appropriate values (which represent the desired action) and then initiate the request by setting the command coil. The setting of the command coil interprets the contents of the command registers and transmits the request to the appropriate analytical device. To initiate a new command the DCS must first clear the command coil by writing a zero. The transition of the command coil status from zero to one initiates the action.

9 OPCRUI

9.1 Introduction

The OPCRUI application can be launched by clicking on the shortcut in Start->Programs->ABB STAR->OPCRUI or by launching it from the STAR Client.

Upon execution, the OPCRUI will attempt to connect to the OPC Server to load its device, router, and user tables. While the OPCRUI is disconnected, the title is as shown in <u>Figure 9-1</u>.

Figure 9-1: OPC Interface Window

₽ _c	VistaOPC RUI [192.168.0.93] – 🗆 🗙
Eil	le Server View Help
14	231:03 18-Mar-14 NIS Services Requested from [192.160.0.185]
14:	:31:03 18-Mar-14 Device Definition Table Updated
14:	:31:03 18-Mar-14 Router Table Updated
14:	:31:03 18-Mar-14 User/Password Table Updated
14:	:31:03 18-Mar-14 VistaOPC Configuration Data Upload Request
->1	11:48:14 18-Mar-14 [1] [HC Message]: NIS Services Requested from [192.168.0.185]
->1	11:48:16 18-Mar-14 [2] [HC Message]: OPC Client Generated RD Report Failed - TIMEOUT
->1	11:48:17 18-Mar-14 [3] [HC Message]: Device Definition Table Updated
->1	11:48:17 18-Mar-14 [4] [HC Message]: Router Table Updated
->1	11:48:17 18-Mar-14 [5] [HC Message]: User/Password Table Updated
L	

9.2 File

The File menu is active and has the following commands while there is no current connection.

- File -> Connect (Connect to an OPC Server)
 File -> Defresh Legel NIC (Defresh tables)
- File -> Refresh Local NIS (Refresh tables)

9.2.1 Connect

"File -> Connect" commands the application to connect to an OPC Server. The Remote OPC Service Address dialog box appears (see <u>Figure 9-2</u>). Select from the list of registered OPC servers or enter the OPC Services IP Address directly and click **OK**.

Figure 9-2: Remote OPC Service Address Window

Remote OPC Service Address				
Address 0.0.0.0 (opc) opc server on 212		Add	ress List:	_
ГОК		Cancel		

A good connection will produce a screen with about a 1 second pause to obtain the data.

Up to 30 of the most recent OPC Service events will display in the main window of the OPCRUI. The "->" indicator denotes that the message originated at the OPC Service. When a message appears without the indicator, this event originated local to the OPCRUI. For example, if the RUI cannot contact the intended OPC Service on a Connect request, an error message will be reported without the "->" indicator. All local error events will appear in this main window without the "->" indicator.

9.2.2 Refresh local NIS

"File -> Refresh Local NIS" commands the application to query the STAR Network Service for device, router, and user tables.

This is where the devices that show up in later dialog boxes originate. If the devices are not in the tables, you will not see those devices as choices when modifying the subscriber list. Use the refresh command if the tables have been updated.

9.3 Server

When you click on **Server** in the OPCRUI window, the Server drop-down menu appears, with the following selections:

- Server -> NewDataReady
- Server -> Poll Interval
- Server -> Refresh NIS
- Server -> Load Configuration
- Server -> Subscriber List
- Server -> Restore Tags

9.3.1 New data ready

When you select **NewDataReady** from the Server menu, the Analyzer New Data Ready window appears (Figure 9-3).

Figure 9-3: Analyzer New Data Ready Window

Analyzer New Data Ready	×
New Data Ready Reset By Client Hold Time 2 Seconds	
Cancel	

If the **New Data Ready Reset By Client** option is checked, the OPC Server does not reset the NewDataReady tag. The OPC client would be responsible for writing a reset value of "0" to the NewDataReady tag when it has completed processing the other tags. If the New Data Ready Reset By Client option is not checked, then the OPC Server will reset the NewDataReady tag after the Hold Time has expired.

9.3.2 Poll interval

When you select **Poll Interval** from the Server menu, the Polling Interval window appears (<u>Figure 9-4</u>).

Figure 9-4: Polling Interval Window

caner Folling Interval	
How much time should V between device/channe	/istaOPC wait el polls?
Frequency:	5 (Seconds)
Γικ	Cancel

From the dialog box, you can set the rate at which the OPC Server polls legacy devices to obtain their current status. This information is used to update the tags associated with IsConnected1, OnLine, and InCal. The PGC5000 is not polled because PGC5000 updates from a status update sent from the instrument to the OPC server.

9.3.3 Refresh NIS

When you select **Refresh NIS** from the Server menu, this refreshes three tables: Device Definition Table, User Password Table, and Router Table.

This is where the devices that show up in later dialog boxes originate. If the devices are not in the tables, you will not see those devices as choices when modifying the subscriber list. For example, only the OPC Servers that are listed in the Device Definition Table will appear in the Connect Dialog box. Use the refresh command if the tables have been updated.

9.3.4 Load configuration

When you select **Load Configuration** from the Server menu, the latest Subscriber List from the OPC Server appears. This is needed now because the OPC Service will automatically add subscribers to its list if a new device reports to it. Prior to editing the Subscriber List, select **Load Configuration** to ensure you have the current list of subscribers (see the next paragraph).

9.3.5 Subscriber list

When you select **Subscriber List** from the Server menu, the following list appears (Figure 9-5).

Figure 9-5: Subscriber List Screen

VistaNet Da	ata Subscriber	List		×
Туре	Timeout	Address	Description	
SIMDIS	2 Sec	0.3.0.10 0.4.0.10	(gcc10) gcc d3 r10 (gcc10) gcc d3 r10	-
CAC	2 Sec	0.1.0.51 0.2.0.51	(CAC51) CAC51 (CAC51) CAC51	
PGC500	II2 Sec	192.168.0.154		
				•
_			ŀ	1
		New	<u>M</u> odify <u>D</u> elete	
		Update Table	<u>C</u> ancel	



IMPORTANT NOTE: The PGC5000 in the subscriber is a version 3 PGC5000 Generation 1 analyzer. PGC5000 analyzers that are generation 4 and above are not contained in the subscriber list of the OPC Server.

