

Application Note AN142

Connecting the RACO[®] Catalyst[®] RTU to the Hach Water Distribution Panel using the Mod I/O Modbus Interface Module

Purpose

The purpose of this application note is to act as a quick start guide when using the Catalyst RTU (Remote Telemetry Unit) with the Hach WDP (Water Distribution Panel).



System Diagram 1: WDP and Catalyst System

Introduction

¹The Catalyst RTU functions as an auto-dialing remote alarm monitor and data logger. Auto-dialers and RTUs are typically used at remote, unattended locations, to monitor the condition of automatic equipment. The mission of an Autodialer/RTU is to compare inputs against alarm criteria. Then if alarm violations occur, the RTU calls maintenance personnel (or a central station computer) to inform them of the "out of normal" condition at the remote site.

Alarm notification reports are typically made to operators as voice reports. However, data reports to central computers can be made as well.

1) Reference: RACO Catalyst Operators Manual, 2/23/2004, version 1.87

Figure 1 illustrates a WDP/Catalyst system. A Mod I/O Gateway is connected to the WDP (Water Distribution Panel) via the AquaTrend network. The Catalyst RTU is connected to the Mod I/O via a RS232 null modem cable. The Catalyst RTU is connected to a POTS (Plane Old Telephone System) via a RJ11 phone cable. The Catalyst unit monitors the WDP via the Mod I/O Modbus interface and reports to the telephone and/or computer the periodic status of the monitored signals. The Catalyst can also notify both the telephone and computer in the event of user defined Alarm conditions.

System Requirements

Equipment and Software

- Hach Water Distribution Panel #5980000
- Hach Mod I/O #5710000
- "X" feet of AquaTrend Network Cable #5215700
- RACO Catalyst RTU www.racoman.com
- RACO Alarmware Software
- Dedicated POTS (Plane Old Telephone System) Line
- One PC (see minimum requirements for computer)

Minimum Computer Requirements

- Operating System: Windows 2000 or XP
- Internal or External 56k Modem (for Remote PC)
- CD ROM
- 400 MHz or better Processor
- 256 Meg of RAM
- One RS232 Serial Port (for local configuration PC)
- Adequate Program Disk Drive space: ~20 Meg

Hardware Setup

- 1. Follow the instructions in the Mod I/O instruction manual for connecting the Mod I/O to the AquaTrend network of the Water Distribution Panel.
- 2. Connect the Mod I/O via the null modem cable that comes with the Mod I/O to the 9 pin Modbus Port of the Catalyst RTU.
- 3. Connect the local configuration PC RS232 Serial Port to the Catalyst RTU 9 pin Alarmware Port with the RACO Alarmware cable.
- 4. Make certain that both the Catalyst RTU and Mod I/O are connected to AC power as outlined in the respective instruction manuals.

Software Installation

Install the RACO **Alarmware** software on the local PC being used to configure the Catalyst RTU by inserting the **Alarmware CD** and following the installation instructions.

This software will also be used on the remote PC for downloading data files and for configuration of the Catalyst RTU from a remote site.

The Alarmware CD contains an instruction manual for the Catalyst RTU in .PDF format. This manual contains detailed instructions for software installation, wiring of the Catalyst RTU, and operation of both the Catalyst RTU and the Alarmware software. It is recommended that you review this manual before proceeding with this application note.

Configuring Alarmware Off-Line

1. From the Windows Start|Programs menu, open the Alarmware program . Click on the Edit button in the Select RTU dialog..

01
<u> </u>
_
one
Port
ie

Figure 1: Select RTU Dialog

2. Edit the Add/Edit RTU dialog with your appropriate RTU Name, Phone Number (phone number of the RTU), and select your RTU Model Number.

Add/Edit R1	ru	? ×
RTU Name* :	HACH_Test	Set
*These same Configuration	RTU Names also appear under the	
-		Cancel
Phone No :	3237890	
Serial # :	S00264	Help
Model # :	C10-S-020-1450 : Catalyst: 56 Channels	•

Figure 2: Add/Edit RTU Dialog

3. Click on the Set button.

Sensor #	AquaTrend Device	AT Display Channels
1	1720D	$\mathbf{A} = \text{Turbidity}(\text{NTU})$
2	CL17	$\mathbf{B} = \mathrm{Cl} (\mathrm{ppm})$
3	SIMa (pH / Temp)	$\mathbf{C} = \mathbf{pH} \ \mathbf{D} = \text{Temp} (^{\circ} \mathbf{C})$
4	SIMa (Conductivity / PSI)	$\mathbf{E} = \text{Cond} (\text{uS}) \mathbf{F} = \text{PSI}$
5	SIMa (TOC)	$\mathbf{G} = \mathrm{TOC} \; (\mathrm{mg/L})$

Table 1 outlines the configuration of a Water Distribution Panel AquaTrend network.

 Table 1: WDP AquaTrend Network Configuration

Table 2 has the Mod I/O Modbus addresses for the various sensor readings in IEEE Floating Point format.

Device	AT Display Channels	Modbus Addresses
1720D	$\mathbf{A} = \text{Turbidity} (\text{NTU})$	Turbidity = 41001
CL17	$\mathbf{B} = \mathrm{Cl} \ (\mathrm{ppm})$	Chlorine = 41017
SIMa pH / Temp	$\mathbf{C} = \mathbf{pH} \ \mathbf{D} = \text{Temp} (^{\circ} \mathbf{C})$	pH = 41033
		Temp = 41035
SIMa Conductivity /	$\mathbf{E} = \text{Cond} (\text{uS}) \mathbf{F} = \text{PSI}$	Conductivity = 41049
PSI		Pressure = 41051
SIMa TOC	G = TOC (mg/L)	TOC = 41065

We will use the Modbus addresses in **Table 2** to configure the **Channel Settings** for the RACO Catalyst RTU.

4. Click on the Work Offline button in the Select RTU dialog.

Select RTU			<u>? ×</u>
Please select an RTU	from the list :		
RTU Name	Phone Number	Firmware Version	Lonnect Phone
HACH_Test	3237890	1.87	Connect COM Port
			Work Offline
			Add
			Edit
			Delete
Becently used :			Cancel
		_	Help

Figure 3: RTU Name Created

5. Then click on the **Configuration** menu selection in the **Menu Bar** of the **Alarmware for Catalyst** window.

Alarmware for Catalyst Transfer Configuration Copy	v LogFile W	″indow Help ??	Quit						<u>- 0 ×</u>
Devices C Offic Destinations Messages Session Params	Test	orking O	ffline						<u>_ </u>
Annunciation PINs	rogram	1	5	9-12	25-32		 		
Cleardowns	cording	2	6	13-16	33-40		 		
aware LoBat	disarmed	3	7	17-20	41-48		 		
tfail pfail	phoning	4	8	21-24	49-56		 	LogFile	
Messages for RTU - H	ACH_Test								
************ Thu A Current working di NVM file path is : LOG file path is : Firmware Version:	pr 28, 20 rectory i C:\Progr C:\Progr 1.87, AWA	05 14:07 s : C:\F am Files am Files RE.EXE v	2:32 **** Program H NRACO\At RACO\At version:	Files\RAG vare_v187 vare_v187 1.87	* O\Àware_ \\data\c \\Log\ca	v187 at1.nvm t1.log			
						Offline			
Configuration option categories								CAPS	NUM SCRU

Figure 4: Alarmware for Catalyst Window

6. Select **Channels** from the **Configuration** menu and configure **Channel 1** as shown in **Figure 6** for **Turbidity** by first entering the **SNA**.

Note that for Modbus Floats, Alarmware uses the Modbus pseudo registers in the 50000 range. For example a Modbus Float register 41001 would be 51001.

