



USB GSM 3G modem RMS-U-GSM-3G

Manual (PDF)

Version 1.0, 2014.8.1

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1. Introduction

The 3G USB Modem provides global wireless access to the Internet and email on GSM / GPRS / EDGE / 3G capable networks. With this modem, your RAMOS ULTRA unit can connect to the Internet using your local GSM, GPRS, EDGE or 3G services.

The 3G USB Modem is powered directly from a USB interface, so no charging devices or external AC/DC adapters are required.

The 3G USB Modem is ready to use by simply connecting its USB interface to your RAMOS ULTRA USB port. The 3G USB Modem can also be connected to any PC or notebook that has USB support. It can also be used with the CONTEG Pro Server application.

1.1 Benefits

This 3G USB Modem is ideal for remote locations, where a RAMOS ULTRA is being used to monitor and control critical environmental factors. After connecting to your RAMOS ULTRA, you can set up your preferred notification and alerting configurations including:

- Send SMS and email alerts from the RAMOS ULTRA base units
- Use the "Heartbeat" feature built into the RAMOS ULTRA to distribute SMS, email and HTTP data to remote web servers via your GSM network at predetermined times
- Support for the 3G USB Modem is already incorporated into the RAMOS ULTRA web interface in a convenient drop down menu for quick and easy setup

1.2 Important

The 3G Modems are compatible only with RAMOS ULTRA units shipped after June 1, 2014. There is no visual way of telling if the modem is compatible, but we can check the MAC ID of when the units were shipped to you.

For more details, please consult the modem's product datasheet (available on our website).

2. Modem setup guide for RAMOS ULTRA base unit

What you'll need:



RMS-U-GSM-3G (3G USB Modem)

Note: The modem has no external antenna – it's not recommended for use in areas with weak signal. To confirm compatibility in your country, and for a comprehensive listing of the GSM/GPRS networks available and the frequencies that they use, visit <http://www.mobileworldlive.com/maps/>



Mobile Service Provider SIM Card

You will need to purchase a SIM card from your local mobile service provider that you will install in the USB modem. This SIM card will provide the mobile connection that enables the base unit to send SMS, MMS, or voice alerts to your mobile phone.

Note on SIM: If the SIM card you purchased requires a PIN number, then you will need to contact your service provider and have them provide you with the instructions for disabling the PIN code on the SIM card. Otherwise it will not work on the base unit.

It is always a good idea to test the SIM card in your mobile phone or on your PC to ensure the SIM is working properly before installing the modem on your base unit.



RAMOS ULTRA base unit

Find the USB port located near the Eth 10/100 LAN interface. This is the port where you will connect the 3G USB modem.

Note: The 3G USB Modems are compatible only with RAMOS ULTRA units produced after June 1, 2014.

2.1 Connecting the 3G USB Modem to your RAMOS ULTRA

Step 1: Connect the 3G USB Modem to the RAMOS ULTRA unit's USB port, as shown in the picture above (it also works with a USB extender cable). It will be automatically detected by the RAMOS ULTRA unit.

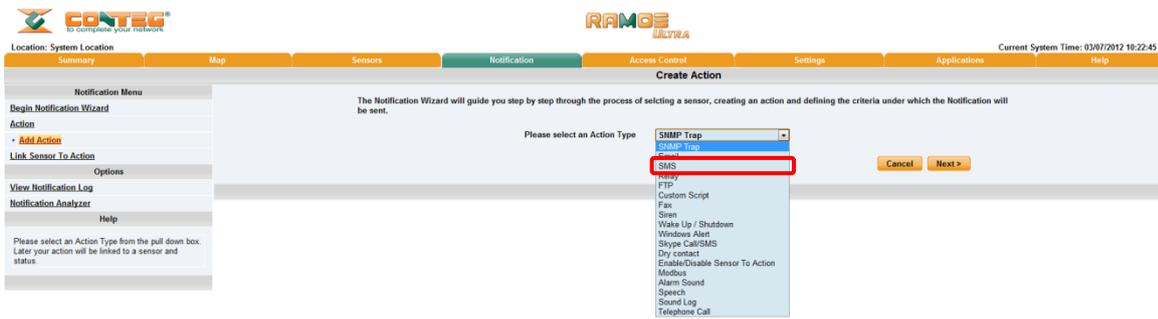
Step 2: Configure the notification settings in the RAMOS ULTRA's web interface. See below for the basic instructions.

2.2 Basic connection setup for RAMOS ULTRA (SMS)

Note: The 3G USB modem doesn't support voice alert notifications.

2.3 SMS Alert – SMS Action

You need to first log in to the unit's web interface as the administrator and navigate to the "Notifications" page. Click on the "Begin notification wizard" page, followed by the "Create" button. From the drop down menu select the "SMS" action type as shown below. Then click "Next".



Note: If the screen images appear too small, just use the zoom feature in your pdf viewer to make them bigger.

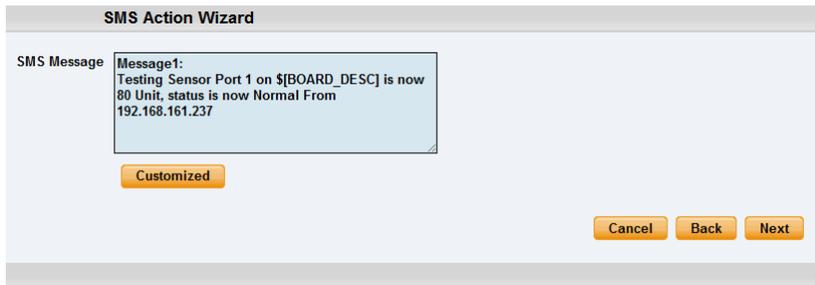


On the next screen, you will name your action and add your mobile phone number, or a list of mobile phone numbers that your SMS alert will be sent to. You can add multiple numbers in the call list. There is no limit to the amount of numbers you can add. However, the more numbers you add, the longer it will take to finish sending the alert out as SMS alerts call to the first number and after finishing will call to the second number and so on.