Analytical devices (PGC2000/3100 and MW) listed in the OPC Server Subscriber List will be polled periodically to obtain status information. Tags representing an analyzer's online status and stream active status will be updated with the results of this polling. If an analyzer is not listed in the OPC Server Subscriber List, its status tags will not be refreshed. You may add new devices, modify, and/or delete existing entries. After changing the list, you must click **Update Table** to send the new configuration back to the OPC Service.



IMPORTANT NOTE: OPC automatically adds devices to the Subscriber List when a device reports to it. You must remove the OPC Server as a subscriber from the device's Subscriber List before manually deleting it from the RUI. Deleting entries from the RUI will work temporarily, but the next time the device reports it will be added back into the Subscriber List.

9.3.6 Restore tags

When you select **Restore Tags** from the Server menu, this will refresh the tag lists.

9.4 View

From the View menu, you can view Active Tags and Analyzer reports.

9.4.1 Active tags

When you select **Active Tags** from the View menu, the following window appears (Figure 9-6).

Figure 9-6: Active OPC Tags Window

Tag Name	Time	Value	Quality	10
GCC15.STRM1.CMPT1.Concentration	11:30:44	0.5687	Good	
GCC15.STRM1.SampleTime	11:30:47	unknown type:7	Good	
GCC15.CONTROL.Command	11:32:00	FALSE	Good	
GCC15.CONTROL.Register1	11:31:30	1	Good	
GCC15.CONTROL.Register2	11:31:36	2	Good	
GCC15.CONTROL.Register3	11:31:54	4	Good	
GCC15.ALARMS.AutoZero	11:30:55	FALSE	Good	
<				>
	OK I			

i

IMPORTANT NOTE: PGC5000 tags are not displayed and PGC5000 reports cannot be displayed.

This window displays a list of all active OPC tags currently subscribed to by attached client applications. The OPC Server only maintains tag values for devices that are active. The list is displayed in a window containing the associated tag name, timestamp, value, and quality flag for each active OPC tag.

9.4.2 Analyzer

When you select **Analyzer** from the View menu, the following window appears (Figure 9-7).

Figure 9-7: Show Most Recent Report Window



After you enter the desired analyzer number (MW and PGC2000 only), a dialog box appears containing the sample inject time, alarms, and associated component concentration values for the last report (see Figure 9-8). This report is static: the values will not automatically be refreshed if a new report is received while this command is active. The OPC Server maintains only one report per analyzer. The report shows the most recent analysis report for the selected analyzer.



	VistaNET GCC 93
Report Time: Stream: Total Peak Area:	14:56:22 03/18/14 1 Validity Code: 2 0 0
Alarms/Wan CommonSoftware CommFailure	nings Concentrations Cmpt 1: -25.00
	[OK]

10 Modbus

10.1 Modbus description

The Modbus interface consists of Modbus software installed in the STAR Gateway and the PGC5000. Modbus software translates data from the ABB analyzer system into the Modbus RTU or Modbus TCP format recognizable by standard DCS gateway devices. To use the serial connection with the PGC5000, connect through a Moxa MGATE MB3170 protocol converter.

The PGC5000, as part of its base design, supports a Modbus TCP interface (acting as a slave). Knowing that this interface is used to communicate with control systems, the servicing of this task is of high priority; therefore, care must be given when configuring the Modbus master interface to the PGC5000. Unreasonable and illogical configuration of the Modbus master can result in resource issues with the PGC5000 which can lead to unpredictable behavior. With version 3.0.3.14 of the PGC5000 software, the fastest response time of the Modbus will be set to 50 ms.

The following general guidelines are recommended when configuring the interface:

- When both networks are connected to one control system, use the secondary network only for failover. The Analyzer Network design is for all normal network traffic to be on the Primary network and to use the Secondary network only upon failure (inability to communicate) of the Primary network.
- Use the NewDataReady tags that indicate when report data has changed and read them, rather than polling for all report data continually. In a typical analyzer, data may not change for 6 to 10 minutes (cycle time of analysis). Polling for report data at a sub-second interval places an undue load on both the PGC5000 and the control system. Polling rates from Master connections should be one second or greater.
- Group transactions as much as possible, using function codes 1, 2, 3, 4 to perform reads of blocks of data. This is a more efficient use of each packet of data: a read of 2 registers 10 times (10 transactions, 40 bytes) is much more costly of CPU time, for both the control system and PGC5000, than a read of 20 registers once (1 transaction, still 40 bytes).
- Do not configure the Modbus master to poll for large blocks of empty data, as this is not an efficient use of transactions.

10.2 Protocol

It is beyond the scope of this manual to describe the Modbus protocol. Consult your DCS documentation for explanation of concepts and terminology that may be unfamiliar to you.

The Modbus protocol provides a set of rules which allows data to be passed between any two compatible devices. The protocol defines how the data is to be transferred, but it does not define what the contents of the data are. In order for the analyzer/DCS interface to operate, both the STAR Gateway (with Modbus software) and the DCS must be configured to define the functions to be

implemented and the corresponding data addresses to be used. The Modbus interface can provide analytical composition data from the analyzer system to the DCS as well as various status information, (such as data validity, analyzer availability, and new data availability). The Modbus interface can also accept limited analyzer control functions from the DCS (e.g. request for calibration, stream activation, etc.).

The STAR Gateway behaves as a slave device in a Modbus system using the Modbus RTU protocol. However, not all Modbus functions are supported. The functions supported by the STAR Gateway are:

- 01 Read coil status
- 02 Read discrete input status
- 03 Read holding registers
- 04 Read input registers
- 05 Force single coil
- 06 Preset single register
- 08 Loopback diagnostic test (limited)
- 15 Force multiple coils
- 16 Preset multiple registers

The STAR Gateway supports all standard Modbus data types: input and holding registers, discrete inputs, and coils. In addition, the STAR Gateway supports the IEEE floating point format that requires two registers. The DCS cannot write to the input registers and discrete inputs; only the STAR Gateway can write to these registers and inputs.

