accQlink™

Installation and Operation Guide

TELEDYNE ISCO
Everywhereyoulook™

Manual Body #60-8308-001
Manual Assembly #60-8304-001

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Foreword

This instruction manual is designed to help you gain a thorough understanding of the operation of the equipment. Teledyne ISCO recommends that you read this manual completely before placing the equipment in service.

Although Teledyne ISCO designs reliability into all equipment, there is always the possibility of a malfunction. This manual may help in diagnosing and repairing the malfunction.

If a problem persists, call or e-mail Teledyne ISCO technical support for assistance. Simple difficulties can often be diagnosed over the phone. For faster service, please have your serial number ready.

If it is necessary to return the equipment to the factory for service, please follow the shipping instructions provided by technical support, including the use of the **Return Material Authorization (RMA)** specified. **Be sure to include a note describing the malfunction.** This will aid in the prompt repair and return of the equipment.

Teledyne ISCO welcomes suggestions that would improve the information presented in this manual or enhance the operation of the equipment itself.

Teledyne ISCO is continually improving its products and reserves the right to change product specifications, replacement parts, schematics, and instructions without notice.

Contact Information

Customer Service

Phone: (800) 228-4373 (USA, Canada, Mexico)

(402) 464-0231 (Outside North America)

Fax: (402) 465-3022

Email: ISCO CSR@teledyne.com

Technical Support

Phone: Toll Free (800) 775-2965 (Syringe Pumps and Liquid Chromatography)

Email: IscoService@teledyne.com

Return equipment to: 4700 Superior Street, Lincoln, NE 68504-1398

Other Correspondence

Mail to: P.O. Box 82531, Lincoln, NE 68501-2531

Email: IscoInfo@teledyne.com

General Warnings

Before installing, operating, or maintaining this equipment, it is imperative that all hazards and preventive measures are fully understood. While specific hazards may vary according to location and application, take heed of the following general warnings:

WARNING

Avoid hazardous practices! If you use this instrument in any way not specified in this manual, the protection provided by the instrument may be impaired.

Hazard Severity Levels

This manual applies *Hazard Severity Levels* to the safety alerts, These three levels are described in the sample alerts below.

CAUTION

Cautions identify a potential hazard, which if not avoided, may result in minor or moderate injury. This category can also warn you of unsafe practices, or conditions that may cause property damage.

WARNING

Warnings identify a potentially hazardous condition, which if not avoided, could result in death or serious injury.

DANGER

DANGER – limited to the most extreme situations to identify an imminent hazard, which if not avoided, will result in death or serious injury.

Compliance

The accQlink device complies with the following radiated emission standards:

- ETSI EN 301 489-1/-17 Class B
- CFR 47 FCC Part 15 Subpart B Class B

The accQlink device complies with Immunity per ETSI EN 301 CE.

FCC Notice

Contains FCC ID: QIPPXS8

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Hazard Symbols

The equipment and this manual use symbols used to warn of hazards. The symbols are explained below.

Hazard Symbols	
Warnings and Cautions	
	The exclamation point within the triangle is a warning sign alerting you of important instructions in the instrument's technical reference manual.
	The lightning flash and arrowhead within the triangle is a warning sign alerting you of "dangerous voltage" inside the product.
Symboles de sécurité	
	Ce symbole signale l'existence d'instructions importantes relatives au produit dans ce manuel.
	Ce symbole signale la présence d'un danger d'électocution.
Warnungen und Vorsichtshinweise	
	Das Ausrufezeichen in Dreieck ist ein Warnzeichen, das Sie darauf aufmerksam macht, daß wichtige Anleitungen zu diesem Handbuch gehören.
	Der gepfeilte Blitz im Dreieck ist ein Warnzeichen, das Sei vor "gefährlichen Spannungen" im Inneren des Produkts warnt.
Advertencias y Precauciones	
	Esta señal le advierte sobre la importancia de las instrucciones del manual que acompañan a este producto.
	Esta señal alerta sobre la presencia de alto voltaje en el interior del producto.

accQlink

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accQlink

Section 1 Installation

1.1 accQlink Device

The Teledyne ISCO accQlink is a remote infrastructure monitoring tool that delivers field data. This all-inclusive, plug-and-play system, includes batteries, SIM card, sensors, and installation hardware.

After learning your specific requirements, accQlink pre-integrates the appropriate sensors with the accQlink data collection, storage and communication device which is then installed onto existing infrastructure.

The data collected from the sensors is stored on Teledyne ISCO secure private cloud server, and/or can be integrated directly into your on-premises servers.

An web-based data management system enables you to configure the device over-the-air and program various parameter threshold levels for email and/or SMS alerts, visualize data in real-time, and produce reports for presentation and analysis. Using accQlink's API, data can be integrated directly into your SCADA systems, business intelligence or other analytic software.

Figure 1-1 accQlink

The accQlink periodically samples the connected sensors and transmits the data to the Teledyne ISCO cloud or to your on-premises server. The device supports 2G, 3G, LTE (4G), CDMA, LPWAN, Satellite, and wireless low-energy networks, and can interchangeably use the strongest available cellular signal.

The accQlink is powered by a field-replaceable internal battery that provides 3,500+ transmissions. Alternatively, the device can be connected to an external battery, solar panel or permanent power source.

The accQlink can be mounted in various ways, including:

- Affixed to a pipe, using the supplied zip ties.
- Affixed to a wall, using the supplied four screws and anchors.
- Hung on a wall, using one of the supplied screws and anchors.

1.1.1 Sensor Integration

Each accQlink may have up to three sensor connector ports and could potentially support any combination of the following types of sensors:

- Serial
- Analog
- Discrete

1.1.2 User Interface

The data collected by the accQlink device and transmitted to the Teledyne ISCO cloud can be viewed in the accQlink web-based data management system. This system enables:

- Visualizing data in real-time.
- Generating reports for presentation and analysis.
- Defining threshold levels for email and/or SMS alerts for various parameters.
- Over-the-air remote device configuration.
- Receiving battery level notifications for predictive maintenance scheduling.

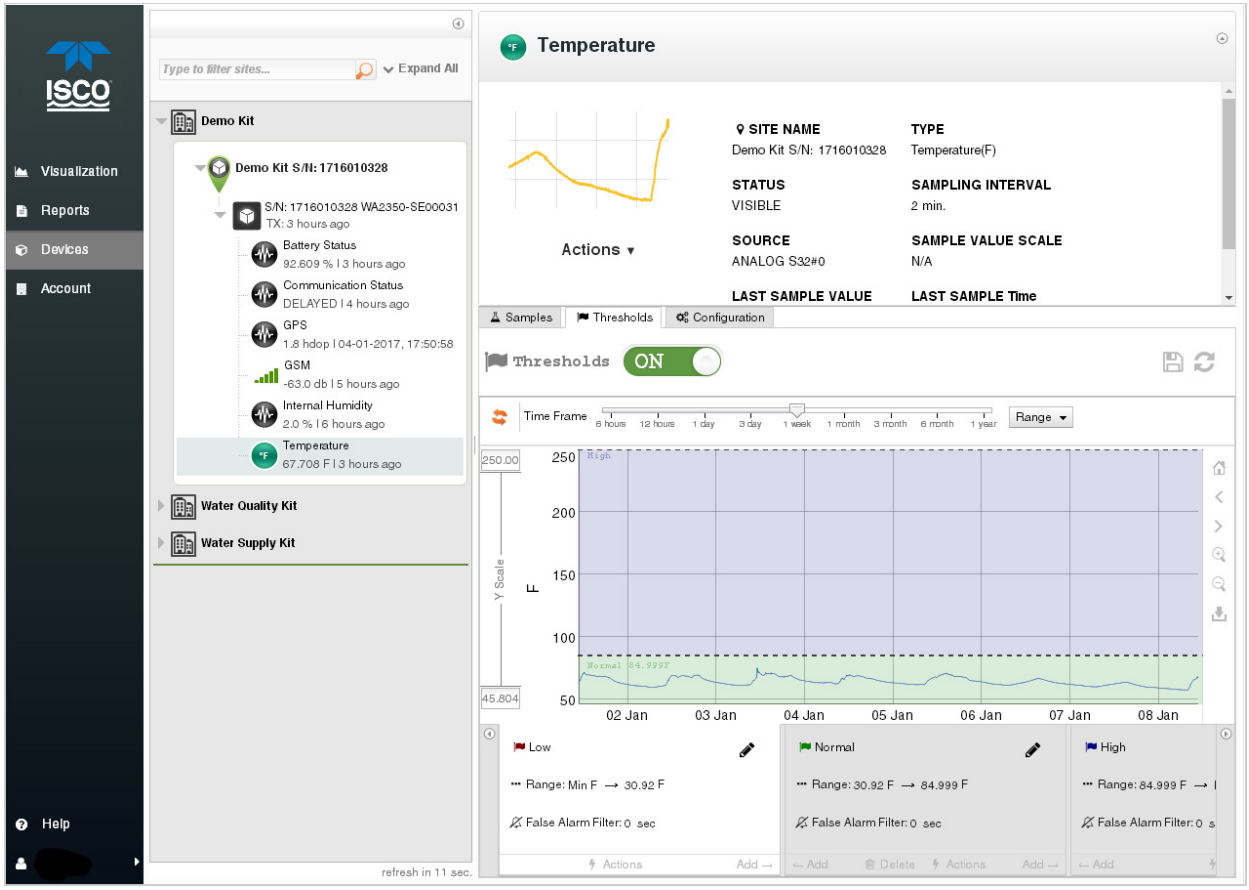


Figure 1-2 accQlink web-based data management system

1.2 accQlink Specifications

Data and Software	
Data Architecture	Teledyne ISCO private cloud and/or on-premises server
Cyber Security	AES-256 encryption, Sensor fingerprinting, One-Time Password (OTP)
Software Integration	SOAP-API, REST-API
SCADA Integration	OPC-UA, OPC-DA, OPC-HDA, DNP3, CSV
accQlink User Interface	Web-based, Tablet, Mobile
Data Export Options	CSV
Device Memory	Up to 32 GB
Data Communication	Bidirectional
Alarm Notification	SMS & Email
Alarm Threshold	Up to 8 per data stream
System Health Check	Included
Power	
Primary Power Supply	Field-replaceable internal military grade lithium battery, 3.9V DC 3A
Battery Capacity	32Ah
Voltage Input	4.5 V – 28 V
Operational Run Time	3,500+ transmissions per battery pack; 4+ years[a]
Battery Status Notifications	Included
External Power	Solar and permanent power compatibility, Automatic power source switching
Sensor Integration	
Sensor Ports	3 ports: supports up to 10 sensors using distribution cables
Sensor Position	External hard-wired
Serial Interfaces	RS485, SDI-12, RS232
Serial Protocols	Modbus RTU, ASCII, Custom
Serial Channels	Up to 15
Analog Channels	Up to 4 (current loop, voltage)
Discrete Channels	Up to 2
Sensor Power Supply Output	12 V, 350 mA
Connectivity	
Communication Network	Multi-network carrier: 2G, 3G, LTE (4G), CDMA, LPWAN, Satellite, and wireless low-energy
SIM Card	Global SIM card and data plan included
Cellular Roaming	Global SIM card supports over 110 countries
Configuration & Upgrades	Remotely over-the-air, USB PC connection
Data Transmission Profile	Periodic, Data Dependent

Antenna	Internal or external
Built-in GPS	Included
Mechanical Encloser*	
Dimensions (W x H x D)	13.2 cm x 16.5 cm x 7.3 cm (5.2 in x 6.5 in x 2.9 in)
Weight	0.7 kg (1.5 lbs)v
Enclosure Material	Molded Polycarbonate
Waterproofing Rating	IP 68 / NEMA 6P
Hazardous Location	Class I Div 1, ATEX certifications (pending)
Operating Temperature Range	-20°C to +60°C (-4°F to +140°F)
Storage Temperature Range	-40°C to +80°C (-40°F to +176°F)

a. The 4+ years is assuming the operation is one pressure sensor sampling once every 15 minutes and transmission sent once every 4 hours.

*Complies with: Radiated emission standards (ETSI EN 301 489-1/ -17 Class B and CFR 47 FCC Part 15 Subpart B Class B), Immunity per ETSI EN 301 CE.

accQlink

Section 2 Installation

2.1 Installing the accQlink

This section will cover how to install the accQlink.

2.1.1 External Power Source

If you connect the accQlink device to an external power source, follow these guidelines:

- Use a 42-00009 (SAL - 8 - RSC3-S) CONEC connector (refer to XXX).
- Perform power connector assembly as illustrated in Figure 2-1.

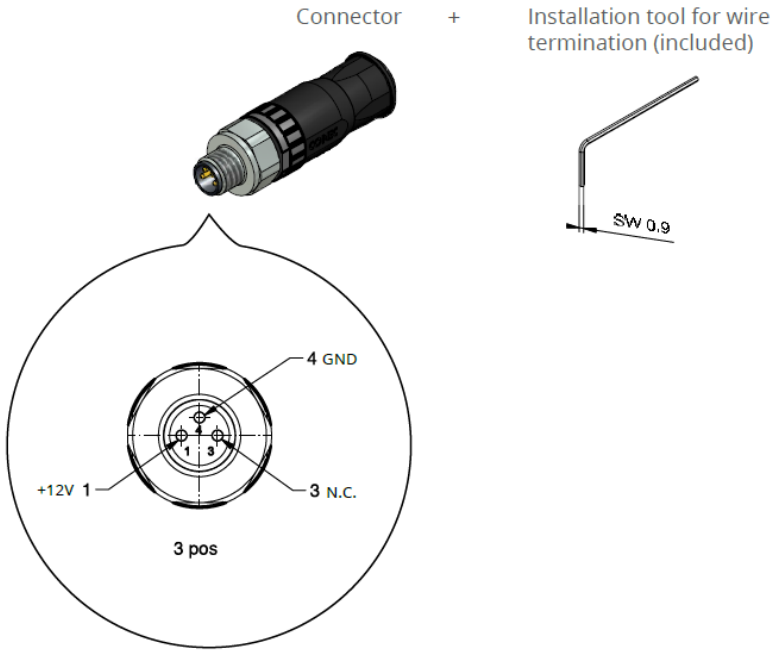


Figure 2-1 Power connector assembly

Use a cable with a round and even cross-section having the following specifications:

- Cable wire cross section surface area: 0.14-0.5 mm^2
- Wire gauge: AWG 26-20
- Cable diameter Ø: 4-5.5 mm

2.1.2 Turning on the accQlink

The accQlink device is delivered in hibernation mode. To turn it ON, press the magnetic activator, provided, onto the Teledyne ISCO logo appearing on the accQlink device (Figure 2-2).

The accQlink device turns on and performs a 10-minute calibration process, after which it starts operating in normal mode.

☑ Note

Every time you press on the Teledyne ISCO logo with the magnetic activator, the device preforms a calibration process.

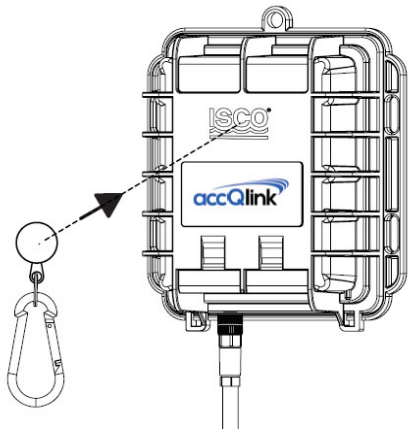


Figure 2-2 Turing on the accQlink device using the activator

2.2 Activating the accQlink

☑ Note

You need to activate your account prior to using the device. Authorized personnel responsible for program management and administration must visit:
www.teledyneisco.com/en-us/accqlinksetup

2.2.1 Activation of the accQlink

To activate your acQlink:

1. Go to: www.teledyneisco.com/en-us/accqlinksetup
2. From here you will be required to fill out a form with information, including: Name, Organization, Email Address, Phone Number, and the Serial Nubmer(s). Click NEXT.
3. You will be redirected to the EULA agreement. Read this agreement, enter your email address (as a signature) and select if you ACCEPT or DECLINE the terms of the agreement.
4. A THANK YOU screen will appear and you will be contacted by a Teledyne ISCO representative to finish up the activation.

accQlink

Section 3 Data Management System

3.1 accQlink Web-based Data Management System

The accQlink data management system provides the following:

- VISUALIZATION window – enables viewing your site deployment from the macro to the micro lev.el
- REPORTS window– enables generating reports and exporting them for viewing and sharing.
- DEVICES window – enables you to view and manage all your Sites, Devices, and Data Stream configurations.
- ACCOUNT window –enables you to manage all Organizations, Users, and User Groups.
- API window – enables access to the REST API and SOAP API, which provide programmatic access to your accQlink's information.

3.1.1 Accessing the Data Management System

To access the accQlink's data management system:

Navigate to https://home.iscoaccqlink.com/and enter your accQlink credentials. The INITIAL VISUALIZATION window will appear.

3.1.2 Site Hierarchy

The account is organized by the following hierarchy:

- Account
- Organization(s)
- Site(s)
- Device(s)
- Data stream(s)

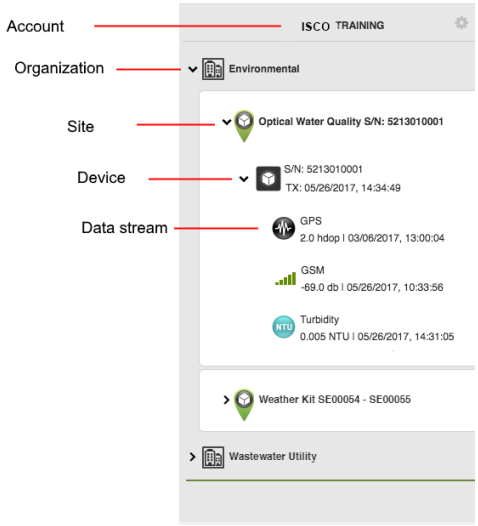


Figure 3-1 Account hierarchy

In Figure 3-1 the NAME OF ACCOUNT consists of two organizations:

- Environmental
- Wastewater Utility

Environmental manages two sites. A site is a representation of a physical location. Typically, each site includes one device. In some instances, multiple devices might be assigned to a single site. Each device generates and subsequently transmits data streams time-stamped data from one or more sensors (such as pressure, turbidity, conductivity, etc.) integrated with the device.

Every account's hierarchy is pre-defined to match the actual deployment of its devices and their sensors. The only hierarchy changes an account owner can make is to add organizations, and unassign/assign sites to organizations.

> ***Note***
>
> The Organization level is optional. If no organizations are defined, all sites are grouped directly under the Account level. This is common in small accounts.

3.2 User Roles

The system supports two sets of roles: Account roles and Organization roles.

- Account roles give permissions with regards to all account assets.
- Organization roles give permissions with regards to a specific organization's assets.

3.2.1 Account Roles

Each role level is given the permissions given to lower-level roles, plus some additional permissions. The roles, from lowest to highest, include:

- No Access - Alerts Only – Can only receive threshold alerts from account devices.
- Account Operator – Can also view sites and streams of this account.
- Account Analyst – Can also generate reports.
- Account Engineer – Can also manage all sites and streams of this account.
- Account Administrator – Can also set device configuration for all devices in this account.
- Account Owner – Can also manage all users, groups and organizations of this account.

3.2.2 Organization Roles

Each role level is given the permissions given to lower-level roles, plus some additional permissions. The roles, from lowest to highest, include:

- No Access - Alerts Only – Can only receive threshold alerts from organization devices.
- Organization Operator – Can also view sites and streams of this organization.
- Organization Analyst – Can also generate reports.
- Organization Engineer – Can also manage all sites and streams of this organization.
- Organization Administrator – Can also set device configuration for all devices in this organization.
- Organization Owner – Can also manage all users and groups of this organization.

3.2.3 Getting Started

After becoming acquainted with the Site's Hierarchy and the available User Roles, it is recommended to perform the following to set up your account:

1. If you are an account owner you may wish to create or edit organizations. Refer to 3.8 *Managing Organizations*.
2. Create or edit users, giving them the necessary permissions. Refer to 3.9 *Managing Users*
3. Create user groups, which define who receives alerts when data thresholds are exceeded. Refer to 3.10 *Managing User Groups*.
4. View your sites (groups of accQlink devices), and edit their settings if necessary. Refer to 3.5 *Managing Sites*.
5. Manage the various data streams received from each specific sensor:

- Trim the raw data; then view the formula for converting raw data into engineering units, and edit if necessary. Refer to 3.7.6 *Viewing and Editing the Treatment of Raw Data*.

- View the samples table, and hide values that are not real values. Refer to 3.7.4 *Viewing and Filtering Samples*.
- Set thresholds. When a threshold is exceeded, an alert is sent to the corresponding user group, and certain data stream actions can be taken. Refer to 3.7.5 *Configuring Data Stream Thresholds*.
- View and optionally change a stream's sampling interval; this is the rate at which the accQlink samples the relevant sensor for data. Refer to 3.7.7 *Managing a Stream's Sampling Interval*.

6. View the settings of your accQlink devices, and modify if necessary. Refer to 3.6 *Managing Devices*.

3.3 Using the Visualization Window

Click the VISUALIZATION tab to display the initial VISUALIZATION window.

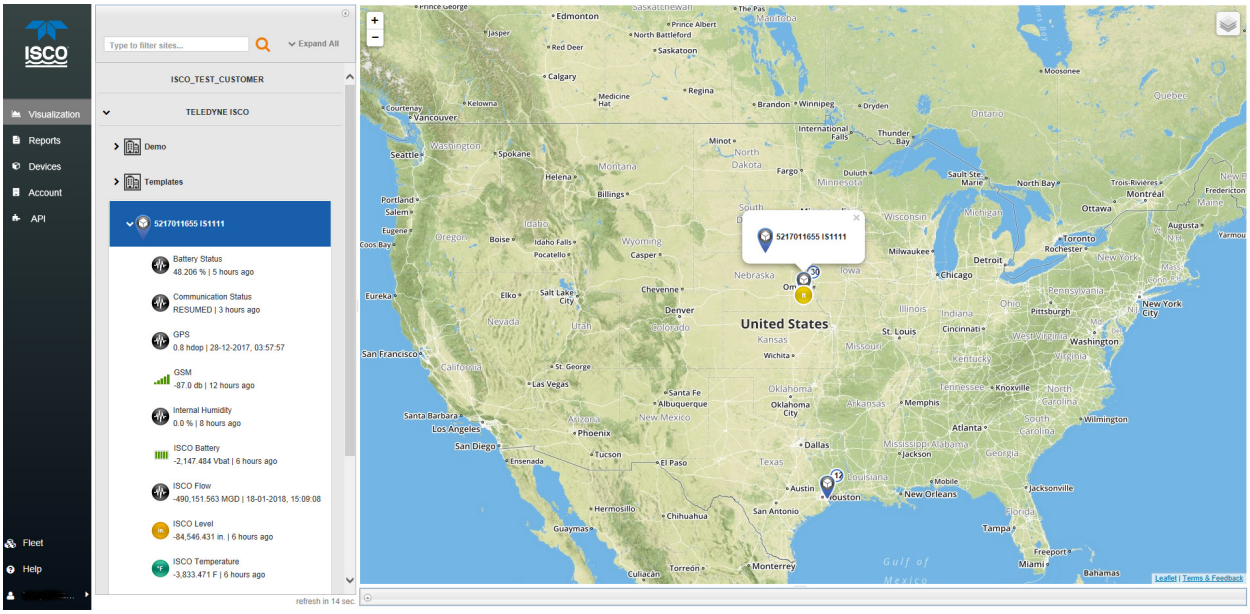


Figure 3-2 Initial Visualization window

The Visualization window is composed of a sidebar, Sites Tree pane and a right pane.

- Side bar – links to the 5 main views: Visualization, Reports, Devices, Account, API. The available views depend on your permissions (role).
- Sites Tree pane – lists all accQlink sites and their data streams (Figure 3-3):

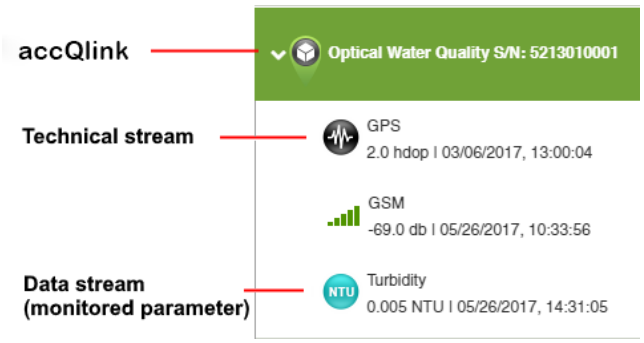


Figure 3-3 Data stream

The Sites Tree pane includes also a search box, which you can use to search for your sites.
If there are more than 5 search results, the results will not be displayed. In that case you need to refine your search criteria.

- Right pane - shows a zoomed-out map displaying clusters of data streams.
  Using the zoom controls, you can zoom in for greater detail, down to an individual site and its data streams.

3.3.1 Viewing Site Information

There are two ways to view the data:

- By specific accQlink site
- By specific data stream

View Data from a Specific accQlink Site

To view the data from a specific accQlink site, click the site in the Sites Tree pane or on the map.
The right pane refreshes to show the site and its data streams (Figure 3-4).

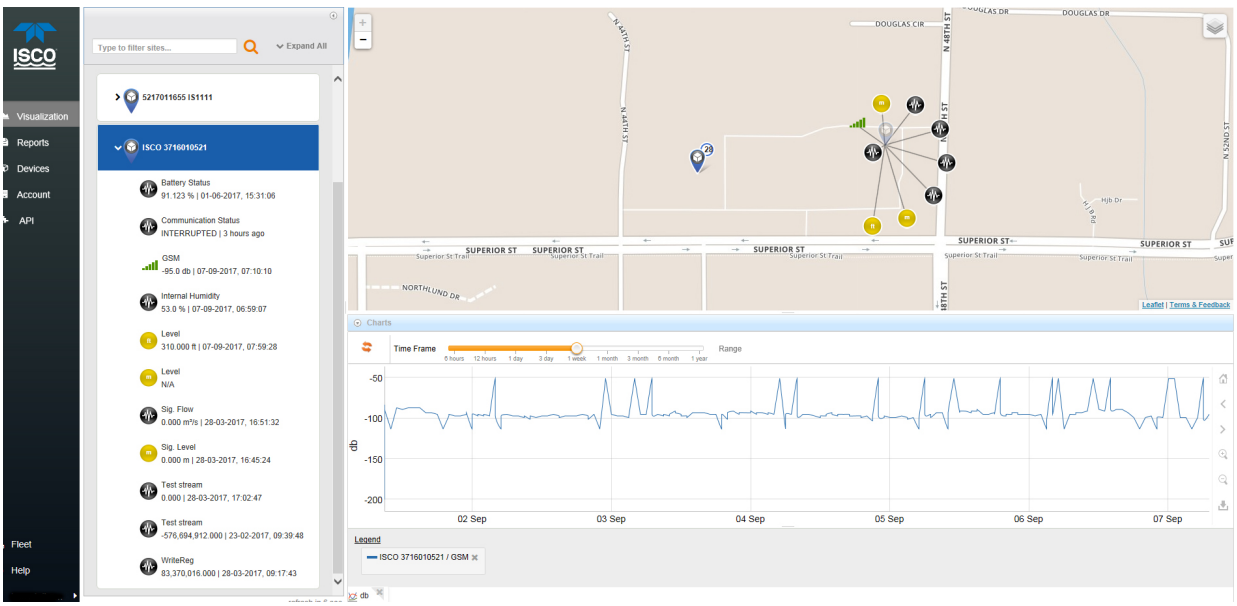


Figure 3-4 Viewing an individual site

View Data from a Specific Data Stream

To view the data sent from a specific data stream, click the data stream in the Sites Tree pane or on the map.
The right pane splits, displaying the data as a chart in the bottom half of the pane (Figure 3-5).

