Honeywell | MASTERLINK R515.1

MasterLink Software Application User's Guide

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CONTENTS

1 About MasterLink 1
1.1 Features 1
1.2 Security Considerations 2
1.1 Supported Device Functionality 3
1.2 Supported File formats and extensions 5
2 Installation 7
2.1 Before you install 7
2.2 Interoperability with SuiteSQL 8
2.3 Silent Installation 8
2.4 MasterLink Client Installation with SQL Server 9
2.4.1 Installing MasterLink with remote SQL Server 15
2.5 Installing MasterLink with SQLite 20
2.6 Upgrading MasterLink with SQLite/ SQL Server 26
2.7 Post Installation Steps 27
3 MasterLink User Interface 29
3.1 Getting Started 29
3.1.1 User Creation and Activation Process 29
3.1.1.1 Site Administrator Creation 29
3.1.1.2 Creating Users 30
3.1.1.3 User Registration 30
3.1.1.4 Forgot Password 32
3.2 Sites 33
3.2.1 Add Site 34
3.2.2 Connecting to a Site 37
3.2.3 Direct Connect 39
3.3 Dashboard 40
3.3.1 User Interface 43
3.3.2 Instrument Data 47
3.3.3 Alarms 48
3.3.4 Configuration Check 50
3.3.5 Time Sync 52
3.3.6 Firmware Update 53
3.3.7 Data Transfer 55
3.3.8 Instrument or Modem Power 57
3.3.9 Update User Account 58
3.3.10 Change Password 59
3.4 View and Edit 60
3.4.1 Configure by Group 60
3.4.2 Configure by Item 63
3.4.3 Send Item File 66
3.4.4 Logging Configuration 68
3.4.5 Manage User Table 71
3.4.6 Manage Shortlist 73
3.4.7 Manage AGA-8 74
3.5 Calibrate 75
3.5.1 Pressure Calibration P1 75
3.5.2 Pressure Calibration P2 83
3.5.3 Pressure Calibration P3 83
3.5.4 Temperature Calibration 85

CONTENTS

3.5.5 Calibration Parameter 90
3.6 Read Data 91
3.6.1 Item File 92
3.6.2 Audit Trail 96
3.6.2.1 Audit Trail Graphs 105
Line Graphs 107
Circular Graphs 110
3.6.3 Alarm Logs 113
3.6.4 Event Logs 116
3.6.5 Diagnostic Logs 119
3.6.6 Cellular Logs 121
3.6.7 Shortlist 123
3.6.8 Activity Log 125
3.6.9 Item Reference CSV Export 127
3.7 Live Data 128
3.8 Administer 136
3.8.1 Activity Log - Purge 136
3.8.2 Export Instrument Data 138
3.8.3 Import Instrument Data 142
3.8.4 Item Template Configuration 147
3.8.5 Clear Logs 150
3.9 Settings 151
3.9.1 Communications Setup 151
3.9.2 Time-Sync Properties 154
3.9.3 Auto Download Settings 155
3.9.4 Device Properties 156
3.10 Security and User Management 157
3.10.1 User Configuration 158
3.10.1.1 Passkey Generation 160
3.10.2 User Roles 162
4 Updates and Upgrades 164
4.1 EC 350/ ERX 350 Firmware Update 164
4.2 CloudLink Modem Firmware Update 165
4.3 Upload CloudLink Modem Certificates 166
4.4 Legacy Devices Firmware Upgrades 168
5 Glossary 170
5.1 Troubleshooting scenarios 172

1 About MasterLink

MasterLink application provides a single software package to configure, calibrate and access data from gas volume correctors. The software's intuitive dashboard enables users to quickly determine the overall health status of instruments. Employing standardized terminology, it is now an easy task to configure and calibrate instruments, import data, and generate reports and graphs, thereby eliminating time-consuming manual effort.

This software employs a dashboard based design philosophy enabling users to get a one-shot status of connected devices. A gas industry first, the software can connect to the device using a choice of short-range wireless communication protocols. The dashboard displays information about alarms, battery voltage, audit trail, configuration integrity, firmware status, time sync and live data. This helps the user understand the current condition of the connected device from a holistic point of view.

MasterLink software addresses the increasing adoption of mobile devices for functions like checking the health of field devices, downloading reports, instrument calibration and other activities once performed exclusively on a laptop. It offers versatile wireless connectivity and is compatible with the latest versions of both iOS and Android operating systems.

1.1 Features

MasterLink allows users to:

- Define dashboard data (auto) download settings
- Secure critical site data
- Enable SSL encrypted communication with site Over the Air (OTA)
- View / Edit item parameters of a connected device
- Provides a wizard based calibration approach
- Generate reports such as:
    - Item report - Item Report by Group, Site Report and Calibration Report
    - Audit Trail report (Plot graph over Audit Trail data)
    - Alarm Log report
    - Event Log report
    - Diagnostic Log report
    - Cellular Log report
    - Short List report
    - Activity Log report
    - Item Reference CSV Export
- Capture live data and plot graphs

- Perform Database Administrative tasks such as
    - Activity Log Purge
    - Import/Export site or instrument data
    - Item Template Configuration
    - Clear Logs
- Configure settings
    - Communication Setup
    - Time Sync Properties
    - Auto Download Settings for Dashboard
    - Device Properties
    - Email Options
- Perform role based user administration for MasterLink
- Administer access privileges for device level functions by sending user table
- Perform offline log-in configuration and send to instrument when connected
- Perform instrument and modem firmware updates

1.2 Security Considerations

- It is recommended to use the CloudLink modem in integrated mode with EC 350 for better security during pairing
- For data protection, it is recommended to provide full privileges to the ProgramData\Honeywell\MasterLink folder only to appropriate MasterLink users
- It is recommended to keep the PC used for MasterLink updated with the security patches released by the respective platforms
- It is also recommended to enable SSL for secure communication with MasterLink.
- Its highly recommended to Install latest operating system security patches on the machine where ML is installed.
- Do not share MLK file with any unintended user

1.1 Supported Device Functionality

*CL = CloudLink, PA = Pulse Accumulator, TC = Turbo Corrector

	EC 350	CL*	EC 350 + CL	PA*	CNI4	Mini-Max	ERX	TCI	Mini-AT	TC*	Accutest	ERX 350	ERX 350 + CL	Mini	Turbo Monitor	PT Mod-bus	ER	ECAT
Item Report	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Audit Report	✓	✖	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✖	✖	✖	✓	✓
Alarm Report	✓	✓	✓	✖	✓	✓	✖	✖	✓	✓	✓	✓	✓	✖	✖	✖	✖	✓
Event Report	✓	✓	✓	✖	✓	✓	✖	✖	✓	✓	✓	✓	✓	✖	✖	✖	✖	✓
Diagnostic Report	✖	✓	✓	✖	✓	✖	✖	✖	✖	✖	✖	✖	✓	✖	✖	✖	✖	✖
Cellular Report	✖	✓	✓	✖	✓	✖	✖	✖	✖	✖	✖	✖	✓	✖	✖	✖	✖	✖
Shortlist Report	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Activity Report	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Send Log Configuration	✓	✖	✓	✖	✖	✖	✖	✖	✖	✖	✖	✓	✓	✖	✖	✖	✖	✖
Change Instrument Access Code	✖	✖	✖	✓	✖	✓	✓	✓	✓	✓	✓	✖	✖	✓	✓	✓	✓	✓
Send User Table	✓	✓	✓	✖	✓	✖	✖	✖	✖	✖	✖	✓	✓	✖	✖	✖	✖	✖
Send Item File	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Config Check Template	✓	✖	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
P1 Calibration	✓	✖	✓	✖	✖	✓	✓	✖	✓	✓	✓	✓	✓	✓	✖	✖	✓	✓
P2 Calibration	✓	✖	✓	✖	✖	✖	✓	✖	✓	✓	✓	✓	✓	✖	✖	✖	✓	✖
P3 Calibration	✓	✖	✓	✖	✖	✖	✓	✖	✖	✖	✖	✓	✓	✖	✖	✖	✖	✖

*CL = CloudLink, PA = Pulse Accumulator, TC = Turbo Corrector

	EC 350	CL*	EC 350 + CL	PA*	CNI4	Mini-Max	ERX	TCI	Mini-AT	TC*	Accutest	ERX 350	ERX 350 + CL	Mini	Turbo Monitor	PT Mod-bus	ER	ECAT
#																		
Temperature Calibration	✓	✗	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓
Firmware Download	✓	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✓	✓	✗	✗	✗	✗	✗
Config By Item Or Group	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Audit Trail Edit	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✓	✓
Shut Down Device	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Live Data Graph	✓	✗	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓
Administer Data	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EVC Firmware Download	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certificate Upload	✗	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗
Modem Firmware Download	✗	✓	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗
Time Sync	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✓	✓
Write Items	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Active Alarms	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓
User Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*CL = CloudLink, PA = Pulse Accumulator, TC = Turbo Corrector

	EC 350	CL*	EC 350 + CL	PA*	CNI4	Mini-Max	ERX	TCI	Mini-AT	TC*	Accutest	ERX 350	ERX 350 + CL	Mini	Turbo Monitor	PT Mod-bus	ER	ECAT
Generate Reports	✓	✓	✓	✖	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EVC Reset Battery	✓	✓	✓	✖	✖	✖	✖	✓	✖	✖	✖	✓	✓	✖	✖	✖	✖	✖

- P3 Pressure Calibration is applicable for the devices EC350, ERX350 only for the firmware versions 1.4038 and beyond.

1.2 Supported File formats and extensions

	FILE FORMAT EXTENSION										
	Item File	Item Tem-plate File	Firmware File	User Table	Shortlist file	Logging Con-figuration	Audit Graphs	Live Graph Setting	Live Graph Values	Shortlist file with value	Certificate file
EC 350	IE3	TE3	BIN	UTE	CE3	LC	AGS	LGS	LGV	KE3	
CloudLink Modem	ICL	TCL	BIN	UTE	CCL					KCL	PEM
EC 350 + CloudLink	ECL	TEL	BIN	UTE	CEL	LC	AGS	LGS	LGV	KEL	
Pulse Accu-mulator	IPA	TPA	MMX		CPA					KPA	
CNI4	INI4	TNI4	MMX/BIN	UTE	SNI4					KNI4	
Mini-Max	IMX	TMX	MMX		CMX			LGS	LGV	KMX	
ERX	IEX	TEX	MMX		CEX			LGS	LGV	KEX	
TCI	ITC	TTCI	TCA		CTC			LGS	LGV	KTC	
Mini-AT	IMA	TMA	TXT		CMA			LGS	LGV	KMA	

	FILE FORMAT EXTENSION										
	Item File	Item Template File	Firmware File	User Table	Shortlist file	Logging Configuration	Audit Graphs	Live Graph Setting	Live Graph Values	Shortlist file with value	Certificate file
Turbo Corrector	ITT	TTT			CTT			LGS	LGV	KTT	
Accutest	ITA	TTA			CTA			LGS	LGV	KTA	
ERX 350	IER3	TER3	BIN	UTE	CER3	LCER3		LGS	LGV	KER3	
ERX 350 + CloudLink	IER3L	TER3L	BIN	UTE	CER3L	LCER3	AGS	LGS	LGV	KER3L	
Mini	IMN	TMN			CMN			LGV		KMN	
Turbo Monitor	ITB	TTB	TBX/T8X		CTB					KTB	
PT Modbus	IPTC	TPTC	PTX		CPTC					KPTC	
ER	IER	TER			CER			LGS	LGV	KER	
ECAT	IAT	TAT			CAT			LGS	LGV	KAT	

Note: While upgrading R500 to R510, the file format extensions of CloudLink Modem and EC 350 + CloudLink Integrated device are to be changed as below.

	FILE FORMAT EXTENSION			
	Item File	Item Template File	Shortlist file	Shortlist file with value
CloudLink Modem	ICL	TCL	CCL	KCL
EC 350 + CloudLink	ECL	TEL	CEL	KEL

2 Installation

This chapter describes the installation of MasterLink software.

2.1 Before you install

Here are the recommended system specifications:

Database Server Configuration

Component	Requirement
CPU	Quad Core and above
RAM	8 GB and above
Disk Space	80 GB and above
Operating System	Microsoft Windows 2008 Standard Edition 32 bit Microsoft Windows 2008 Standard Edition 64 bit Microsoft Windows 2008 R2 Standard Edition 32 bit Microsoft Windows 2008 R2 Standard Edition 64 bit Windows Server 2012 – SP1 (Standard, Essentials) : 64 bit Windows Server 2012 R2 –SP1 (Standard, Essentials) : 64 bit Windows Server 2016 (Standard, Essentials) : 64 bit
Database Server	SQL Server 2008 R2 (Standard, Enterprise) : 32 bit SQL Server 2012 (Standard, Enterprise) : 32 bit SQL Server 2014 (Standard, Enterprise) : 32 bit SQL Server 2008 R2 (Standard, Enterprise) : 64 bit SQL Server 2012 (Standard, Enterprise) : 64 bit SQL Server 2014 (Standard, Enterprise) : 64 bit SQL Server 2016 (Standard, Enterprise) : 64 bit SQL Server 2017 (Standard, Enterprise) : 64 bit

Note: If you are using a database instance on your network, you need to have domain user permission.

Client Configuration

Component	Requirement
CPU	Dual Core and above
RAM	4 GB and above
Disk Space	40 GB and above
Operating System	Windows 7 – SP2 / Convenience rollup (Professional, Enterprise, Ultimate) : 32bit, 64 bit Windows 8 – (Core, Pro, Enterprise) : 32bit, 64 bit Windows 8.1 – (Core, Pro, Enterprise) : 32bit, 64 bit Windows 10 – (latest build 2 months before release) : 32bit, 64 bit Windows Vista Standard Edition 32 bit

Mobile Recommendations

Android	Android OS 4.3x, 4.4.0-4.4.4, 5.0.0-5.0.2, 5.1.x, 6.0 RAM: 1 GB onwards Memory: 8 GB onwards Processor Speed: Dual-core 1 GHz onwards Communication BLE compatible General availability of Mail Client required
iOS	OS 7.1.x, 8.4.x, 9.1.x, 10.1.x Memory: 8 GB onwards Screen Size: 3.5 inches onwards RAM: 1 GB onwards Communication BLE capability General availability of Mail Client required

2.2 Interoperability with SuiteSQL

MasterLink application can coexist with Suite SQL.

New MasterLink can be used with either SQL database Server or SQLite database.

If a single data source is preferred with an existing MasterLink SQL installation, please choose SQL Server as a database option during installation.

2.3 Silent Installation

TO INSTALL SQL LITE IN SILENT MODE:

Command to Install the exe

Msiexec /i “<Path to MasterLink515.1exe>” /S /v”/qn DBTYPE=2 INSTALLDIR= <Path to Install>”

Note:

1. INSTALLDIR is an optional argument, if it is not passed, by default it will get installed to "C:\Program Files(x86) \Honeywell\MasterLink"
2. There is no space between /v and "
3. /S is case sensitive and it must be upper case.
4. DBTYPE is passed as empty, then SQLite DB will be installed

Example:

"C:\E569427___tanmay\RMG (\ML\build\MasterLinkR515.1.exe" /S /v"/qn DBTYPE=2 INSTALLDIR=\"C:\Program Files(x86)\Honeywell\MasterLink\""

Path to Masterlink.exe - C:\E569427___tanmay\RMG (\ML\build\MasterLinkR515.1.exe

Path to Install - \"C:\Program Files(x86)\Honeywell\MasterLink\""

TO INSTALL SQL DB SERVER IN SILENT MODE:

Command to Install the exe

1. Msiexec /i "<Path to MasterLink515.1exe>" /S /v"/qn DBTYPE=1 INSTALLDIR= <Path to Install> IS_DATABASESERVER=< Database Server that you are installing > DATABASEDIR= <Place to Install the Database>"

Note:

1. INSTALLDIR is an optional argument, if it is not passed, by default it will get installed to "C:\Program Files(x86) \Honeywell\MasterLink"
2. There is no space between /v and "
3. /S is case sensitive and it must be upper case.
4. DBTYPE is passed as empty, then SQLite DB will be installed. So DBTYPE=1 is mandatory
5. IS_DATABASESERVER= Database Server that you are installing to
6. DATABASEDIR = C:\Programdata\Honeywell\MasterLink\SQL (default value)

Example:

"C:\E569427___tanmay\RMG (\ML\build\MasterLinkR515.1.exe" /S /v"/qn DBTYPE=1 INSTALLDIR= \"C:\Program Files(x86)\Honeywell\MasterLink\" IS_DATABASESERVER-R=IE1FLT5614GH2 DATABASEDIR=\"C:\ProgramData\Honeywell \MasterLink\SQL\\""

Path to Masterlink.exe - C:\E569427___tanmay\RMG (\ML\build\MasterLinkR515.1.exe

Path to Install - \"C:\Program Files(x86)\Honeywell\MasterLink\"

Database Server that you are installing - IE1FLT5614GH2

Place to install the Database - \"C:\ProgramData\Honeywell \MasterLink\SQL\\""

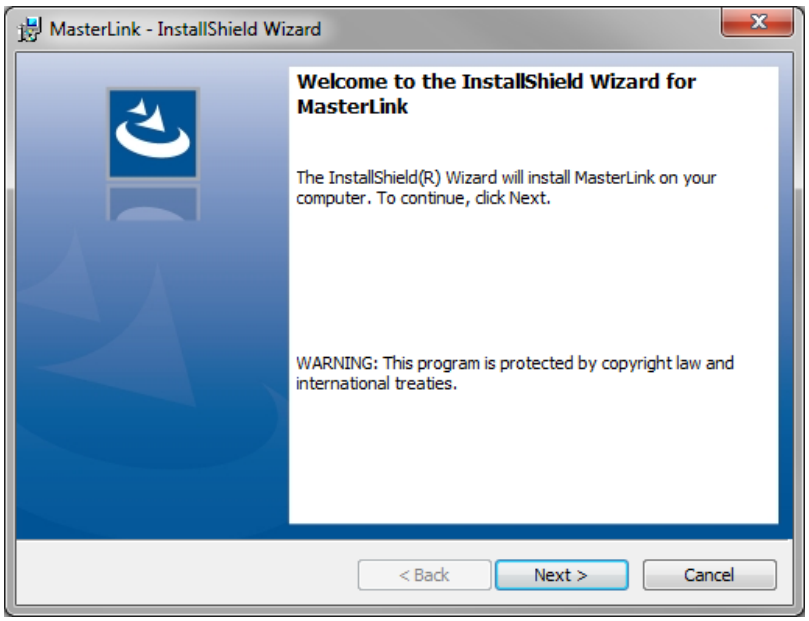
2.4 MasterLink Client Installation with SQL Server

Prerequisites:

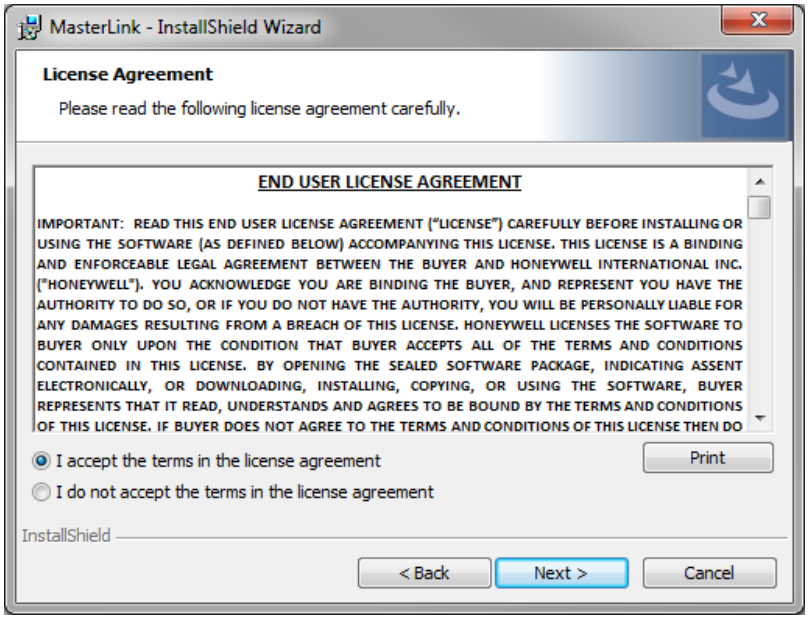
1. If you are using SQL Server, then a SQL Server instance must be installed before installing MasterLink.
2. Administrative Privileges are required to install the application.
3. Ensure Masterlink.exe and Redist folder should be in the same path to avoid any errors on crystal report.

To Install MasterLink Installation with SQL Server:

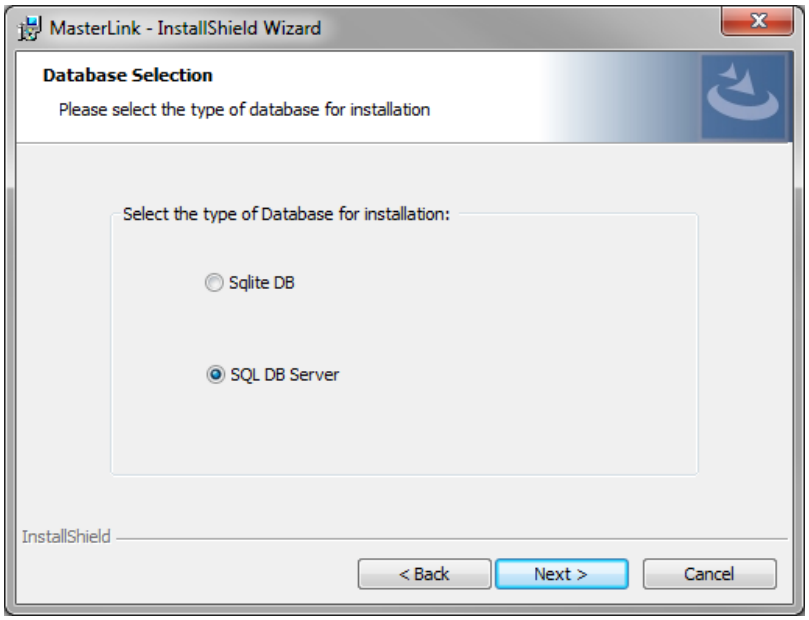
1. Launch the installer. The *MasterLink - InstallShield Wizard* appears. Click **Next**.



2. The *License Agreement* page appears. Click *I accept...* and then click **Next**.



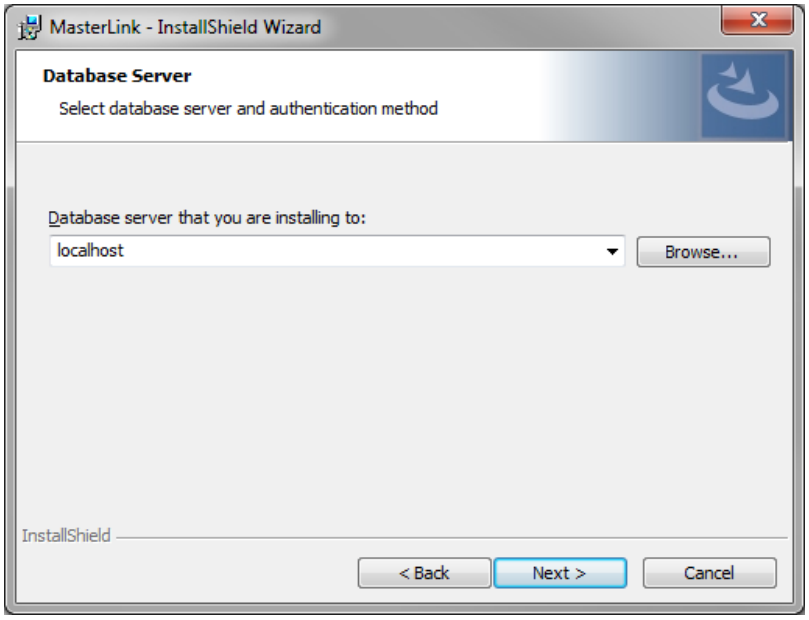
3. The *Database Selection* page appears. By default, *SQL DB Server* is selected.



If you choose to continue with a *SQL DB Server* for installation, then you will see the following page (as shown in step 4), where you need to select the database server instance.

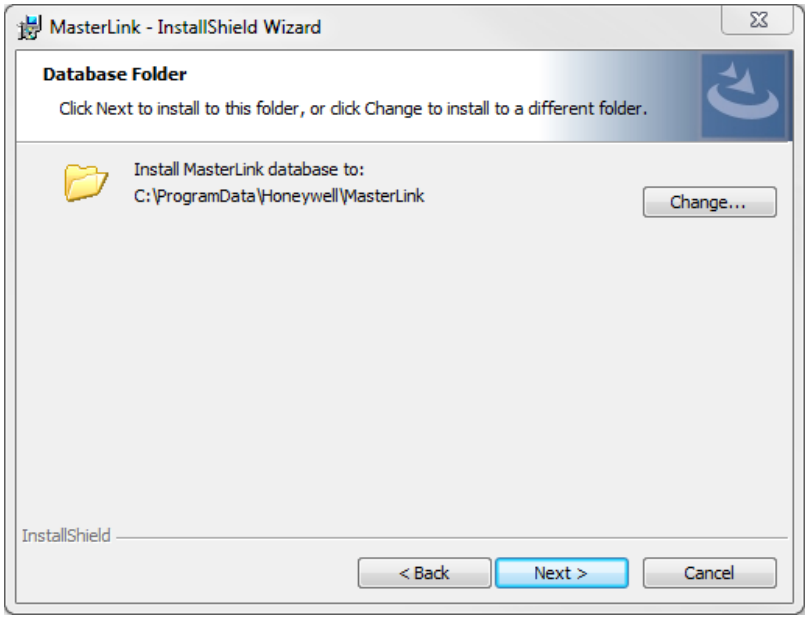
Click **Next** to continue.

4. The *Database Server* page appears. Click **Next**.



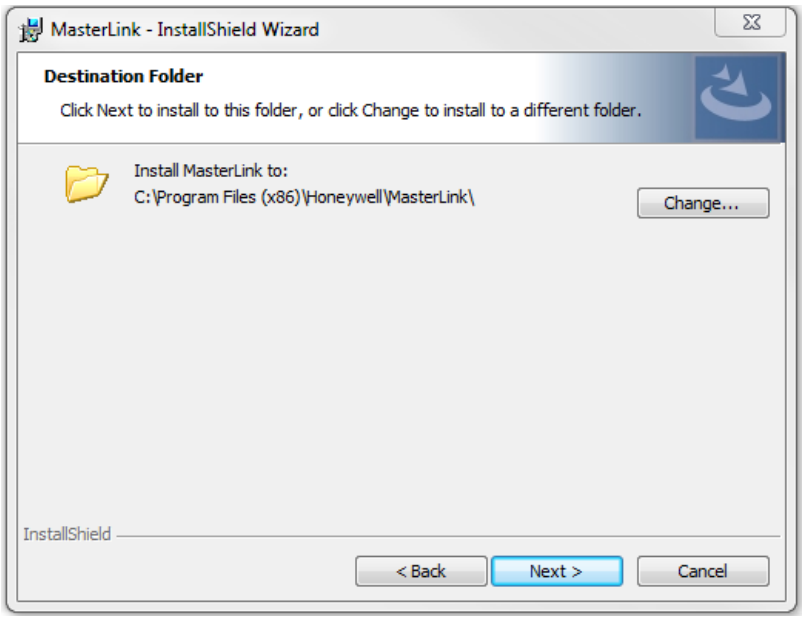
5. The *Database Folder* page appears. Browse and select the folder where you need to install MasterLink and database files.

   Click **Next**.

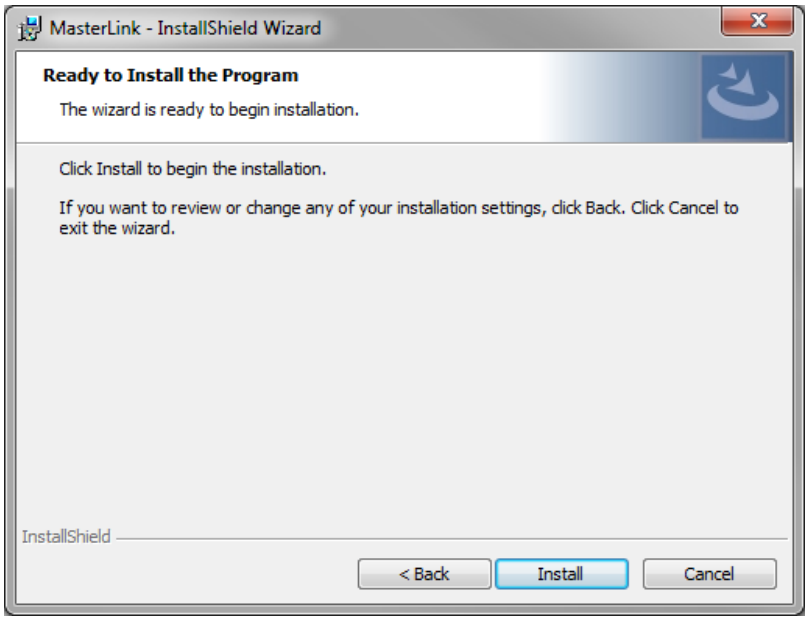


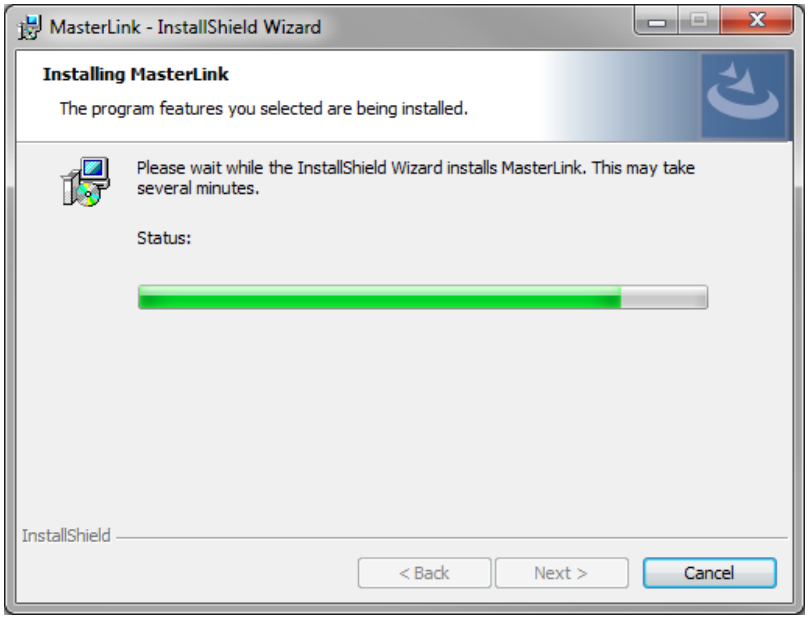
6. The *Destination folder* page appears, displaying information about the default destination folder.

   Click **Next**.

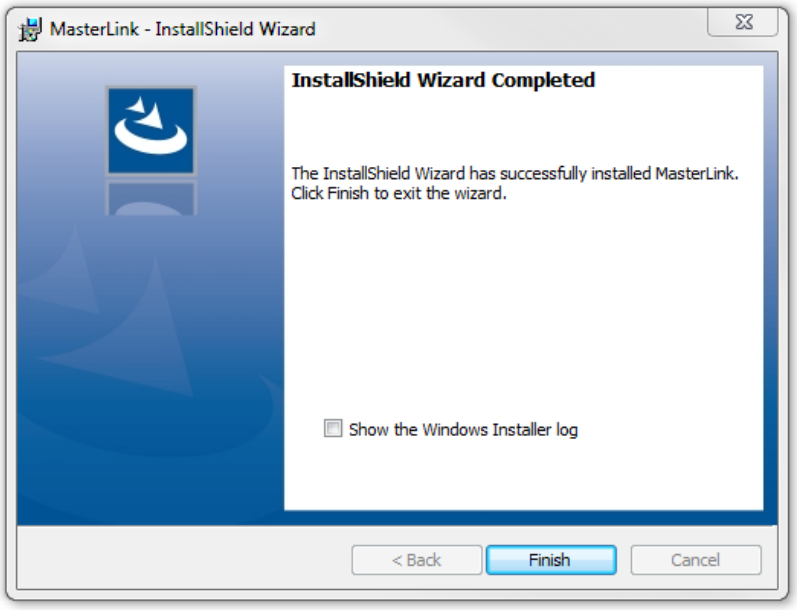


7. The *Ready to install the Program* page appears. Click **Install** to continue.





8. Finally, click **Finish** to complete.



Note: Select the check box to view the Installer log.

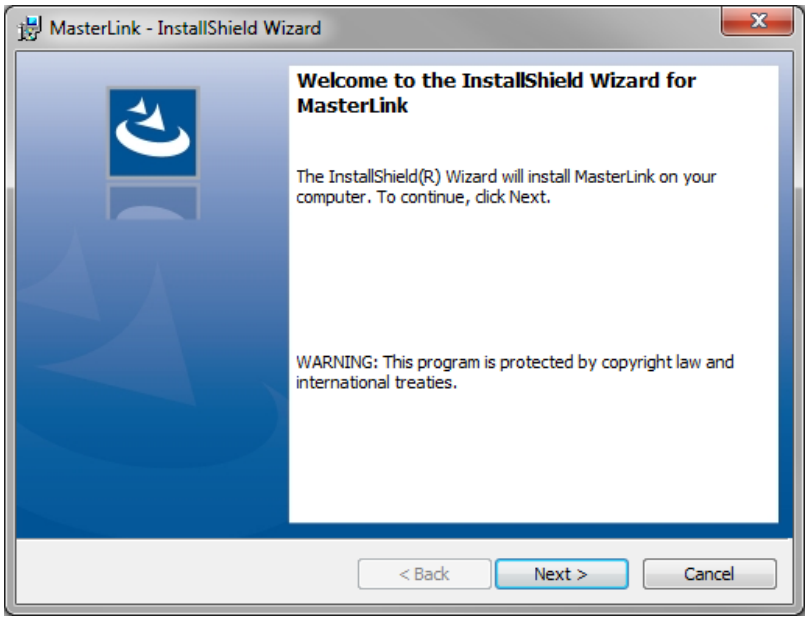
2.4.1 Installing MasterLink with remote SQL Server

Prerequisites:

1. If you are using SQL Server, then a SQL Server instance must be installed before installing MasterLink.
2. Administrative Privileges are required to install the application.
3. Ensure Masterlink.exe and Redist folder should be in the same path to avoid any errors on crystal report.

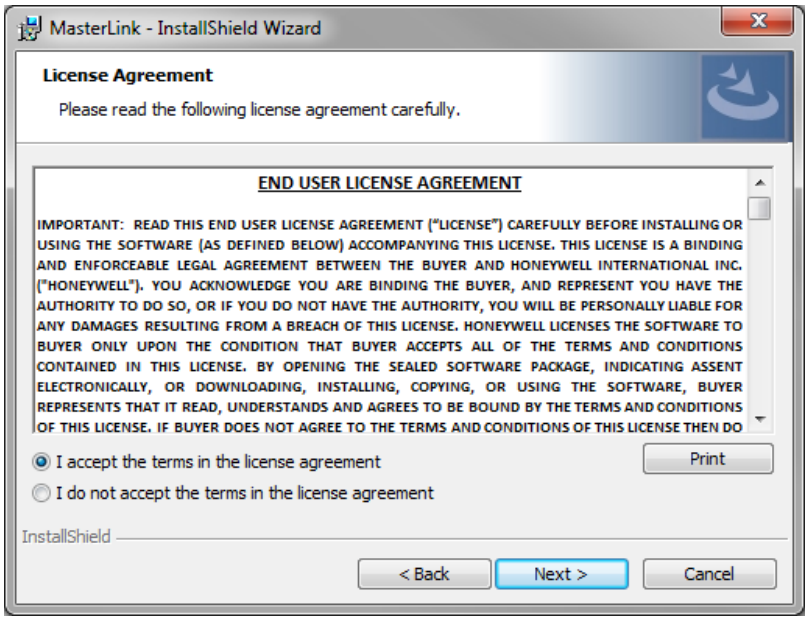
To Install MasterLink with remote SQL Server

1. Right-click Setup file and then click *Run as administrator*. The *MasterLink - InstallShield Wizard* appears. Click **Next**.

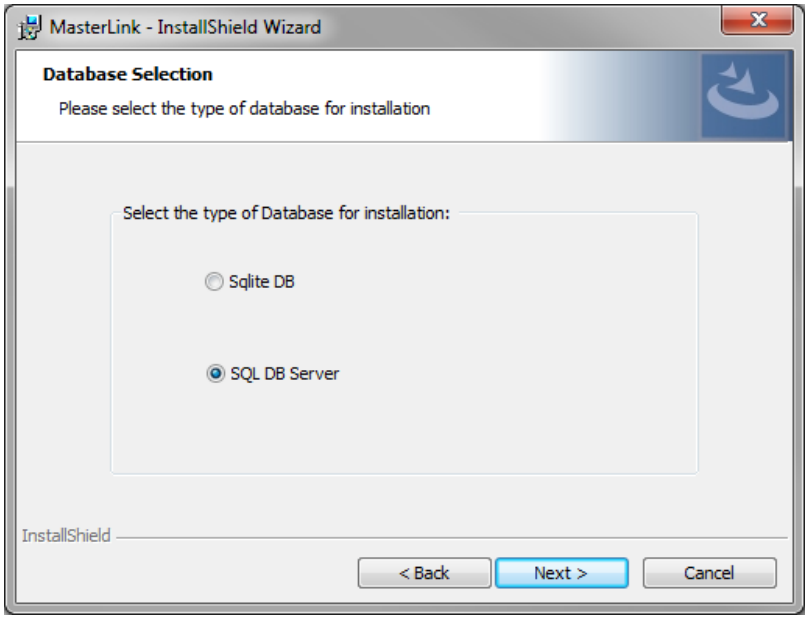


2. The *License Agreement* page appears.

   Click *I accept the terms in the license agreement* and then click **Next**.

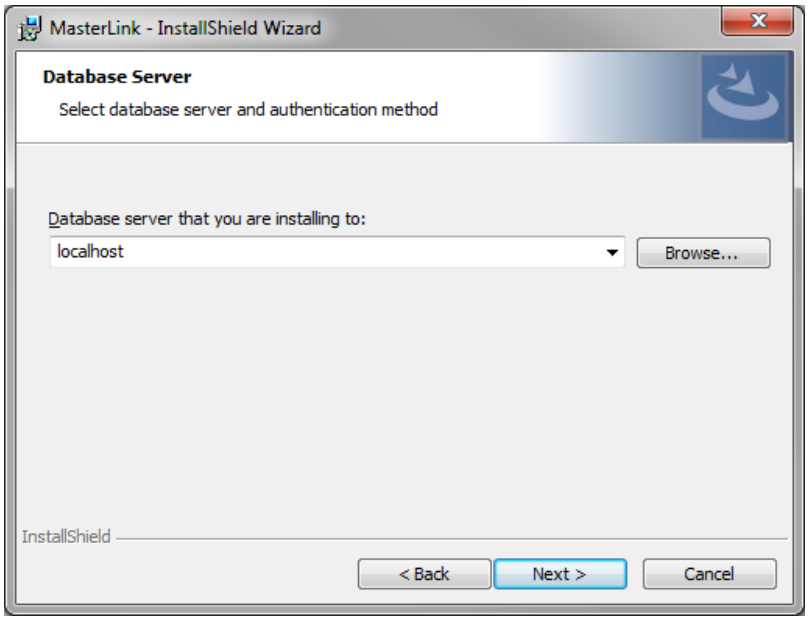


3. The *Database Selection* page appears.

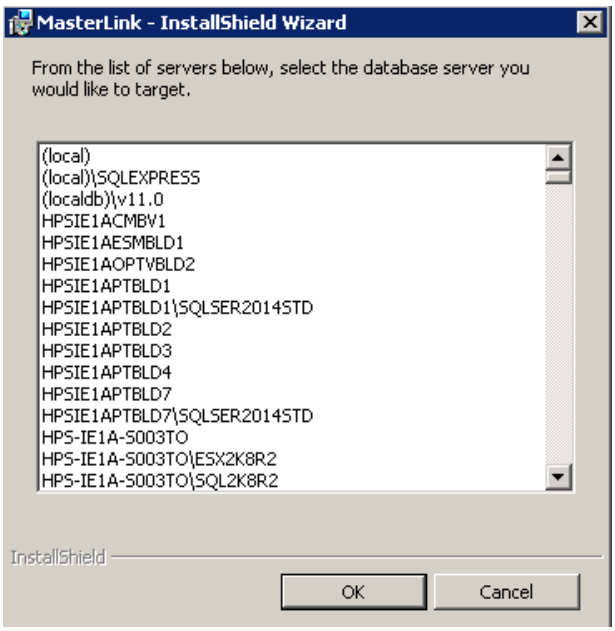


By default, *SQL DB Server* is selected. If you choose to continue with a *SQL DB Server* for installation, then you will see the following page (as shown in step 4), where you need to select the database server instance. Click **Next**.

4. The *Database Server* page appears.


MasterLink - InstallShield Wizard
Database Server
Select database server and authentication method
Database server that you are installing to:
localhost
Browse...
InstallShield
< Back
Next >
Cancel

You can browse and select a database on your network. Click **OK**.

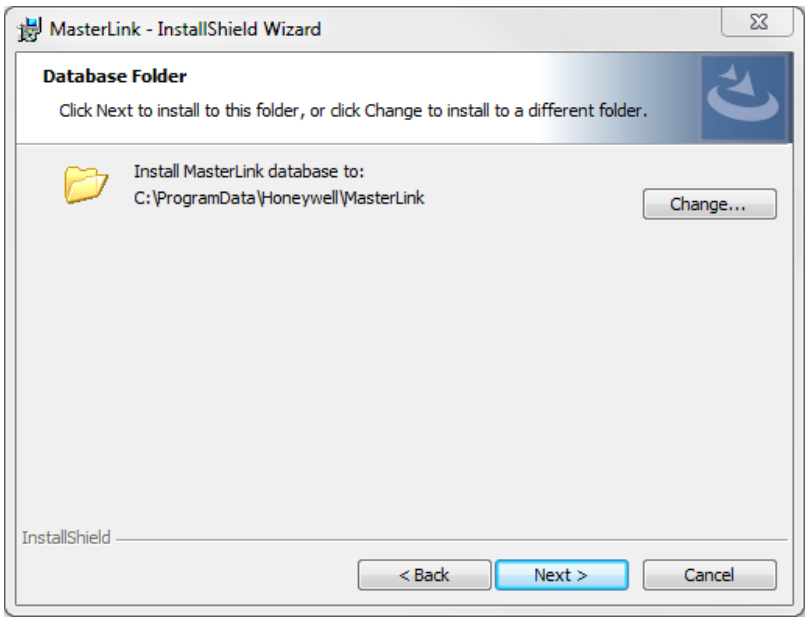


Click **Next** after selecting the required database.

Note: If you are using a database instance on your network, you need to have domain user permission.

5. The *Database Folder* page appears. Click on **Change** and enter the path on the remote machine where user intends to create the Database files. The path selected on remote machine should not exist on the machine where the installer is running.

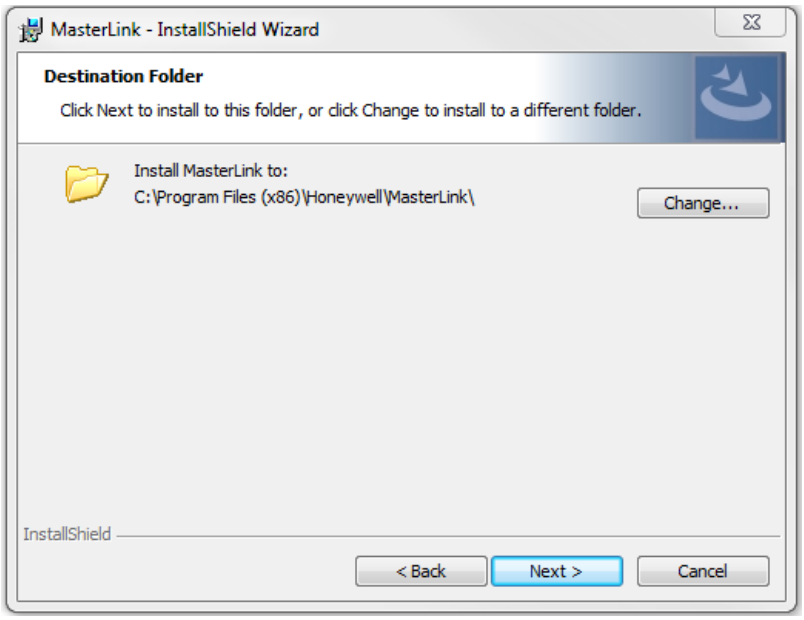
   Click **Next**.



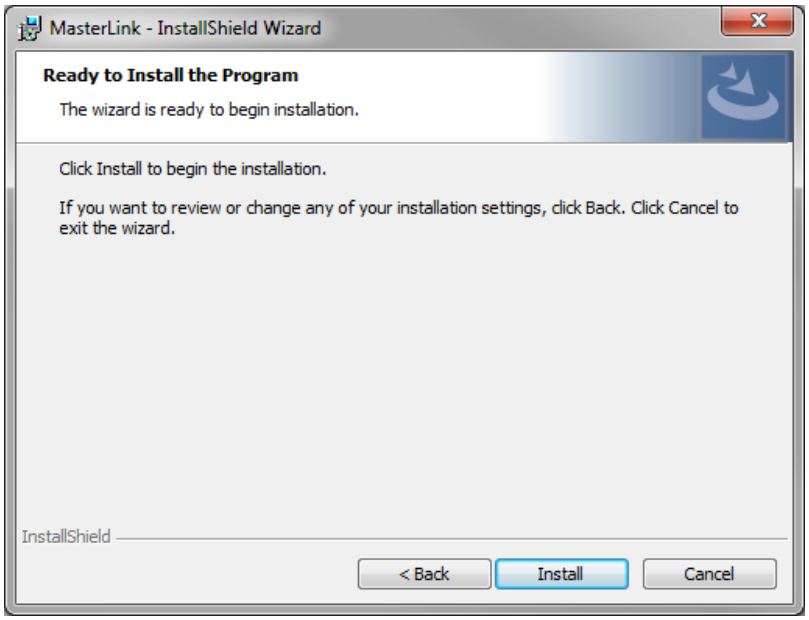
Note: The path selected on remote machine should exist on remote machine.

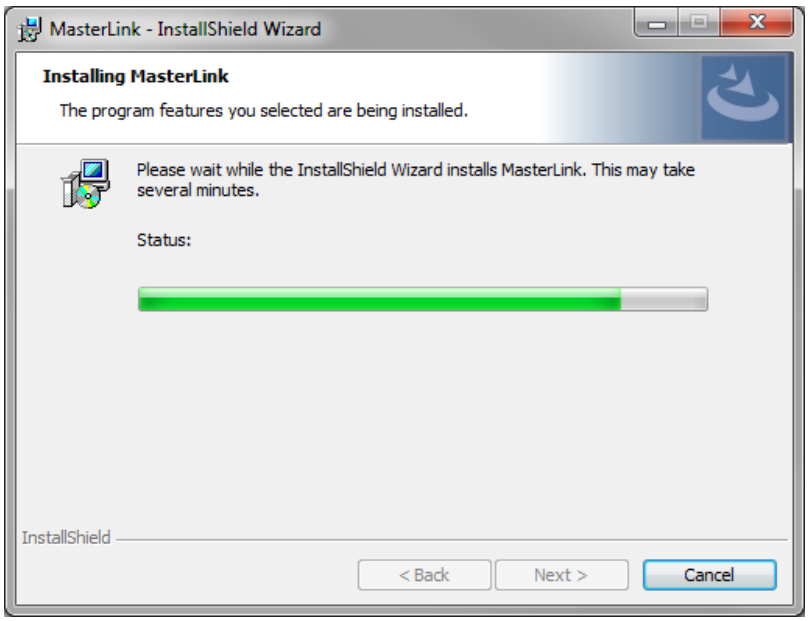
6. The *Destination folder* page appears, displaying information about the default destination folder. The path selected on remote machine should not exist on current machine where installer is running.

   Click **Next**.

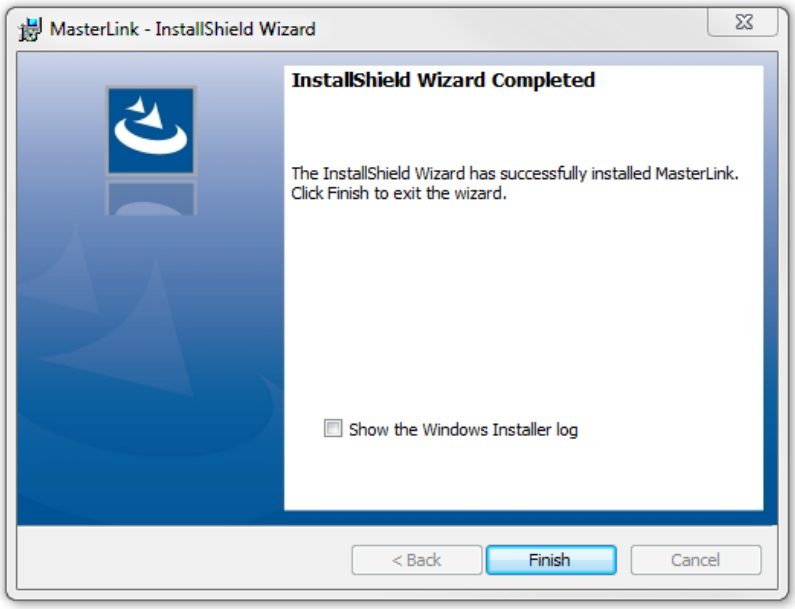


7. The *Ready to install the Program* page appears. Click **Install** to continue.





8. Click **Finish** to complete.



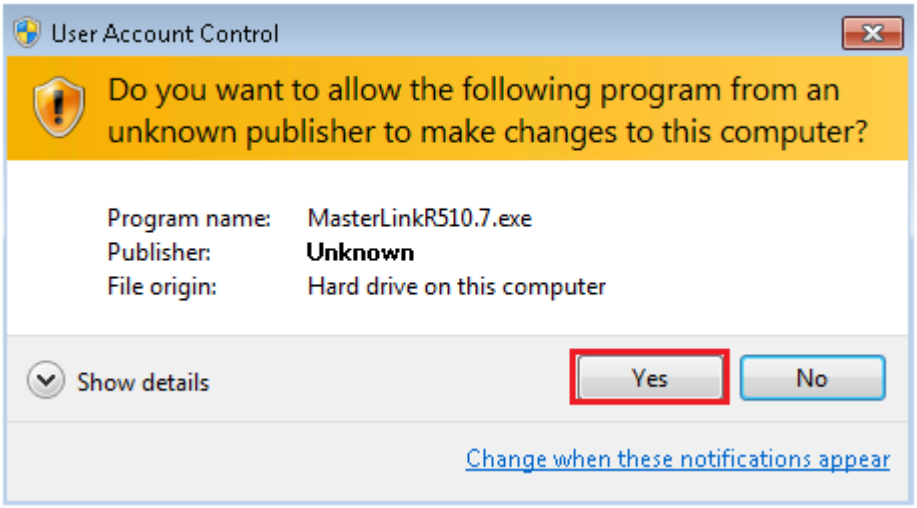
Note: Select the check box to view the Installer log.