IMPORTANT NOTE: If you set up multiple SMS alerts in the same notification folder, this will cause an “SMS Queue Full” error. For example, if you have multiple mobile numbers on a list, and you set up each SMS alert to go out to only one number, then you will get an error message. If you have set up your notification setting like this, it forces the RAMOS ULTRA to connect to each phone number for an equal amount of time for each alert. (For example, if one notification has 20 SMS alerts, then the device needs to call and connect to the service provider 20 times). This causes the SMS queue to fill up and report an error message. What you need to do is change the setting to send one SMS alert to multiple numbers. This will decrease the number of connections to the service provider.

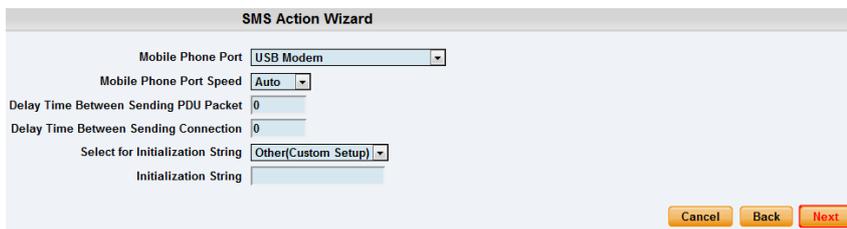


After you have finished adding the mobile numbers to the call list, click the “Next” button as shown above.

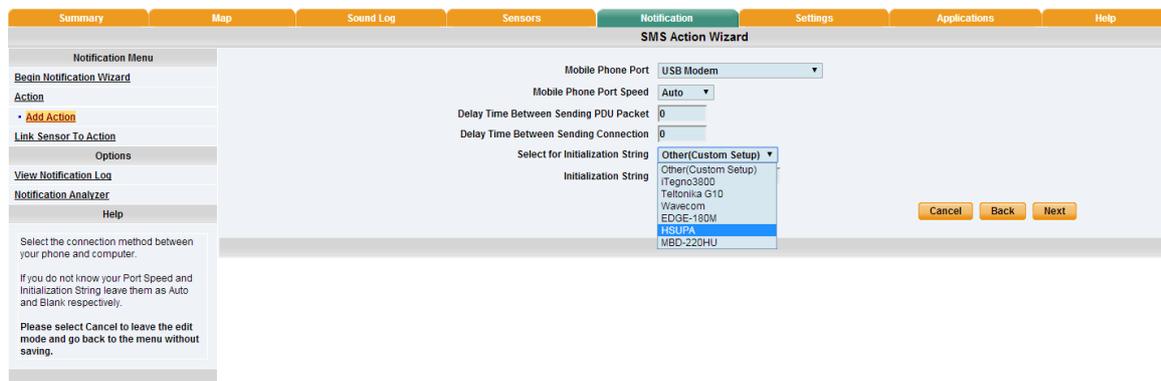


The next screen of the SMS Action Wizard will show the SMS message that will be sent. You can click on the **“Customized”** button to edit the text that will be sent. After you’re finished, click on the **“Next”** button.

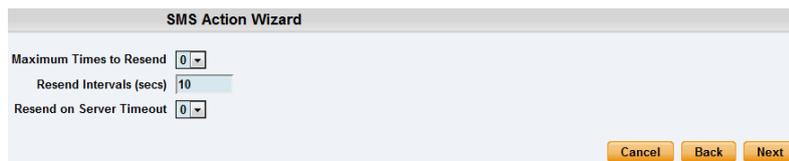
The customized message is a template compiled from static written words and dynamic macro texts.



In the screen above, you will select the modem port from the drop down list. For the 3G USB Modem, you will choose **“USB Modem”**. You should also note whether the wording **“(Not Connected)”** appears under **“USB Modem”**. This means that the unit does detect the modem is connected to the USB port. If you see this wording under **“USB Modem”**, then there is a problem with the connection. You should check the cable or try connecting the modem directly to the USB port.



You can leave the port speed as **Auto** and disregard the Delay Times settings. Choose the **HSUPA** from the Initialization String drop down list and click **“Next”** as shown above.



On the next screen, you can set up the **“Maximum Times to Resend”**, which is five. You can also set the **“Resend Intervals”** and the **“Resend on Server Timeout”** in case there is a problem connecting to the GSM service.

Clicking on the “**Finish**” button will save your new SMS alert format and complete the wizard.

You will now see your new SMS alert in the action list as shown above, and you can test it to make sure it is working correctly by first highlighting it, then clicking on the “**Test Action**” button.

You can then navigate to the Summary page and check the Syslog for the entry regarding the successful test message.

Now that you have your SMS alert format completed you can link it to any sensor connected to your base unit using the “**Link Sensor to Action Wizard**”.

2.4 3G data connection setting for RAMOS ULTRA

You can find the data connection settings under the **Settings** page. Select **Connectivity**, and then find **Dial-Out Modem**.

The screenshot shows the 'Dial-Out Modem' configuration page. The left sidebar contains a navigation menu with categories like 'General', 'Connectivity', 'Ethernet Network', 'Wifi Network', 'Modbus', 'SNMP', 'Bluetooth', 'Dial-In Modem', 'Dial-Out Modem', 'OpenVPN Client', 'Serial to Network Proxy', 'Server Integration', 'System Administrator', 'Password Checking', 'User & Group Management', 'System Maintenance', 'Services and Security', 'System Log', 'Heartbeat Messages', 'Cloud Monitoring', and 'License Management'. The main content area is titled 'Dial-Out Modem' and includes the following settings:

- Connection Method: Never Dial-Out (Use Ethernet Only)
- Connection Type: Always On (selected), On-Demand
- Status: Disconnected, View Log
- IP address: n/a
- Save / Reset buttons
- Dial-Out Profiles section:
 - Modem On Port: USB Modem (selected)
 - Modem Port Speed: COM1
 - Initialization String: USB to Serial (Unplugged)
 - Connection Mode: GPRS: Secured
 - Access Point Name: (empty)
 - Redial Attempt: 0
 - Idle time before hanging up (secs): 30 / 30 secs
 - Login: (empty)
 - Password: (empty)
 - ISP's Domain Name Server: (empty)
 - Save / Reset buttons

Select **Modem On Port** as the **USB Modem** from the drop-down list, and enter the connection details, as given by your service provider.

