

# ADS<sup>®</sup> ECHO<sup>™</sup> Qstart<sup>™</sup> XML Quick Reference Guide

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**ADS ENVIRONMENTAL  
SERVICES<sup>®</sup>**

340 The Bridge Street, Suite 204  
Huntsville, Alabama 35806

(256) 430-3366

[www.adsenv.com](http://www.adsenv.com)

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## Support

This Quick Reference Guide is intended to provide instructions for the configuration and activation of the ADS ECHO level monitor. *Note that all fields will not be described in this document.* For further information, please consult Qstart<sup>XML</sup>'s online help, the ADS® ECHO Installation, Operation, and Maintenance Manual at <https://www.adsenv.com/ads-product-manuals/> or contact Customer Support at:

Email: [adssupportcenter@idexcorp.com](mailto:adssupportcenter@idexcorp.com)

Telephone: 1-877-237-9585 (U.S. Customers), 256-430-6234 (customers outside the U.S.)

## Initial Setup

Perform the steps to the **Initial Setup** first and then progress to the **Configuration and Activation** section.

**Initial Setup** includes:

- **Activate SIM Card**
- **Download and Install Qstart<sup>XML</sup> Software**
- **Download and Install Bluetooth Driver**

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## Activate SIM Card

**ECHO** monitors include a pre-installed SIM card which must be activated to allow for wireless communication. Request the activation **within 48 hours** of monitor installation and **before** proceeding to the field to install the **ECHO**.

1. Request activation of the SIM card by emailing [ADSEODIP@idexcorp.com](mailto:ADSEODIP@idexcorp.com). Include the serial number of the specific **ECHO** monitor and the last four digits of the SIM card number (the 20 digit number found on the attached SIM punch-out card) as well as the name of the municipality or company requesting the activation. ADS employees should also include the project name and job number as part of the request.



AT&T (top) and Verizon LTE-M (bottom) Punch-out card highlighting last 4 Digits of SIM number

2. Wait for a return email from ADS. The email will contain the IP address of the SIM card and its associated phone number. If text messaging commands capability is desired, be sure to note the phone number associated with the IP address.

Wait at least 15 minutes from the receipt of email before initializing modem with the magnet. See *Verifying Wireless Communication* for details on initializing and verifying remote wireless communications.

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## Download and Install the **Qstart<sup>XML</sup>** Software

The **ECHO** monitor requires the use of the ADS **Qstart<sup>XML</sup>** software.

Download the **Qstart<sup>XML</sup>** software and **Qstart<sup>XML</sup> Installation Guide** from the ADS website at: <https://www.adsenv.com/resources/>. Install **Qstart<sup>XML</sup>** by following the instructions in the **Qstart<sup>XML</sup> Installation Guide**.

**Note:** **Qstart<sup>XML</sup>** can only be installed on a Microsoft Windows computer with a Windows 10 or higher operating system.

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## Download and Install the Bluetooth Driver

The **ECHO** monitor requires use of Bluetooth communications for activation and is the recommended method of establishing initial communication with the monitor. Obtain the Bluetooth drivers and a Bluetooth dongle.

Download the Bluetooth driver from the ADS website at: <https://www.adsenv.com/resources/>.

**Note:** Download the “**CP210x\_Windows\_Drivers.zip**” zipped folder containing the Bluetooth driver installer and files onto the computer which will be used for the **ECHO** communications.

Bluetooth communications require near proximity (roughly 8 feet or 2.5 m) to the monitor.

1. Extract the downloaded Bluetooth driver files to a folder on the desktop. Run the “**CP210xVCPInstaller\_x64.exe**” installer application for 64-bit systems, and the “**CP210xVCPInstaller\_x86.exe**” for 32-bit systems. To determine if the system is a 64-bit or 32-bit, open Windows Explorer. Right click the Computer icon and select **Properties** to view the system type.
2. Insert the ADS-supplied Bluetooth dongle (P/N ADS 9000-0061) into a USB port. The first time the Bluetooth dongle is inserted, it may take several minutes for Windows to complete the driver update.

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## Configuration and Activation

The following sections details the steps for configuring and activating the **ECHO** monitor and includes:

- **Create and Configure the Monitor Location**
- **Activate the Monitor**

Perform these steps after performing the steps to the **Initial Setup**. Once this section is complete, proceed to **Final Configuration and Verification**.

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### Create and Configure the Monitor Location

This section includes instructions for creating a monitor location in **Qstart<sup>XML</sup>** as well as selecting and editing devices.

**Note:** Initial activation for a new **ECHO** monitor can occur via Bluetooth or a wireless connection. ADS recommends using the Bluetooth connection for initial configuration and activation of the monitor.

#### **Launch the Qstart<sup>XML</sup> Software**

Launch the **Qstart<sup>XML</sup>** software by selecting **Start > All Programs > ADS LLC > Qstart<sup>XML</sup>** from the **Microsoft® Windows®** start menu or double-clicking on the **Qstart<sup>XML</sup>** icon on the **Windows** desktop.