2.5 Installing MasterLink with SQLite

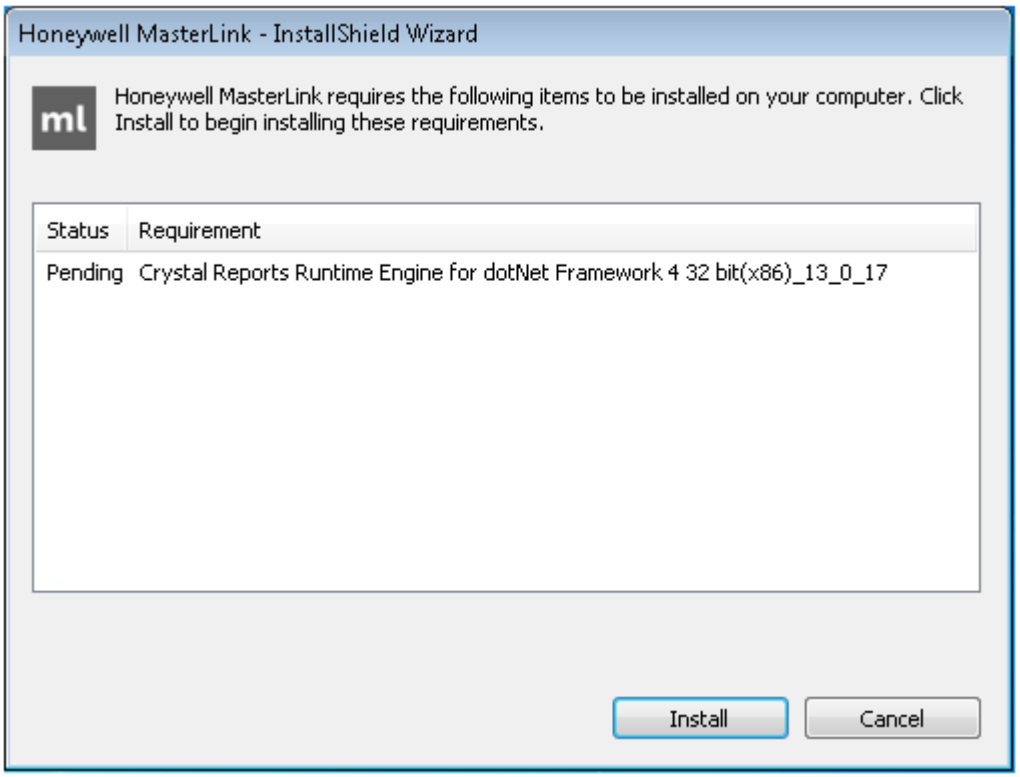
Prerequisites:

1. Administrative Privileges are required to install the application.
2. Ensure Masterlink.exe and Redist folder should be in the same path to avoid any errors on crystal report.

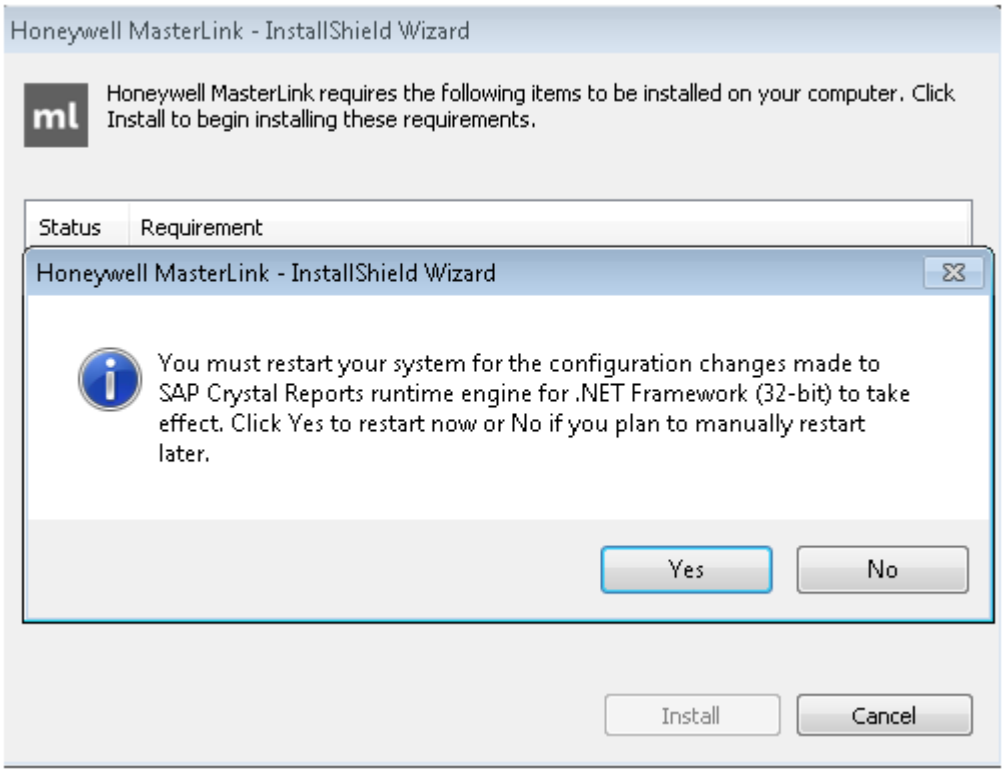
1. Right-click Setup file and then click *Run as administrator*. Allow the program to make changes to your computer by clicking Yes.



2. Click 'Install' to allow the Crystal Reports installation on your machine.

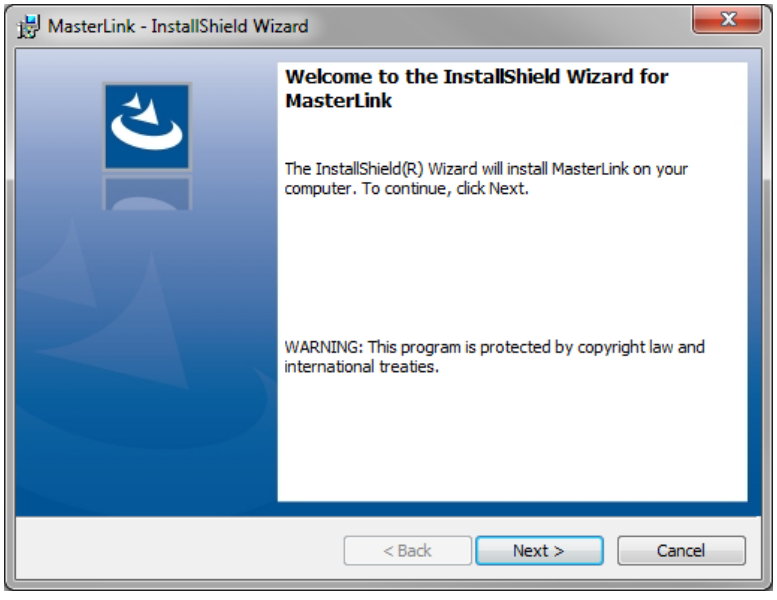


3. For smooth installation, click 'Yes' to allow the changes to be effective immediately.



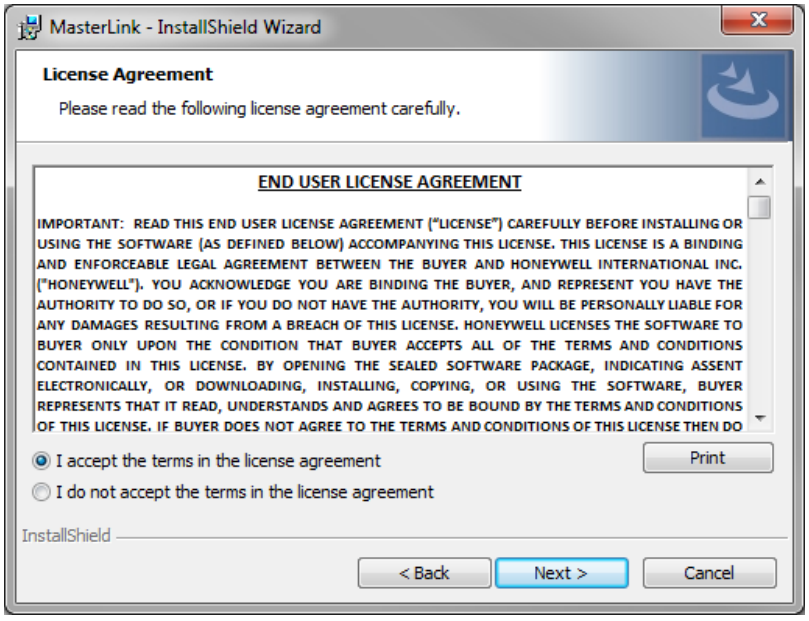
4. The *MasterLink - InstallShield Wizard* appears.

   Click **Next**.



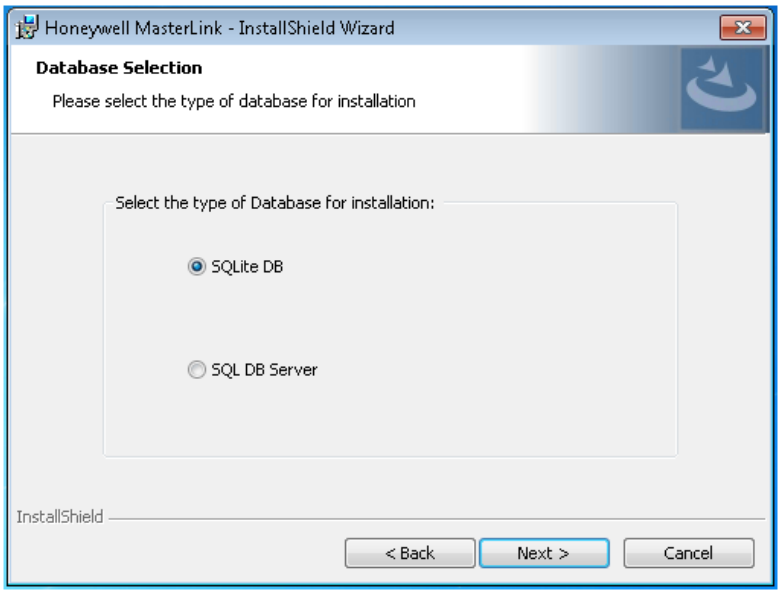
5. The *License Agreement* page appears.

   Click *I accept the terms in the license agreement* and then click **Next**.



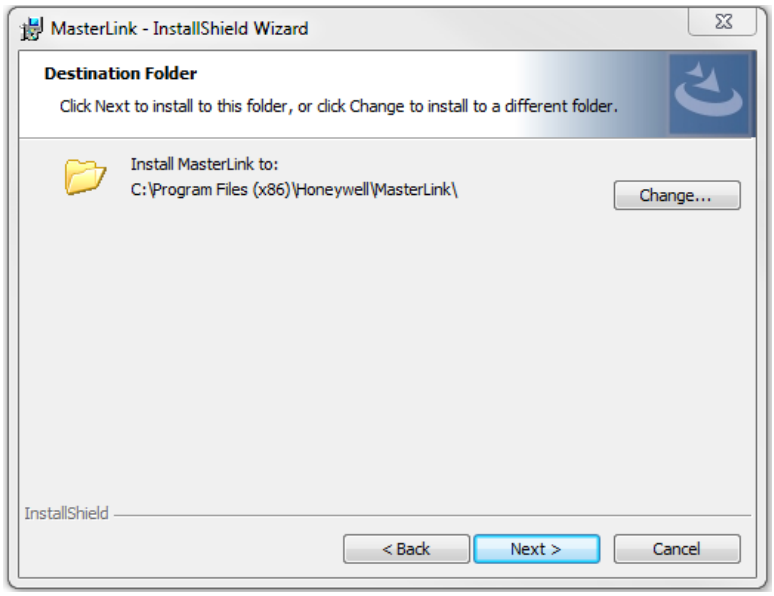
6. The *Database Selection* page appears. By default, SQL DB Server is selected. User is required to select SQLite DB.

   Click **Next**.

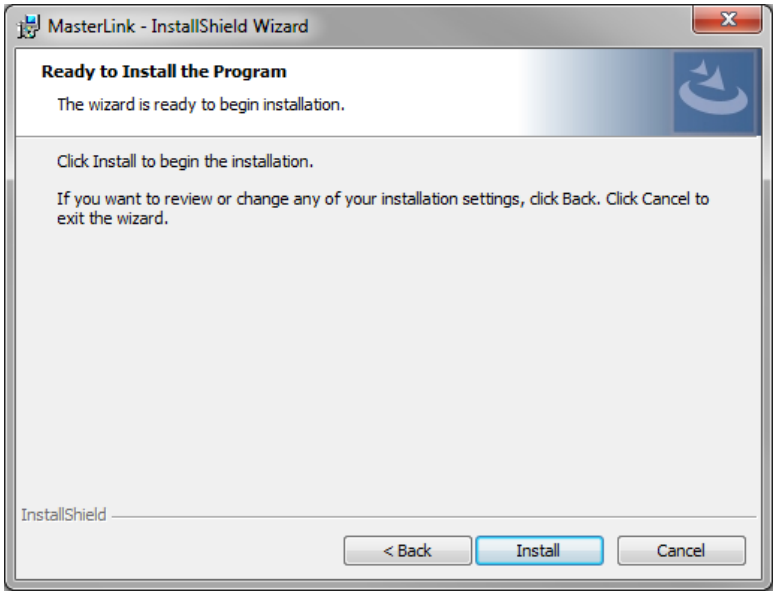


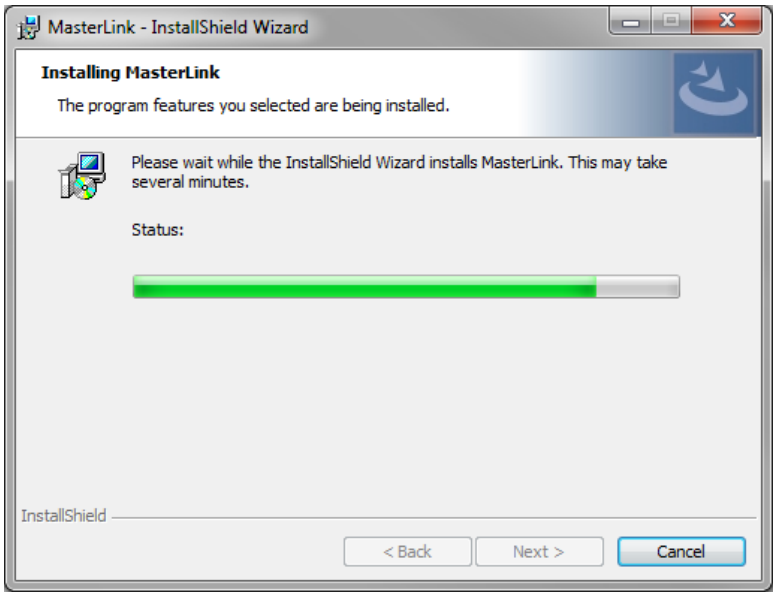
7. The *Destination folder* page appears, displaying information about the default destination folder.

   Click **Next**.

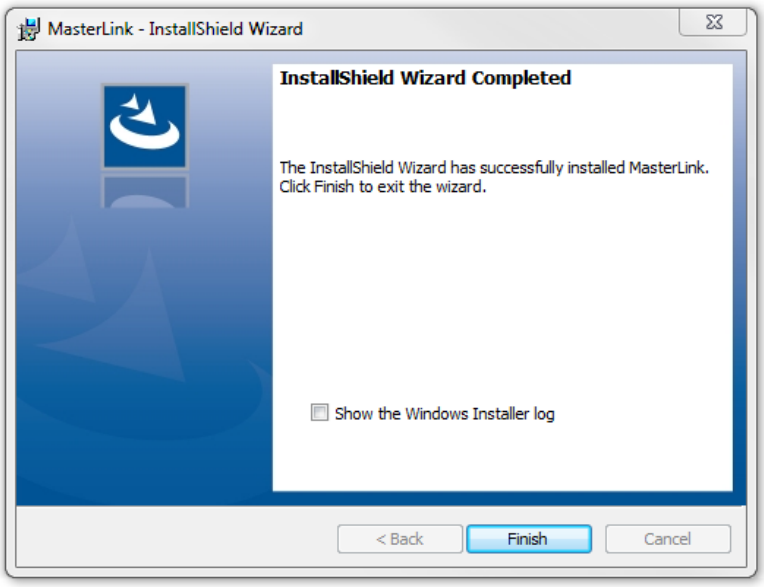


8. The *Ready to install the Program* page appears. Click **Install** to continue.





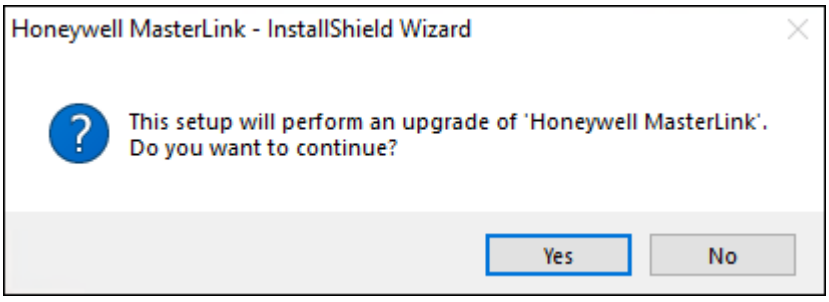
9. Click **Finish** to complete.



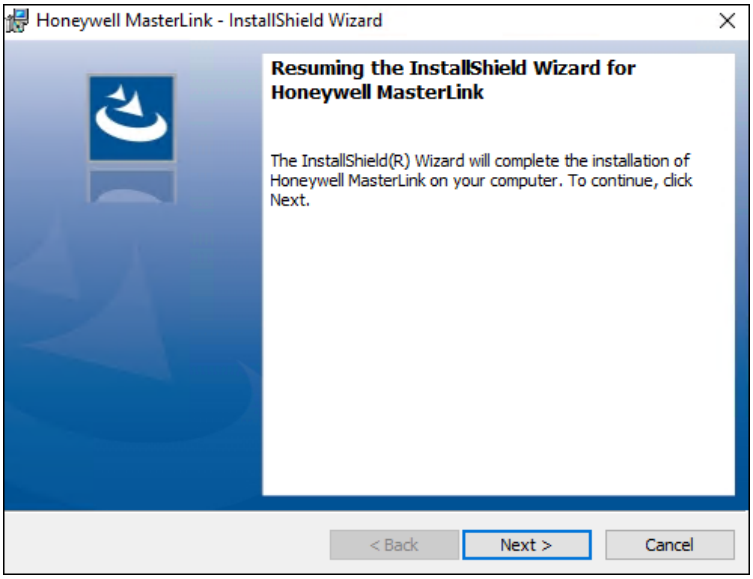
Note: Select the check box to view the Installer log.

2.6 Upgrading MasterLink with SQLite/ SQL Server

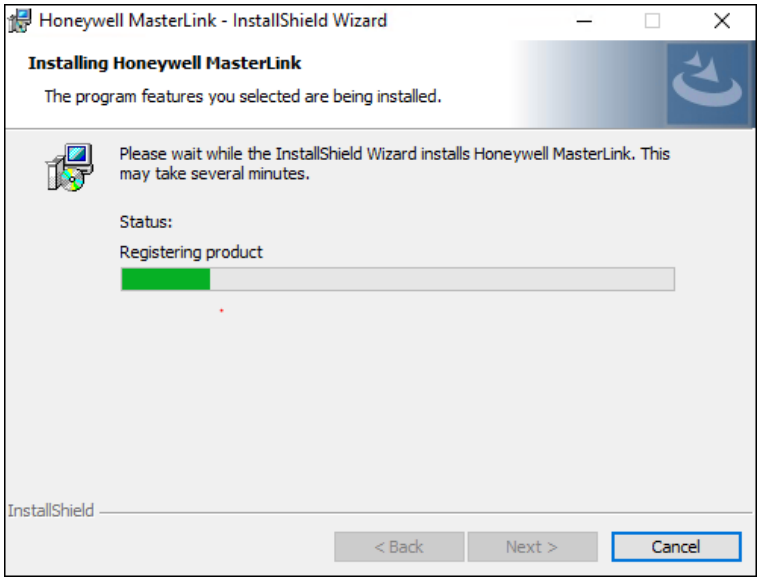
1. Right-click Setup file and then click *Run as administrator*. Allow the wizard to perform an upgrade to your computer by clicking Yes.



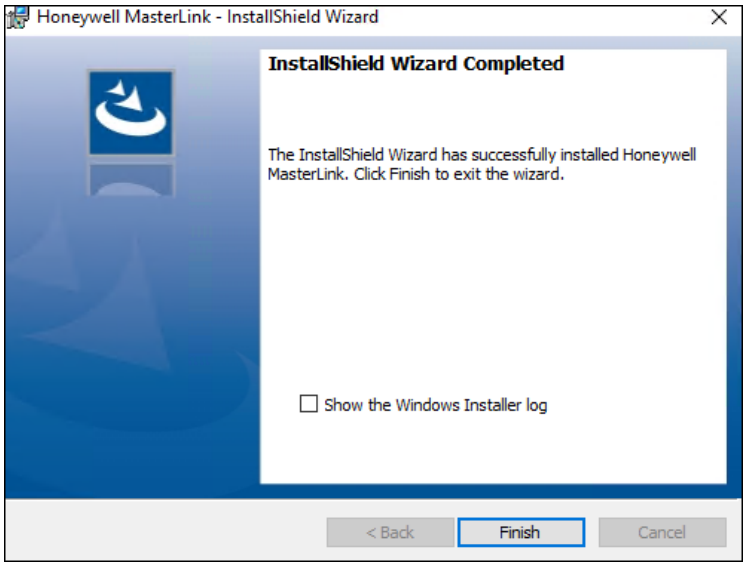
2. The *MasterLink - InstallShield Wizard* appears. Click **Next**.



View the download process in the progress bar.



3. Click **Finish** to complete.

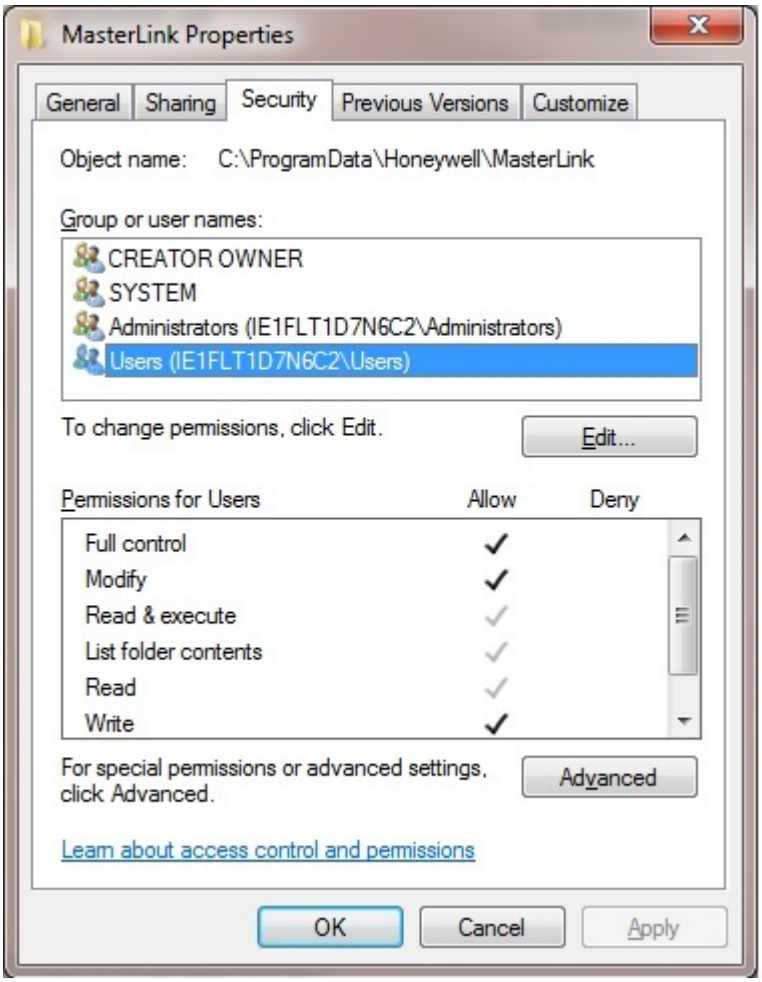


Note: Select the check box to view the Installer log.

2.7 Post Installation Steps

1. To log on to MasterLink application, users need access to C:\ProgramData\Honeywell\Masterlink. By default, all users under Users group has the required privileges.

   If a user falls under any other user group, then administrator should give “Full Control” privileges on folder “C:\ProgramData\Honeywell\Masterlink” for that particular user group.



If SQL server is used as a database while installing the MasterLink application, then all users who will use the application must be provided DBO access on SUITE32 database.

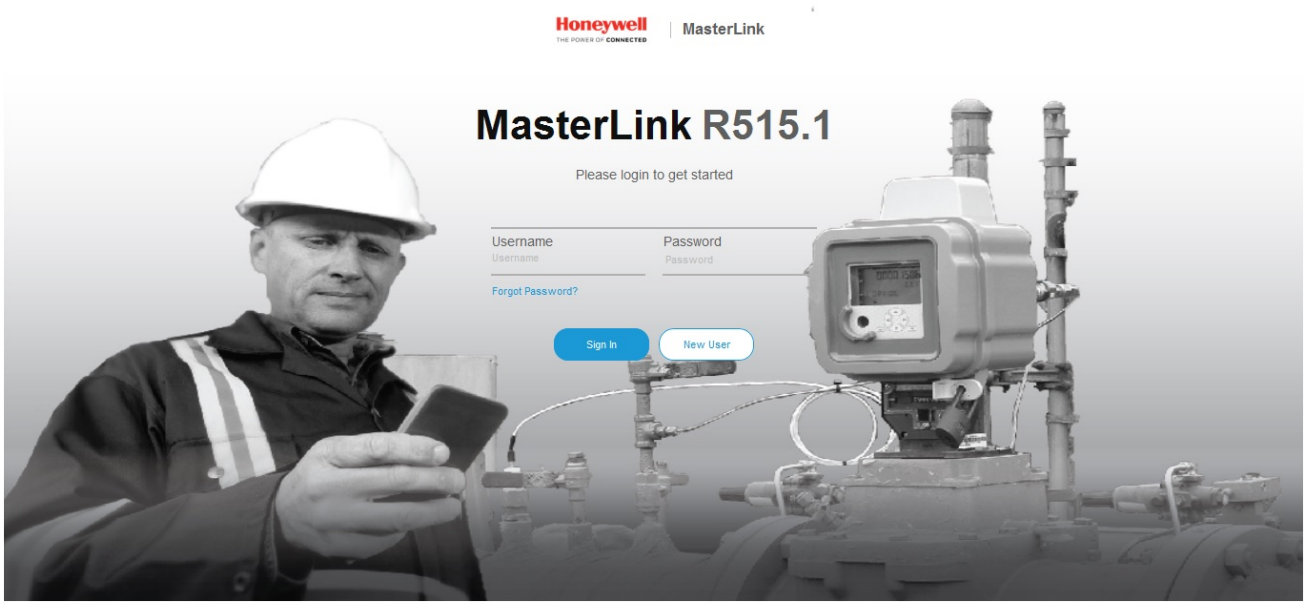
3 MasterLink User Interface

This chapter describes the steps of getting started with MasterLink. This chapter also explains the user interface along with the different features that are available in separate tabs.

DISCLAIMER: Please DO NOT compare or verify the software build number shown in this manual with the build that you are using. Special demonstration builds were used specifically to capture screenshots for this manual, and so the build number may differ from the version that you are using.

3.1 Getting Started

On launching the MasterLink, you will see a screen to log on.



3.1.1 User Creation and Activation Process

To start using MasterLink Application, one must create a Site Administrator user who can in turn create multiple users with different privileges based on the business requirements.

3.1.1.1 Site Administrator Creation

The Site Administrator must initially get a MasterLink license from Honeywell Process Solutions. This license key can be used to register a Site Administrator in the MasterLink Application. Contact TAC team to get your license key.

3.1.1.2 Creating Users

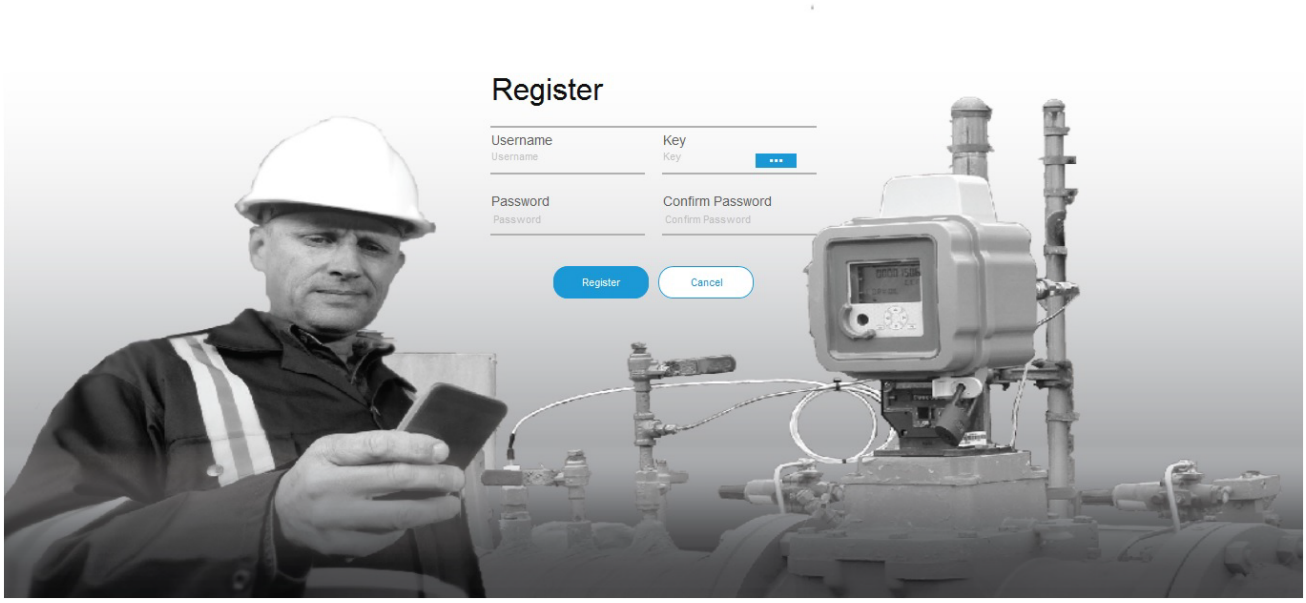
After the site administrator is registered, they can create new users using Security feature. To know more on passkey generation refer to User Configuration.

For individual user, the generated license key must be emailed to the respective users allowing them to register and start using MasterLink application.

3.1.1.3 User Registration

For a first time user, click **New User** and register. User is required to register with license key provided by the site Administrators. The **User name** you enter while registering must match with the user name used while creating the license key.

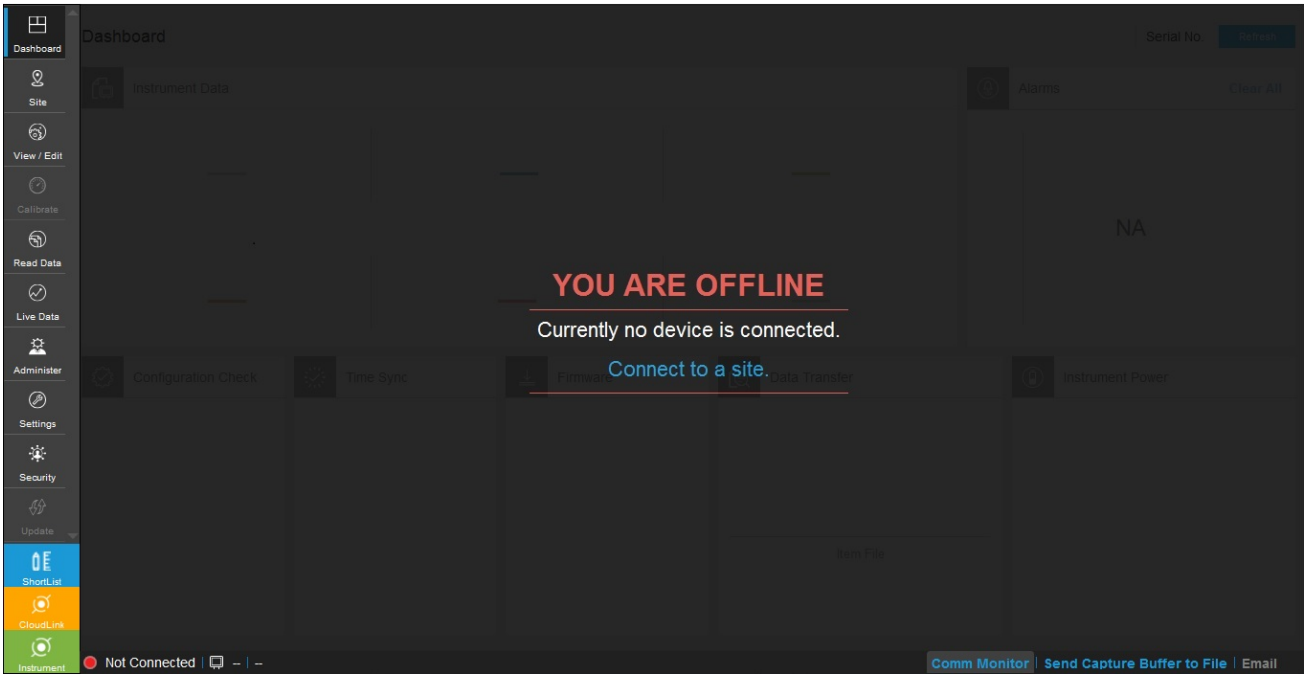
Enter the log-in details, browse and select the license key, and then click **Register**.



The Login screen appears.

Log on with your credentials. Click Sign In.

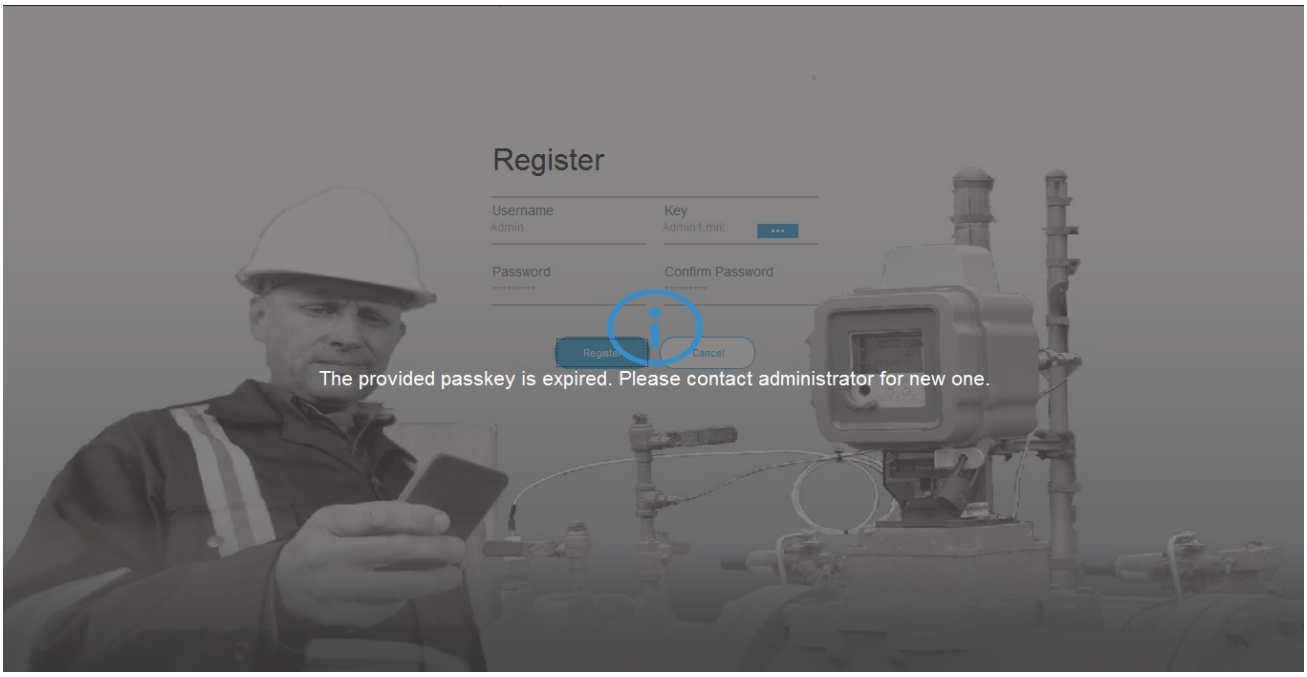
The following screen is displayed:



Refer **MasterLink Installation Guide** for understanding the prerequisites and installation instructions.

MLK files (license key) generated with MasterLink Old Release (R510.1, R510.2, R510.4 till Build 11.1.39) will not work with Release R510.4 Build 11.1.41 onwards.

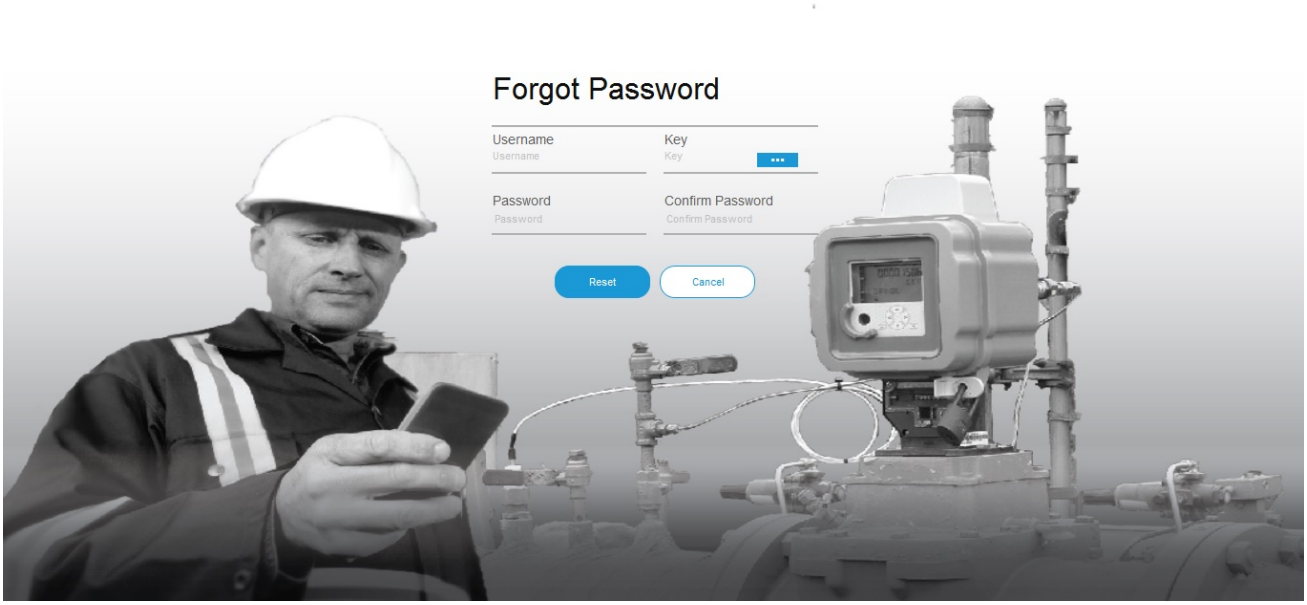
The following error appears if you are using the old license key.



3.1.1.4 Forgot Password

If users forget their password they can reach out to the site Administrator for a new passkey. Once the key is received, users can reset their passwords by clicking the Forgot Password link. The Forgot Password screen appears.

Enter your user-name, browse and select the license key, and finally enter your new password. Click **Reset** to log-in with the new password.



3.2 Sites

The 'Sites' screen lists all sites configured in the MasterLink application. A Site refers to a field instrument such as:

1. Accutest	10. ERX 350 + CloudLink Modem
2. CloudLink Modem	11. Mini
3. CNI4	12. Mini-AT
4. EC 350	13. Mini-Max
5. EC 350 + CloudLink Modem	14. PT Modbus
6. ECAT	15. Pulse Accumulator
7. ER	16. TCI
8. ERX	17. Turbo Corrector
9. ERX 350	18. Turbo Monitor

The user can also add a new Site, as well as edit or remove an existing Site. From the 'Sites' screen, users can connect to a device deployed on the field.

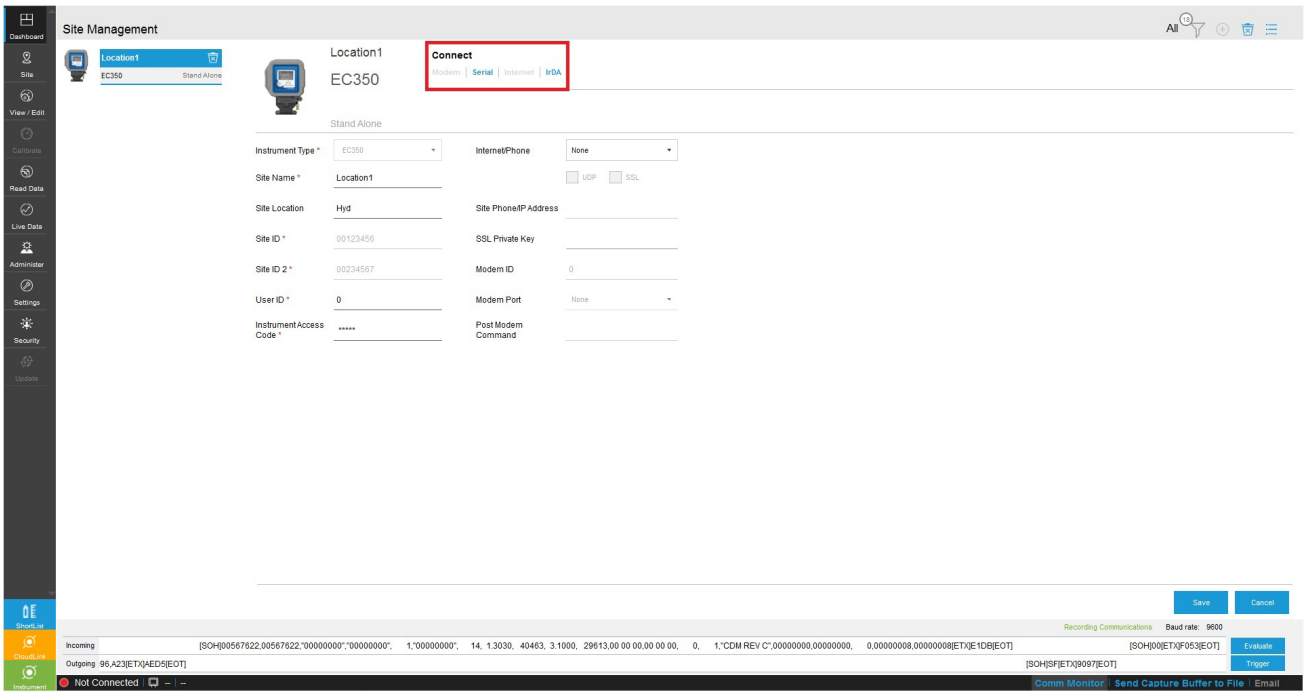
This section describes the steps to configure and add a site to MasterLink. It also explains how to connect and communicate with existing sites.

Note: In Coexistence scenario, any CloudLink related sites that are added using New Master link will be displayed as “Unknown” sites in MasterLink.

Note: By Default, EC 350 will be selected in Instrument Type drop-down.

3.2.1 Add Site

In the 'Site Management' screen, you can configure and connect to site.



Site can be connected and configured over the following interfaces based on deployment (device type):

	Serial	IrDA	Modem	Internet*
Accutest	✓	×	✓	✓
CloudLink	✓	×	×	✓
CNI4	✓	×	×	✓
EC 350	✓	✓	✓	✓
EC 350 + CloudLink	✓	✓	×	✓
ECAT	✓	×	✓	✓
ER	✓	×	✓	✓
ERX	✓	×	✓	✓
ERX 350	✓	×	✓	✓
ERX 350 + CloudLink	✓	✓	×	✓
Mini	✓	×	✓	✓
Mini-AT	✓	×	✓	✓
Mini-Max	✓	×	✓	✓
PT Modbus	✓	×	✓	×
Pulse Accumulator	✓	×	✓	✓

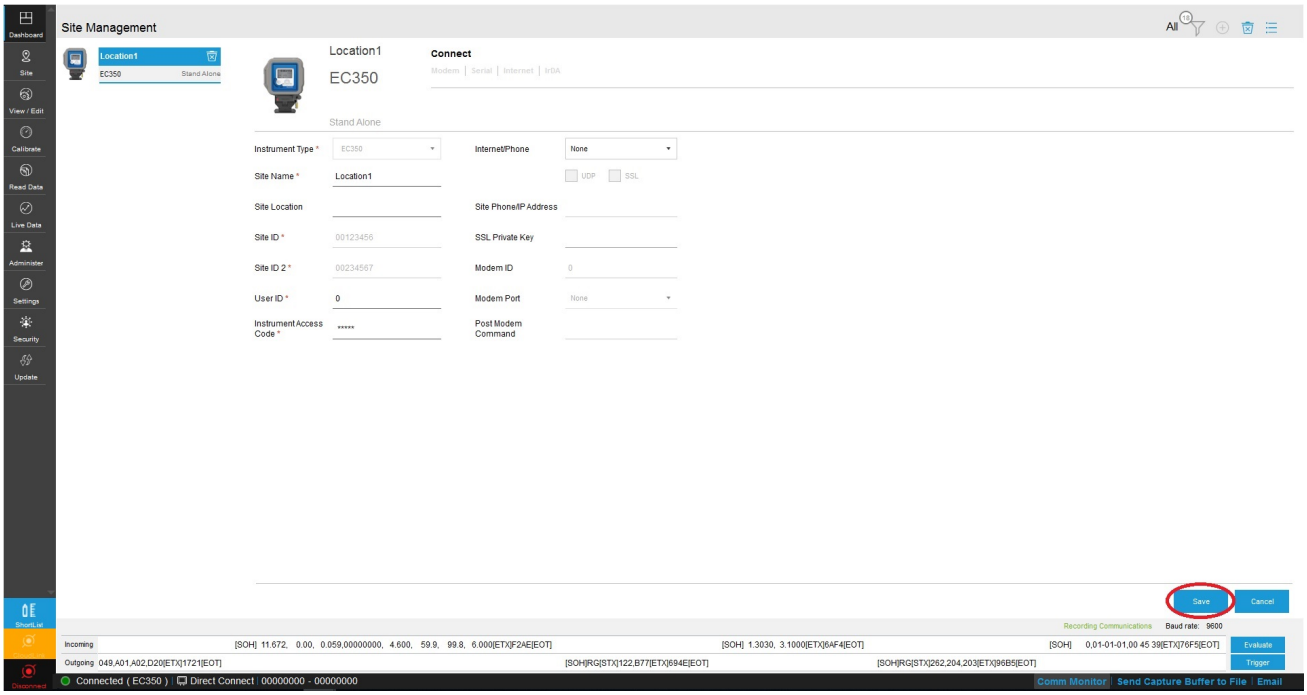
	Serial	IrDA	Modem	Internet*
TCI	✗	✓	✗	✗
Turbo Corrector	✓	✗	✓	✓
Turbo Monitor	✓	✗	✓	✓

* Assuming that a cellular modem is being used.

Note: Before adding a new site, ensure that you have configured your communication settings under Settings > Communications Setup.

Click the **'+' icon** on the top-right corner of the screen to create a new site or a field device. This function is used to add site information to the Site List.

Configure the site details and click **Save**.



Attention: In integrated mode, Site IDs must be identical for device and modem. (If you are using EVC or Recorder's Site ID with 8 digits, then Modem ID should be Last 6 digits).

Also, an integrated site must be added in 'Integrated' mode only. Otherwise only the CloudLink modem will be added as a site followed by a sync with the central server. A Site once created and synced with the central server cannot be deleted from the server. However, the site can be deleted from Technician's mobile app.