This screenshot is similar to the previous one but shows the 'Connection Mode' dropdown menu open, with 'GPRS: Unsecured' selected. The 'Modem On Port' is still 'USB Modem'. The 'Modem Port Speed' is now 'Auto'. The 'Connection Mode' dropdown also shows other options: 'Normal', 'PAP: Unsecured', 'PAP: Secured', 'GPRS: Unsecured', and 'RAS'. The 'Idle time before hanging up (secs)' is still 30 / 30 secs.

You may select a different **Connection Mode** (PAP/GPRS/RAS). The most commonly used mode is **GPRS Unsecured**.

Summary	Map	Sound Log	Sensors	Notification	Settings	Applications	Help
Dial-Out Modem							
Setup		Connection Method: Never Dial-Out (Use Ethernet Only)					
<ul style="list-style-type: none"> General Connectivity <ul style="list-style-type: none"> Ethernet Network Wifi Network Modbus SNMP SNMPTraps Bluetooth Dial-In Modem Dial-Out Modem OpenVPN Client Serial to Network Proxy Server Integration System Administrator <ul style="list-style-type: none"> Password Checking User & Group Management System Maintenance 		Connection Type: Never Dial-Out (Use Ethernet Only) Status: Disconnected IP address: n/a <input type="button" value="Save"/> <input type="button" value="Reset"/>					
		Dial-Out Profiles					
		Modem On Port: USB Modem Modem Port Speed: Auto Initialization String: <input type="text"/> Connection Mode: GPRS: Unsecured Access Point Name: <input type="text"/> Redial Attempt: 0 Idle time before hanging up (secs): 30 / 30 secs Login: <input type="text"/> Password: <input type="password"/> ISP's Domain Name Server: <input type="text"/> <input type="button" value="Save"/> <input type="button" value="Reset"/>					

You may change the Connection Method:

- **Never Dial Out (Use Ethernet only):** The unit will never try to use the modem for sending out notifications. If you don't have an Ethernet connection, you should change this setting, otherwise you won't get any notifications.
- **Dial-Out if Ethernet failed:** The unit will only use the modem for sending out notifications if the Ethernet connection fails.
- **Use Dial-Out Only:** The unit will only use the modem to send out notifications, regardless of the state of the Ethernet connection.

Summary	Map	Sound Log	Sensors	Notification	Settings	Applications	Help
Dial-Out Modem							
Setup		Connection Method: Never Dial-Out (Use Ethernet Only)					
<ul style="list-style-type: none"> General Connectivity <ul style="list-style-type: none"> Ethernet Network Wifi Network Modbus SNMP SNMPTraps Bluetooth Dial-In Modem Dial-Out Modem OpenVPN Client Serial to Network Proxy Server Integration System Administrator <ul style="list-style-type: none"> Password Checking User & Group Management System Maintenance 		Connection Type: <input checked="" type="radio"/> Always On <input type="radio"/> On-Demand Status: Disconnected <input type="button" value="View Log"/> IP address: n/a <input type="button" value="Save"/> <input type="button" value="Reset"/>					
		Dial-Out Profiles					
		Modem On Port: USB Modem Modem Port Speed: Auto Initialization String: <input type="text"/> Connection Mode: GPRS: Unsecured Access Point Name: <input type="text"/> Redial Attempt: 0 Idle time before hanging up (secs): 30 / 30 secs Login: <input type="text"/> Password: <input type="password"/> ISP's Domain Name Server: <input type="text"/> <input type="button" value="Save"/> <input type="button" value="Reset"/>					

You may change the **Connection Type**:

- **On-Demand:** The unit will initiate a connection only when it's necessary for sending out notifications.
- **Always On:** The unit will keep the connection up, even when there is nothing to send.

You can always view the current connection status on this page.

3. Modem setup guide for CONTEG Pro Server

What you'll need:



RMS-U-GSM-3G (3G USB Modem)

Note: The modem has no External Antenna – it’s not recommended for use in areas with a weak signal. To confirm compatibility in your country, and for a comprehensive listing of the GSM/GPRS networks available and the frequencies that they use, visit <http://www.mobileworldlive.com/maps/>



Mobile Service Provider SIM Card

You will need to purchase a SIM card from your local mobile service provider that you will install in the USB modem. This SIM card will provide the mobile connection that enables the base unit to send SMS, MMS or voice alerts to your mobile phones.

Note on SIM: If the SIM card you purchased requires a PIN number, then you will need to disable it using the 3G Modem’s configuration program (see below for instructions). Otherwise it will not work with the CONTEG Pro Server.



Free USB port

Note: The front panel USB ports usually provide less power than the ones in the back. We advise you to connect the USB modem to one of the back ports of your machine, especially if you’re using a USB extender cable.

The 3G Modem doesn’t have a high-power requirement, but it would perform better in one of the back ports.

3.1 Connecting the 3G USB Modem to your PC/Server

Step 1: Connect the 3G Modem to the PC/Server’s free USB port, as shown in the picture above (it also works with a USB extender cable). It will be automatically detected by Windows and show the setup program for the driver installation. See below for a guide on installing the drivers.