The STAR Gateway requires a DB9 connector at its end of the STAR Gateway/DCS communications cable for the RTU serial. The pins used and their functions are:

- 2 Receive Data
- 3 Transmit Data
- 5 Signal Ground

10.3 Client configurator

The STAR Gateway uses Client Configurator software to map analyzer points to Modbus coils and registers. The Configuration Client's main display is the Client Configurator. To display the Client Configurator, click **Classic Applications** in the tool bar, select **Client Configurator** and then **Launch**. The Client Configurator screen will appear (see Figure 10-1). From this screen and its subordinates, you can perform all the necessary Modbus configuration.

Figure 10-1: Client Configurator



Near the top of the Client Configurator is the Toolbar (Figure 10-2).

Figure 10-2: Toolbar

A	B C D E F	G H I J K L M N O P Q
Icon	Action	Description
Α	Start a new Configuration	Opens the selected configuration file
В	Addresses configuration	Assigns registers for the selected configuration file
С	Read Config	Reads configuration file into Client Configurator
D	Save Configuration	Saves the selected configuration file
E	View Configuration	Allows you to view the selected configuration file's contents
F	Download Configuration	Allows you to retrieve the current configuration file from the STAR Gateway
G	Add PGC5000	Adds one entry in the PGC5000 Configuration
Н	Add PGC2000/3100	Adds one entry in the PGC2000/3100 Configuration
I	Add MW	Adds one entry in the MW Configuration
J	Add CAC2000	Adds one entry in the CAC2000 Configuration
К	Add Advance Optima	Adds one entry in the AO Configuration
L	Add FTIR	Adds one entry in the FTIR Configuration
М	Add RVP	Adds one entry in the RVP Configuration
Ν	Enter Sales Order Information	Allows you to insert and review sales order information
0	Configure Communication	Allows you to verify or set the various communications
	Parameters	parameters
Р	Help on Configurator	Provides context-sensitive help for Configuration Client features
Q	About Client Configurator	Displays the Configuration Client's version information and allows you to view System Info

10.4 Configuration client auto mapping (Modbus)

Mapping in the PGC5000 is tied to the actual text names in the PGC5000, so the text in the mapping must exactly match the names in the PGC5000. To enter the names manually can be tedious so there is a feature to request the configuration from the PGC5000 automatically and to generate the map from the configuration.

To take advantage of this feature in the Configuration Client, perform the following steps:

1. Click the Add PGC5000 icon (see Figure 10-3).

APP Client Configuration		
Abb Client Configurator		~
📩 🗣 🖻 🖩 💧	📑 🖥 🖷 🖪 🖬 📱 SSS 🕿 💡	2
Protocol MODBUS 20V7 PGC5000 ModV 20V4 Persist	Packing Moderate (Every 1) Absolute (Every 1) Moderate (Every 50) Tight (Every 10) Loose (Every 100)	Warn on Duplicate Addresses Addresses start at 1 Let DCS Update Time Verbose Map
PGC2000 PGC2000 MW2000 CAC	PGC5000s 0 + OPC I	LocalHost ~

Figure 10-3: Add Client Configurator Dialog Box

2. Click **Yes** when asked if you want to upload XML files from the analyzer (see Figure 10-4).

Figure 10-4: Upload Files Dialog Box

ABB Client Configurator	
🔀 🕵 🖾 🖬 🔒 🛃	👔 📑 📓 🕫 🚍 🚠 🖷 📱 🚮
Protocol • MODBUS C 20V7 C PGC5000 • ModV C 20V4 C Persist	Packing C Absolute (Every 1) C Moderate (Every 50) Image: Tight (Every 10) C Loose (Every 100)
PGC5000 PGC2000 MW2000 CAC	2000 AO FTIR RVP
Petro-Instruments Oven#1 DET1 DTC1 Process Stream Process Stream Methane Ethane Calculater Utilidation	PGC5000s 1 OP Current PGC CientConfigurator X Name Petr Upload XML files from Analyzer? Yes No

3. When requested, enter the IP address of the PGC5000. In the example in Figure 10-5, the address is 10.1.0.75.

Figure 10-5: Enter IP Address Dialog Box

ABB Client Configurator	
🔀 🐢 🖬 🖩 🗎 📥	🛐 📑 📑 🚍 🔺 📲 ฐ 🗱 😭 🍞
Protocol MODBUS C 20V7 C PGC5000 ModV C 20V4 C Persist	Packing ✓ War C Absolute (Every 1) C Moderate (Every 50) I Tight (Every 10) C Loose (Every 100)
PGC5000 PGC2000 MW2000 CAC	2000 AO FTIR RVP
Petro-Instruments	PGC5000s 1 Current PGC 5000
DET1	Name Petro-Instruments Address 1
DTC1	Please enter the IP Address for the Analyzer Address 10.1.0.75 OK Cancel
	Current Sample System

4. Click **OK**. After a short pause, the mapping should appear for the PGC5000 in the Treeview on the left (see Figure 10-6).

Figure 10-6: Mapping Shown in Treeview



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IMPORTANT NOTE: If the analyzer does not appear in the list, you have the option to browse to a folder that contains the configuration.

10.5 Global configuration

With the ABB Client Configurator running, you can access the various global configuration items, which consist of Protocol, Packing, Sales Order Information, and Warn on Duplicate Addresses.

10.5.1 Communications

Click on the **Configure Communication Parameters** icon in the Client Configurator toolbar and the following dialog box appears (see <u>Figure 10-7</u>) to verify or set the various communications parameters.

ABB Client Configurator	-		-		
🔀 🗫 🖬 🗈 🔳 🗣 🏢	.	• 🛐 🕿 💡 🎖	5		
Protocol 0 MODBUS 20\7 PGC5000 ModV 20V4 Persist PGC5000 PGC2000 Mw2000 CAC200	Packing Absolute (Every 1) (③ Tight (Every 10) (0 A0 FTIR Configure Communic	Moderate (Every 50) Loose (Every 100)	 ✓ Warn of ✓ Addres Let DC 	on Duplicate Addres sses start at 1 S Update Time	sses
P	Baud Rate Serial Port Data Bits Stop Bits Parity Swap Words	9600 COMM1 8 1 ODD ENQ Before XMI Cancel	vion	LocalHost	×

Figure 10-7: Selecting communications parameters

In this dialog box, you can verify or set the following parameters:

- Baud Rate
- Serial Port
- Data Bits
- Stop Bits
- Parity

Verify all communications parameters with those listed in the data package supplied with the equipment. If you make any changes to the communications parameters, click **OK** to save the changes, or click **Cancel** to retain the original settings.