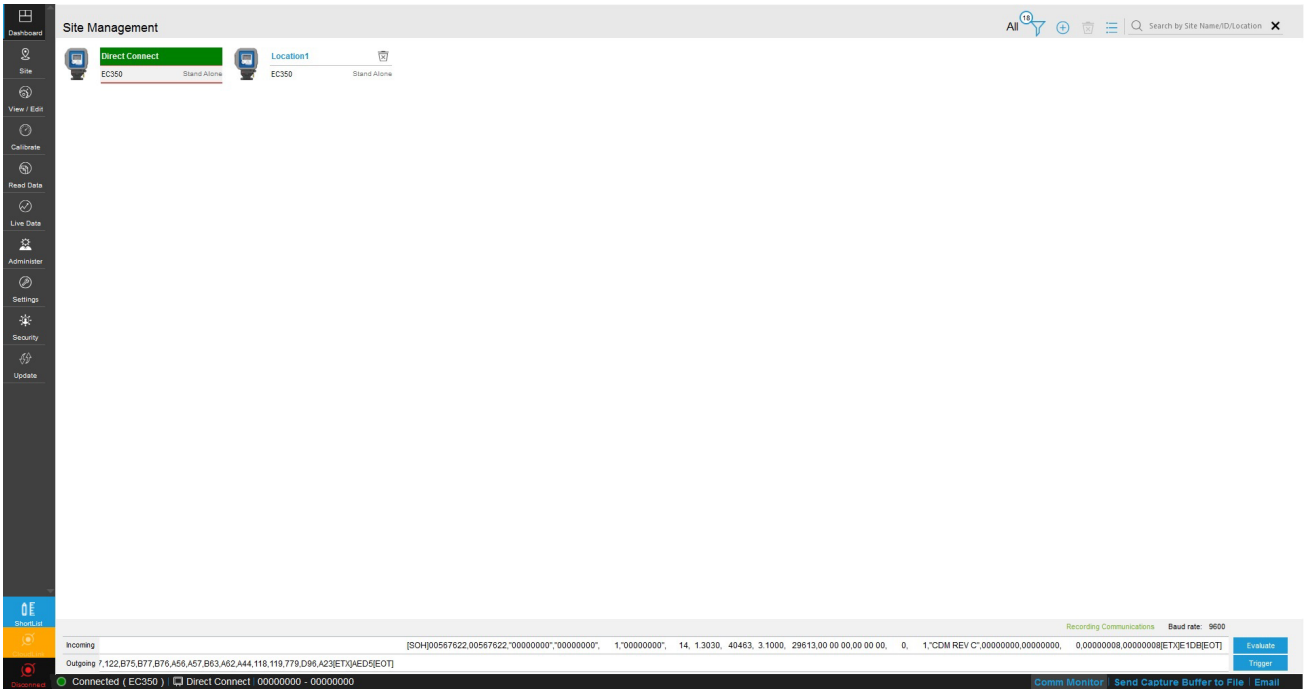
Attention: Site IDs must not be changed after it is synced with the central server. If the Site ID is changed after the sync, then the mobile iOS app may not work as expected.

While adding an integrated site, the EVC or Recorder's site IDs will be shown as Site IDs of integrated sites. The CloudLink modem's Site ID will not be displayed as the Site ID of the integrated

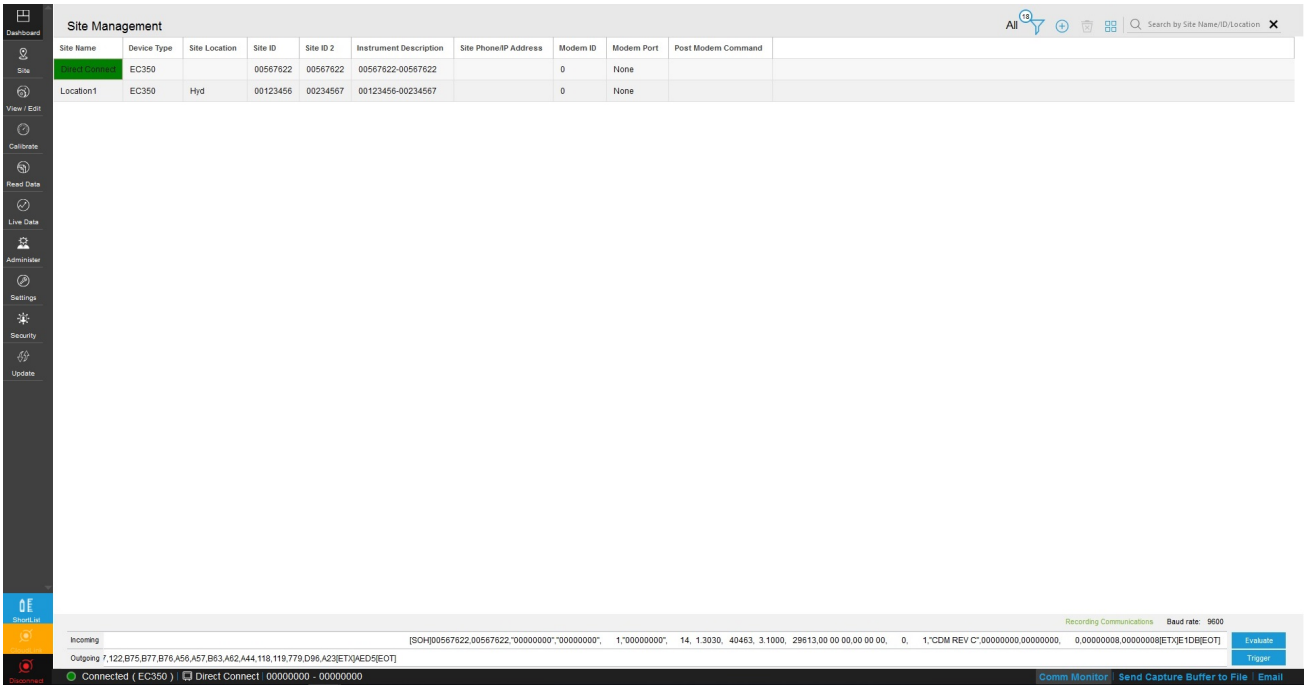
site. However, the Site ID of the CloudLink modem will still be used to scan and detect the integrated site.

The 'Site Management' screen has 2 views:

1. Tile View:

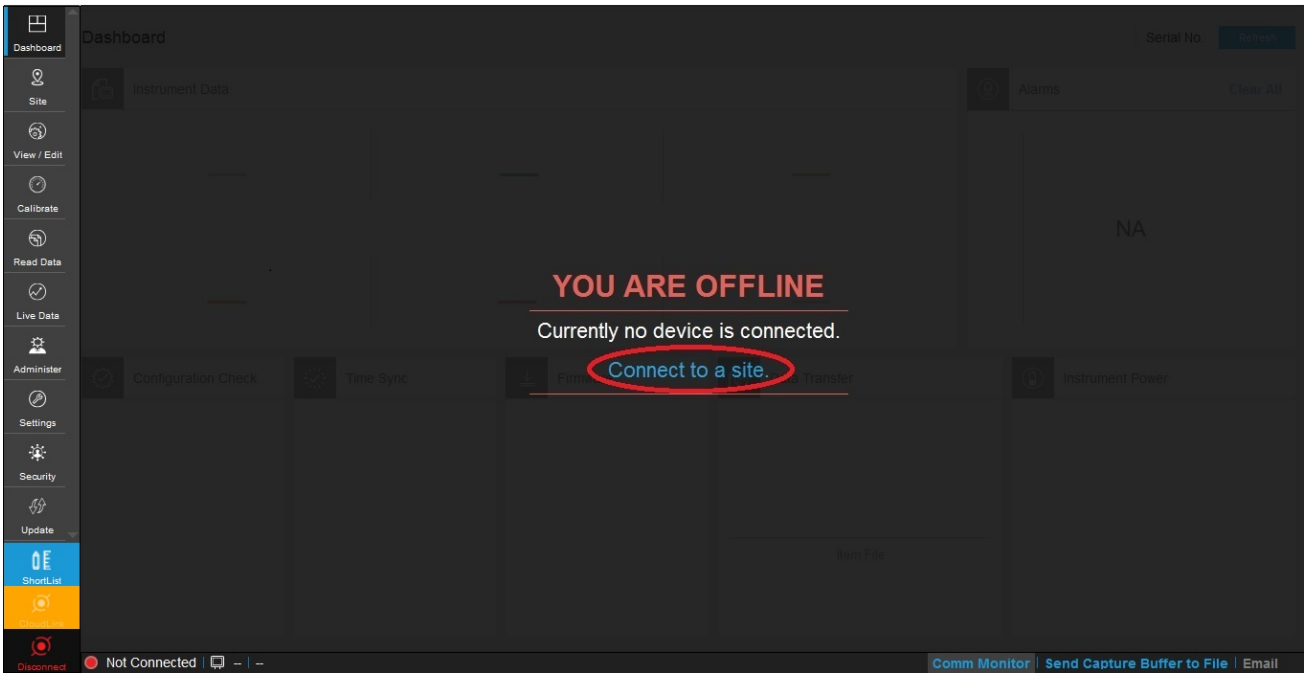


2. List View:



3.2.2 Connecting to a Site

When you log on to MasterLink and if you are NOT connected to a site or a device, you will see the following screen.



Click on the **Site** tab or the **Connect to a site** link to get started.

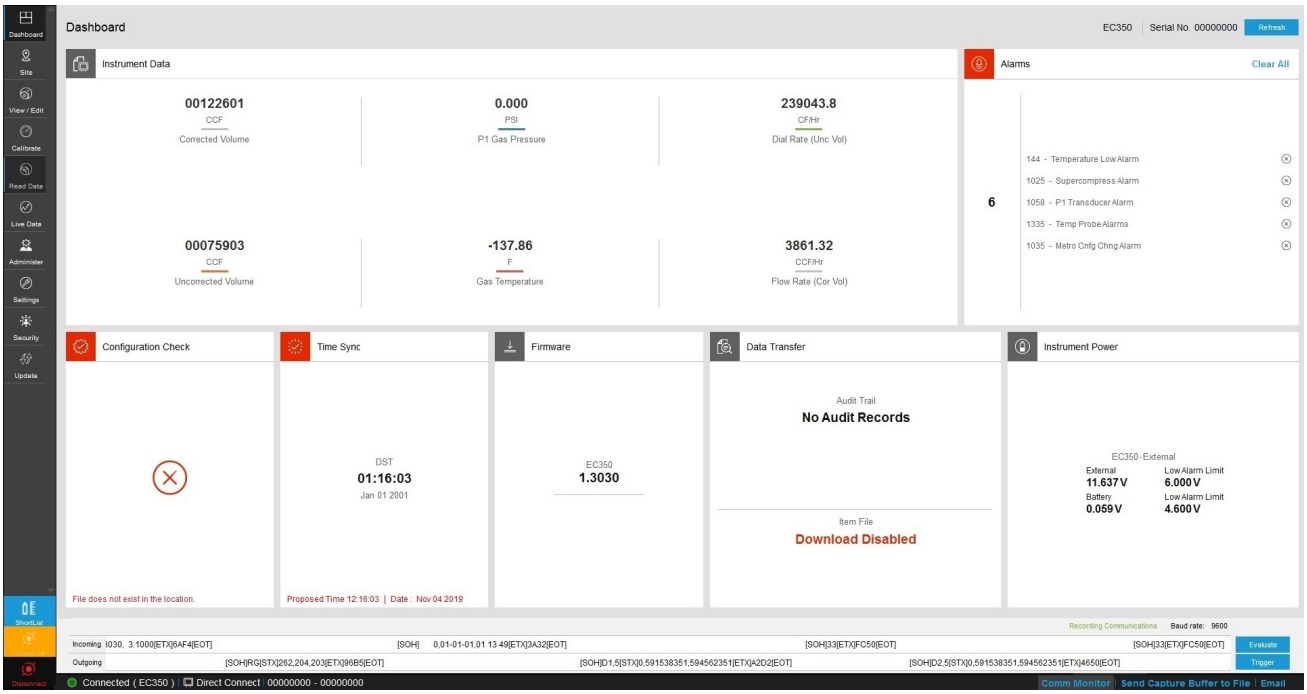
Configured sites can be connected using the **Site/Site Management** screen of MasterLink.

> **Note:** To connect an instrument through serial interface or modem configure the communication settings in the Settings tab.

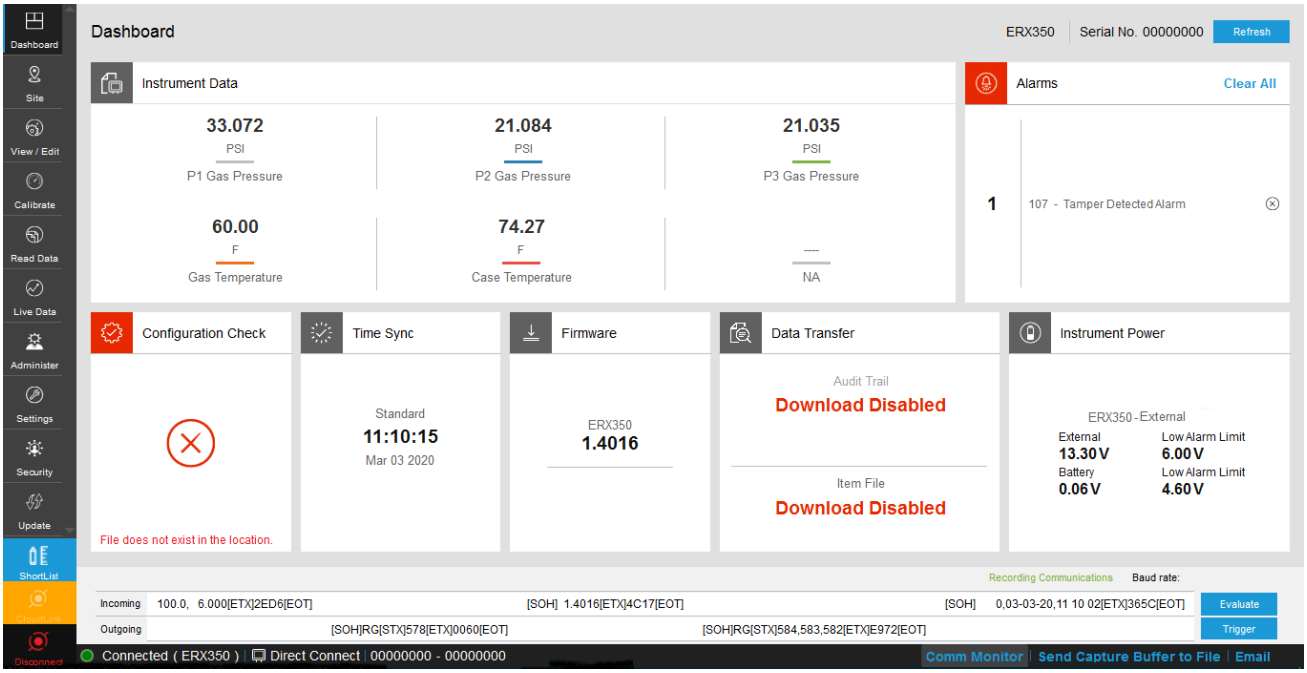
After successfully connecting to the device, the dashboard starts downloading the data.

> **Note:** It is recommended that the user waits till the dashboard data is loaded.

EC 350 Dashboard:



ERX 350 Dashboard:



Note: Panels with red icons indicate that user attention is required.

3.2.3 Direct Connect

The 'Direct Connect' feature lets the MasterLink connect to a site which is physically connected to a computer. The Direct Connect functionality works based on the serial port or IrDA settings configured under Settings > Communications Setup.

To connect a device:

1. Physically connect the instrument using a serial or IrDA interface.
2. Configure the required communication settings, go to Settings > Communications Setup.
3. Configure the user specific User ID and Access Code, go to Settings > Device Properties
4. Click **Connect** located at the bottom left. The device will be connected and the dashboard starts loading.

In case of integrated device, for example CNI4 (Pulse Accumulator + CloudLink Modem). If MasterLink is able to connect to Pulse Accumulator only and not the CloudLink Modem, then the dashboard loads only the with the Pulse Accumulator data and notifies users that it could not connect to CNI4. This scenario arises if the site is already added as CNI4, but only the Pulse Accumulator is connected. In this case, If the site is not already added, MasterLink will just treat the connected device as standalone Pulse Accumulator.

3.3 Dashboard

On successful site connection, dashboard data gets loaded automatically based on the 'Auto Download Settings'.

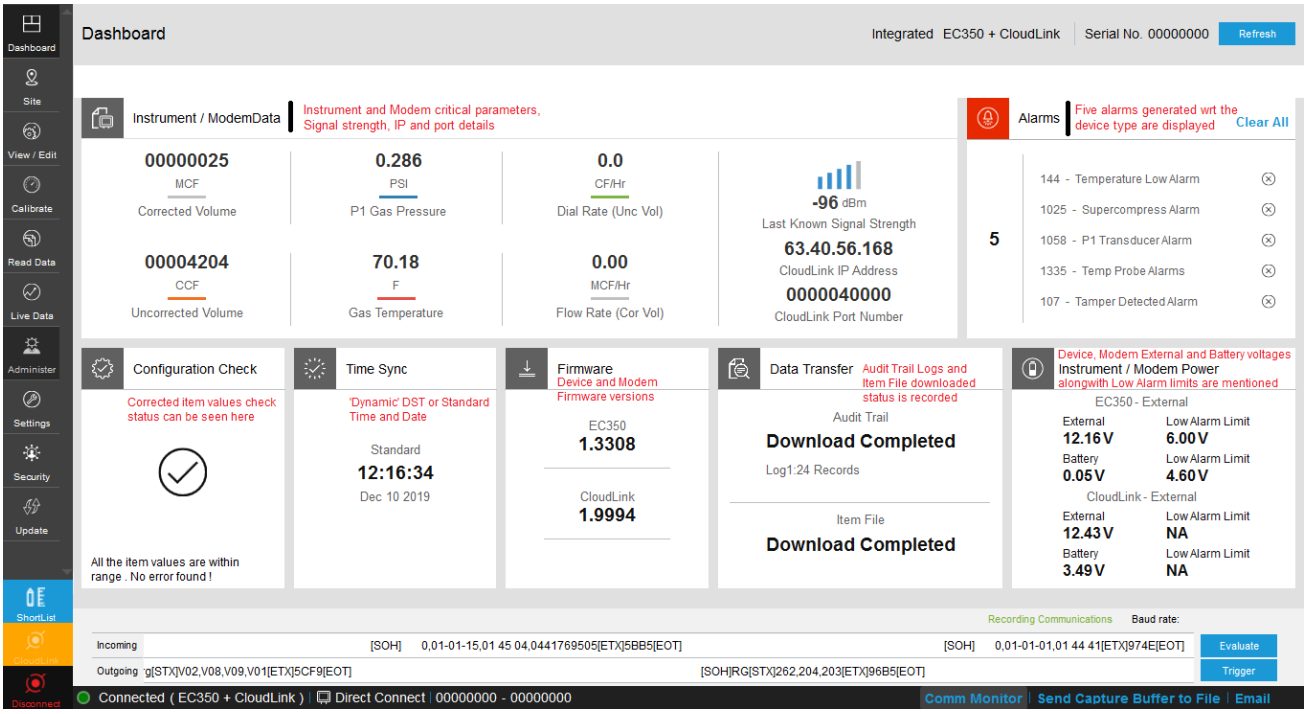
Dashboard has various panels that show current data from the connected site. User can further drill down to see relevant data by clicking on respective panels. The dashboard automatically reads and displays the following data:

1. Critical instrument data
2. Active alarms
3. Configuration checks based on the item template file
4. Time Sync
5. Firmware
6. Audit Trail data
7. Instrument/Modem Power

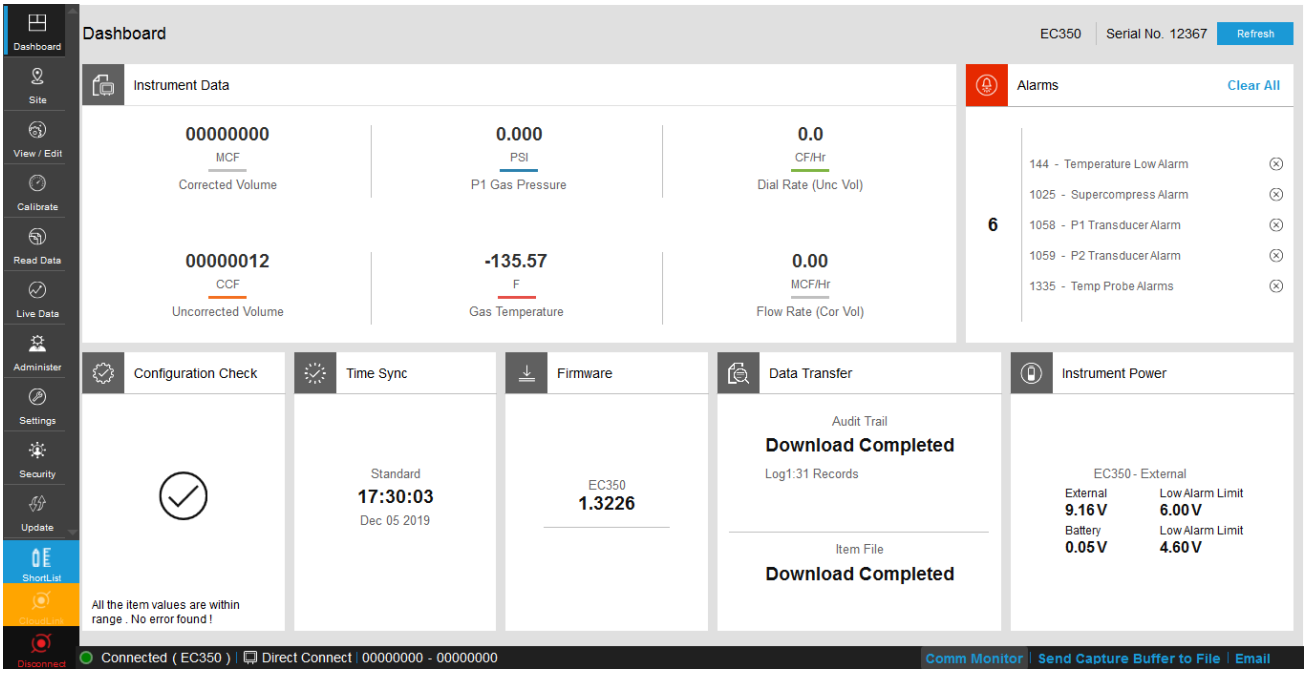
Using Data Download Settings, you can configure the dashboard data and as per your requirement.

> **Note:** The instrument data can vary based on the connected device type.

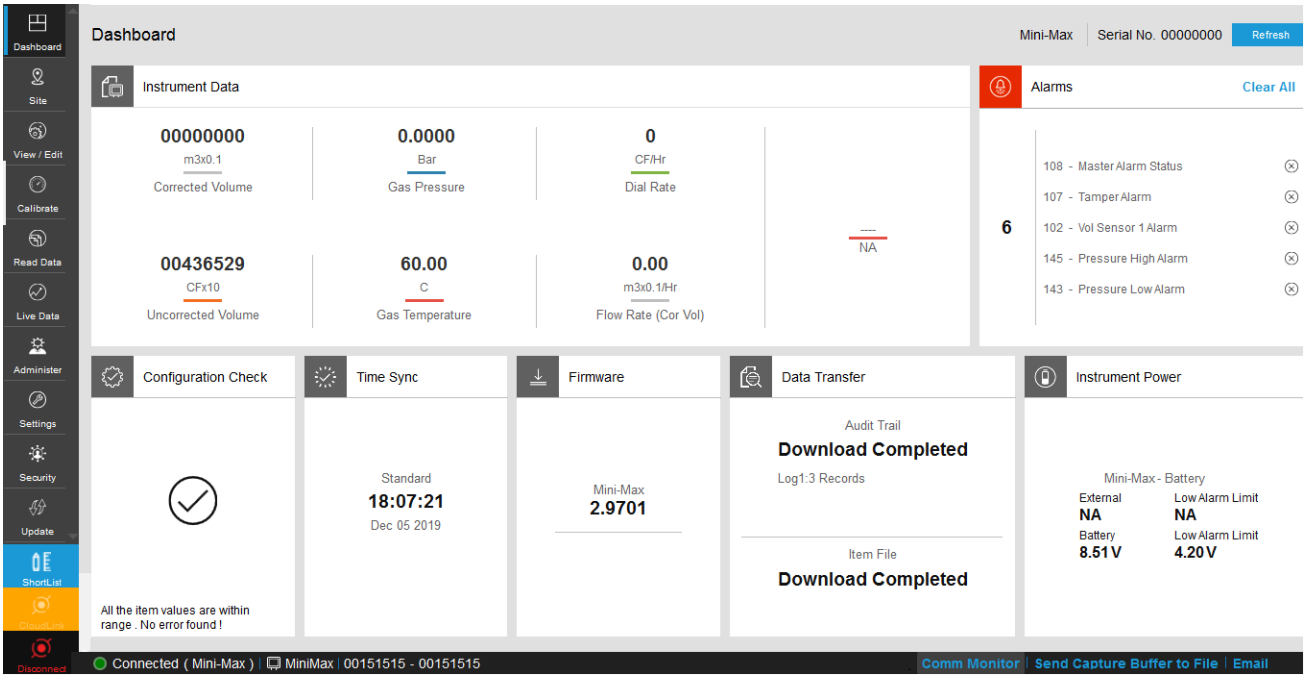
EC 350 + CloudLink Modem Dashboard:



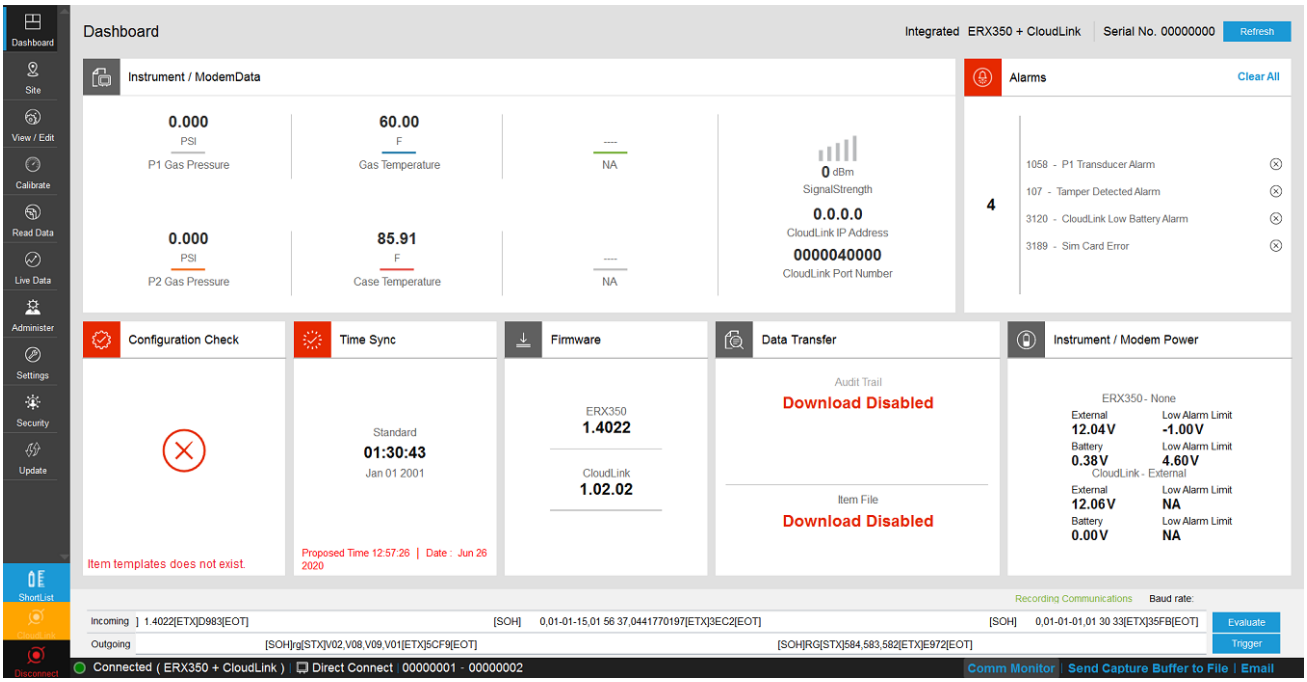
EC 350 Dashboard:



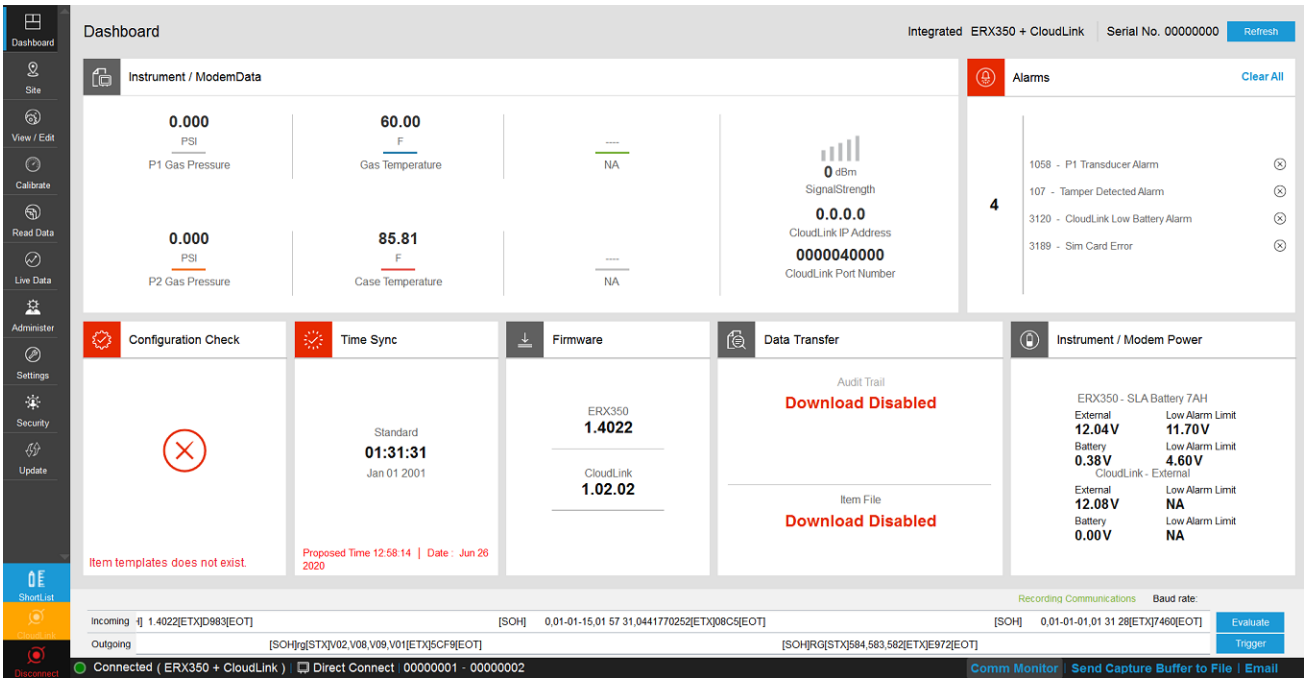
Mini-Max Dashboard:



ERX 350 + CloudLink Modem Dashboard when the device is externally powered:



ERX 350 + CloudLink Modem Dashboard when the device is battery powered:



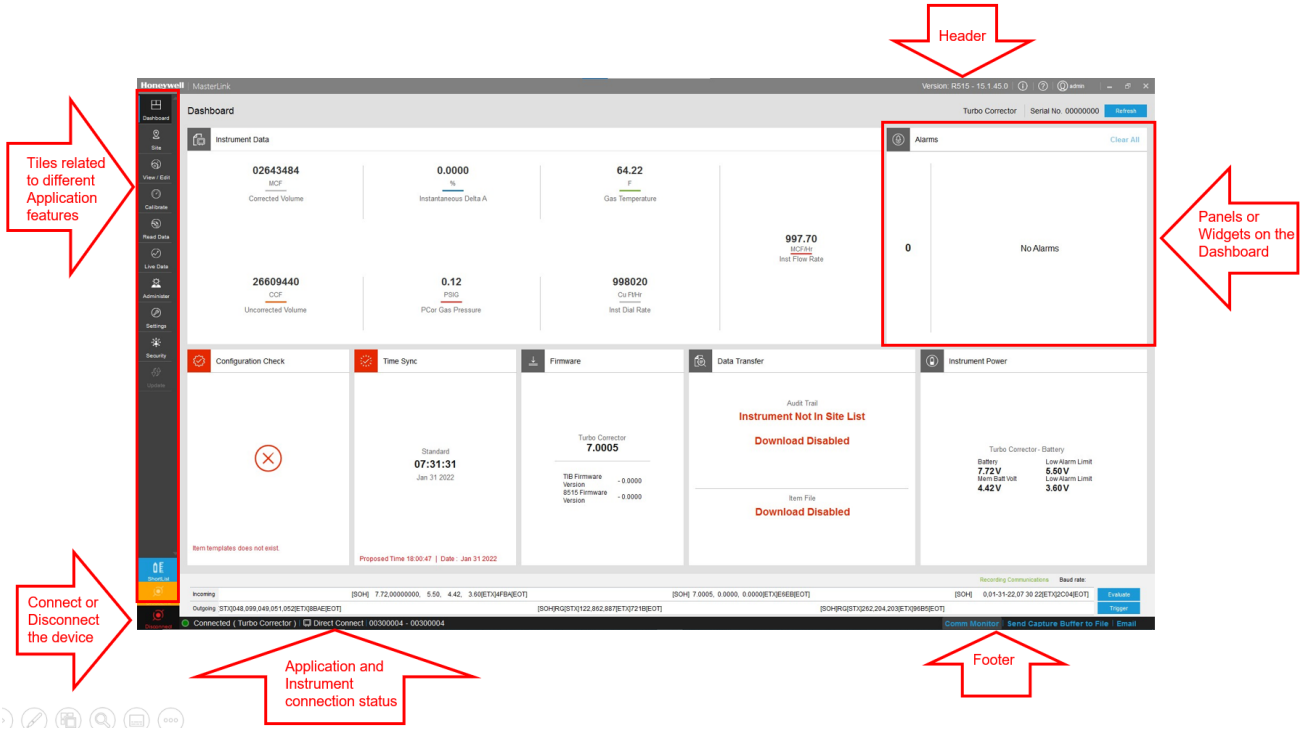
3.3.1 User Interface

User Interface consists of the following sections:

> **Note:** You can now connect to an Instrument and Modem with dedicated settings via Instrument and CloudLink buttons on the left pane of the dashboard.

CloudLink - You can connect to CloudLink Modem directly by setting the necessary configurations in Settings -> Communications Setup option.

Instrument - You can connect to an Instrument i.e., EC 350. ERX 350, Mini-AT, Integrated (EC 350+CL) etc.. directly by setting the necessary configurations in Settings -> Communications Setup option.



Tiles related to the application features include:

Header contains:

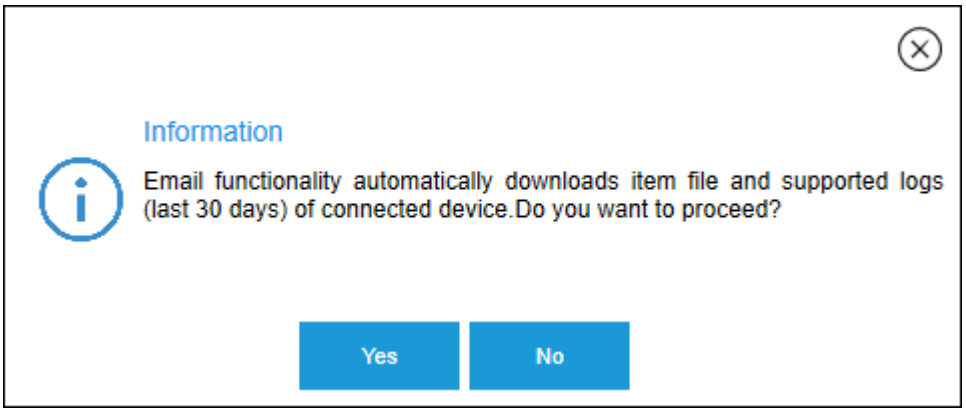
- MasterLink application number
- About MasterLink button
- MasterLink Application help button
- User account button

Footer contains the following information:

Icons	The icons displayed on the footer are used to illustrate the following:

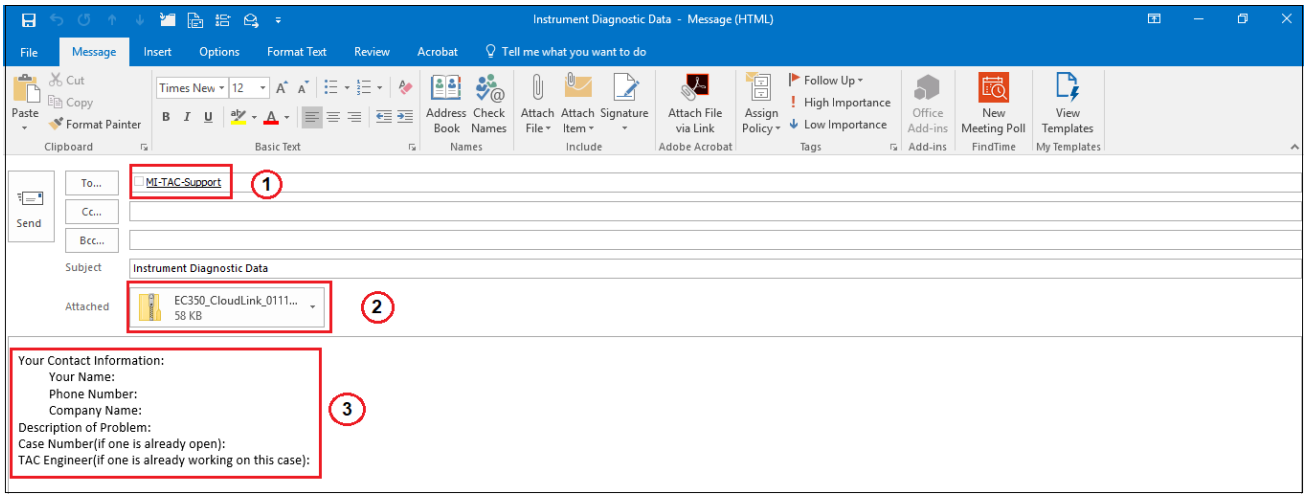
	- Not connected to any site, - Connecting to a site, - Connected to a site
Comm Monitor	Displays all the communications (command/responses) between Master-Link application and the connected site.
Send Capture Buffer to File	Allows the user to save all the communication into a file for analysis.
Email	This is ONLY available in online mode or connected mode. Allows you to email a set of files to the TAC support team MI-TAC-Sup-port@Honeywell.com.

After an active connection is established and once the dashboard is downloaded click on **Email** option, a pop-up window appears as below:



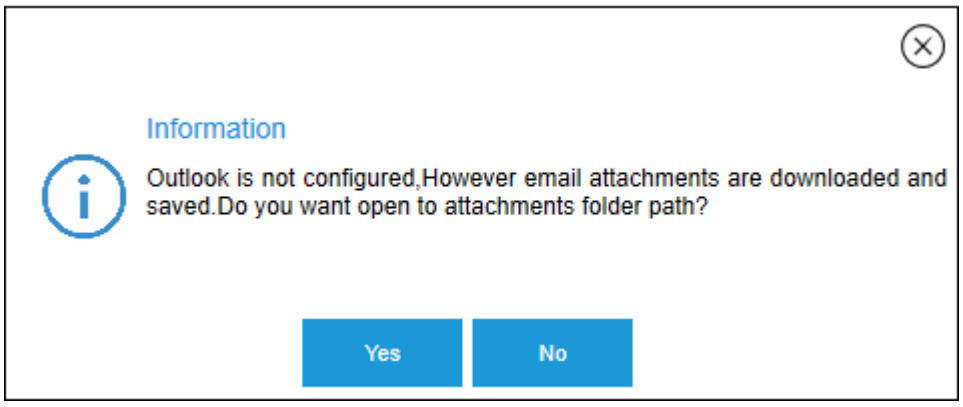
Note: This Email option is an Outlook functionality. User should be outlook configured before proceeding with this option.

Click 'Yes' if you wish to proceed else 'No'. Once you proceed further, you will be redirected to Microsoft Outlook message window. This email will be sent to TAC Support team with minimal sender details which is a mandatory fill before sending to the TAC Support.



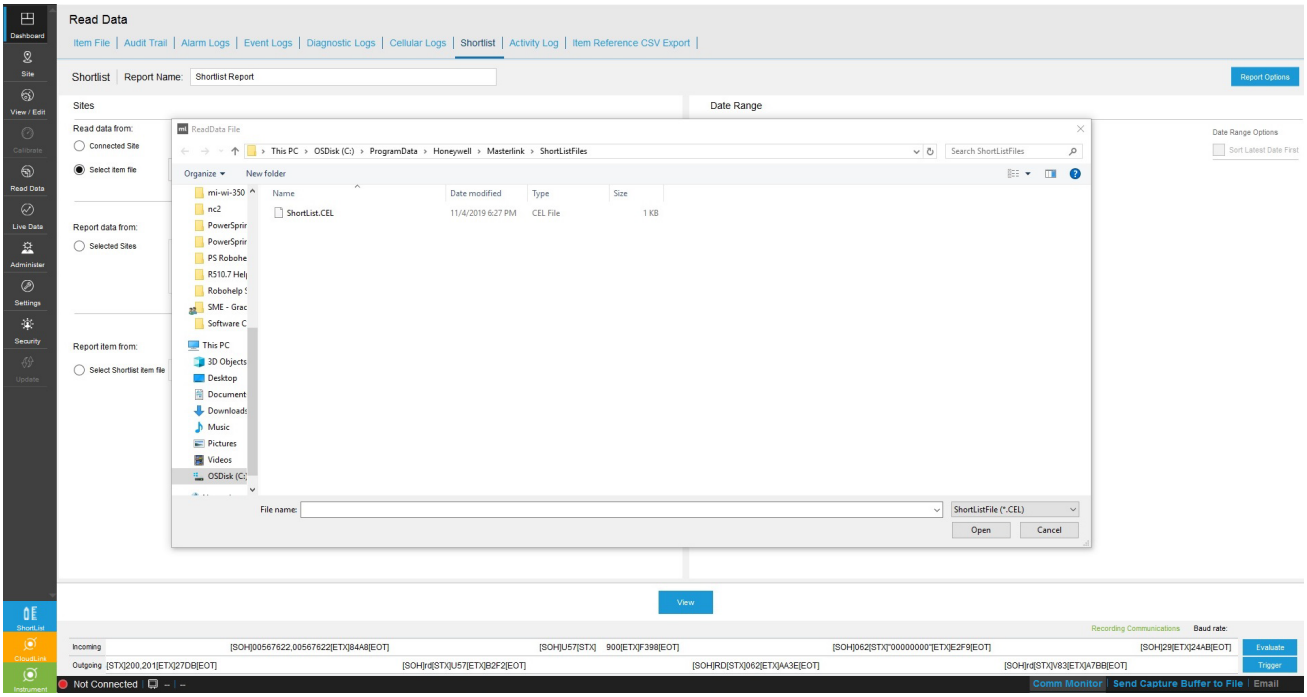
1. Email is auto directed to TAC support email communication address.
2. Set of files (Item, alarm, event, diagnostic and audit logs) zipped to be sent as an attachment.
3. Mandatory minimal contact details to be filled by the sender before sending the Email.

When outlook is not pre-configured in your machine, the below pop-up screen appears.

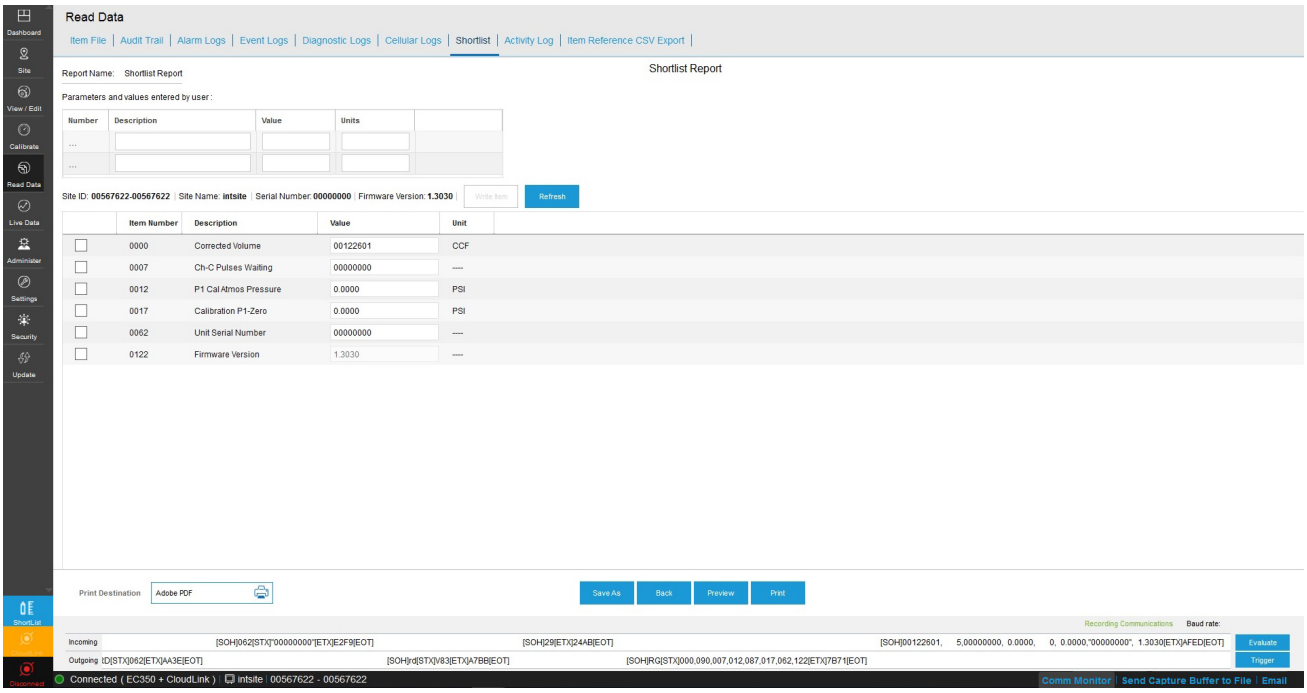


You can save all the file attachments in the pre-defined folder path : C:\ProgramData\Honeywell\Masterlink\Email. As the outlook is not configured, you can only save the documents but, not send them.

When you click the **ShortList** button, MasterLink will automatically connect to the site and opens the Shortlist tab. Also, a **ReadData File** window opens, where you can select the Shortlist file based on which a Shortlist report is generated.

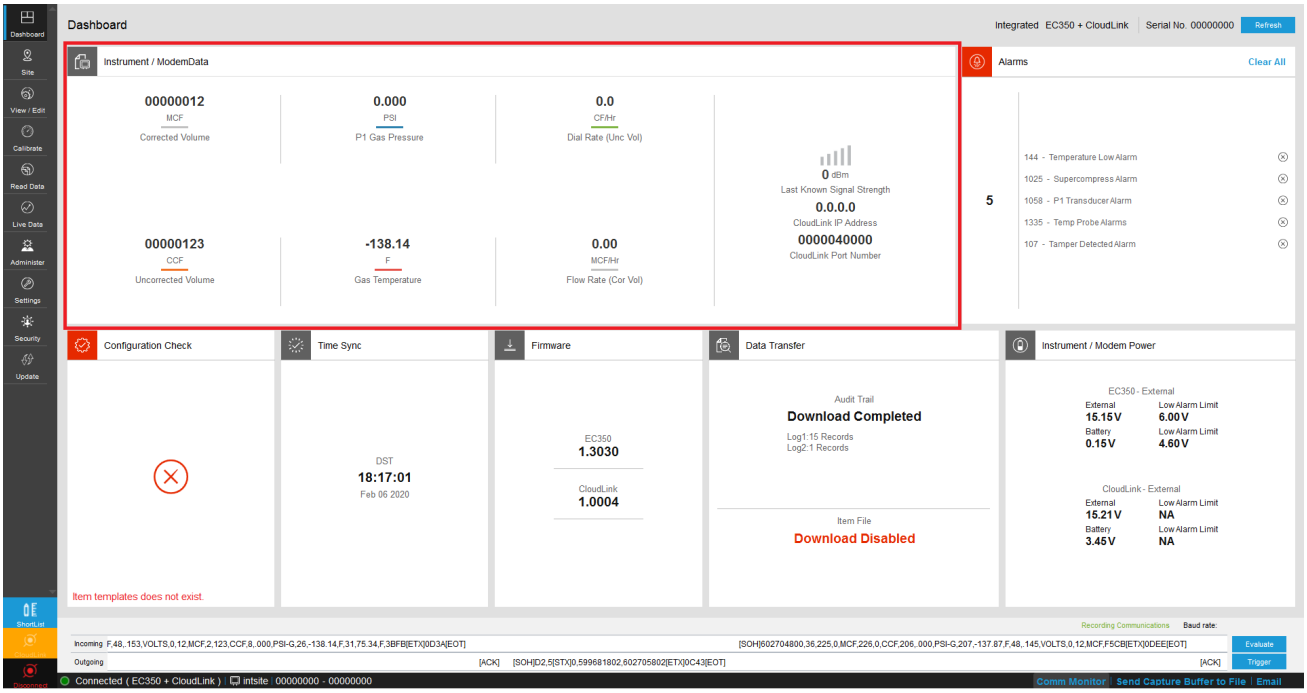


After opening the shortlist file, the following screen appears.