The SNA (Source Net Address) has the format of Net*Node*Address. Since we are using the Modbus port on the RTU, we will set the Net = 1. The Node is the Modbus Address. In this example our Mod I/O has its Modbus Address set to 5 so we set the Node = 5. The SNA Address is the Modbus Register we want to collect data from. Our Turbidity Data Register is 41001 and it is a Float (made up of Registers 41001 and 41002). Therefore we will set the SNA Address = 51001.

```
>>>>>The end result for Turbidity is: <<<< SNA = 1*5*51001.
```

7. After you enter the SNA field, click on the Physical Input button to accept the SNA value.

Channel Settings	_ 🗆 ×
Channel Number : 1 📩	
_SNA (Required) :	Сору <u>Т</u> о
1*5*51001 Discrete Mode	Copy From
Physical Input <u>C</u> hange Mode	
Alarm Trip Delay : 2 seconds	New <u>W</u> indow
Alarm Violation Criteria :	Clea <u>r</u> All
Alarm on 1 Raw Value	Clear <u>I</u> tem
	<u>G</u> roups
Reading Format for Direct Channel Readings (Not used for Reports to Destinations) :	<u>C</u> lose
0 Reported as 'Closed Circuit'	<u>H</u> elp
	<u>A</u> dvanced
Messages for this channel	

Figure 5: Entering the SNA in the Channel Settings Dialog

The **Alarm Setpoints** in this application note example have been set to assure you will not have an alarm condition unless the turbidity value exceeds the unlikely value of 5 NTU. We recommend that you set the initial alarm setpoints as shown in the examples until you have proven your configurations and communication with the Catalyst RTU. You can then use Alarmware to change the **Setpoint** values to your desired limits.

8. Continue Configuring the remaining 6 Channels as shown. You can select the Channels by using the **Spin Buttons** next the Channel Number at the top of the **Channel Settings** Dialog.

Channel Settings	_ 🗆 ×
Channel Number : 📔 🚊	
_SNA (Required) :	Сору <u>Т</u> о
1*5*51001 Analog Mode	Copy From
Alarm Trip Delay : 15 seconds	New <u>W</u> indow
Alarm Violation Criteria :	Clea <u>r</u> All
Alarm on High & Low Set Point	Clear <u>I</u> tem
High setpoint 5 Low setpoint 0 value :	<u>G</u> roups
Analog Reporting Format :	<u>C</u> lose
Floating Point	<u>H</u> elp
Significant Digits : 4	Advanced
Messages for this channel	

Figure 6: Channel 1, Turbidity

Channel Settings	
Channel Number : 🛛 🔁 🚔	
_SNA (Required) :	Сору <u>Т</u> о
1*5*51017 Analog Mode	Copy From
<u>C</u> hange Mode	
Alarm Trip Delay : 15 seconds	New <u>W</u> indow
Alarm Violation Criteria :	Clea <u>r</u> All
Alarm on High & Low Set Point	Clear <u>I</u> tem
High setpoint 5 Low setpoint 0 value :	<u>G</u> roups
Analog Reporting Format :	<u>C</u> lose
Floating Point	<u>H</u> elp
Significant Digits : 4	<u>A</u> dvanced
Messages for this channel	

Figure 7: Channel 2, Chlorine

Channel Settings	_ 🗆 🗵	
Channel Number : 🔋 📑		
- SNA (Required) :	Сору <u>Т</u> о	
1×5×51033 Analog Mode		
Change Mode	Lopy From	
Alarm Trip Delay : 15 seconds	New <u>W</u> indow	
Alarm Violation Criteria :	Clea <u>r</u> All	
Alarm on High & Low Set Point	Clear <u>I</u> tem	
High setpoint 14 Low setpoint 0 value :	<u>G</u> roups	
Analog Reporting Format :	<u>C</u> lose	
Floating Point	<u>H</u> elp	
Significant Digits : 🛛 💌	<u>A</u> dvanced	
Messages for this channel		

Figure 8: Channel 3, pH

Channel Settings		
SNA (Required) :	·	Copy <u>I</u> o
1*5*51035	Analog Mode	Copy <u>F</u> rom
Alarm Trip Delay : 15	seconds	New <u>W</u> indow
Alarm Violation Criteria :		Clea <u>r</u> All
Alarm on High & Low Set	Point 💌	Clear <u>I</u> tem
High setpoint 100 value :	Low setpoint 0	<u>G</u> roups
Analog Reporting Format :		<u>C</u> lose
Floating Point	•	<u>H</u> elp
Significant Digits : 🔒 💌		<u>A</u> dvanced
<u>M</u> essages for	this channel	

Figure 9: Channel 4, Temperature

Channel Settings	- 🗆 ×
Channel Number : 🧧 📑	
_SNA (Required) :	Сору <u>Т</u> о
1×5×51049 Analog Mode	Copy From
<u>C</u> hange Mode	
Alarm Trip Delay : 15 seconds	New <u>W</u> indow
Alarm Violation Criteria :	Clea <u>r</u> All
Alarm on High & Low Set Point	Clear <u>I</u> tem
High setpoint 2000 Low setpoint 0 value :	<u>G</u> roups
Analog Reporting Format :	<u>C</u> lose
Floating Point	<u>H</u> elp
Significant Digits : 4	Advanced
Messages for this channel	

Figure 10: Channel 5, Conductivity

Channel Settings	<u>_ × ×</u>
Channel Number : 🛛 🛛 📑	
SNA (Bequired) :	Copy <u>T</u> o
1×5×51065 Analog Mode	
<u>C</u> hange Mode	Copy From
Alarm Trip Delay : 15 seconds	New <u>W</u> indow
Alarm Violation Criteria :	Clea <u>r</u> All
Alarm on High & Low Set Point	Clear <u>I</u> tem
High setpoint 25 Low setpoint 0 value :	<u>G</u> roups
Analog Reporting Format :	<u>C</u> lose
Floating Point	<u>H</u> elp
Significant Digits : 🛛 💌	<u>A</u> dvanced
Messages for this channel	

Figure 12: Channel 7, TOC

- 9. After configuring all 7 channels, click on the Close button.
- 10. Then click the Configuration menu selection in the Menu Bar of the Alarmware for Catalyst window and select Devices. Select the Phone Config tab and enter the RTU Phone Number. The other setting can remain as shown in Figure 13.



Figure 11: Channel 6, Pressure

evice Settings				? :
RTU Modem	Printe	er 🔰	Log File	ISP
Phone Config	Physical Inputs	Modbus Port	Alarmware Port	Time/Date
RTU Phone Numb	ber : 3237890			
Call Progress Mor	itoring Enable : 🛛 🔽			
Outgoing Call Ans	wer Limit : 45	seconds		
			Clear All	
Speaker Enable :	V		Clear Item	
RTU attached to (GSM Digital Cellular Pho	ne Line: 🗖		
			Help	
Country :	USA 🔄			
Dialing Mode :	Tone 🔹			
Ring Answer Dela	y: 2 rings			
After answering, w	vait a maximum of 60	seconds for t	he session to start	
				Close
				Close

Figure 13: Device Settings, Phone Config

11. Select the **Modbus Port** tab and configure it as shown. The Mod I/O in this example was set as follows: baud rate = **19200**, stop bits = **1**, and parity = **none**. Enter these values in the Dialog as shown in Figure 14.

Device Settings	? ×
RTU Modem Printer Log File	ISP]
Phone Config Physical Inputs Modbus Port Alarmware Port	Time/Date
Protocol : MBMaster	
Baud Rate : 19200 🔹 Data Bits : 🛚 👻	
Stop Bits : 1 💌 Parity : none 💌 Clear All	
RTU's Node Address : 1 Link Timer : 0 Clear Rem	
Communications 200 seconds Help	
Application Timer : 0.5 seconds	
Transmit Delay : 0 seconds	
CTS always ON C (Otherwise, CTS is asserted only when actually transmitting to support RS485)	
	Close

Figure 14: Device Settings, Modbus Port

12. Then select the Alarmware Port tab and make sure it is configured as shown in Figure 15.

D	evice Settings					? ×
	RTU Moden	0	Printer	Log File	1,1	SP)
	Phone Config	Physical Inpu	its Modbus	Port Alarmwa	are Port	Time/Date
	Protocol :	SFP	-			
	Baud Rate :	57600 💌	Data Bits : 8	-		
		1 💌	Parity : no	one 🔽 📕	lelp	
	Node Address :	0	Link Timer : 2	Cle	ar Item	
	Communications Alarm Delay :	200	Appl. Timer : 2			
						Close

Figure 15: Device Settings, Alarmware Port

13. Select the **Time/Date tab** and configure it as shown in Figure 16 with the current time and date.

Device Settings	? ×
RTU Modem Printer Log File Phone Config Physical Inputs Modbus Port Alarmware Port Date : Month : 14 Day : 28 Year : 2005	ISP Time/Date
Time : Hour : 13 Min : 27 Sec : 24 Clear All Image: Set RTU time equal to Alarmware host time Clear Item Clear Item DayLight Saving : Auto Help	
Time of Day Format : Thu Apr 28, 2005 13:27:12	
	Close