10.5.2 Protocol

This menu allows you to select the Modbus protocol. Select **MODBUS** in the Protocol area at the top left of the Client Configurator screen (see Figure 10-1).

10.5.3 Packing

Packing addresses the amount of space allocated between devices in the Modbus registers. If you expect there might be changes in the size of the configuration files, then a moderate or loose packing should be selected. If register space must be optimized, you can select tighter packing. To access packing, click on the type of packing desired in the Packing area at the top of the Client Configurator screen (see Figure 10-1).

10.5.4 Sales order information

This function allows you to insert and review the relevant sales order information. Click the **Enter Sales Order Information** icon in the Client Configurator toolbar and type the required information (see Figure 10-8). The sales order information is listed in the Data Package supplied with the equipment. Click **OK** to save the changes or click **Cancel** to retain the original settings.

Customer	4		
Gales Order			
	Tuesday , <mark>August</mark>	17, 2010	~

Figure 10-8: Sales Order Information

Warn on duplicate addresses 10.5.5

This function allows the software to warn you if the same Modbus device slave address has been assigned to more than one analytical instrument. To activate the function, check Warn on Duplicate Addresses at the top of the Client Configurator (see Figure 10-1). GCs and MWs are usually mapped to one Modbus slave address.

PGC5000 configuration 10.6

To verify or set a PGC5000's configuration, use the Client Configurator (see Figure 10-1).

To add or edit a PGC5000:

- Click on the PGC5000 tab. 1.
- 2. Review the list of devices shown in the PGC5000 tab.
- 3. In the GCs box to the right of the window, use the up/down control to add and delete GCs (see Figure 10-9).

Figure 10-9: Typical PGC5000 Configuration Dialog Box

	ABB Client Configurator - 🗆 🔜
🔀 🗣 🖬 🖬 💧	📭 🔡 🗃 🕾 🛆 💷 🖫 🗱 😭 🎇
Protocol MODBUS 20V7 PGC5000 ModV 20V4 Persist	Packing Absolute (Every 1) Moderate (Every 50) Tight (Every 10) Loose (Every 100) Loose (Every 100) Verbose Map
B	PGC5000s 1
DET1	Name gcc6 Address 1 🖨 Configure Alarms
EP FPC	Ovens 1 😓 Schedules 1 🔄 Sample Systems 0 🚖
e C cro	Name oven1 Configure Alarms
stream1	Detectors 1 + DTCs 1 + EPCs 1 +
c2	Current Schedule
hand \$1.5	Name schedule1 Streams 1 - Configure Alarms
	Current Stream
	Name stream1 Components 1 - Configure Alarms
	Name c2
	Current Sample System
	DVMs 0 🚔 How Systems 0 🖨
	Current How System
	FLPs 0

4. Enter the appropriate information in the fields that appear, then click **OK**.

10.6.1 PGC5000 properties

1. Select the desired PGC5000 listed in the PGC5000 tab.

- 2. If a Modbus address is required, enter the Address for the PGC5000 using the up/down control.
- 3. To configure alarms, click **Configure Alarms**.
- 4. When the Alarm Configuration dialog box appears (see <u>Figure 10-10</u>), check the box for each alarm to be configured, select the Register Type (Input Status or Coil Status) and, if necessary, enter a Register Number.

Figure 10-10: Typical Alarm Configuration Dialog Box

Active	Name	Location	Туре		1
✓	Master Scope Rollup	0	Input Status	V	
~	Power Fail	0	Input Status	~	
~	POST Failure	0	Input Status	~	
~	Network Comm Failure	0	Input Status	¥	
~	Purge Fail MC	0	Input Status	~	1
~	Comm Failure Oven1	0	Input Status	~	1
~	Comm Failure Oven2	0	Input Status	~	1
~	Comm Failure Oven3	0	Input Status	~	
~	Comm Failure Oven4	0	Input Status	~	١,

- 5. In the Detectors field of the PGC5000 Configuration dialog box, use the up/down control to enter the desired number of detectors (each GC must have at least one detector).
- 6. In the Streams field, use the up/down control to enter the desired number of streams.

10.6.2 Stream configuration

- 1. On the PGC5000 tab, double-click on the desired stream number. The Stream Configuration dialog box appears.
- 2. Enter the desired changes and then click **OK** to save the changes or click **Cancel** to retain the original settings.

10.6.3 Component configuration

- 1. On the PGC5000 tab, double-click on the desired component. The Component Configuration dialog box appears.
- 2. Enter the desired changes and then click **OK** to save the changes or click **Cancel** to retain the original settings.

10.6.4 Complete PGC5000 configuration

- 1. When you have completed all entries, click the **Address Configuration** icon on the Client Configurator toolbar to assign registers.
- 2. Click the Save Configuration icon on the toolbar.
- 3. When the Save Configuration File window appears, enter the desired file name and click **Save**.

10.7 PGC2000 configuration

To verify or set a PGC2000's configuration, use the Client Configurator (see Figure 10-1).

- To add or edit a PGC2000:
 - 1. Click the **PGC2000** tab.
 - 2. Review the list of devices shown.
 - 3. In the PGC2000s area to the right of the window, use the up/down control to add or delete GCs (see <u>Figure 10-11</u>). The Current PGC2000 Properties dialog box will be highlighted.