**Qstart<sup>XML</sup>** Icon on Desktop

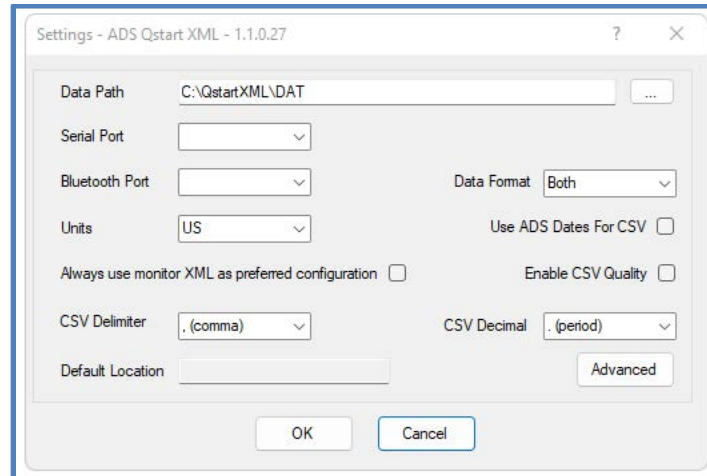
If **Qstart<sup>XML</sup>** settings have already been configured, proceed to

Create a Monitor Location

## Set Up the **Qstart<sup>XML</sup>** Parameters

**Qstart<sup>XML</sup>** stores and displays data, directs configuration, and performs communication based on certain parameters designated through the **Qstart<sup>XML</sup>** settings. This **Settings** dialog containing these parameters is available the first time you run the **Qstart<sup>XML</sup>** software following installation and through the main screen by clicking on the **Settings** button.

**Note:** Ensure the Bluetooth dongle is inserted before opening **Qstart<sup>XML</sup>** so the Bluetooth Port will automatically update.



Settings Dialog

1. Enter the path or browse to the directory to which you want to save the XML files and collected flow data in the **Data Path** field.
2. The **Bluetooth Port** automatically updates to the correct port designation once the Bluetooth dongle has been inserted. No user entry should be required. If there is any question as to whether the correct Bluetooth Port is displayed, go to the **Control Panel > Device Manager > Ports** and verify the correct port for the Silicon Labs UART to USB Bridge port and enter this port into the **Qstart<sup>XML</sup> Settings** page.
3. Select the desired units of measurement (**US** or **Metric**) to be used throughout **Qstart<sup>XML</sup>** to represent the data when entering values, saving data, and displaying data from the **Units** drop-down list. The **US** units report depth in inches, velocity in feet per second (fps), flow rate in Million Gallons per Day (MGD) and temperature in Fahrenheit. The **Metric** units report depth in millimeters, velocity in meters/second (m/s), flow rate in liters/second (l/s) and temperature in Celsius.
4. Refer to **Qstart<sup>XML</sup>**'s online help for further descriptions of the settings.
5. Click on the **OK** button to save the settings from this dialog to the designated local directory or network.

**Note:** Access the data path, CSV file configuration, and communication settings at any time by clicking on the **Settings** button on the **Qstart<sup>XML</sup>** main screen.

After the settings are configured, the **Qstart<sup>XML</sup>** main screen will display on each subsequent opening of the software.

## Create a Monitor Location

1. Select the **New** button at the bottom of the main **Qstart<sup>XML</sup>** screen.

**Qstart<sup>XML</sup>** main screen showing the New default location

2. Enter a name for the new location in the **Location Name** field. This associated drop-down list contains all the locations available in the **Data Path** designated previously on the **Settings** dialog. A location name may be up to 19 alphanumeric characters in length. No spaces are allowed.
3. Select **ECHO** from the **Series** drop-down list.
4. Enter the serial number corresponding to the specific monitor in the **Serial Number** field.
5. Enter the depth of the manhole where the **ECHO** will be installed in the **Manhole Depth** field.
6. Verify or select the desired interval at which the monitor will record data from the **Sample Rate** drop-down list.
7. Verify or select the desired interval at which the monitor will record data during alarm conditions from the **Fast Rate** drop-down list.
8. Select **Wireless** from the **Connect** drop-down list and enter the monitor's **IP Address**.
 

**Note:** Do not include leading zeroes in the IP address. For example, enter IP address of 166.219.008.063 as 166.219.8.63.
9. From the **Connect** drop-down list, select **Bluetooth**.
10. Under *Monitoring Point 1*, select the type or shape of the pipe or channel that the **ECHO** will be monitoring.
11. For **Height**, enter the distance from the bottom of the pipe to the crown (top or peak) of the pipe. For **Width**, enter the horizontal distance across the widest portion of the pipe (this is disabled for circular installations).
 

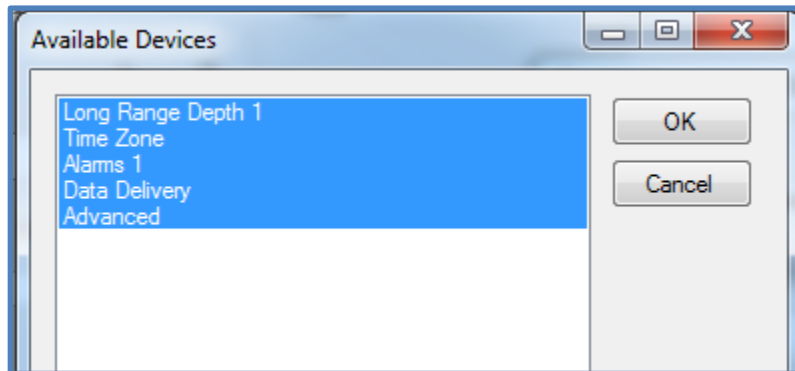
**Note:** The **Height** and **Width** can be approximations since the installation of the **ECHO** requires no manhole descent.