Figure 16: Device Settings, Time/Date

14. Select the Log File tab and configure it as shown. The shown configuration will log channel data to the file every 15 minutes starting at Midnight (Base time). You can enter your desired logging rate at this time. The Alarmware documentation has detailed information on the Catalyst memory size etc.

evice Settings Phone Config Physical In RTU Modem	puts Modbus Port Printer Log	Alarmware Port	Time/Date
Disable : 🗖 Items !	io Log		
RTU Events : ✓ Session History ✓ Configuration Changes ✓ Data Samples Base Time : 00 : 00 (hh:mm) Frequency : 00 : 15 : 00 (hh:mm:ss) 00 : 15 : 00	Channel Events : Alarms Alarm Acknowledgment Channel Reset to Normal	Clear All Clear Item Help Groups	
Adva	inced		Close

Figure 17: Device Settings, Log File

If you desire E-mail notification of Alarms, Status, and Log Files, you can configure the **ISP** tab as shown. E-mail service requires that you have an established dial-up **ISP** (Internet Service Provider) with an established E-mail account that does not require authentication. Contact your ISP to see if they require authentication for their E-mail server.

Device Settings			? ×
Phone Config RTU Modem	Physical Inputs Modbus Printer	Port Alarmware Port Log File	Time/Date
Internet Service Prov	rider Configuration		
Phone# :	32312345		
Account Name :	myemail@myisp.com	Clear All	
Account Password :	******	Clear Item	
Outbound Mail Server (SMTP):	Change Password smtp.myisp.com	Help]
			Close

Figure 18: Device Settings, ISP

15. After configuring the Devices, click the Close button.

 Then click the Configuration menu selection in the Menu Bar of the Alarmware for Catalyst window and select Destinations.

This is where we choose how we want Catalyst to communicate with us. For this example, **Destination #1**, we will configure Catalyst to send us Telephone messages.

- 17. On the General Tab, select
 Destination # 1, set
 Destination Type to
 Telephone and enter the phone number you want Catalyst to call for this destination. You can also name the destination.
- 18. Select the Notification Reports tab for Destination #1 and configure it as shown in Figure 20.

Catalyst will call the phone number for this destination and report any Alarm states and Alarm Acknowledgements. Catalyst will continue to call the phone number until the Alarm(s) are acknowledged.

If you have more than one phone number to call, the Catalyst starts with the lowest number and works its way through the assigned numbers, then starts over until someone acknowledges.



Figure 19: Destination Settings, General

Destination Settings	? ×
General Notification Reports Status Reports Log File	Reports Advanced
Notify this destination whenever the following states have tripped for any channel in the destination group Alarm Alarm Alarm Acknowledgement	<u>Clear Item</u>
	Clear All
Sort the report contents by : Time the state tripped, first in first out (FIFO) Time the state tripped, last in first out (LIFO) Channel Number	Help
Delivery Rule Continually until acknowledged Dolly once Until Reported	
	Close

Figure 20: Destination Settings, Notification Reports

19. Select the Status Reports tab for Destination #1 and configure it as shown. In this example, since the Frequency is set to 24 hours, the status report will be delivered via the telephone once a day at 11 AM.

Note that the **Base time** is in 24 hour (Military) time format.



20. To configure a FAX destination, select the General tab and set the Destination to #2. Then set the Destination Type to Fax Machine and configure as shown, entering your FAX Phone Number and Destination Name.

Figure 21: Destination Settings, Status Reports

Destination Settings	<u>? ×</u>
General Notification Reports Status Rep Destination : 2 -	borts Log File Reports Advanced
3234321	
	Сору То
Destination Name* : My Fax Machine	Copy From
*These same Destinations Names also ap Configuration Messages menu for this Des	pear under Clear All
C Not in Use	Clear Item
C Telephone	Help
C Numeric/Beeping Pager C Alpha-Numeric Pager	Groups
Fax Machine	
C Remote Data Terminal	
C PA System	
C Email Recipient	
	Close

Figure 22: Destination Settings, General, FAX

21. Select the Notification Reports tab for Destination #2 and configure it as shown in Figure 23.



Figure 23: Destination Settings, Notification Reports

22. Select the Status Reports tab for Destination #2 and configure it as shown in Figure 24. The status report will be delivered via FAX every day at 30 minutes after Midnight.



Figure 24: Destination Settings, Status Reports

23. Select the Log File Reports tab for Destination #2 and configure it as shown in Figure 25. In this example, the configuration will send a Log File to the FAX machine starting at 45 minutes after Midnight and every 6 hours thereafter. Since we selected Undelivered data only, the data that had not previously been delivered will be in the report.

Destination Settings	<u>? ×</u>
General Notification Reports Status R	eports Log File Reports Advanced
Destination : 🛛 🔁 🛨	
Deliver log file reports on the following Base time (mo:dd:hh:mm) 00 : 00 Frequency (mo:dd:hh:mm) 00 : 00 Include the following Channel State Transitions I Logged Alarms Logged Alarm Acknowledgment	schedule : Clear All Clear Item Help Iog file contents : RTU Events Clear Samples Clear Yetm Help
 Logged Channel Resets Include log data in the following range All data Undelivered data only Data collected in previous (DD : H Sort data samples according to : Chronological order of sample time Clumped by channel number 	H Logged Configuration Changes
	Close

24. Select the Advance tab for Destination #2 and configure it as shown in Figure 26.

Figure 25: Destination Settings, Log File Reports

Destination Settings	? ×
General Notification Reports Status Reports Log File R	eports Advanced
Protocol: Device : T.30/T.4 Modem Language : Report Format : English Full Text	Request Test Report Call Back Clear Item
Preferred Report Image Resolution :	Clear All Help
Maximum number of pages per report : 6 Maximum transmission time per page : 2 minutes	
Include Cover Page : Yes O No	
	Close

Figure 26: Destination Settings, Advance

Destination Settings

25. To configure an Email Recipient destination, select the General tab and set the Destination to #3. Then set the Destination Type to Email Recipient and configure as shown in Figure 27, entering your Email Address and Destination Name.

General Notification Reports Status Reports Log File Reports Advanced				
Destination : 🔋 🚖				
Email Address: TheBoss@myisp.com	_			
	Сору То			
Destination Name* : Email	Copy From			
*These same Destinations Names also appear under Configuration Messages menu for this Destination.	Clear All			
Destination Type O Not in Use	Clear Item			
C Telephone	Help			
C Numeric/Beeping Pager C Alpha-Numeric Pager	Groups			
C Remote Data Terminal				
 Email Recipient 				
	Close			

? ×

26. Select the Notification Reports tab for Destination #3 and configure it as shown in Figure 28.

Figure 27: Destination Settings, General, Email Reports

Destination Settings	? ×
General Notification Reports Status Reports Log File	Reports Advanced
Destination : 📓 🛓	
Notify this destination whenever the following states have tripped for any channel in the destination group	
✓ Alarm	
Alarm Acknowledgement	Clear Item
	Clear All
Sort the report contents by :	Help
C Time the state tripped, first in first out (FIFO)	
C Time the state tripped, last in first out (LIFO)	
Channel Number	
Delivery Rule	
C Continually until acknowledged	
C Only once	
• Until Reported	
	Close

Figure 28: Destination Settings, Notification Reports

27. Select the Status Reports tab

for Destination #3 and configure it as shown in Figure 29. The status report will be delivered via Email every day at 1 AM. Since the "Include this destination in the autocall router" box has been checked, when the Catalyst makes an auto call, an E-mail Status Report will be sent.

An Autocall is a test call made at scheduled intervals. The intervals can be configured in the **Annunciation Options** dialog, Figure 47 on page 25.

28. Next select the Log File Reports tab for Destination #3 and configure it as shown Figure 30. In this example, the configuration will send a Log File to the Email Recipient starting at 1:15 AM and every 2 hours thereafter. Only the data that had not previously been delivered will be in the report.