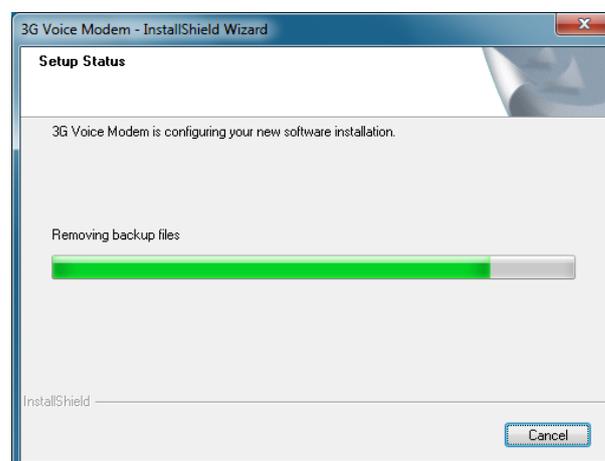
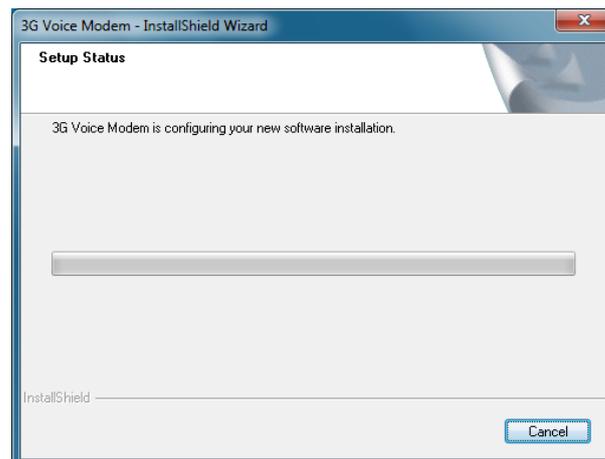
Step 2: Configure the notification settings in the CONTEG Pro Server. See below for basic instructions.

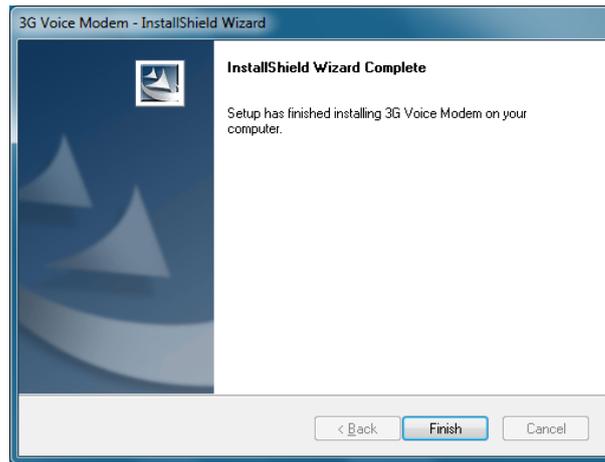
3.2 3G Modem installation for PC/Server

Windows will detect the device connected to the USB port, and install it. There is a virtual CD drive on the modem, which contains the driver files. Run autorun.exe to begin the installation process:



Wait for the setup wizard to finish:

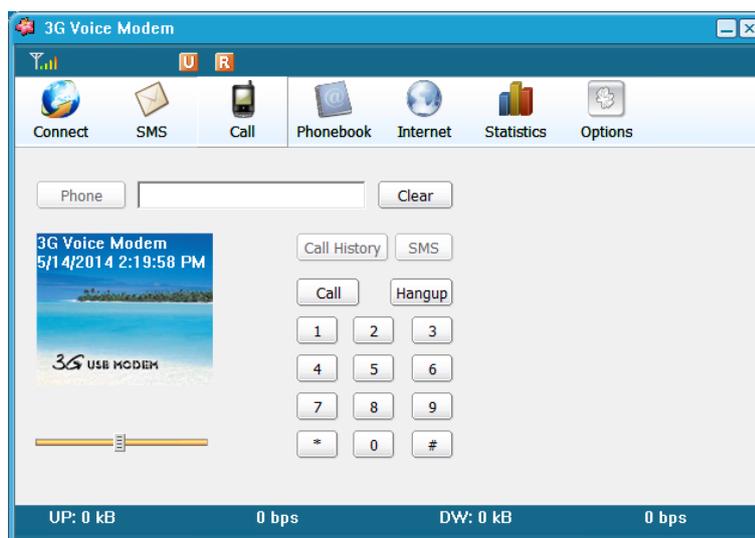




The modem setup will install the necessary drivers for the connection:



After the setup is completed, it will start the configuration program for the modem:



You can also configure the modem's 3G network settings with this utility.

3.3 Disable the SIM card's PIN using the modem's configuration program

In the Options menu, you'll have the option to disable the SIM card's PIN number, if you haven't already done. You must disable the PIN number to be able to use the modem with a RAMOS Ultra device and the CONTEG Pro Server.



3.4 Basic notification setup for CONTEG Pro Server (SMS)

Note: the 3G USB Modem doesn't support voice alert notifications.

This tutorial provides you with the information needed to set up the SMS notification feature. Before starting this tutorial:

- Connect the modem to the PC/Server's free USB port
- Let the modem successfully install and configure itself

When the device is connected and successfully configured, you can start the CONTEG Pro Server:

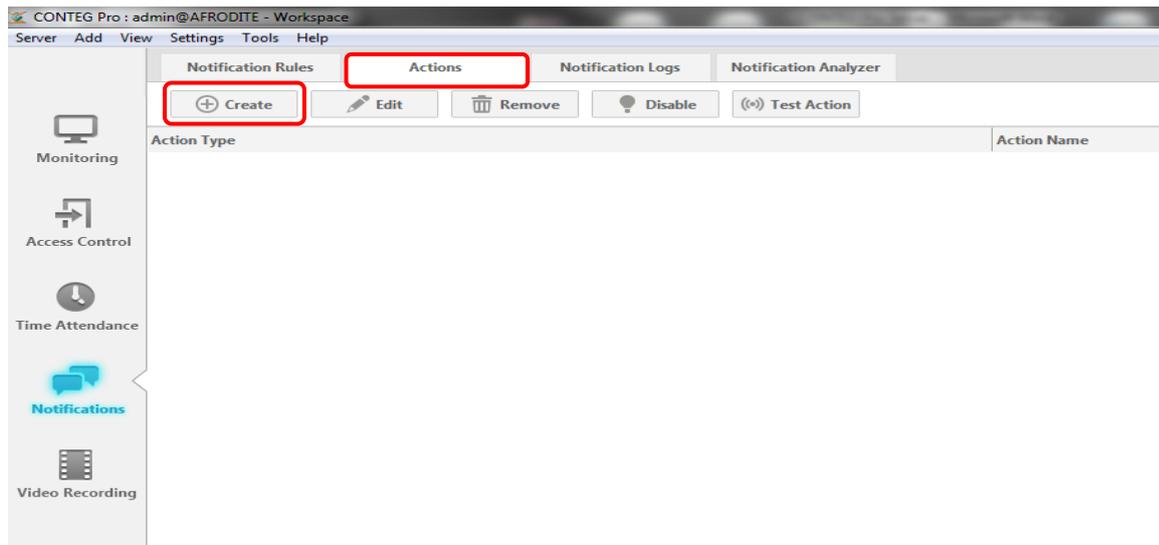


We will show you how to set up an SMS notification when the 'host status' virtual sensor goes offline using the 3G Modem. The modem needs to be connected to the USB port of the test machine where the CONTEG Pro Server is installed.