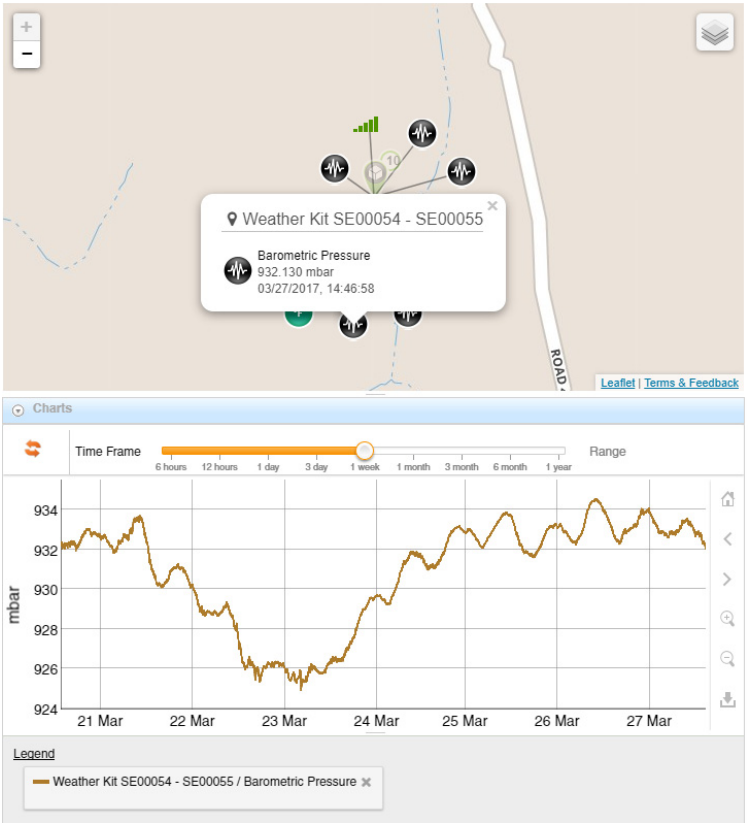


Figure 3-5 Viewing an individual data stream

3.3.2 Understanding the Data Stream Chart

Hovering over a point in the chart displays a tool tip with the following information:

- Timestamp
- Site name
- Type of data stream (such as Pressure, Level, etc.)
- The reading

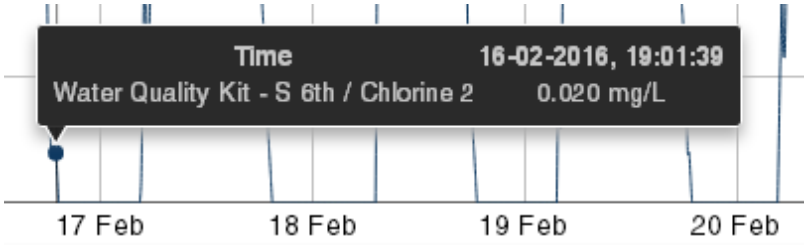


Figure 3-6 Data Stream Chart

Setting the Time Range

You can set the start and end date for the chart by clicking the RANGE drop-down and setting the dates.

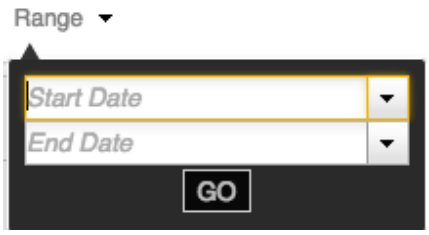


Figure 3-7 Range drop-down

Setting the Time Frame

You can set the time frame shown in the window by selecting the desired time frame in the TIME FRAME selector.

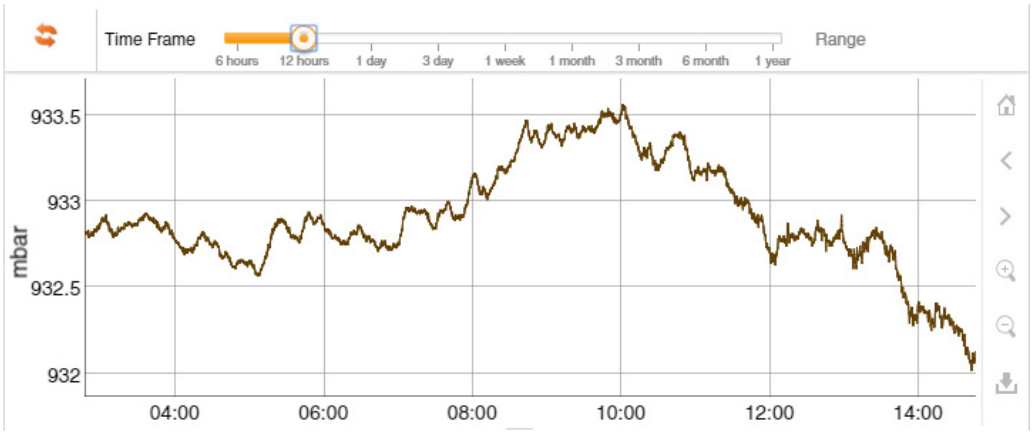


Figure 3-8 Time Frame screen

Using the Zoom and View Tools

You can adjust the view using any of the following tools, appearing to the right of the chart:

	Zoom to initial view
	Pan left
	Pan right
	Zoom in
	Zoom out
	Download as a .png. This opens the graph as a PNG file in a new browser tab.

3.3.3 Comparing Data Streams

You can also compare the readings obtained from multiple data streams by displaying them in same chart. Up to five data streams of up to two different types can be displayed in the same chart.

To compare data streams:

1. Click the first data stream in the Sites Tree pane.
   The right pane splits, displaying the data in a chart in the bottom half of the pane.
2. Click the second data stream in the Sites Tree pane.
   The data appears in the same chart in the bottom half of the right pane.
3. Repeat step (2) as desired. If you select more than five data streams in all, or more than two different types of data streams, the data from the additional data streams will appear in a new tab.

The following example shows a comparison of two data streams from the same site.

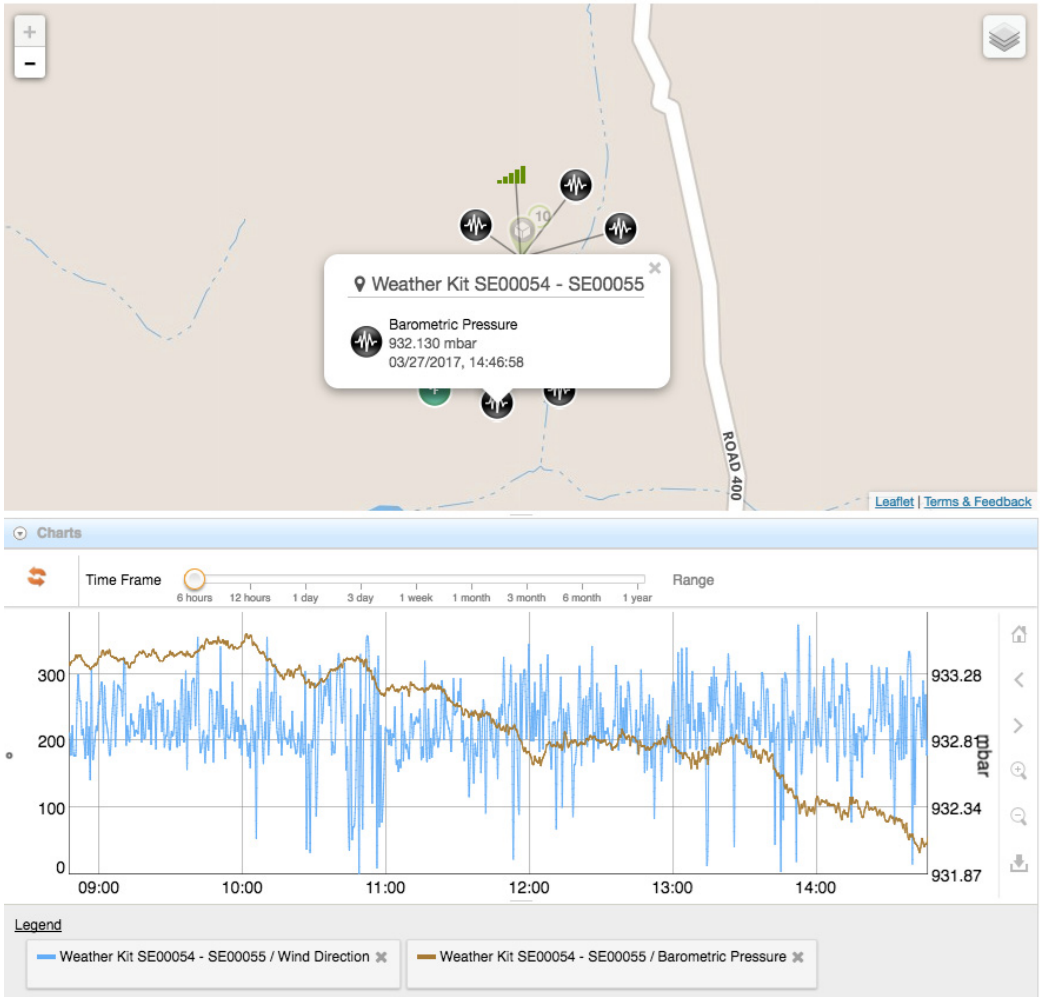


Figure 3-9 Comparing two data streams

3.4 Generating Reports

Using the REPORTS tab you can easily create various types of reports, and export them to Excel.

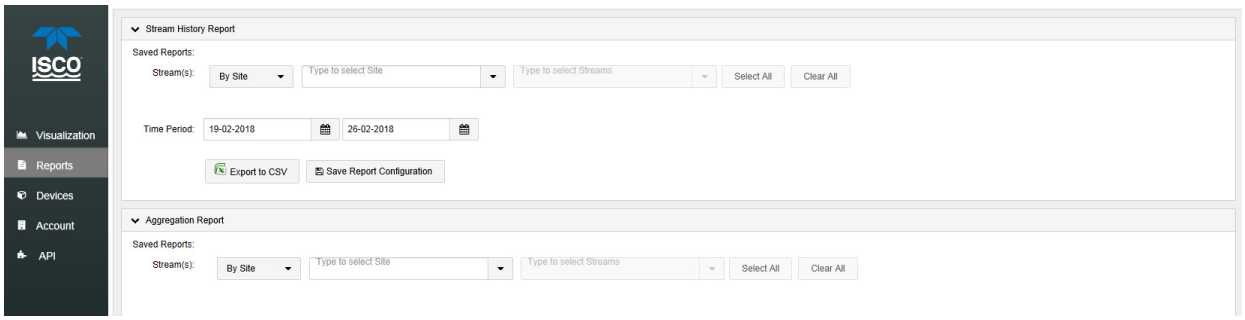


Figure 3-10 Reporting tab

You can create the following types of reports:

- Stream History Report
- Aggregation Report
- Custom Stream History Report

3.4.1 Stream History Report

This type of report displays the history of one or more data streams of a particular type.

❯To create a Stream History report:

1. Click REPORTS in the side bar.
2. In the STREAM HISTORY REPORT pane:
   a. Select whether to specify streams BY SITE or BY STREAM TYPE.
   b. If you selected to specify streams BY SITE, specify the site, and then specify stream(s) in the site.
   c. If you selected to specify streams BY STREAM TYPE, specify the stream type, and then specify stream(s) of that type.
   d. Specify the reporting TIME PERIOD.

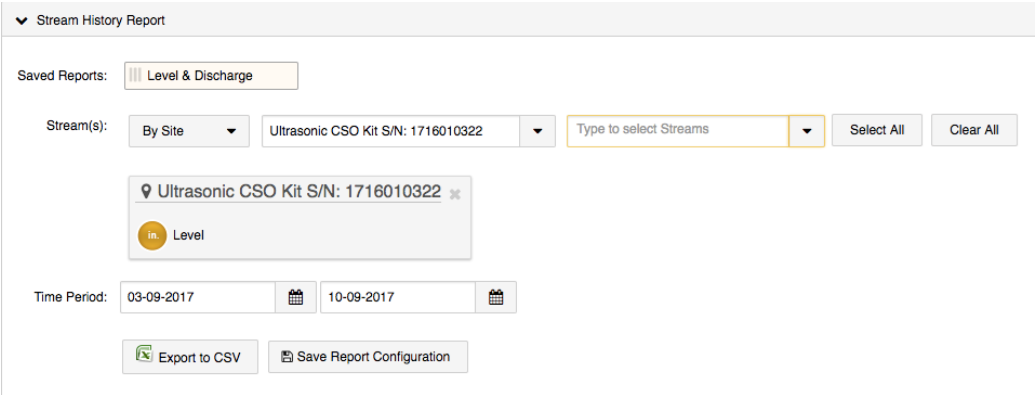


Figure 3-11 Stream History Report-Defining Report Criteria

3. Click SAVE REPORT CONFIGURATION if you wish to save this specific report generation criteria, and enter a descriptive name for the report type.
4. Click EXPORT TO CSV. A CSV file is created, showing the history of the selected streams during the selected time period.

	A	B	C	D	E
1	Time Zone	US/Eastern			
2					
3	Site Name	Stream Name			
4	Ultrasonic CSO Kit S	Level			
5					
6	Datetime	Datetime(UTC)	Date	Time	Ultrasonic CSO Kit S/N: 1716010322 / Level(in.)
7	09/03/2017 03:31	2017-09-03 07:31:21Z	09/03/2017	07:31:21	0
8	09/03/2017 03:31	2017-09-03 07:31:28Z	09/03/2017	07:31:28	0
9	09/03/2017 03:32	2017-09-03 07:32:28Z	09/03/2017	07:32:28	26.622
10	09/03/2017 03:34	2017-09-03 07:34:21Z	09/03/2017	07:34:21	26.622
11	09/03/2017 03:47	2017-09-03 07:47:28Z	09/03/2017	07:47:28	26.622
12	09/03/2017 04:02	2017-09-03 08:02:28Z	09/03/2017	08:02:28	26.622
13	09/03/2017 04:17	2017-09-03 08:17:28Z	09/03/2017	08:17:28	26.622
14	09/03/2017 04:32	2017-09-03 08:32:28Z	09/03/2017	08:32:28	26.622
15	09/03/2017 04:47	2017-09-03 08:47:28Z	09/03/2017	08:47:28	26.622

Figure 3-12 Stream History Report-Example

3.4.2 Aggregation Report

The Aggregation report enables viewing a statistical analysis of the readings obtained in one or more data streams of a specific type.

›To create an Aggregation report:

1. Click REPORTS in the side bar.
2. In the AGGREGATION REPORT pane:
   a. Select whether to specify streams BY SITE or BY STREAM TYPE.
   b. If you selected to specify streams BY SITE, specify the site, and then specify stream(s) in the site.
   c. If you selected to specify streams BY STREAM TYPE, specify the stream type, and then specify stream(s) of that type.
   d. Specify the reporting TIME PERIOD.
3. Select the aggregation period - from 1 min intervals to 1 month intervals.
4. If you select to run the report for multiple streams, you can:
   a. Select which statistical analysis function to run on those streams: either SUM, AVERAGE, MIN, MAX OR STANDARD DEVIATION
   b. Specify SEPARATE STREAMS if you wish to run a separate analysis for each of the specified streams. For example, if you had specified Stream1 and Stream2 and chosen AVERAGE, then:

- Choosing SEPARATE STREAMS will provide the average of all Stream1 recorded values in one column, and the average of all Stream2 recorded values in a second column.
- Not choosing SEPARATE STREAMS will provided an average of all Stream1 and Stream2 recorded values, in a single column.
- An Aggregation report can be generated for multiple streams only if all those streams are of the same type (such as Level), and use the same unit of measurement (such as inches).

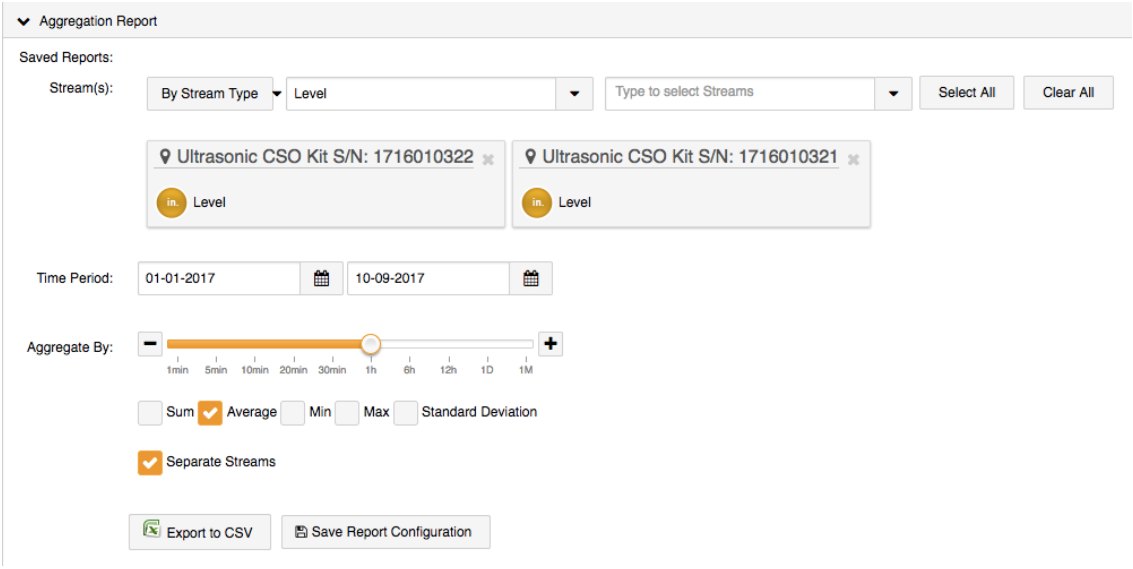


Figure 3-13Aggregation Report - Defining Report Criteria for Multiple Streams

5. If you select to run the report for a single stream, you can run any combination of the following statistical analysis functions: SUM, AVERAGE, MIN, MAX OR STANDARD DEVIATION.

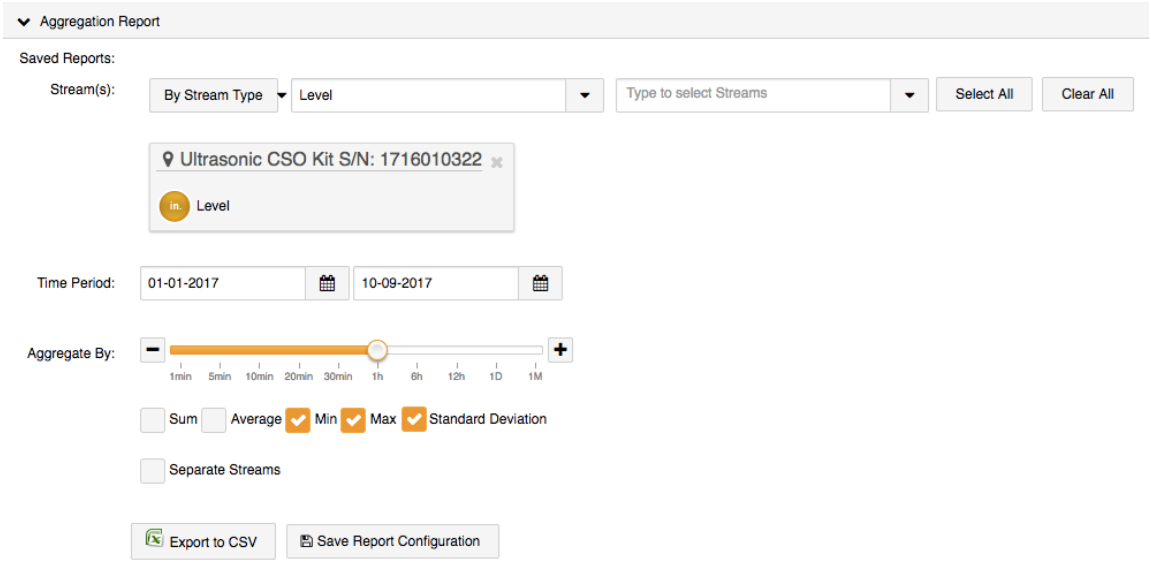


Figure 3-14Aggregation Report - Defining Report Criteria for a Single Stream

6. Click SAVE REPORT CONFIGURATION if you wish to save this specific report generation criteria, and enter a descriptive name for the report type.
7. Click EXPORT TO CSV. A CSV file is created, showing the results of the statistical analysis for the selected period. For example:

- If you had specified two streams, the AVERAGE function, and SEPARATE STREAMS in the report criteria, the resultant report will look similar to the following:

	A	B	C	D
1	Aggregated By	1 hours		
2	Time Zone	US/Eastern		
3				
4	Site Name	Stream Name		
5	Ultrasonic CSO Kit S/N: 1716010322	Level		
6	Ultrasonic CSO Kit S/N: 1716010321	Level		
7				
8				
9	Date	Interval	Avg Value-Ultrasonic CSO Kit S/N: 1716010322 [Level (in.)]	Avg Value-Ultrasonic CSO Kit S/N: 1716010321 [Level (in.)]
10	09/03/2017	03:00-04:00	10.649	20.025
11	09/03/2017	04:00-05:00	26.622	20.015
12	09/03/2017	05:00-06:00	26.602	20.006
13	09/03/2017	06:00-07:00	13.272	26.681
14	09/03/2017	07:00-08:00	6.616	26.72
15	09/03/2017	08:00-09:00	19.996	26.71
16	09/03/2017	09:00-10:00	26.632	26.7
17	09/03/2017	10:00-11:00	26.671	26.661
18	09/03/2017	11:00-12:00	13.35	26.612
19	09/03/2017	12:00-13:00	0	26.563

Figure 3-15Aggregation Report – Example for Multiple Streams

- If you had specified a single stream, and the MIN, MAX and STANDARD DEVIATION functions in the report criteria, the resultant report will look similar to the following:

	A	B	C	D	E
1	Aggregated By	1 hours			
2	Time Zone	US/Eastern			
3					
4	Site Name	Stream Name			
5	Ultrasonic CSO Kit S/N: 1716010322	Level			
6					
7					
8	Date	Interval	Min Value [Level (in.)]	Max Value [Level (in.)]	Std Dev
9	09/03/2017	03:00-04:00	0	26.622	13.042
10	09/03/2017	04:00-05:00	26.622	26.622	0
11	09/03/2017	05:00-06:00	26.543	26.622	0.034
12	09/03/2017	06:00-07:00	0	26.622	13.272
13	09/03/2017	07:00-08:00	0	26.464	11.459
14	09/03/2017	08:00-09:00	0	26.661	11.545
15	09/03/2017	09:00-10:00	26.622	26.661	0.017
16	09/03/2017	10:00-11:00	26.622	26.74	0.051
17	09/03/2017	11:00-12:00	0	26.74	13.35

Figure 3-16Aggregation Report – Example for a Single Stream

3.4.3 Custom Stream History Report

This type of report enables customizing the display of any data streams' history. You can set which fields will appear in the report, how the fields should be delimited, etc. This is very useful if you need to export data from the report into a system that supports a specific data structure only.

›To create a Custom Stream History report:

1. Click REPORTS in the side bar.
2. In the CUSTOM STREAM HISTORY REPORT pane, select the specific streams you wish to view, and the reporting time period.

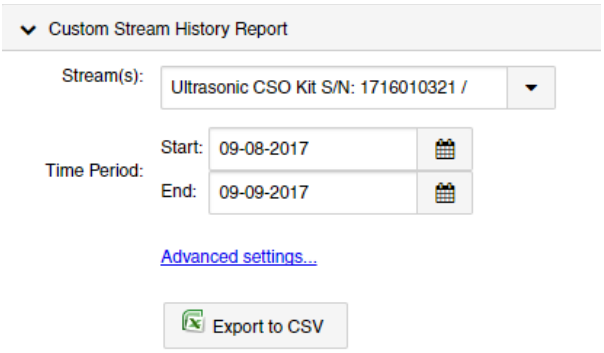


Figure 3-17 Custom Stream History Report - Defining Streams and Time Period

3. Click ADVANCED SETTINGS to define the type of information to include in the report, as well as how it will be displayed.

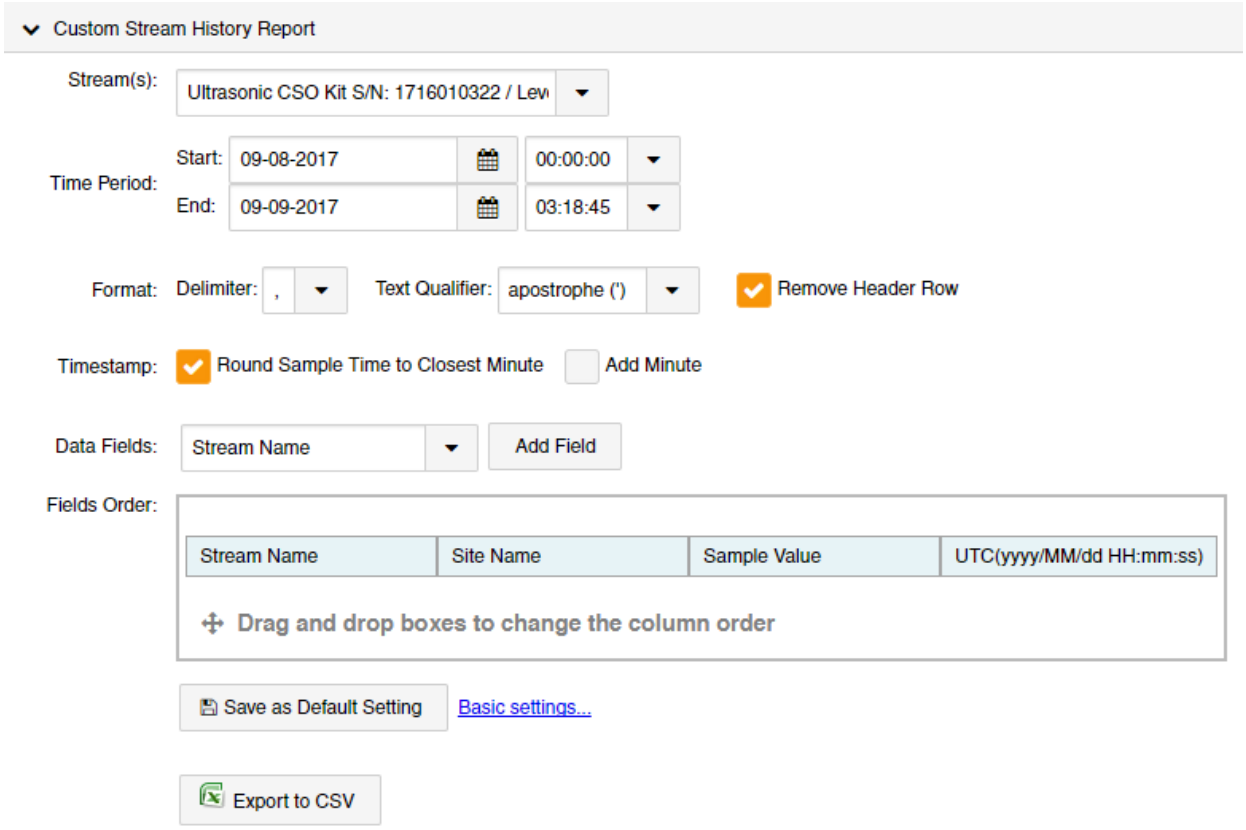


Figure 3-18 Custom Stream History Report – Specifying Fields and Method of Display

a. Set the FORMAT DELIMITER.
b. Set the TEXT QUALIFIER.
c. Specify whether to REMOVE HEADER ROW.
d. Specify whether to ROUND SAMPLE TIME TO CLOSEST-MINUTE in the timestamp, and whether to ADD MINUTE.
e. For each data field you wish to include in the report:

- Select the field in the DATA FIELDS drop-down.
- If a format drop-down appears, select a format.

Note

The format can be edited directly in the window.

Figure 3-19 Data field

- Click ADD FIELD.

f. In the FIELDS ORDER section, you can change the order in which columns will appear, by dragging and dropping column titles.

g. Optionally click SAVE AS DEFAULT SETTINGS; the settings you defined will become the new default settings for the CUSTOM STREAM HISTORY REPORT.

4. Click EXPORT TO CSV. A CSV file is created, showing the history of the selected streams during the selected time period.

   For example, for the report criteria defined in Figure 3-18, the resultant CSV report file is as follows:

	A	B	C	D
1	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'0.000'	'2017/09/03 07:31:00'
2	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'0.000'	'2017/09/03 07:31:00'
3	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.622'	'2017/09/03 07:32:00'
4	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'0.000'	'2017/09/03 07:34:00'
5	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.622'	'2017/09/03 07:47:00'
6	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.622'	'2017/09/03 08:02:00'
7	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.622'	'2017/09/03 08:17:00'
8	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.622'	'2017/09/03 08:32:00'
9	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.622'	'2017/09/03 08:47:00'
10	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.622'	'2017/09/03 09:02:00'
11	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.622'	'2017/09/03 09:17:00'
12	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.543'	'2017/09/03 09:32:00'
13	'Level'	'Ultrasonic CSO Kit S/N: 1716010322'	'26.622'	'2017/09/03 09:47:00'

Figure 3-20 Custom Stream History Report - Example with no header row

3.5 Managing Sites

A site is a group of devices in close proximity. This section describes how to view and edit site information.

3.5.1 Viewing a Site

›To view site information:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the site NAME (Figure 3-21).