Destination Settings				? ×
General Notification Reports	Status Repo	orts Log File	Reports Adv	vanced
Destination : 📑 📑				
Include this destination in Deliver status reports on the following schedule : Base time : 01 : (hh : mm) Frequency : 24 : (hh : mm)	the autocall	roster	Clear Item Clear All Help]
				Close

Figure 29: Destination Settings, Status Reports

estination Settings	<u>? ×</u>
General Notification Reports Status	Reports Log File Reports Advanced
Destination : 🔋 📑	
Deliver log file reports on the followin Base time (mo:dd:hh:mm) 00 : 0 Frequency (mo:dd:hh:mm) 00 : 0 Include the followin Channel State Transitions	g schedule : 0 : 15 Clear All Clear Item Help BTU Events
Logged Alarms Logged Alarm Acknowledgment Logged Channel Resets	 Logged Data Samples Logged Session History Logged Configuration Changes
Include log data in the following rang C All data C Undelivered data only C Data collected in previous (DD : Sort data samples according to :	ре:
 Chronological order of sample tim Clumped by channel number 	e
	Close

Figure 30: Destination Settings, Log File Reports

- 29. Select the Advance tab for Destination #3 and configure it as shown in Figure 31. The Call back string is the number that the report will display as the number to call when the report is received. By default, the callback number is the RTU phone number.
- **30**. Click the **Close** button to complete the Destination Settings configuration.

31. Click the **Configuration** menu selection in the **Menu Bar** of the **Alarmware for Catalyst** window and select **PINs**.

32. Click the **Add** button and edit the PIN Information Dialog. If PINs are configured, there will be a request for entry of a PIN number when an Alarm call is received. Refer to the Catalyst instruction manual or on-line help for additional PIN details. If desired, enter a **PIN** number, Name and select a **Privilege** level. Don't forget to record your PIN numbers in a safe place for reference.

Destination Settings	<u>? ×</u>		
General Notification Reports Status Reports Log File Reports Advanced			
Destination : 🔋 🚊	·		
Protocol : Device : SMTP ISP Language : Report Format : English Comma Separated Values	Request Test Report Call Back		
Call Back String : 0007000	<u>Clear Item</u>		
Use RTU Phone Number	Clear All		
	Help		
 This destination is able to view HTML Send as Attachment Include Cover Page : 			
Yes No Maximum size of any EMAIL report is : 2.00 Maximum transmission time when other sessions waiting is:	15 minutes		
	Close		

Figure 31: Destination Settings, Advance



Figure 32: PINs Dialog



Figure 33: PIN Information

33. Click the **OK** button to return to the **PINs** dialog. Additional PINs can be added if desired. When you are finished, click the **Close** button to complete the process of configuring PINs.

PIN	s				? ×
	No.	PIN	Privilege	PIN Name	
	1	12345	Administration	Admin1	
	•				•
		Add	Clear	Close	
		Edit	ClearAll	Help	



34. Click the **Configuration** menu selection in the **Menu Bar** of the **Alarmware for Catalyst** window and select Messages.

At this time you can change the **RTU Name** if you desire.

Messages ? ×
Type :
RTU Name
RTU Name* :
HACH_Test
*This same RTU Name also appears under the Select RTU menu for this RTU
Clear All Text Messages Clear Current Text Message
- Corresponding User Recorded Speech Messages
Clear All Speech Messages Recording Rate :
Clear Current Speech Message
Clear Item
Time limit for any single voice message : 30 seconds
Tag Words Close Help

Figure 35: Messages Dialog, RTU Name

35. Click on the down arrow in the Type drop down list and select Net Names. This is the name used to identify the Net devices in text reports. Since Net Name #1 is the Modbus Port this example has re-named it My Water Distribution Panel. You can enter your specific name at this time.

Messages	<u>? ×</u>
Messages for Text Reports	
Type: Net Nu	mber :
Net Names 1	3
Net Name :	
My Water Distribution Panel	
Clear All Text Messages	Clear Current Text Message
Corresponding User Recorded Speech Messa	ages
Clear All Speech Messages	Recording Rate : -
	3600 • bps
Clear Current Speech Message	
	Clear Item
Message Lime	
Time limit for any single voice message	ge : 30 seconds
Tag Words Close	Help

Figure 36: Messages, Net Names

36. Click the down arrow in the Type drop down list and select Destination Names. This is the name of one of your Destinations (e.g. Telephone, FAX, or Email). You can edit the names here and select other Destinations by changing the Destination Number.

Messages ?	x
Messages for Text Reports	٦
Destination Number :	
Destination Name* :	
PC Lab	
*These same Destination Names also appear under the Configuration Destinations menu	
Corresponding User Recorded Speech Messages	
Clear All Speech Messages	
Clear Current Speech Message	
Message Time	
Time limit for any single voice message : 30 seconds	
Tag Words Close Help	

Figure 37: Messages, Destination Names

37. Click the **down arrow** in the **Type** drop down list and select **PIN Names**. You can edit the names of other PINs by changing the **PIN Number**.



Figure 38: Messages, PIN Names

38. Click the down arrow in the
Type drop down list and select
Channel Status Messages.
This is where you edit the
channel message that will show
up in your reports. For example
if you want channel 1's message
to read: CHANNEL 1
Turbidity is 0.085 NTU, where
0.085 is the current value, you
would edit the dialog for
Channel Number 1 as shown
Figure 39. You can edit other
channels by changing the
Channel Number.

Messages ?	×
- Messages for Text Reports- Type : Channel Number : Channel Status Messages 1]
Message 1: counter CHANNEL 1 Turbidity is 24 + Reading + 24	
Message 2: NTU 5	
+ Tag Word(s) Total : 29	
Channel Status Text Messages for Analog Channel Reports consist of a Preamble(Message 1), plus the Reading, plus a Postamble(Message 2), plus Tag Word(s) reflecting on Channel's State.	
Clear All Text Messages Clear Current Text Message	
Corresponding User Recorded Speech Messages	1
Clear All Speech Messages	
Clear Current Speech Message	
Message Time	
Time limit for any single voice message : 30 seconds	
Tag Words Close Help	

Figure 39: Messages, Channel Status Messages

39. Change the **Channel Number** to **2** and edit it as shown in Figure 40.

Messages	? ×		
Messages for Text Reports			
Channel Number :			
Channel Status Messages 12 😨			
Message 1:	unter		
CHANNEL 2 Chlorine is			
+ Heading +			
Message 2.	—		
+ Tag Word(s)			
l otal: [29			
Preamble(Message 1), plus the Reading, plus a Postamble(Message 2), plus Tag Word(s) reflecting on Channel's State.	s.		
Liear All Text Messages Liear Current Text Message			
Corresponding User Recorded Speech Messages			
Clear All Speech Messages Recording Rate :	1 I		
Clear Current Speech Message Clear Item			
Message Time			
Time limit for any single voice message : 30 seconds			
Tag Words Close Help			

Figure 40: Messages, Channel 2

40. Change the **Channel Number** to **3** and edit it as shown in Figure 41.

Type	ages for Text Reports— e :		Chan	nel Num	nber:			
Cha	nnel Status Messages	-	3	÷				
, Maa		_						counte
CH.	sayen. ANNEL 3 pH is						_	17
+	Beading +							
Mes	sane 2 [.]							
DH							_	4
+ 1	an Word(s)					-		
Chan	nel Status Text Message	es for An	alog C	hannel	Benc	rts cons	eist of	a
_	Vord(s) reflecting on Uha	annel's 5	tate.					
	Vord(s) reflecting on Lha Clear All Text Messa	annel's 5 ages	itate.	Clear (Currer	nt Text N	/lessa	ige
	Clear All Text Messa	ages	tate.	Clear (Currer	nt Text N	/lessa	ige
- Corre	Clear All Text Messa	ages d Speec	h Mes	Clear (Currer	It Text N	/lessa	ige
- Corre	Clear All Text Messa clear All Text Messa sponding User Recorder Clear All Speech M	ages d Speec lessage:	h Mes	Clear (sages	Currer	It Text M	/lessa ng Ra	ige ate : -
- Corre	Clear All Text Messa Clear All Text Messa sponding User Recorder Clear All Speech M Clear Current Speech	ages d Speec lessage: h Messa	h Mes s	Clear (sages		t Text M Recordi	flessa ng Ra ∎t	oge ate :
- Corre	Clear All Text Messa Clear All Text Messa sponding User Recorder Clear All Speech M Clear Current Speec Message Tir	ages d Speec lessage: h Messa ne	h Mes s	Clear (sages –		t Text N Recordi 3600 Clear	ng Ra ∎∎ t	age ate : - ops
- Corre	Clear All Text Messa Clear All Text Messa sponding User Recorder Clear All Speech M Clear Current Speech Message Tir Time limit for any sing	ages d Speec tessages h Messa me gle voice	h Mess ge	Clear C sages	Currer	t Text N Recordi 3600 Clear sec	Messa ng Ra ▼t titem	ate : - ops