After setting up this notification, you should receive a text message from the CONTEG Pro Server informing you that your RAMOS ULTRA is offline. You will then be able to take immediate action. With notifications, you will be able to monitor your sensors anytime and anywhere.

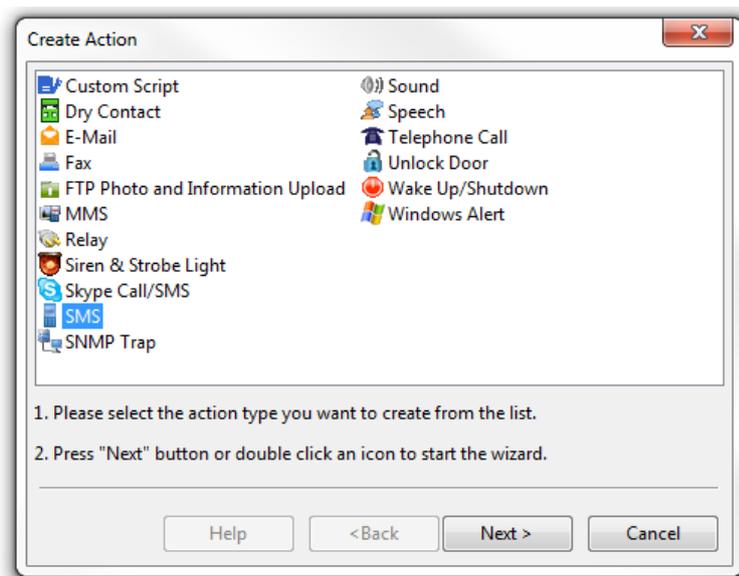
We create notifications on the **Notifications** page. To open the Notifications page, click the Notifications button on the main navigation bar. The Notifications tab will appear in the main window.

There are four tabs under it – “Notification Rules”, “Actions”, “Notification Logs” and “Notification Analyzer”.

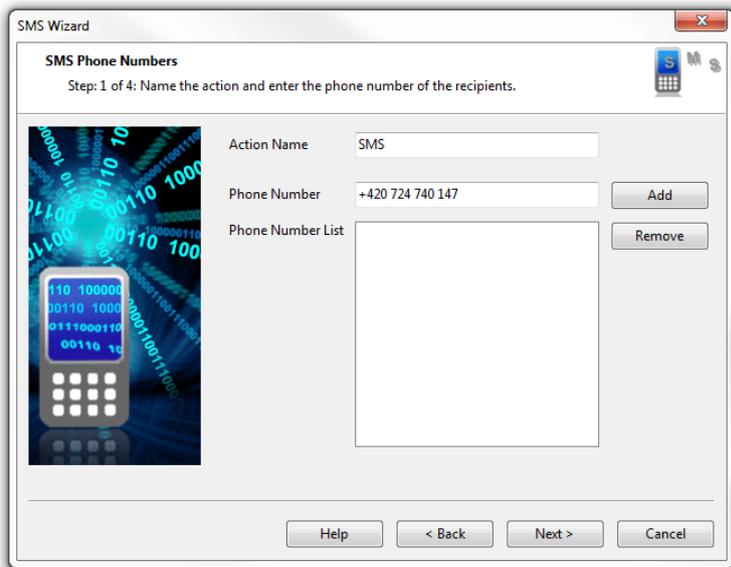


First, we need to create a **notification action** and a **notification rule** to link the action to a sensor and status conditions.

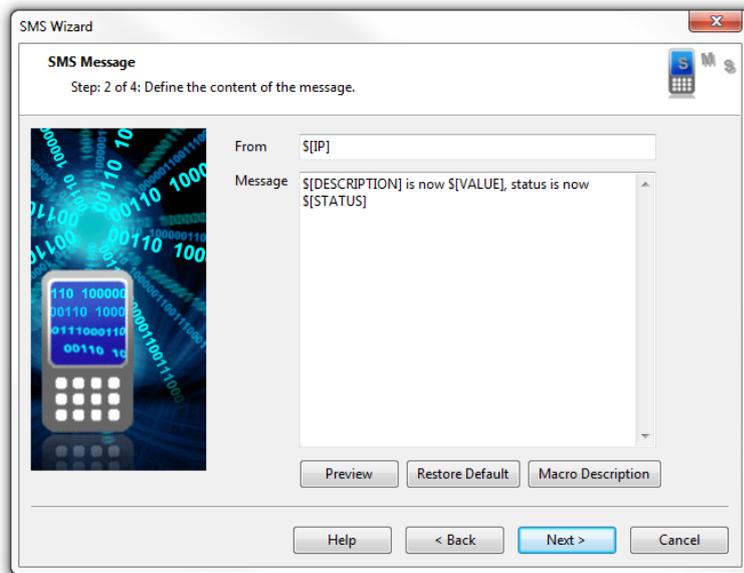
To create a notification action, click on the **Actions** tab under Notifications and click the ‘**Create**’ button. A 'Create Action' dialog window will appear.