## Select and Edit Devices

Select and edit the devices corresponding to the new monitor location to log the desired data. The default devices for the **ECHO** are **Advanced**, **Alarms 1**, **Data Delivery**, **Long Range Depth 1**, and, **Time Zone**. Editing the devices involves setting specific parameters to ensure the monitor and Qstart<sup>XML</sup> properly obtain and process the data.

1. In the **Location Name** field, select the desired location to assign and edit devices.

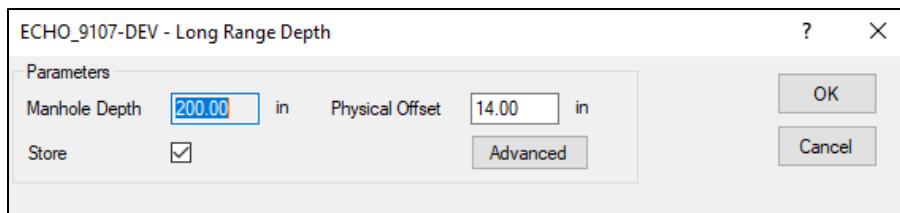
The **Devices** dialog displays the devices selected by default (i.e. based on Qstart<sup>XML</sup>'s or the user's designated default configuration) for the **ECHO** monitor series.



Devices Section

2. To edit the parameters associated with a device, select the desired device to view or modify from the **Devices** list and click the **View** button. The **Location Name** and **Device Name** are displayed at the top of the dialog. Edit or modify the device parameters as necessary, and then click on the **OK** button when complete. Refer to the following sections for details concerning the parameters for each specific device.
3. Repeat Step 2 for each additional device that requires modification of the parameters, and then click the **Save** button to save the devices with any parameter modifications to the local directory or network.

### **Edit the Long Range Depth Device 1**

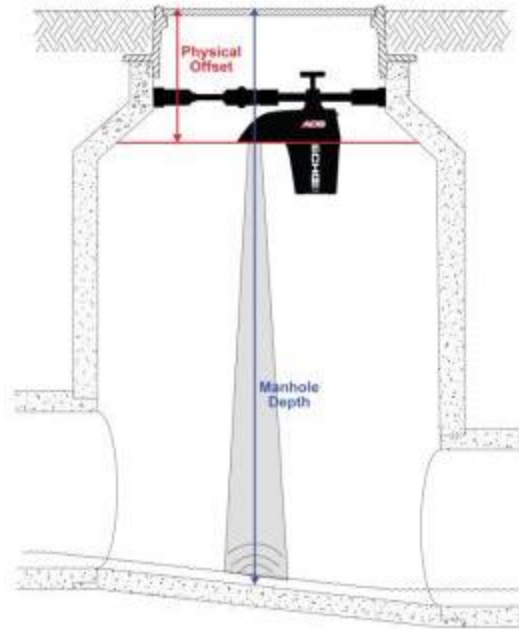


Long Range Depth 1 dialog

- **Physical Offset** – Enter the distance (in inches or millimeters) from the manhole rim to the bottom of the parabolic reflector of the **ECHO** housing.

**Note:** The **Manhole Depth** and **Physical Offset** measurements will be taken upon installation of the monitor.





Physical Offset and Manhole Depth measurements

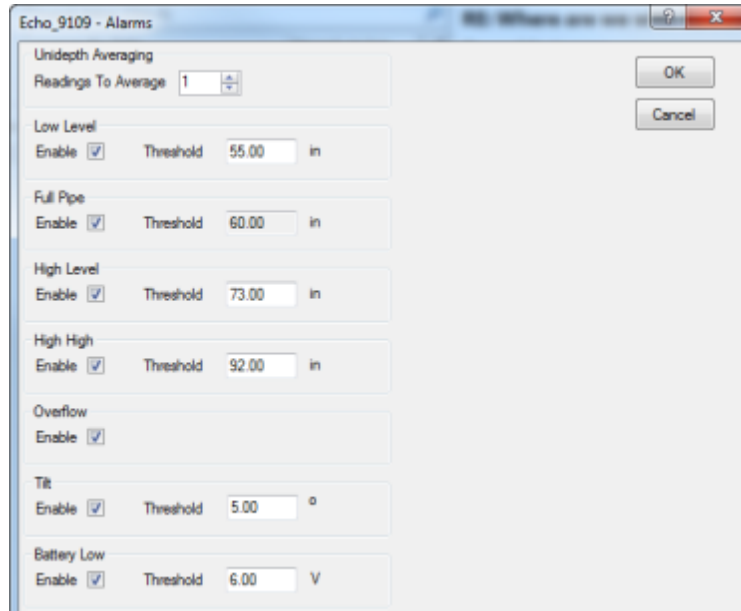
### ***Edit the Time Zone Device***

Time Zone device dialog

- **Time Zone** – Select the time zone in which the selected **ECHO** monitor is located. **Time Zone** is a required device and must be configured before monitor activation.
- **Sync Time to Cellular Tower** – When enabled, the monitor will sync its time with the time provided by the cellular network. Uncheck the box if this feature is not desired or the cellular system does not support the synchronization.
- **Daylight Saving Rule** – Uncheck the **Enable** checkbox to disable the **Daylight Saving Rule**, if Daylight Saving is not applicable to the region where the **ECHO** will be installed. Note that the content of the text box is not editable.