Figure 41: Messages, Channel 3

41. Change the **Channel Number** to **4** and edit it as shown in Figure 42.

Messages	? ×
Messages for Text Reports	
Lype : Channel Number :	
Channel Status Messages 🔄 4 📑	
Message 1:	counter
CHANNEL 4 Temperature is	26
+ Reading +	
	10
+ Tag Word(s)	
l otal	36
Preamble(Message 1), plus the Reading, plus a Postamble(Message 1) Tag Word(s) reflecting on Channel's State.	2), plus age
Corresponding User Recorded Speech Messages	
Clear All Speech Messages Recording R	late :-
Clear Current Speech Message	bps
Message Time	
Time limit for any single voice message : 30 second	\$
Tag Words Close Help	

Figure 42: Messages, Channel 4

42. Change the **Channel Number** to **5** and edit it as shown Figure 43.

Тур	e:		Chan	nel Numbe	er:		
Ch	annel Status Messag	ges 💌	5	÷			
Me	ssage 1:						counte
CH	ANNEL 5 Conductiv	vity is					27
÷ +	Reading +						·
Me	ssage 2:						
uS							4
+	Tag Word(s)				т	otal ·	31
	wora(s) renecting or	n Channers .	otate.				
	Clear All Text M	tessages		Clear Cu	rrent Text N	1essag	ge
- Corre	Clear All Text M	1essages	ch Mes	Clear Cu sages	rrent Text N	lessag	ge
– Corre	Clear All Text M sponding User Rec Clear All Spee	fessages orded Speed ch Message	ch Mes	Clear Cui sages —	rrent Text M	1essag ng Ra	ge te :
– Corre	Clear All Text M rsponding User Rec Clear All Spee Clear Current Sp	fessages orded Speed ch Message	ch Mes	Clear Cur sages —	rent Text M Recordi	1essag ng Ra ▼b	ge te : - ps
- Corre	Clear All Text M sponding User Reco Clear All Spee Clear Current Sp Messag	fessages orded Speed ch Message peech Messa	ch Mes	Clear Cui sages]]	Recordi	1essag ng Ra ▼b r Item	ge te:- ps
– Corre	Clear All Text M esponding User Reco Clear All Spee Clear Current Sp Messag Time limit for any	fessages orded Speeα ch Message reech Messa μe Time γ single voic	ch Mes s age e mess	Clear Cui sages —]] age : 30	Recordi	fessag ng Ra ▼b r Item	ge te : - .ps

Figure 43: Messages, Channel 5

43. Change the **Channel Number** to **6** and edit it as shown Figure 44..

Messages	? ×
Messages for Text Reports	
Channel Number :	
Channel Status Messages 🗾 6 🖶	
Message 1:	counter
UHANNEL 6 Pressure is	23
+ Reading + Message 2:	
	5
+ Tag Word(s) Total	, 100
10(a)	· 120
Treamble(Message 1), plus the Reading, plus a Postamble(Message Tag Word(s) reflecting on Channel's State. Clear All Text Messages Clear Current Text Messages Corresponding User Recorded Speech Messages	age
Clear All Speech Messages Recording R	late : -
Clear Current Speech Message	bps
Message Time	
Time limit for any single voice message : 30 second	s
Tag Words Close Help	

Figure 44: Messages, Channel 6

44. Change the Channel Number to 7 and edit it as shown Figure 45. Then click the Close button.

- Messa Type	ages for Text Repo e :	rts	Chan	nel Numb	er:		
Cha	innel Status Messag	ges 🔽	7	*			
Mess	sage 1:						counter
CH/	ANNEL 7 TOC is						18
+	Reading +						
Mess	sage 2:						
mg/	Ľ						6
+ T	ag Word(s)					Total :	24
Tag V	nble(Message 1), pl Vord(s) reflecting or	us the Read n Channel's	ding, plu State.	is a Posti	amble(Me	essage 2	!), plus
TagV	nble(Message 1), pl Vord(s) reflecting or Clear All Text M	us the Read n Channel's 1essages	ding, plu State.	is a Posta Clear Cu	amble(Me urrent Te:	essage 2 xt Messa	i), plus age
Tag V	hble(Message 1), pl Vord(s) reflecting or Clear All Text M sponding User Rec	us the Read n Channel's fessages orded Spee	ding, plu State.	Clear Cu	amble(Me urrent Te:	essage 2 xt Messa	i), plus age
Tag V	hble(Message 1), pli Vord(s) reflecting or Clear All Text M sponding User Rec Clear All Spee	us the Read h Channel's lessages orded Spee ch Message	ding, plu State.	Clear Cu sages	urrent Te	xt Messa xt Messa	i), plus age ate :
- Corres	ble(Message 1), pl Vord(s) reflecting or Clear All Text M sponding User Rec Clear All Spee Clear Current Sp	us the Read n Channel's fessages orded Spee ch Message	ding, plu State.	Clear Cu sages —	Irrent Te: Reco	xt Messa ording R4	i), plus age ate :
-Corres	ble(Message 1), pl Vord(s) reflecting or Clear All Text M sponding User Rec Clear All Spee Clear Current Sp Messag	us the Reac n Channel's fessages orded Spee ch Messagu seech Mess re Time	ding, plu State.	Clear Cu sages	Irrent Te: Recc 360	xt Messa ording Ra 00 1	i), plus age ate :
- Corres	ble(Message 1), pl Vord(s) reflecting or Clear All Text M sponding User Rec Clear All Spee Clear Current Sp Messag Time limit for any	us the Reac In Channel's dessages orded Spee ch Messagu eech Mess per Time y single voice	ding, plu State.	is a Posta Clear Cu sages —]] age : 3	Irrent Te	xt Messa ording Ra 00 I tem lear Item	age ate : bps

Figure 45: Messages, Channel 7

45. Click the Configuration menu selection in the Menu Bar of the Alarmware for Catalyst window and select Session Params. Edit the Session Timeout to 600 seconds and click the Close button.

Session Parameters		<u>? ×</u>
Redial Attempts :	1 attempts	Clear Item
Session Timeout :	600 seconds	
Intersession Delay :	1 minutes	Clear All
Microphone Listening Period at End of Session :	Off 💽	Close
During voice sessions, give the menu prompt no more than :	1 times	Help
When starting a data session, wait no more than :	7 seconds to determine the protocol	
L		1

Figure 46: Session Parameters

- 46. Click the Configuration menu selection in the Menu Bar of the Alarmware for Catalyst window and select Annunciation. Edit the dialog as shown in Figure 47 so the phone line is checked once an hour or however often you prefer.
- 47. If you desire, check the Conduct test"autocalls" box and set up an auto call schedule.
- **48**. Then click the **Close** button.

Annunciation Options	? ×
Annunciator Model Time Parameters	
Common Alarm Trip Delay : 2 seconds	
Alarm Reset Time : 1 hours	
Power Failure Alarm Trip Delay : 1 minutes	
Calling RTU Acknowledges Alarm? No	
When RTU is disarmed, automatically rearm after minutes	Clear All
Check the phone line on the following schedule :	Clear Item
Frequency : (hh : mm) 01 : 00	Help
Conduct test "autocalls" on the following schedule : Base time : (dd : hh : mm) 00 : 05 : 00 Frequency : (dd : hh : mm) 01 : 00 : 00	

Figure 47: Annunciation Options

49. Click the Configuration menu selection in the Menu Bar of the Alarmware for Catalyst window and select ClearDowns. Click on the Help button for information on ClearDows. Click the Close button.

Warning: Do not use this command if you want to use this Catalyst configuration or programmed speech data again.

ClearDown	<u>? ×</u>
 Reformat Configuration File* * Read Help Topic before selecting Reformance 	ormat
ClearDown Close	Help

Figure 48: ClearDown

50. Click the Configuration menu selection in the Menu Bar of the Alarmware for Catalyst window and select Channels. Click on the Groups button.