ABB Client Configurator			- 🗆 X	
📩 🔖 🖻 🗐 🐐	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- 🔢 🕿 🖓 🔀		
Protocol MODBUS 20V7 PGC5000 ModV 20V4 Persist	Packing Absolute (Every 1) O Mo Tight (Every 10) O Lo	Warn on Dup wderate (Every 50) Sose (Every 100) Let DCS Update Verbose Map	licate Addresses start at 1 ate Time	
PGC5000 PGC2000 MW2000 CA	C2000 AO FTIR RVP			
GCC1	PGC2000s 1	OPC Location	lost ~	
DETECTORI	Current PGC 2000 Properties			
	Modbus Address 1	Remote #	1	
Emme S CMPT 1	Detectors 1	GC Allias		
	Streams 1	Include Control Registers		
		Configure Control	Configure Alarms	
	Current Stream Properties			
	Components 1	Stream Alias		
	Stream Number 1	New Data Ready	0	
	Current Component Propertie	15		
	Name	Register		
	Туре	Alias		
	Number			

Figure 10-11: Typical PGC2000 Configuration Dialog Box

10.7.1 PGC2000 properties

- 1. Click on the desired GCC listed.
- 2. If a Modbus address is required, enter the Modbus Address for this PGC2000 using the up/down control.
- 3. Enter the network identification number for this PGC2000 in the Remote # field. This is how the GC is named.
- 4. If desired, enter the plant's identification for the PGC2000 in the GC Alias field.
- 5. To configure alarms, click **Configure Alarms**.
- 6. When the Alarm Configuration dialog window appears (see <u>Figure 10-10</u>), check each alarm to be configured, select the Register Type (Input Status or Coil Status) and, if necessary, enter a Register Number.
- 7. In the Detectors field of the Current PGC2000 Properties area, use the up/down control to enter the desired number of detectors (each GC must have at least one detector).
- 8. In the Streams field, use the up/down control to enter the desired number of streams.

10.7.2 Stream properties

- 1. In the GC tab, double-click on the desired stream number.
- 2. Enter the appropriate information in the fields in the Current Stream Properties area.
- 3. Click **OK** to save the changes or click **Cancel** to retain the original settings.

10.7.3 Component properties

- 1. In the GC tab, double-click on the desired component. The Component Configuration dialog box will be highlighted.
- 2. Enter the appropriate information in the fields in the Current Component Properties area.

3. Click **OK** to save the changes or click **Cancel** to retain the original settings.

10.7.4 Complete PGC2000 configuration

- 1. When you have completed all entries, click the **Address Configuration** icon on the Client Configurator toolbar to assign registers.
- 2. Click the **Save Configuration** icon on the Toolbar.
- 3. When the Save Configuration File window appears, enter the desired file name and click **Save**.

10.8 Multiwave configuration

To verify or set a Multiwave's (MW) configuration, use the Client Configurator (see Figure 10-1).

To add or edit a Multiwave:

- 1. Click the **MW2000** tab.
- 2. Review the list of devices shown in the MW tab.
- 3. In the MW2000s field to the right of the window, use the up/down control to add or delete MWs (see <u>Figure 10-12</u>). The MW Properties dialog box will be highlighted.

Figure 10-12: Typical MW Configuration Dialog Box

impose PGC5000 MODBUS 20V7 PGC5000 ModV 20V4 Persist	Packing Absolute (Tight (Even	Every 1) O Moderate (Every y 10) O Loose (Every 10	Warn or (y 50) Address (00) Let DCS Verbose	Duplicate Addresses ses start at 1 Update Time Map
GC5000 PGC2000 MW2000 C	AC2000 AO FT MW 2000s Current MW Pr Modbus Addre Components New Data Reg	R RVP 1 OPC operties ss 1 ister	C Location Loc Remote # MW Alias [Inclu	alHost v
	C	Configure Control		Configure Alarms
	Current Compo	onent Properties		

10.8.1 MW properties

- 1. Click on the desired MW listed in the MW tab.
- 2. If a Modbus address is required, enter the Modbus Address for this MW using the up/down control.
- 3. Enter the network identification number for this MW in the Network ID box. This is how the MW is named.
- 4. If desired, enter the plant's identification for this MW in the MW Alias field.
- 5. To configure alarms, click **Configure Alarms**.

- 6. When the Alarm Configuration window appears (see <u>Figure 10-10</u>), check each alarm to be configured, select Register Type (Input Status or Coil Status) and, if necessary, enter a Register Number.
- 7. In the Components field, use the up/down control to enter the desired number of components (each stream must have at least one component).

10.8.2 Component properties

- 1. On the MW tab, click on the desired component. The Component Properties dialog box will be highlighted.
- 2. Enter the appropriate information in the fields in the Component Properties dialog box

10.8.3 Complete MW configuration

- 1. When you have completed all entries, click on the **Address Configuration** icon on the Client Configurator toolbar to assign registers.
- 2. Click the **Save Configuration** icon on the toolbar.
- 3. When the Save Configuration File window appears, enter the desired file name and click **Save**.

10.9 RVP configuration

To verify or set an RVP's configuration, use the Client Configurator (see Figure 10-1).

To add or edit an RVP:

- 1. Click on the **RVP** tab.
- 2. Review the list of devices shown in the RVP tab.
- 3. In the RVP field to the right of the window, use the up/down control to add or delete RVPs (see <u>Figure 10-13</u>). The Current RVP Properties dialog box will be highlighted.

Figure 10-13: Typical RVP Configuration Dialog Box

ABB Client Configurator		– 🗆 ×
📩 🗣 🖃 🗐 💧	📑 🖥 🛯 🚍 👗 🖬 📱 🚮 😭 😭	8
Protocol MODBUS 20V7 PGC5000 ModV 20V4 Persist	Packing O Absolute (Every 1) O Moderate (Every 50) Image: Tight (Every 10) O Loose (Every 100)	Warn on Duplicate Addresses Addresses start at 1 Let DCS Update Time Verbose Map
PGC2000 PGC2000 MW2000 CAC	RVPs 1 = OPC Current RVP Properties	Location LocalHost ~
	Modbus Address 1	Remote Number 1

- 4. Click on the desired RVP listed in the RVP tab.
- 5. If a Modbus address is required, enter the Modbus Address for this RVP using the up/down control.

- 6. If needed, enter the OPC Location for this RVP using the up/down control.
- 7. If needed, enter the Remote Number for this RVP in the Remote Number field.
- 8. When you have completed all entries, click the **Address Configuration** icon on the Client Configurator toolbar to assign registers.
- 9. Click the Save Configuration icon on the Toolbar.
- 10. When the Save Configuration File window appears, enter the desired file name and click **Save**.

11 Legacy products

Although the products covered in this section have been discontinued, many of them are installed in existing equipment.