### Edit the Alarms Device

The **Alarms** device allows the user to enable/disable alarms and define alarm thresholds.



Alarms device dialog

- **Unidepth Averaging** – Select the number of consecutive *UNIDEPTH* readings for the monitor to average to minimize the potential for false alarms due to erroneous depth readings. **ECHO** alarms are generated from *UNIDEPTH* rather than raw *LRDEPTH* readings.
- **Low Level** – Define the depth at which the monitor will trigger a **Low Level** alarm. This event indicates that the flow depth measured at a location has fallen below this threshold. This depth should be lower than the lowest depth that typically occurs at the location.
- **Full Pipe** – This monitor event indicates that the flow depth in the manhole is greater than or equal to the pipe height.
- **High Level** – Define the depth at which the monitor will trigger a **High Level** alarm.
- **High High** – Define the depth at which the monitor will trigger a **High High** alarm. This value must be zero when this feature is not in use, or greater than the value entered for the **High Level** alarm when it is in use. ADS recommends setting this value at least 2 inches higher than the value designated for **High Level**.
- **Overflow** – This event indicates that the **ECHO** monitor's internal pressure sensor has detected the site is experiencing overflow conditions, where the flow is above the manhole rim.

### Edit the Data Delivery Device

By default the **ECHO**'s modem is in the *Always Off* mode to conserve battery power. Therefore, configure the **Data Delivery** device to upload data stored in the monitor memory to ADS **PRISM** and/or an FTP server at an interval designated by the user. To upload data to **PRISM** and/or an FTP server, you must know the IP address or DNS of the server. FTP servers also require the username and password the monitor must use to access the server, and when applicable, the name of the folder on the server in which the monitor is to place the data.

**Data Delivery** device dialog

- **FlowView (PRISM)**

This section allows you to configure the monitor to deliver data and/or alarms to ADS' web-based software: **PRISM** or **FlowView**.

- **Server** – Enter the ADS **FlowView** server IP address of 13.82.147.226 (this same address is used for **PRISM**). This is where the monitor will deliver data.
- **Normal** – Select the interval which you want the monitor to deliver data under normal conditions.
- **Fast** – Select the increased interval which you want the monitor to deliver data under alarm conditions. This feature can also be set to **Off**.

- **FTP Setup 1**

This section must only be completed if FTP file delivery is required.

- **Mode** – Select the appropriate port assignment (**Active** or **Passive**) for the FTP server. **Passive** is the recommended **Mode** for file transfers.
- **Normal** – Select the interval which you want the monitor to deliver data under normal conditions.
- **Fast** – Select the increased interval which you want the monitor to deliver data to the FTP server under alarm conditions. This field can be set to **Off**.
- **Server** – Enter the numeric IP address for the FTP server to which the monitor will deliver data. The ADS FTP server numeric IP address is 64.14.232.6. This FTP server is for internal ADS use only. Customers wishing to use the ADS FTP server should contact ADS Client Services to see what arrangements can be made.
- **Folder (optional)** – Enter the name of the folder on the FTP site in which the monitor will upload the data.

**Note:** **Qstart<sup>XML</sup>** will not create a folder on the FTP server automatically. Therefore, if it is desired that the monitor deliver data to a specific folder, create the folder through the FTP server manually before the monitor begins uploading data to the server. If a specific folder is not designated, the monitor will upload data to the FTP server's root directory.

- **Username** – Enter the username the monitor must use to access the FTP server.
- **Password** – Enter the password associated with the username the monitor must use to access the FTP server.
- **CSV Format** – Select the option corresponding to the type and format of the data the monitor will upload to the FTP server.
  - **ADS** – Choose this option to deliver all of the entity data from the monitor to the designated FTP server.
  - **GE** – Choose this option to deliver the data in GE CSV format, which will group readings and their corresponding quality values in rows rather than displaying all stored values in column format.
- **FTP Setup 2** – Refer to the instructions for the **FTP Setup 1** parameters to set up an additional FTP server to which the monitor can deliver data.

### ***Edit the Advanced Device***

The **Advanced** device includes three tabs representing parameters related to diagnostic information, modem setup, and alarm notification.

**Note:** No changes are necessary to the **Advanced** device unless using a non-ADS supplied AT&T public, static SIM card or the **ECHO** needs to be configured to deliver notifications directly from the monitor, rather than to **PRISM**. The instructions for setting up notifications are included below.

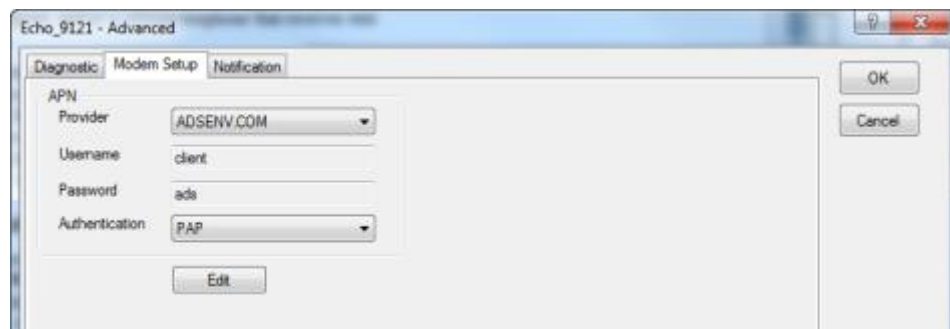
#### **Modem Setup Tab**

The **Modem Setup** feature is used to set the APN (Access Point Name) that the cellular modem will use when connecting to the network.