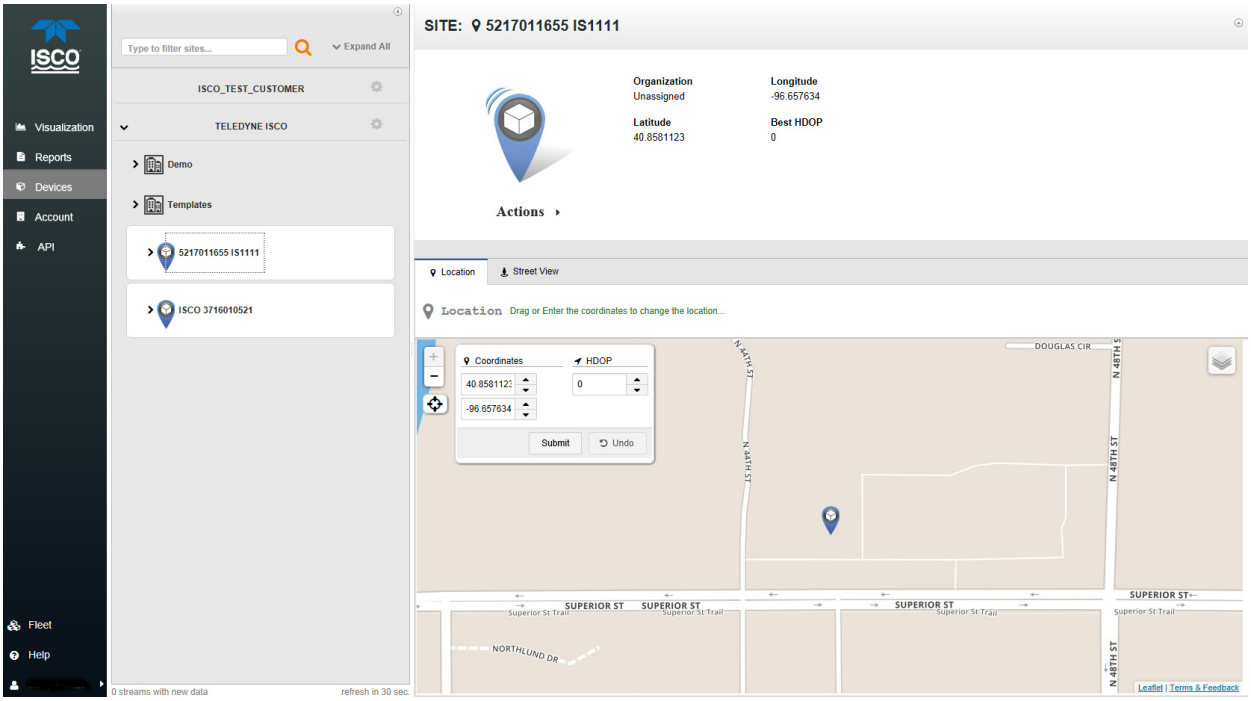


Figure 3-21 Selecting a Site

The site's location and information appears in the right pane. This includes:

- The site name, the organization to which it belongs, and its latitude and longitude coordinates.
- A map view, showing the location of the site. You can change the view by clicking the layers icon at the top right corner of the view.
- A street view from Google of the site's location.

3.5.2 Editing a Site

There are a few ways to edit a site. These include changing the site name and organization and/or changing the sites location.

Changing the Site Name and Organization

You can change a site's name and the organization to which it belongs.

›To change a site's name and organization:

1. Click DEVICES in the sidebar, and click the site name in the Sites Tree pane.
2. In the right pane, click ACTIONS under the site icon, and select EDIT (Figure 3-22).

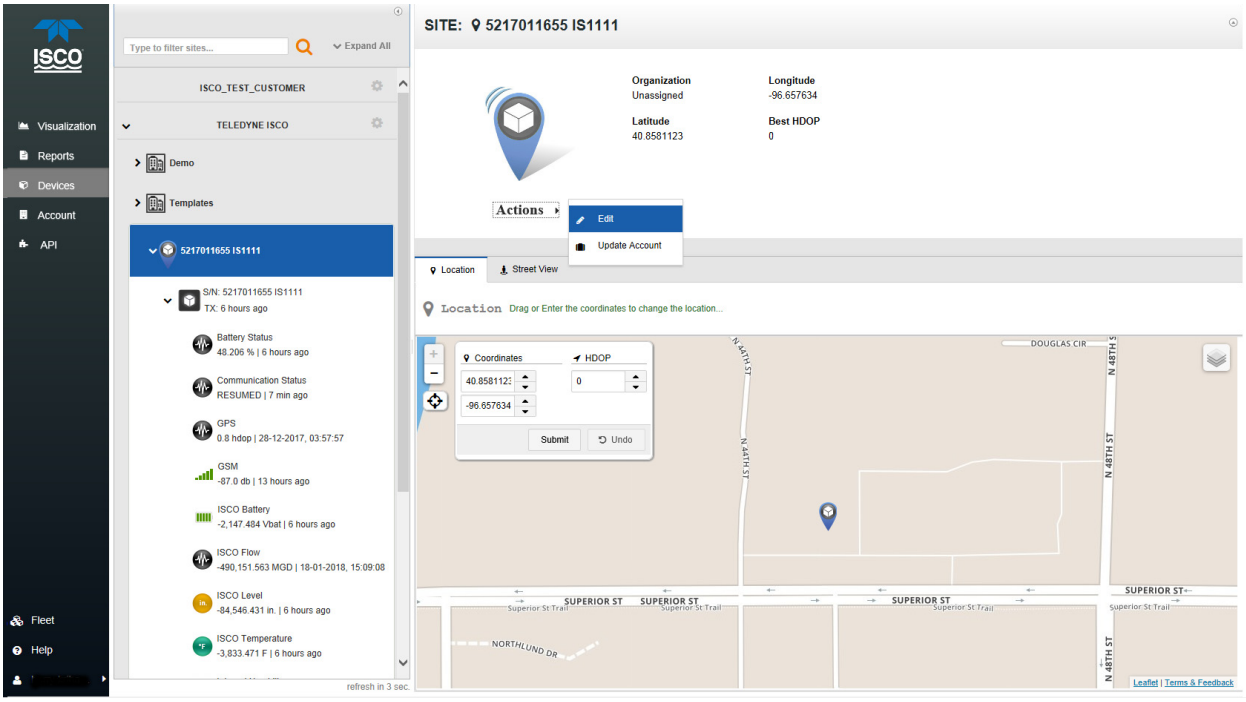


Figure 3-22 Selecting a site to edit

The Site Name Configuration window appears (Figure 3-23).

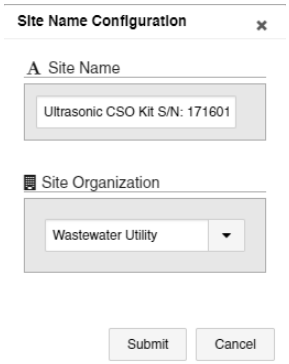


Figure 3-23 Changing site name or organization

3. In the SITE NAME CONFIGURATION window, you can:
   - Change the name of the site.
   - Change the organization to which the site belongs.

Note

A site can belong to only one organization.

4. Click SUBMIT.

3.5.3 Changing the Site Location

You can change the site's location by dragging and dropping it in the map, or by entering coordinates in the COORDINATES fields.

›To change a site's location:

1. Click DEVICES in the sidebar, and click the site name in the SITES TREE pane (Figure 3-24).

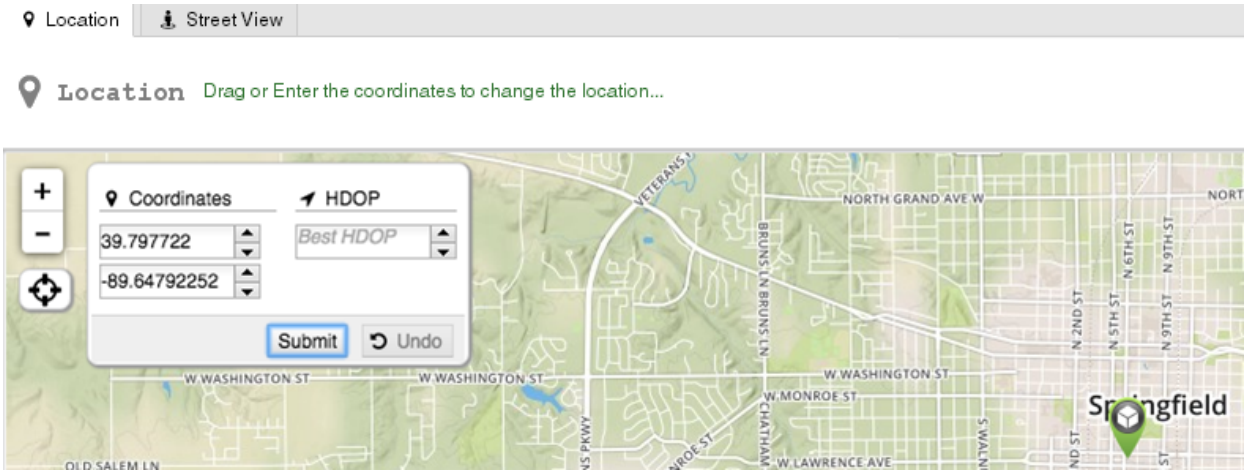


Figure 3-24 Changing site location

2. In the map appearing in the right pane, you can do any of the following:

- Drag and drop the site icon in the map.
- Edit the coordinates displayed in the COORDINATES fields. The coordinates originally displayed are the site location as transmitted by the devices in the site.

> ☑ ***Note***
> Do not edit the HDOP field. It is reserved for future use.

3.6 Managing Devices

You can view and change device settings such as the device transmission rate, and view varied device history and health information.

›To view and edit device settings:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the device name (Figure 3-25).

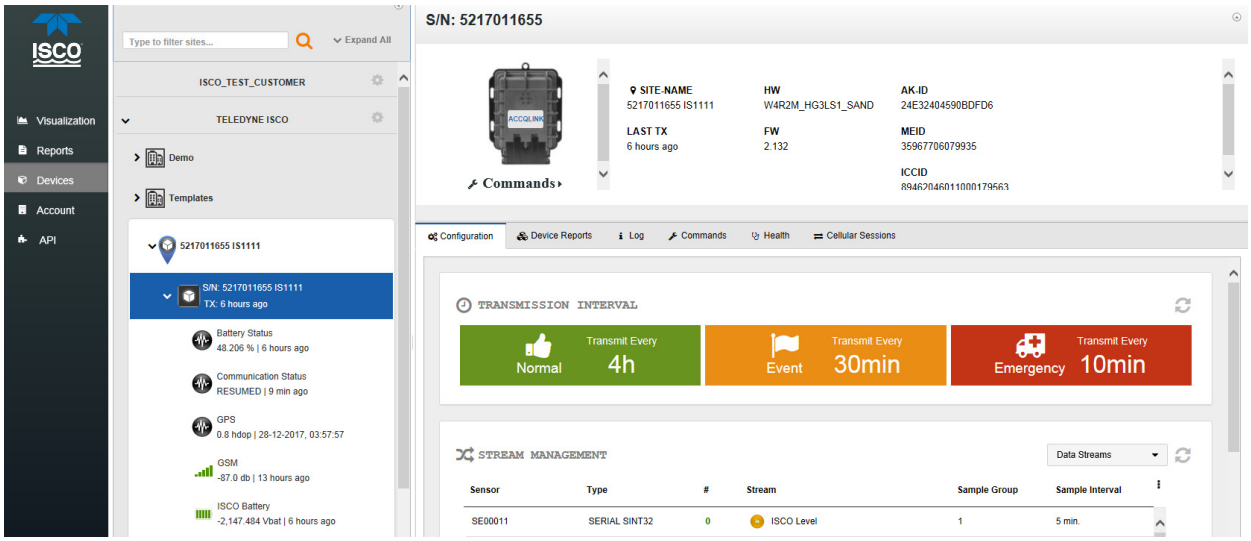


Figure 3-25 Selecting a device

Device information and configuration options appear in the right pane. This includes:

- The device's serial number, part number, its site name, last transmission time, hardware version and firmware version, Teledyne ISCO ID and ICC ID (=ID of the SIM card).
- The ability to send various commands to the device.
- Stream management information – an overview of the mapping of physical streams to logical channels.
- Several tabs enable:
  - Managing Device Configuration
  - Viewing the File Sent and Received by the device
  - Viewing the Device Event Log
  - Viewing the Command Sent to the Device
  - Viewing the Health of the Device
  - Viewing Device Cellular Information

3.6.1 Managing Device Configuration

The device's CONFIGURATION tab enables viewing and changing device configuration definitions. With the exception of the actions described in the following sub-sections, we recommend not changing these definitions without consulting with Teledyne ISCO.

Setting the Device Transmission Intervals

The device transmission interval defines how often the device transmits the data gathered by its sensors.

For every device you can set 3 transmission intervals: NORMAL, EVENT and EMERGENCY. Transmission interval NORMAL is the default interval. Transmission intervals EVENT and EMERGENCY are two alternate intervals. Data is always transmitted at the

NORMAL rate, unless you specify a different rate – either EVENT or EMERGENCY – when readings fall within a threshold range (as described in Section XX).

When setting transmission intervals, keep in mind that very short transmission intervals consume a large amount of power and network resources.

To view or set the device transmission

intervals:

1. Click DEVICES in the sidebar.
2. In the Sites Tree pane, click the device name.
3. In the right pane, click the CONFIGURATION tab. The currently-defined transmission intervals are displayed (Figure 3-26).

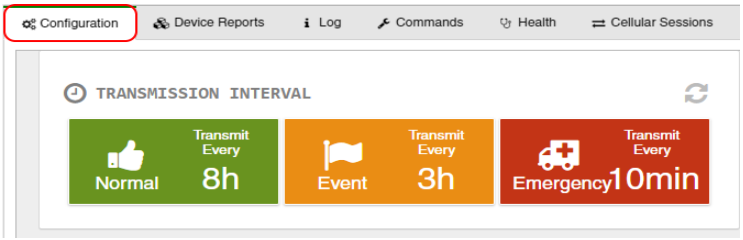


Figure 3-26 Viewing the defined transmission intervals

4. Click inside the box of the transmission interval you wish to change. For example, to change the NORMAL transmission interval, click inside the green box.

   A SELECT TRANSMISSION INTERVAL for NORMAL window appears, with a slider for setting the interval length (Figure 3-27).

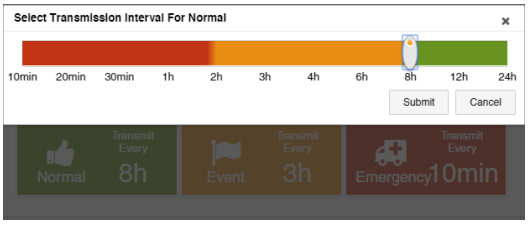


Figure 3-27 Changing a transmission interval using the slider

5. Set the transmission interval time, and click Submit.

Note

The slider enables choosing from among the default intervals. To set the interval to a value that does not appear in the slider, refer to the section on *Setting a Device Transmission Interval to a Custom Setting*.

Note

Changes won't take effect and won't be visible on this screen until the accQlink next communicates with the server.

Setting a Device Transmission Interval to a Custom Setting

To set a device transmission interval to a custom setting:

1. Click DEVICES in the sidebar.
2. In the Sites Tree pane, click the device name.
3. In the right pane, click the CONFIGURATION tab.

   The currently-defined transmission intervals are displayed (Figure 3-26).
4. Scroll to the bottom of the CONFIGURATION tab, and click ADVANCED DEVICE CONFIGURATION to expand this section.

The DEVICE CONFIGURATION TREE is displayed.

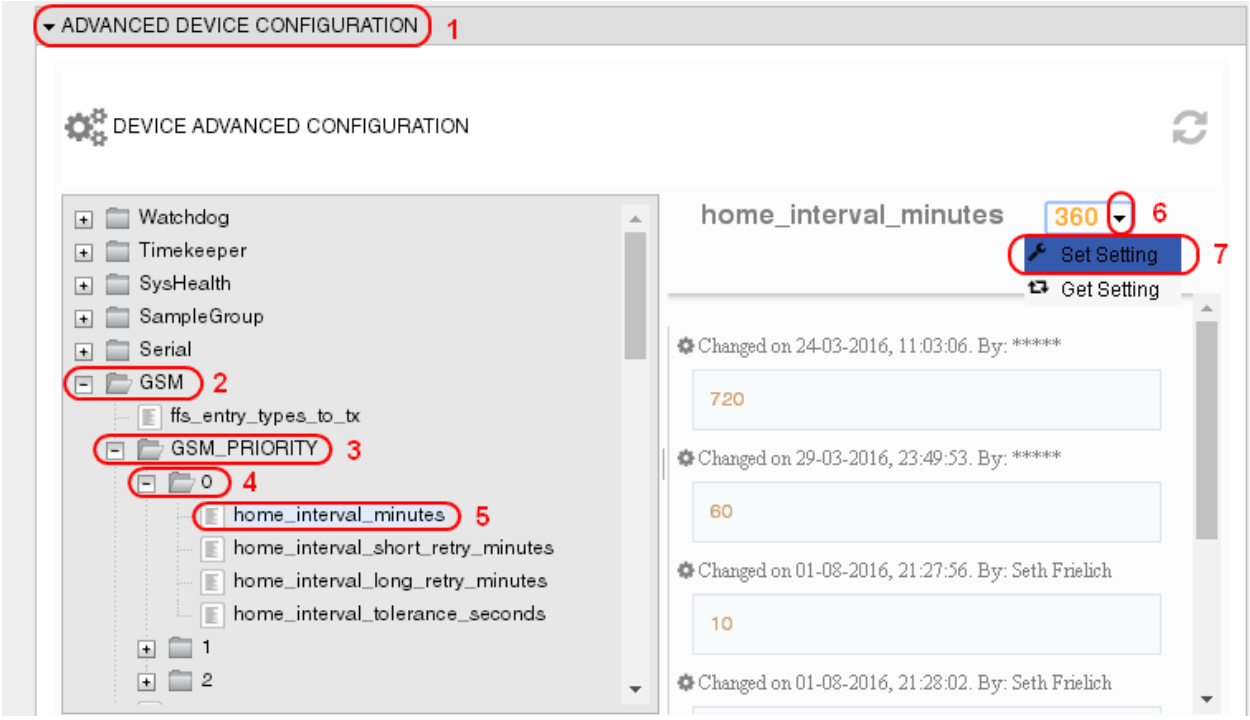


Figure 3-28 Selecting the device transmission interval parameter

5. To change the device's NORMAL transmission interval (in minutes), in the Device Configuration tree select GSM > GSM_PRIORITY > 0 > HOME_INTERVAL_MINUTES and then:
   a. To the right of the configuration tree, select the drop-down arrow adjacent to the current value.
   b. Select SET SETTING.

c. In the Send New Value window, enter the desired value in the

d. NEW VALUE field, and click SUBMIT.

> **Note**
>
> It is recommended not to set a value below 10 minutes, since this will drain the battery.

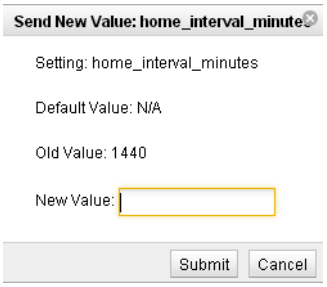


Figure 3-29 Send New Value window

6. To change the EVENT transmission interval (in minutes), select GSM > GSM_PRIORITY > 1 > HOME_INTERVAL_MINUTES and follow the instructions in the sub-steps of step
7. .To change the EMERGENCY transmission interval (in minutes), select GSM > GSM_PRIORITY > 2 > HOME_INTERVAL_MINUTES and follow the instructions in the sub-steps of step 5.

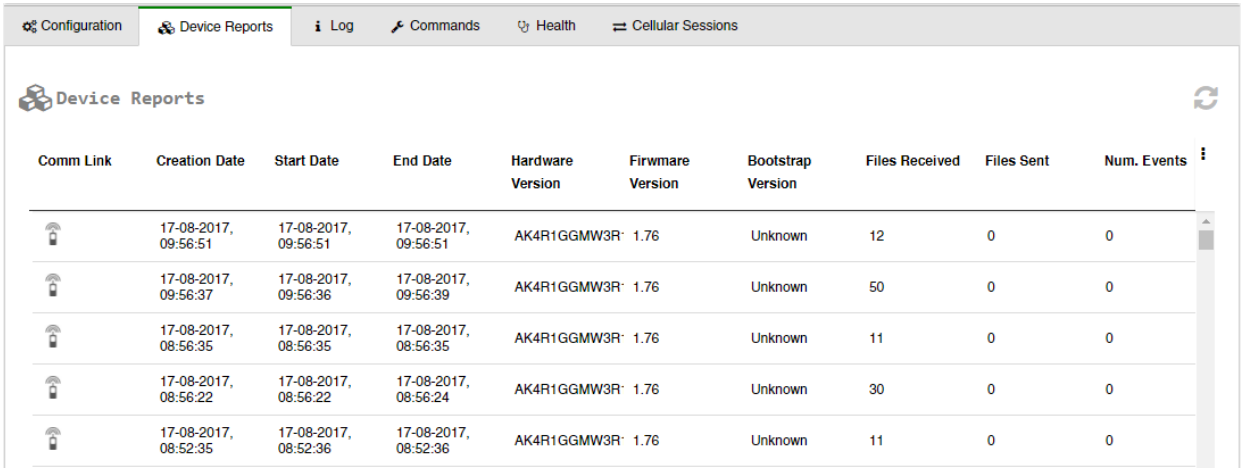
Setting the Device Sampling Interval

Sampling intervals are set at the stream level. For details, refer to the section on 3.7.7 *Managing a Stream's Sampling Interval*.

3.6.2 Viewing the Files Sent and Received by the Device

To view the files sent and received by the device:

1. Click DEVICES in the sidebar.
2. In the Sites Tree pane, click the device name.
3. In the right pane, click the DEVICE REPORTS tab (Figure 3-30).



Comm Link	Creation Date	Start Date	End Date	Hardware Version	Firwmare Version	Bootstrap Version	Files Received	Files Sent	Num. Events
	17-08-2017, 09:56:51	17-08-2017, 09:56:51	17-08-2017, 09:56:51	AK4R1GGMW3R	1.76	Unknown	12	0	0
	17-08-2017, 09:56:37	17-08-2017, 09:56:36	17-08-2017, 09:56:39	AK4R1GGMW3R	1.76	Unknown	50	0	0
	17-08-2017, 08:56:35	17-08-2017, 08:56:35	17-08-2017, 08:56:35	AK4R1GGMW3R	1.76	Unknown	11	0	0
	17-08-2017, 08:56:22	17-08-2017, 08:56:22	17-08-2017, 08:56:24	AK4R1GGMW3R	1.76	Unknown	30	0	0
	17-08-2017, 08:52:35	17-08-2017, 08:52:36	17-08-2017, 08:52:36	AK4R1GGMW3R	1.76	Unknown	11	0	0

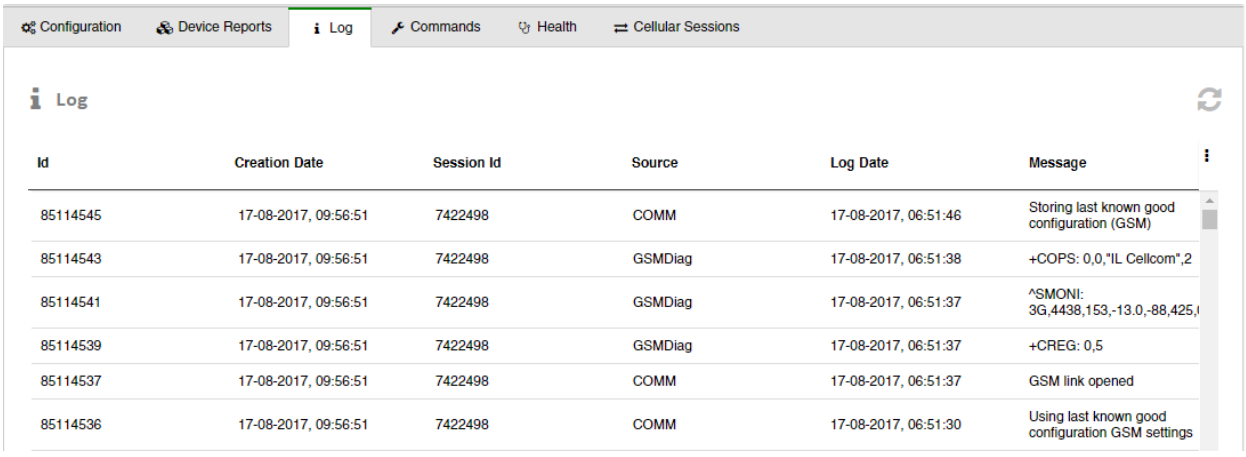
Figure 3-30 Device- Device Reports tab

The report lists, for each event in which files were received from or sent by the device, the number of FILES RECEIVED from the device (such as files containing sensor readings), and FILES SENT to the device (such as files containing device configuration changes).

3.6.3 Viewing the Device Event Log

To view the device event log:

1. Click DEVICES in the sidebar.
2. In the Sites Tree pane, click the device name.
3. In the right pane, click the LOG tab. The Log appears, listing all device activity (Figure 3-31).



Id	Creation Date	Session Id	Source	Log Date	Message
85114545	17-08-2017, 09:56:51	7422498	COMM	17-08-2017, 06:51:46	Storing last known good configuration (GSM)
85114543	17-08-2017, 09:56:51	7422498	GSMDiag	17-08-2017, 06:51:38	+COPS: 0,0,"IL Cellcom",2
85114541	17-08-2017, 09:56:51	7422498	GSMDiag	17-08-2017, 06:51:37	^SMONI: 3G,4438,153,-13.0,-88,425,
85114539	17-08-2017, 09:56:51	7422498	GSMDiag	17-08-2017, 06:51:37	+CREG: 0,5
85114537	17-08-2017, 09:56:51	7422498	COMM	17-08-2017, 06:51:37	GSM link opened
85114536	17-08-2017, 09:56:51	7422498	COMM	17-08-2017, 06:51:30	Using last known good configuration GSM settings

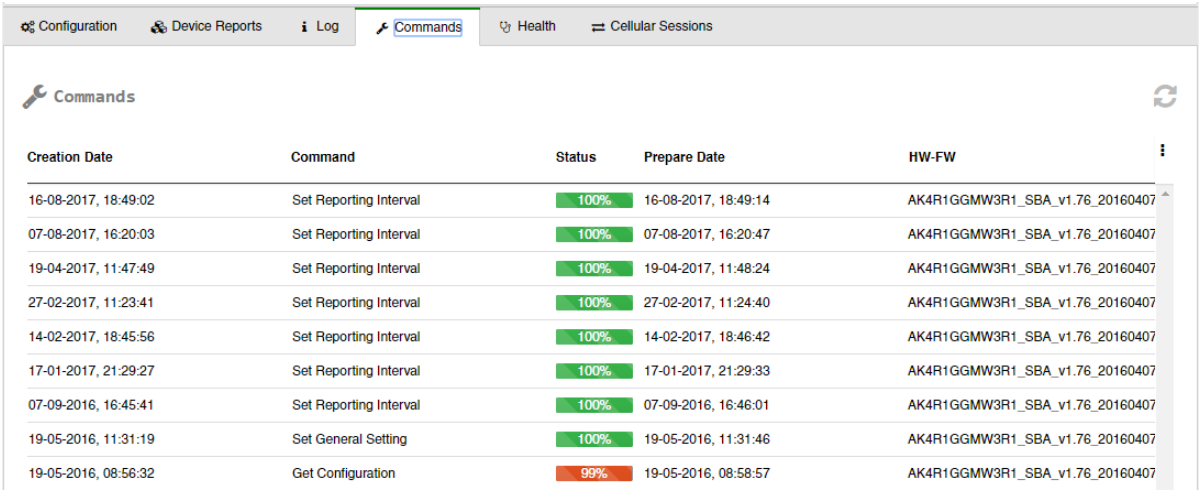
Figure 3-31 Device- Log tab

3.6.4 Viewing the Commands Sent to the Device

The table lists all the commands sent to the device. These mainly include device configuration changes.

To view the commands sent to the device:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the device name.
3. In the right pane, click the COMMANDS tab (Figure 3-32).



Creation Date	Command	Status	Prepare Date	HW-FW
16-08-2017, 18:49:02	Set Reporting Interval	100%	16-08-2017, 18:49:14	AK4R1GGMW3R1_SBA_v1.76_20160407
07-08-2017, 16:20:03	Set Reporting Interval	100%	07-08-2017, 16:20:47	AK4R1GGMW3R1_SBA_v1.76_20160407
19-04-2017, 11:47:49	Set Reporting Interval	100%	19-04-2017, 11:48:24	AK4R1GGMW3R1_SBA_v1.76_20160407
27-02-2017, 11:23:41	Set Reporting Interval	100%	27-02-2017, 11:24:40	AK4R1GGMW3R1_SBA_v1.76_20160407
14-02-2017, 18:45:56	Set Reporting Interval	100%	14-02-2017, 18:46:42	AK4R1GGMW3R1_SBA_v1.76_20160407
17-01-2017, 21:29:27	Set Reporting Interval	100%	17-01-2017, 21:29:33	AK4R1GGMW3R1_SBA_v1.76_20160407
07-09-2016, 16:45:41	Set Reporting Interval	100%	07-09-2016, 16:46:01	AK4R1GGMW3R1_SBA_v1.76_20160407
19-05-2016, 11:31:19	Set General Setting	100%	19-05-2016, 11:31:46	AK4R1GGMW3R1_SBA_v1.76_20160407
19-05-2016, 08:56:32	Get Configuration	99%	19-05-2016, 08:58:57	AK4R1GGMW3R1_SBA_v1.76_20160407

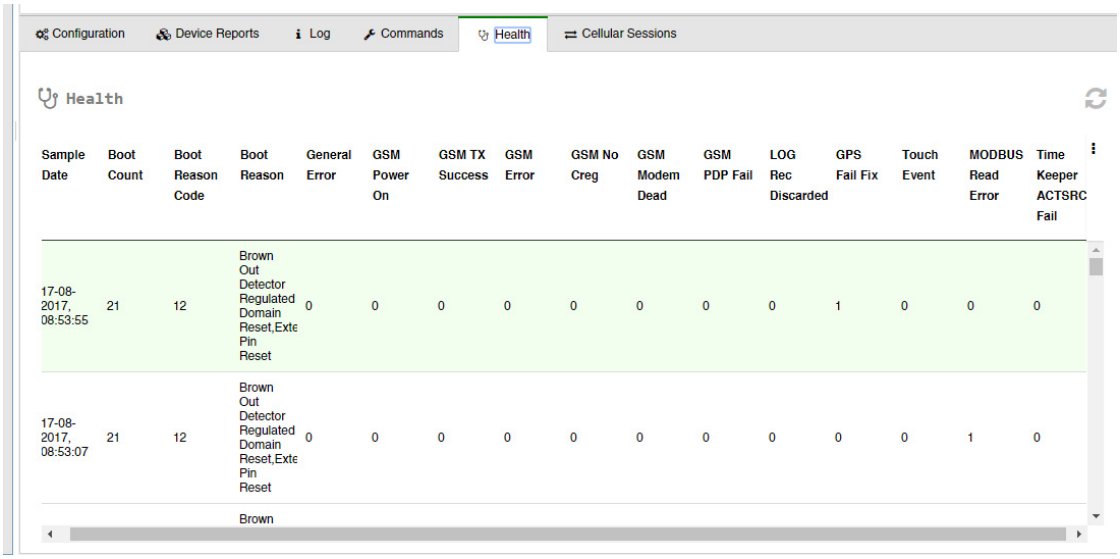
Figure 3-32 Device- Command tab

3.6.5 Viewing the Health of the Device

This tab is intended for device troubleshooting, to help identify the possible source of issues.