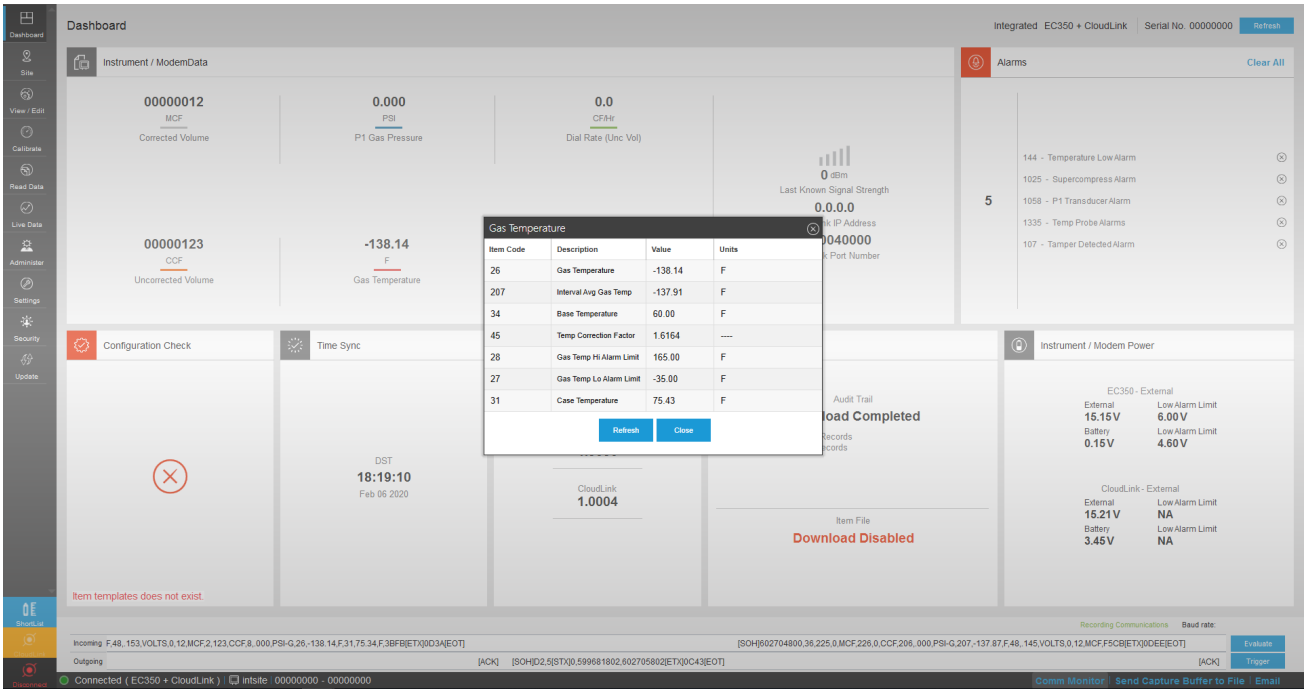


3.3.2 Instrument Data

The Dashboard shows current instrument data from the connected site. This data is read from the instrument and displayed under the **Instrument Data** widget.

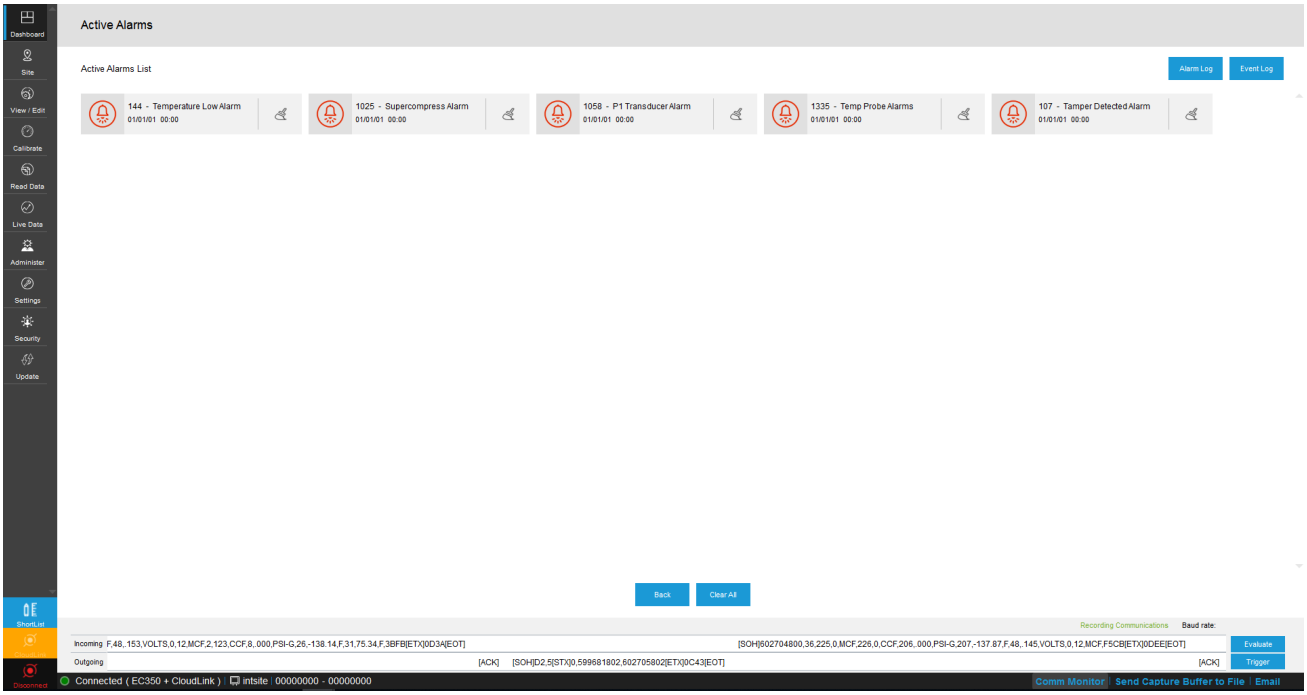


On clicking any value, further details are displayed.



3.3.3 Alarms

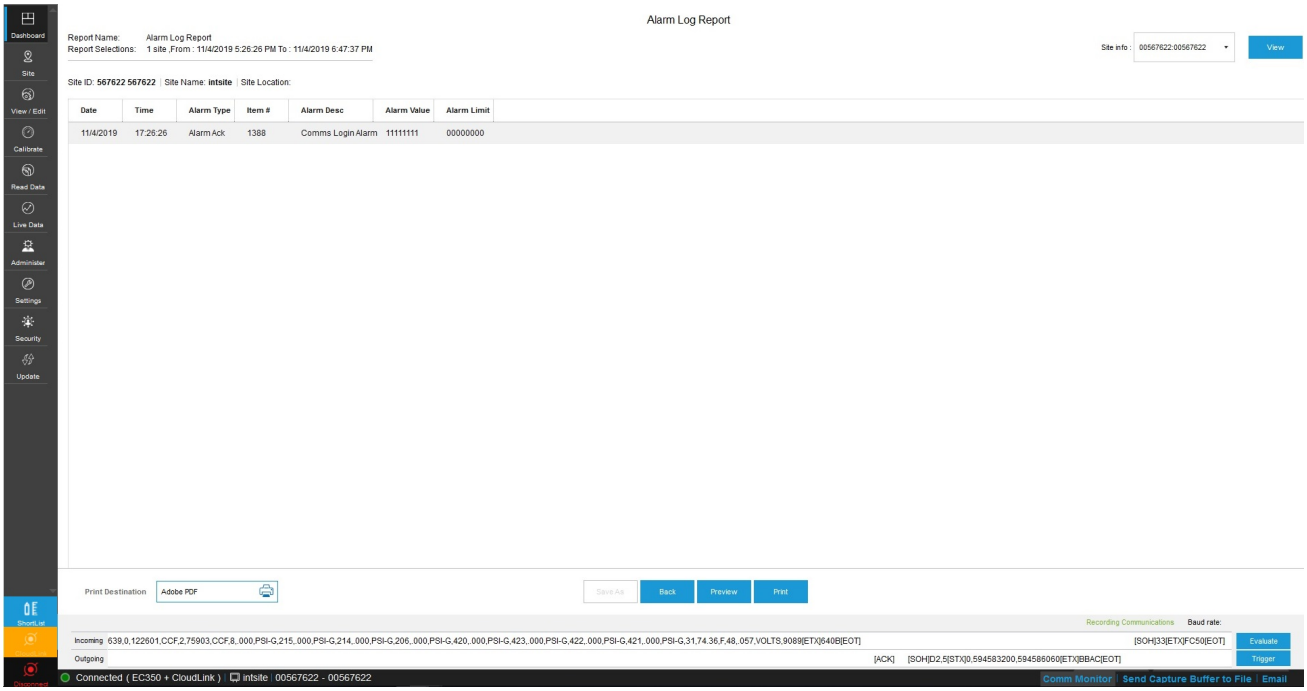
User can drill down to alarm and event history by clicking on the number of active alarms displayed on the dashboard.

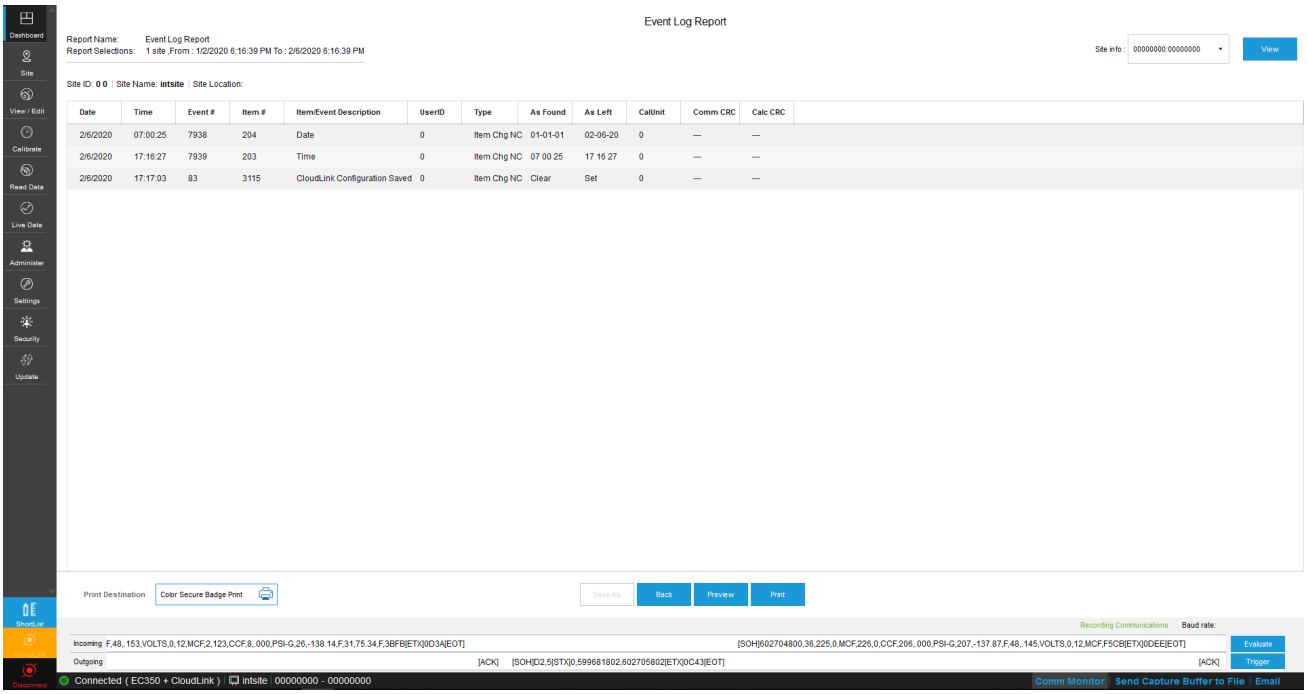


Individual alarms can be cleared by clicking

All active alarms can be cleared at once, by clicking **Clear All**

User can access alarm log and event log reports from the Dashboard.

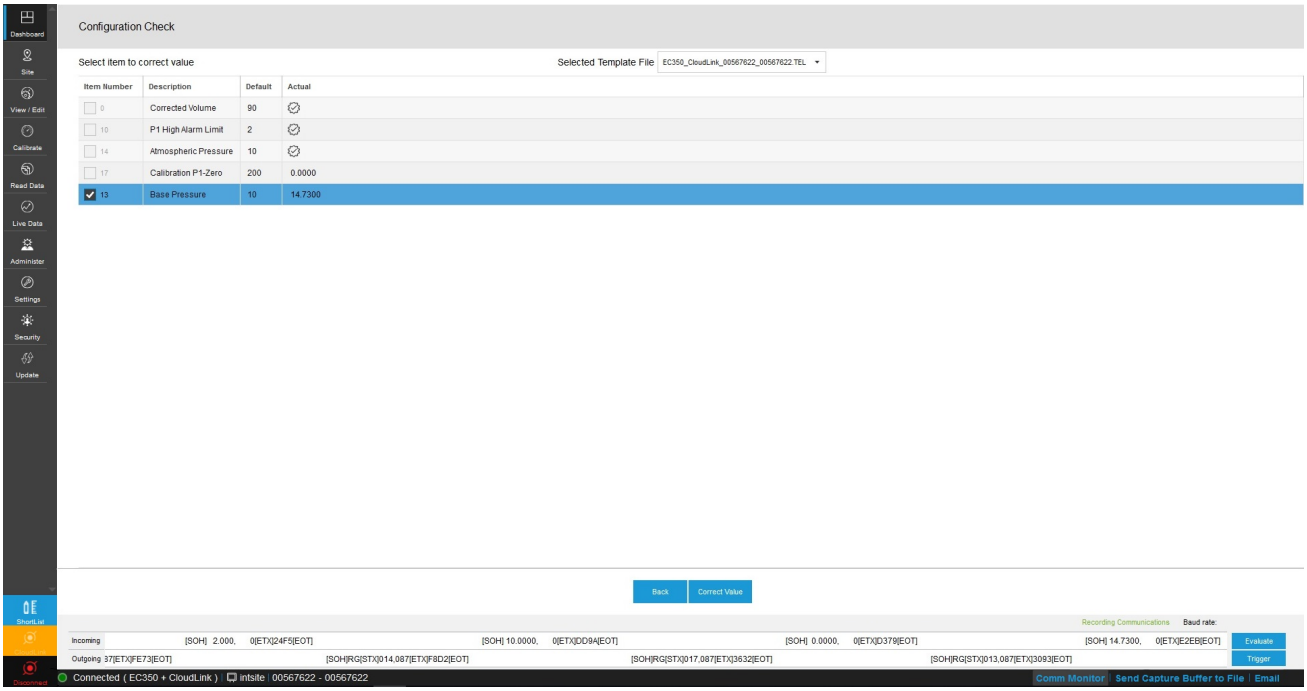




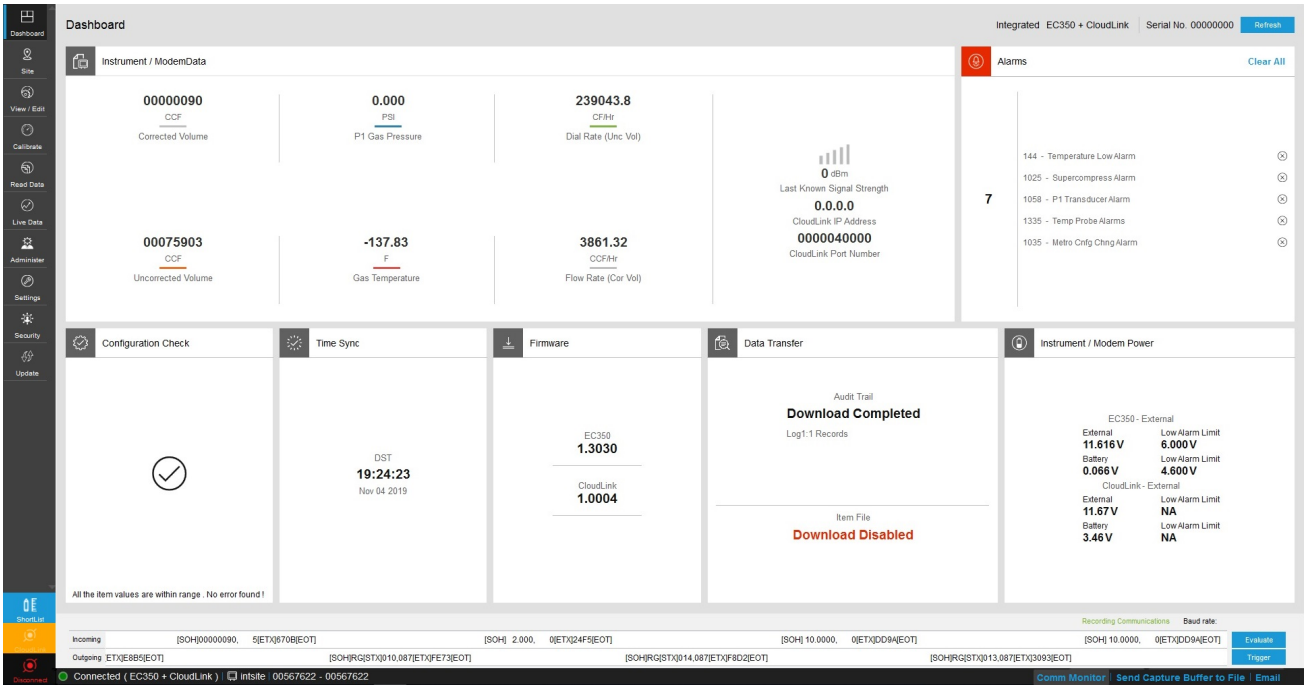
Refer Auto Download Settings page for more details.

3.3.4 Configuration Check

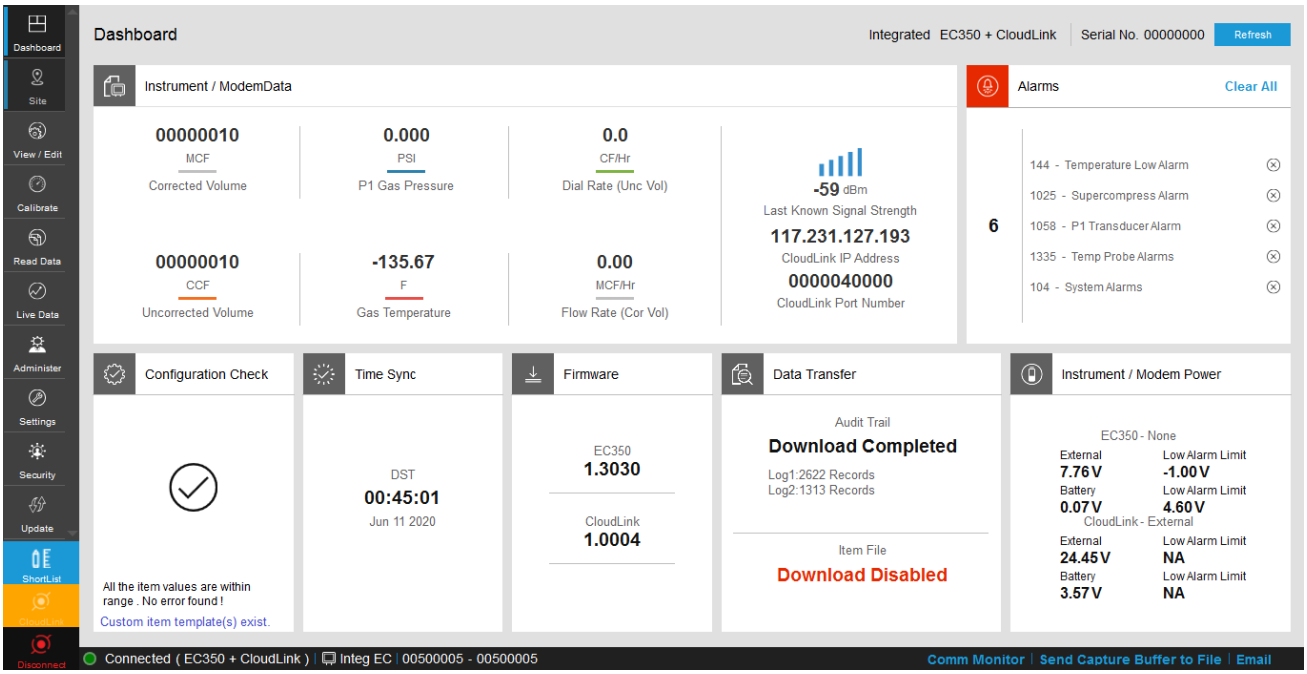
After connecting to the instrument, MasterLink compares values of items defined in the template with actual values in the instrument and reports the status of Configuration Check widget on Dashboard. User can correct the values from the drill-down screen.



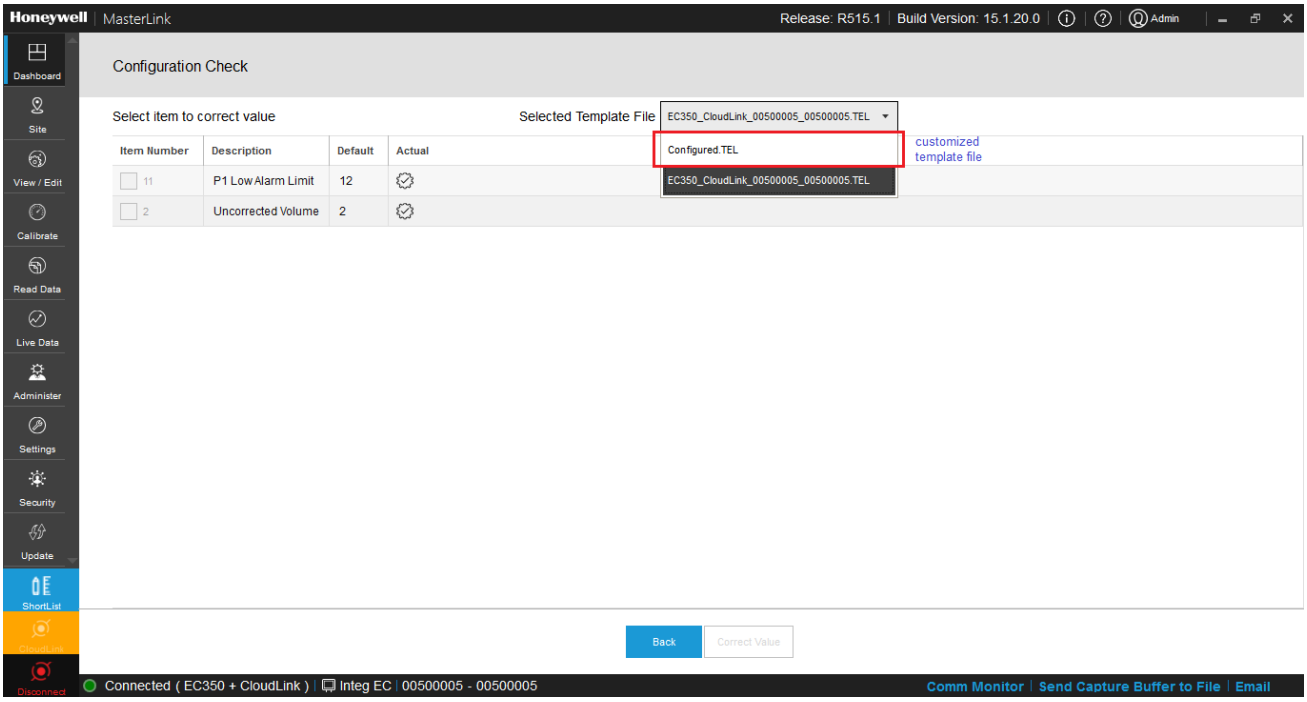
When all the values are corrected, the Configuration Check widget reports status as **All items found are within range. No error found!**



When the customized files are a part of default templates list the Dashboard will show **Multiple item templates exist** in the Configuration Check panel. See below.



User can drill-down the panel screen to view the list of templates available. You can select any template for config check from the drop-down and correct the values if required.

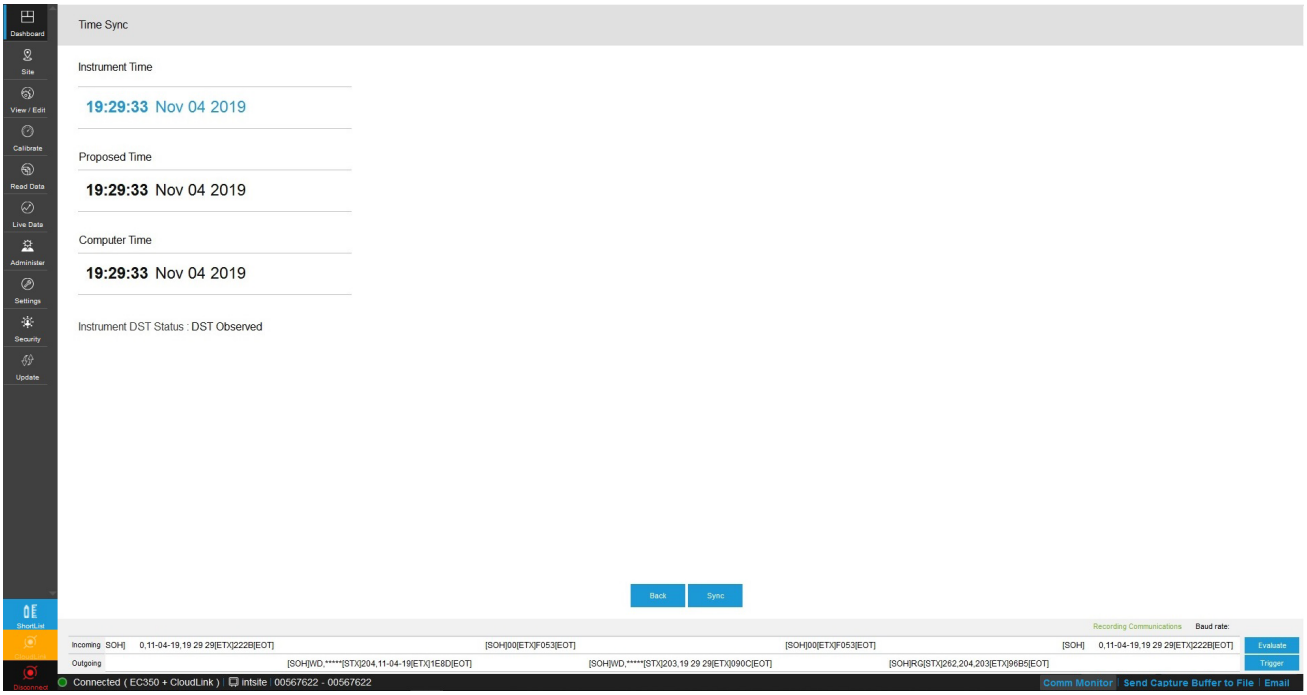


Refer Item Template Configuration page for more details.

3.3.5 Time Sync

'Time Sync' page provides a user configurable option to enable/disable auto time synchronization of the connected device with your PC.

Alternatively, time can be synchronized manually by clicking on **Sync**.



Time difference trigger point is taken into account when application reports time synchronization status.

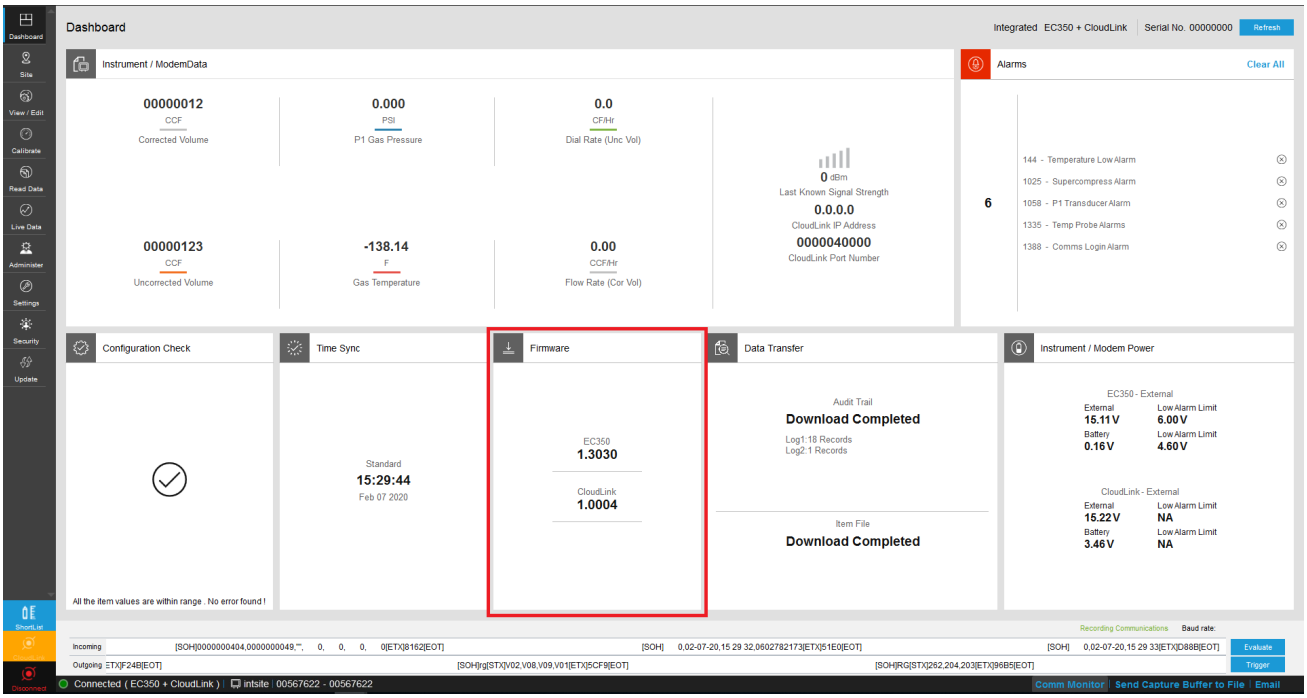
> **Note:** In case of integrated devices, Time Sync for both device and modem are considered but user can see only Device's date and time in the Dashboard Time Sync panel. If device time is in sync but the modem time is not, the Time Sync panel shows an error.

> **Note:** The Computer time displayed on the Time Sync is not dynamic. It is the actual PC time when the Time Sync tab is opened. It changes only when the Time Sync tab is refreshed. The Computer time can be different from the actual PC time.

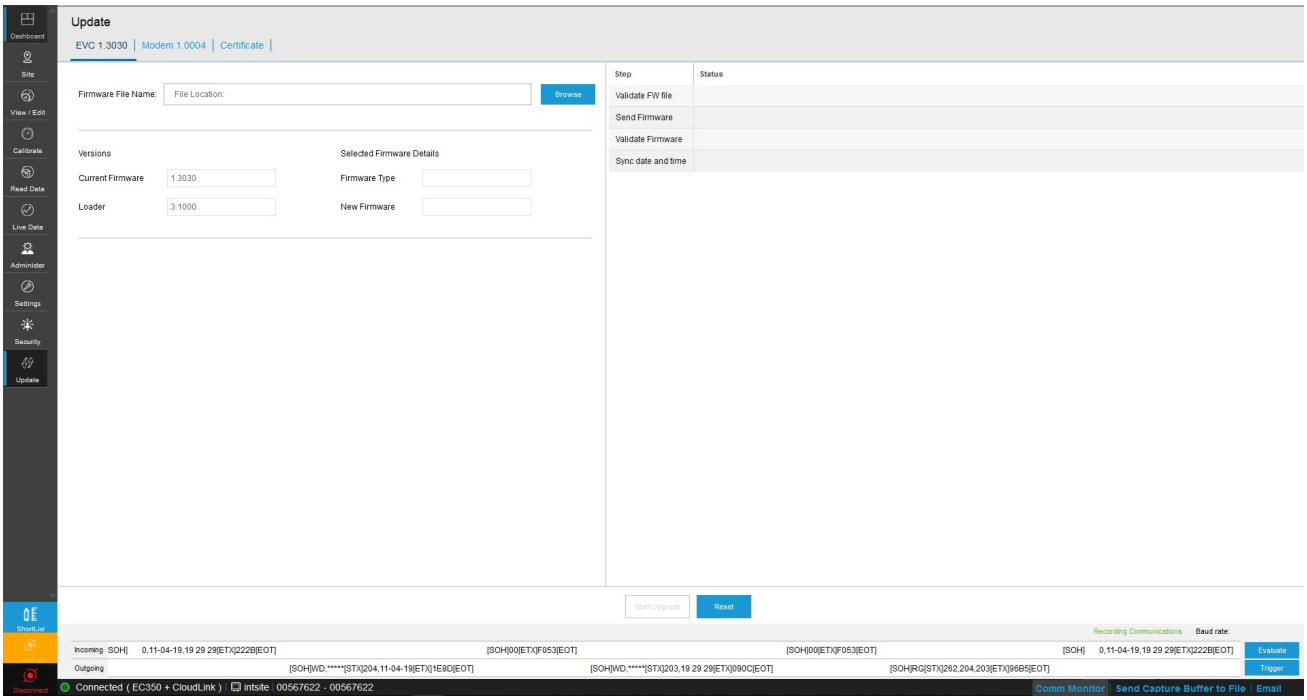
Refer Time Sync Properties page for more details.

3.3.6 Firmware Update

Dashboard reports the current firmware revision/version(s) loaded in the instrument(s).



Firmware versions can be upgraded using the firmware drill down screen.



The **Update** screen consists of three tabs:

1. EC 350 Firmware Upgrade
2. CloudLink Modem and
3. Certificate

The current firmware version details are displayed on the relevant update screen. The firmware file to be used can be browsed and version of the firmware to be upgraded is displayed under 'Selected Firmware Details' section.

Browse and select the required firmware file to be uploaded and observe application displays the information of firmware file selected under 'Selected Firmware Details' section.

The new firmware is transferred to the instrument and then installed.

Note: MasterLink R500 Application (Windows & Mobile) supports firmware upgrade to the EC 350 and CloudLink Modem, only if the devices have the following firmware versions:

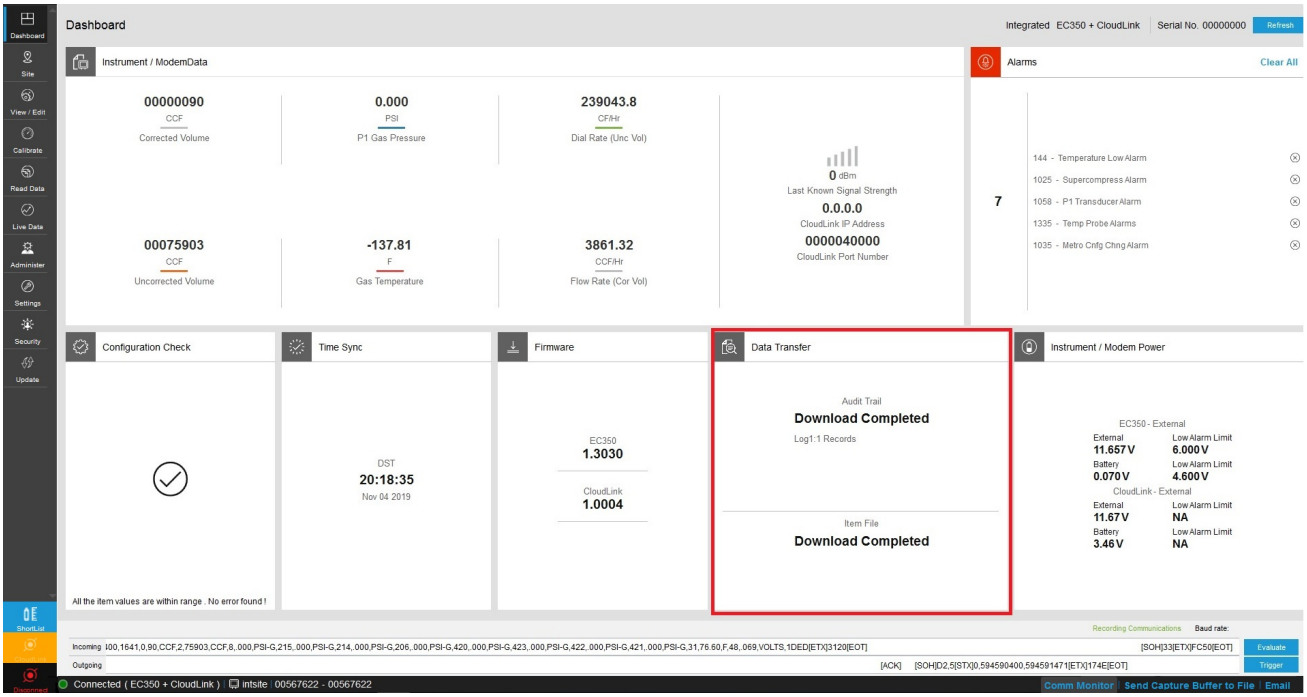
CloudLink Modem: 1.0001

EC 350: 1.1032

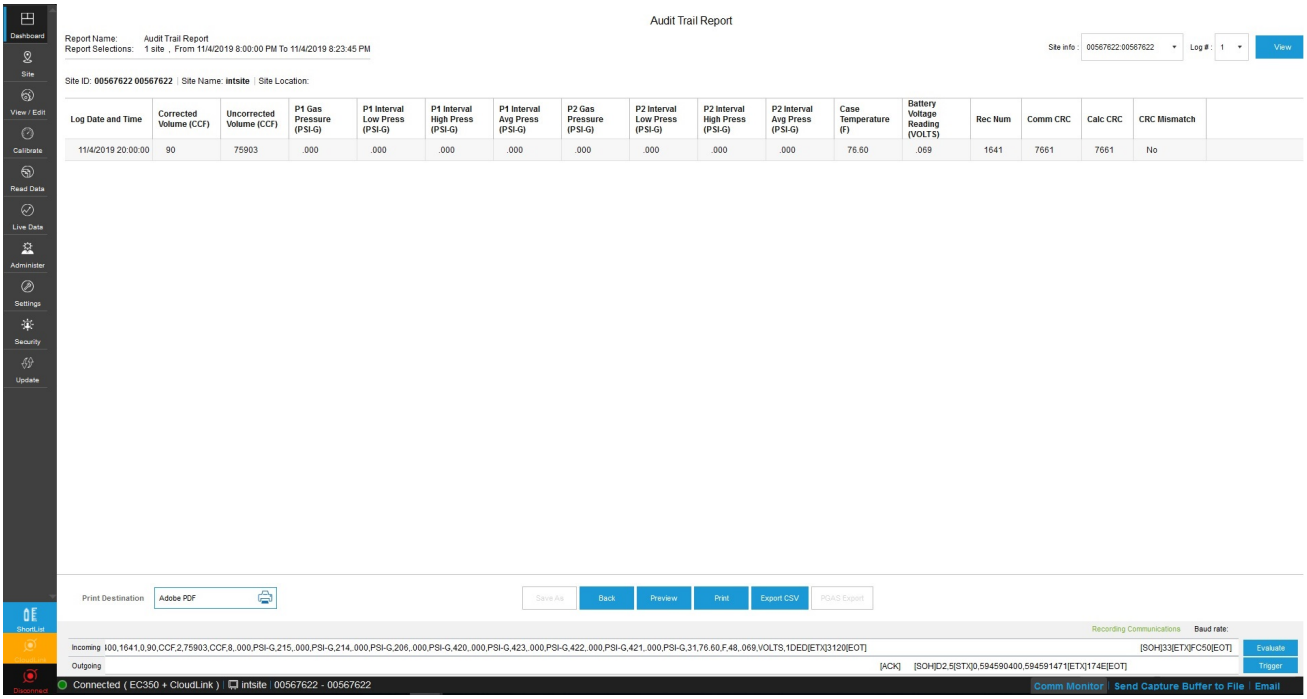
It is not recommended to perform a firmware upgrade, unless the devices are running on the versions mentioned above.

3.3.7 Data Transfer

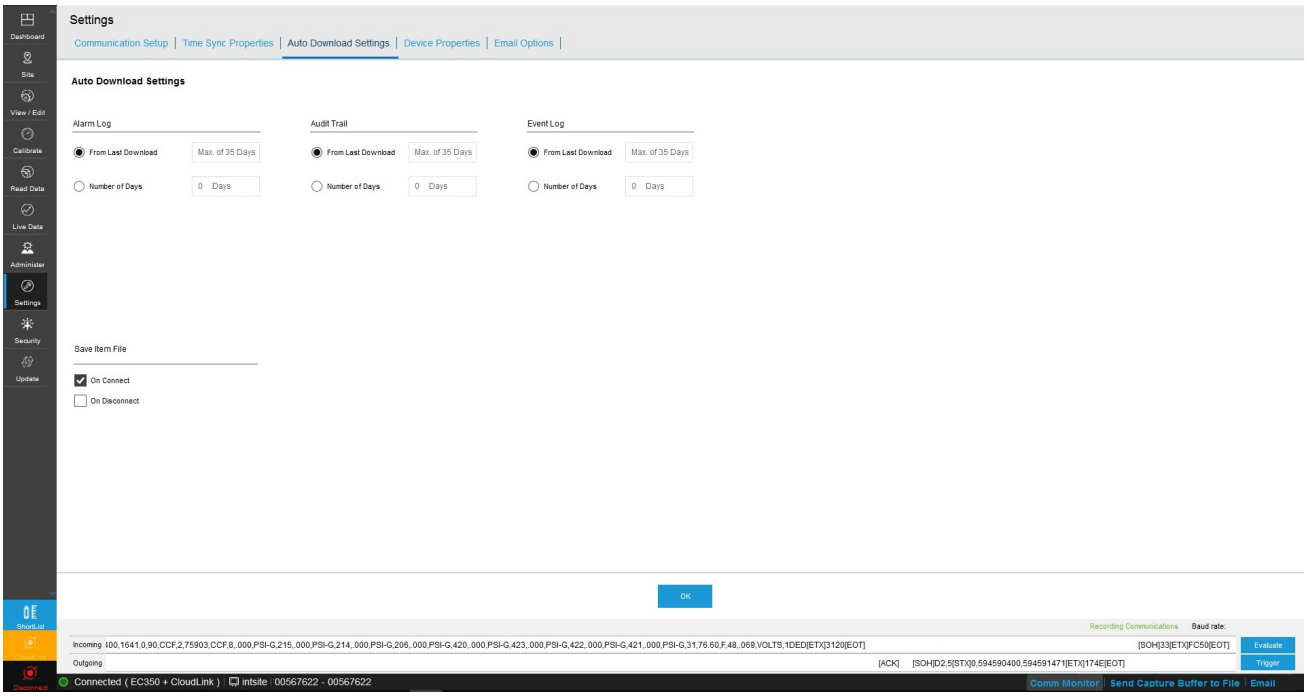
As soon as you connect an instrument to MasterLink Software Applications, Audit Trail data and Item File from the instrument is automatically downloaded.



Screen shot showing Audit Trail data.



Instrument data is automatically downloaded if the Auto Download settings are enabled.



Refer Auto Download Settings for more details.

Scenario 1: When the device in not saved in Site list and if Auto download is enabled. Audit trail will display an error message as “Instrument not in site list” “Download failed”.

Resolution: Make sure that the device is saved in Site list to download the data from the dashboard.

Scenario 2: When device in not saved in Site list and if Auto download is disabled. Audit trail will display an error message as “Instrument not in site list” “Download Disabled”.

Resolution: Make sure that the device is saved and Auto download is enabled to download the data from the dashboard.

3.3.8 Instrument or Modem Power

While connecting to the site, application reads the type of power source (Battery or External). Corresponding voltage is displayed on Dashboard.

A drill down on the panel depicts a plot of battery/external voltage against time.

> **Note:** Instrument/Modem Power drill down can be done on 1.4030 firmware version & 15.1.25.0 MasterLink build version onwards only.

Integrated device type with Battery and External Power supply connected.

> **Note:** CloudLink shows only one type of Power source at a time.

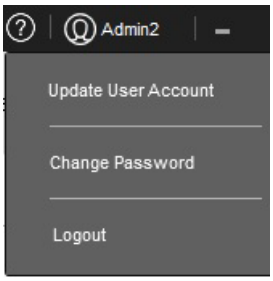
MasterLink supports the below scenarios based on the type of power source connected.

1. When device is battery powered then it displays only the battery voltage graph.
2. When device is external powered then it displays only the external voltage graph.
3. When any standalone device is powered with both external & battery , then it will displays both together in one graph only.

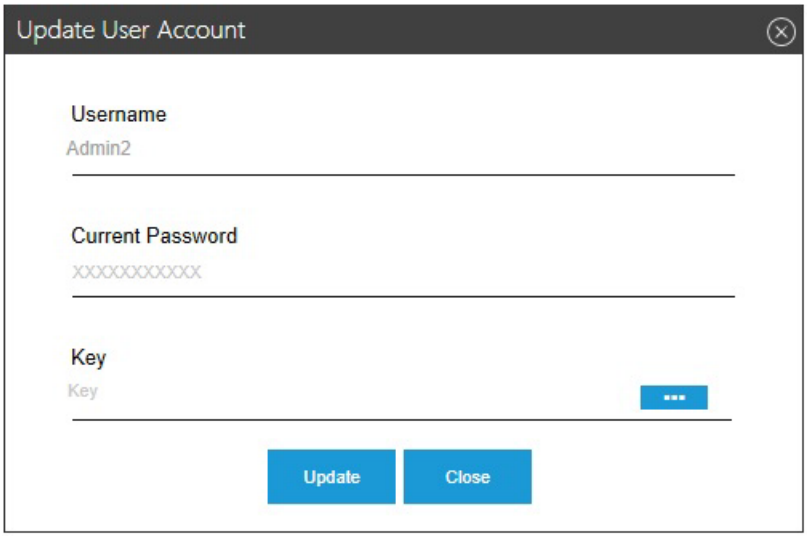
3.3.9 Update User Account

If privileges associated with user role are modified, then the respective user account needs to be updated with a new passkey shared by administrator.

Click on username on the dashboard header and select **Update User Account**.



The **Update User Account** pop-up appears.

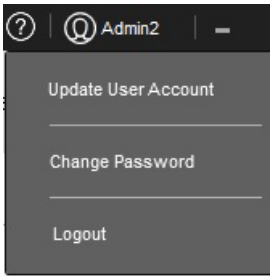


Update user account using the new key sent by the administrator.

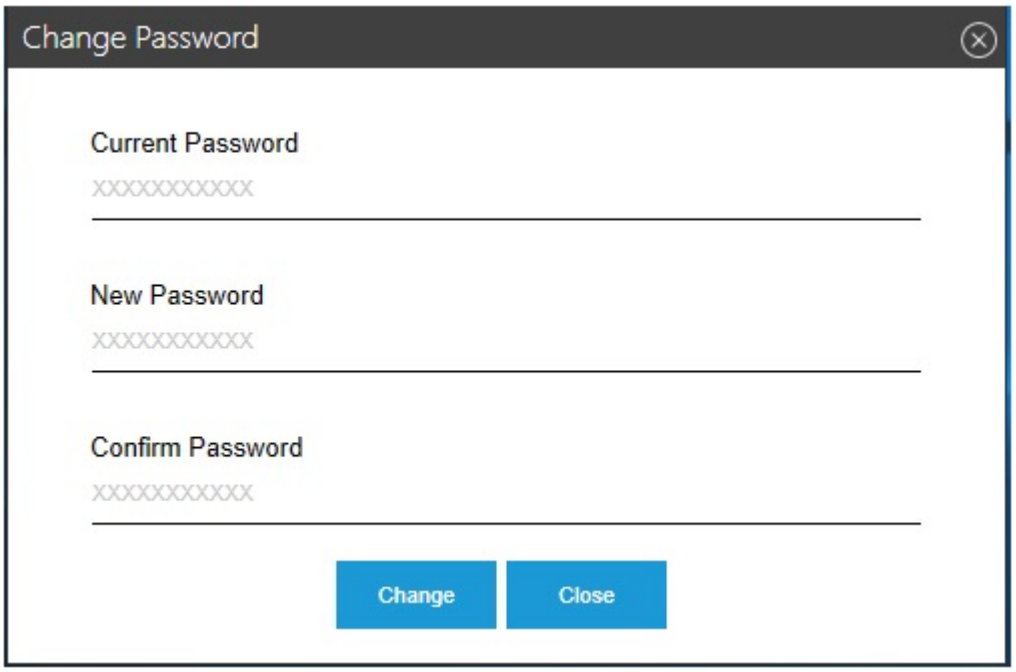
3.3.10 Change Password

Password of an existing user can be changed using the Change Password option.

Click on user-name and select **Change Password**.



The **Change Password** pop-up appears.



Type current password, and then the new password. You also need to confirm your new password by typing it again.

After you finish making the required changes, click **Change** to save the changes.

3.4 View and Edit

This tab has the functionality for performing various interactions with device such as read/write item, read item file etc.