**Note 1:** The **9000-ECHO-4VZ** and the **9000-ECHO-4WW** contain an LTE-M modem and will receive the APN from the network if the APN is set to **ADSENV.COM** or set to a blank entry.

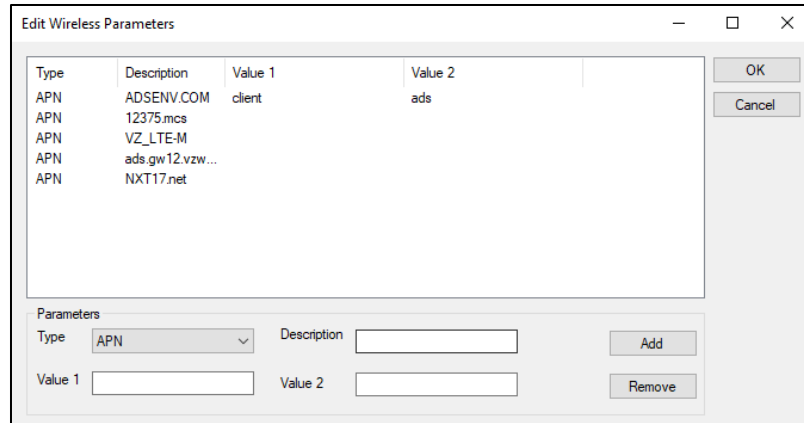
**Note 2:** The **9000-ECHO** contains a 2G/3G modem that requires the APN to be set as follows:

- **ADS public static SIM:** APN = ADSENV.COM
- **AT&T VPN (ADS):** APN = 12375.mcs
- **Customer Network (APN):** Supplied by customer mobile carrier



**Modem Setup** Tab of **Advanced** Device Dialog

- **Provider** – Select the APN corresponding to the SIM card in the modem. The **Username** and **Password** fields should automatically populate with the information associated with the selected APN. However, if the APN associated with the carrier's SIM card is not available on the list, or the username and password require modification, click on the **Edit** button and complete the **Edit Wireless Parameters** dialog.



**Edit Wireless Parameters Dialog**

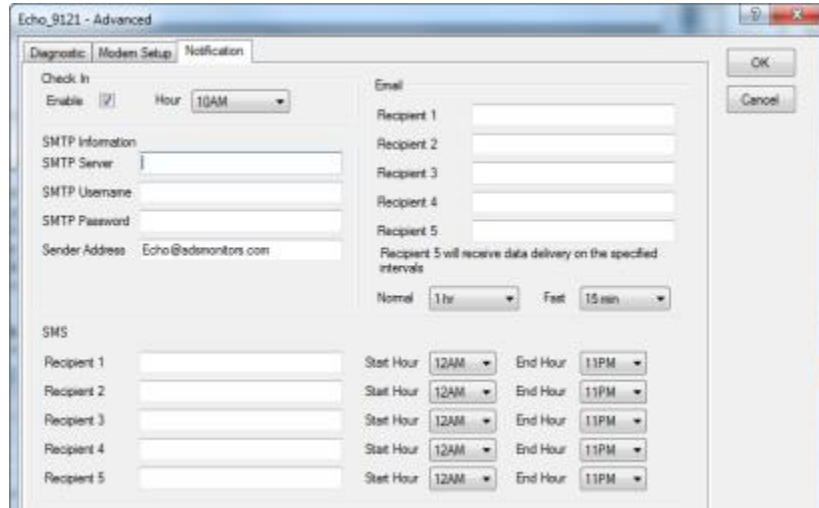
- Select **APN** from the **Type** drop-down list. If an existing APN requires modification, select the appropriate APN from the **Type** column in the table of available APNs and providers.
  - Enter the proper APN for the carrier, or edit the existing APN as necessary.
  - Enter or edit the username corresponding to the APN in the **Value 1** field.
  - Enter or edit the password corresponding to the APN in the **Value 2** field.
  - Click the **Add** button to add the APN or modifications to the table, and then click on the **OK** button. The new APN should be available for selection from the **Provider** drop-down list on the **Modem Setup** tab or the modified information should display in the **Username** and/or **Password** fields once the corresponding provider/APN is selected.
- **Username** – This read-only field displays the username associated with the selected provider (APN).
  - **Password** – This read-only field displays the password associated with the selected provider (APN).

**Authentication** – Select **PAP** (Password Authentication Protocol) in which the **Username** and **Password** are used for communication authentication. Select **CHAP** (Challenge Handshake Authentication Protocol) in which a challenge string is used for authentication. Select **None** in cases where the authentication protocol is unknown or not required. This information will be provided by the wireless SIM provider. The default selection, **None**, should be sufficient in most cases.

### **Notification Tab**

The **Notification** tab enables the user to configure the **ECHO** monitor to provide alarm and event notification to up to five email recipients and/or up to five mobile phones with text messaging (SMS - Short Message Service) capability. The **ECHO** can also check-in daily with the designated recipients to provide the current battery voltage and other monitor status information.