Figure 49: Channel Settings

51. For Channel #1, check
Destinations 1, 2, and 3.
Change the Channel
number to 2 and repeat
checking Destinations 1,
2, and 3. Do the same for
all channels 3 through 7.
Next click the Close
button.

You could also click the **SetAll** button and just uncheck any destination you did not want to use for a specific Channel #. It does not hurt to have unconfigured destinations selected.

- 52. Click the Channel Settings dialog Close button.
- 53. Click the LogFile menu selection in the Menu Bar of the Alarmware for Catalyst window and select Transfer Options.
- 54. Edit the Transfer
 Options dialog as shown. Log Files will be in CSV (Comma Separated Values) format. This format is easily opened for processing in MS Excel. By selecting Undelivered data only, only the data in the RTU memory that has not previously been delivered will be in the Log File report. Then click the Accept button.



Figure 50: Destination Channels Grouping

🚰 Alarmware for Catalyst	
Transfer Configuration Copy	LogFile Window Help Quit
	Transfer Options Open Alarmware LogFile

Figure 51: Log File Menu

Transfer Options		? ×		
Include the following log file contents Channel State Transitions	s : RTU Events			
 Logged Alarms Logged Alarm Acknowledgment 	 Logged Data Samples Logged Session History 	Clear Item		
Logged Channel Resets	Logged Configuration Changes	Clear All		
Include log data in the following rang C All data O Undelivered data only	je :	Help		
C Data collected in previous (DD : Sort report contents according to :-	C Data collected in previous (DD : HH) : : : : : : : : : : : : : : : : :			
 All events in chronological order Data samples clumped by chann 	el number	Accept		
Logfile Format : Comma Sep	parated Values 💌			
Language : English	-			
Loghle Extension : CSV	1			

Figure 52: Log File Options

- 55. Click the Configuration menu selection in the Menu Bar of the **Alarmware for Catalyst** window and select Transfer and click Save to Disk.
- 56. To quit working offline, in the Menu Bar of the **Alarmware for** Catalyst, click Quit.

🚰 Alarmware for Catalyst					
Transfer	Configura	tion Copy	LogFile	Window	Help Quit
Savel	to Disk	213	s 3/	2 -	- N.
				Ľ.	

Figure 53: Save to Disk

🚰 Alarmware for Catalyst	
Transfer Configuration Copy LogFile	Window Helk Quit
	? 🖬 🕔
Offline with RTU - HACH_Test	
	Working Offline

Figure 54: Quit Working Offline

57. Answer the Prompt dialog by clicking Yes.

58. Click the Cancel button

Alarmware for Catalyst 🛛 🔀				
Do you want to end offline session with RTU - HACH_Test ?				
Yes No				

Figure 55: Prompt



Figure 56: Select RTU Dialog

59. To configure communications, in the Menu Bar of the Alarmware for Catalyst, click on Options and select COM Port.

🚰 Alarmware for Catalys	st 🛛	
Select RTU Import RTU	Options LogFile He	elp Exit
<u>iii 🔤 🔤 🔤 🔤</u>	COM Port Modem	<u>e</u> ' 🦻
	Alarmware PIN	
_	Misc. Options	

Figure 57: Options

60. In the COM Port Settings dialog, select the COM Port number for the local configuration PC. This is the serial Port that the Alarmware cable connects to. Click OK to close the dialog.

COM Port Settings		? ×
COM Port Number for Serial Port :	COM1 -	ОК
Baud Rate :	57600 🔹	
Data Bits :	8	Cancel
Parity :	None	
Stop Bits :	1	Help

Figure 58: COM Port Settings

61. In the Menu Bar of the Alarmware for Catalyst, click on Select RTU.

🚰 Alarmware for Catalyst
Select RTU Import RTU Options LogFile Help Exit
<u> </u>

Figure 59: Alarmware Menu

Connecting the Alarmware program to the RTU

We are now going to upload the configuration to the RTU. Make certain that the Alarmware cable is connected between your local configuration PC and the RTU. Power the RTU ON.

Also make sure that the Mod I/O serial cable is connected between the RTU and Mod I/O, and that WDP is functioning with its Mod I/O configured for **Modbus Address 5, 19200 Baud, no parity, and 1 stop bit**.

> 1. Click the **Connect COM Port** button in the Select RTU dialog.

Select RTU			?×
Please select an F	TU from the list :		Connect Phone
RTU Name	Phone Number	Firmware Version	
HACH_Test	3237890	1.87	Connect COM Port
			Work Offline
			Add
			Edit
			Delete
Recently used :	HACH_Test	•	Cancel
			Help

Figure 60: Select RTU Dialog

- 2. After the connection to the RTU is made, the Alarmware software will compare its settings with the Catalyst RTU.
- 3. The Alarmware software will detect a mismatch between the Catalyst RTU settings and the current Alarmware settings. Select Export Alarmware settings to RTU and click the OK button to upload the new settings.

Checking Rem	ote File S)ystem	<u>? ×</u>
		82%	
	3	bytes per sec	
	0:06	Min:Sec Spent	
	0:01	Min:Sec Remaining	
	Abort	Disconnect	

Figure 61: Checking Remote File System

Database Settings Mismatch	? ×
When Online, settings must match!	
 Import RTU settings to Alarmware Export Alarmware settings to RTU 	
OK Disconnect	

Figure 62: Database Settings Mismatch

You should see the following Window if all systems are functioning properly.

							_ 🗆 🗵
liagnostics Window Hel	p Quit						
? 📑 🕔							
						_	- 🗆 🗵
nline Status							
1 5	9-12	25-32					
2 6	13-16	33-40					
3 7	17-20	41-48					
4 8	21-24	49-56				LogFile	
Ac <u>k</u> nowledge Alarm		Disc <u>o</u> nnea	t RTU	1	Ext.NetAdd	Iress	
						-	
005 11:06:20 **** is : C:\Program I ram Files\RACO\At ARE.EXE version: a COM2. ssion: direct v: 0000 21700000) 181 by omplete.	7iles\RAC vare_v187 vare_v187 1.87 ia COM2. tes.	** :0\Aware_ ?\\data\c ?\\Log\ca	v187 atl.nvm tl.CSV				
							E A
	Acknowledge Alarm	iagnostics Window Help Quit	iagnostics Window Help Quit ? . . . nline Status . . . 1 5 9.12 25.32 . 2 6 13.16 33.40 . 3 7 17.20 41.48 . 4 8 21.24 49.56 . Acknowledge Alarm Disconnect . 005 11:06:20 ************************************	iagnostics Window Help Quit ? 1 5 9-12 25-32 2 6 13-16 33-40 3 7 17-20 41-48 4 8 21-24 49-56 Acknowledge Alarm Disconnect RTU 005 11:06:20 ************************************	iagnostics Window Help Quit ? 1 5 9.12 25-32 2 6 13.16 33-40 3 7 17-20 41.48 4 8 21-24 49-56 4 8 21-24 49-56 Acknowledge Alarm Disconnect RTU ! D05 11:06:20 ************************************	iagnostics Window Help Quit ? 1 5 9-12 25-32 2 6 13-16 33-40 3 7 17-20 41-48 4 8 21-24 49-56 Acknowledge Alarm Disconnect RTU Ext.NetAdd 005 11:06:20 ************************************	iagnostics Window Help Quit ? Inine Status 1 5 9-12 25-32 2 6 13-16 33-40 2 6 13-16 33-40 3 7 17-20 41-48 LogFile Acknowledge Alarm Disconnect RTU Ext.NetAddress LogFile 005 11:06:20 ************************************

Figure 63: Connected Online

Connecting a Remote PC with Alarmware to the RTU via a Phone Line

This portion of the **Application Note** assumes your **RTU** has a functioning **POTS** line connected to the RTU telephone input; is pre-configured and operating at a remote location.

This portion also assumes that you have a new installation of Alarmware on your Host PC that has not been used to configure the remote RTU.

- Connect your phone line to the Modem of your Host PC. Start the Alarmware program and click on the Add button in the Select RTU dialog.
- 2. Edit the Add/Edit RTU dialog as shown and click the Set button.