3.4.1 Configure by Group

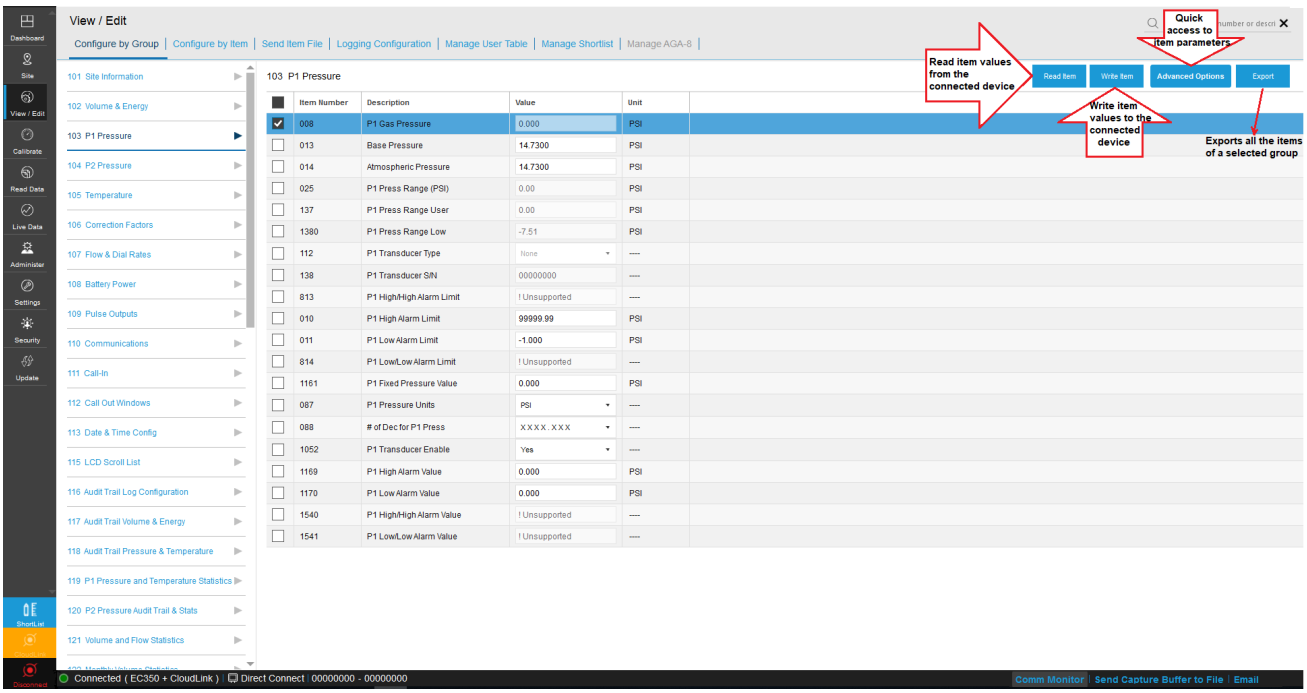
MasterLink must be connected to an instrument for this function to work. **Configure by Group** tab displays groups categorized by items corresponding to connected instrument.

Instrument items (which vary per type of instrument) can be grouped by function. The **Configure by Group** tab displays the item values that apply to the type of connected instrument after grouping them by function. For example, all items related to pressure calibration are displayed on one screen.

When connected to an instrument, you can click on the **Read** button to read item values from the connected instrument.

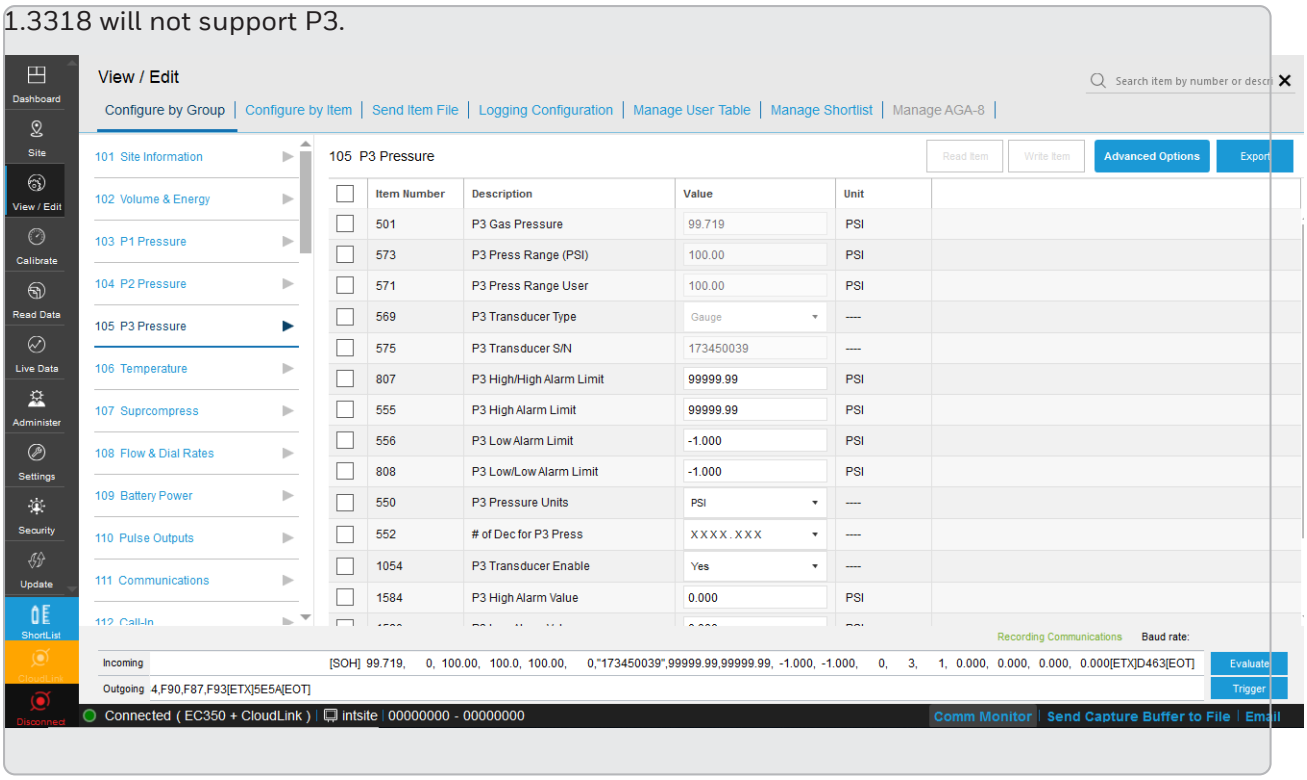
To change item values:

1. Click on the desired function group (panel on left) to see the group items (panel on right).
2. Select an item by clicking the check box next to it.
3. Enter a value for the selected item number, and click on **Write Item** button.



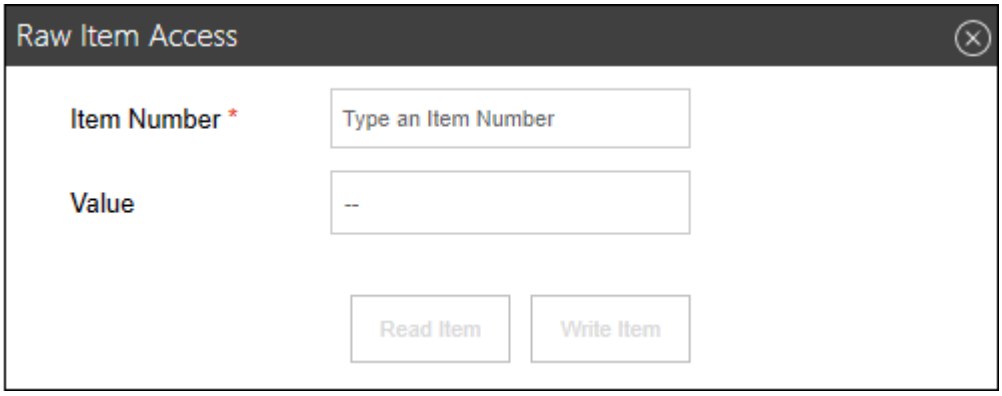
Note: Third Pressure P3 is supported ONLY for MIWI350 with Pressure expansion board from 1.4016 firmware version onwards. Instruments (EC 350, ERX 350) prior to firmware version

1.3318 will not support P3.

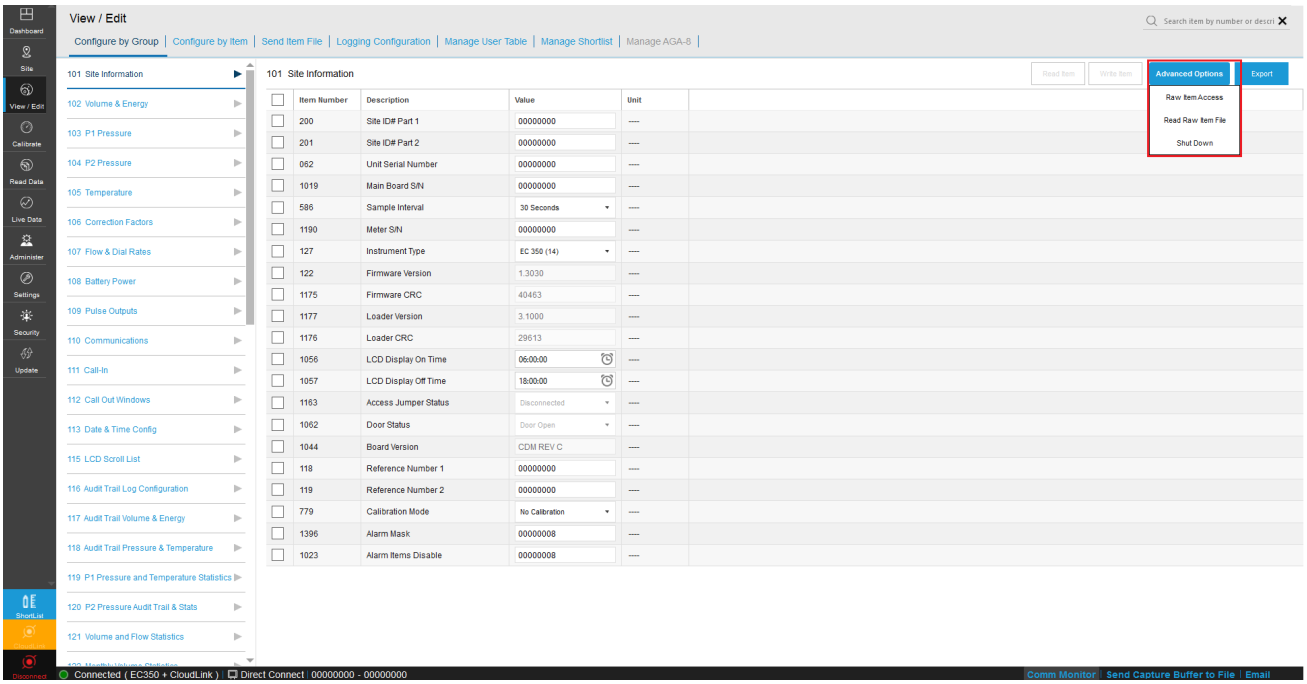


Advanced Options: It has three options

1. Raw Item Access - You can modify (Read/Write) the value of any item by typing an item number in the pop-up below.



2. Read Raw Item File - Reads all the item numbers in one click.
3. Shut Down - Clicking this will shut down the device.


View / Edit
Configure by Group | Configure by Item | Send Item File | Logging Configuration | Manage User Table | Manage Shortlist | Manage AGA-8
Search item by number or descri
Dashboard
Site
View / Edit
Calibrate
Read Data
Live Data
Administer
Settings
Security
Update
ShortList
101 Site Information
102 Volume & Energy
103 P1 Pressure
104 P2 Pressure
105 Temperature
106 Correction Factors
107 Flow & Dial Rates
108 Battery Power
109 Pulse Outputs
110 Communications
111 Call-In
112 Call Out Windows
113 Date & Time Config
115 LCD Scroll List
116 Audit Trail Log Configuration
117 Audit Trail Volume & Energy
118 Audit Trail Pressure & Temperature
119 P1 Pressure and Temperature Statistics
120 P2 Pressure Audit Trail & Stats
121 Volume and Flow Statistics
101 Site Information
Read Item
Write Item
Advanced Options
Export
Raw Item Access
Read Raw Item File
Shut Down
Item Number
Description
Value
Unit
200 Site ID# Part 1 00000000 ----
201 Site ID# Part 2 00000000 ----
062 Unit Serial Number 00000000 ----
1019 Main Board S/N 00000000 ----
586 Sample Interval 30 Seconds ----
1190 Meter S/N 00000000 ----
127 Instrument Type EC 350 (14) ----
122 Firmware Version 1.3030 ----
1175 Firmware CRC 40463 ----
1177 Loader Version 3.1000 ----
1176 Loader CRC 29613 ----
1056 LCD Display On Time 06:00:00 ----
1057 LCD Display Off Time 18:00:00 ----
1163 Access Jumper Status Disconnected ----
1062 Door Status Door Open ----
1044 Board Version CDM REV C ----
118 Reference Number 1 00000000 ----
119 Reference Number 2 00000000 ----
779 Calibration Mode No Calibration ----
1396 Alarm Mask 00000008 ----
1023 Alarm Items Disable 00000008 ----
Disconnect
Connected (EC350 + CloudLink) Direct Connect | 00000000 - 00000000
Comm Monitor | Send Capture Buffer to File | Email

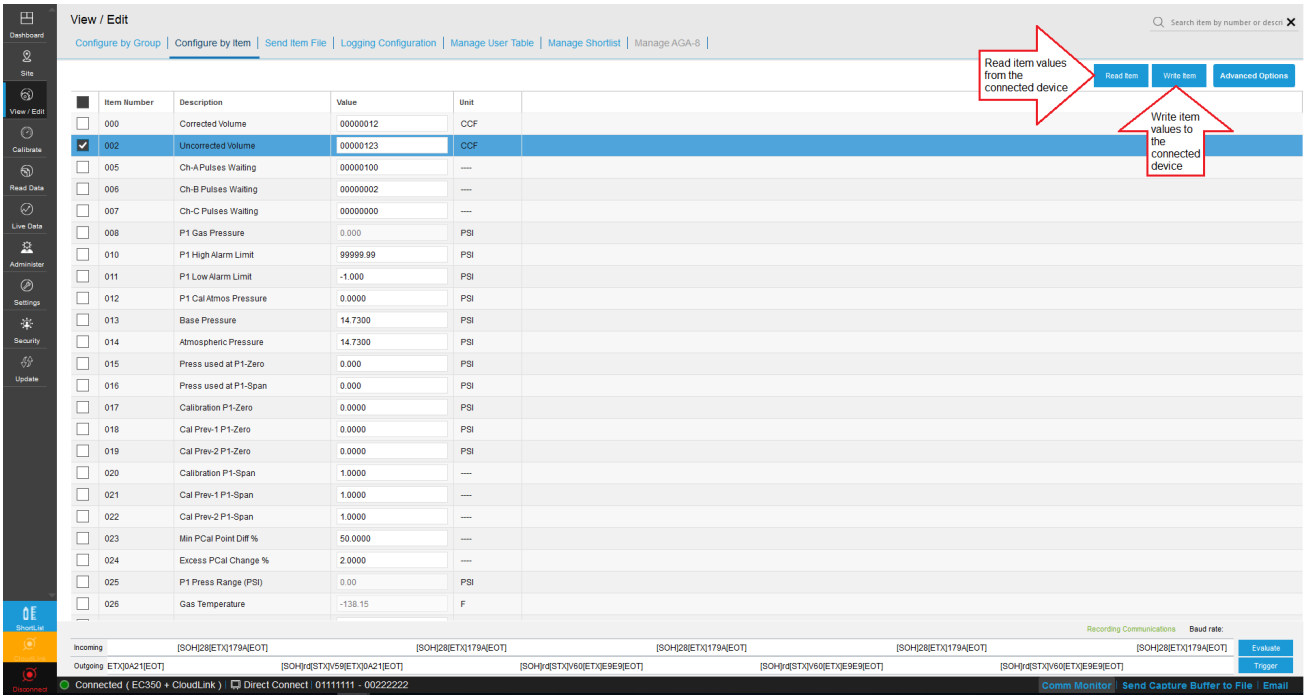
3.4.2 Configure by Item

MasterLink must be connected to an instrument for this function to work as different instruments have different items and groups categorized. **Configure by Item** tab displays all items corresponding to connected instrument and by default, all items are sorted by item number.

An item can be searched with Item number or description. The check box must be checked in order to read/write value(s) of any item.

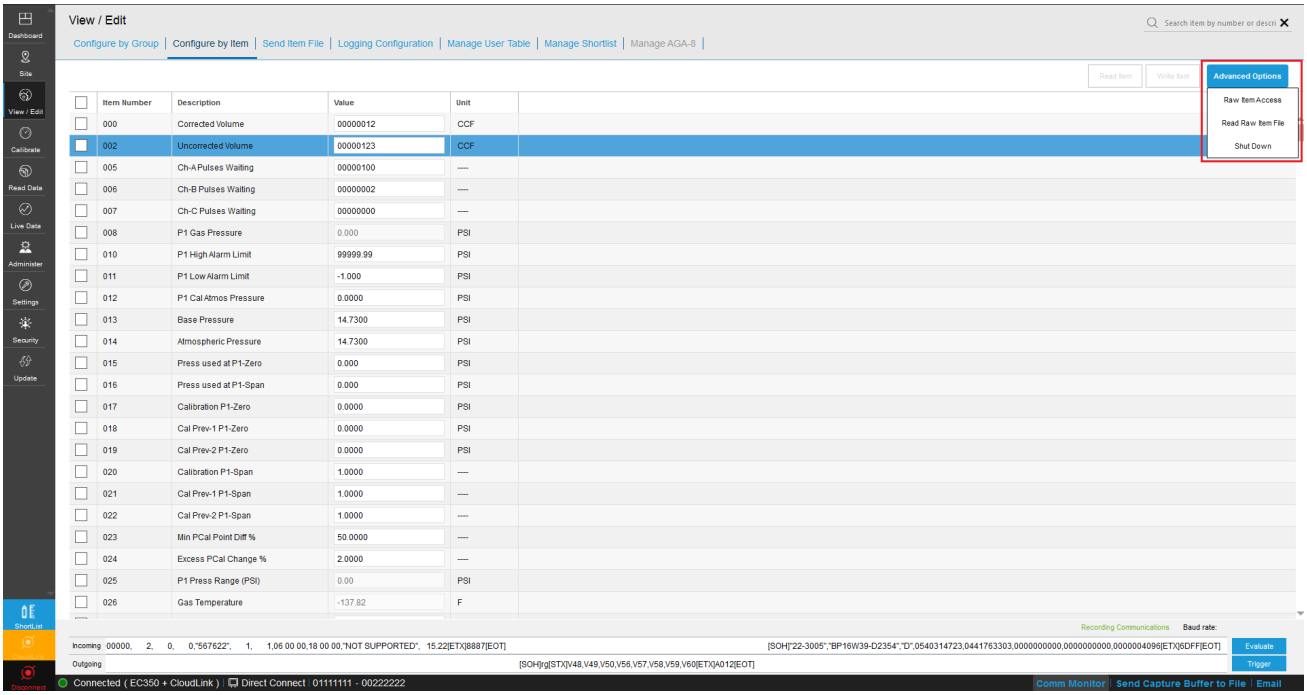
To change item values:

1. Select an item by clicking on the check box next to it.
2. Enter a value for the item number.
3. Click **Write Item** after making the changes. This will write the new item value to the connected instrument.

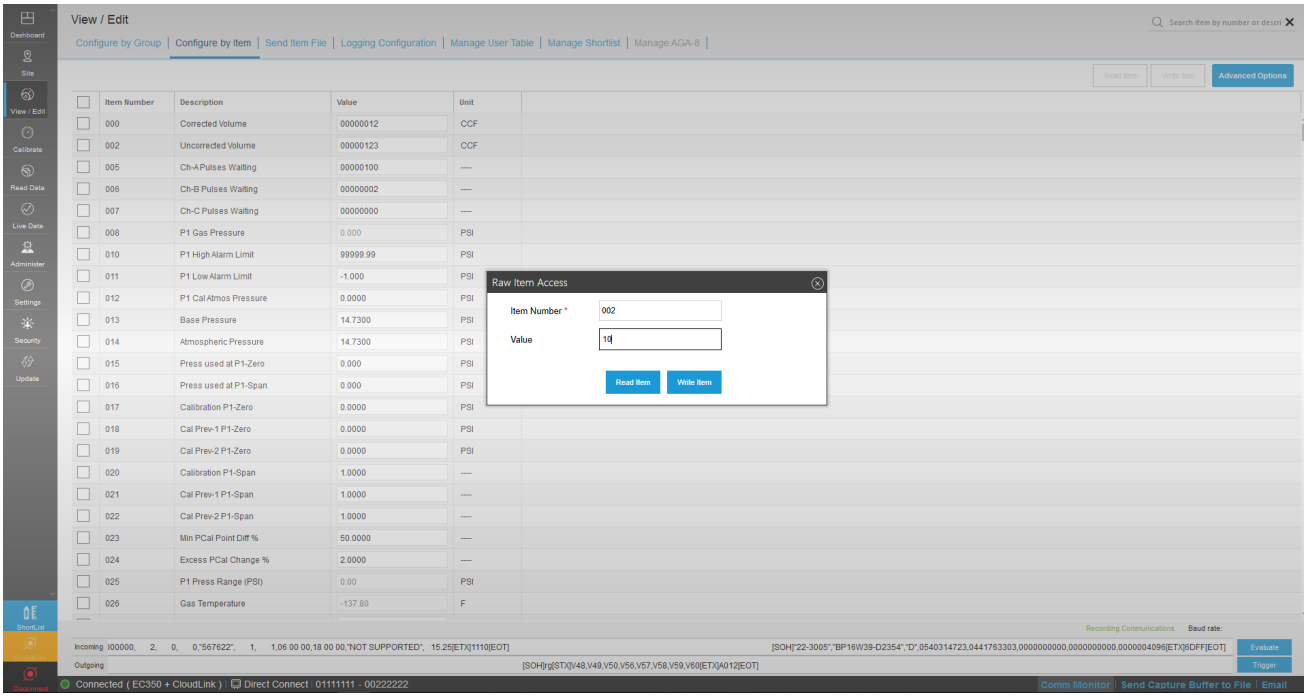


Sliding the mouse over the column divider until a cross is displayed, then dragging it to the desired width can re size the column widths. Use the up/down arrows or across arrows for full viewing of all data fields.

Click on **Advance Options** and select **Raw Item Access** to modify the value of an item.



Search for a particular item either by number or description.



Read Raw Item File will read all the item numbers in one click.

Clicking on **Shut down** will shut down the device.

Note: When Pressure factor mode (Item 109) is changed from Fixed to Live, P1 Transducer Enable (Item 1052) should be manually changed from NO to YES to get the Live value of P1 Gas Pressure (Item 008).

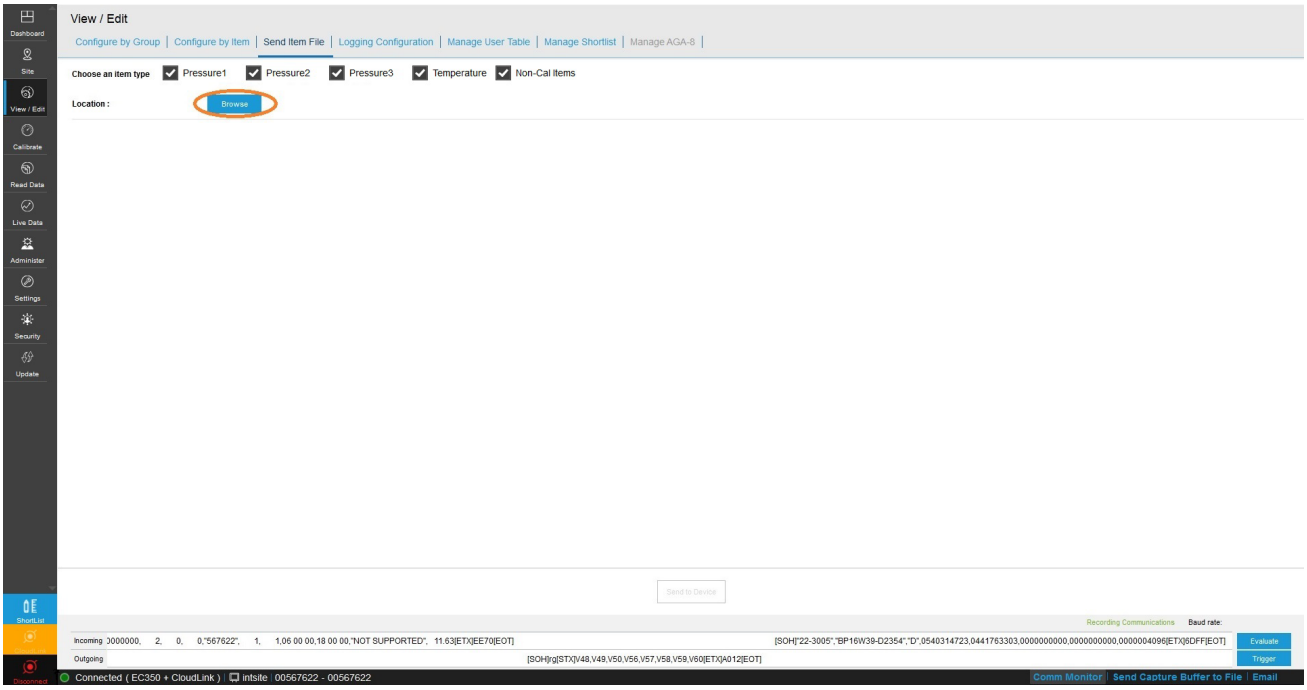
Note: When Temperature factor mode (Item 111) is changed from Fixed to Live, T1 Temp Probe Enable (Item 1055) should be manually changed from NO to YES to get the Gas Temperature (Item 026).

Note: When Supercompress Method (Item 147) is changed to Fixed Super, Unsquared Supercompress (Item 047) and Squared Supercompress (Item 116) will be updated with Fixed Unsq Super Factor (Item 1457) within 30 seconds.

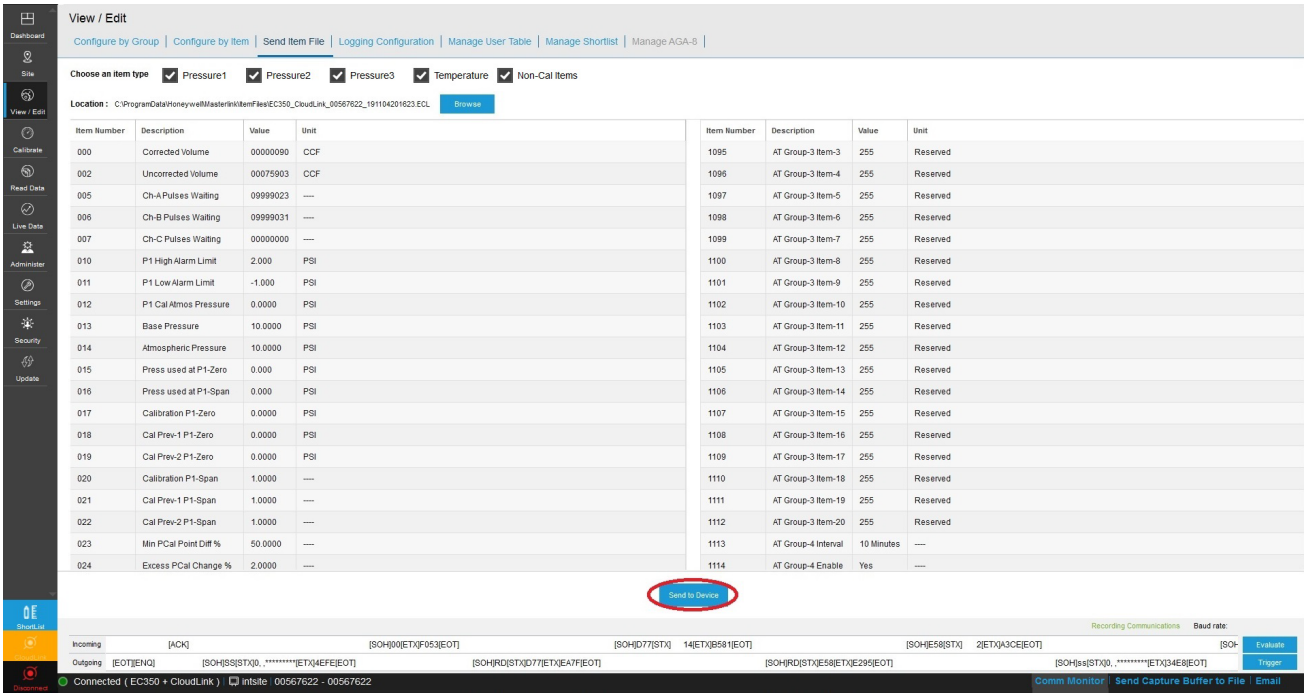
3.4.3 Send Item File

An Item File stores the current instrument's item code values on your computer in a file. You can configure different items corresponding to an instrument in an **Item File** and then send it to the device.

Click **Browse** and select the item file. (.IE3 for EC 350, .ICL for CloudLink Modem, .ECL for EC 350 + CloudLink Modem)



View the values configured for different item numbers.



View the values configured for different item numbers. The Item types will differ based on the connected instrument.

Refer to the table below for the item types displayed for specific devices.

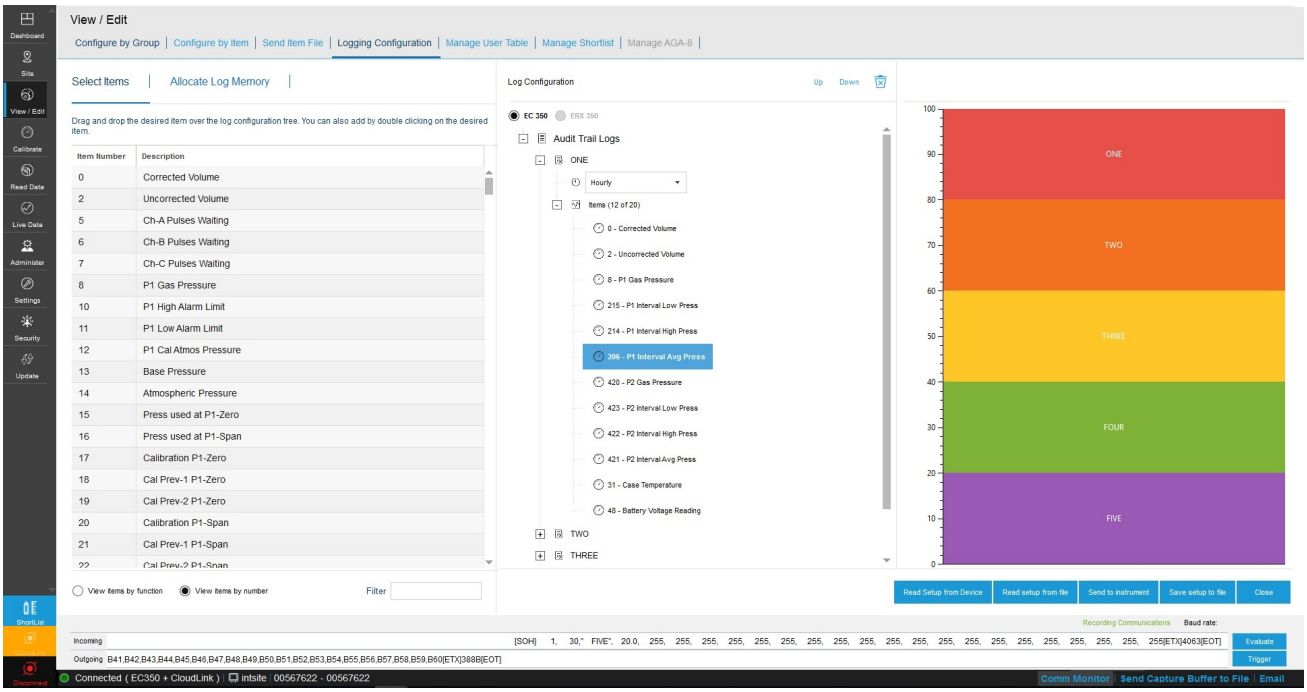
Device Type	Supported Types in Send Item File
Accutest	Pressure1, Pressure2, Temperature, Non-Cal Items
CloudLink Modem	Non-Cal Items
CNI4	Non-Cal Items
EC 350	Pressure1, Pressure2, Temperature, Non-Cal Items
EC 350 + CloudLink	Pressure1, Pressure2, Temperature, Non-Cal Items
ECAT	Pressure1, Temperature, Non-Cal Items
ER	Pressure1, Pressure2, Temperature, Non-Cal Items
ERX	Pressure1, Pressure2, Pressure3, Board Temperature, Non-Cal Items
ERX 350	Pressure1, Pressure2, Temperature, Non-Cal Items
ERX 350 + CloudLink Modem	Pressure1, Pressure2, Temperature, Non-Cal Items
Mini	Pressure1, Temperature, Non-Cal Items
Mini-AT	Pressure1, Pressure2, Temperature, Non-Cal Items
Mini-Max	Pressure, Temperature, Board, Non-Cal Items
PT ModBus	Non-Cal Items
Pulse Accumulator	Non-Cal Items
TCI	Temperature, Non-Cal Items
Turbo Corrector	Pressure1, Pressure2, Temperature, Non-Cal Items
Turbo Monitor	Non-Cal Items

Click **Send to Device** to send the Item File to the connected field instrument.

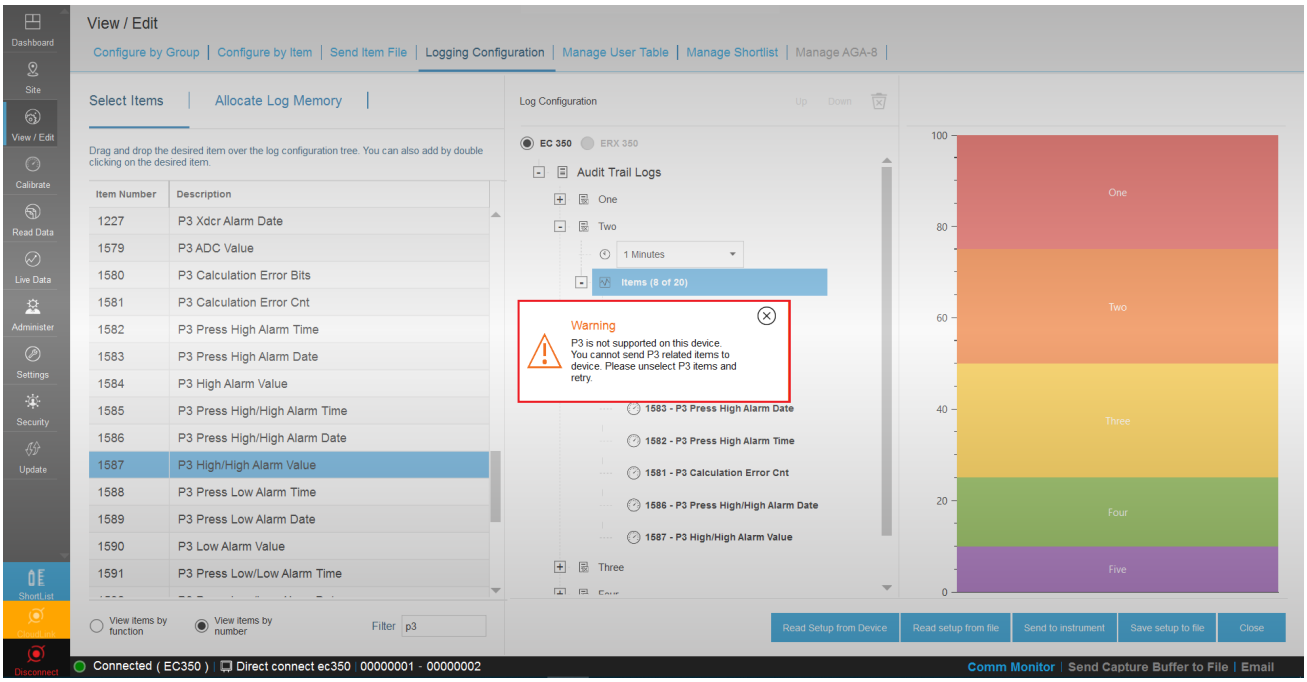
3.4.4 Logging Configuration

Available only for EC 350 and ERX 350 devices

Using MasterLink software, an instrument can be configured to contain as many as 5 independent logs, each with its own collection of item values and collection (sample) frequency. Each log can be configured to collect values for up to 20 items.



You cannot add/enable P3 items to the log configuration if the Pressure Expansion Board is not physically connected to the device (EC350/ERX350) hardware. And if you still try to configure, a pop-up error window appears as seen below.

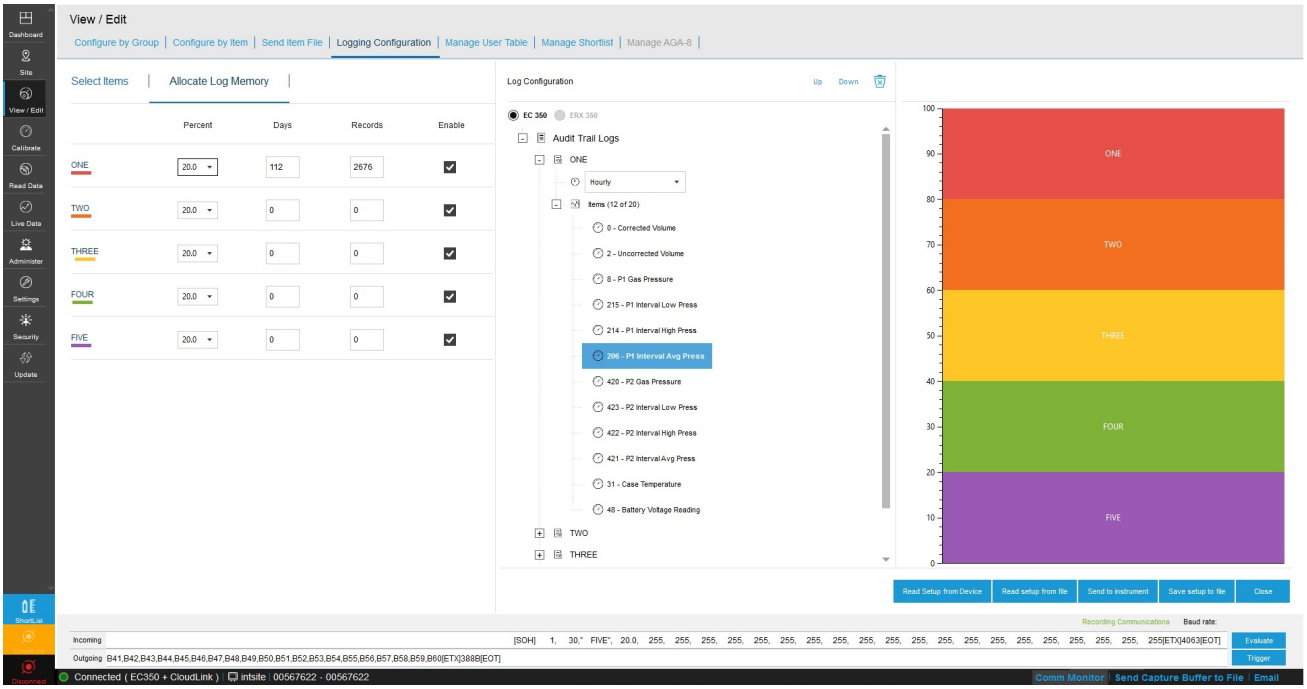


The order of the items in the Log Configuration list determines the order in which the values are stored and thus the order in which they will later appear in a report. Items in the list can be moved up and down to change the order.

The selected items from a log can be removed by clicking

The configuration can be saved for future references to a configuration file (*.cnfg) with the **Save setup to file** button. It can later be retrieved with the **Read setup from file** button. Only *.cnfg files can be read; item files (*.ie3) are not compatible.

In the **Allocate log memory** tab, configure the percentage of available memory which can be allocated to each log.



Note: The sum total of memory allocated for all logs must be equal to 100%.

The consequence of a particular allocation setting is reflected in the number of days' worth of data as well as the number of records that can be written before overwriting will occur. The smaller a log's allocation, the less data it will be able to store. When the limit is reached, the oldest records will be overwritten with the newer ones.

Note: A log's interval setting will impact days, but not record numbers.

The Enable check-boxes may be used to suspend data collection for one or more logs. A log's existing records will not be affected when the log is disabled.

Ensure that the device is connected to MasterLink. Click **Send to Instrument** to push the log configuration to the device. A few seconds will be required for the transfer. A window should appear indicating **Successfully Configured**.

Click **Read setup from Device** to read logging configuration settings from the connected instrument.

Attention: When you change the log configuration by modifying the memory allocation, all existing logs will be erased.

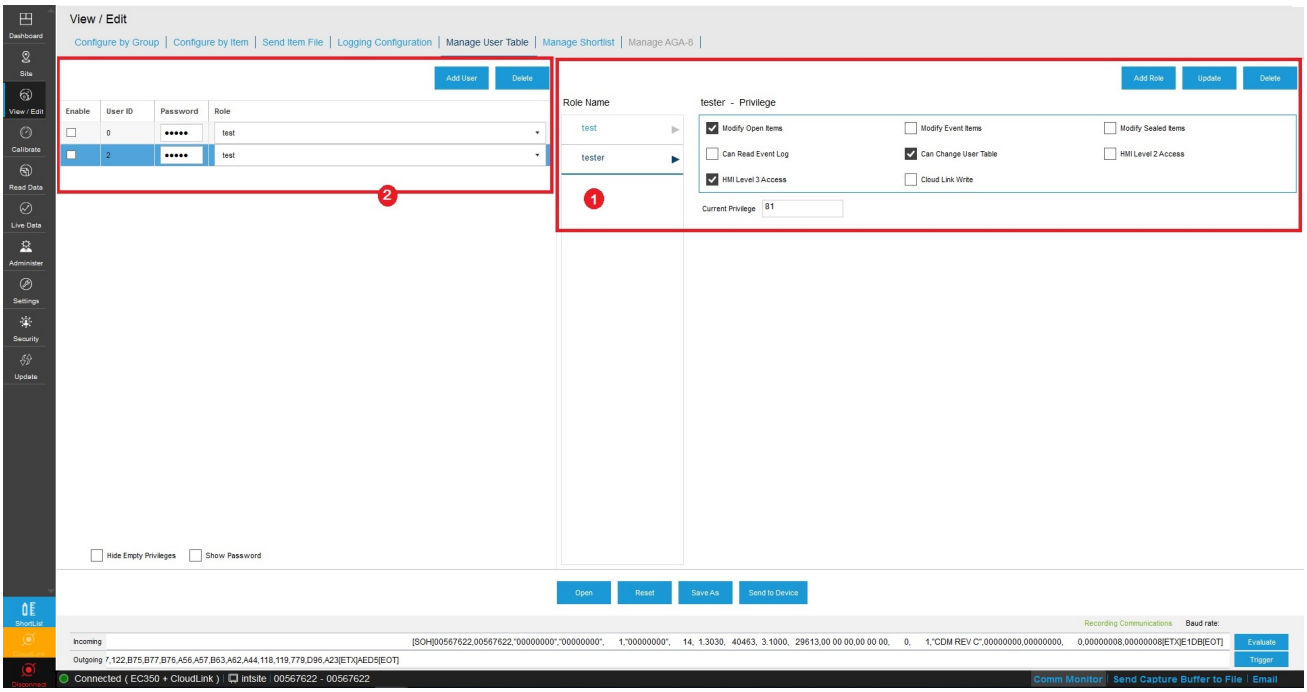
Attention: It is recommended to save the item file and log configuration file before changing the memory allocation of the logs.

3.4.5 Manage User Table

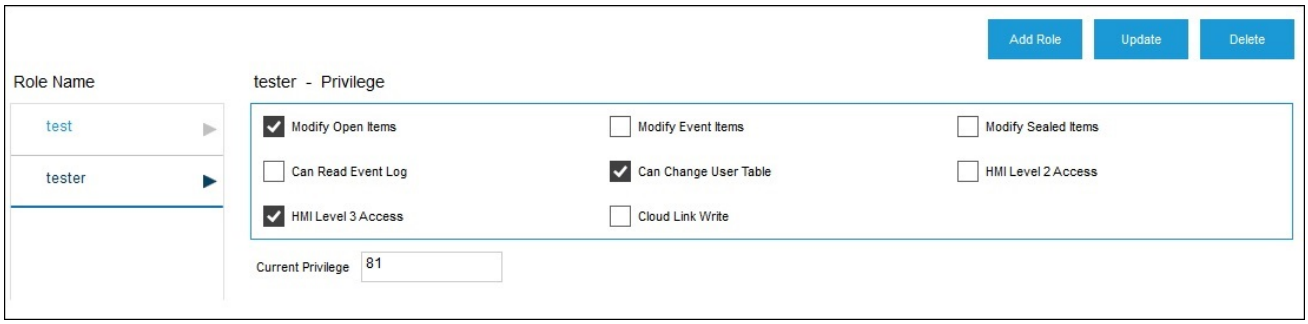
Access to an instrument can be controlled by defining users and assigning them Pass codes with defined privileges. Start by creating a role, then assign the role to the user and define Passcode.

User IDs and Pass codes are used to log-in to an instrument. When creating a user account, assign User ID, and a Passcode, and assign a role to the new user. Valid User IDs are 0 through 99 (decimal numeric). Valid pass codes are 00000 through 99999 (decimal numeric). The Passcode must be 5 digits in length.

Click on **Open** and load an existing saved .UTE (Manage User Table) file.



Based on the privileges assigned to the role, the value of the privilege changes or vice-versa.



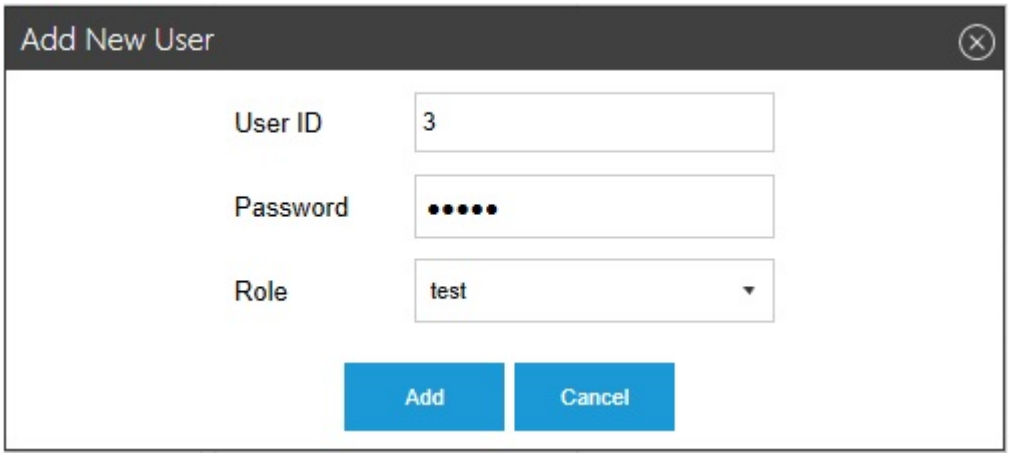
1. Click the check box under privileges to assign permissions to the role.
2. After a role is created, click **Add User** to create a new user.
3. After updating the privileges, click **Update** to save the changes.

The following privileges can be granted:

- Modify Open Items
- Modify Event Items
- Modify Sealed Items
- Can Read Event Log
- Can Change User table
- HMI Level 2 Access
- HMI Level 3 Access
- CloudLink Write

To add a user:

1. Click **Add User** to add new users.



2. Enter the **User ID** and **Password**.
3. Assign a role or change the role of an existing user by selecting a different role from the **Role** drop-down.
4. Click **Add** to complete the process of adding a new user.

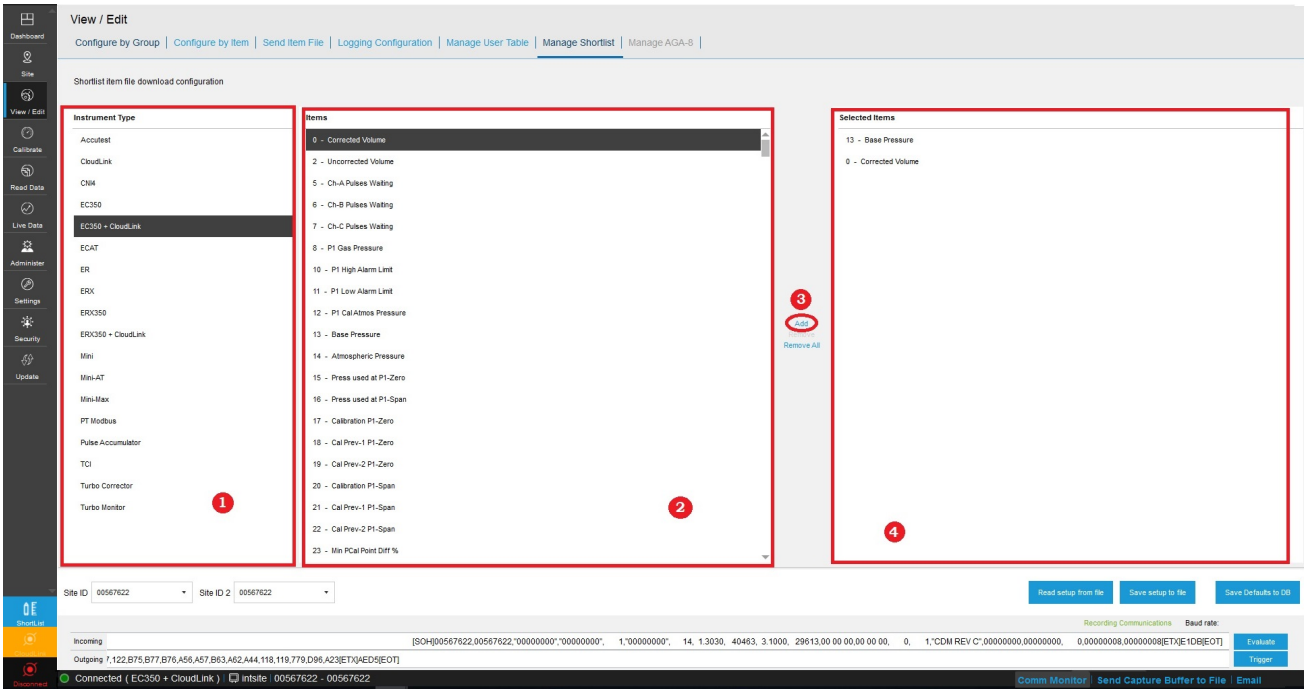
Click **Save As** to save a copy of the user table created. This user table is encrypted and saved in .UTE format.

Click on **Send to Device** to send a user table to the connected instrument.

> **Note:** For CNI4 device, the User Table must be created with only one user.

3.4.6 Manage Shortlist

A Shortlist is the same as the standard Item list (stores the current instrument's item values), except that you can customize it to include required items.



To create a Shortlist:

1. Start by selecting the instrument type.
2. The items displayed in the **Items** column are populated based on the selected instrument type.
3. Use the **Add** button to move selections to the **Selected Items** pane.
4. Items listed in the **Selected Items** column will be printed using Shortlist Report.