**Note:** **ECHO** monitors equipped with a Verizon LTE-M SIM (**9000-ECHO-4VZ** only supports **Notification** via SMS text messaging. It does not support direct email notification.



Notification Tab of Advanced Device Dialog

- **Check In**
  - **Enable** – Select this checkbox to ensure the monitor sends a daily email and/or text message to the designated recipients that includes status information about the monitor, such as the monitor name, date and time, battery voltage, and wireless signal strength.
  - **Hour** – Select the time each day at which the monitor will deliver the monitor status information via email or text message to the designated recipients.
- **SMTP (Simple Mail Transfer Protocol) Information**
  - **SMTP Server** – Enter the name of the server through which the monitor will send notification to the recipient(s). The associated IP address of the SMTP server used by ADS is 64.14.232.5.
    - Note:** The IP address could change in the future. Contact ADS Client Services to verify the IP address, as needed.
    - Note:** If the **ECHO** is not using an ADS AT&T public static or private static SIM card, and yet needs to be able to send emails through the ADS SMTP server, please provide the external static IP address to ADS Client Services. They will verify if the IP address can be added to the permitted list of IP addresses supported by the server.
  - **SMTP Username** – Enter the username for the server through which the monitor will send notification for the recipient(s). No username is required for the ADS SMTP server.
  - **SMTP Password** – Enter the password for the server through which the monitor will send notification to the recipient(s). No password is required for the ADS SMTP server.
  - **Sender Address** – Enter the designated email address for the monitor from which notification will originate. The default address is *Echo@adsmonitors.com*.
- **Email**
  - **Recipient 1 through 5** – Enter the email address for each contact (up to 5) that will receive the monitor notifications when an event and/or alarm occurs. The contact designated as **Recipient 5** will receive data automatically from the monitor based on the interval set up for data delivery. Data is included in an attachment present in .CSV format. *Note: Data through email is only supported by AT&T 9000-ECHO monitors.*
  - **Normal** – Select the interval at which the monitor will deliver data to **Recipient 5** under normal conditions.

- **Fast** – Select the increased interval at which the monitor will deliver data to **Recipient 5** during active alarm conditions.

**Note:** If **Normal** and **Fast** intervals are set to OFF, **Recipient 5** will become a recipient of monitor notifications like **Recipient 1-4**.

- **SMS**

- **Recipient 1 through 5** – Enter the mobile phone number for each contact (up to 5) that the monitor will notify through a text message when an event and/or alarm occurs.
- **Start Hour** – Enter the time during the day at which the server can begin sending text messages to the corresponding recipient when an alarm and/or event occurs.
- **End Hour** – Enter the hour during the day up to which the server can continue sending text messages notifying the corresponding recipient that an alarm and/or event has occurred. Alarms or events that occur after this hour up to the designated **Start Hour** on the next day will not be delivered to the corresponding user. For example, setting a **Start Hour** of **8AM** and an **End Hour** of **4PM** will ensure the server sends a message to the corresponding recipient when an alarm and/or event occurs only between 8:00 in the morning and 4:59 in the afternoon.

**Note:** The **Start** and **End Hour** designation for text message notification may be beneficial for organizations that only would want their recipients to receive notification during designated shift or work hours. To ensure 24-hour notification to a recipient, choose **12AM** for the **Start Hour** and **11PM** for the **End Hour**.

## Activate the Monitor

Configuration of the monitor is now complete and the **ECHO** is ready for activation. The initial monitor activation occurs through the **Diagnostics** tool in **Qstart<sup>XML</sup>** using a Bluetooth connection.

1. Ensure the Bluetooth dongle is inserted into the computer port.
2. In **Qstart<sup>XML</sup>**, select the desired **Location**, verify the configuration parameters are correct, and select *Bluetooth* for the **Connect** type.
3. Hold the blue ADS Magnet (P/N 8000-0460) on the **Wake** activation point on the **ECHO** monitor until the **COMMS** LED (closest to the T-handle) starts flashing a deep blue. This should take approximately 5-10 seconds. Remove the magnet after the **COMMS** LED is flashing deep blue.



Wake Activation Point

4. Click on the **Activate** button in the **Functions** section. **Qstart<sup>XML</sup>** initiates and establishes communication with the monitor and then downloads the appropriate information and files. Once the activation is complete, the status bar displays an **Activate Successful** message. **Qstart<sup>XML</sup>** generates an activation log that is available for viewing through the log viewer within **Qstart<sup>XML</sup>**.

5. Stay online with the **ECHO**; do not hang up.
6. Proceed to the last *Quick Start Reference Guide* section, **Final Configuration and Verification**.

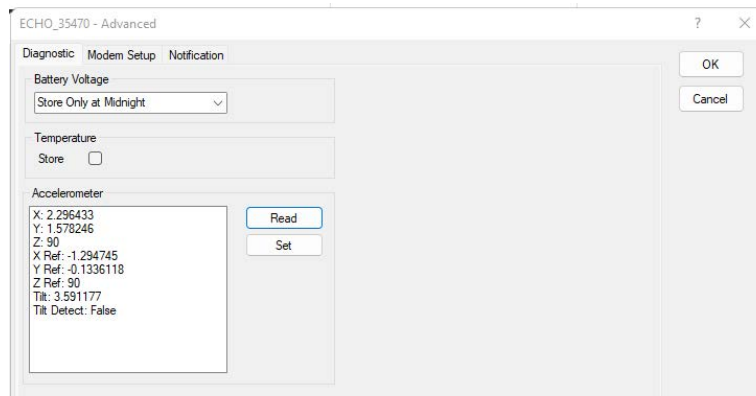


## Final Configuration and Verification

This section includes the procedures for final configuration, as well as verification of the monitor readings.