To view the health of the device:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the device name.
3. In the right pane, click the HEALTH tab (Figure 3-33).



Sample Date	Boot Count	Boot Reason Code	Boot Reason	General Error	GSM Power On	GSM TX Success	GSM Error	GSM No Creg	GSM Modem Dead	GSM PDP Fail	LOG Rec Discarded	GPS Fail Fix	Touch Event	MODBUS Read Error	Time Keeper ACTSRC Fail
17-08-2017, 08:53:55	21	12	Brown Out Detector Regulated Domain Reset,Exte Pin Reset	0	0	0	0	0	0	0	0	1	0	0	0
17-08-2017, 08:53:07	21	12	Brown Out Detector Regulated Domain Reset,Exte Pin Reset	0	0	0	0	0	0	0	0	0	0	1	0
			Brown												

Figure 3-33 Device- Health tab

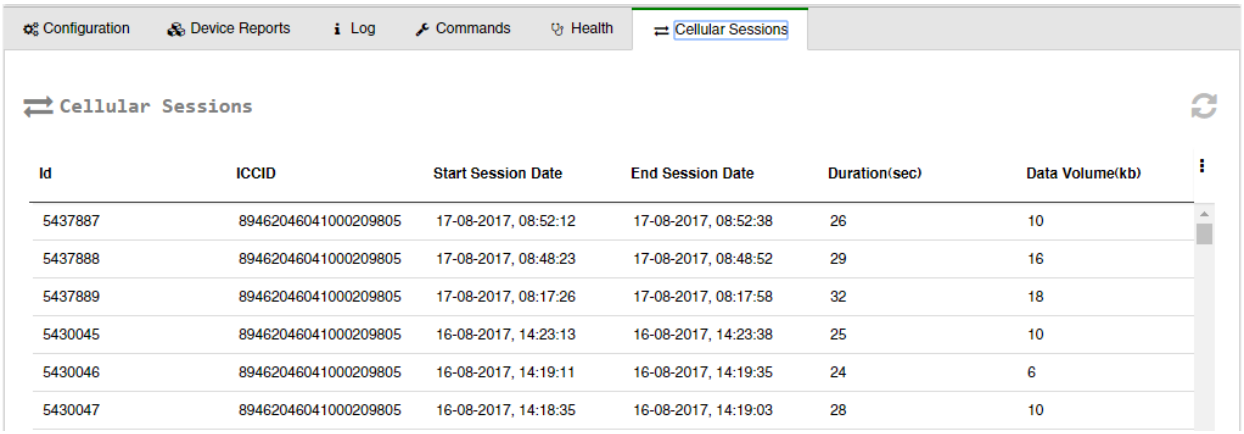
3.6.6 Viewing Device Cellular Information

This tab lists information about each data transmission session during which the device transmitted data over the mobile network.

To view the cellular information of the device:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the device name.

In the right pane, click the CELLULAR SESSIONS tab (Figure 3-34).



Id	ICCID	Start Session Date	End Session Date	Duration(sec)	Data Volume(kb)
5437887	89462046041000209805	17-08-2017, 08:52:12	17-08-2017, 08:52:38	26	10
5437888	89462046041000209805	17-08-2017, 08:48:23	17-08-2017, 08:48:52	29	16
5437889	89462046041000209805	17-08-2017, 08:17:26	17-08-2017, 08:17:58	32	18
5430045	89462046041000209805	16-08-2017, 14:23:13	16-08-2017, 14:23:38	25	10
5430046	89462046041000209805	16-08-2017, 14:19:11	16-08-2017, 14:19:35	24	6
5430047	89462046041000209805	16-08-2017, 14:18:35	16-08-2017, 14:19:03	28	10

Figure 3-34 Device- Cellular Sessions tab

3.6.7 Managing Device Technical Alerts

Account owners can set device technical alerts that will be sent as SMS and/or email messages if any device crosses one of the following thresholds: communication-disruption, internal-humidity, or internal battery-level.

> **Note**
>
> Device technical alerts are not sent immediately when the configured device thresholds are crossed. Rather, they are sent once every 3 hours. However, each alert has a timestamp which identifies exactly when the alert was triggered (Figure 3-35).

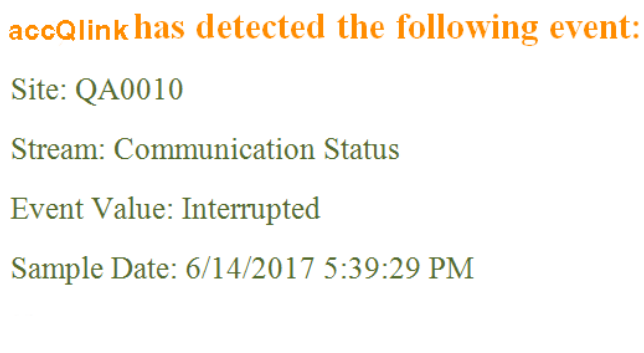


Figure 3-35 Technical Alert-

Viewing the List of Technical Alerts

To edit, deactivate, reactivate or delete a device technical alert:

1. Click DEVICES in the sidebar.
2. In the Sites Tree pane, click the Preferences icon adjacent to the account name.

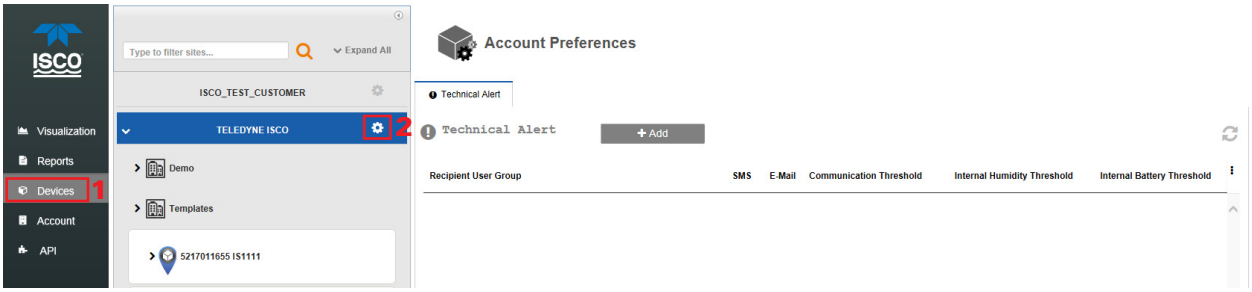


Figure 3-36 Selecting Account Preferences

3. View the technical alerts listed in the Technical Alert table. The table shows, for each technical alert:

- Whether the alert is sent in an SMS text message and/or in an email.
- Whether an alert is sent when communication is
- DELAYED or INTERRUPTED beyond a certain threshold. An empty cell indicates that no alert is sent if communications are delayed or interrupted. Please note: Each device has its own Delayed Transmission and Interrupted Transmission thresholds, which are set at the device level, as described in Section 3.6.8 *Setting the Device Reporting Profile*.
- The INTERNAL HUMIDITY THRESHOLD. If the internal humidity level in the device rises to above this threshold, a humidity threshold alert will be sent. An empty cell indicates that no alert is sent for humidity levels.
- The **INTERNAL BATTERY THRESHOLD.** If the internal battery level falls to below this threshold, a battery threshold alert will be sent. An empty cell indicates that no alert is sent for battery levels.

Adding a Technical Alert

To add a device technical alert:

1. Click DEVICES in the sidebar.
2. In the Sites Tree pane, click the Preferences icon adjacent to the account name.
3. Click +ADD (Figure).

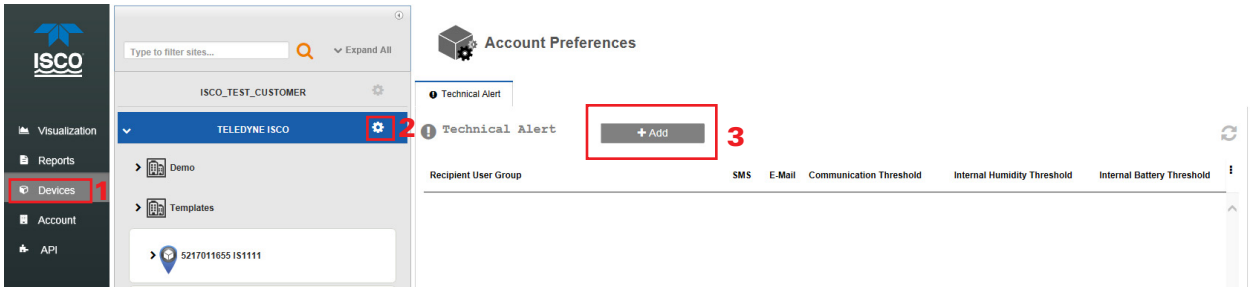


Figure 3-37 Selecting to Add a Technical Alert

The Create Technical Alert window appears (Figure 3-38).

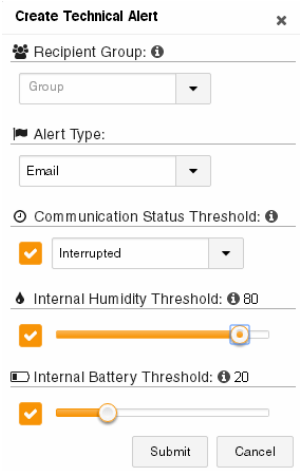


Figure 3-38 Creating a technical alert

4. In the Create Technical Alert window:
   a. Select a RECIPIENT GROUP. All members of the group you specify will receive the alert. Note that you need to first define a user group, as described in 3.10 *Managing User Groups*.
   b. .Select the ALERT TYPE: EMAIL, SMS, OR EMAIL & SMS.
   c. In COMMUNICATION STATUS THRESHOLD:
   · Check the COMMUNICATION STATUS THRESHOLD box if you wish to send an alert upon a communication status threshold being crossed.
   · Select whether to send an alert when communication status is DELAYED or INTERRUPTED beyond the configured threshold. Note that each device has its own Delayed Transmission and Interrupted Transmission thresholds, set at the device level. You can view and set these thresholds as described in 3.6.8 *Setting the Device Reporting Profile*.

d. In INTERNAL HUMIDITY THRESHOLD:

- Check the INTERNAL HUMIDITY THRESHOLD box if you wish to send an alert upon an internal device humidity threshold being crossed.
- Use the slider to set the upper humidity threshold (in percentage of humidity). If the internal humidity level rises to above the threshold, a humidity threshold alert will be sent.

e. In INTERNAL BATTERY THRESHOLD:

- Check the INTERNAL BATTERY THRESHOLD box if you wish to send an alert upon an internal battery threshold being crossed.
- Use the slider to set the lower battery threshold (in percentage of battery power remaining). If the internal battery level falls to below the threshold, a battery threshold alert will be sent.

f. Click SUBMIT.

Editing, Deactivating, Reactivating or Deleting a Technical Alert

To edit, deactivate, reactivate, or delete a device technical alert:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the PREFERENCES icon adjacent to the account name (Figure 3-39 Technical Alerts table).

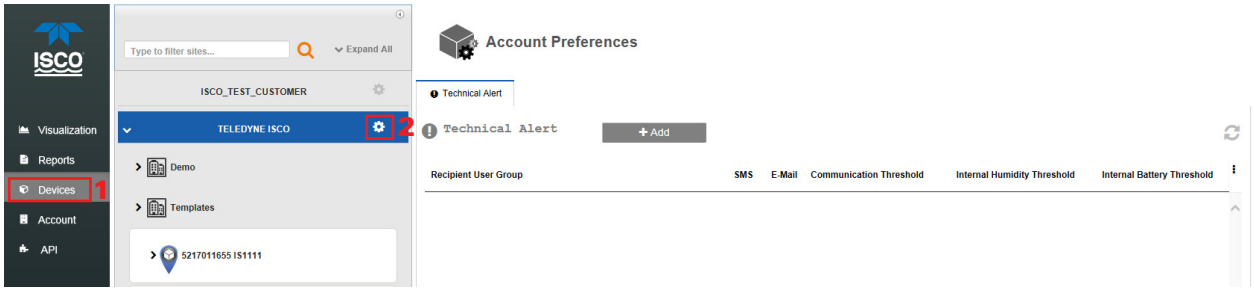


Figure 3-39 Technical Alerts table

3. Hover over the line corresponding to the technical alert you wish to modify. Several icons appear. (Figure 3-40).

Figure 3-40 Options for modifying a technical alert

Select the icon corresponding to the action you wish to take:

	Edit technical alert settings. Click this icon and edit the settings in the window that appears.
	Deactivate the technical alert. A deactivated technical alert does not trigger any alerts, but is not deleted from the database
	Reactivate the technical alert.
	Delete the technical alert from the database.

3.6.8 Setting the Device Reporting Profile

Each device has its own Delayed Transmission and Interrupted Transmission thresholds, which are set at the device level. These thresholds determine, in cases where device transmission problems occur, at what point a device transmission alert is sent (assuming a 3.6.7 *Managing Device Technical Alerts* and 3.10 *Managing User Groups* were defined). An account and organization owner or administrator can view and set these thresholds, which are called the device reporting profile.

To view or change a device reporting profile:

1. Click DEVICES in the sidebar.
2. Select the device in the SITES TREE pane.
3. In the bottom part of the device information box, click the arrow in the drop-down COMMANDS list, and select SET REPORTING PROFILE.

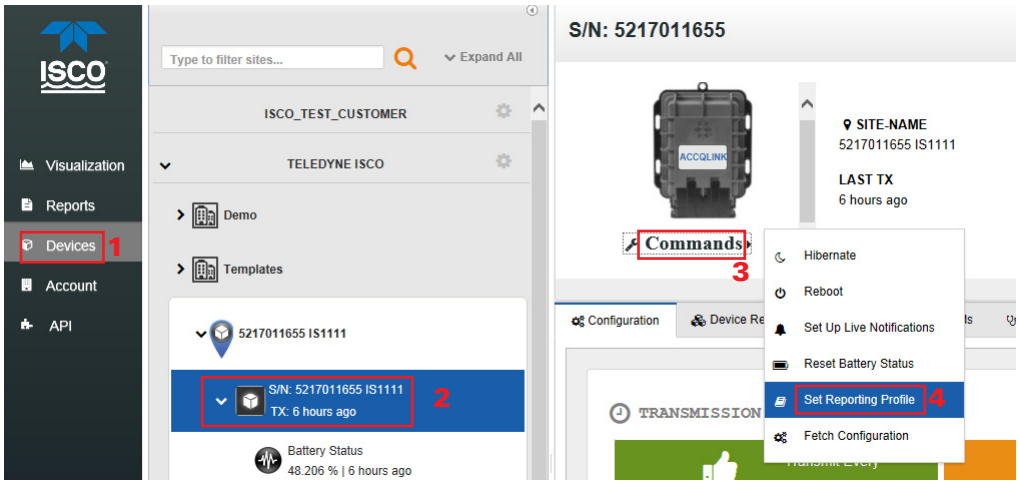


Figure 3-41 Selecting to set reporting profile

The Update Reporting Profile window appears.

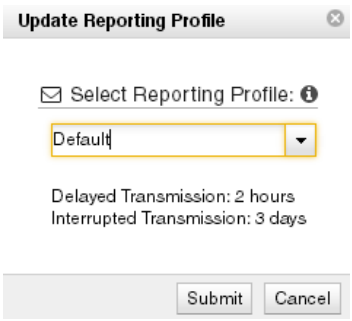


Figure 3-42 Setting the device reporting profile

4. In the Update Reporting Profile window, select a device REPORTING PROFILE from the drop-down list. Each profile defines a specific threshold for Delayed Transmission and for Interrupted Transmission.

   For example, if you select the DEFAULT profile (shown in Figure 3-42), then if device transmission is delayed for over 2 hours relative to its expected transmission schedule, a Delayed Transmission alert is sent; and if the device fails to transmit for over 3 consecutive days relative to its expected transmission schedule, it is considered to be in an INTERRUPTED TRANSMISSION state, and an Interrupted Transmission alert is sent.

3.6.9 Setting Up Live Notifications

You can use the Live Notifications option to send to your mobile phone all the messages a device transmits. This is mainly intended for use during initial device installation, or troubleshooting in the field. Typically, you would set up Live Notifications before re-activating the device with the magnetic activator, so as to easily view in real time all device transmissions such as sensor readings, GSM values, GPS values, etc.

1. Click DEVICES in the sidebar.
2. Select the device in the SITES TREE pane.
3. In the bottom part of the device information box, click the arrow in the drop-down COMMANDS list, and select SET UP LIVE NOTIFICATIONS.

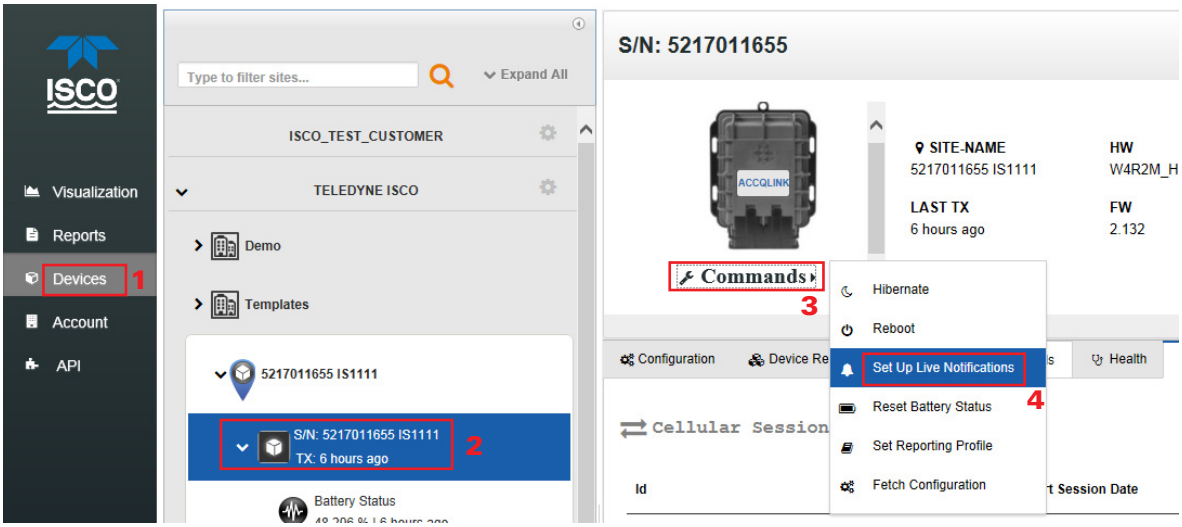


Figure 3-43 Selecting to Set Up Live Notifications

The Live Notifications window appears.

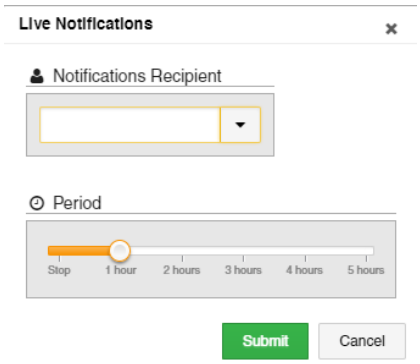


Figure 3-44 Setting up Live Notifications window

4. In the Live Notifications window:
   a. Specify which user will receive live notifications from the device. The live notifications will be sent as SMS messages to the recipient's mobile phone.
   b. Specify the duration of the period when live notifications are sent to the recipient. The period starts from the moment you click SUBMIT. Thus, if you specified a duration period of 2 hours, and clicked SUBMIT at 8 AM, then live notifications will be sent from 8 AM to 10 AM. Note that you can cancel Live Notifications before the duration period has ended, as described in Cancelling Live Notifications
   c. Click SUBMIT.

Cancelling Live Notifications

To cancel live notifications:

1. Click DEVICES in the sidebar.
2. Select the device in the SITES TREE pane.
3. In the bottom part of the device information box, click the arrow in the drop-down COMMANDS list, and select SET UP LIVE NOTIFICATIONS.

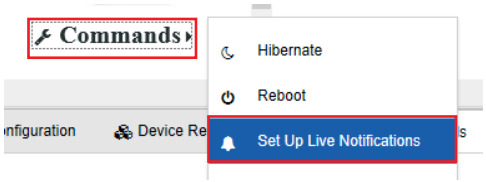


Figure 3-45 Commands window appears

4. In the Live Notifications window that appears:
   a. Specify the user for whom you wish to cancel Live Notifications.
   b. Set the PERIOD to STOP.
   c. Click SUBMIT.

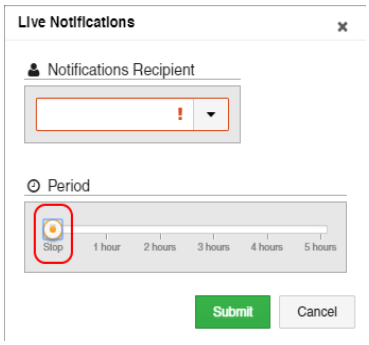


Figure 3-46 Selecting to Stop Live Notifications

3.7 Managing Data Streams

Each data stream shows the actual data received from a specific sensor connected to the accQlink device.

3.7.1 Viewing a Data Stream

To view data stream information:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the data stream name.

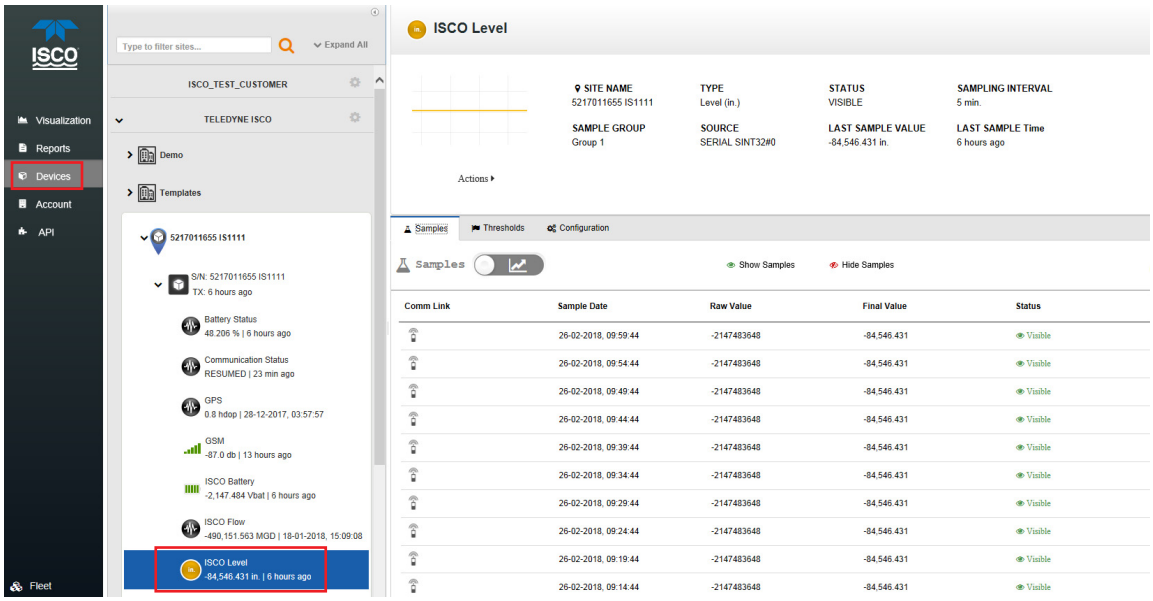


Figure 3-47 Selecting a data stream

Data stream information appears in the right pane. This includes:

- The stream's name, the site's name, the stream's type, sampling interval, status, source, last sample time, and last sample value.
- A graph depicting the samples' trend in the past 48 hours.
- Three tabs, enabling:
- 3.7.4 *Viewing and Filtering Samples*
- 3.7.6 *Viewing and Editing the Treatment of Raw Data*
- 3.7.5 *Configuring Data Stream Thresholds*

3.7.2 Editing a Data Stream

To edit a stream's settings:

1. Click DEVICES in the sidebar, and click the stream name in the Sites Tree pane.
2. In the right pane, click ACTIONS underneath the graph, and select EDIT STREAM.

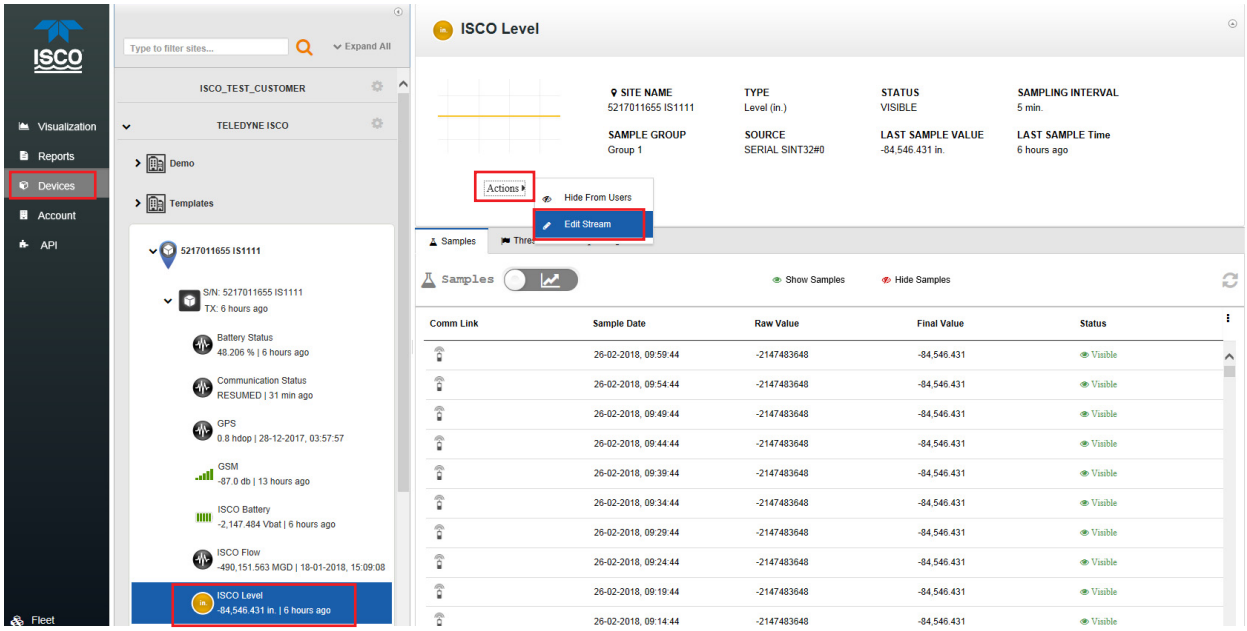


Figure 3-48 Selecting to edit a data stream

The STREAM NAME and TYPE CONFIGURATION window appears.

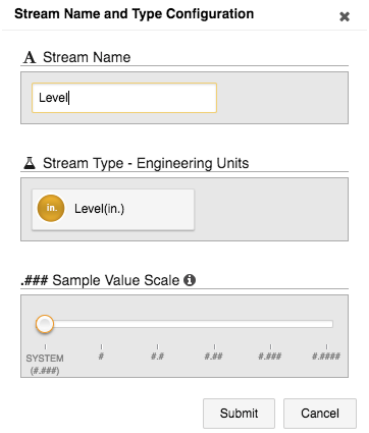


Figure 3-49 Changing stream settings

3. Optionally change the STREAM NAME.
4. Optionally change the ENGINEERING UNITS that appear in the SITES TREE pane and in reports.

Note

Keep in mind that if you want the final values (derived by converting the raw value into engineering units) to be correctly expressed in a specific engineering unit (for example in inches rather than feet), you need to edit the formula for converting raw data into engineering units. Refer to *Changing the Conversion Formula*.

5. Optionally change the SAMPLE VALUE SCALE, which specifics how many decimal points to display after a whole value. This enables you to set the level of accuracy when displaying values in the Sites Tree pane and in generated reports.
6. Click SUBMIT.

3.7.3 Hiding a Data Stream

An account owner can hide a stream from other account users. A hidden stream is only visible to account owners. At any time, the account owner can un-hide a hidden stream and make it visible again to all account users.

❯To hide a stream:

1. Click DEVICES in the sidebar, and click the stream name in the SITES TREE pane.
2. In the right pane, click ACTIONS underneath the graph, and select HIDE FROM USERS.