The **Save** option, saves the Shortlist to the database.

The **Save Setup to file** option exports the shortlist.

> **Note:** By default, instrument specific short lists are created (all sites). Use the Site ID 1 and Site ID 2 drop-downs to create site specific short lists. The short list files are named as <SiteID1>_<SiteID2>_yymmddhhmmss.CE3 file. **Example:** 44571111_44571111_161214120204

You can save and download the Shortlist as a file for later use. You can also read an existing Short-list file.

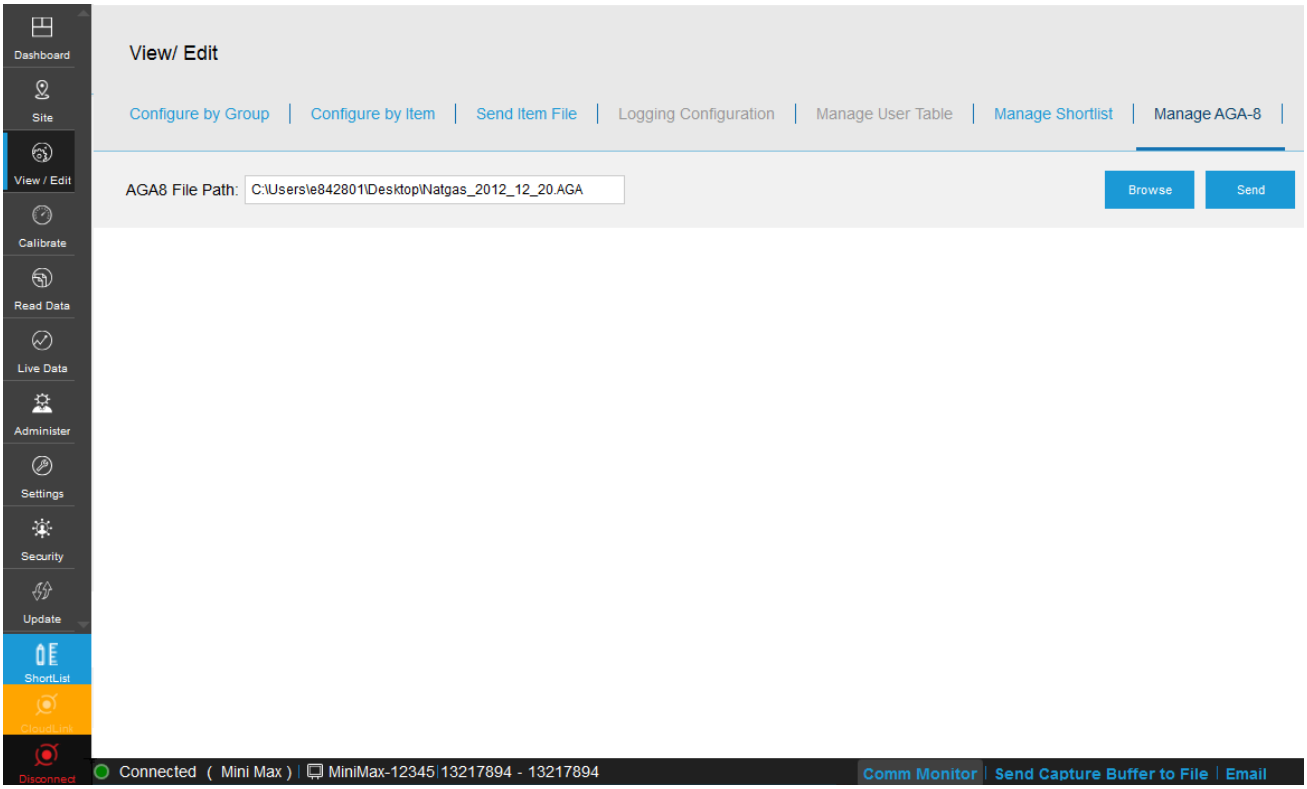
> **Note:** By default all shortlist files are stored in *C:\ProgramData\Honeywell\MasterLink\ShortListFiles*.

3.4.7 Manage AGA-8

AGA-8 calculations determine the compressibility of natural gas and other hydrocarbons based on it's components. These calculations are ideally designed to determine the compressibility of natural gas. These calculations can be gross or detailed. These (.aga) files can be generated using SuiteSQL (MasterLink SQL) software. You can use the **Manage AGA-8** tab to send .aga files to a connected instrument. This feature is supported by the following legacy Mercury devices:

1. Mini-Max
2. Mini-AT
3. Accutest
4. Turbo Corrector
5. ECAT

On the Manage AGA screen, **Browse** and then select a .aga file.



Finally click **Send** to send the .aga file to the connected legacy Mercury instrument.

3.5 Calibrate

3.5.1 Pressure Calibration P1

This procedure is used to calibrate the pressure transducer to a pressure calibration standard.

Understanding Pressure Calibration:

This is a simple two-point calibration. First, calibrate pressure at a low scale pressure and then again at a high scale pressure. Each time, adjust the pressure calculated by the instrument to match the reading from your pressure standard (reference standard calibrator). Adjusting the low scale pressure is called "**Zero Calibration**" while adjusting the high scale pressure is called "**Span Calibration**". Span calibration actually uses some of the information determined from performing the zero calibration. For this reason, you will need to at least "sample" a low scale pressure before you can begin the span calibration. Sampling occurs when you indicate that the pressure is ready to be averaged.

Before starting the Pressure Calibration:

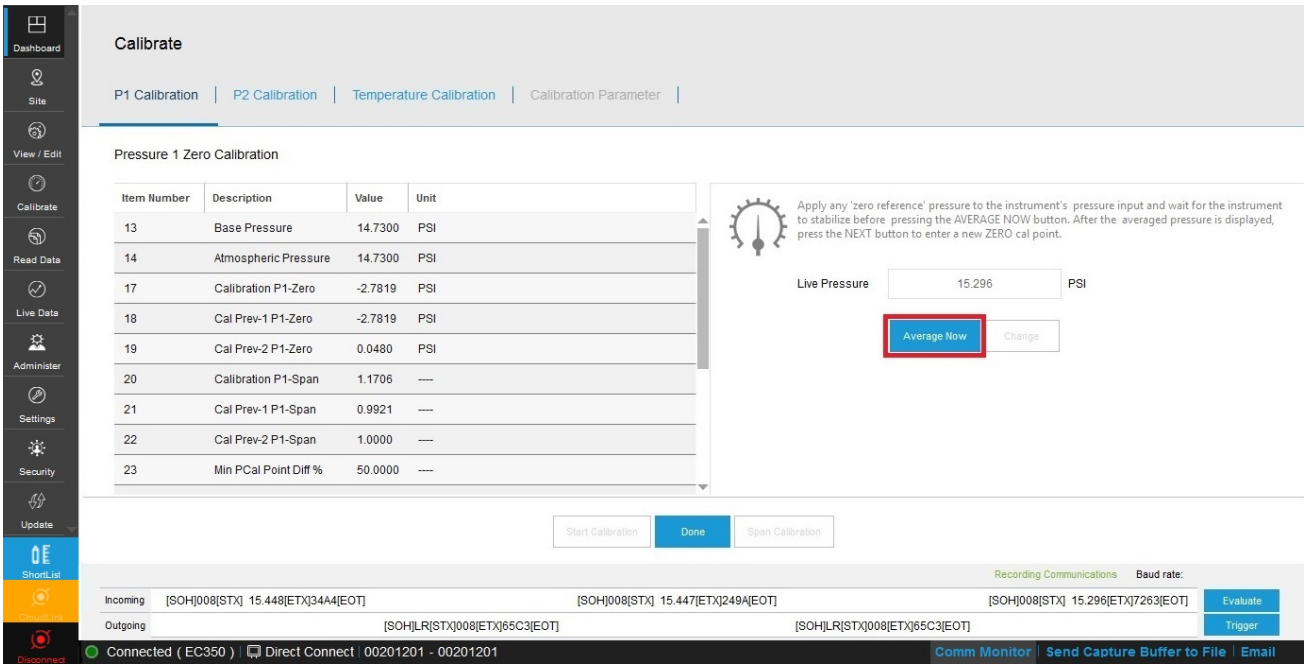
Make certain that the following items have been verified for correctness:

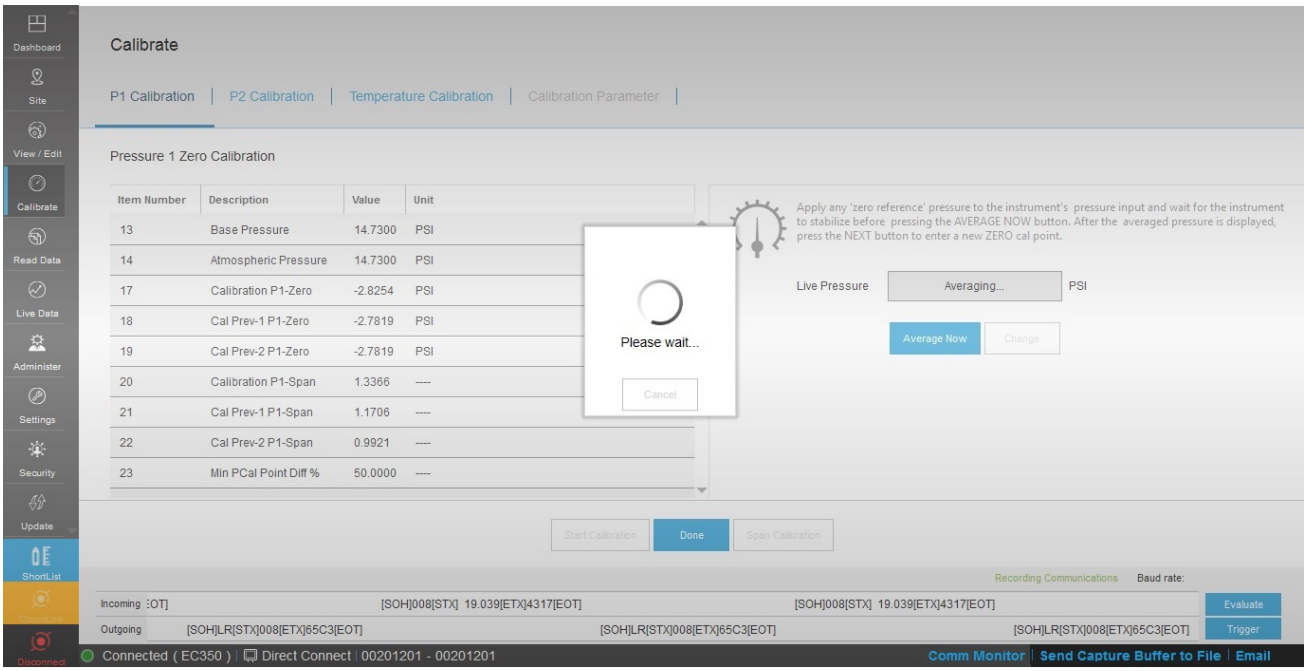
1. Pressure Calibrator
2. Pressure Unit Code (unit of measure)
3. Transducer Serial Number (assigned at the factory)
4. Type of Transducer (gauge or absolute)

P1 Calibration table displays current Calibration pressure and two previous pressure values along with Calibration date in mm-dd-yy format. Current span Calibration pressure and two previous pressure values are also displayed.

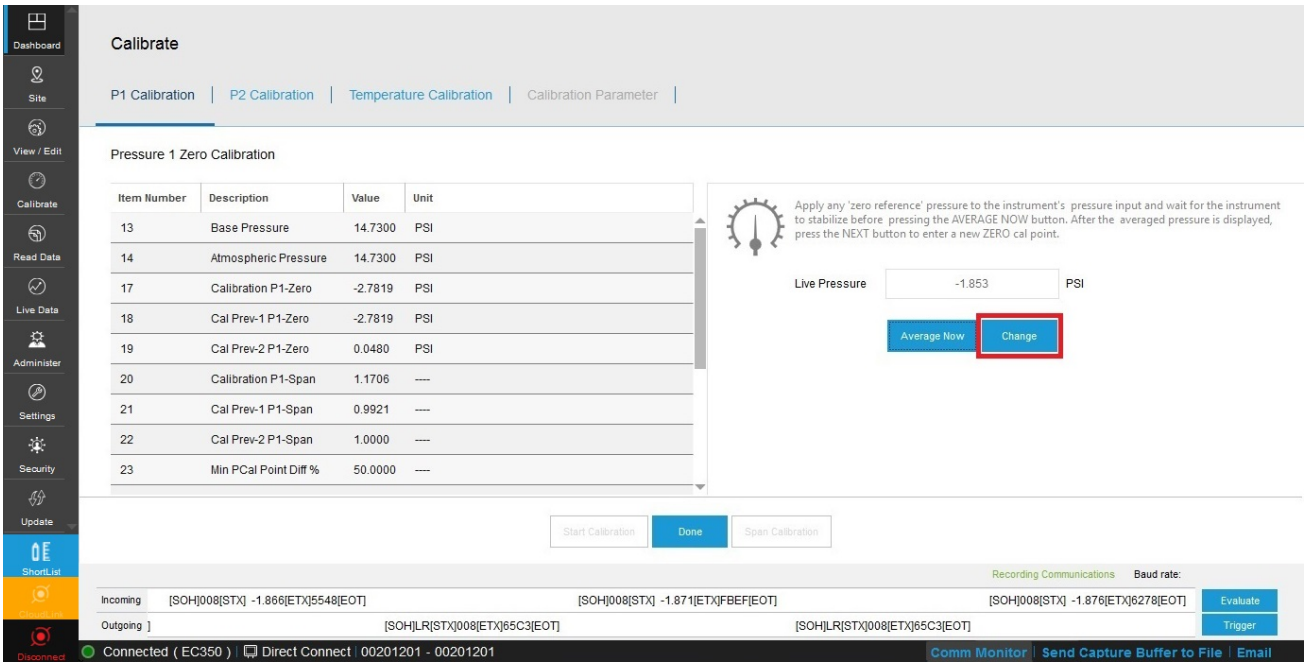
To calibrate pressure:

1. Apply a zero reference pressure (low range) to the P1 pressure transducer of the instrument, and wait for the instrument to stabilize.
2. Click **Average Now** to apply a zero reference pressure to the instrument.

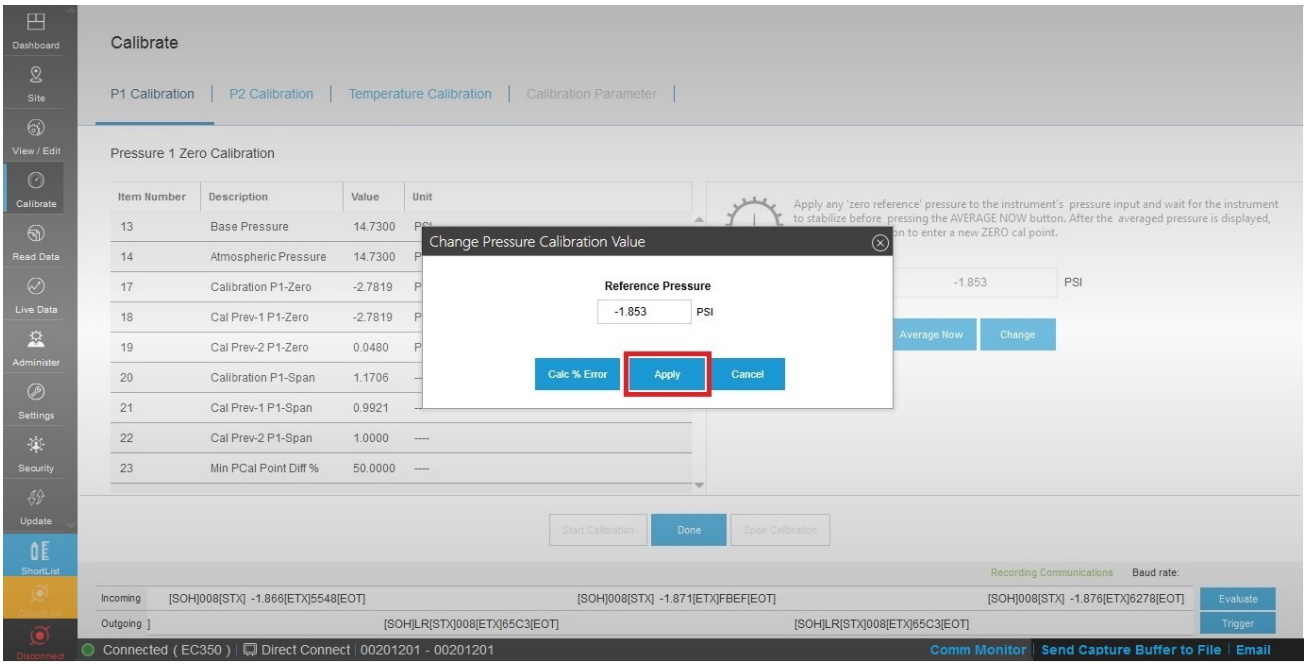


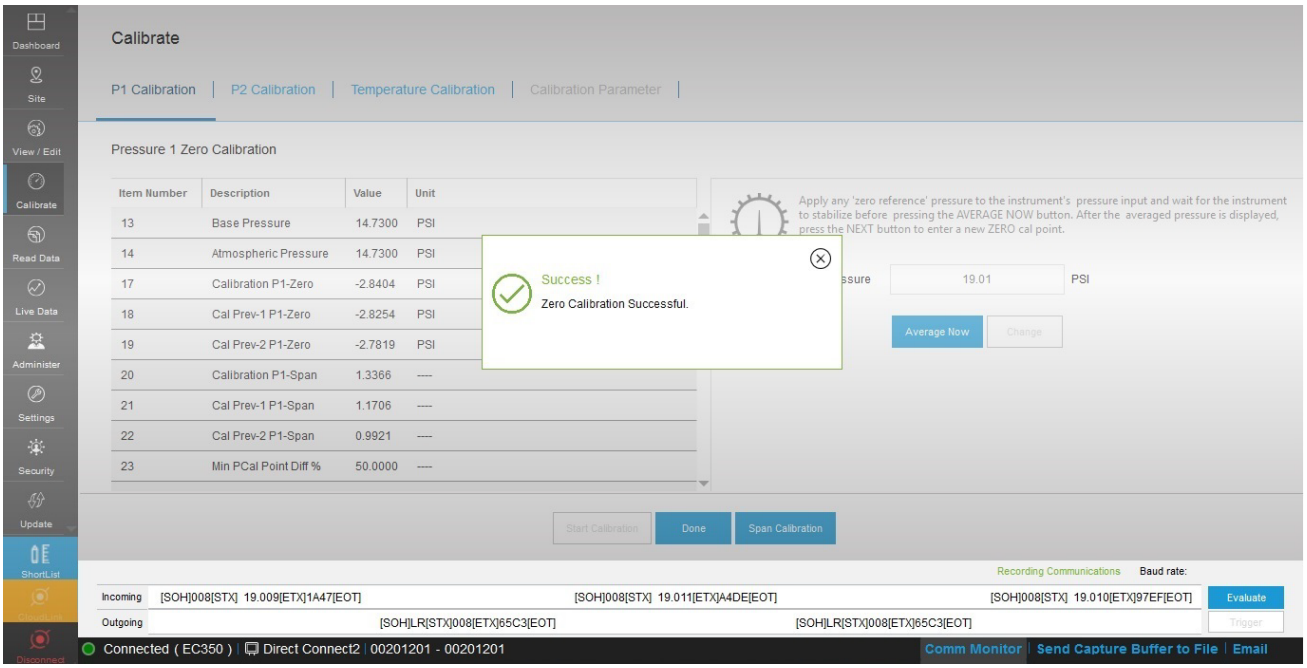


3. The averaged pressure appears. Click **Change** to enter a zero cal point.


Dashboard
Site
View / Edit
Calibrate
Read Data
Live Data
Administer
Settings
Security
Update
ShortList
CloudLink
Disconnect
Calibrate
P1 Calibration | P2 Calibration | Temperature Calibration | Calibration Parameter |
Pressure 1 Zero Calibration
Item Number | Description | Value | Unit
13 | Base Pressure | 14.7300 | PSI
14 | Atmospheric Pressure | 14.7300 | PSI
17 | Calibration P1-Zero | -2.7819 | PSI
18 | Cal Prev-1 P1-Zero | -2.7819 | PSI
19 | Cal Prev-2 P1-Zero | 0.0480 | PSI
20 | Calibration P1-Span | 1.1706 | ----
21 | Cal Prev-1 P1-Span | 0.9921 | ----
22 | Cal Prev-2 P1-Span | 1.0000 | ----
23 | Min PCal Point Diff % | 50.0000 | ----
Apply any 'zero reference' pressure to the instrument's pressure input and wait for the instrument to stabilize before pressing the AVERAGE NOW button. After the averaged pressure is displayed, press the NEXT button to enter a new ZERO cal point.
Live Pressure -1.853 PSI
Average Now
Change
Start Calibration
Done
Span Calibration
Recording Communications
Baud rate:
Incoming [SOH]008[STX] -1.866[ETX]5548[EOT] [SOH]008[STX] -1.871[ETX]FBEF[EOT] [SOH]008[STX] -1.876[ETX]6278[EOT]
Evaluate
Outgoing] [SOH]LR[STX]008[ETX]65C3[EOT] [SOH]LR[STX]008[ETX]65C3[EOT]
Trigger
Connected (EC350) | Direct Connect | 00201201 - 00201201
Comm Monitor | Send Capture Buffer to File | Email

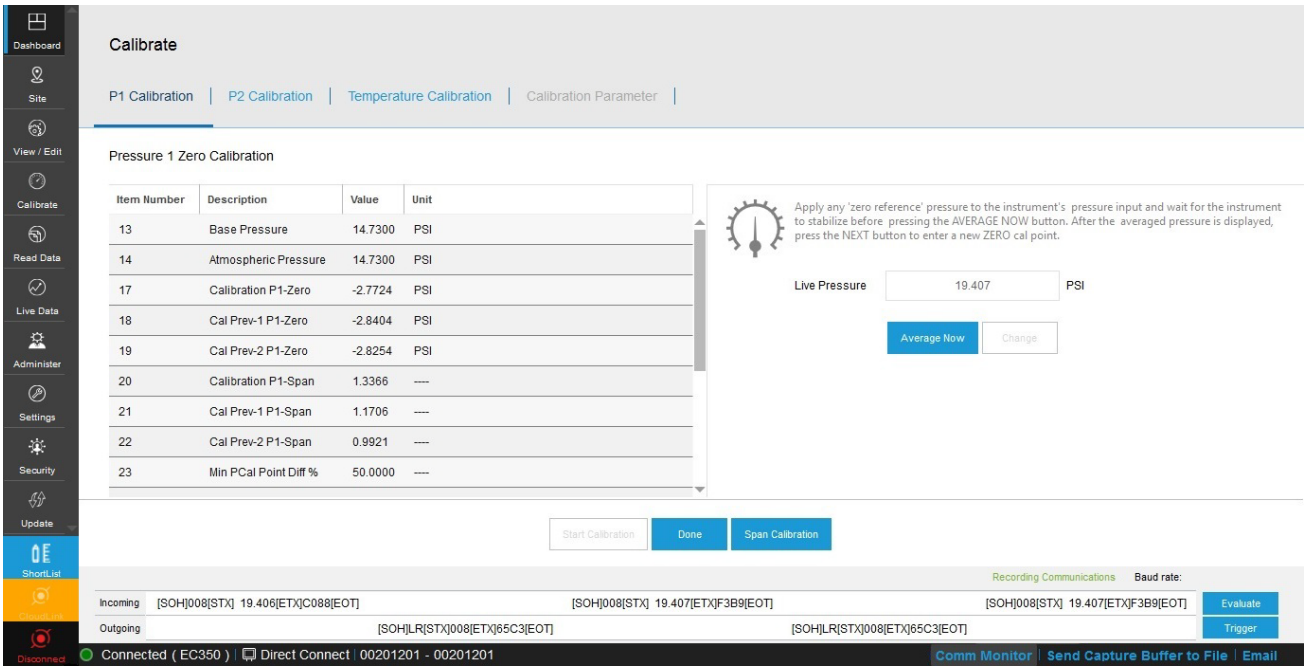
4. Change the value to accurately match the zero reference pressure applied to the pressure transducer. Click **Apply**.

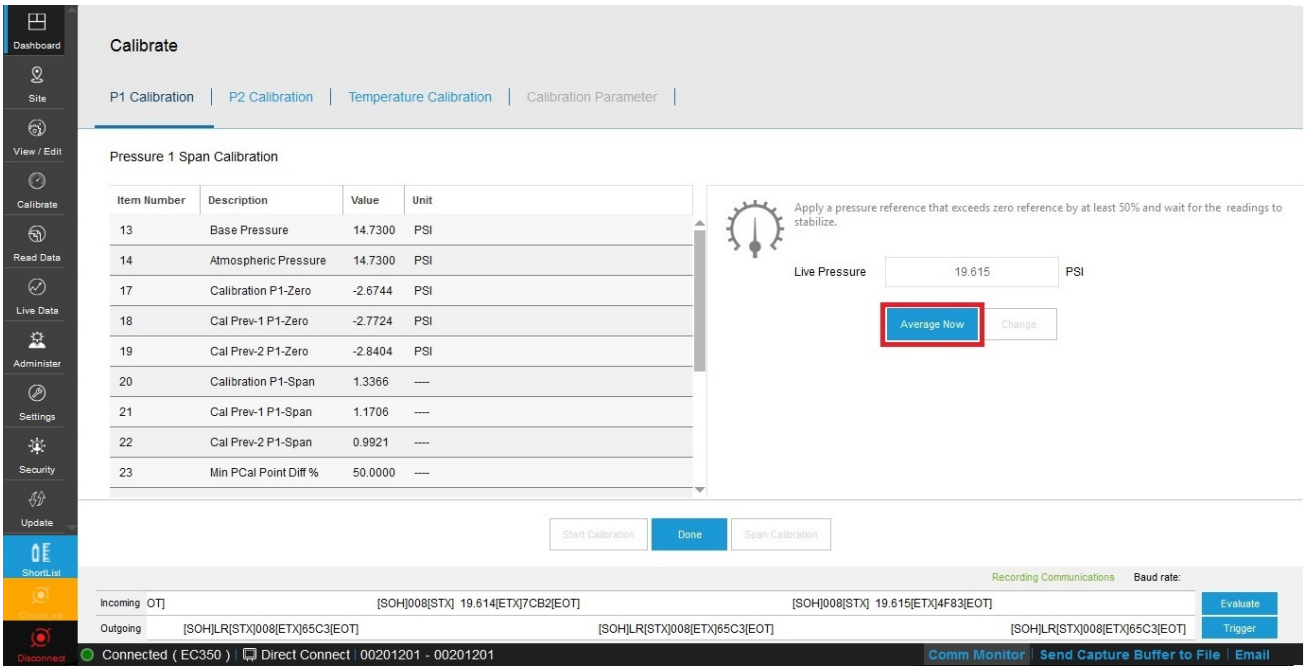




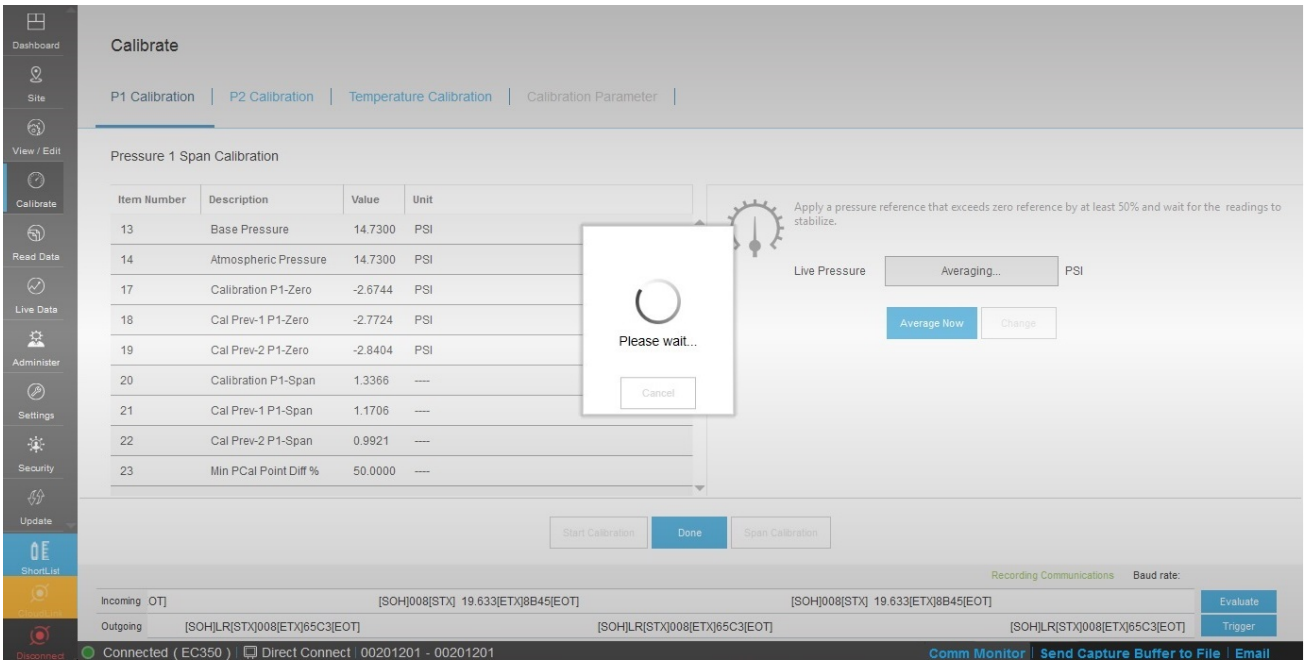
5. Click **Span Calibration.** Apply a high pressure such that the pressure applied is at least 50% more than the zero reference pressure. Wait for the pressure reading displayed on the Pressure 1 dialog box to exceed the zero reference pressure by 50%.

> **Note:** For example, if the zero reference pressure on a 100 PSI transducer equals 0.00 PSI, then the span reference pressure must be between 50.00 and 100.00 PSI. If the zero reference pressure on a 600 PSI transducer equals 0.00 PSI, then the span reference pressure must be between 300.00 and 600.00 PSI.

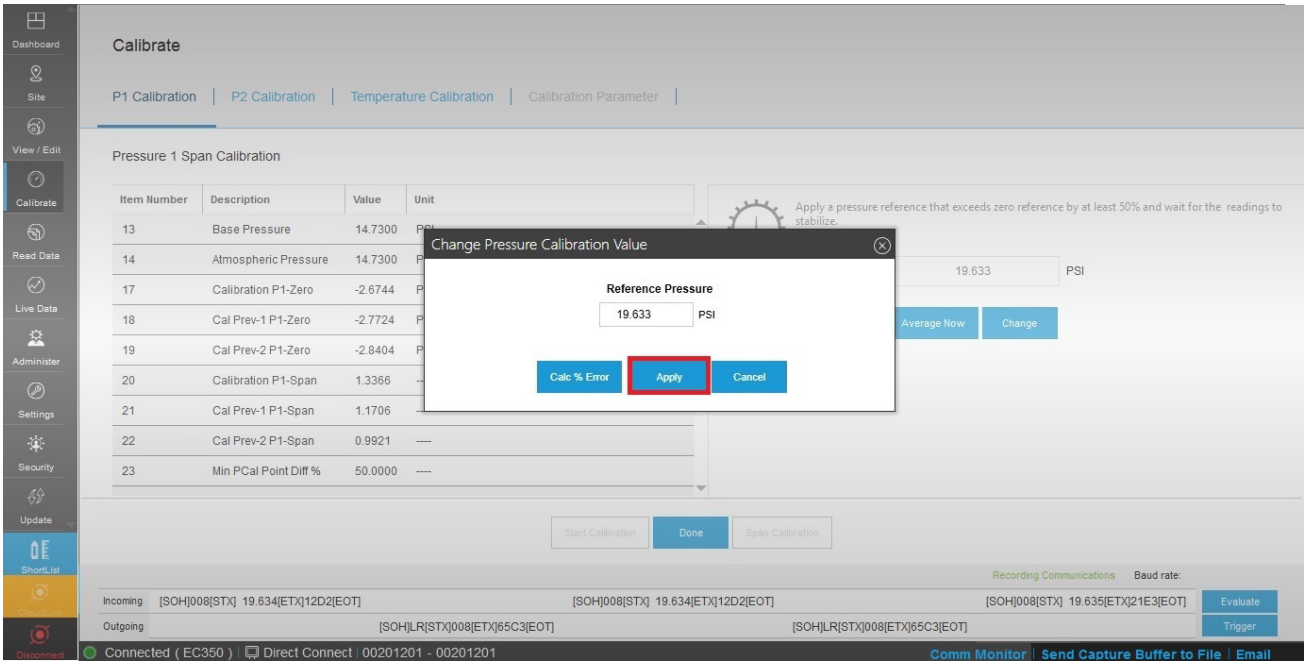


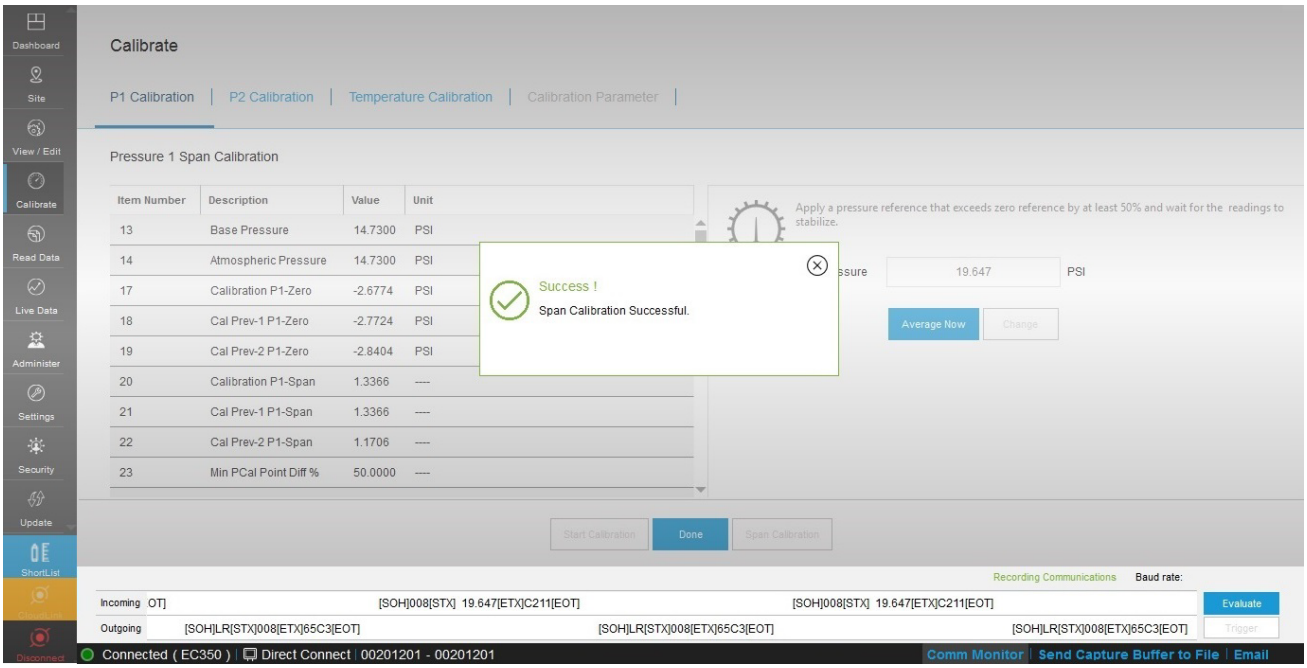


6. After the pressure stabilizes, click **Average Now**. MasterLink averages the reading and displays the average pressure.

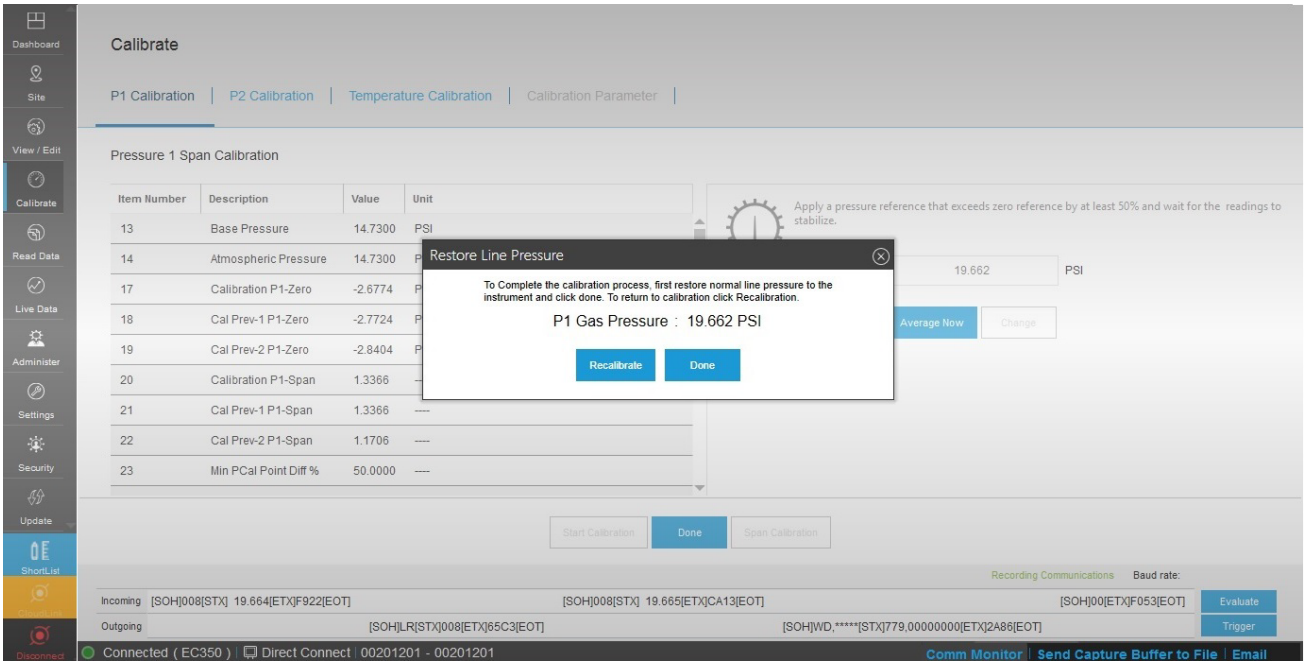


7. Click **Apply**.




Dashboard
Site
View / Edit
Calibrate
Read Data
Live Data
Administer
Settings
Security
Update
ShortList
Disconnect
Calibrate
P1 Calibration | P2 Calibration | Temperature Calibration | Calibration Parameter |
Pressure 1 Span Calibration
Item Number | Description | Value | Unit
13 | Base Pressure | 14.7300 | PSI
14 | Atmospheric Pressure | 14.7300 | PSI
17 | Calibration P1-Zero | -2.6774 | PSI
18 | Cal Prev-1 P1-Zero | -2.7724 | PSI
19 | Cal Prev-2 P1-Zero | -2.8404 | PSI
20 | Calibration P1-Span | 1.3366 | ----
21 | Cal Prev-1 P1-Span | 1.3366 | ----
22 | Cal Prev-2 P1-Span | 1.1706 | ----
23 | Min PCal Point Diff % | 50.0000 | ----
Apply a pressure reference that exceeds zero reference by at least 50% and wait for the readings to stabilize.
19.647
PSI
Average Now
Change
Success !
Span Calibration Successful.
Start Calibration
Done
Span Calibration
Recording Communications
Baud rate:
Incoming
Outgoing
[SOH]008[STX] 19.647[ETX]C211[EOT]
[SOH]LR[STX]008[ETX]65C3[EOT]
Evaluate
Trigger
Connected (EC350) | Direct Connect | 00201201 - 00201201
Comm Monitor | Send Capture Buffer to File | Email

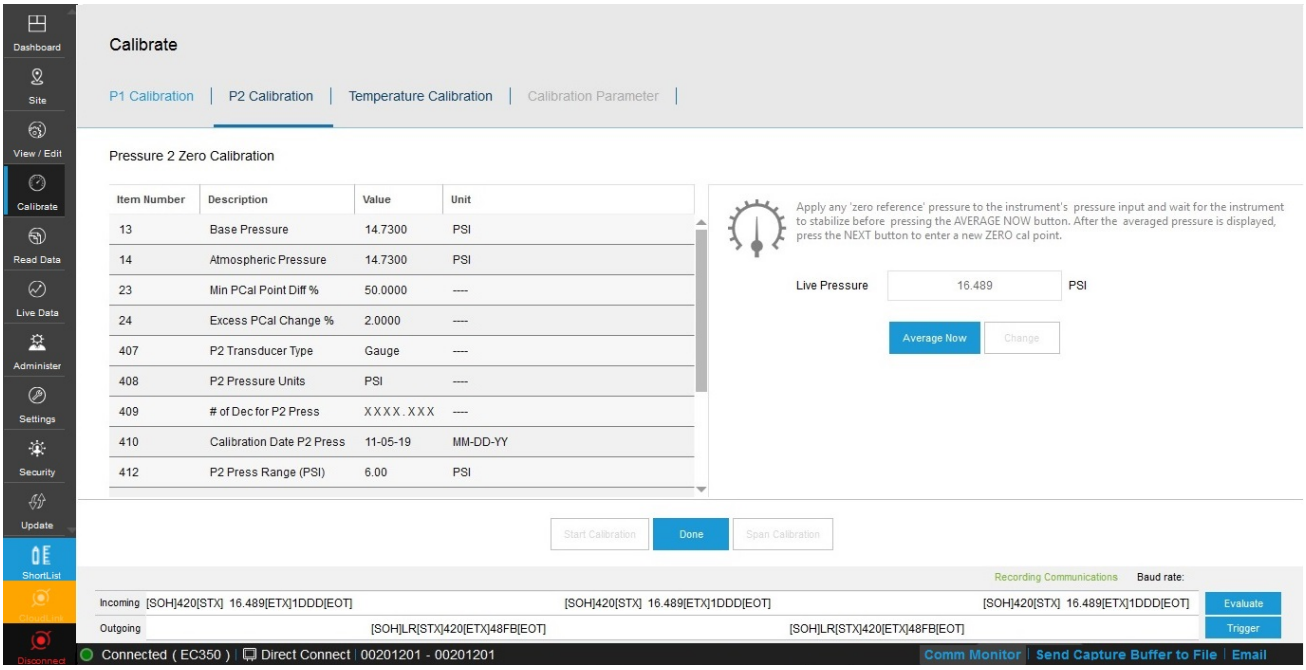
8. To complete the calibration process, restore the normal line pressure to the instrument, and then click **Done**.



9. For Recalibration, click **Recalibrate** and repeat the same process.

3.5.2 Pressure Calibration P2

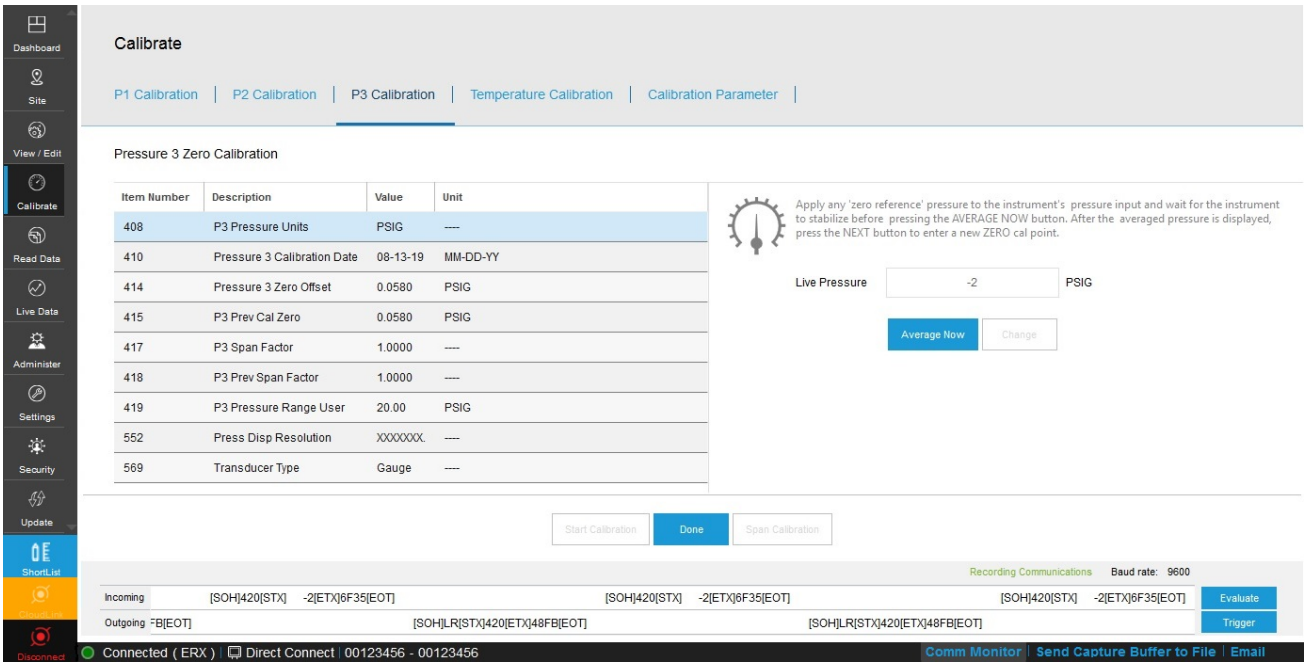
P2 Calibration contains different calibration items. The procedure is same as performed for P1 calibration.



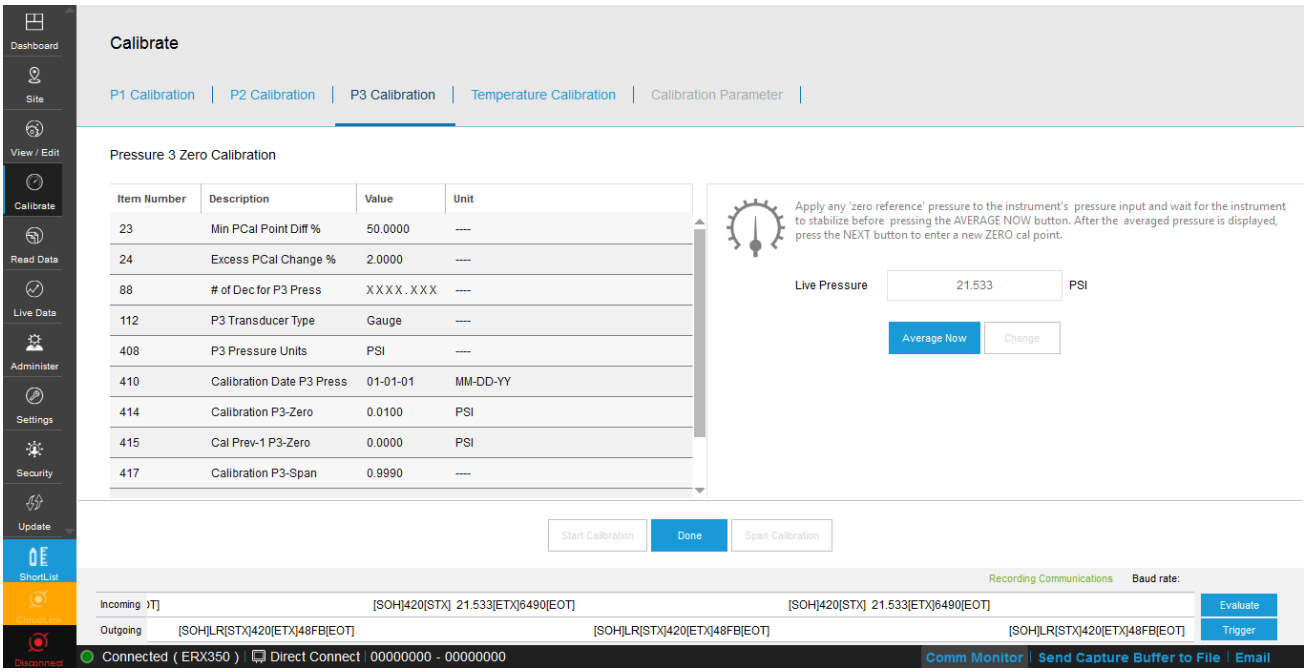
3.5.3 Pressure Calibration P3

P3 Calibration contains different calibration items. The procedure is same as performed for P1 calibration.