11.1 GCC RUI (PGC2000/3100)

To access an RUI, choose the desired RUI icon on the desktop or launch from the STAR Client. The title bar identifies the specific RUI you have accessed. To bring up the GCC-RUI window, choose Connect in the File menu to access the Remote GCC Address window (see Figure 11-1).

Figure 11-1: Remote GCC Address Window

Remote GCC Address	
Gas Chromatograph Controllers	Address List
0.0.00	
(AT-21001) 249862-210 () 249862-250 (AT-18001) 249862-190 () 249862-240 (AT-13802) 249862-060 (AT-13802) 249862-060 (AT-14202) 249862-270 (AT-19031) 256425-170	Cancel

Choose the desired GCC and select an address from the Address List. Then click **OK**. The RUI presents the Status Display screen (see Figure 11-2).

Figure 11-2: GCC Status Display Screen



The Status pane, Alarm pane, and Report pane display.

The SQC pane can display up to eight sets of statistical data. To view a particular data set, click **Select**, then choose the desired data set from the menu.

The items in the Menu Bar have submenus to help divide the various tasks to be done. Functions labeled as analyzer functions perform in the same manner as they do at the analyzer. Use the analyzer manual to assist you in performing these functions. The menu items and subitems are as follows:

File Edit Save Tbls Methods (analyzer function) Load Tbis Streams (analyzer function) Print Tbls Tables (analyzer function) Hardware (analyzer function) Print Report Disconnect VistaBASIC (analyzer function) View Control Clear Alarms (analyzer function) Application Data Start/Stop analysis (analyzer function) Chromatogram Status Bar Start RT Basic (analyzer function) Toolbar Request Stream (analyzer function) **RUI** Colors Request Stream (analyzer function) **RUI** Fonts Request Calibration (analyzer function) Report Type (analyzer function) Request Benchmark (analyzer function) Test

Configuration (analyzer function) Chroma Brd Test (analyzer function) ROM Chksum Test (analyzer function) Output (analyzer function)

The functions not identified as analyzer functions perform the following tasks:

- File menu items
 - Save Tbls: Saves the GCC-RUI's current tables to the selected location
 - Load Tbls: Loads the tables into the GCC-RUI
 - Print Tbls: Prints the GCC-RUI's current tables
 - Print Report: Prints the selected report
 - Disconnect: Disconnects the RUI from the selected analyzer
- View menu items
 - Application Data: For future expansion
 - Chromatogram: Allows you to view and save chromatograms from the analyzer
 - Status Bar: Displays a windows status bar
 - Toolbar: Displays a windows toolbar
 - RUI Colors: Lets you select the desired colors for the RUI window separately for each pane
 - RUI Fonts: Lets you select the desired fonts for the RUI window separately for each pane

11.2 Router assembly

The VistaNET Router Assembly is used when some or all analytical devices connected to VistaNET utilize the VistaNET Communication PCBs (and in low-speed systems, the VistaNET Interconnect PCB). If all analytical devices use an Ethernet PCB, the Router Assembly is not necessary.

The VistaNET Router Assembly connects VistaNET applications to an analytical network. The only user function for the VN2300D Router Assembly is a web interface. The VN2300DM Modbus-enabled Router also has the HIU-RUI.

11.3 Report viewer

The Report Viewer allows you to view or print various PGC5000 reports and chromatograms (for PGC5000 prior to version 4). To access the Report Viewer, click **Run Viewer** at the top left of any Remote Client (RUI) screen.

11.4 VistaSTORAGE



IMPORTANT NOTE: VistaSTORAGE can only store results from single detector, simulated distillation, and simultaneous dual detector GCCs.

VistaSTORAGE archives analytical results. It stores the analytical results from each analyzer in a circular database that can support seven days of data. When the file has accumulated seven days of data, VistaSTORAGE discards the oldest day's results, replacing them with the current day's results. In this manner, you can always access the most recent week's results.

VistaSTORAGE automatically creates a subdirectory in the ABB directory named Databases and stores all the databases used by VistaSTORAGE (files with ".mdb" extension) in this subdirectory.

VistaSTORAGE has two types of databases: master (one database for the system) and instrument (one database for each analytical device). VistaSTORAGE creates the instrument databases as it receives data from each analytical device. When VistaSTORAGE creates an instrument database, the name of the instrument database file will appear on the VistaSTORAGE window.

When you click on the VistaSTORAGE icon or Taskbar button, the VistaSTORAGE window appears (see <u>Figure 11-3</u>). This window is read-only.

Figure 11-3: VistaSTORAGE Window

<mark>é VistaSTORAGE</mark> Elle <u>H</u> elp			د ات ـــ
VistaREPORTER: 130.1 Databases In: C:\Pr	110.74.238 rogram Files\ABB\V	istaNET 2.0\Databases\	
Analyzer	Analyzer	Database	Date of Oldest Report Table
GC13 IN PAT LAB DD GC 34 IN PAT LAB	0.77.0.13	GC077078013.mdb DD077078011.mdb	Monday, December 06, 2004 Monday, December 06, 2004
DE GC 34 IN PAT LAB	0.77.0.13	DD077078011.mdb	Monday, December 06, 2004 Monday, December 06, 2004
đ			aaadaa aa aa aa aa aa aa aa aa ah ah ah ah a

The first two letters of each Database Name refer to the device type:

- GC single detector GCC
- DD simultaneous dual detector GCC
- SD simulated distillation GCC.



NOTICE – Loss of data risk. The remainder of the name consists of the device's VistaNET address.

Do not exit the VistaSTORAGE window, as this action will cause VistaSTORAGE to stop collecting data.

When you have finished looking at the VistaSTORAGE information, minimize the window.

In addition to storing the analysis results, VistaSTORAGE performs analyzer availability calculations. You can view the results of these calculations, along with the archived analytical results, with VistaSAM.

11.5 VistaSAM



IMPORTANT NOTE: Proper operation of VistaSAM requires you to set the Window date function to "English (United States)." You can set or verify the date format by clicking on Start/Settings/Control Panel/Regional Settings.

VistaSAM generates text and graphical reports from data collected by VistaSTORAGE.

VistaSAM requires you to select a master base and database path, followed by opening the instrument database. When you open the instrument database, a list of analytical device tags will appear on the screen. From this list you can select the analytical device to generate reports for.