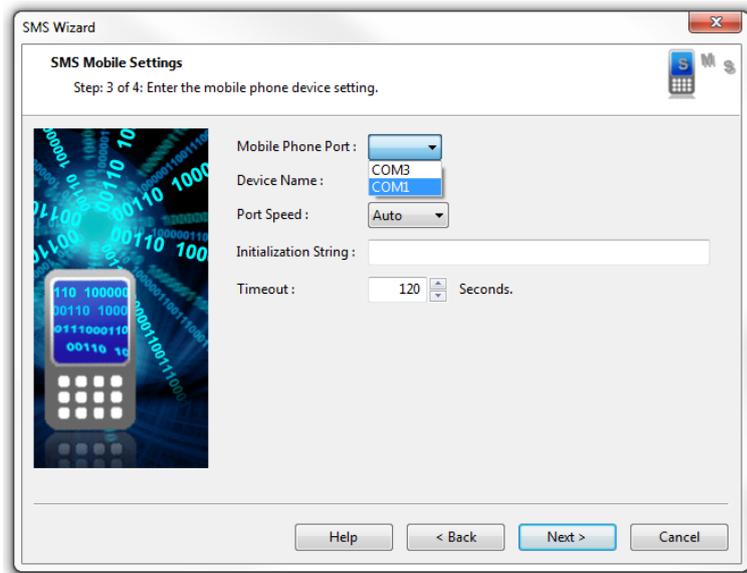
In the dialog window, you will see a list of notification actions. Select the **SMS** action, and click ‘**Next**’ to run the SMS Wizard dialog.



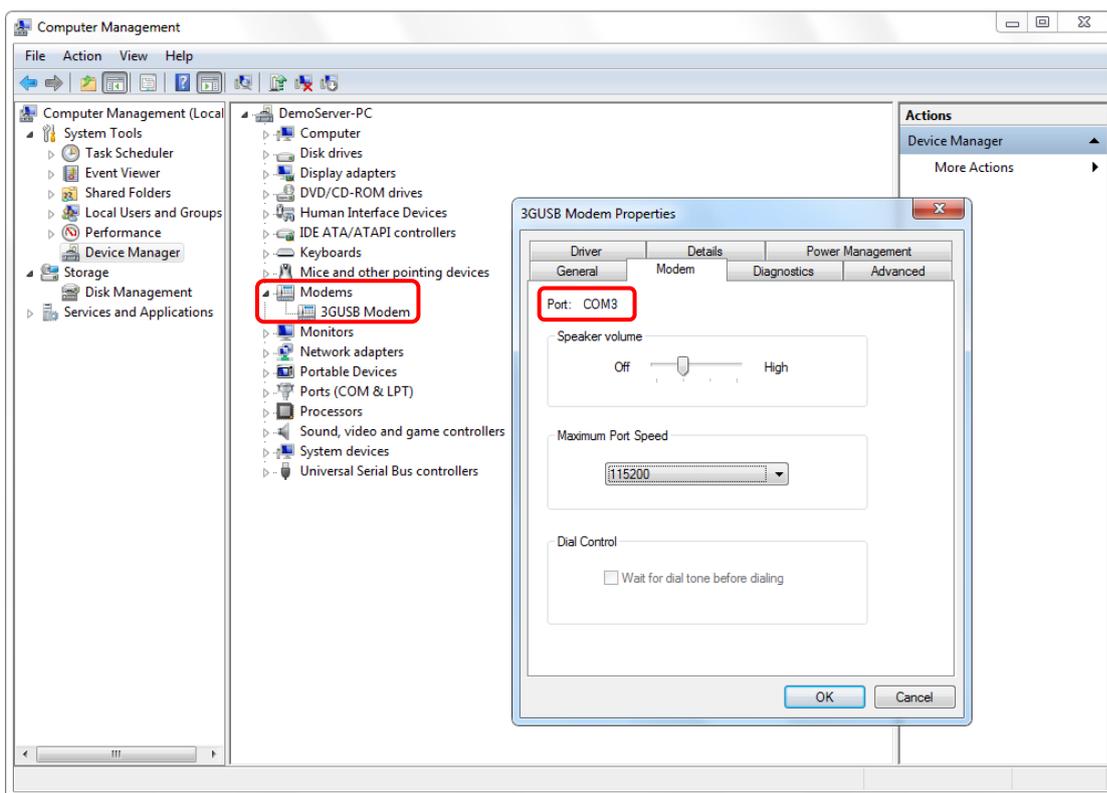
Enter an **action name** and enter at least one **phone number** in the Phone Number List. To add a number, enter the number in the **'Phone Number'** field and click the **'Add'** button. The number will then be added in the Phone Number List box. You can remove phone numbers in the list by selecting the number and click the **'Remove'** button. Click **'Next'** to continue.



You can customize the SMS message to be sent. The **'From \$[IP]'** is an example of a macro description named '\$[IP]'. In the actual SMS message, the value of it will depend on the IP address of the host sending the notification. If you wish to preview your message, click the **'Preview'** button.



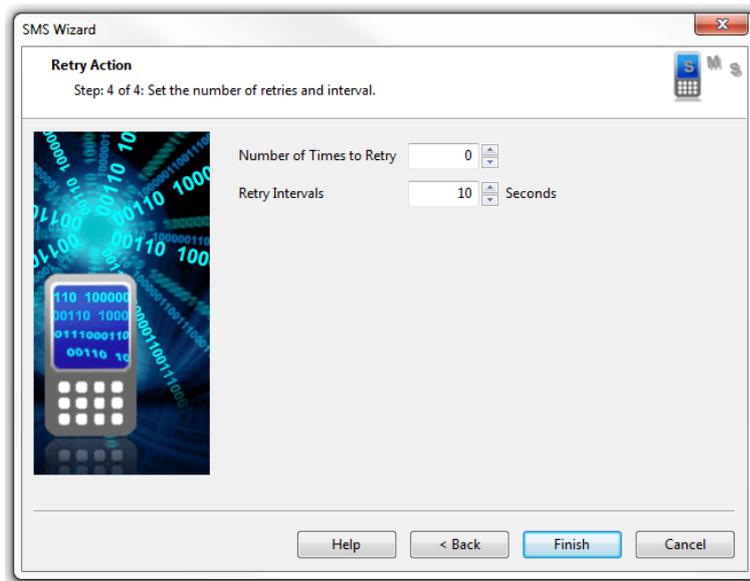
For this example, the 3G Modem is attached to port COM3. Select COM3 as the Mobile Phone Port. If you are unsure what Port your modem is connected to, browse your Device Manager under Modems. Right click on your device and click on Properties. You can see the port and maximum port speed under the modem tab.