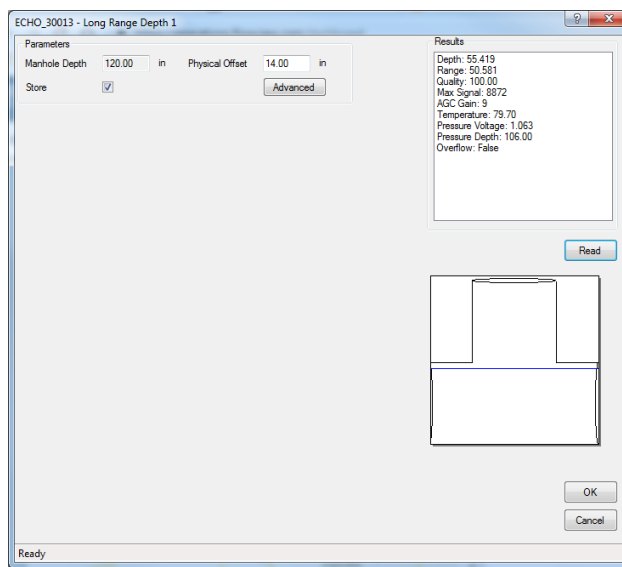
In addition, this section includes steps to configure power savings in order to conserve and extend the monitor's battery life. This process can be used on monitors with a static IP address. By default the modem is configured in the *Always Off* mode, turning on each day between 11AM and 12PM monitor time, allowing for remote, wireless communication during this hour.

1. While still online with the **ECHO** (if not online, reinitialize Bluetooth communication and connect again), select the **Advanced** device. Under the **Diagnostics** tab, the **Accelerometer** must be set to establish a baseline against which it will compare later readings to check for a **Tilt** alarm. Click **Read** to obtain the installed **Accelerometer** values. Click the **Set** button to set these initial values. This will display reference values for the X, Y, and Z.



Setting the Accelerometer

2. To ensure all settings have been configured properly, perform a test fire of the **Long Range Depth** sensor. If still online with the **ECHO**, open the **Long Range Depth** device dialog. Otherwise, reconnect with the **ECHO** by selecting **Connect**, then open the **Long Range Depth** device dialog. Click on the **Read** button to initiate the test. Observe the results to confirm proper sensor performance. *Note: If the ECHO has been sitting in extreme hot or cold temperatures, initial readings will not be correct. Do not adjust any parameters if the Temperature reading in the ECHO is significantly different than the temperature in the manhole.*



Long Range Depth Dialog – Test

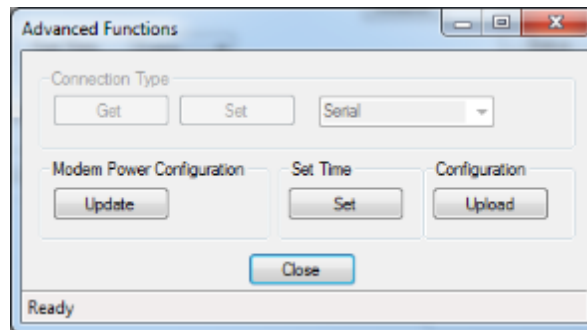
## Configuring the Modem Power Parameters

Qstart<sup>XML</sup> enables the user to configure the monitor for uninterrupted modem communications or for modem downtime during specific periods throughout each day of the week. Powering down the wireless modem during specific hours of the day conserves battery power. Use the **Modem Power** option in Qstart<sup>XML</sup> to configure the monitor to conserve battery power. The monitor automatically powers up the wireless modem each day between 11AM and 12PM to receive incoming calls.

**Note:** In order to maximize battery life, **Modem Power** default is set to *Always Off* and the **ECHO** should be configured to deliver data to **PRISM** or an FTP at the desired interval. Data delivery files and alarm notifications will still be delivered to **PRISM** and/or an FTP server when the modem is in the *Always Off* configuration.

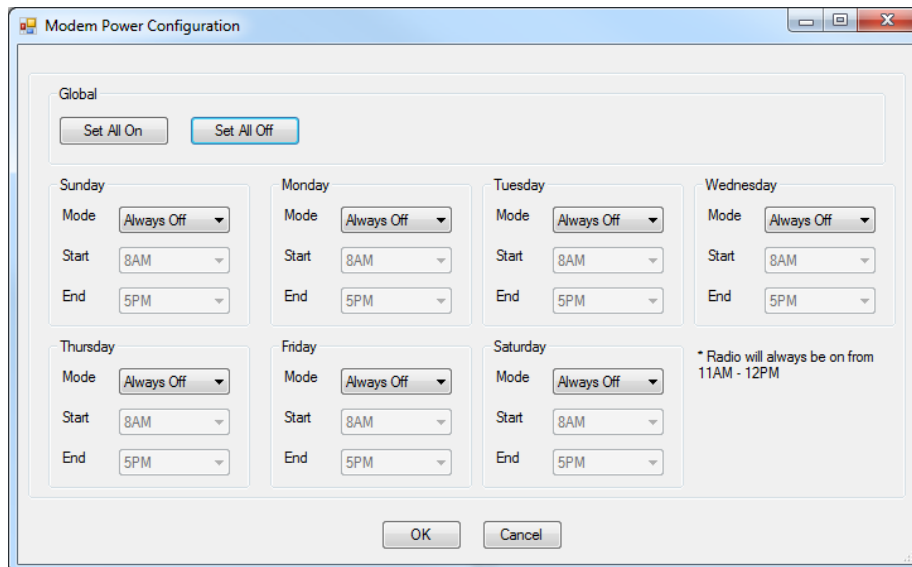
Setting up the power savings option occurs through the **Advanced** function while communicating with the monitor.