To start VistaSAM:

- 1. Click File.
- 2. Click **Open Master Database** (see Figure 11-4).

Figure 11-4: Open Master Database Screen

🕅 VistaSAM				
File Edit View Help				
Open Master Database				
Open Instrument Database				
Exit				
ABB Process Analytics, Inc. CAPS	INUM	INS	10.59 AM	7/11/2005

3. Locate the folder for the desired instrument, choose databases, and then click **OK** (see Figure 11-5).



Figure 11-5: Set Database Path Window

- 4. Verify that the Selected Path shows the desired database.
- 5. When the device list appears, click on the device for which you want to generate reports (see <u>Figure 11-6</u>).
Figure 11-6: VistaSAM Device Screen

🕅 VistaSAM				_O×
Eile Edit View Help				
ās ekst 7				
Select Device Tag Name IGC13 IN PAT LAB DD GC 34 IN PAT LAB				
ABB Process Analytics, Inc. CAPS	NUM	JINS	11:01 AM	7/11/2005 🥢

- 6. Click on the **View** menu.
- 7. From the report type selection list, click the desired type of report (see Figure 11-7):
 - Display reports
 - Trend charts
 - SQC charts
 - Analyzer availability charts and reports

Figure 11-7: Report Selection Screen

Vista5AM					_O×
File Edit View Help					
Display Repo	irts				
Select D SOC Charts	·				
GCIGIN Availiability D	ata				
DD GC					
	1	Concernance of the second seco	1		
ABB Process Analytics, Inc.	CAPS	INUM	JINS	11:03 AM	7/11/2005

The next few paragraphs discuss these report types in detail.

11.5.1 Display reports

You can view analysis, benchmark, and calibration reports for any given instrument.

After you select the instrument from the list:

- 1. Click View.
- 2. Click **Display Reports** and the Report Type selection dialog box will appear (see Figure 11-8).

Figure 11-8: Report Type Screen

Report Type		
	Standards	
	Regular Analysis	
	Regular Analysis	

Click the Standards button to view calibration and benchmark reports. Click the Regular Analysis button to view all stream reports.

3. Click on the Standards or Regular Analysis button and the appropriate Report table will appear (Figure 11-9 shows the Regular Analysis table).

Figure 11-9: Regular Analysis Table Screen

jie <u>⊂</u> lose						
Method:	•		Inject Tim	e: 11/17/2	2003 10:10:	50 AM 👻
Alarms :	_					
Analyzer hardware Raw Data Report I Name	e alarm for Standard: Retention Time	s: Response Factor	Uncorrected Peak Hgt	Uncorrected Peak Area	Corrected Peak Hgt	Corrected 🔨 Peak Area
3,3 DMC5	528.41	0.58835 32	11.40	7300.73	9.34	3973.85
3M HEXANE	758.56	2.38816 32	30.60	27932.84	28.30	23886.60
ONTRACT	808 88	3 73186 32	42 09	42528 59	39.91	37350 40 ≚

This table allows you to select any analysis report from the previously selected analytical device for viewing or printing. From the drop-down lists in this table, select the desired report by stream (for regular analysis), method (for standards), and sample inject time and date. The data presented in the report consists of:

- Component name
- Retention time
- Concentration/response factor
- Uncorrected peak height
- Uncorrected peak area
- Corrected peak height
- Corrected peak area
- Slope sensitivity
- Peak width
- Start time
- Start amplitude
- End time
- End amplitude
 - 4. To eliminate some of this data from the current report, click File.
 - 5. Click **Options Reports** and the Report Options dialog box will appear (see Figure 11-10).

Figure 11-10: Options Report Window

Report Options	
Columns to include i	in Reports :
Component Name	🔽 Corrected Pk Area
🔽 Retention Time	🔽 Slope Sensitivity
🔽 Concentration	🔽 Peak Width
🔽 Start Flags	🔽 Start Time
🔽 End Flags	🔽 Start Aamp
🔽 Uncorrected Pk Hgt	🔽 End Time
🔽 Uncorrected Pk Area	🔽 End Amp
🔽 Corrected Pk Hgt	
	OK Cancel

6. Clear any type of data not desired in the current report.

11.5.2 Trend charts: introduction

To view the analytical data in graphical format, click **Trend Charts** in the View menu. There are four types of trend charts: normal (Trend chart), statistical (SQC), split Y axes, and X vs. Y charts. You can select the desired chart from the Edit menu.

11.5.3 Trend charts: normal trend chart

The normal trend chart shows by default (see Figure 11-11).

Figure 11-11: Normal Trend Chart



To change the chart attributes, right-click. From the top-level menu, select submenu items by placing the mouse cursor on a menu item that has a right arrow. Figure 11-12 shows the available menu items.



Figure 11-12: Menu Structure (All Charts)

The Chart Element Selection dialog box will appear, allowing you to select the desired chart options (see Figure 11-13).



Figure 11-13: Chart Element Selection Dialog Box

You can trend multiple attributes for the same component by checking them in the Select items to chart group or you can chart the same property for multiple components by clicking the component name in the Components Available list. To remove a component from the Current Components Selection list, click on the component name and then click **Remove Component**.



IMPORTANT NOTE: You cannot trend multiple attributes from multiple components in a normal trend chart.

The stream selected in the Select Stream list, and time period selected from Start Time to End Time (on the Normal Trend Chart) set the limits of the data shown on the trend chart. To display changes to any of these selections, click **Redraw**.

VistaSAM automatically determines a range for the Y-axis. However, you can change the maximum and minimum Y-axis values by selecting the Y-Axis Control option at the Edit menu. The Y AXIS Settings dialog box will then appear (see <u>Figure 11-14</u>), from which you can change the Y-axis settings.

Y AXIS Settings			
21.7003488540649	Max Y Axis		ОК
21.5452375411987	Min Y Axis		Cancel
Full Scale Measurmen Range	ţ	Set Percentage for S	cale Around Midpoint
C Set Midpoint at Full Scale Measurement range		Set to +- 1%	Set to +- 5%
C Set Midpoint at Mean Value		Set to +- 2%	Set to +- 10%
C Set Scale to +- 3 Standard Deviations		Mean 21.62295	Standard Deviation
Calculate Cpk		21.70565	Upper Spec Limit
Cpk		21.54024	Lower Spec Limit
0			

Figure 11-14: Y Axis Settings Dialog Box

11.5.4 Trend charts: statistical chart

The statistical chart represents another variation of the trend chart (see Figure 11-15). You can access this by clicking **SQC** from the Edit menu. The statistical chart is simply a normal trend chart to which lines representing the mean, ± 2 standard deviations, and ± 3 standard deviations have been added. VistaSAM automatically calculates the statistical values on the currently displayed data.