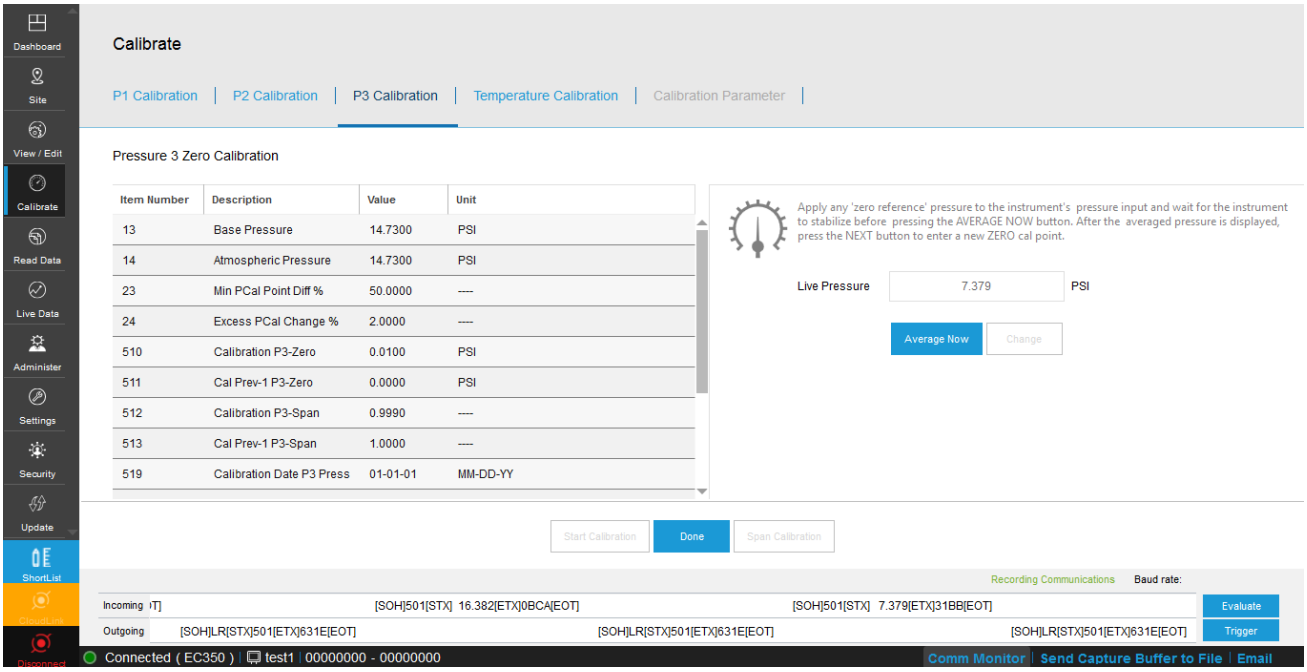
ERX :



ERX 350 :


Dashboard
Site
View / Edit
Calibrate
Read Data
Live Data
Administer
Settings
Security
Update
ShortList
CloudLink
Disconnect
Calibrate
P1 Calibration | P2 Calibration | P3 Calibration | Temperature Calibration | Calibration Parameter
Pressure 3 Zero Calibration
Item Number | Description | Value | Unit
23 | Min PCal Point Diff % | 50.0000 | ----
24 | Excess PCal Change % | 2.0000 | ----
88 | # of Dec for P3 Press | XXXX.XXX | ----
112 | P3 Transducer Type | Gauge | ----
408 | P3 Pressure Units | PSI | ----
410 | Calibration Date P3 Press | 01-01-01 | MM-DD-YY
414 | Calibration P3-Zero | 0.0100 | PSI
415 | Cal Prev-1 P3-Zero | 0.0000 | PSI
417 | Calibration P3-Span | 0.9990 | ----
Apply any 'zero reference' pressure to the instrument's pressure input and wait for the instrument to stabilize before pressing the AVERAGE NOW button. After the averaged pressure is displayed, press the NEXT button to enter a new ZERO cal point.
Live Pressure 21.533 PSI
Average Now
Change
Start Calibration
Done
Span Calibration
Recording Communications
Baud rate:
Incoming)T] [SOH]420[STX] 21.533[ETX]6490[EOT] [SOH]420[STX] 21.533[ETX]6490[EOT]
Outgoing [SOH]LR[STX]420[ETX]48FB[EOT] [SOH]LR[STX]420[ETX]48FB[EOT] [SOH]LR[STX]420[ETX]48FB[EOT]
Evaluate
Trigger
Connected (ERX350) | Direct Connect | 00000000 - 00000000
Comm Monitor | Send Capture Buffer to File | Email

EC 350 :


Dashboard
Site
View / Edit
Calibrate
Read Data
Live Data
Administer
Settings
Security
Update
ShortList
CloudLink
Disconnect
Calibrate
P1 Calibration | P2 Calibration | P3 Calibration | Temperature Calibration | Calibration Parameter
Pressure 3 Zero Calibration
Item Number | Description | Value | Unit
13 | Base Pressure | 14.7300 | PSI
14 | Atmospheric Pressure | 14.7300 | PSI
23 | Min PCal Point Diff % | 50.0000 | ----
24 | Excess PCal Change % | 2.0000 | ----
510 | Calibration P3-Zero | 0.0100 | PSI
511 | Cal Prev-1 P3-Zero | 0.0000 | PSI
512 | Calibration P3-Span | 0.9990 | ----
513 | Cal Prev-1 P3-Span | 1.0000 | ----
519 | Calibration Date P3 Press | 01-01-01 | MM-DD-YY
Apply any 'zero reference' pressure to the instrument's pressure input and wait for the instrument to stabilize before pressing the AVERAGE NOW button. After the averaged pressure is displayed, press the NEXT button to enter a new ZERO cal point.
Live Pressure 7.379 PSI
Average Now
Change
Start Calibration
Done
Span Calibration
Recording Communications
Baud rate:
Incoming)T] [SOH]501[STX] 16.382[ETX]0BCA[EOT] [SOH]501[STX] 7.379[ETX]31BB[EOT]
Outgoing [SOH]LR[STX]501[ETX]631E[EOT] [SOH]LR[STX]501[ETX]631E[EOT] [SOH]LR[STX]501[ETX]631E[EOT]
Evaluate
Trigger
Connected (EC350) | test1 | 00000000 - 00000000
Comm Monitor | Send Capture Buffer to File | Email

3.5.4 Temperature Calibration

Understanding Temperature Calibration

This is a simple two-point calibration. First, calibrate the gas temperature sensor at a low scale temperature and then again at a high scale temperature. Each time, adjust the temperature calculated by the instrument to match the reading from your reference standard calibrator.

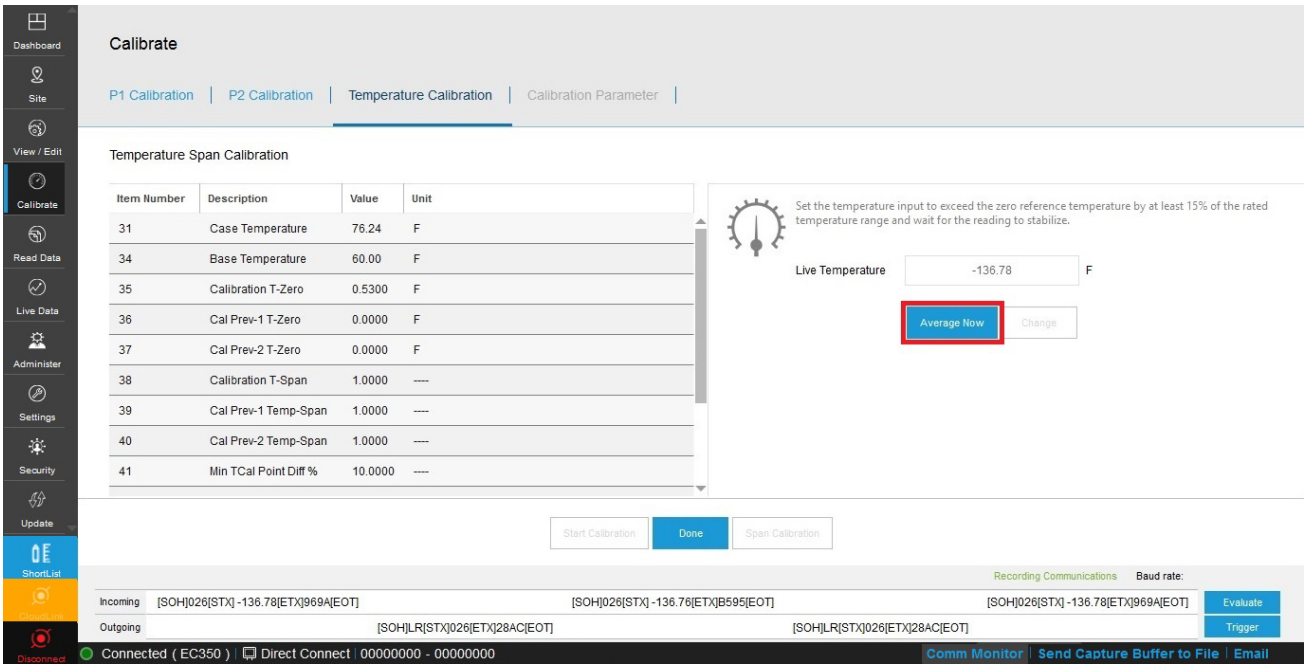
Adjusting the low scale temperature is called **Zero Calibration** while adjusting the high scale temperature is called **Span Calibration**. A low temperature source, usually an ice bath (32 °F) is used to determine the Temperature Zero Calibration. A higher temperature source is used to determine the Temperature Span Calibration (gain). The default Calibration Parameters require the Span Temperature exceed the Zero Temperature by at least 10% of the instrument's temperature range.

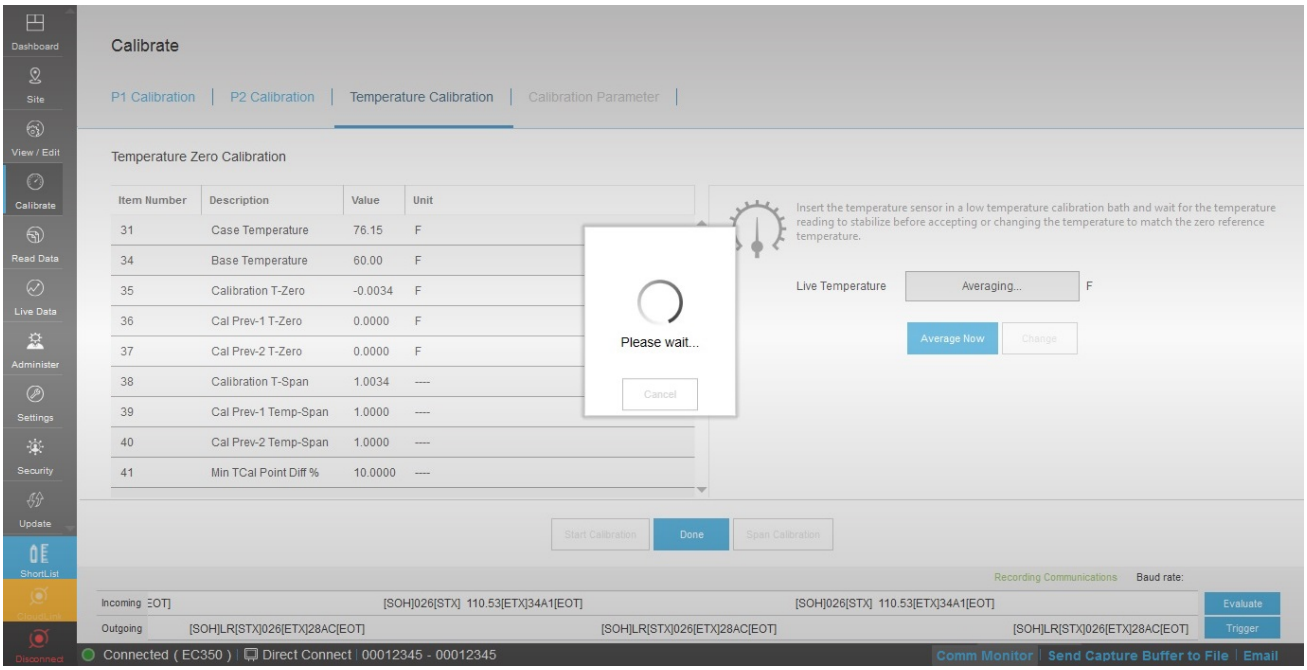
Span calibration actually uses some of the information determined from performing the zero calibration. For this reason, you will need to at least "sample" a low scale temperature before you can begin the span calibration. Sampling occurs when you indicate that the temperature is ready to be averaged.

To calibrate temperature:

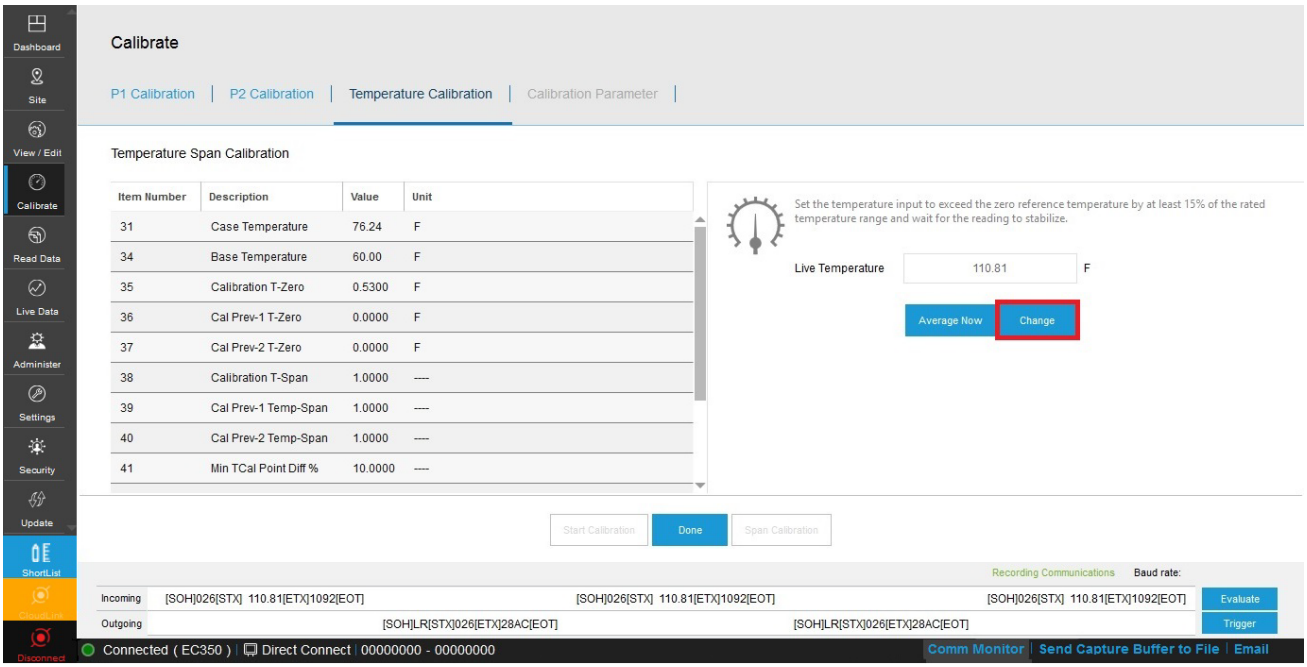
Insert the temperature probe of the instrument, along with an accurately calibrated thermometer into a low temperature bath or dry well, which provides the temperature zero reference. Wait for the temperature reading displayed on the Temperature Calibration dialog box to be stabilized.

1. Click **Average Now**. MasterLink averages the reading and displays the average temperature.

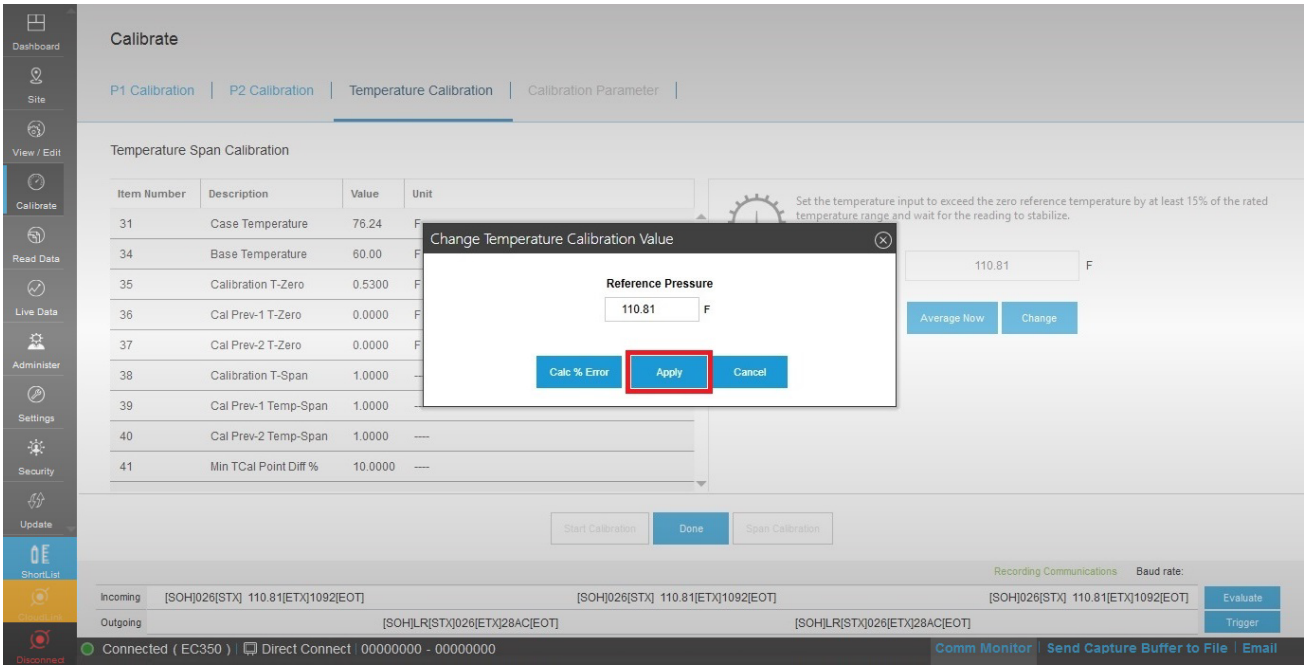




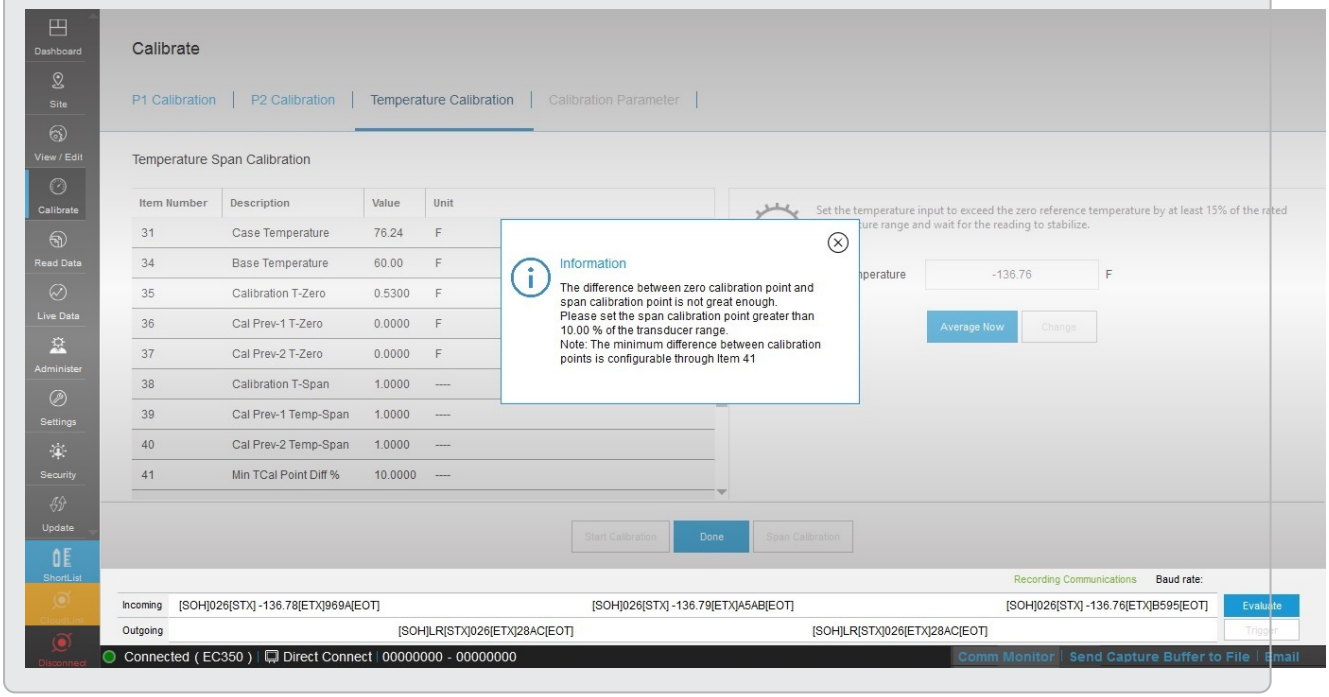
2. The averaged temperature appears. Click **Change** to change the value to accurately match the temperature measured by the calibrated thermometer placed in the low temperature bath.

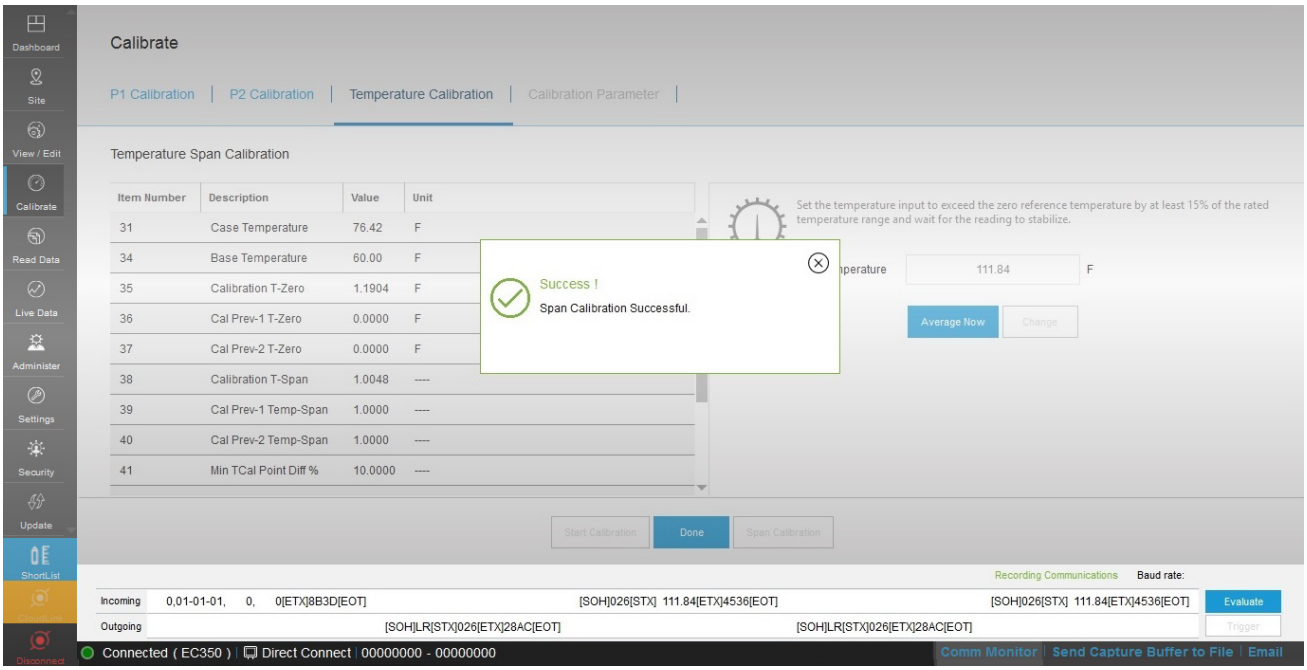


3. Click **Apply**.



Note: On entering incorrect values, an error message is displayed.





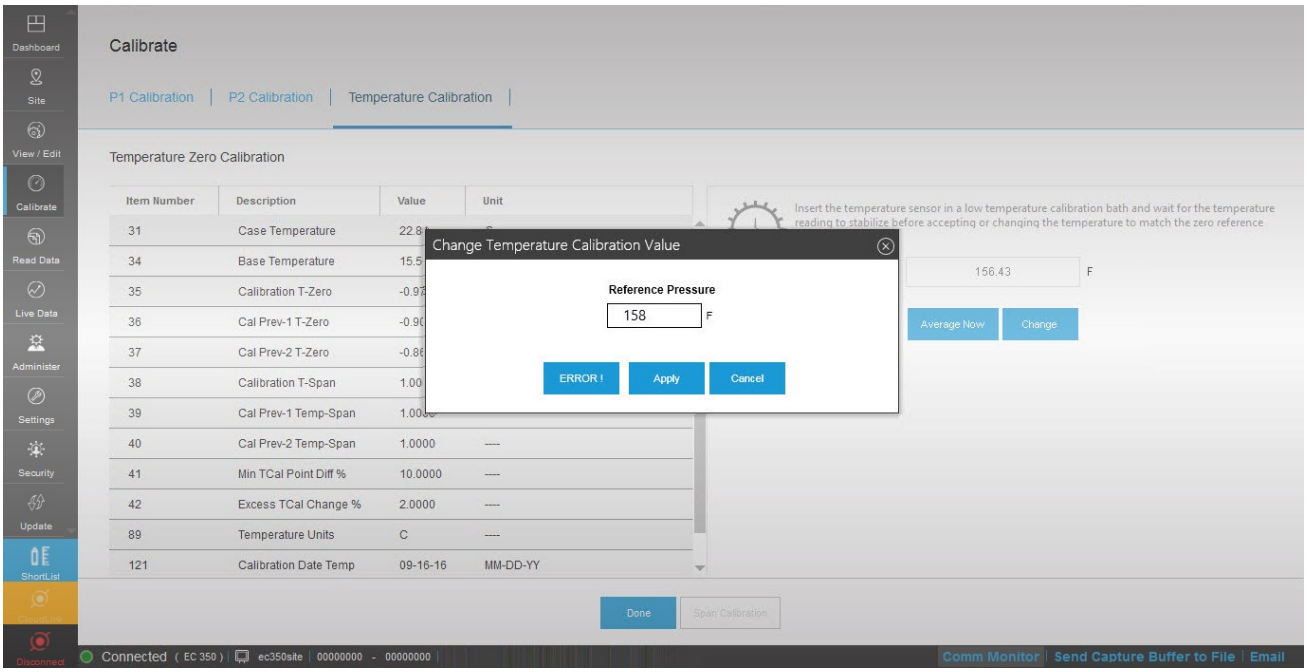
4. Click **Span Calibration**.

   Insert the temperature probe of EC 350 and the calibrated thermometer into a high temperature bath, which provides the temperature span reference. The temperature reading displayed on the Temperature Calibration dialog box must exceed the zero reference temperature by at least 15% to proceed with span calibration.

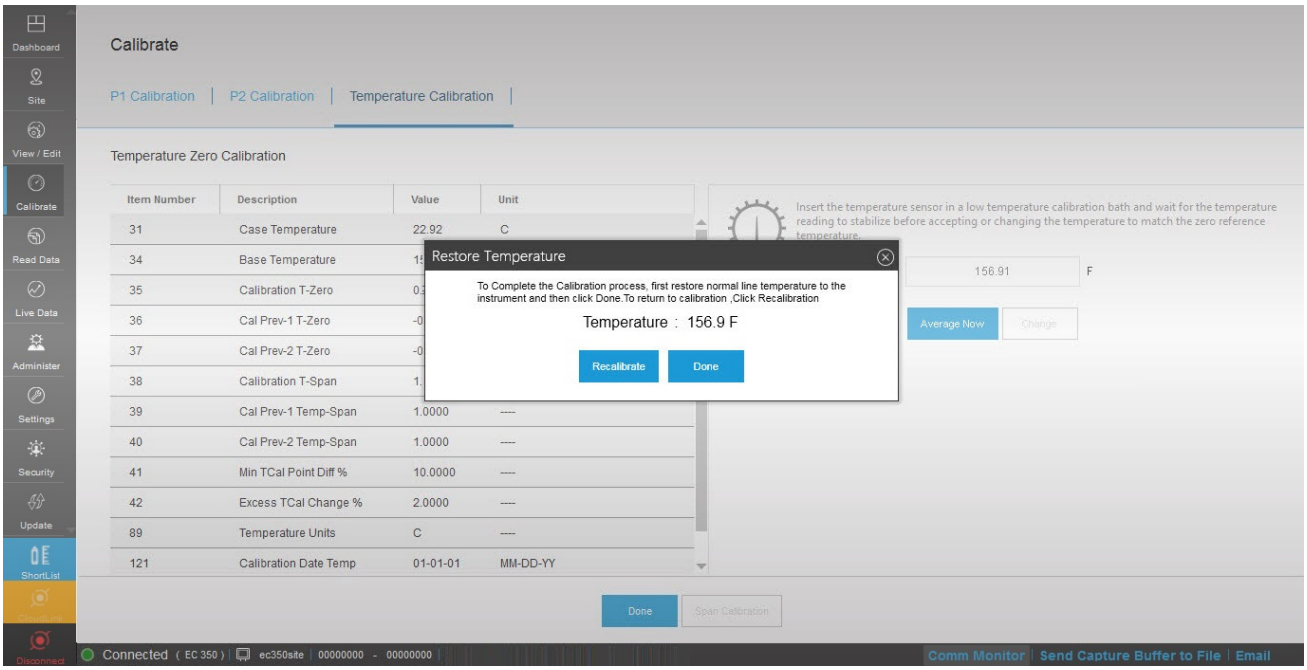
5. After the reading stabilizes, click **Average Now**.

   MasterLink averages the reading and displays the average temperature.

6. Click **Change**. Change the value to accurately match the temperature measured by the calibrated thermometer placed in the high calibration bath. Finally click **Apply**.



7. To complete the calibration process, first restore normal line temperature to the instrument, and then click **Done**.

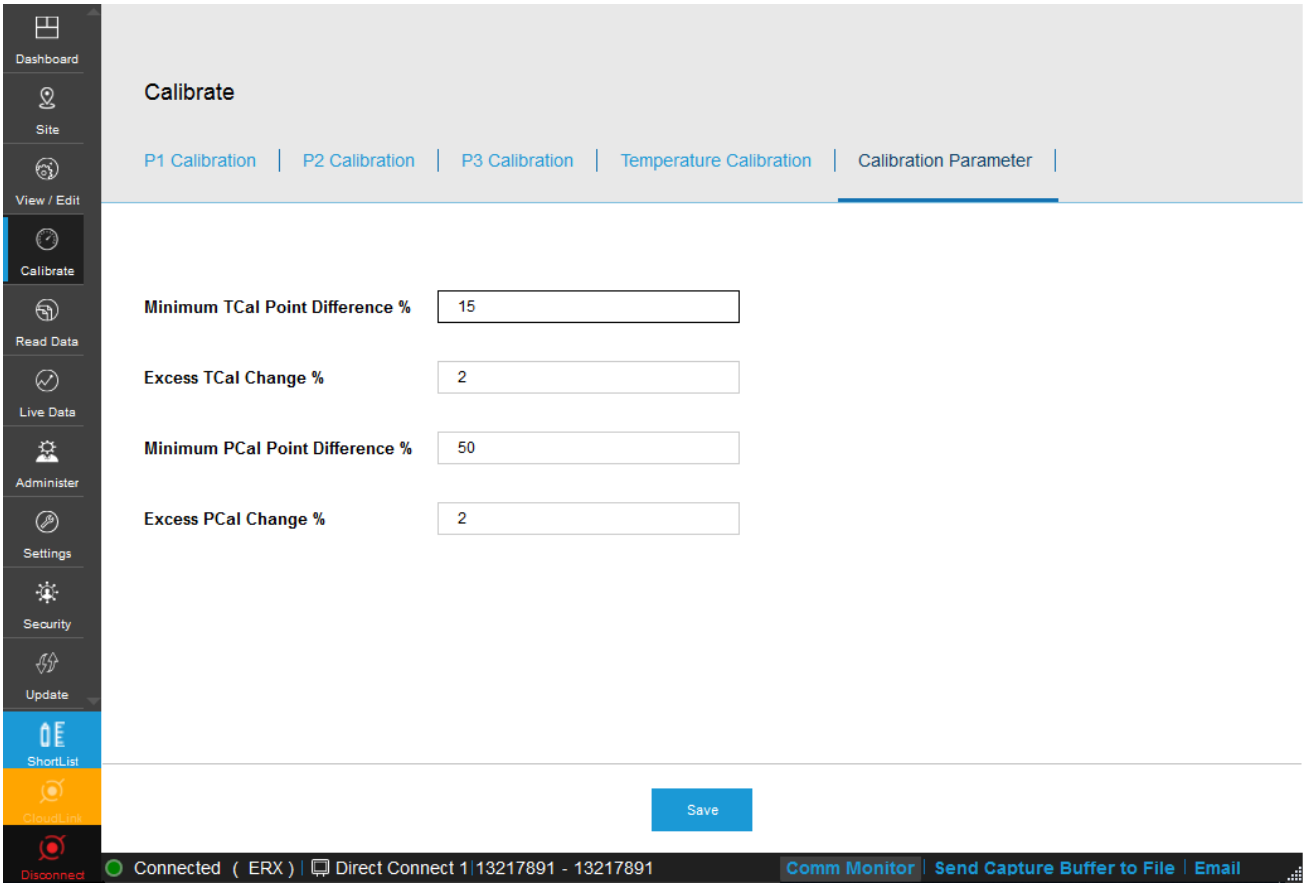


Note: Supported temperature range: -40 °C to 70 °C

8. For Recalibration, click **Recalibrate** and repeat the same process.

3.5.5 Calibration Parameter

This tab is used to configure calibration parameters for legacy Mercury devices, such as ERX, ER, and Mini.



Enter the values and click **Save** to calibrate the connected legacy Mercury device.

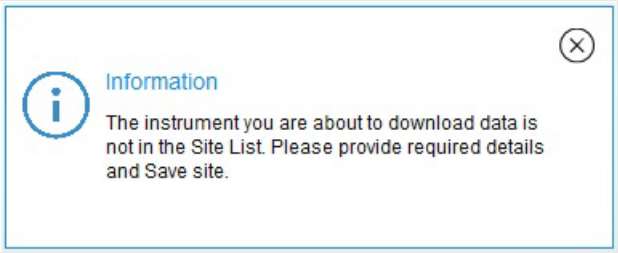
3.6 Read Data

The Read data functionality is now re-designed to read and report data from the same screen. Users can read the logs from the instrument and can also generate reports.

In EC 350/Standalone mode, tabs corresponding to cellular logs and diagnostic logs are disabled.

While working with a CloudLink modem, if you start downloading the device logs, you cannot cancel or abort the ongoing download process.

Attention: The site must be added to MasterLink application to use the **Read Data** tab. If the site is not already added, the following warning pop-up message appears.

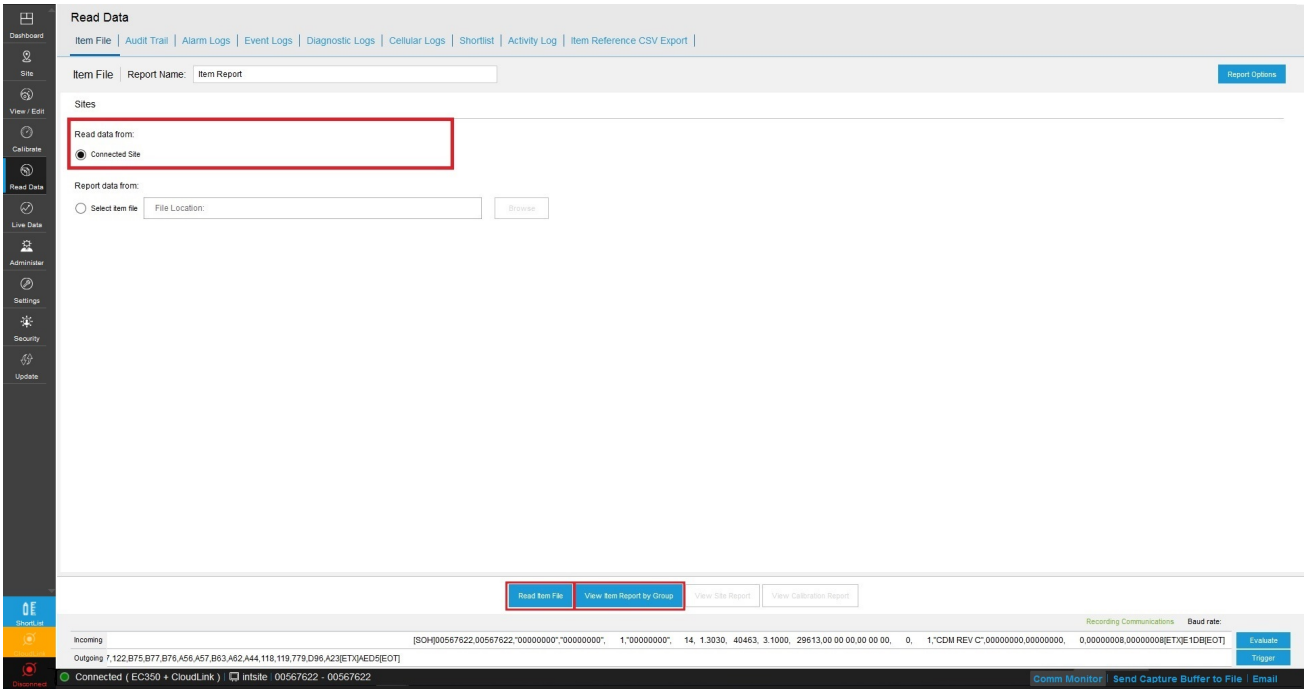


After closing the warning pop-up message, the **Add Site** page will appear. Provide required site details and click on **Save**.

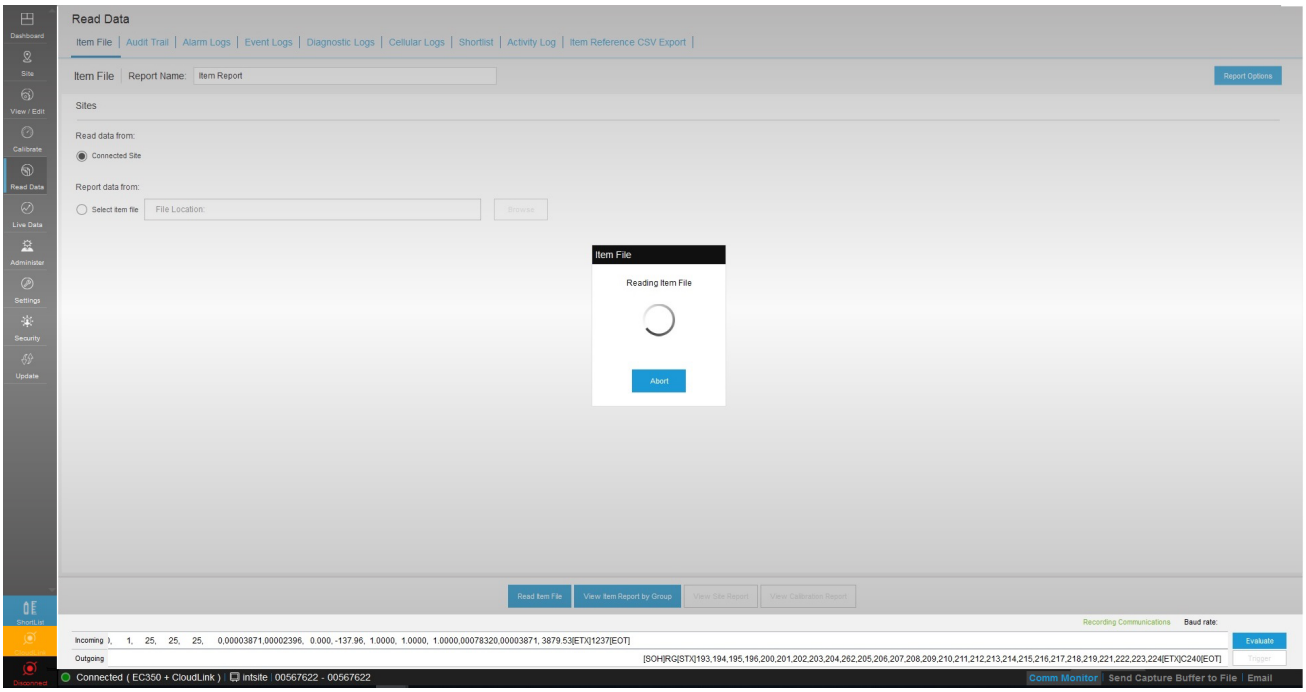
3.6.1 Item File

Use the **Item File** tab to read the item numbers and their current values from the instrument. An Item File stores the connected site instrument's item values in a file (*.IE3 for EC 350, *.ICL for CloudLink Modem, *.ECL for EC 350 + CloudLink Modem).

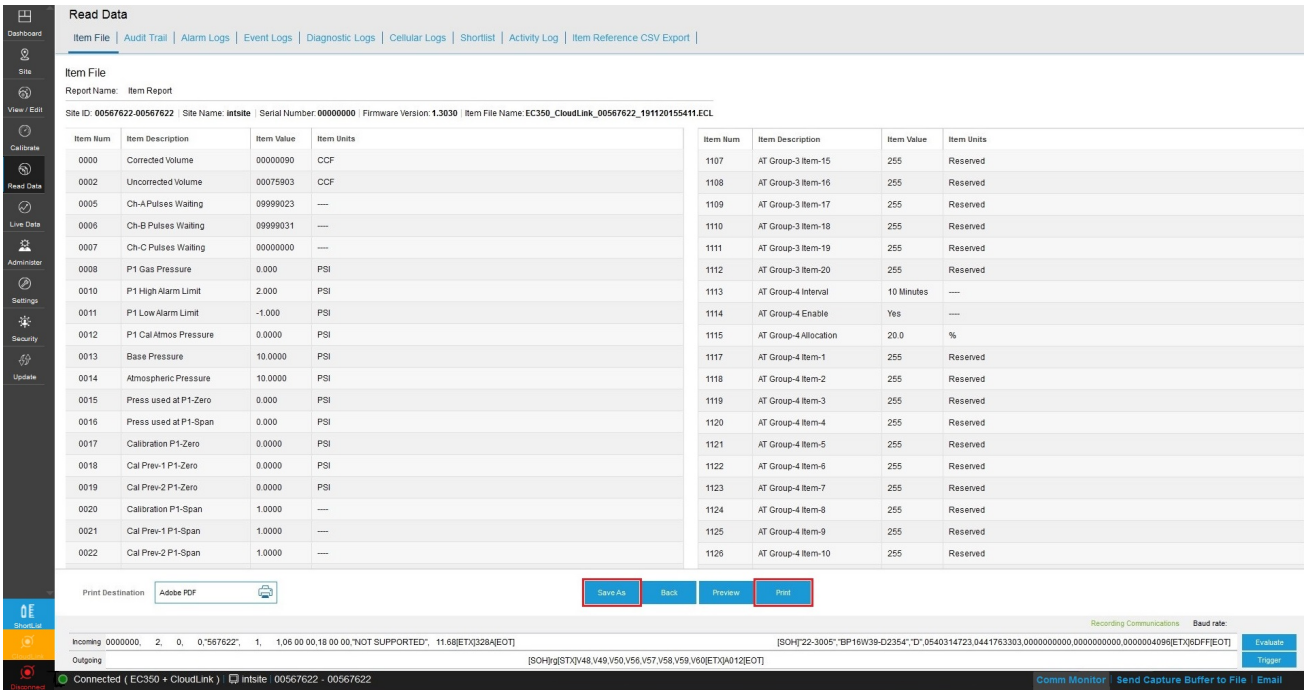
Item file can be read (online) from the connected instrument or can be viewed (offline) from a stored item file.



On checking the **Connected Site** click **Read Item File** tab.



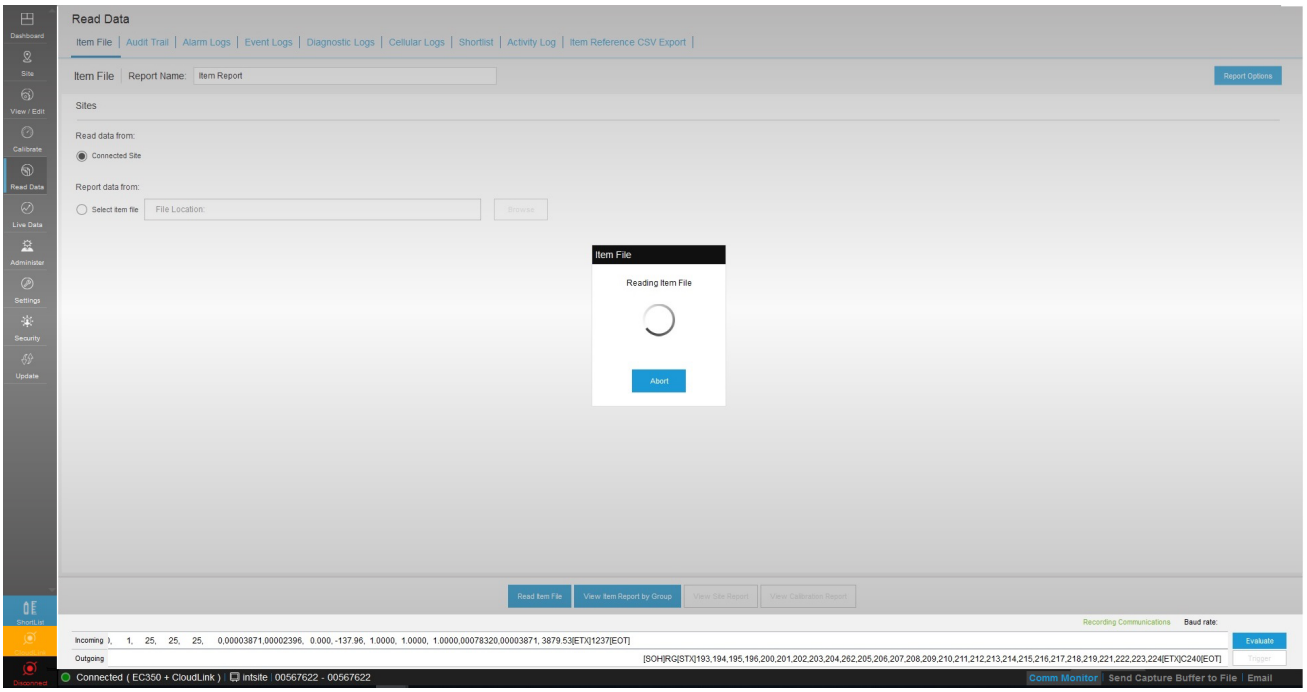
The Item File report appears.



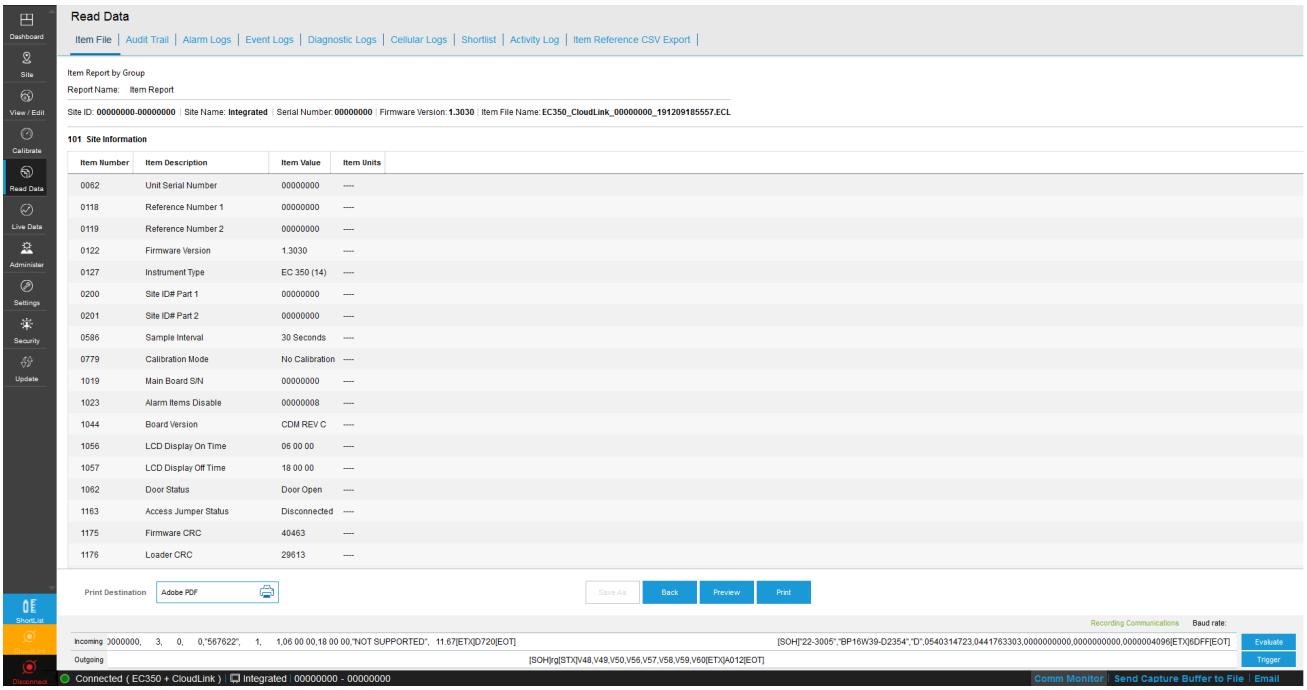
You can **Save As** or **Print** the data obtained.

You can also choose **Preview** to export the data.

On checking the **Connected Site** click **View Item Report by Group** tab.



The Item File report appears by Group.



You can **Print** the data that is obtained.