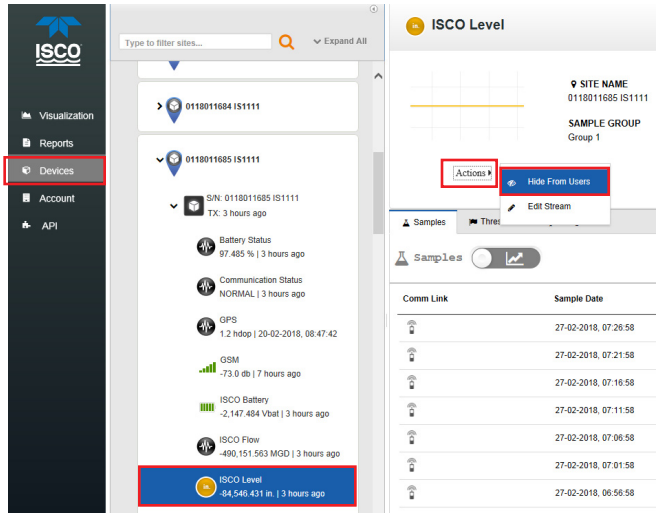


Figure 3-50 Selecting to Hide a Stream

A confirmation window appears.

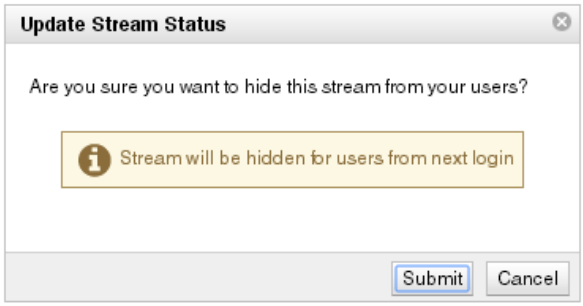


Figure 3-51 Confirm hiding a stream

3. Click SUBMIT.

An indication appears, adjacent to the stream name, indicating the stream will be hidden from other account user from their next login, and will be visible to the account owner(s) only.

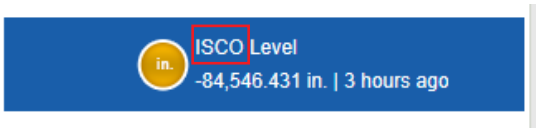
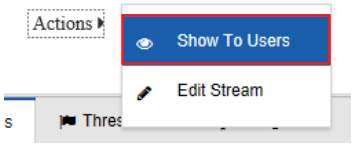


Figure 3-52 Indication of a hidden stream

4. To un-hide a stream:
   a. Click DEVICES in the sidebar, and click the stream name in the Sites Tree pane.
   b. In the right pane, click ACTIONS underneath the graph, and select SHOW TO USERS.



The stream will now be visible to all account users from their next login.

3.7.4 Viewing and Filtering Samples

You can view the samples taken by a specific sensor.

To view samples:

1. Click DEVICES in the sidebar, and click the stream name in the SITES TREE pane.
2. In the right pane, select the SAMPLES tab.

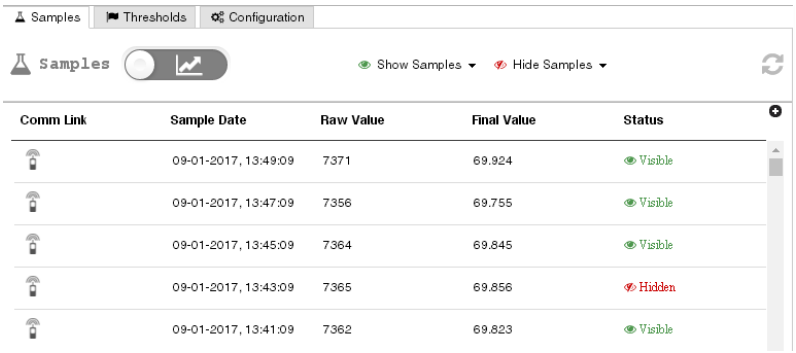


Figure 3-53 Samples table

The samples table shows, for each reading taken in the past:

- The sampling date and time.
- The raw value.
- The final value after converting the raw value to engineering units.
- The Hidden/Visible status of the sample.

Sorting the Samples Table

You can sort the entries in the table by a specific column. To do so, click the column head and then click the arrow appearing to the right. The samples are sorted in descending order. Click again to sort by ascending order.

Hiding Samples in the Samples Table

You may wish to change the status of some samples to Hidden, for example because you know they do not represent the true state of the body being sampled. Hidden samples appear neither in the Visualization window nor in reports.

To hide a single sample:

1. In the samples table (Figure 3-54) double-click the word VISIBLE in the line corresponding to the data point you wish to hide.
2. In the drop-down menu, select HIDDEN.

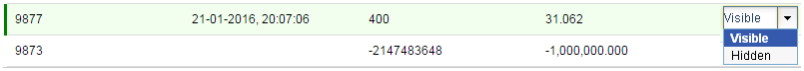


Figure 3-54 Drop-down selections

Hiding Samples from an Entire Period

To hide samples from a certain period:

1. In the samples table (Figure 3-55) select HIDE SAMPLES.
2. In the drop-down menu, enter the start and end dates, and click SUBMIT.

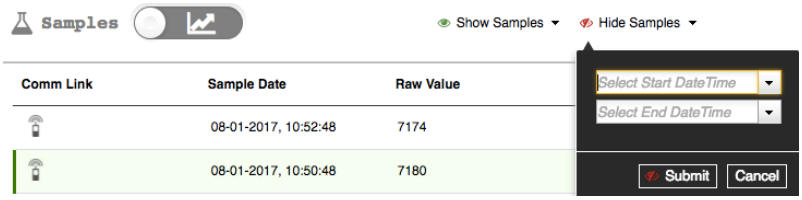


Figure 3-55 Hiding Samples

The status of all samples from the specified period changes to HIDDEN.

Filtering the Samples Table

To display samples only from a certain period:

1. In the samples table (Figure 3-54) select SHOW SAMPLES.
2. In the drop-down menu, enter the start and end dates, and click SUBMIT. Only samples from the specific period are displayed in the table.

3.7.5 Configuring Data Stream Thresholds

A key feature of the accQlink system is the ability to configure multiple thresholds for any data stream, and specify actions such as alerts when data samples cross a threshold.

Thresholds are configured using ranges of values bound by a lower and upper limit. Let's say you want to configure thresholds for a Temperature data stream. You can define a Low threshold of 0-40°F, a Normal threshold of 40-120°F, and a High threshold of 120-250°F. For each threshold range, you can configure Actions the accQlink device should perform when data samples cross into a threshold range, such as modifying the sampling or transmission frequency, or sending email and/or SMS alerts to certain users.

Accessing the Threshold View

A quick overview:

1. Click DEVICES in the sidebar,
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF 

, click it to switch Thresholds to ON 

.

To view or set a data stream's thresholds:

1. Click DEVICES in the sidebar, and click the stream name in the Sites Tree pane.
2. In the right pane, select the THRESHOLDS tab.
3. If the Thresholds slider is in the OFF position click it to switch Thresholds to ON. A graph appears, showing the data stream values for the past week (use the Time Frame slider to zoom in or out).

The thresholds defined for this data stream are displayed below the graph.

By default, the system creates three ranges for each data stream: Low, Normal and l.
The thresholds cover the entire spectrum of actual stream values collected by the device.

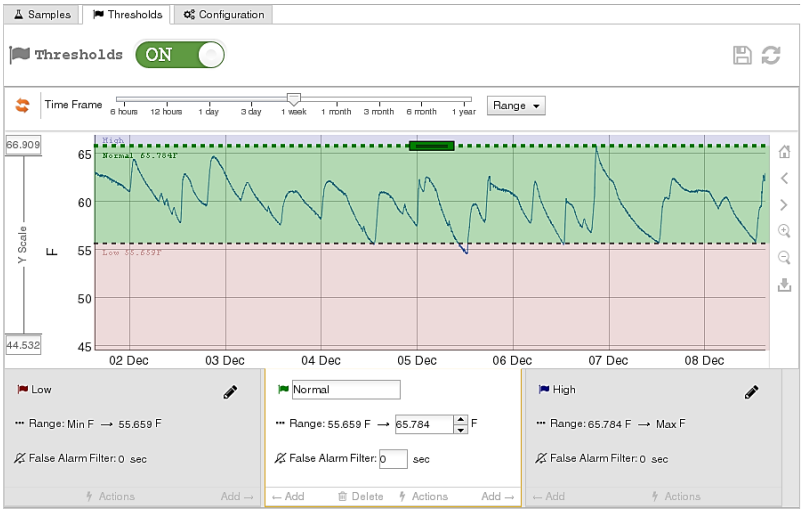


Figure 3-56Threshold view

- *Changing Threshold Settings* by:
  - Changing a Thresholds Name
  - Changing a Thresholds Range
  - Setting a Thresholds False Alarm Filter
- *Adding a New Threshold*
  - *Setting a Thresholds Transmission Intervall*
  - *Setting a Threshold's Sampling Interval*
  - *Defining a Thresholds Alert Recipients*
  - *Setting Resultant Sampling Actions*

Note

All threshold configuration changes will take effect after the device next communicates with the server.

Changing Threshold Settings

The following threshold settings can be changed:

- Changing a thresholds name
- Changing a thresholds range
- Setting a thresholds False Alarm Filter

Changing a Thresholds Name

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF 

, click it to switch Thresholds to ON 

.
5. In the threshold definition area, click the current name, adjacent to the flag, and overwrite it with the new name.
6. Save changes by clicking the save icon 

It is recommended to give each threshold an appropriately descriptive name because in the threshold alert text, the threshold name is the only indication of the reason why the alert was sent (Figure 3-57).

Figure 3-57 Example alert text

To change a threshold's name:

1. In the threshold definition area, click the pencil icon  .

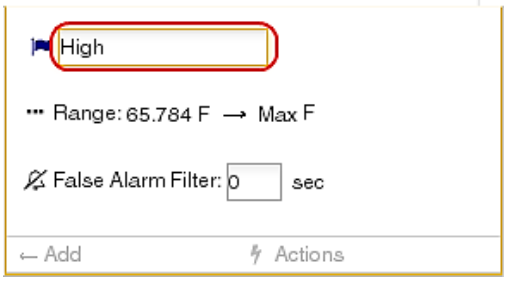


Figure 3-58 Threshold definition area

2. Overwrite the current name with the new name.
3. Save changes by clicking the save icon  .

Changing a Thresholds Range:

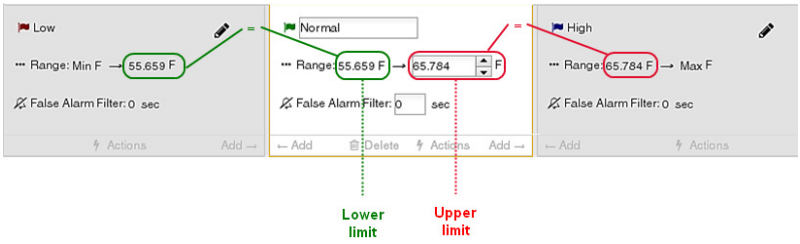
1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF 

, click it to switch Thresholds to ON 

.
5. In the threshold definition area:
   a. Set the thresholds upper limit by editing it directly
   b. Set the thresholds lower limit by editing the upper limit of the threshold to its left.
6. Save changes by clicking the save icon 

The thresholds mechanism works as follows:

- Thresholds cover the entire spectrum of actual stream values collected by the device.
- Thresholds are organized in ascending order, from the lowest (left-most), to the highest (right-most).
- Only a threshold's upper limit is editable. A given threshold's lower limit is the upper limit of the preceding threshold.
- The lower limit of the lowest (left-most) threshold is not-editable, and is set by the system depending on the given stream's lowest value.
- The upper limit of the highest (right-most) threshold is not-editable, and is set by the system depending on the given stream's highest value.



Therefore, to set a threshold's range of values:

1. Set the threshold's upper limit by editing it directly.
2. Set the threshold's lower limit by editing the upper limit of the threshold to its left.
3. Save changes by clicking  .

Alternatively, you can drag the dotted lines, representing the thresholds' upper and lower limits, in the threshold graph (). The ranges of the relevant thresholds are updated accordingly.

Setting a threshold's False Alarm Filter

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF 

, click it to switch Thresholds to ON 

.
5. In the threshold definition area, click the value of the FALSE ALARM FILTER and overwrite it with the new value.
6. Save changes by clicking the save icon 

The false alarm filter is intended to help ensure that threshold alerts are not sent for very short data spikes. For example, if you set this value to 120 seconds, that means no threshold alerts will be sent if stream samples are within the threshold for less than 2 minutes.

Note

Note that in order for the false alarm filter to be meaningful, its value should be set no higher than the threshold's Sampling Interval (link).

To set a threshold's false alarm filter:

1. In the threshold definition area (), click the value adjacent to FALSE ALARM FILTER.
2. Overwrite the current value with the new value.
3. Save changes by clicking  .

Adding a New Threshold

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF 

, click it to switch Thresholds to ON 

.
5. In the threshold definition area:

   a. Click ← Add or Add → to add a threshold before (to the left of) or after (to the right of) an existing threshold.

   b. Edit the threshold as desired. Refer to:

- Changing a thresholds name
- Changing a thresholds range
- Setting a thresholds False Alarm Filter
- *Setting Threshold Actions*

6. Save changes by clicking the save icon 

You can define more thresholds in addition to the three thresholds the system creates by default. A new threshold is always inserted in between two existing thresholds. It can be inserted anywhere between the very lowest and very highest thresholds. The maximum number of thresholds for a data stream is eight thresholds.

1. Determine where you want to insert the new threshold, and then in the threshold definition area (Figure XX) click either ← Add or Add → to add a threshold before (to the left of) or after (to the right of) an existing threshold.
2. Edit the threshold as desired. Refer to:

- *Changing Threshold Settings*
  - Changing a thresholds name
  - Changing a thresholds range
  - Setting a Thresholds False Alarm Filter
  - *Setting Threshold Actions*

3. Save changes by clicking the save icon .

Setting Threshold Actions

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF OFF, click it to switch Thresholds to ON ON.
5. In the threshold definition area, click ACTIONS.
6. In the Threshold actions window, set any of the following:
   - *Setting Whether to Transmit Data Immediately*
   - *Setting a Thresholds Transmission Interval*l
   - *Setting a Threshold's Sampling Interval*
   - *Defining a Thresholds Alert Recipients*
   - *Setting Resultant Sampling Actions*
7. Save changes by clicking the save icon .

For each threshold, you can define what actions the device should take when stream samples fall within the range of the threshold.

To set threshold actions:

1. In the threshold definition area, click Actions.

The thresholds actions view is displayed.

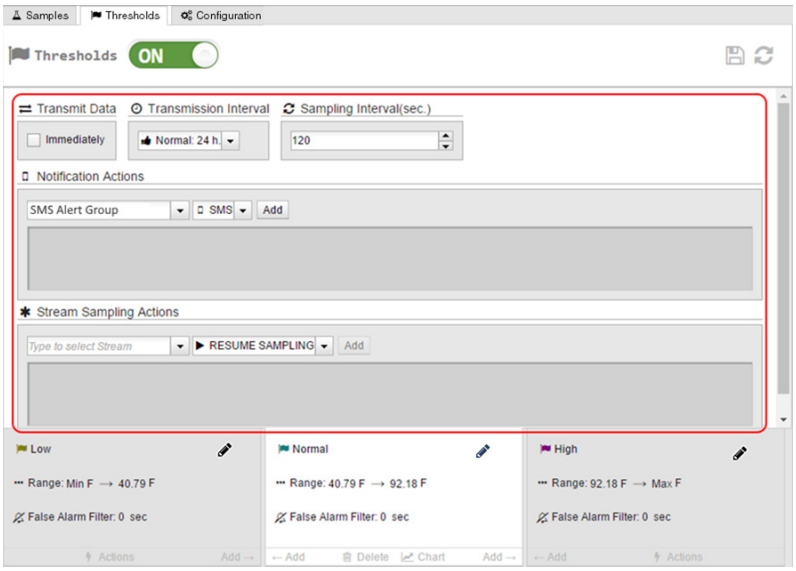


Figure 3-59 Threshold Actions view

Setting Whether to Transmit Data Immediately

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF 

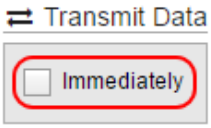
, click it to switch Thresholds to ON 

.
5. In the threshold definition area, click ACTIONS.
6. Under TRANSMIT DATA, check the IMMEDIATELY box if you want the device to transmit data immediately when a stream sample crosses into this threshold.
7. Save changes by clicking the save icon
.

In the TRANSMIT DATA section, specify whether the device should transmit data immediately when a stream sample crosses into this threshold, or whether the device should wait until the next scheduled transmission time.

Note

The system automatically checks the IMMEDIATELY box if you specify that users should be notified when samples enter the threshold range (see *Defining a Thresholds Alert Recipients*).



Setting a Thresholds Transmission Interval

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF 

, click it to switch Thresholds to ON 

.
5. In the threshold definition area, click ACTIONS.
6. Under TRANSMIT INTERVAL, select NORMAL, EVENT, or EMERGENCY.
7. Save changes by clicking the save icon .

To change the NORMAL, EVENT and EMERGENCY transmission intervals of a device, refer to Setting the Device Transmission IntervalsSetting the Device Setting Intervals (link).

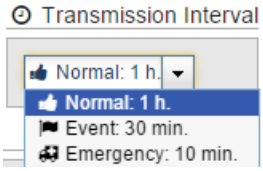
A transmission interval defines how often the device transmits data gathered by its sensors. Every device has three configurable transmission intervals: Normal, Event and Emergency. Transmission interval Normal is the default interval. Transmission intervals Event and Emergency are two alternate intervals. Data is always transmitted at the Normal rate, unless a different rate is specified– either Event or Emergency – when stream samples fall within a certain threshold range.

Note

Note that you can set the Normal, Event and Emergency transmission intervals of a device. For instructions, refer to Setting the Device Transmission Intervals.

To set the device transmission interval when samples are within a threshold range:

1. In the TRANSMISSION INTERVAL section of the threshold's Actions view, select a transmission interval from the drop-down list: NORMAL, EVENT or EMERGENCY.



2. Save changes by clicking the save icon .

Keep in mind that very short transmission intervals consume a large amount of power and network resources.

> **Note**
>
> Whenever a device is scheduled to transmit data, it transmits all the data it stored since its previous transmission. Thus if you set the device to transmit at the Emergency rate for a certain threshold, then whenever the threshold is reached and the device transmits at the Emergency rate, it will transmit data from all its data streams, not only from the stream for which you defined the threshold.

Setting a Threshold's Sampling Interval

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF 

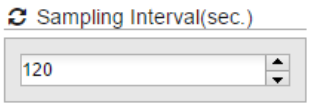
, click it to switch Thresholds to ON 

.
5. In the threshold definition area, click ACTIONS.
6. Under SAMPLING INTERVAL, enter the value in seconds.
7. Save changes by clicking the save icon 
.

The sampling interval defines how often the device samples a data stream. You can specify the sampling interval for the time periods when stream samples fall within a threshold range.

To define the stream sampling rate when samples are within a threshold range:

1. In the Sampling Interval (sec.) section of the threshold's Actions view, select or enter a sampling interval, in seconds.



2. Save changes by clicking the save icon 
.

Defining a Thresholds Alert Recipients

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF 

, click it to switch Thresholds to ON 

.
5. In the threshold definition area, click ACTIONS.
6. Under NOTIFICATION ACTIONS:
   a. . Select a group.
   b. Select whether to send an email and/or SMS.
   c. Click ADD.

7. Repeat the previous step for every additional group you want to add.
8. Save changes by clicking the save icon .

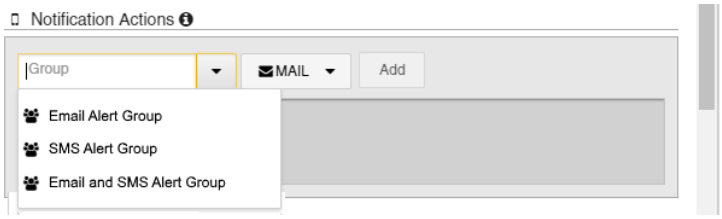
You can define which user groups will receive an alert whenever a stream sample crosses into a threshold range. All members of the groups you specify will receive the alerts.

Note

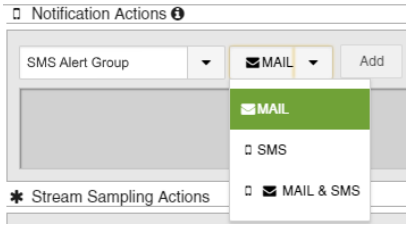
To use this feature you need to first define user groups, as described in section 3.10 *Managing User Groups*.

To define which groups will receive alerts when samples enter a threshold range:

1. In the Notification Actions section of the threshold's Actions view, perform the following:
   a. Select a group in the drop-down list.



   b. Select an alert medium – email and/or SMS. The message will be sent to the mobile phone number or email address defined for each of the group's users (refer to 3.9.2 *Inviting a New User*).



   c. Click ADD.
2. Repeat the previous step for every group to which you want to send a threshold alert.
3. Click to save your settings.

Setting Resultant Sampling Actions

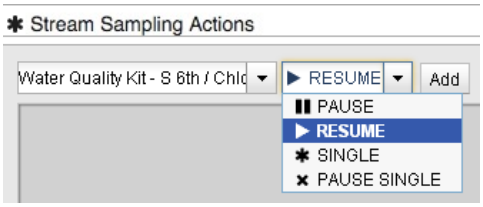
1. Click DEVICES in the sidebar.
2. In the SITES TREE pane select the stream.
3. In the right pane select the THRESHOLDS tab.
4. If the Thresholds slider is OFF OFF , click it to switch Thresholds to ON ON .
5. In the threshold definition area, click ACTIONS.

6. Under STREAM SAMPLING ACTIONS:
   a. Select a data stream.
   b. Select an action: Pause, Resume, Single, or Pause Single.
   c. Click ADD.
7. Repeat the previous step for every additional action you want to add.
8. Save changes by clicking the save icon .

You can instruct a device to take a certain action for a specific data stream, whenever a stream sample crosses into a threshold range.

To set stream sampling actions when samples enter a threshold range:

1. In the Stream Sampling Actions section of the threshold's Actions view, perform the following:
   a. Select a data stream in the drop-down list.
   b. Select one of the following actions:
   - Pause – Instructs the device to pause sampling the selected data stream.
   - Resume – Instructs the device to resume sampling the selected data stream.
   - Single – Instructs the device to take a single sample of the selected data stream immediately and then resume the regular sampling schedule for the selected data stream.
   - Pause Single – Instructs the device to immediately take one sample of the selected data stream, and then pause sampling of this data stream.



   c. Click ADD.
2. Repeat the previous step for every data stream for which a certain sampling action should be taken whenever data crosses into the threshold you are setting.
3. Click to save your settings.

3.7.6 Viewing and Editing the Treatment of Raw Data

The CONFIGURATION tab of a data stream provides a visualization of the operations performed on the raw data during the process of converting it to an engineering value.

To view or edit the treatment of raw data:

1. Click DEVICES in the sidebar, and click the stream name in the Sites Tree pane.
2. In the right pane, select the CONFIGURATION tab.

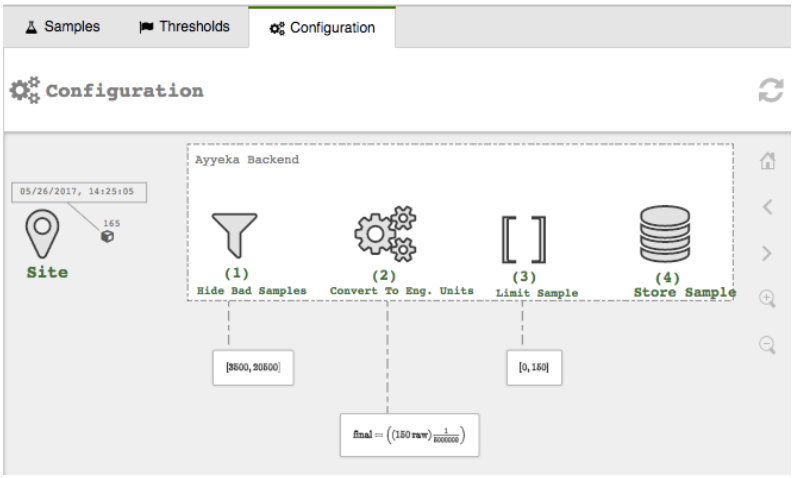


Figure 3-60 Selecting a stream's Configuration tab

In the Configuration tab you can perform the following:

- *Hiding Bad Samples of Raw Data*
- *Changing the Conversion Formula*
- *Limiting Display of Engineering Values*

Hiding Bad Samples of Raw Data

You can set the minimum and maximum values for raw data. Raw data that is outside this range will be discarded. This is useful in cases where you know that values outside this range are not real values, caused for example by the sensor being disconnected from the accQlink device.

To hide bad samples of raw data:

1. Click DEVICES in the sidebar, and click the stream name in the SITES TREE pane.
2. In the right pane, select the CONFIGURATION tab.
3. In the Configuration tab click the frame under (1) Hide Bad Samples.

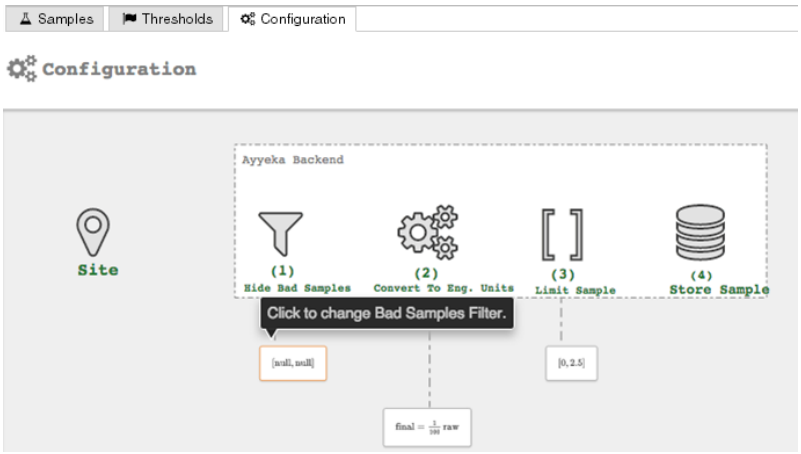


Figure 3-61 Selecting to change the Bad Samples filter

The Bad Samples Filter Configuration window appears.

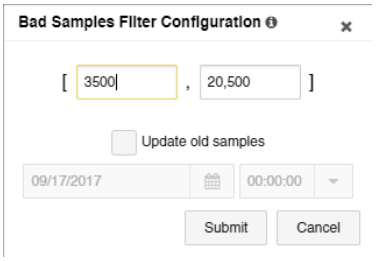


Figure 3-62 Bad Samples Filter Configuration window

4. In the top two fields of the BAD SAMPLES FILTER CONFIGURATION window, set the minimum (left field) and maximum (right field) values for raw data.
5. Click UPDATE OLD SAMPLES to retroactively update old samples according to the new minimum and maximum values. Samples can be updated up to two weeks back.

Changing the Conversion Formula

You can change the formula used to convert raw data into engineering units if the formula being used is linear.

To change the formula for converting raw data to engineering units:

1. Click DEVICES in the sidebar, and click the stream name in the SITES TREE pane.
2. In the right pane, select the CONFIGURATION tab.
3. In the Configuration tab click the frame under (2) Convert To Eng. Units.

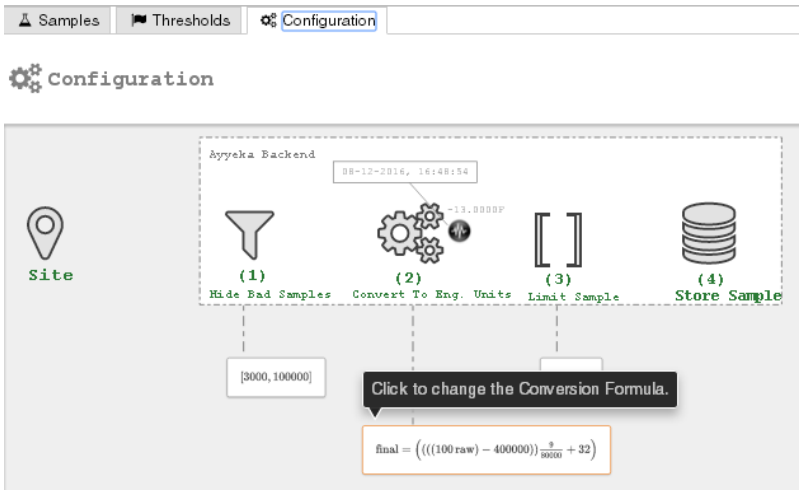


Figure 3-63 Selecting to change the conversion formula

The STREAM ENG. UNITS CONVERTER CONFIGURATION window appears.