3. Click the **Cancel** button in the **Select RTU** dialog.

Select RTU			?×
Please select an R	TU from the list :		Courses Diseas
RTU Name	Phone Number	Firmware Version	Lonnect Phone
CATALYST		Unknown	Connect COM Port
			Work Offline
			Add
			Edit
			Delete
Becentluused :			Cancel
HOUSING USED.	1		Help

Figure 64: Select RTU

Add/Edit RTU	<u>? ×</u>
RTU Name*: HACH_Test	Set
*These same RTU Names also appear under the Configuration Messages menu.	Canaal
Phone No : 3237890	
Serial # : \$00264	Help
Model # : C10-S-020-1450 : Catalyst: 56 Channels	•

Figure 65: Add RTU

Select RTU			? ×
Please select an F	TU from the list :		Connect Phone
RTU Name	Phone Number	Firmware Version	Connect none
HACH_Test	3237890	1.87	Connect COM Port
			Work Offline
			Add
			Edit
			Delete
Recently used :	HACH Test		Cancel
,	1		Help

Figure 66: Select RTU

- 4. To configure Modem communications, in the Menu Bar of the Alarmware for Catalyst, click Options and select Modem.
- In the MODEM Settings dialog, select the Port Number that your Modem is connected to. All other settings should be as shown. Then click the OK button.
- 6. In the Menu Bar of the Alarmware for Catalyst, click Select RTU.
- 7. Click on the **Connect Phone** button in the **Select RTU** dialog.

🚰 Alarmware for Cataly	st			
Select RTU Import RTU	Options	LogFile	Help	Exit
<u>iii 🖳 🔤 🔤 🔤 🔤 🔤 🔤 🔤 🔤 🔤 🔤 🔤 🔤 🔤 </u>	COM Mode	Port	ē	1
	Alarm Misc.	ware PIN Options		

Figure 67: Options Menu

MODEM Settings		? ×
Port Number : COM3	Baud Rate :	57600 -
Initialization String : X1		
Outgoing Call Answer Limit :	120.0 seconds	
ОК	Cancel	Help

Figure 68: MODEM Settings

Alarmware for Catalyst Select RTU Import RTU Options LogFile Help Exit	•	U
Select RTU Import RTU Options LogFile Help Exit	🚰 Alarmware for Catalyst	
)) = () () ()	Select RTU Import RTU Options	LogFile Help Exit
	<u>)</u> = <u>(</u>	💭 💽 🔍

Figure 69: Alarmware Menu

Please select an RT	U from the list :		<u>1</u>
RTU Name	Phone Number	Firmware Version	Connect Phone
HACH_Test	3237890	1.87	Connect COM Port
			Work Offline
			Add
			Edit
			Delete
Becentluused :	HACH Test		Cancel
neeenky used .	Inword Less		Help

Figure 70: Select RTU

Note: Since this is your first time connecting to the Remote RTU, it will ask for your **PIN** number. Enter the **PIN** number. After Entering the PIN number the connection may be broken and you will need to repeat the process of clicking the **Connect Phone** button and re-establishing communication. At this, it should not request your PIN number.

After the connection to the RTU is made, the Alarmware software will compare its settings with the Catalyst RTU.

Checking R	? ×						
	82%						
	3	bytes per sec					
	0:06	Min:Sec Spent					
	0:01	Min:Sec Remaining					
	Abort	Disconnect					

Figure 71: Checking Remote File System

8. The Alarmware software will detect a mismatch between the Catalyst RTU settings and the current Alarmware settings. Select **Import RTU settings to Alarmware** and click the **OK** button to Download the RTU settings.

Database Settings Mismatch	<u>?×</u>
When Online, settings must match!	
 Import RTU settings to Alarmware Export Alarmware settings to RTU 	
0K Disconnect	

Figure 72: Database Settings Mismatch

After importing the RTU configuration you will be **Online**. Changes to the RTU will now be made online as you make them on the Alarmware display. You can also acknowledge alarms. In this example we will download a log file.

Transfer Config	or Catalyst uration Cor	au LogEile	Diagnostics ¹	Window He	do Quit						<u>- 🗆 ×</u>
	a ldion 000	, cogr #0	? 🖃	N 5	ap con						
Online with	RTU - HA	.CH_Test									
Online Status											
PLC	normal	program	1	5	9-12	25-32					
printer	check	recording	2	6	13-16	33-40					
aware	LoBat	disarmed	3	7	17-20	41-48					
tfail	pfail	phoning	4	8	21-24	49-56				LogFile	
<u>A</u> rm/Dis	sarm Unit	t	Ac <u>k</u> nowle	dge Alarm	1 [Disc <u>o</u> nne	ct RTU	I F	<u>E</u> xt.NetA	ddress	
<u>A</u> rm/Dis	sarm Unit	:	Ac <u>k</u> nowle	dge Alarm		Disc <u>o</u> nne	ct RTU		<u>E</u> xt.NetA	ddress	
<u>A</u> rm/Dis	sarm Unit	t	Ac <u>k</u> nowle	dge Alarm		Disc <u>o</u> nne	ect RTU		<u>E</u> xt.NetA	ddress	
<u>A</u> rm/Dis	sarm Unit for RTU - H ** Fri)	t IACH_Test May 06, 2	Ac <u>k</u> nowle	dge Alarm 5:18 ***		Disc <u>o</u> nne	ect RTU		<u>E</u> xt.NetA	ddress	
Arm/Dis Messages I ********* Current wo NVM file p	for RTU - F ** Fri h rking di ath is :	HACH_Test May 06, 2 irectory : C:\Pros	Acknowle 2005 13:3 is : C:N gram File	dge Alarm 5:18 *** Program s\RACO\A	Files\RA ware_v18	Disconne	ct RTU		<u>E</u> xt.NetA	ddress	
Arm/Dis Messages f ********** Current wo NVM file p LOG file p Firmware V	for RTU - H ** Fri h rking di ath is ersion:	HACH_Test May 06, 2 irectory : C:\Prog : C:\Prog 1.87, AU	Acknowle 2005 13:3 is : C:N gram File VARE.EXE	dge Alarm 5:18 *** Program s\RACO\A version:	Files\R4 ware_v18 ware_v18 1.87	Disconne ** CONÀware 7NdataN 7NLogNc	v187 v187 cat1.nvm at1.log		<u>E</u> xt.NetA	ddress	<u></u> _
<u>Arm/Dis</u> <u>Messages I</u> ********* Current wo NVM file p LOG file p Firmware V Using mode Originatin	for RTU - H ** Fri h rking di ath is ath is ersion: m on CON g Progra	HACH_Test May 06, 2 irectory : C:\Prog 1.87, Au 46. amming se	Acknowler	dge Alarm 5:18 *** Program s\RACO\A s\RACO\A version: dialing	<pre>Files\RA ware_v18 ware_v18 ware_v18 4027.</pre>	Disconne ** CONAware, 7\\data\ 7\\Log\c	_v187 _cat1.nvm at1.log		<u>E</u> xt.NetA	ddress	X
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<u>Arm/Dis</u> <u>Arm/Dis</u> <u>Arm/Dis</u> <u>Current wo</u> NVM file p LOG file p Firmware V Using mode Originatin Connecting The curren Database s	for RTU - H ** Fri h rking di ath is ath is ath is ersion: m on CON g Progra with 40 nt date t time i ynchroni	ACH_Test May 06, 2 irectory : C:>Proc : C:>Proc : 1.87, Au 46. amming se 127. is set to is set to ization of	Acknowle 2005 13:3 is : C:N gram File VARE.EXE ession: to 5/6/05 p 13:36:1 complete.	dge Alarm 5:18 *** Program S\RACO\A S\RACO\A version: dialing , Friday 2.	******** Files\RA ware_v18 ware_v18 1.87 4027.	Disconne ** CO\Åware 7\\data\ 7\\Log\c	v187 cat1.nvm at1.log		<u>E</u> xt.NetA	ddress	
Arm/Dis Messages 1 ********** Current wo NVM file p LOG file p LOG file p LOG file p Connecting The curren Database s	for RTU - H *** Fri h rking di ath is ersion: m on CON g Progra with 40 r date t time i ynchroni	t May 06, 2 irectory : C:>Proc 1.87, Aŭ 46. amming se 027. is set to is set to ization c	Acknowle 2005 13:3 is : C:N yram File pram File VARE.EXE ession: to 5/6/05 to 13:36:1 complete.	dge Alarm 5:18 *** Program s\RACO\A s\RACO\A version: dialing , Friday 2.	******** Files\RA ware_v18 1.87 4027.	Disconne ** CO\Aware 7\\data\ 7\\Log\c	_v187 _at1.nvm at1.log	Modem	<u>E</u> xt.NetA	ddress	

Figure 73: Online

Downloading a Log File While On-Line

1. After the connection to the RTU is made, via the LogFile menu, select Transfer Options.



Figure 74: Select Transfer Options

- Edit the Transfer Options dialog to download
 Undelivered data only and to have a Comma
 Separated Values format with the LogFile
 Extension .CSV.
- 3. Click the Accept button.