Figure 11-15: Statistical Chart



11.5.5 Trend charts: split y axes chart

When trending multiple attributes or components, they may not fit in a single range with adequate graphic visibility. For example, if one attribute ranged in value from 0 to 1 and another ranged from 10000 to 10010, the range for both values would range between 0 and 10010. However, since the range for each attribute is so small, you would not have enough resolution to discern changes in each attribute. For this situation VistaSAM provides the split Y Axes chart (see Figure 11-16).

Figure 11-16: Split Y Axes Chart



To access this chart, select the **Split Y Axes** option from the Edit menu. This chart will display each attribute (up to six attributes) with a separate auto-ranged y axis.

11.5.6 Trend charts: x vs y chart

To create the XVSY (X vs. Y) chart, click **XVSY** from the Edit menu. The X vs. Y Chart Element dialog box will prompt you for the needed information (see Figure 11-17).

Figure 11-17: X vs Y Settings Dialog Box

Select items to chart	Components Available	Set X Avie
🔽 Measured Value	Unknown	
Value Deviation	F-32	Current X Axis Setting
🔲 Start Time	F-12 F-22	Item
🔲 Start Amplitude	?????	Component
Retention Time	Current Component Selections	
Crest Amplitude		
🔲 End Time	F-23	
🔽 End Amplitude		
🗖 Area		Set Y Axis
Corrected Area		Current Y Axis Setting
Corrected Height		Item
	Remove Component	Component
[
APPLY AND CHART		

In this dialog box, you can select the Set X Axis and Set Y Axis buttons. When you make a selection, VistaSAM will use the combination of attribute and component active at the time for that particular axis in the chart (see Figure 11-18).



11.5.7 SQC charts

SQC charts look like statistical trend charts except SQC charts use only calibration and benchmark data (see <u>Figure 11-19</u>). To view these charts, select **SQC Charts** from the View menu. As in the trend charts, you may select the stream (only benchmark and calibration streams are now available) and start/end times. However, you may also select the component from the Component to View list. Right-click to bring up the trend chart Menu structure.

Figure 11-19: SQC Chart

4.415	5				<u> </u>		
			Benchn	nark SQC Data ASH alue Sandard Deviation= 318.80	LAND OIL SULF 381 Mean = 402.89142	UR	
		Output	Mean	+ 3 Standard Dev	+ 2 Standard Dev	- 3 Standard Dev	- 2 Standard Dev
125	:50						
1.00							
76	60				_		
50	500			$M \rightarrow M$			
25	250						
	0	0		a		<u> </u>	
-26	250						
-50	500						
	- 1 37	30	3/	8 8	30 30	37	2 2
	24/19	24/19	24/19	24/19	24/19	24/19	24/19
	98 1 2:	38 1:5	38 5:2	38 95 38 7.0	38 6:0 38 11:	38 7:4	98 11: 38 9:2
	16:52	6:52 <i>F</i>	6:52 /	2:00 /	9:30 F 32:00	9:30 F	09:30 F

To graph a different component attribute, select **Property to Chart** from the Edit menu and click the attribute to be graphed at the SQC Item Selection dialog box (see <u>Figure 11-20</u>).

Figure 11-20: SQC Item Selection Dialog Box

Measured Value	C End Time
Value Deviation	C End Amplitude
⊖ Start Time	C Area
Start Amplitude	C Corrected Area
Crest Time	C Corrected Height
Crest Amplitude	No item selected at this time

11.6 Analyzer availability

Analyzer Availability is a maintenance function that is explained in the STAR Administrator's Guide 2300-AG.

12 Glossary

Term	Definition
ACL	Access Control List
STAR Gateway	Unit in the STAR system that connects STAR to the DCS through the Analytical Network
DCS	Distributed Control System
Device Definition Table	List of STAR devices available to perform a service when requested
Domain	Group of networked computers that share a common communications address
GCC	Gas Chromatograph Controller (part of PGC2000 series analyzer)
HIU	Host Interface Unit
HIU-RUI	see Remote User Interface
IP	Internet Protocol
LAN	Local Area Network
LUI	Local User Interface

Term	Definition
MW	Multiwave
MW-RUI	see Remote User Interface
NIS	Network Information Service
OPC	Open Platform Communications
OPCRUI	OPC Remote User Interface
Packet	unit of a message
PC	Personal Computer
PCB	Printed Circuit Board
PGC2000/3100	PGC2000/3100 Series Process Gas Chromatograph
PGC5000	PGC5000 Series Process Gas Chromatograph
Remote User Interface (RUI)	Series of software products that enables the operator to have remote access to a PGC5000, HIU, MW, or OPC, and provides network configuration. RUI software is titled by its function: OPCRUI, MW-RUI, etc.
Reporter	Software application that accepts analysis results, alarms, and other events from analyzers on the STAR system and displays them on an attached monitor or printer, or sends them to a hard disk for storage
Report Viewer	A software application that allows you to view analysis data and configuration information used to create an analysis; used only with the PGC5000 Version 3
Router	VistaNET Router Assembly, a unit in the VistaNET system that acts as a
PLIT	
	Peid Vanor Pressure Analyzer
Server List	see Subscriber List
Subscriber	Device which receives data from another device
Subscriber List	List of applications to which data is sent
VistaSAM	VistaNET Statistical Analyzer Management PC software that generates text
VISCOSAN	and graphical reports from data collected by VistaSTORAGE
VistaSTORAGE	A software application that creates a database for use in trending SQC, etc.
VNSA	VistaNET Name Service Application. PC software that serves as the address book for the VistaNET. VNSA maintains and distributes current system configuration information such as device names, routing, and User Password tables for VistaNET 2.0 devices/applications
VNSA-RUI	A VistaRUI software product that enables you to have remote access to a VNSA, and it provides network configuration

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