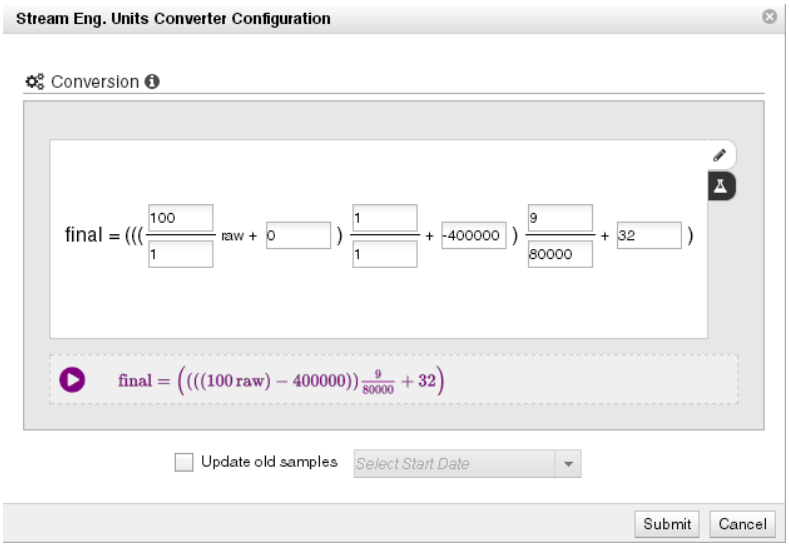


Figure 3-64 Raw Data Converter configuration – direct editing

4. Define the formula for converting raw data to engineering units in either of the following ways:

- Edit the existing formula, as shown in Figure 3-64.
- Click the beaker to define the formula by entering a pair of (Raw value, Final value) values. The system will compute the actual formula.

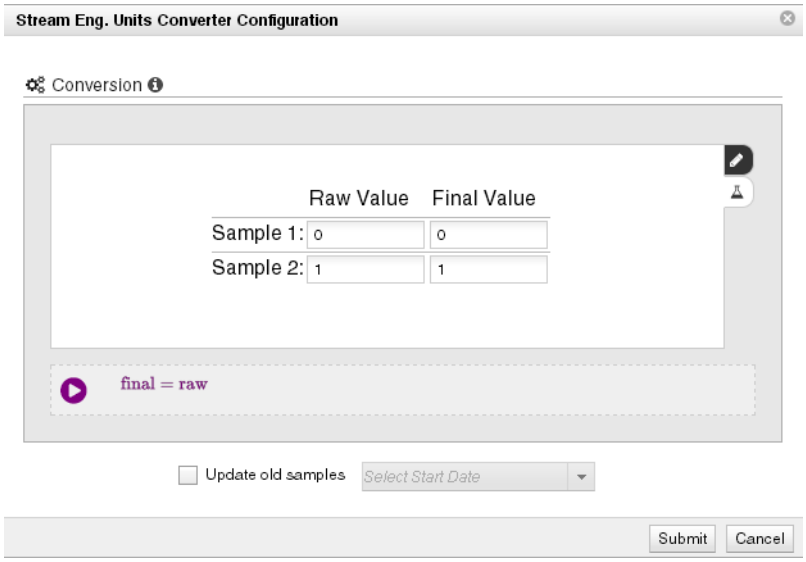


Figure 3-65 Raw Data Converter configuration – by extrapolation

5. Click UPDATE OLD SAMPLES to retroactively update old samples according to the new conversion formula. You can update samples up to two weeks back.
6. Click SUBMIT.

Limiting Display of Engineering Values

You can define how to round up and round down engineering values for display.

To limit the display of engineering values:

1. Click DEVICES in the sidebar, and click the stream name in the SITES TREE pane.
2. In the right pane, select the CONFIGURATION tab.
3. In the Configuration tab click the frame under (3) Limit Sample.

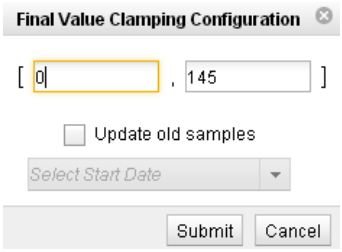


Figure 3-66 Final Value Clamping Configuration window

4. Perform the following:

a. In the left field, enter a value for rounding up. For example, if you enter 0, all negative values will display as 0.

b. In the right field, enter a value for rounding down. For example, if you enter 145, then all values above 145 will display as 145.

5. Click UPDATE OLD SAMPLES to retroactively update old samples according to the new clamping values. You can update samples up to two weeks back.
6. Click SUBMIT.

3.7.7 Managing a Stream's Sampling Interval

A stream's sampling interval is the rate at which the accQlink samples the relevant sensor for data. For example, a sampling interval of 5 minutes means that the accQlink samples the sensor every 5 minutes.

accQlink provides two default sampling interval values, called Sample Group 1 and Sample Group 2. Each stream, by default, is a member either of Sample Group 1 or of Sample Group 2. In this way, each stream is given a sampling interval value. The Sample Group 1 value and the Sample Group 2 value can be viewed and changed, as described below. accQlink also provides a third option, which is to disassociate a stream from both sample groups, and assign it a custom value instead.

Thus, a stream's sampling interval can be set to any of the following:

- The value of Sample Group 1. This value applies to all steams associated with Sample Group 1.
- The value of Sample Group 2. This value applies to all steams associated with Sample Group 2.
- A custom value, that applies to the specific stream only.

To find out a given stream's sampling interval, refer to *Discovering a Stream's Sampling Interval Value*.

To set a given stream's sampling interval, you need to:

1. Find out whether the stream is associated with Sample Group 1 or Sample Group 2, or with neither of them. Refer to *Discovering a Stream's Association with a Sample*

Group.

- If the stream is associated with one of the groups – you can set the sampling interval of that group. Note however that the value you set determines the sampling interval for all streams associated with that group. Refer to *Setting the Sampling Interval Value of a Sample Group*.
- If the stream is associated with neither of the groups – its sampling interval is a custom value. You can change the stream's custom sampling interval, and this will affect the specific stream only. Refer to *Setting a Stream's Custom Sampling Interval Value*.

2. In addition, you can change a stream's association with the sample groups. That is, whatever its current association, you can set a stream to be associated with Sample Group 1, or with Sample Group 2, or with neither of them (and therefore its sampling interval is a custom value). Refer to *Changing a Stream's Association with the Sample Groups*.

Discovering a Stream's Sampling Interval Value

To find out a stream's sampling interval value:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the device name.
3. In the right pane, select the CONFIGURATION tab, which will display the STREAM MANAGEMENT table.

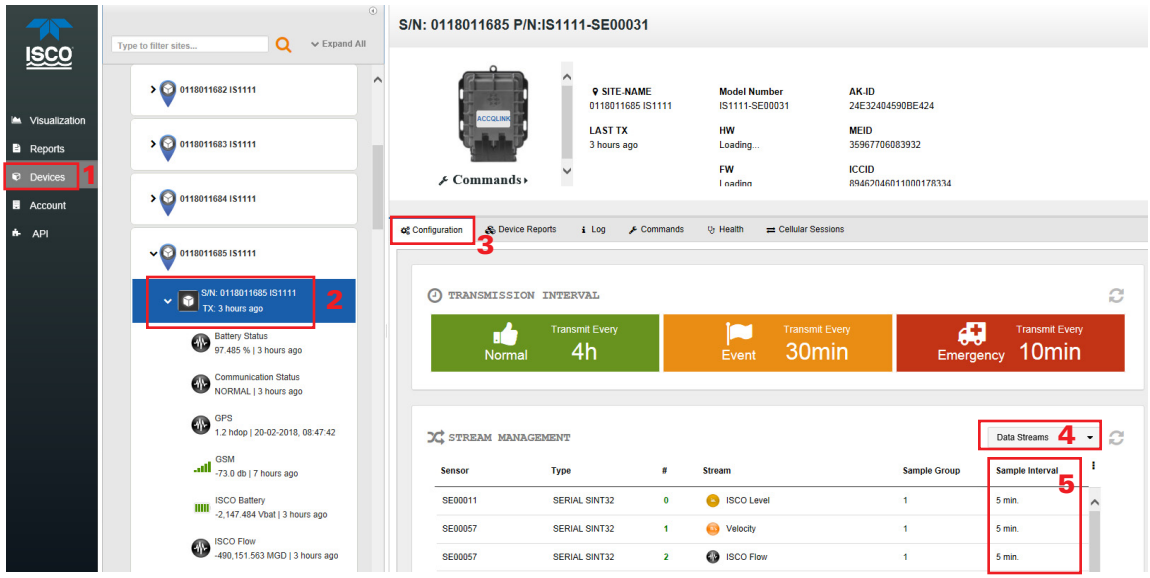


Figure 3-67 Viewing a stream's sample interval

4. In the STREAM MANAGEMENT table, make sure that DATA STREAMS is selected in the top right drop-down box.
5. In the STREAM MANAGEMENT table, check the stream's SAMPLE INTERVAL value, displayed in minutes. For example, Figure 3-67 shows that the sampling interval of the

WIND SPEED stream is 30 seconds.

Discovering a Stream's Association with a Sample Group

If you wish to change a stream's sampling interval, you must first find out whether it is associated with Sample Group 1 or Sample Group 2 group, or with neither of them.

To discover a stream's association with a sample group:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the device name.
3. In the right pane, select the CONFIGURATION tab, which will display the STREAM MANAGEMENT table.

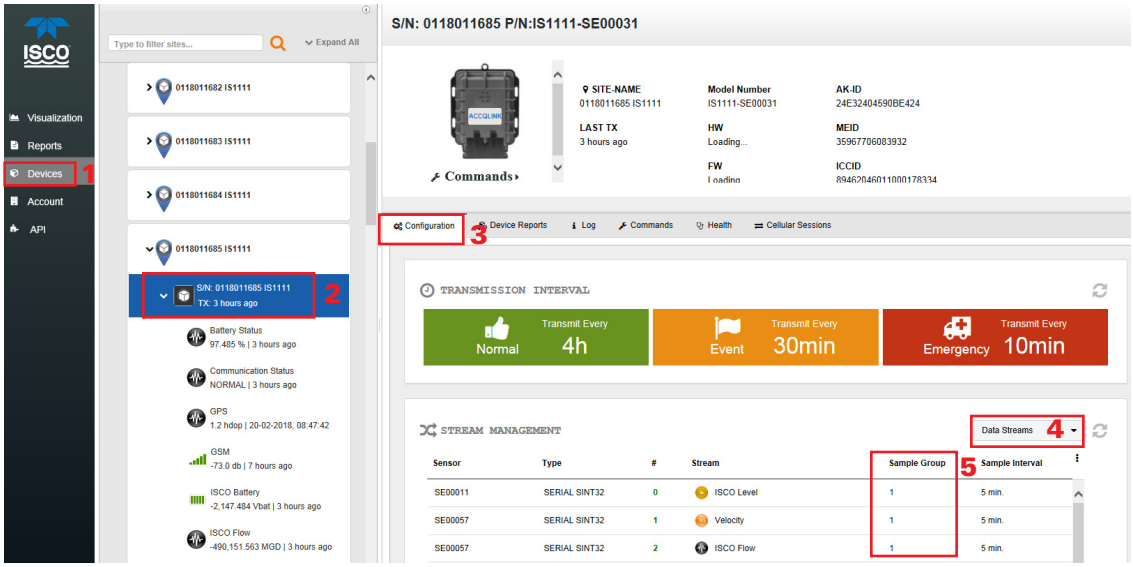


Figure 3-68 Viewing a stream's Sample Interval Group

4. In the STREAM MANAGEMENT table, make sure that DATA STREAMS is selected in the top right drop-down box.
5. In the STREAM MANAGEMENT table, the stream's SAMPLE GROUP value indicated the following:

- 1 – The stream is associated with Sample Group 1.
- 2 – The stream is associated with Sample Group 2.
- Empty cell – The stream is configured to accept a custom sampling interval value.

For example, Figure 3-68 shows that the Wind Speed stream is associated with Sample Group 1, the Wind Direction stream is associated with Sample Group 2, while the Wind Gust Speed stream is configured to accept a custom sampling interval value.

Changing a Stream's Association with the Sample Groups

You can change any specific stream's association with a sample group.

To change a stream's association with the sample groups:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the device name.
3. In the right pane, select the CONFIGURATION tab, which will display the STREAM MANAGEMENT table.

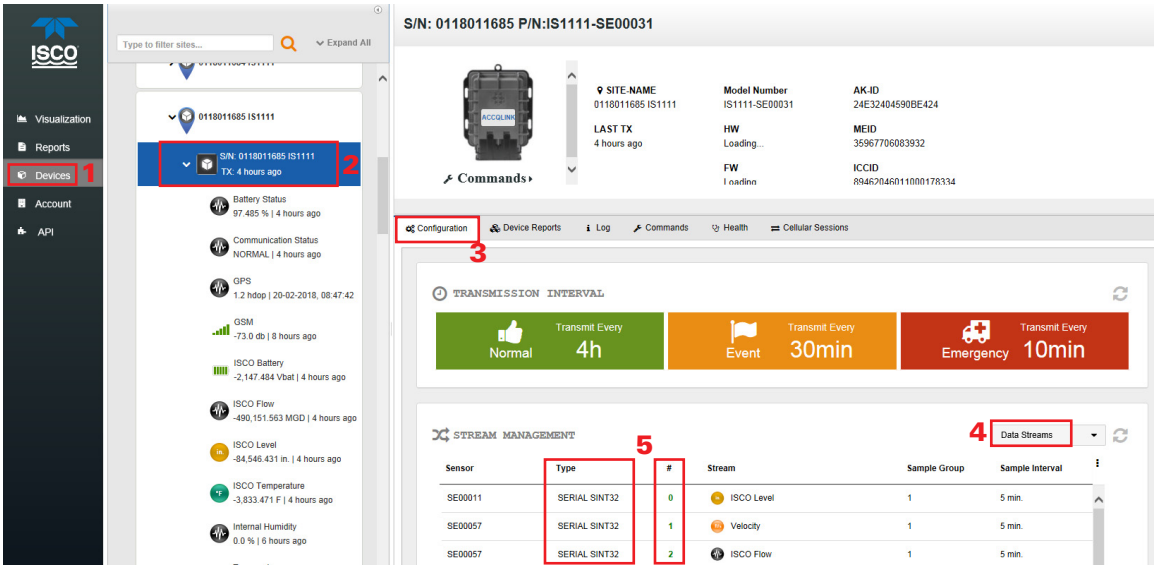


Figure 3-69 Viewing a stream's Type and Number

4. In the STREAM MANAGEMENT table, make sure that Data Streams is selected in the top right drop-down box.
5. Locate the stream in the Stream Management table, and note its Type (stream type) and # (stream number). In the example shown in Figure 3-69, the Wind Gust Speed stream's Type=Serial, and Number=3.
6. Perform the following:
   a. Scroll to below the Stream Management table, and click ADVANCED DEVICE CONFIGURATION (Step a in Figure 3-70).
   b. In the configuration tree, expand the node whose name is the stream's type. In our example, this is the Serial node.
   c. Expand the CHANNEL node.
   d. Expand the node whose name is the stream's number. In our example, this is the 3 node.
   e. Select the group node.

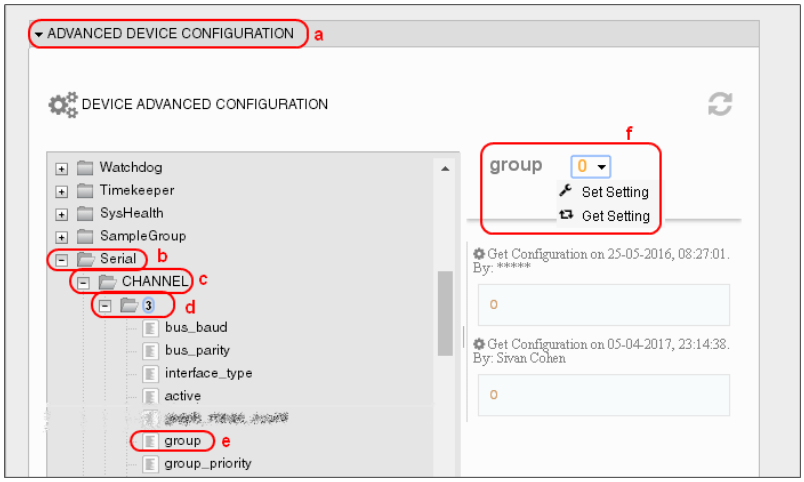


Figure 3-70 Determining the sample group

f. Set the value of group (step f in Figure 3-70)as follows:

- Group=0: This stream is not associated with any Sample Group. Its value is custom set, and can be changed as described in Setting a Stream's Custom Sampling Interval ValueSetting a Streams Custom Sampling Interval Value.
- Group=1: This stream is associated with Sample Group 1. You can set the sampling interval of the group as described in Setting the Sample Interval Value of a Sample Group.
- Group=2: This stream is associated with Sample Group 2. You can set the sampling interval of the group as described in Setting the Sample Interval Value of a Sample Group.Setting the Sampling Interval Value of a Sample Group

7. If you changed the value of group (step f in Figure 3-70), you must reboot the device in order for the change to take effect. Refer to *Rebooting a Device*.

Setting the Sampling Interval Value of a Sample Group

You can set the sampling interval of Sample Group 1 or Sample Group 2. Note that the value you set determines the sampling interval for all streams associated with that group.

To set the sampling interval of a sample group:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the device name.
3. In the right pane, select the CONFIGURATION tab.
4. In the STREAM MANAGEMENT table, hover over the line displaying the number of the sample group whose sampling interval you wish to modify. A green pencil icon appears at the right end of the line.

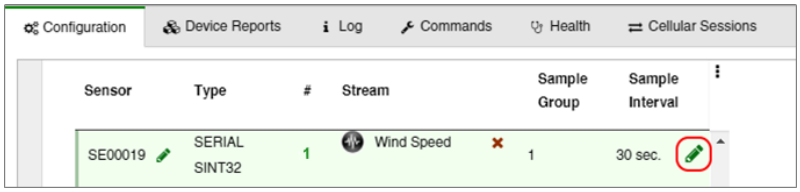


Figure 3-71 Option for modifying the Sampling Interval

5. Click the green pencil icon :
6. In the Update Sampling Interval for Group window that appears, modify the value of the sampling interval in seconds.

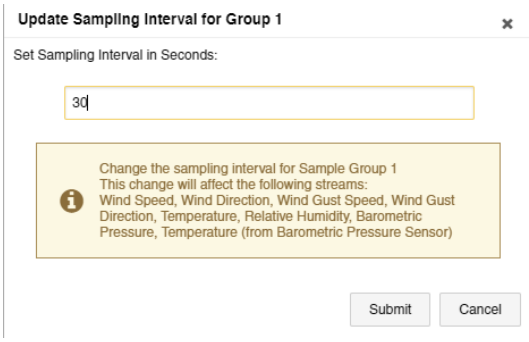


Figure 3-72 Setting the sampling interval for a Sample Group

7. If you changed the sample interval, you must reboot the device in order for the change to take effect. Refer to *Rebooting a Device*.

Setting a Stream's Custom Sampling Interval Value

You can change a specific stream's custom sampling interval value. However, first check whether the stream is configured to accept a custom sampling interval value, as described in Discovering a Stream's Association with a Sample Group. If it is not, configure the stream to accept a custom sampling interval value, as described in Changing a Stream's Association with the Sample Groups.

To set a stream's custom sampling interval:

1. Click DEVICES in the sidebar.
2. In the SITES TREE pane, click the device name.
3. In the right pane, select the CONFIGURATION tab.
4. In the STREAM MANAGEMENT table, hover over the line displaying the number of the sample group whose sampling interval you wish to modify. A green pencil icon appears at the right end of the line.

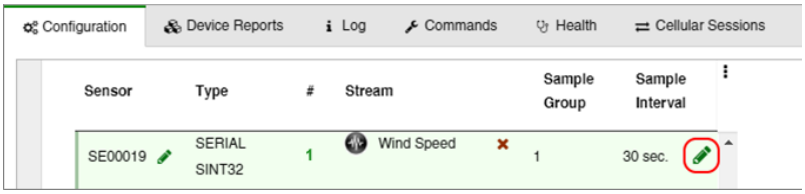


Figure 3-73 Option for modifying the Sampling Interval

5. Click the green pencil icon :
6. In the Update Sampling Interval window that appears, modify the value of the sampling interval in seconds.

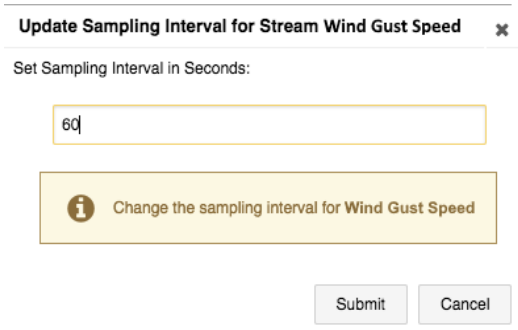


Figure 3-74 Setting a custom sampling interval

7. If you changed the sample interval, you must reboot the device in order for the change to take effect. Refer to *Rebooting a Device*.

3.8 Managing Organizations

An account owner can add or edit organizations.

> **Note**
>
> If you are setting up your account and intend to add organizations, it is recommended to do so before creating users. This will enable you to create users in their appropriate organizations.

3.8.1 Adding an Organization

An account owner can create organizations and assign to them sites.

To add an organization:

1. Click ACCOUNT in the sidebar.
2. In the right pane, select the ORGANIZATIONS tab.
3. Click + ADD ORGANIZATION.

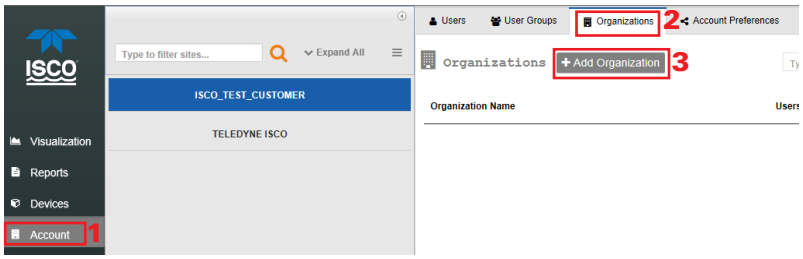


Figure 3-75 Selecting to add an organization

The CREATE ORGANIZATION window appears.

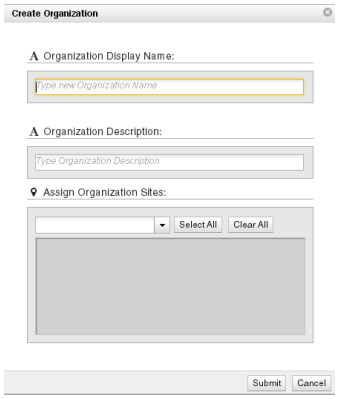


Figure 3-76 Create Organization window

4. In the Create Organization window:
   a. Enter a name for the organization.
   b. Optionally enter a description.
   c. Specify which sites you are assigning to the organization.

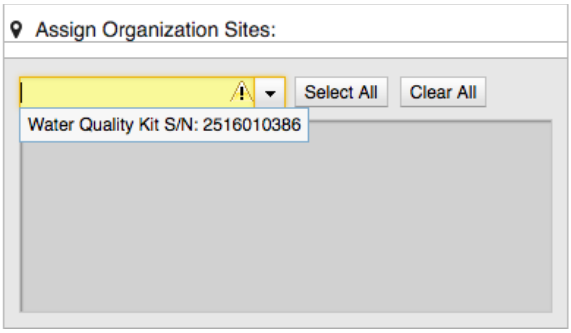


Figure 3-77 Assigning sites to an organization

Note

A site can belong to only one organization. If you wish to assign to Org1 a site that is currently assigned to Org 2, you must first remove the site from Org2 (refer to 3.8.2 *Edit an Organization*), and then assign it to Org1.

5. Click SUBMIT.

3.8.2 Edit an Organization

An account owner can edit the name, description, and assigned sites of an existing organization.

To edit an organization:

1. Click ACCOUNT in the sidebar.
2. In the right pane, select the ORGANIZATIONS tab.
3. In the list of organizations, click the pencil icon adjacent to the organization you wish to edit.

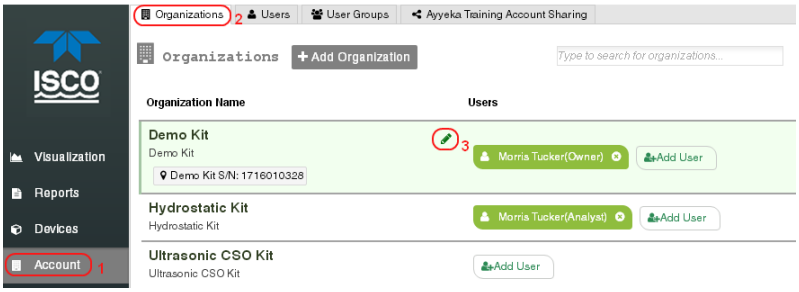


Figure 3-78 Selecting to edit an organization

The UPDATE ORGANIZATION window appears.

4. In the UPDATE ORGANIZATION window, change the organization's name, description, or assigned sites.
5. Click SUBMIT.

3.9 Managing Users

Users are managed by assigning them to an organization or account, and assigning them roles. A user's role defines his permitted actions (see Understanding User Roles).

3.9.1 Viewing the List of Users

You can view all the users in your organization (if you are an Organization owner), or in your account (if you are an account owner).

1. Click ACCOUNT in the sidebar.
2. In the right pane, select the USERS tab.

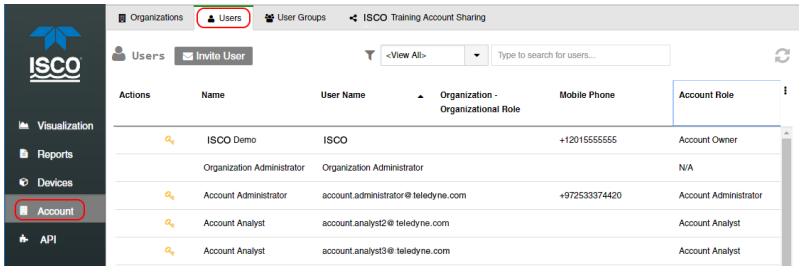
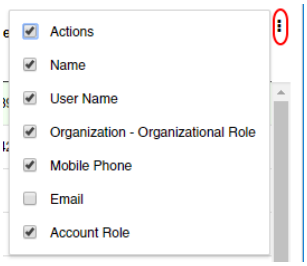


Figure 3-79 Users window

The USERS table shows, for each user in your organization (or account):

- The user's name
- The user's login name
- The user's organization, and his Organizational Role
- The user's mobile phone number
- The user's Account Role (if any)
- You can click ⋮ in the top right to select to display also the user's email address.



3.9.2 Inviting a New User

A user with an Account Owner role can add new users at either the account or organization level, while a user with an Organization Owner role can add new users to his organization only.

To add a new user at the account or organization level:

1. Click ACCOUNT in the sidebar.
2. In the right pane, select the USERS tab.
3. Click INVITE USER and the following window appears:

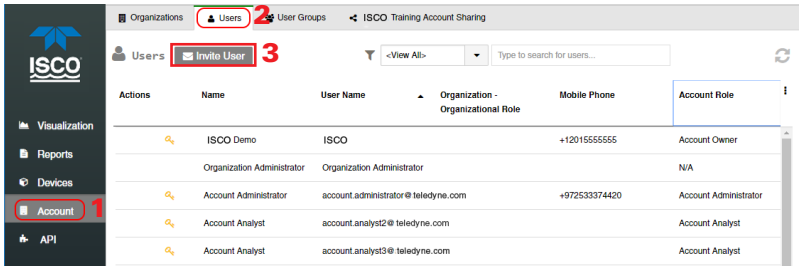


Figure 3-80 Selecting to Invite User – at the Account level

4. In the Invite User window:
   a. Enter the user's email address. This is the address to which the invitation will be sent.
   b. In the ROLE section, specify whether the user will be an ORGANIZATION USER or ACCOUNT USER:
   - If you are creating an Account User, select a role for the user.
   - If you are creating an Organization User, you can give the user roles in multiple organizations. To do so, select an organization and a role, and click ADD. Repeat these actions for every organization in which you wish to assign the user a role.

   c. Click SUBMIT.

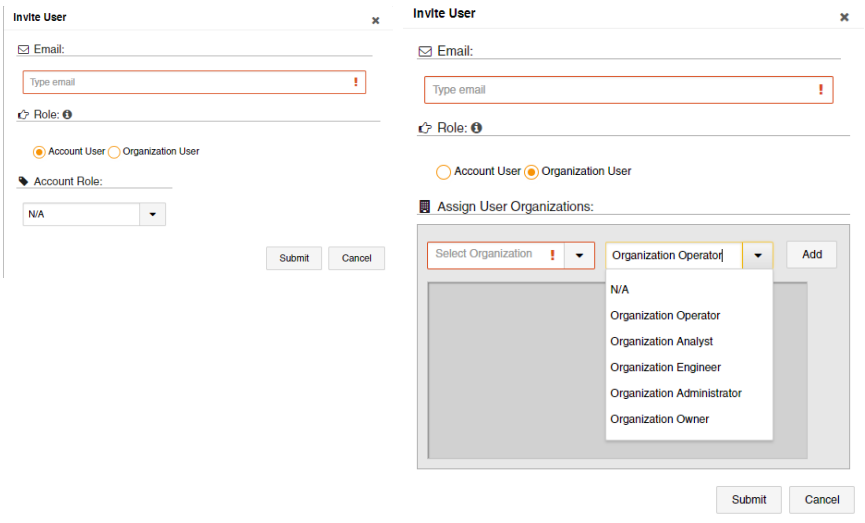


Figure 3-81 Invite User window – Account User (Left) or Organization User (Right)

5. An invitation to access the accQlink Management Console is sent by email to the newly invited user. To accept, the new user clicks ACCEPT INVITATION in the email message.