Leave the default **Port Speed** on 'Auto'.

'Timeout' is the time lapsed in seconds that the system has no response from the modem device.

Click **'Next'** to continue.



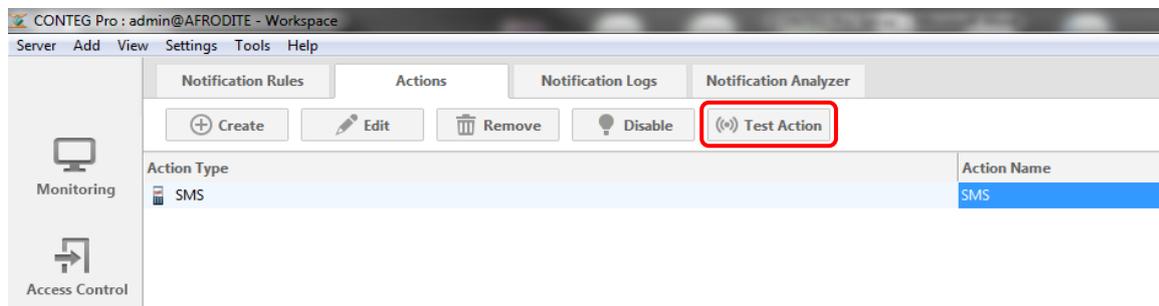
'Number of Times to Repeat' is the number of times the SMS message will be sent.

'Repeat Intervals' is the time interval in seconds between the resent SMS messages.

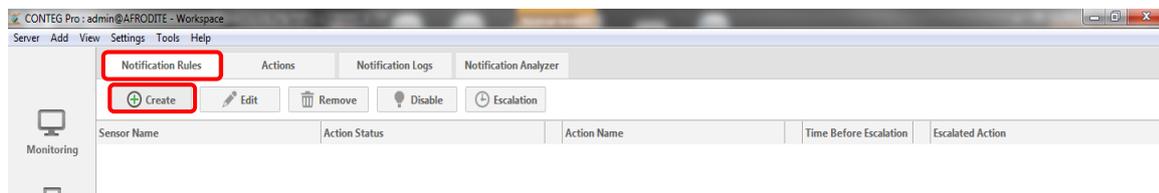
In this example, we only want to receive one SMS message, so we will set the “Number of Times to Repeat” to 0.

You can click the 'Back' button to change any previous configuration.

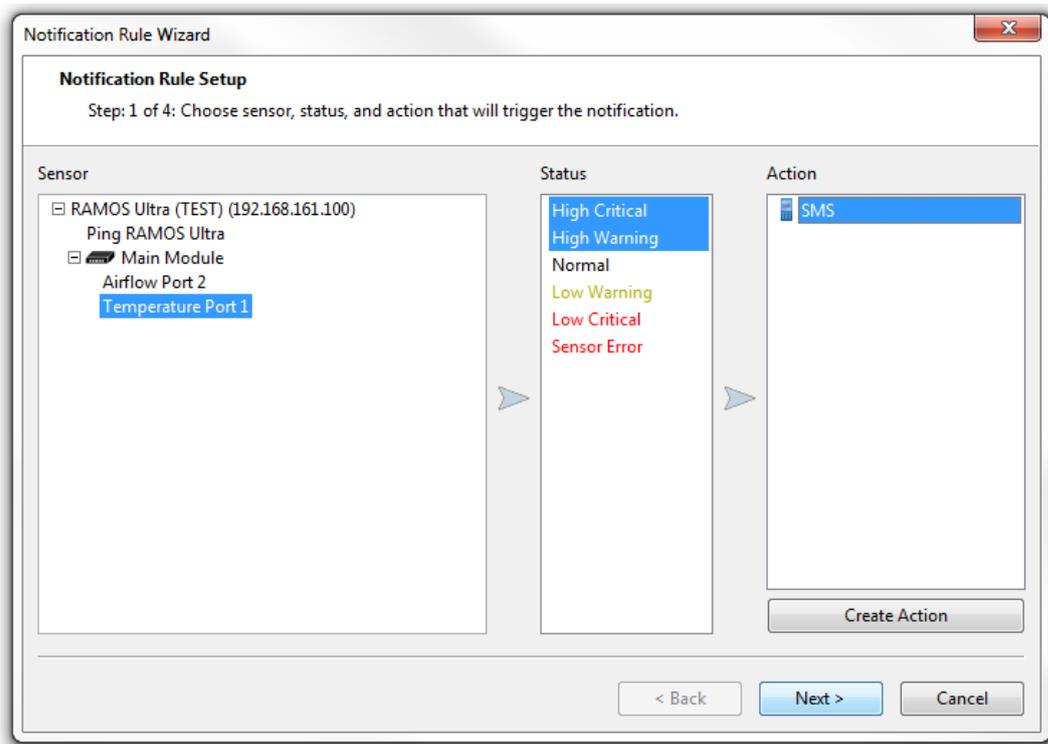
Click the 'Finish' button to create an SMS Notification Action.



Your SMS action named 'SMS' is created and displayed in the action list. You can test your newly created notification action by selecting the action and clicking 'Test Action' to make sure it does what you need it to do. You can click the 'Edit' button if you need to reconfigure the action.