1. While still online with the **ECHO** (if not online, reinitialize Bluetooth communication and connect again), click on the **Advanced** button in the **Functions** section. This will display the **Advanced Functions** dialog.



Advanced Functions dialog

2. Click on the **Update** button. The **Modem Power Configuration** dialog displays the current power savings parameters in the monitor configuration.



Modem Power Configuration dialog

3. Click on one of the following buttons in order to apply power savings settings for all seven days of the week:

- **Set All On** – Choose this button to configure the monitor to provide uninterrupted power to the modem 24 hours a day, 7 days a week. Choosing this setting will cause the **Always On** option to display for the **Mode** on all 7 days, resulting in no power savings to the monitor.
  - **Set All Off** – Choose this button to configure the monitor to provide power to the modem only from 11AM to 12PM each day of the week. The monitor will withhold power from the modem at all other times. This option offers the greatest power savings to the monitor. Choosing this setting will cause the **Always Off** option to display for the **Mode** on all 7 days.
4. Select one of the following methods to apply power savings settings for each individual day of the week from the **Mode** drop-down list. This step must be completed for each day of the week. Some modes may require designating a corresponding time range.
    - **Always On** – Choose this option to configure the monitor to provide uninterrupted power to the monitor for the entire day, resulting in no designated power savings to the monitor on that day.
    - **Always Off** – Choose this option to configure the monitor to provide power to the modem only from 11AM to 12PM on that day, offering the most significant power savings available within that day.
    - **Span On** – Choose this option to configure the monitor to provide uninterrupted power to the modem for the time period designated in the **Start** and **End** fields. Select the time at which the monitor will begin powering on the modem on the corresponding day from the **Start** drop-down list. Then select the time at which the monitor will discontinue powering the modem on that day from the **End** drop-down list.
    - **Span Off** – Choose this option to configure the monitor to withhold power from the modem for the time period designated in the associated **Start** and **End** fields. Select the time at which the monitor will discontinue powering the modem on the corresponding day from the **Start** drop-down list. Then select the time at which the monitor will resume powering the modem on that day.
  5. Click the **OK** button to save the power savings parameters to the monitor. This will again cause the **Advanced Functions** dialog to display.
  6. Click on the **Close** button to exit the **Advanced Functions** dialog.
  7. Click on the **Hangup** button in the **Functions** section on the **QstartXML** main screen.

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## Saving Final Configuration and Creating New Default Location

1. Save the configuration by clicking the **Save** button at the bottom of the **Qstart<sup>XML</sup>** main screen.
2. Clicking on the **Set As Default** button will update the default new location parameters to match how the **ECHO** was just configured. This will allow the user to create a configuration template for all subsequent **ECHO** monitor locations, and clicking **New** will then populate the configuration with the template parameters.

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## Verifying Wireless Communication

It is recommended that wireless communication be verified upon installation of the monitor.

1. Ensure an antenna is attached to the **ECHO**.
2. Hold the magnet on the **Wake** activation point for 25 to 30 seconds until the **SENSE** LED illumines magenta. Hold the magnet in place for another 1 to 2 seconds once this magenta light illuminates, then quickly remove the magnet. The **SENSE** light will begin to rapidly flash a green light and the **COMMS** LED will be a solid green until connected to the network. Once the **COMMS** LED is slowly flashing green, wireless communications will be enabled.
3. Change the connection type to *Wireless*, and verify the IP address is correct.
4. Verify the **COMMS** LED is a slow flashing green light.

5. Attempt communication with the monitor by clicking the **Status** button.
6. If the monitor status information is displayed, wireless communication has been verified.

```
Monitor Status: ECHO_TANKTEST
Current Host Time: 01/16/2020 12:37:58
Current Monitor Time: 01/16/2020 12:37:54
Oldest Entry Time: 07/25/2018 05:50:00
Newest Entry Time: 01/16/2020 12:35:00
Scan Interval: 300
Monitor Temperature: 69.46 F
Firmware Version: V8.11
Multi-block Modem Attached: Yes
Model Number: X900
BASIC Code Program Status: OK
BASIC Code Fault: 0
Events Pending Status: 0
Abnormal Resets: 0
Battery Voltage: 9.0 V
TCP/IP Signal Strength: -70 dB
```

Monitor Status

7. Close the print preview of the status screen and click on the **Hangup** button in the **Functions** section on the **Qstart**<sup>XML</sup> main screen.

The configuration and activation of the **ECHO** is now complete.