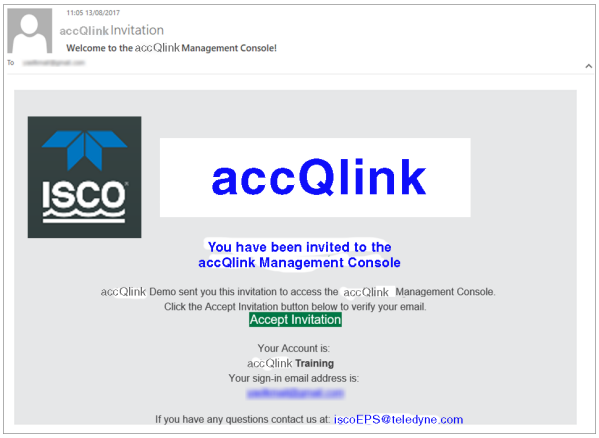


Figure 3-82 accQlink Invitation email message

6. An accQlink Management Console page opens in the new user's browser, displaying an Invited User Details window. The new user should:
   a. Enter the user's actual First Name and Last Name.
   b. Optionally change the email address, which currently lists the email address to which the invitation was sent. Note that threshold alerts will be sent to this address/mobile number (refer to *Defining a Thresholds Alert Recipients*).
   c. Optionally enter a mobile phone number. Note that threshold alerts will be sent to this address/mobile number (refer to *Defining a Thresholds Alert Recipients*).
   d. Enter a password, and confirm the password. Note that a green line appearing under the password box indicates a strong password; an orange line indicates a medium-strength password; and a red line indicates an insufficiently-strong password.
   e. Click SUBMIT.

*Figure 3-83 Invited User Details window-**Need new image?***

7. Upon a successful submission, a login window with a successful registration message appears. The new user can enter his user name and password to log into the accQlink Management Console.
   To access the accQlink Management Console anytime, the user can browse to https://home.iscoaccqlink.com/.

Figure 3-84 Login window following successful new user registration

The new user is added to the users table, as shown below.

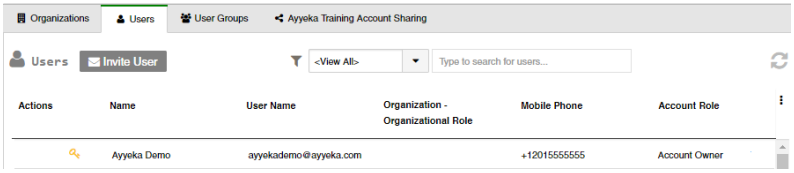


Figure 3-85 User successfully added to account

Note

The user details can be changed and managed by an owner, as described in Editing, Disabling or Deleting a User. Any logged-in user can change most of his own user details, such as email, mobile phone, and password, as described in Setting Your Own User DetailsSetting Your Own User Details.

3.9.3 Editing, Disabling or Deleting a User

An account owner can edit/disable/delete users at either the account or organization level, while an organization owner can edit/disable/delete users of his organization only.

1. Click ACCOUNT in the sidebar.
2. In the right pane, select the USERS tab.
3. Hover over the line of the user you wish to modify. Several icons appear to the left of the user's Name.

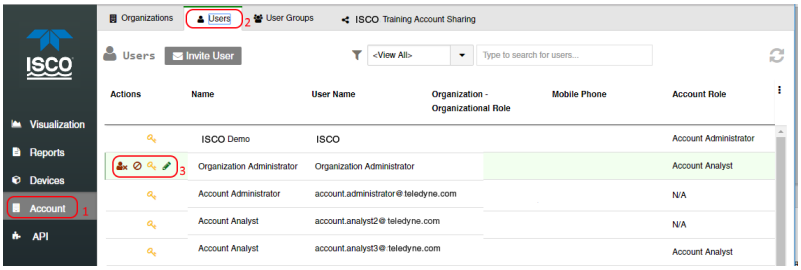


Figure 3-86 Options for modifying a user

4. Select the icon corresponding to the action you wish to take:

	Edit user settings. Click this icon and edit the settings in the Edit User Properties window that appears.
	Indicates the user has a valid password. Click this icon to change the existing password. Note that the logged-in user can change his own password, as described in Changing your own password-Changing your own password.
	Indicates the user password has expired. Click this icon to define a new password.
	Deactivate the user. A deactivated user does not receive threshold alerts and cannot access the UI, but is not deleted from the database.
	Activate a deactivated user.
	Delete the user from the database.

3.9.4 Adding Existing Users to Organization(s)

An account owner can give an organization user, permissions in more than one organization. For example, you may wish to grant the Organization Owner of Org1 permission to view the sites and streams (=Operator permissions) in Org2 and Org3. In this case you would give this user an Organization Owner role in Org1, an Organization Operator role in Org2, and an Organization Operator role in Org3.

Note

A similar mechanism exists for giving users certain permissions to sites, called Sharing. The differences between Sharing sites and adding users to an organization, are:

- Sharing gives permissions to specific sites, not to all an organization's sites.
- Sharing bestows Analyst (viewing and reporting) permissions only, while a user who is added to an organization can be given any role.

To add an existing user to an organization:

1. Click ACCOUNT in the sidebar.
2. In the right pane, select the ORGANIZATIONS tab.

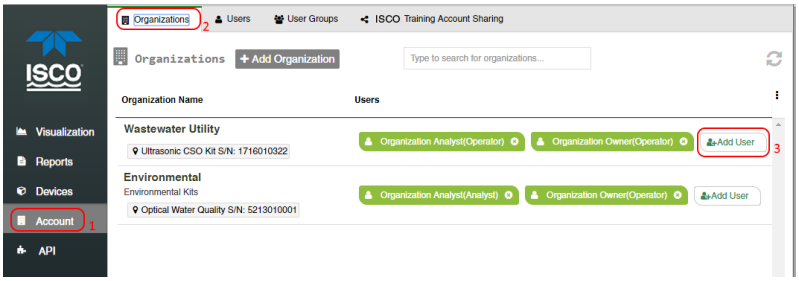


Figure 3-87 Selecting to add a user to an organization

3. Click + ADD USER in the USERS column of the organization to which you want to add a user and the ADD USER TO ORGANIZATION window appears (Figure 3-88).

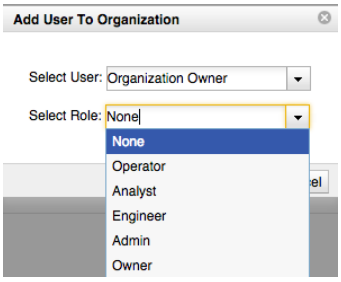


Figure 3-88 Assigning a role to a user

4. In the SELECT USER drop-down list, specify which user to add to the organization.

5. In the SELECT ROLE drop-down list, specify the user's role in this organization.

> **Note**
>
> If the role assigned here is not identical to the role assigned to the user upon user creation, the system grants him permissions to the organization's assets that correspond to the higher of the two roles.

3.10 Managing User Groups

Alert Groups – The main purpose of a user group is to define alert groups – that is, define which users will receive which threshold alerts.

The full process includes the following actions:

1. On the one hand, create a user, create a user group, and assign users to the group. Refer to 3.9.2 *Inviting a New User*, 3.10.1 *Adding a User Group*, and 3.10.2 *Assigning a User to a Group*.
2. On the other hand, set thresholds. You can:

- Set data stream thresholds and define which groups will receive alerts when the thresholds are exceeded. Refer to 3.7.5 *Configuring Data Stream Thresholds* and *Defining a Thresholds Alert Recipients*.
- Set device thresholds, and define which groups will receive alerts when the thresholds are crossed. Refer to 3.6.7 *Managing Device Technical Alerts*.

Site-sharing – A user group can also serve as a mechanism for sharing sites with any user. For a full description and instructions, refer to *Sharing Sites with Any User*.

> **Note**
>
> Only a user with an "Owner" role can manage user groups. An Account Owner can manage user groups in any organization, while an Organization Owner can manage the user groups in his organization.

3.10.1 Adding a User Group

To create a user group:

1. Click ACCOUNT in the sidebar.
2. In the right pane, select the USER GROUPS tab.
3. Click + ADD GROUP.

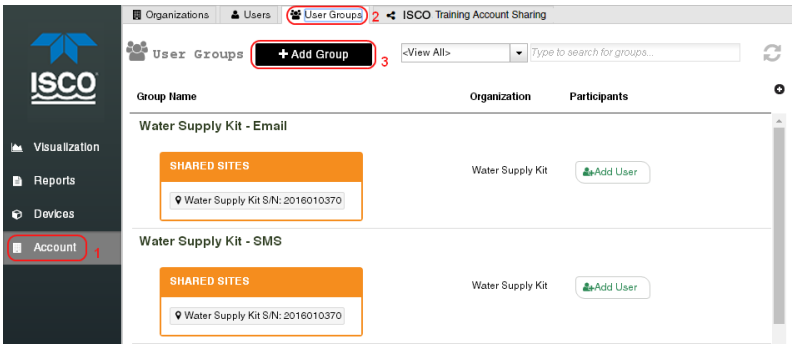


Figure 3-89 Selecting to add a user group

The Add New Group window appears.

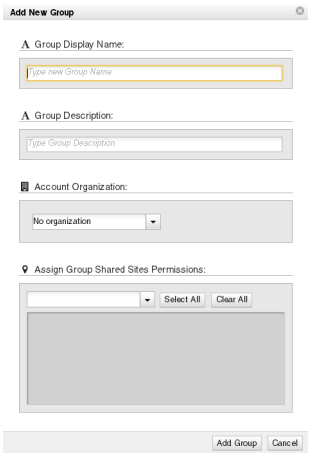


Figure 3-90 Add New Group window

4. In the Add New Group window:
   a. Enter a group name.
   b. Optionally enter a description.
   c. In the ACCOUNT ORGANIZATION field, specify which owners can manage this group.
   - Select NO ORGANIZATION if you want this group to remain at the account level. In this case, only the account owner can manage the group.
   - Select a specific organization if you want to associate this group with a specific organization. In this case, both the account owner and the specific organization's owner can manage the group.

Note

If the group was created at the organization level, the group is automatically associated with that organization, and there is no option to select a different organization.

5. Optionally, share sites which you can manage, with all users of this group, using the ASSIGN GROUP SHARED SITE PERMISSIONS option. Refer to *Sharing Sites with Any User*.
6. Click SUBMIT. The group is added to the groups table, as shown below.

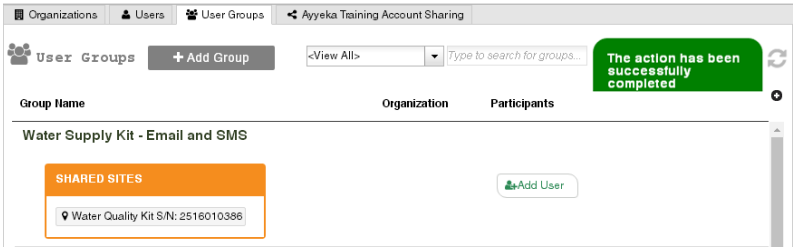


Figure 3-91 Group successfully added

7. You can now assign users as group members. Refer to 3.10.2 *Assigning a User to a Group*.

3.10.2 Assigning a User to a Group

To assign a user to a group:

1. In the ACCOUNT > USER GROUPS tab, click ADD USER adjacent to the name of the group you created.

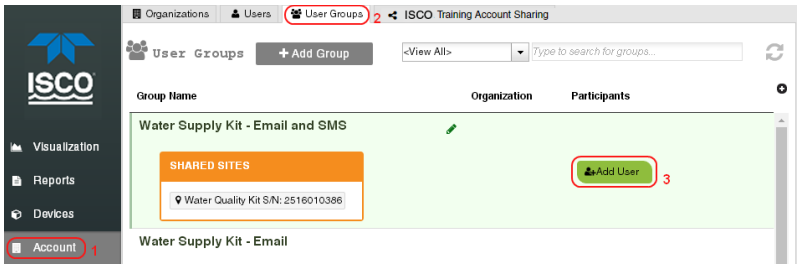


Figure 3-92 Selecting to add a user to a group

2. Select a user from the drop-down list. The list of users you can add includes only those users you can manage, so an organization owner can only select users from his organization. The list includes also the owner performing the ADD USER operation, thus an owner can add himself to the group he created.

Note

A user can be a member of more than one group.

3.10.3 Removing a User from a Group

To remove a user from a group:

1. In the ACCOUNT > USER GROUPS tab, click the X to the right of the user name.

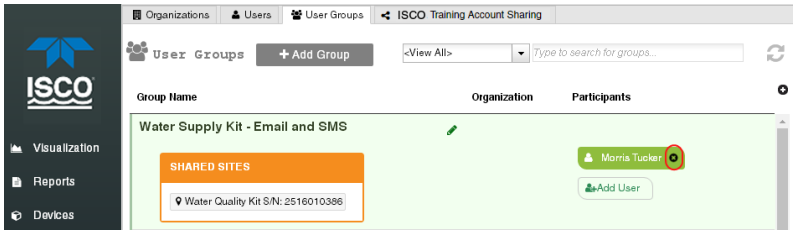


Figure 3-93 Selecting to remove a user from a group

2. Confirm the removal.

3.10.4 Editing a Group

1. In the ACCOUNT > USER GROUPS tab, click  to the right of the group name.

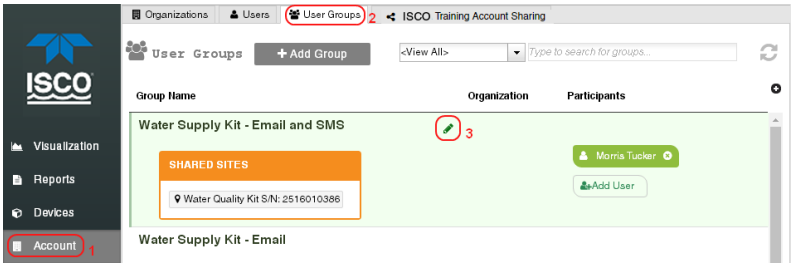


Figure 3-94 Selecting to edit a group

2. In the Edit Group Properties window that appears, edit the group's properties, as described in Adding a USer Group.

3.11 Sharing Sites and Accounts

The accQlink user interface provides several options for sharing sites and accounts, with users who are not associated with those sites or accounts.

Sharing Sites with Any User

You can share any site that you can manage, even with users who are not members of the organization to which the site belongs. This option is available through the User Group mechanism. The sites you specify for sharing will be available in the VISUALIZATION and REPORTS windows, to all the members of the group.

To share organization(s)' site(s):

1. Create a User Group, or edit an existing group, as follows:
   a. Click ACCOUNT in the sidebar.
   b. In the right pane, select the USER GROUPS tab.
   c. Click + ADD GROUP to define a new group, or click  to the right of an existing group name. The Add New Group window or Edit Group Properties window appears.

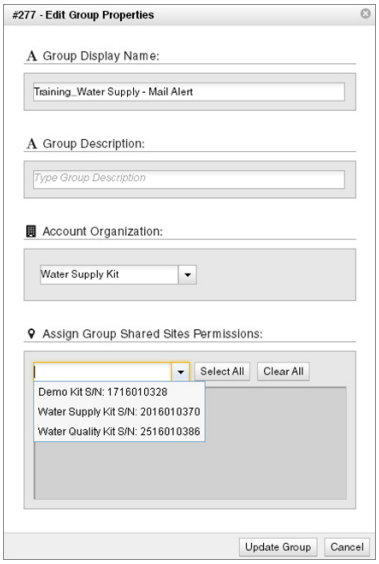


Figure 3-95 Edit Group Properties window

2. In the group definition window:
   a. In the ASSIGN GROUP SHARED SITES PERMISSIONS section, select from the drop-down list all the account's sites you want to share with the members of the group.
   b. You can click SELECT ALL if you wish to select all of the account's sites, or click CLEAR ALL to delete all the sites you selected.
   c. Click ADD GROUP or UPDATE GROUP.
3. Assign to the group those users with whom you wish to share the sites (refer to 3.10.2 *Assigning a User to a Group*).

Sharing an Account with any accQlink User

An account owner can share the account with any accQlink user, as well as define that user's role in the account.

Note

If you share an account with a user, that user cannot then share the account with others, even if you granted him Account Owner permissions.

To share an account with any accQlink user:

1. Click ACCOUNT in the sidebar.
2. Click the share icon at the top of the right pane.

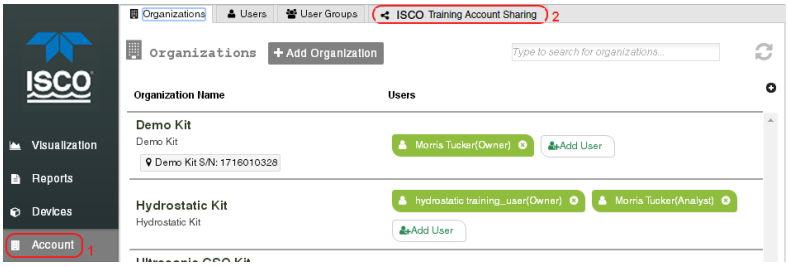


Figure 3-96 Share an Account

3. In the ACCOUNT SHARING window that appears, click + SHARE.

Figure 3-97 Account Sharing window

A Share Account window appears.

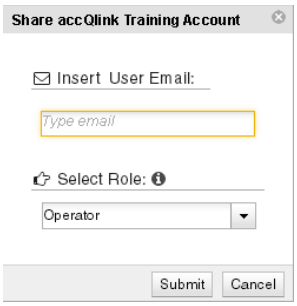


Figure 3-98 Share Account window

4. In the Share Account window:
   a. Specify the user, by entering the user's accQlink User Email.
   b. Specify an account role for that user.

3.12 Setting Personal Preferences

The logged-in user can change most of his own user details, such as email, mobile phone, and password, as well as customize some user interface display settings.

3.12.1 Setting Your Own User Details

The logged-in user can change his own user details at any time. The ACCOUNT > USERS window will automatically be updated with the new settings

To set your own user details:

1. At the bottom of the side bar, click the arrow to the right of your login name.

2. Select PROFILE.

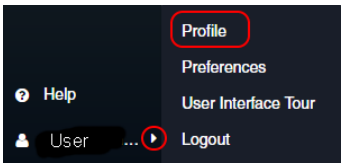


Figure 3-99 Selecting the Profile option

The Profile Details window appears.

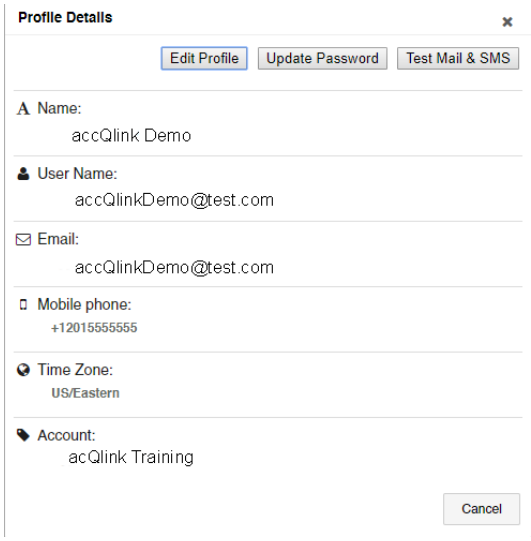


Figure 3-100 Profile Details window

3. Click EDIT PROFILE to edit your user details. The EDIT PROFILE DETAILS window appears (Figure 3-10).

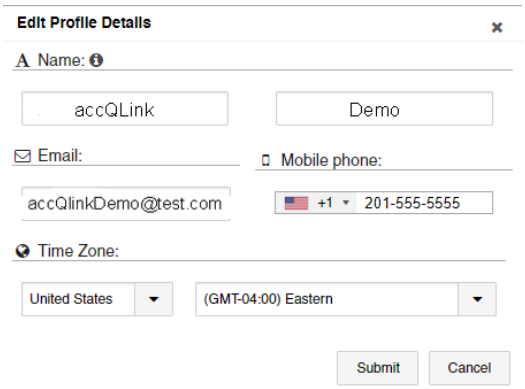


Figure 3-101 Edit Profile Details window

4. In the EDIT PROFILE DETAILS window you can:
   a. Edit your actual first name and last name in the NAME fields.

Note

You cannot change your own login name.

b. Edit your email address and/or your mobile phone number. Threshold alerts are sent to this address/mobile number (refer to *Defining a Thresholds Alert Recipients*).

c. Specify a Time Zone.

5. Click SUBMIT.

Changing your own password

The logged-in user can change his own password at any time.

To change your own password:

1. At the bottom of the side bar, click the arrow to the right of your login name.
2. Select PROFILE.

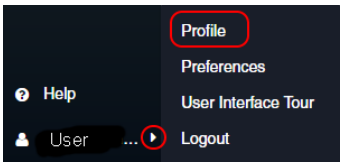


Figure 3-102Selecting the Profile option

3. In the Profile Details window that appears in Figure 3-100 click EDIT PASSWORD.
4. In the Update Password window that appears, enter the old password (=current password), and enter and confirm the new password.

Note

A green line appearing under the password box indicates a strong password; an orange line indicates a medium-strength password; and a red line indicates an insufficiently-strong password.

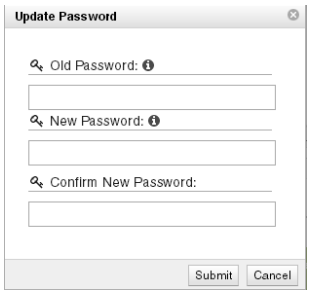


Figure 3-103Update Password window

5. Click SUBMIT.

Forgot Password

If you forget your password, you can define a new one, as follows.

1. In the login page, click FORGOT PASSWORD.

Figure 3-104Selecting the Forgot Password option

2. In the window that appears, enter the email address associated with your accQlink user account, and click SUBMIT.

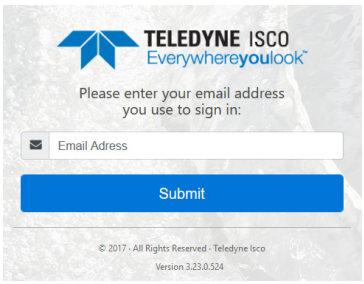


Figure 3-105Forgot Password – enter your sign-in email address

3. A message appears, notifying you that a reset-password link was sent to the email address you had specified.

Note

The link expires after 1 hour. In your inbox, open the Reset Your Password email that you received, and click CHOOSE A NEW PASSWORD.

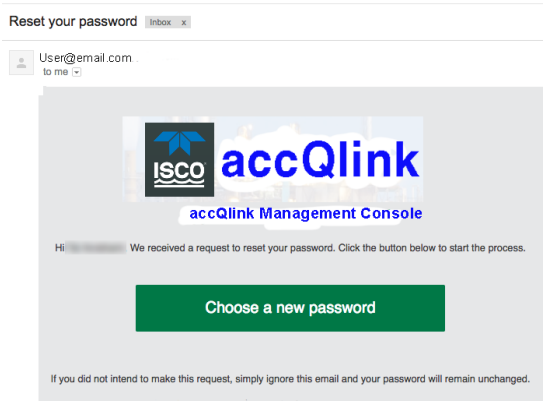


Figure 3-106Reset Your Password email message

4. An accQlink Management Console page opens in your browser, with a window for defining a new password. Enter a new password and confirm it, and then click SUBMIT.
5. Upon a successful password change, a login window with a successful password change message appears. You can now log in using the new password.

Sending a Test Email and SMS

accQlink Live Notifications, Threshold Alerts, and Device Technical Alerts are sent to the user via email and/or SMS. The logged-in user can send a test email and SMS to himself, to make sure he can receive emails and SMS messages from the accQlink system.

To send a test email and SMS:

1. At the bottom of the side bar, click the arrow to the right of your login name.
2. Select PROFILE.

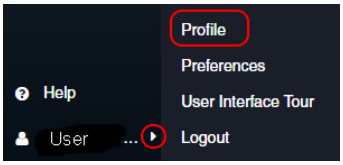


Figure 3-107Selecting the Profile option

3. In the Profile Details window that appears in Figure 3-100, click TEST EMAIL AND SMS.

4. In the TEST EMAIL AND SMS window that appears, click SUBMIT.

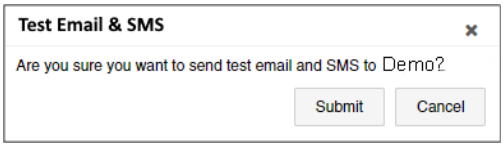


Figure 3-108Test Email and SMS window

5. Make sure you receive an SMS and email, similar to the examples shown below.

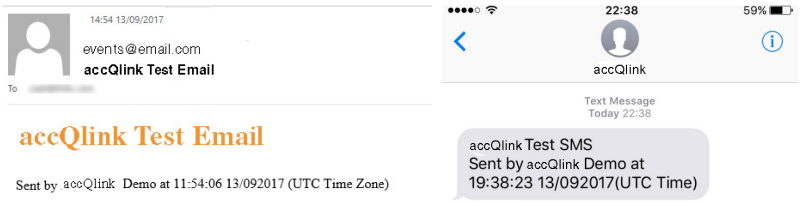


Figure 3-109Test Email and SMS messages

3.12.2 Customizing your User Interface Display

The logged-in user can customize his user interface display at any time. In addition, an Organization Owner and Account Owner can customize the user interface display of the users they manage, unless a specific user customizes his user interface display himself.

To customize your user interface display:

1. At the bottom of the side bar, click the arrow to the right of your login name.
2. Select PREFERENCES.

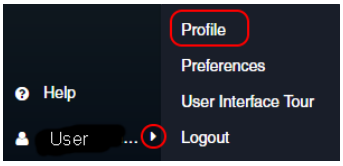


Figure 3-110Selecting the Preferences option

The Preferences window appears.

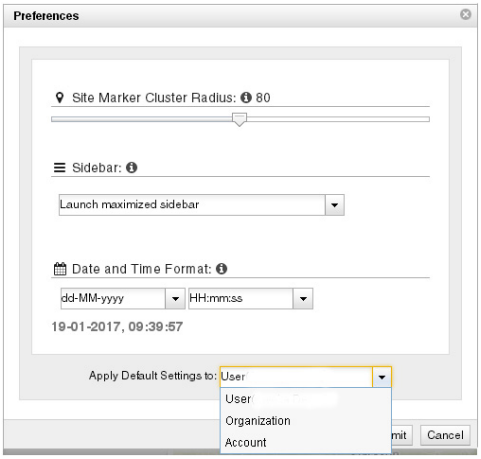


Figure 3-111Preferences window

3. In the SITE MARKER CLUSTER RADIUS slider, specify the size of clusters of site markers in the VISUALIZATION map. Lower values dictate smaller clusters of site markers. You must refresh the window for the change to take effect.
4. In SIDEBAR, specify the default appearance of the sidebar when the UI is launched: MAXIMIZED or MINIMIZED.
5. In the DATE AND TIME FORMAT fields, specify the format of all date and time fields in the UI. Note that you can edit the format directly in the window.
6. In APPLY DEFAULT SETTINGS TO, specify to which users these default Preferences apply:

- User – The defined Preferences apply to yourself (the logged in user).

- Organization – The defined Preferences apply to each of the users of the organization(s) you can manage, unless a user set his own preferences.
- Account – The defined Preferences apply to each of the users of the account(s) you can manage, unless a user's organization owner set the organization's preferences, or the user set his own preferences.

Therefore, the Preferences that the logged-in user sets, always override any other Preferences settings.

accQlink

Section 4 accQlink API

4.1 Using the accQlink API

accQlink provides programmatic access to your accQlink information using a simple and secure REST or SOAP based web services API. To use the accQlink REST API or SOAP API, you need basic familiarity with software development, REST or SOAP web services, and accQlink user interface.

4.1.1 Using the accQlink REST API

Account and organization owners, as well as account and organization administrators, can access the accQlink REST API.

Gaining Access to accQlink Data via the REST API

The process of gaining access to accQlink data via the REST API includes the following steps:

1. Register your application as an API client with accQlink. Refer to Step 1 – Creating an API ClientStep 1- Creating an API Client.
2. Get an access token. Refer to Step 2- Getting Access Token for a REST API Call.
3. Authenticate with the REST API using the provided access token Refer to Step 3- Authentication with REST API using the Access Token.

Step 1 – Creating an API Client

To create an API client:

1. Click API in the sidebar.
2. Click + GENERATE API CLIENT.

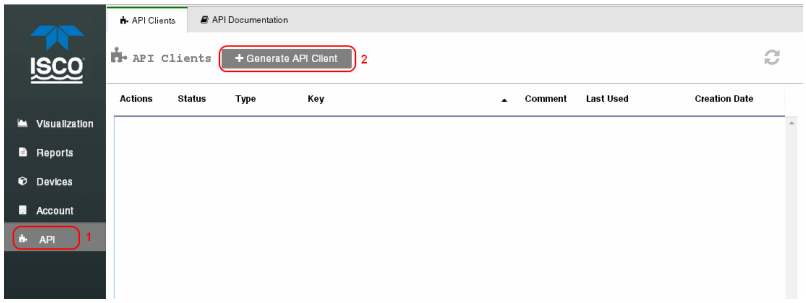


Figure 4-1 Selecting to generate an API client

3. In the Generate API Client window that appears:
   a. In TYPE, select the type of API client you wish to generate: REST API or SOAP API.
   b. Optionally enter a COMMENT.
   c. Click GENERATE.