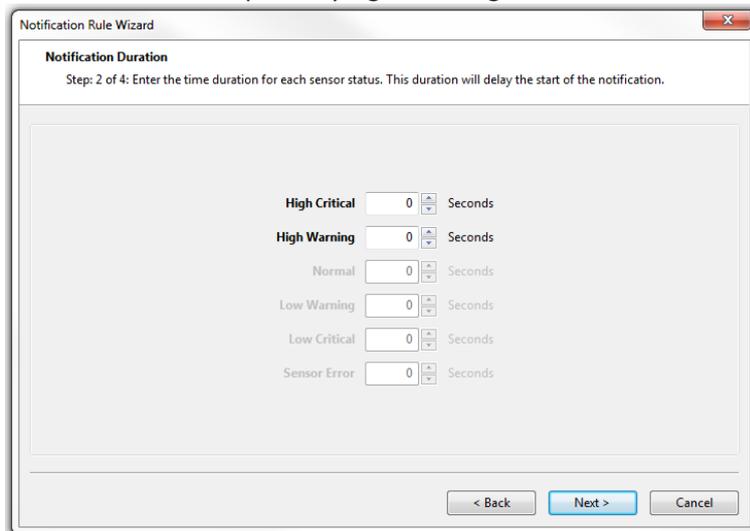
The next step is to create a notification rule and link this action to a sensor and specify the status requirements that will trigger this action. Click on the “Notification Rules” tab. To create a notification rule, click the 'Create' button and follow the Notification Rule Wizard.



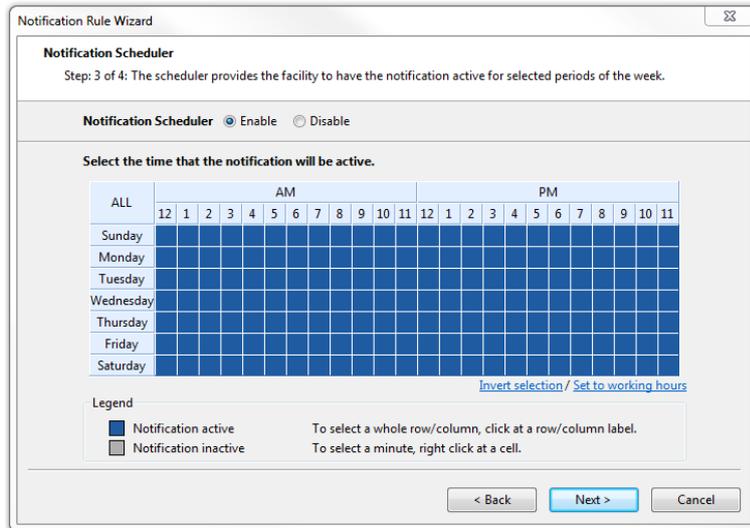
Select a sensor, the status requirements and the notification actions. If the desired action does not exist yet, you can create an action by clicking the **'Create Action'** button.

In this example, we will set up a notification rule where an SMS notification to the administrator will be sent out when the **'Temperature Port 1'** sensor reaches a High Warning or High Critical status.

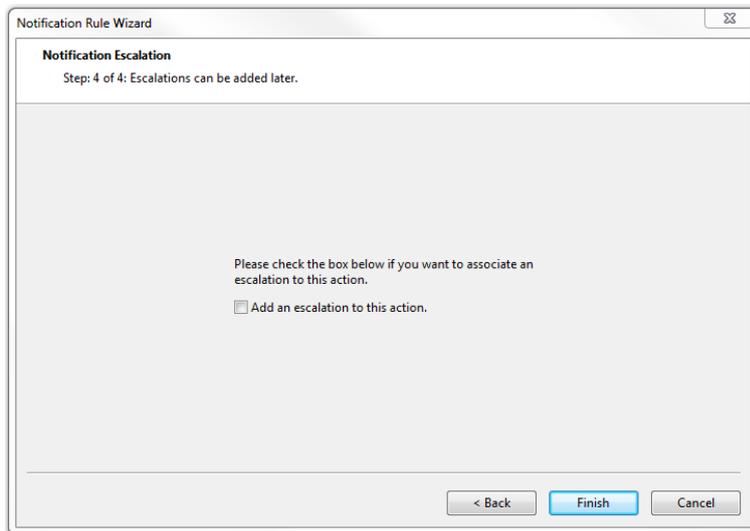
You can see additional status options for each column by holding down the 'Ctrl' button on your keyboard. Select the correct status option by right clicking the mouse.



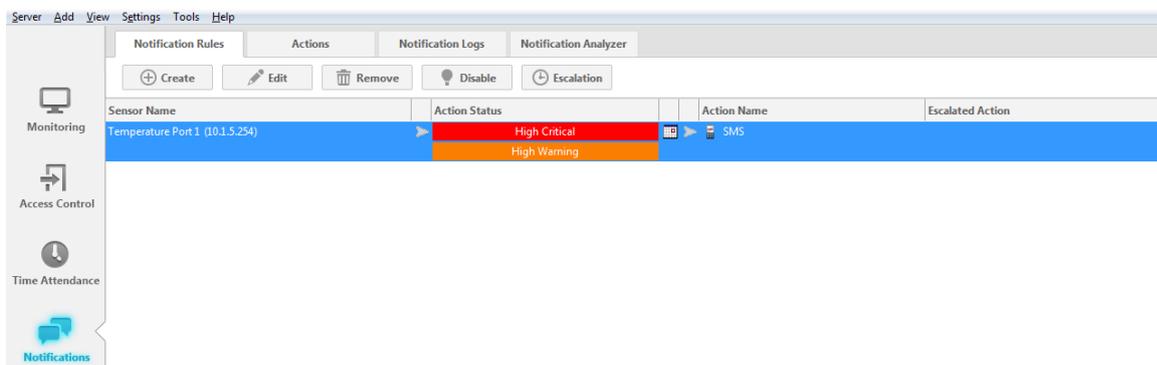
You can set up the notification rule to activate only when a certain status persists over a specified amount of time (in seconds). This feature allows you to filter real threats from false alarms, as possible fluctuations can occur in the sensor values but pose no real threat. Click **'Next'** to schedule when to activate the notification.



You can choose whether to enable the calendar option, otherwise the notification will always be active.



After setting the calendar, you have the option to include an escalation that will be activated after a specified amount time has passed after the initial notification. If you wish, you may add it later by going to the Notification Rules List page. Click **'Finish'** to create the notification rule.



You now have created a notification rule. You have the option to Edit, Remove, Enable/Disable and Add an Escalation to the rule. Select a Notification rule and click the appropriate button.