Transfer Options		? ×					
Include the following log file Channel State Transitions	e contents : RTU Events						
Logged Alarms Logged Alarm Acknow Logged Channel Reset	ledgment 🔽 Logged Data Samj is Logged Session Hi is Logged Configurati	oles Clear Item istory ion Changes Clear All					
Include log data in the following range : All data Undelivered data only Data collected in previous (DD : HH) Fort report contents according to :							
All events in chronolog Data samples clumped	cal order by channel number omma Separated Values 🔽	Accept					
Language : En	nglish 🔽						

Figure 75: Transfer Options

4. Then via the LogFile menu select, Transfer LogFile from RTU.



Figure 76: Transfer LogFile from RTU

5. Click **OK** to download the current Log File from the RTU to your PC.

Log File Download		×
Clicking OK will cau to be downloaded to This may take consi the size of the Log F	se the RTU's Log F) this computer runn derable time depen ïle.	ïle contents ning Alarmware, iding upon
ОК	Cancel	

Figure 77: Log File Download

It may take several minutes to download the file depending on its size.



Figure 78: LogFile Transferring

6. After the file downloads, use Windows Explorer and go to the file located at: C:\Program Files\RACO\Aware_v187\Log and open the cat1.CSV file with MS Excel. Depending on your Alarmware configuration, the file name may be different.



Figure 79: Opening the Log File

M	icrosoft Excel - ca	t1.CSV					<u>_ D ×</u>
8	<u>F</u> ile <u>E</u> dit <u>V</u> iew	Insert Format	<u>T</u> ools <u>D</u> ata	<u>W</u> indo	w <u>H</u> elp A	\cro <u>b</u> at	_ 8 ×
	2 🖬 🔒 🎒	🖻 🝼 🗠 •	🤮 Σ 🔸 🛃		75% 🔹 🕻) * * *	Remove Dups 🖕
10	• B = =	🔠 🔛 🗕 🖄	• <u>A</u> •		» 3	🗞 🕈 🚺	achInstruments 🔹 🍟
R	290302 🗸	🗾 🏂 CHANN	IEL 1 Turbidity	is			
	1		2		3	4	-
2863	4/28/2005 2:35	CHANNEL1Turbid	ity is		0.266	NTU	NORMAL -
2864	4/28/2005 2:35	CHANNEL 2 Chlor	ine is		0.366	mg/L	NORMAL
2865	4/28/2005 2:35	CHANNEL 3 pH is			0.466	pН	NORMAL
2866	4/28/2005 2:35	CHANNEL 4 Temp	erature is		0	Degree C	NORMAL
2867	4/28/2005 2:35	CHANNEL 5 Cond	uctivity is		0.566	uS	NORMAL
2868	4/28/2005 2:35	CHANNEL 6 Press	ure is		0	PSI	NORMAL
2869	4/28/2005 2:35	CHANNEL 7 TOC i	s		0.666	mg/L	NORMAL
2870							
2871	4/28/2005 2:40	CHANNEL 1 Turbid	ity is		0.267	NTU	NORMAL
2872	4/28/2005 2:40	CHANNEL 2 Chlor	ine is		0.366	mg/L	NORMAL
2873	4/28/2005 2:40	CHANNEL 3 pH is			0.466	pН	NORMAL
2874	4/28/2005 2:40	CHANNEL 4 Temp	erature is		0	Degree C	NORMAL
2875	4/28/2005 2:40	CHANNEL 5 Cond	uctivity is		0.566	uS	NORMAL
2876	4/28/2005 2:40	CHANNEL 6 Press	ure is		0	PSI	NORMAL
2877	4/28/2005 2:40	CHANNEL 7 TOC i	s		0.666	mg/L	NORMAL
2878							
2879	4/28/2005 2:45	CHANNEL 1 Turbid	ity is		0.267	NTU	NORMAL
2880	4/28/2005 2:45	CHANNEL 2 Chlor	ine is		0.367	mg/L	NORMAL
2881	4/28/2005 2:45	CHANNEL 3 pH is			0.467	pН	NORMAL
2882	4/28/2005 2:45	CHANNEL 4 Temp	erature is		0	Degree C	NORMAL
2883	4/28/2005 2:45	CHANNEL 5 Cond	uctivity is		0.567	uS	NORMAL
2884	4/28/2005 2:45	CHANNEL 6 Press	ure is		0	PSI	NORMAL
2885	4/28/2005 2:45	CHANNEL 7 TOC i	s		0.666	mg/L	NORMAL
14 4	H Catl				•		FI
Read	v					NUM	



Creating a Scheduled Download of the Log File from the RTU

We can use **Windows Scheduler** to create a scheduled Log File download from the RTU. To do this we need to create a **.BAT** file with **Windows Notepad** that will launch the **LogTran187.exe** program.

1. Open Windows Notepad and add the line Logtran187 "HACH_Test" dial as shown. Note that "HACH_Test" is the name given the RTU in this example, yours may be different.

🛃 LogtranDownload.bat - Notepad	- 🗆 🗵
File Edit Format Help	
Logtran187 "HACH_Test" dial	-
	-



2. Save the file with the file name LogtranDownload.bat in the C:\Program Files\RACO\Aware_v187\ folder.

Open the Windows Control Panel and select the Scheduled Tasks application. Double click on the Add Scheduled Task.

Scheduled Tasks			_ 🗆 ×
File Edit View Favorites T	ools Advanced Helj	5	1
🖨 Back 🔹 🔿 👻 🔯 Sea	rch 🔁 Folders 🥳	📲 📲 🗙 ശ	»
Address 💼 Scheduled Tasks		🔹 🤗 Go	Links »
Name	Schedule	Next Run Time	Last Run 1
Add Scheduled Task			
ا			•
1 object(s)			1.

Figure 82: Add a Scheduled Task

4. Click on the Next button in the Scheduled Task Wizard.



Figure 83: Scheduled Task Wizard

5. In the Scheduled Task Wizard, click on Browse.



Figure 84: Select Program to Schedule

- Browse to the C:\Program
 Files\RACO\Aware_
 v187\ folder and select the file
 LogtranDowload.bat.
- 7. Click the **Open** button.

Select Program	to Schedule				? ×
Look in:	🔁 Aware_v187		- 🔶 🗄) 🗗 🛅	
History Desktop My Documents My Computer	Bak Data Log Artu AWARE.HLP aware187.exe AwareHelpFile bds52f.dll bdt52cf.dll core187.rfw	.cnt .GID	 cw3230.dll HACH_Test.ttu HACH_Test.txt INETWH32.dll Introduction.txt LOGFILEH.TXT logities.csv logitran sessions.txt LogTran.ini logtran187.exe LogtranDownload.bat 		message.txt owl52f.dll Readme187.doc RESPONSE.wf RHMPLAY.DL ROBOEX32.DLl itu.ini ttu.ini SFP.INI SOFTRPT.wRI
My Network P	File name: Files of type:	LogtranDown	load.bat	<u> </u>	Open Cancel

Enter a name for the task and select when to perform the task, (e.g. Daily). Then click the Next button.

Figure 85: Select Program to Schedule



Figure 86: Edit Task Wizard

9. Select a **Time** and **Date** for the task to run and click the **Next** button.



Figure 87: Edit Task Wizard Time and Date

10. Enter your Computer/Network login **password** and click the **Next** button.



Figure 88: Enter Password

11. Click the **Finish** button and your Task is scheduled.



Figure 89: Finish Task Wizard

12. When the scheduled task automatically runs, at the end of the Log File download, a completion dialog will remain on the screen. Click **OK** to close the dialog.



Figure 90: Log File Transfer Successful



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