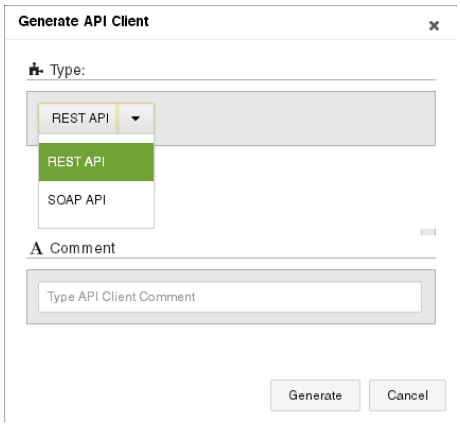


Figure 4-2 Selecting the API Client to generate

4. In the API CLIENT KEY AND SECRET window that appears, your API client key and secret are displayed.
   a. Make sure to store the key and secret in a secure location. After you close the window, you will not be able to retrieve the secret.
   b. Click CLOSE.

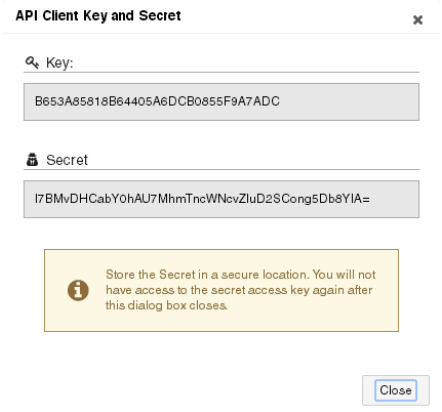


Figure 4-3 API client key and secret

5. The API Clients window refreshes to display the newly generated API client in the table.

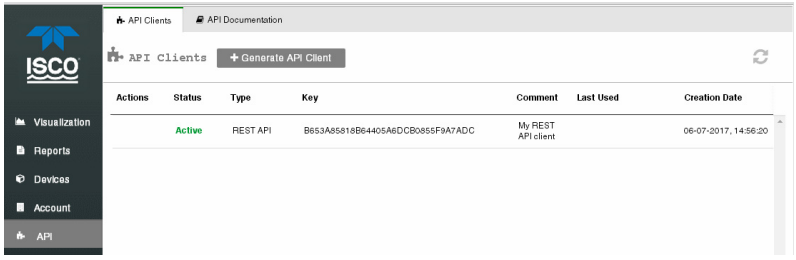


Figure 4-4 API Clients table

Deleting, Deactivating or Activating an API Client

You can delete, deactivate or activate an API client. To do so:

1. Access the API Clients table by clicking API in the side bar.

2. Hover over the line corresponding to the API Client you wish to delete or deactivate. Several icons appear.

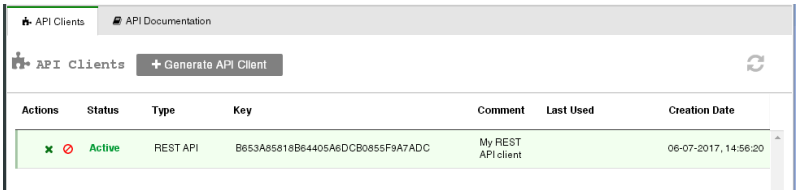


Figure 4-5 Options for deleting or deactivating an API client

3. Select the icon corresponding to the action you wish to take:

⊘	Deactivate the API client. A deactivated API client cannot be used to access accQlink data, but is not deleted from the database.
▶	Reactivate an API client that was previously deactivated.
✖	Delete the API client from the database.

Step 2 – Getting an Access Token for a REST API Call

Follow the instructions in the USING THE REST API window of the accQlink UI.

To access the page, click API in the sidebar, then select API Documentation > Using the REST API.
Specifically, see the section Step 2: Getting an Access Token.

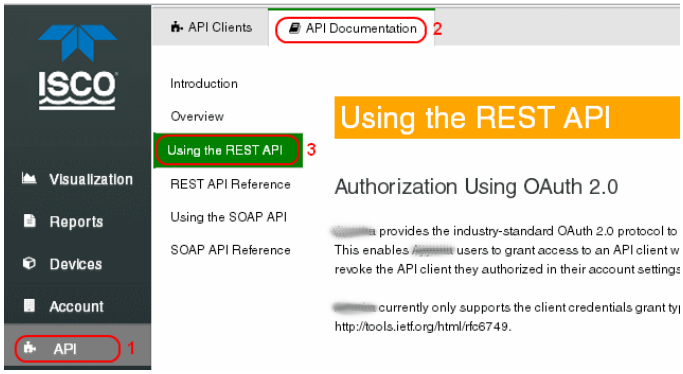


Figure 4-6 Using the REST API window

Step 3 – Authentication with REST API using the Access Token

Follow the instructions in the USING THE REST API window of the accQlink UI (Figure 4-6).

To access the page, click API in the sidebar, then select API DOCUMENTATION > USING THE REST API.
Specifically, see the section Step 3: Authentication with Access Token.

Using the accQlink REST API Methods

The methods available for RESTful access to accQlink data are listed and explained in the REST API Reference window of the accQlink UI.

To access the page, click API in the sidebar, then select API DOCUMENTATION > REST API REFERENCE.

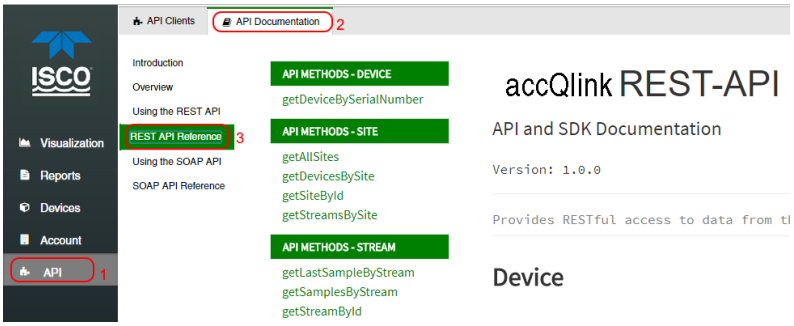


Figure 4-7 REST API Reference window

4.1.2 Using the accQlink SOAP API Method

Account and organization owners, as well as account and organization administrators, can access the accQlink SOAP API.

Gaining Access to accQlink Data via the SOAP API

The process of gaining access to accQlink data via the SOAP API includes the following steps:

1. Refer to Step 1- Creating an API Client.Step 1 – Creating an API Client
2. Get an access token. Refer to Step 2 – Getting an Auth Token for SOAP API AuthenticationStep 2- Getting an Auth Token for SOAP API Authentication.

Step 1 – Creating an API Client

Refer to Step 1 – Creating an API ClientStep 1- Creating an API Client.

Step 2 – Getting an Auth Token for SOAP API Authentication

Follow the instructions in the USING THE SOAP API window of the accQlink UI.

To access the page, click API in the sidebar, then select API DOCUMENTATION > USING THE SOAP API.

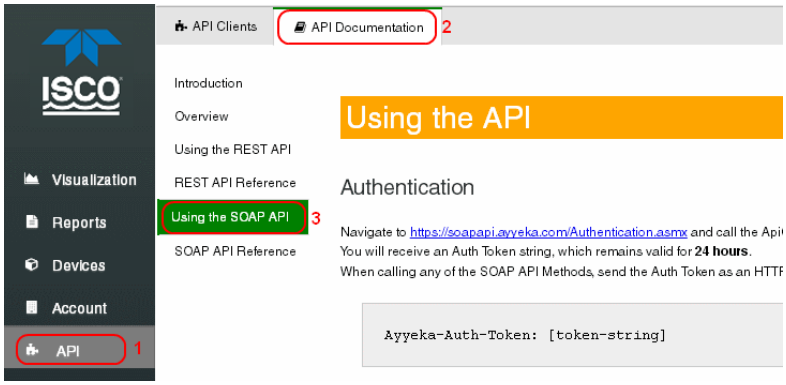


Figure 4-8 Using the SOAP API window

Using the accQlink SOAP API Methods

The methods available for SOAP API access to accQlink data are listed and explained in the SOAP API Reference window of the accQlink UI.

To access the page, click API in the sidebar, then select API DOCUMENTATION > SOAP API REFERENCE.

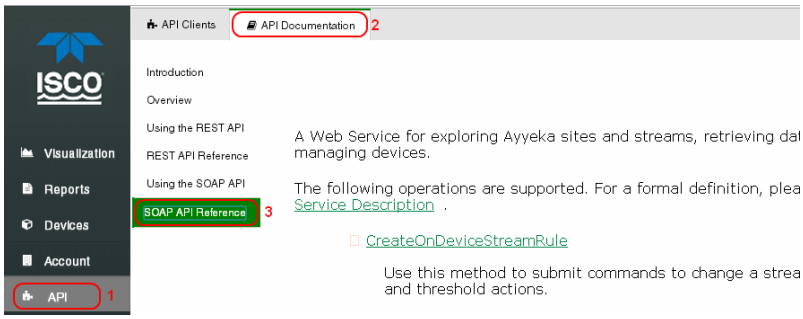


Figure 4-9 SOAP API Reference window

accQlink

Section 5 Maintenance

5.1 accQlink Battery Replacement

The BATTERY STATUS DATA STREAM displays a device's current battery level, enabling you to prepare for battery replacement.

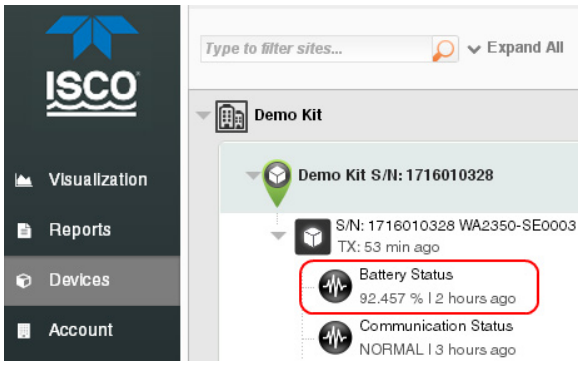


Figure 5-1 Battery status screen

5.1.1 Battery Replacement Instructions

WARNING

Beware of static discharge, making sure to work in a clean environment and ensuring that your hands and the accQlink device are completely dry.

1. Place the accQlink device face down on a dry, stable surface with the connectors pointing downward (Figure 5-2).

Figure 5-2 accQlink face down

2. Partially unscrew the six (6) screws located on the back of the accQlink enclosure, until you can lift off the back panel with the screws still affixed to their screw holes (Figure 5-3).

Figure 5-3 Remove the 6 screws

3. Remove the accQlink's back panel and place it flat-side down adjacent to the accQlink box (Figure 5-4).

Figure 5-4 Back cover removed

4. On the interface board, move the ON/OFF switch to the OFF position (Figure 5-5).

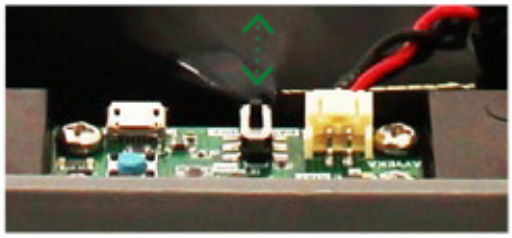


Figure 5-5 Interface board of the accQlink

5. Carefully disconnect the male end of the battery connector cable from the female connector on the interface board. Using an indelible pen, mark the battery as "Used" and dispose of it properly. (Figure 5-6)

Figure 5-6 Disconnect the battery

6. Mark the new battery with the current date. Place the battery in the accQlink enclosure and carefully connect the male end of the battery connector cable to the female connector on the interface board (Figure 5-7).

   Verify that the yellow, red and blue LED lights on the interface board blink briefly. This confirms that the battery has been successfully connected.

Figure 5-7 Connecting the new battery

7. On the interface board, move the ON/OFF switch to the ON position. The accQlink device turns on and performs a 10-minute calibration process, after which it starts operating in normal mode.

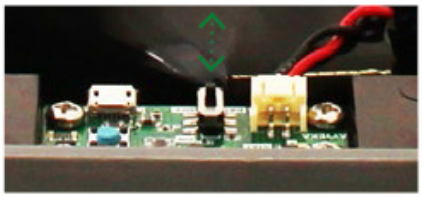


Figure 5-8 Interface board

8. Replace the accQlink back panel, ensuring that the battery cable is neatly arranged and not pinched within the accQlink enclosure (Figure 5-9).

Figure 5-9 Replacing the cover

9. Tighten the six (6) back panel screws until the accQlink is closed and sealed. Do not over-tighten as this will strip the screw threads (Figure 5-10).

   The accQlink device is now ready to resume monitoring and transmission.

Figure 5-10 Replace the 6 screws

10. In the Management user interface, select DEVICES in the sidebar, and select the device in the Sites Tree pane.

    In the bottom part of the device information box, click the arrow in the drop-down COMMANDS list, and select RESET BATTERY STATUS.

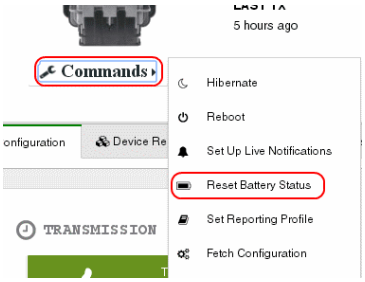


Figure 5-11 Resetting the battery

accQlink

Section 6 Troubleshooting

6.1 accQlink Device Does Not Turn On

Problem: Magnetic activator does not turn the accQlink on.

Recommended Actions:

1. Partially unscrew the six (6) screws located on the back of the accQlink enclosure (see Battery Replacement Instructions, step 2), until you can lift off the back panel with the screws still affixed to their screw holes.
2. Remove the accQlink's back panel and place it flat-side down adjacent to the accQlink box.
3. On the interface board, move the ON/OFF switch to the ON position (see Battery Replacement Instructions, step 4).

   The accQlink device turns on and performs a 10-minute calibration process, after which it starts operating in normal mode
4. Replace the accQlink back panel, ensuring that the battery cable is neatly arranged and not pinched within the accQlink enclosure.
5. Tighten the six (6) back panel screws until the accQlink is closed and sealed. Do not over-tighten as this will strip the screw threads.

6.2 LED Light Status Indicators

The LEDs on the accQlink's interface board provide indications of the device's status.

6.2.1 LEDs Status Indications

LEDs Status	Interpretation
All LED are off	Not connected to network. The LED lights do not blink when the device is sampling. Note: accQlink may be powered down (power switch is in the OFF position), in Hibernate mode, or have insufficient battery power.
Green LED is blinking	Attempting to connect to network.
Green LED remains on	Transmission of data is in progress; the LED will turn off when transmission is complete.
Green and Red LEDs blink 5x	Communication error. The device failed to transmit.
Red and Blue LEDs blink 5x	Sensor error.
Green-Red-Blue-Red-Green LEDs blink sequentially 5x	accQlink activated using Magnetic Activator. This is typically followed by firmware boot sequence.
Green, Red, Blue LEDs blink 5x	Bootloader is starting up when the device powers up. This is typically followed by firmware boot sequence.
Green and Blue LEDs blink 2x, then Red	Firmware is booting.
Blue LED is blinking	Bootloader is active, not connected to the network.
Blue and Green LEDs are blinking	Bootloader is active, trying to connect to network.

6.2.2 Accessing the Interface Board LEDs

To access the accQlink's interface board LEDs:

- Partially unscrew the six (6) screws located on the back of the accQlink enclosure, until you can lift off the back panel.
- The three LEDs: COMM, ERROR, and STAT, are on the interface board, as shown in the Figure 6-1.
  - COMM LED is green.
  - ERROR LED is red.
  - STAT LED is blue.

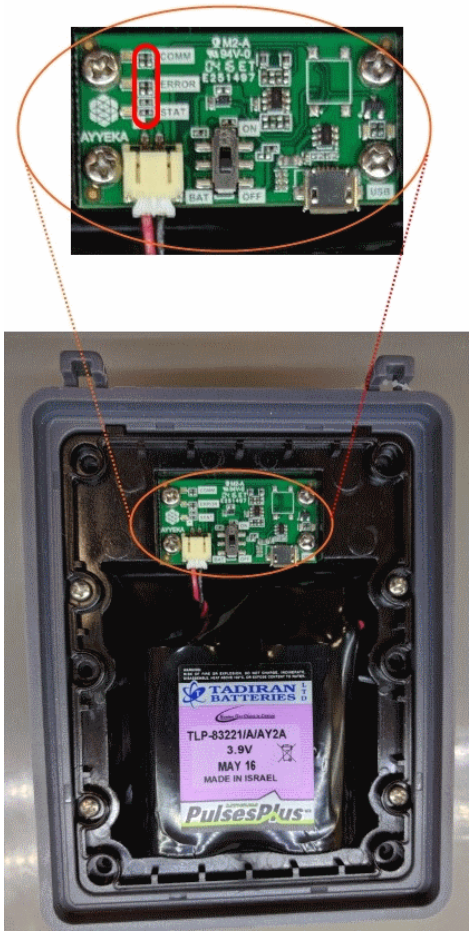


Figure 6-1 accQlink interface board LEDs

accQlink

Section 7 FAQ's About accQlink

7.1 FAQ's

Is the accQlink activator unique per device?

The accQlink Activator is a magnet, and is identical for all accQlink devices, in all accQlink kits.

Why are updated GPS coordinates not appearing in the UI?

When the device reports new GPS coordinates to the server, it takes the server several minutes to complete the processing. Usually however, the issue is the time it takes for the GPS coordinates to be detected in the field. Keep in mind that:

- The internal GPS antenna is located at the top of the device, opposite the connectors panel. That side of the accQlink device needs a clear view of a patch of sky for about 5-10 minutes in order to pick up a GPS signal.
- Trees, buildings, roofs, etc. interfere with the GPS signal.

What is the recommended range for the device cellular signal?

The recommended range is -89 dBm and above. More specifically:

Signal Value in dBm	Resultant Signal Quality
<= -100	Very weak
Between -99 and -90	Weak
Between -89 and -80	Fair
Between -79 and -65	Good
> -64	Excellent

How can I change the destination server address?

If you must change the address of the server to which accQlink devices transmit their data, perform the following:

1. Click DEVICES in the sidebar.
2. In the Sites Tree pane, select the device.
3. In the right pane, select the CONFIGURATION tab.
4. Click ADVANCED DEVICE CONFIGURATION.
5. In the configuration tree, expand the GSM node.
6. Select the server_addr node.
7. To the right of the configuration tree, select the drop-down arrow adjacent to the current value and Select SET SETTING.

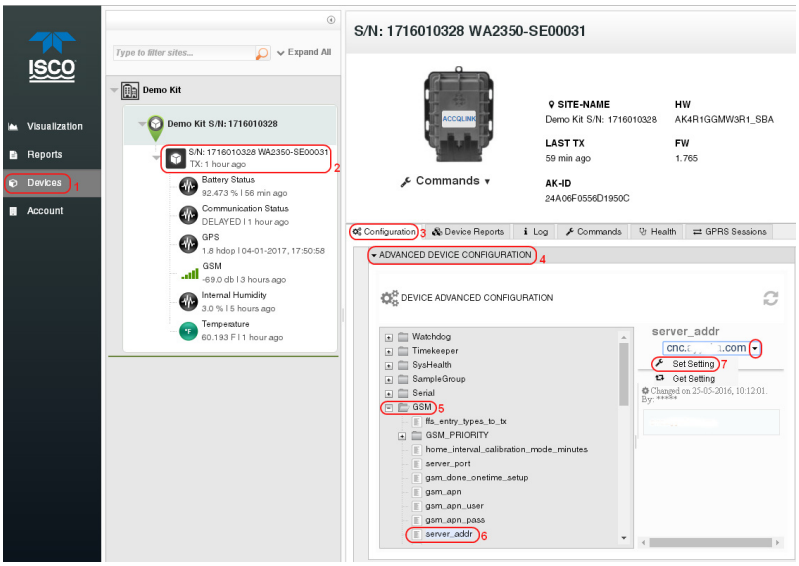


Figure 7-1 Changing the destination server address

8. In the SEND NEW VALUE window that appears, enter the new server IP address or DNS name in the NEW VALUE field, and click SUBMIT.

Why are device configuration changes not taking effect?

Most of the settings available through CONFIGURATION > ADVANCED DEVICE CONFIGURATION require a reboot in order to take effect.

Rebooting a Device

To reboot a device:

1. Click DEVICES in the sidebar, and select the device in the Sites Tree pane.
2. In the bottom part of the device information box, click the arrow in the drop-down COMMANDS list, and select REBOOT. Both the configuration changes and the reboot will take effect after the device contacts the server.

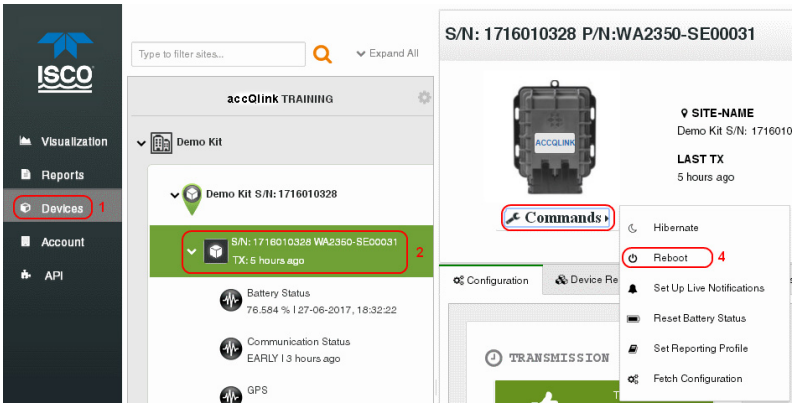


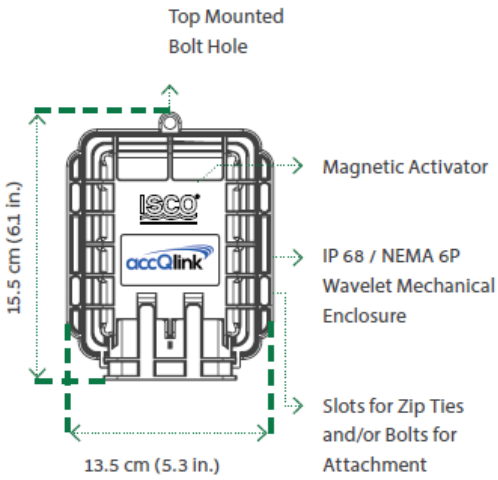
Figure 7-2 Selecting to reboot a device

accQlink

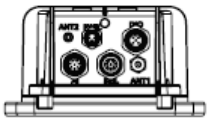
Appendix A Replacement Parts, Diagrams, and Listings

A.1 accQlink

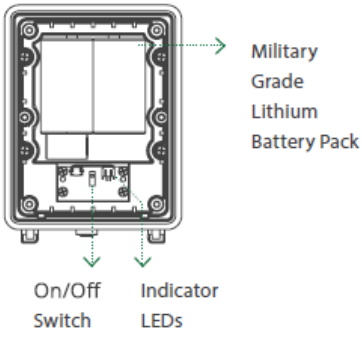
External (Front)



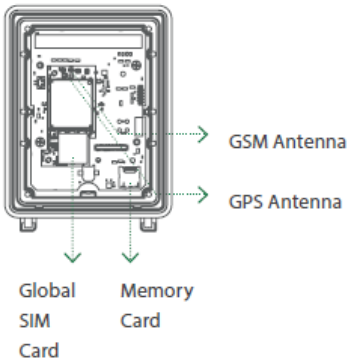
External (Bottom)



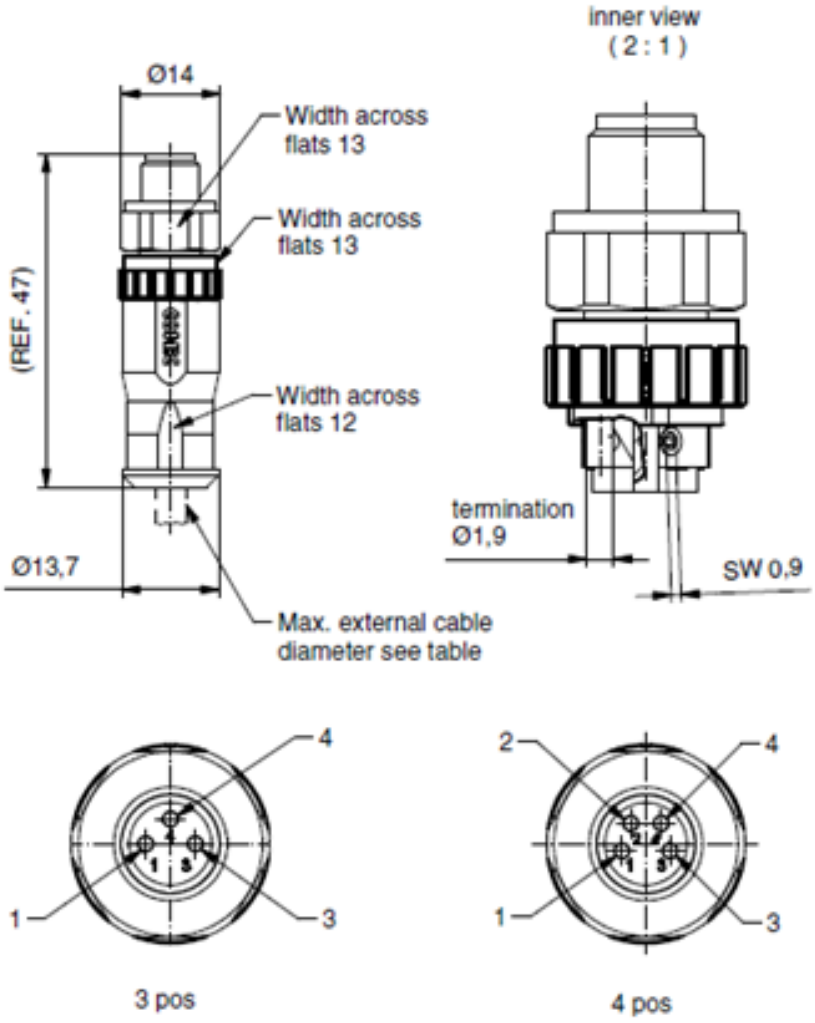
Internal (Layer 1)



Internal (Layer 2)



A.2 Connector 42-00009



Teledyne Isco One Year Limited Factory Service Warranty*

This warranty exclusively covers Teledyne Isco instruments, providing a one-year limited warranty covering parts and labor.

Any instrument that fails during the warranty period due to faulty parts or workmanship will be repaired at the factory at no charge to the customer. Teledyne Isco's exclusive liability is limited to repair or replacement of defective instruments. Teledyne Isco is not liable for consequential damages.

Teledyne Isco will pay surface transportation charges both ways within the 48 contiguous United States if the instrument proves to be defective within 30 days of shipment. Throughout the remainder of the warranty period, the customer will pay to return the instrument to Teledyne Isco and Teledyne Isco will pay surface transportation to return the repaired instrument to the customer. Teledyne Isco will not pay air freight or customer's packing and crating charges. This warranty does not cover loss, damage, or defects resulting from transportation between the customer's facility and the repair facility.

The warranty for any instrument is the one in effect on date of shipment. The warranty period begins on the shipping date, unless Teledyne Isco agrees in writing to a different date.

Excluded from this warranty are normal wear; expendable items such as desiccant, pH sensors, charts, ribbon, lamps, tubing, and glassware; fittings and wetted parts of valves; check valves, pistons, piston seals, wash seals, cylinders, pulse damper diaphragms, inlet lines and filter elements; and damage due to corrosion, misuse, accident, or lack of proper installation or maintenance. This warranty does not cover products not sold under the Teledyne Isco trademark or for which any other warranty is specifically stated.

No item may be returned for warranty service without a return authorization number (RMA) issued by Teledyne Isco.

This warranty is expressly in lieu of all other warranties and obligations and Teledyne Isco specifically disclaims any warranty of merchantability or fitness for a particular purpose.

The warrantor is Teledyne Isco, 4700 Superior, Lincoln, NE 68504, U.S.A.

***This warranty applies to the USA and countries where Teledyne Isco does not have an authorized dealer. Customers in countries outside the USA, where Teledyne Isco has an authorized dealer, should contact their Teledyne Isco dealer for warranty service.**

Problems can often be diagnosed and corrected without returning the instrument to the factory. Before returning any instrument for repair, please contact the Teledyne Isco Service Department for instructions and to obtain a return material authorization number (RMA).

Instruments needing factory repair should be packed carefully and shipped to the attention of the service department. Small, non-fragile items can be sent by insured parcel post. **PLEASE WRITE THE RMA NUMBER ON THE OUTSIDE OF THE SHIPPING CONTAINER** and enclose a note explaining the problem.

Shipping Address:	Teledyne Isco - Attention Repair Service 4700 Superior Street Lincoln, NE 68504 USA
Mailing Address:	Teledyne Isco PO Box 82531 Lincoln, NE 68501 USA
Phone:	Repair service: (800) 775-2965 (lab instruments) (866) 298-6174 (samplers & flow meters) Sales & General Information: (800) 228-4373 (USA & Canada)
Fax:	(402) 465-3001
Email:	IscoService@teledyne.com

March 2, 2016 P/N 60-1002-040 Rev J

TELEDYNE ISCO
Everywhereyoulook™