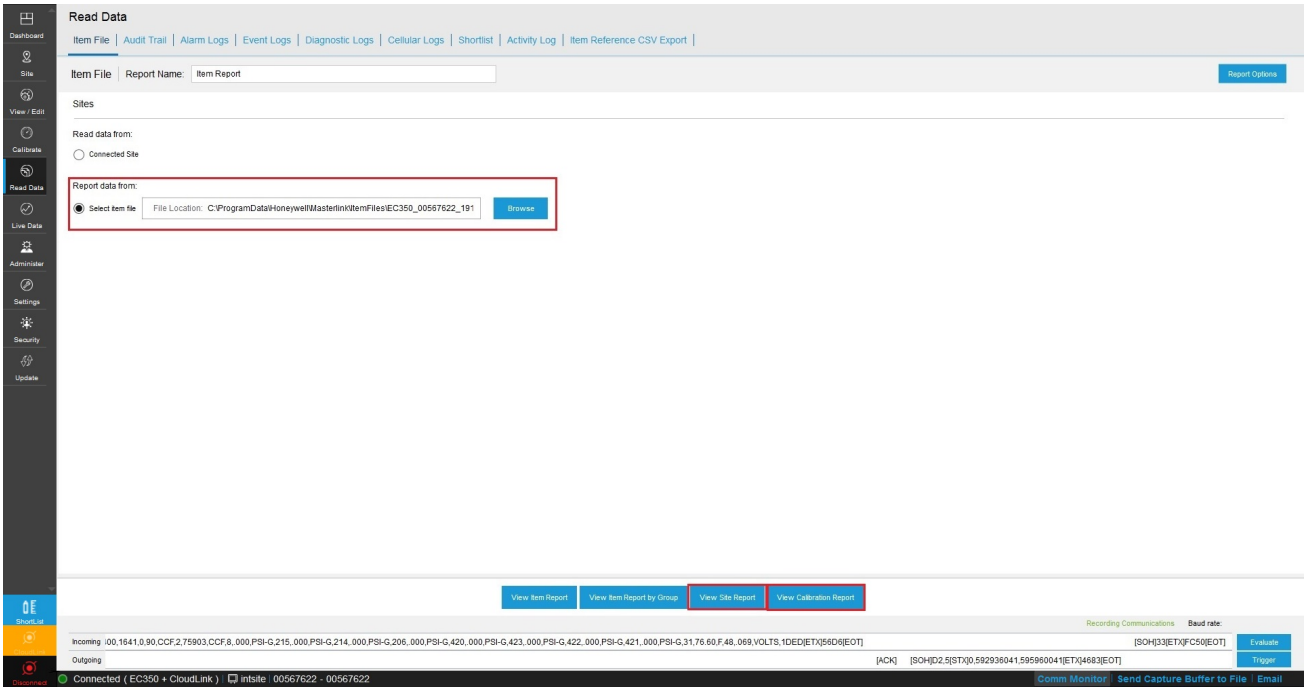
You can also choose **Preview** to export the data.

> **Note:** Application must be connected to an instrument to perform this operation.

Browse and select an item file to generate Site Report.

> **Note:** Site Report and Calibration Report are offline operations.

Click **View Site Report** under Item File tab to generate site report. Click **View Calibration Report** under item file tab to view calibration report.



See the reports here: Site Report; Calibration Report.

3.6.2 Audit Trail

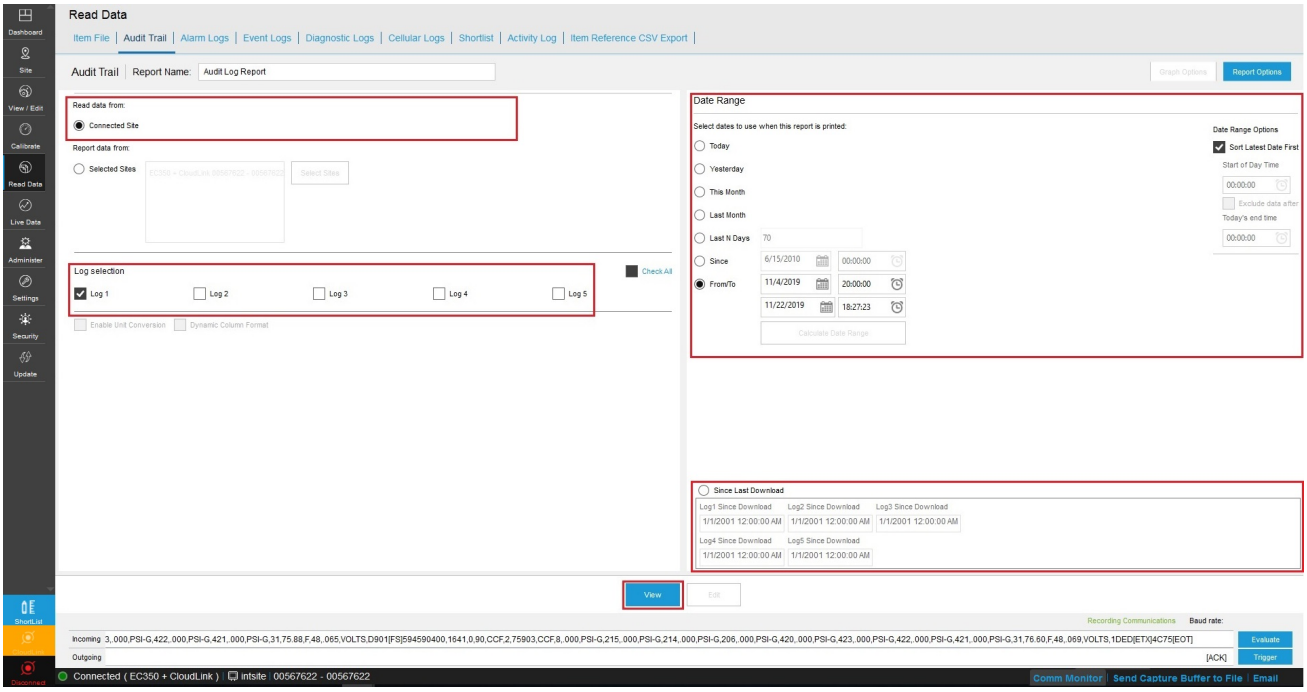
Use the 'Audit Trail' tab to view and download Audit Trail data from the instrument.

Logs can be read from a connected site (online), or can be retrieved from exiting list of sites (off-line). The connected site will be selected by default.

On checking the **Connected Site**, select a **Date Range**, select the required logs from **Log selection**.

Since last Download gives you the last downloaded log time and date. Once you select this, logs are downloaded from the time the report was last generated. You can reset the value to the start of the device setup.

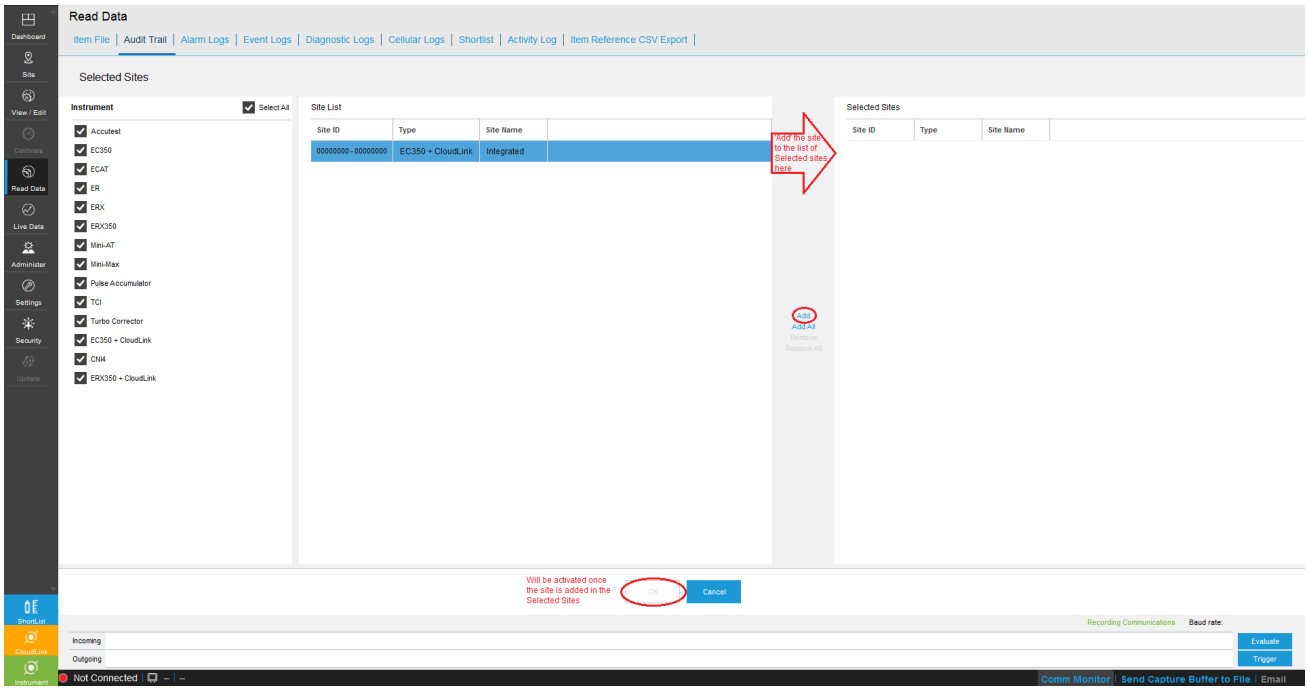
and then click **View** tab. Application must be connected to an instrument to view Audit Trail reports.



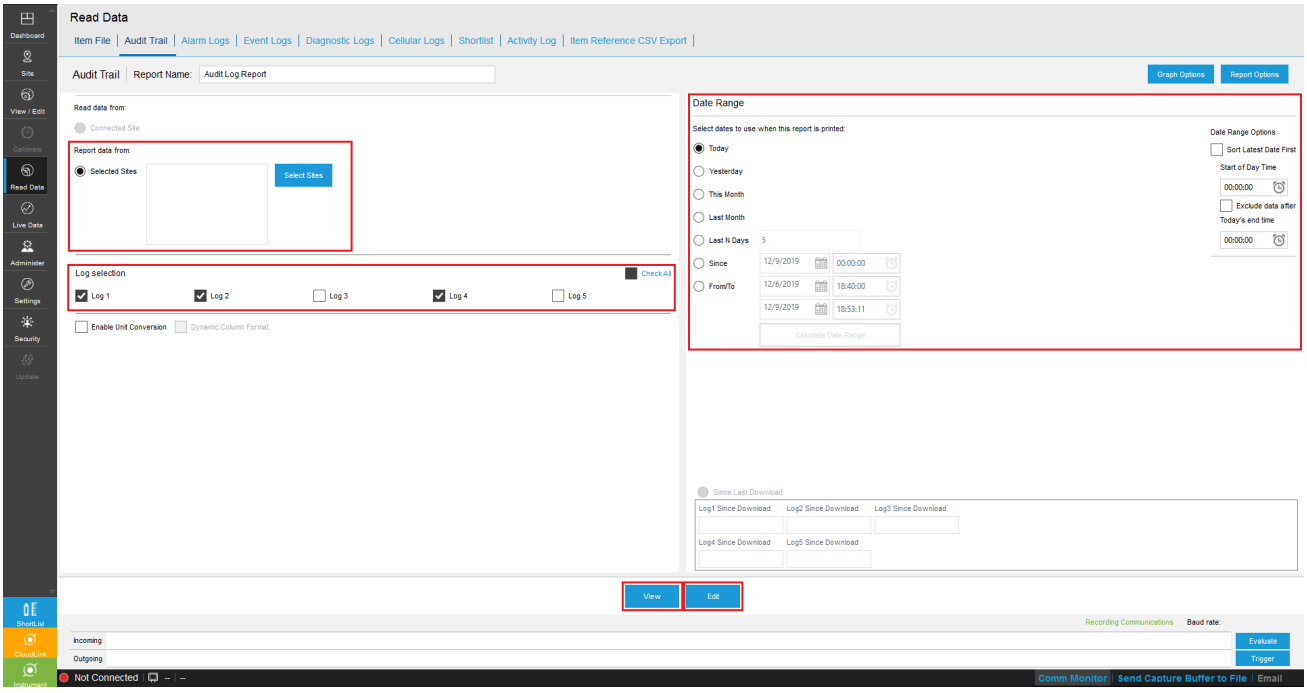
Alternatively, you can choose to select a list of sites and then generate a report.

Relate the steps highlighted in the image above with the steps below:

1. Start by selecting the site. For selecting multiple sites use **Select Sites** option. A new window appears.



2. Click **OK**
3. Select the required **log** or select **Check All**.
4. Select the **Date Range**.
5. Click **View** to view Audit Trail Report.
6. Click **Edit** to edit the generated report.

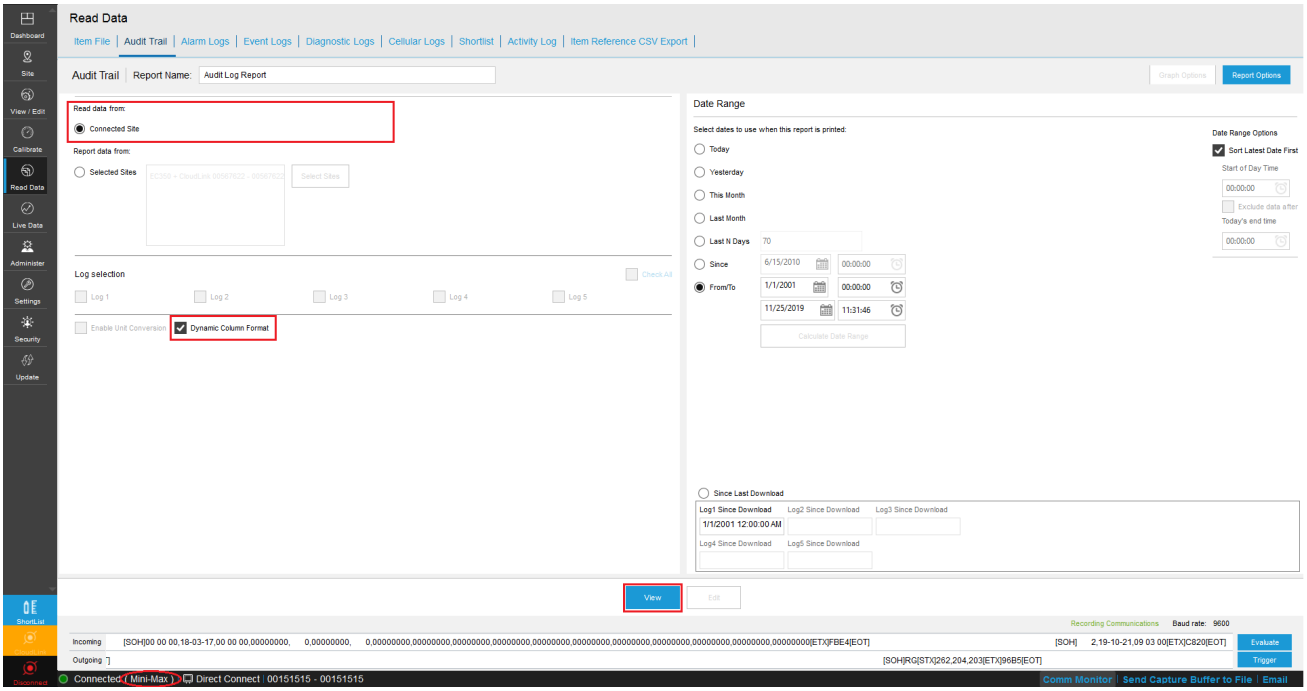


If required, click on **Report Options** to view or add more information in the report.

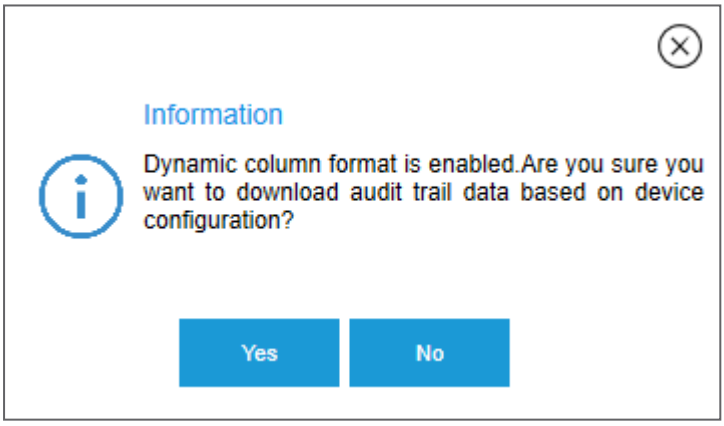
Dynamic Column Format (For Mini-Max connections only):

This option is enabled only when Mini-Max is connected (as below) and as per the instrument log configuration audit trail data will be downloaded.

Click **View**.



An 'Information' dialog box appears with two options **Yes** and **No**.

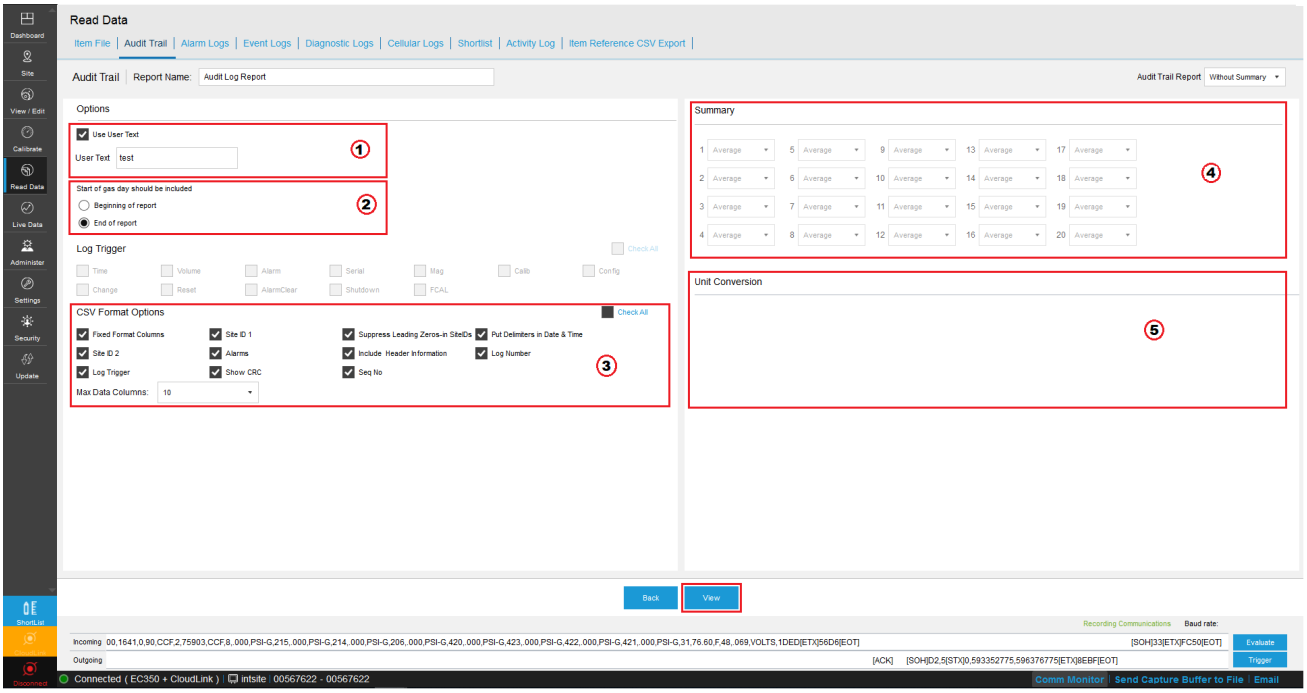


YES: Audit Trail data will be downloaded as per the pre-defined instrument configuration

NO: All the 10 log audit data items will be downloaded. The next view of the 'Audit Trail' window will deselect the **Dynamic Format Column** check box.

Dynamic Column Format is disabled for other device types and when in offline view i.e., selected sites.

Audit Trail Report can be viewed without Summary (offline mode only) - This function is used to provide a full report (without summary) of the audit trail data that pertains to a particular instrument.



Note: 'Log Trigger' is available only for 'Without Summary' option.

Relate the steps highlighted in the image above with the steps below:

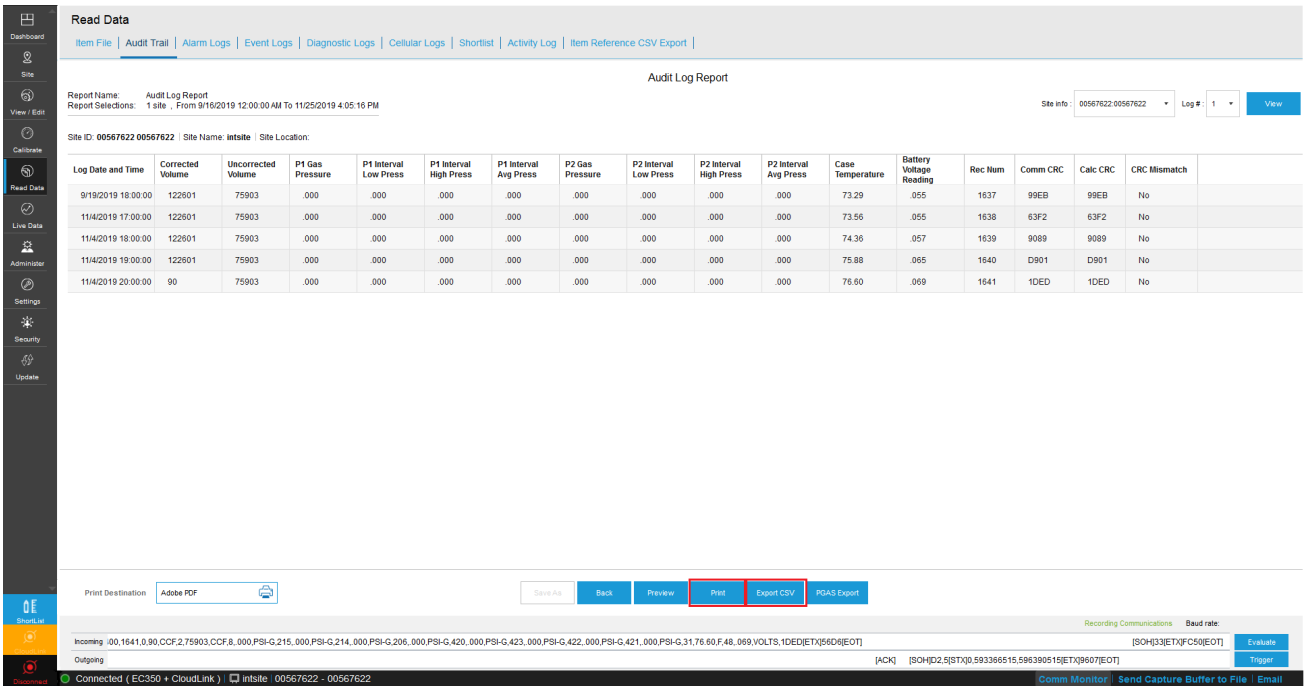
1. Start by checking **Use User Text**, and entering the name of the report.
2. Select whether *start of gas day* is to be included in **Beginning of report** or towards the **End of Report**.
3. Select the required **CSV Format Options**.

   Max Data Columns: This is applicable only in the Export CSV format. It will display the logging configuration parameters.

   For example: When 15 is chosen in the drop-down but the logging configuration is only defined for 10 parameters then, the next 5 columns will be shown empty. See here.
4. Select the **Summary**. You can chose Without Summary, Daily Summary and Monthly Summary from the drop-down.
5. Unit Conversion is only applicable for legacy devices (ERX, Mini-Max etc.).
6. Click **View**.

Note: 'Log Trigger', 'Unit Conversion' and 'Summary' are available only in offline mode.

The Audit Trail Report appears based on selected criteria.



You can choose to **Export** or **Print** the data.

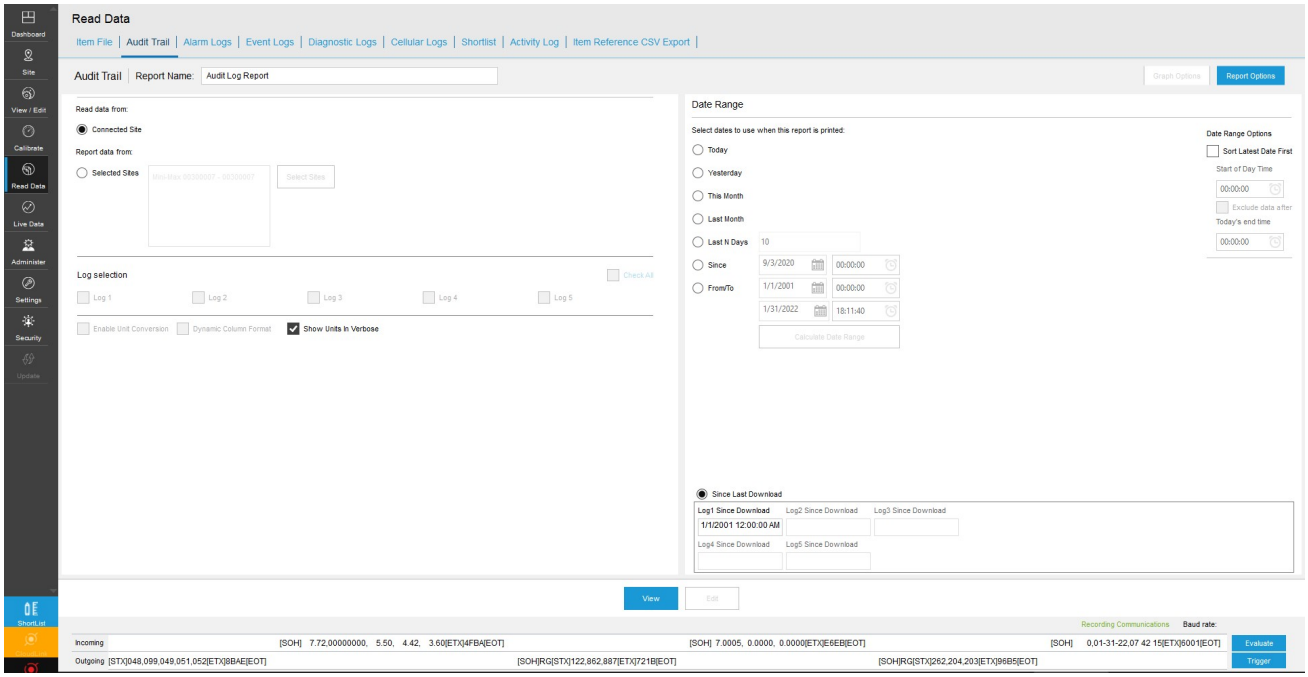
PGAS Export is the customized Audit trail report in CSV format to fulfill the PGAS requirements. If items 225, 206, 207, 226, -1, 54, 55, 53 are part of Audit trail configuration then, their audit data values are mapped to the columns 5, 9, 10, 11, 12, 29, 30, 31 of the report respectively.

PGAS Export is applicable only for correctors and can only be generated for Time log trigger data.

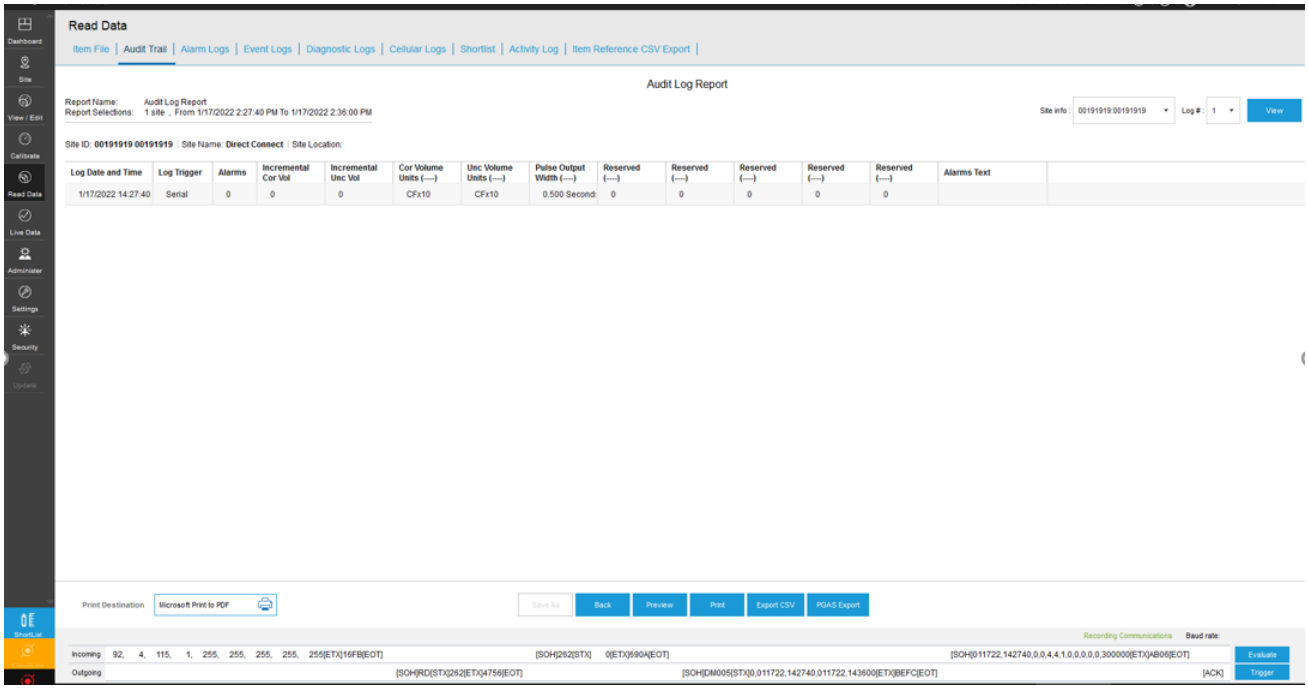
Show units in Verbose: This feature will help load the volume units in the alphanumeric or numeric format as per the user selection.

Connected Site With or with out selecting the check box: While you are reading the Audit trail from the Connected Site option, the **Show units in Verbose** check box will be enabled irrespective of Corrector type connected.

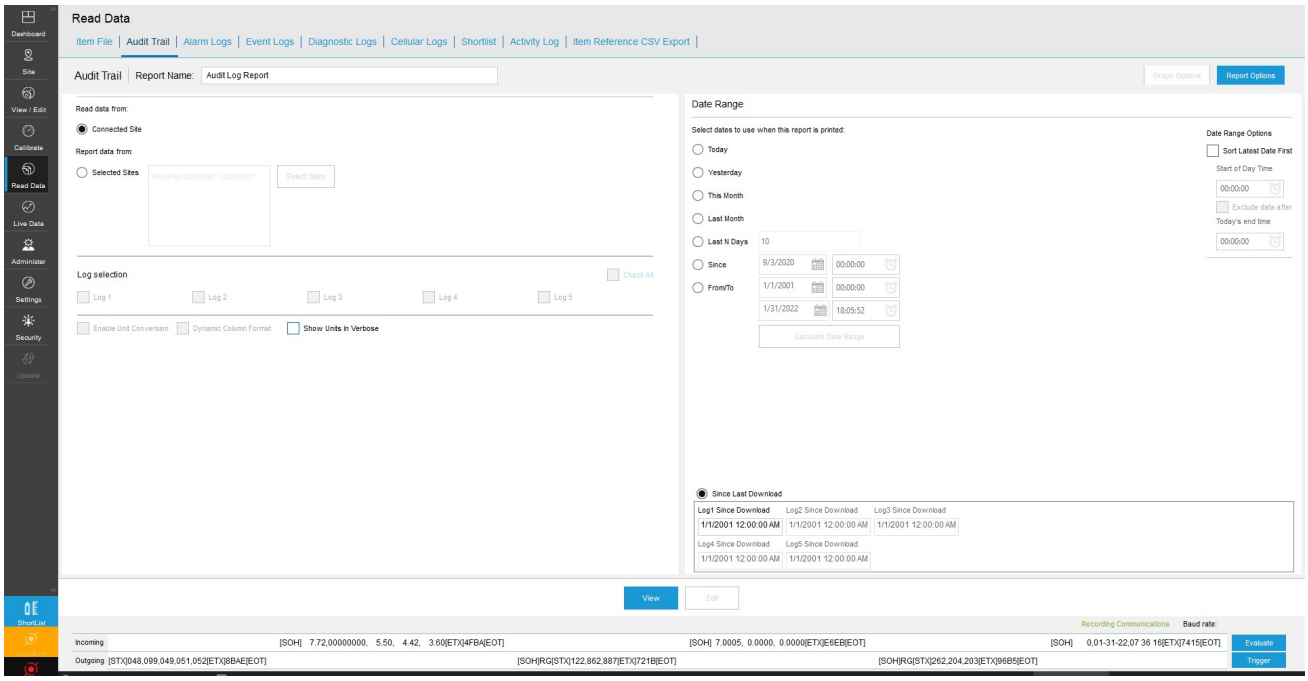
1. Select the **Show units in Verbose** then click on **View**.



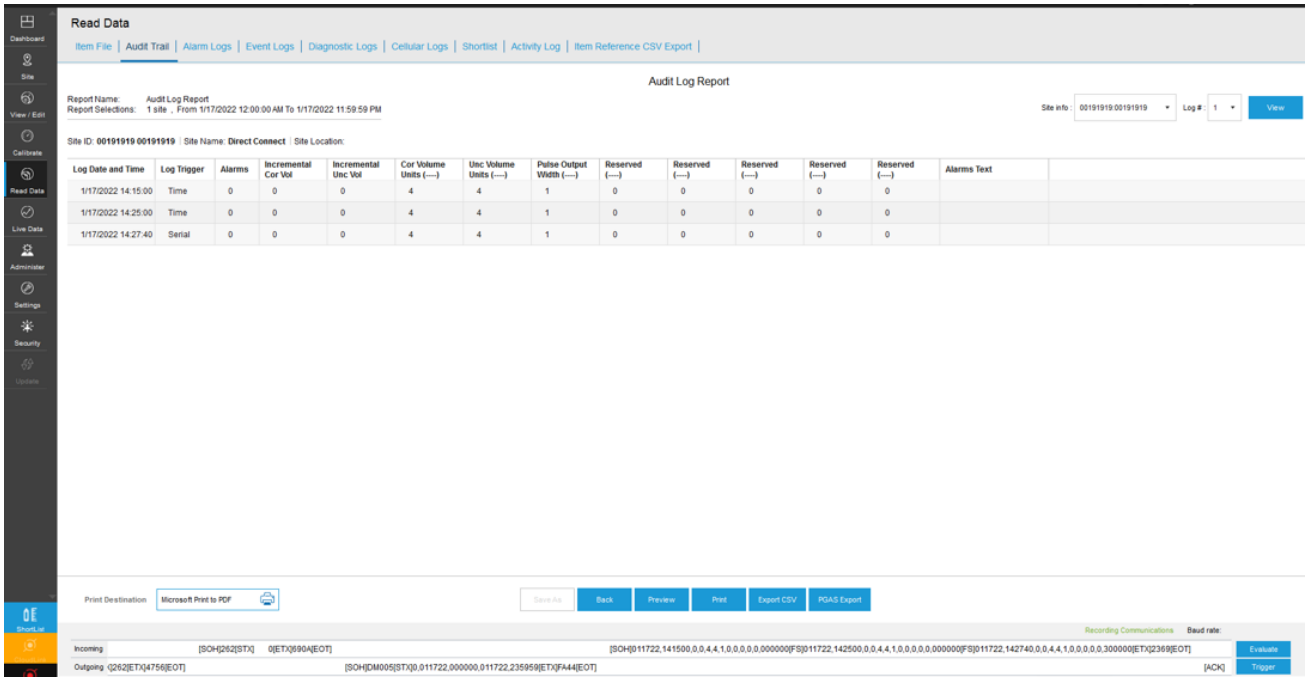
2. It will display the volume units in alpha numeric format.



3. Click on **View** by not selecting the **Show units in Verbose** check box.

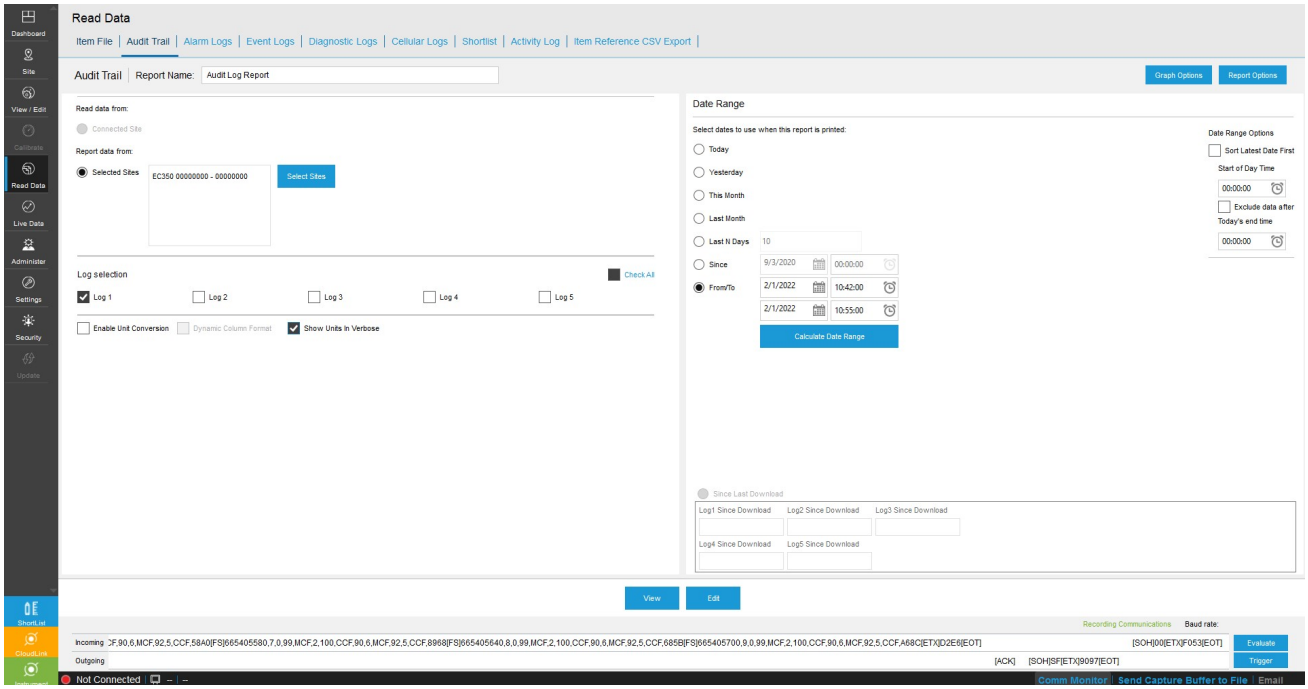


4. It will display the volume units in numeric format.

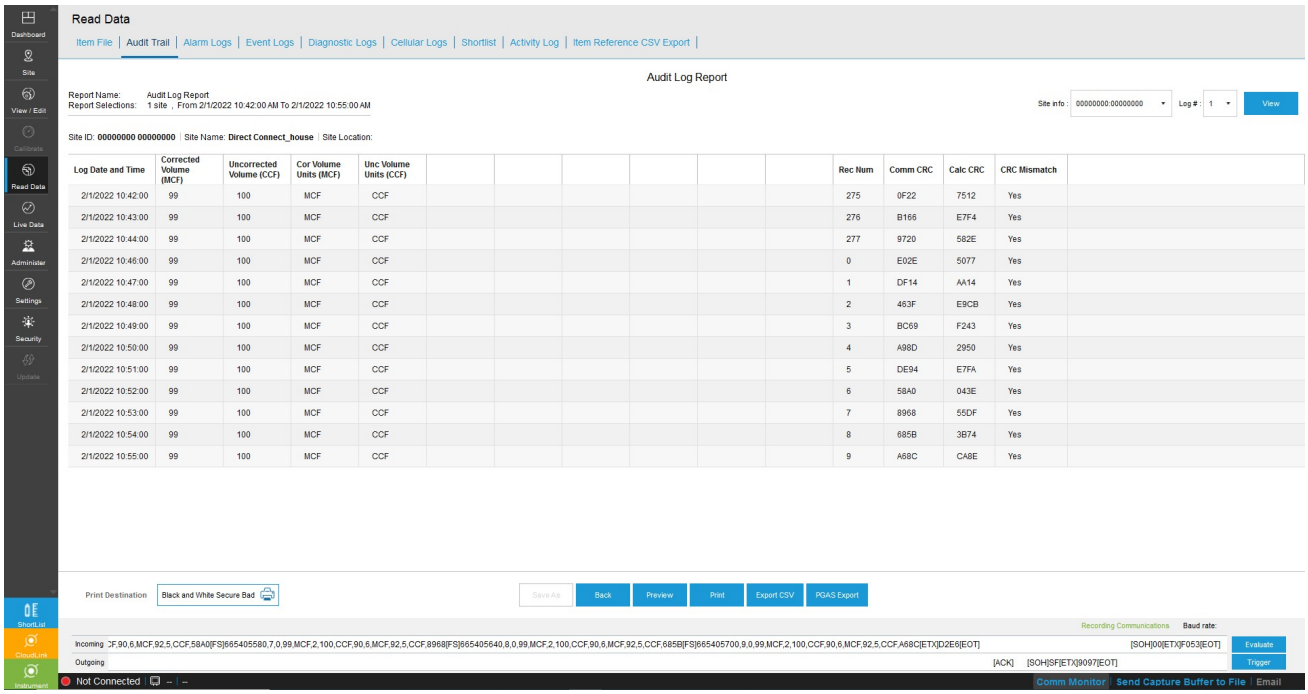


Selected Sites With or with out selecting the check box: While you are reading the Audit trail from the Selected Site option, the **Show units in Verbose** check box will be enabled only for the Corrector types (EC350 and ERX350).

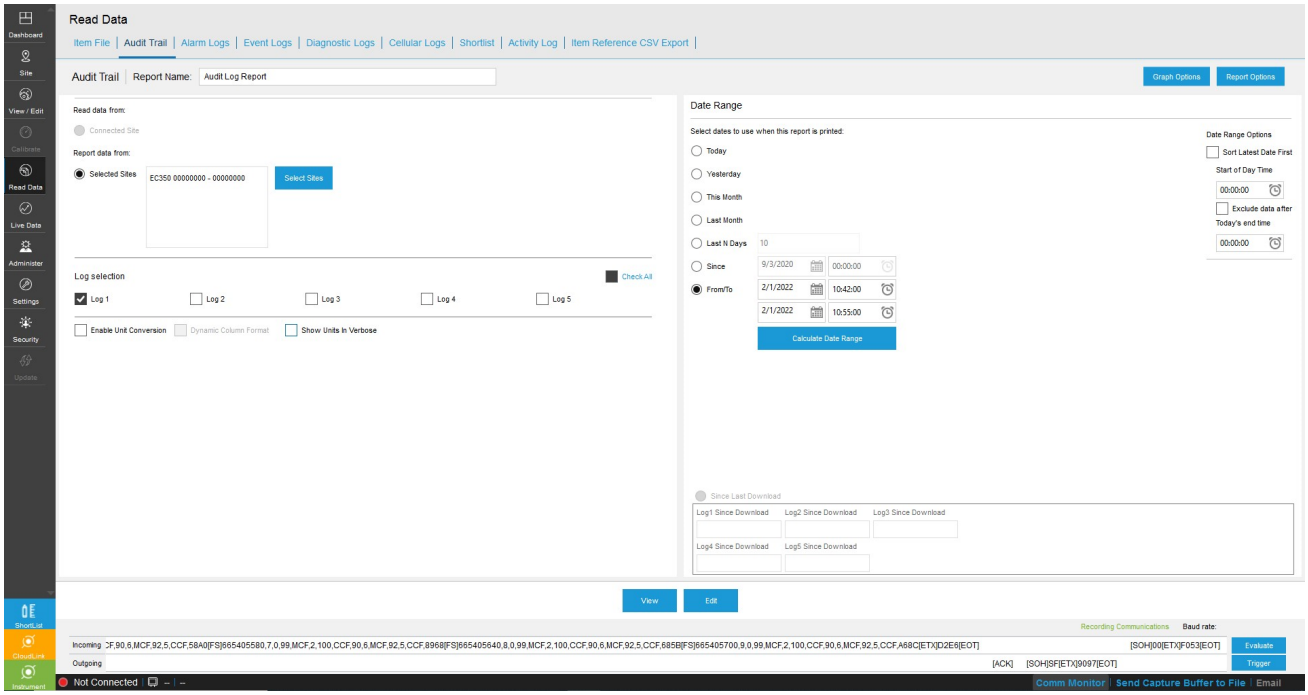
1. Select the **Show units in Verbose** then click on **View**.



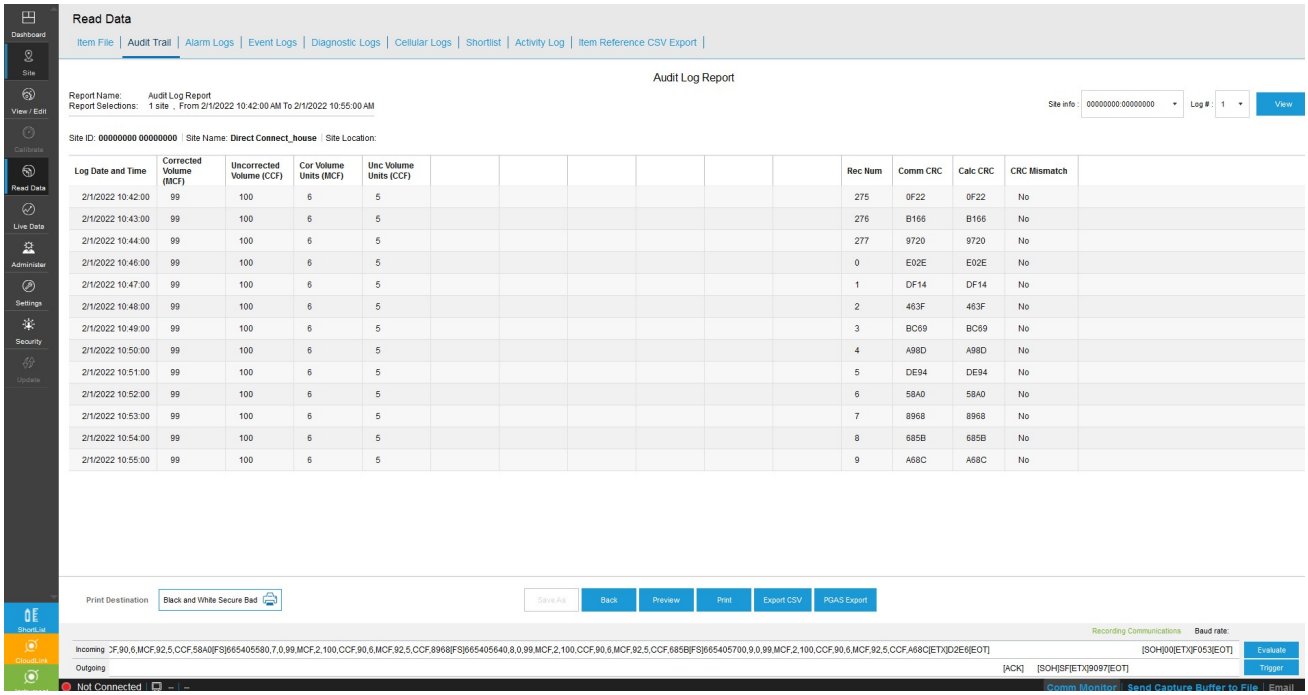
2. It will display the volume units in alpha numeric format.



3. Click on **View** by not selecting the **Show units in Verbose** check box.



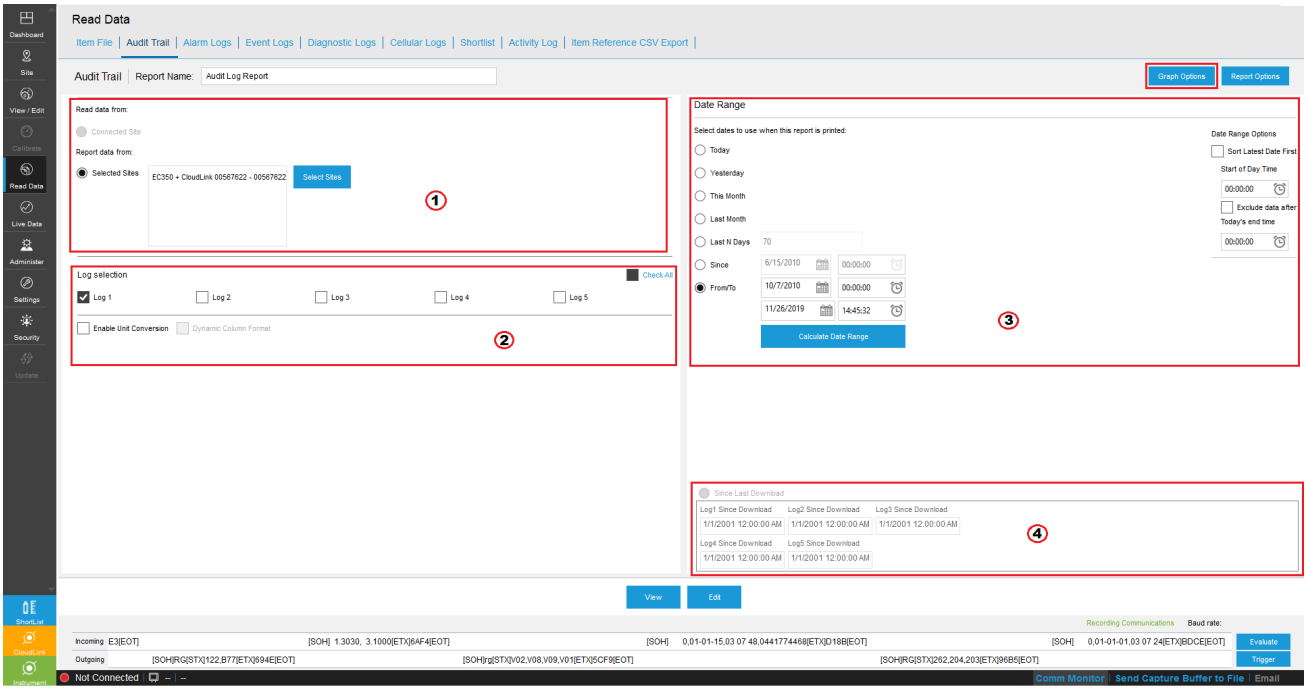
4. It will display the volume units in numeric format.



3.6.2.1 Audit Trail Graphs

The Audit Trail Graph function displays selected report items in graph format. It is recommended that items with numeric values are used for plotting the graph.

> **Note:** This is an offline operation. ONLY one site and one log can be selected to generate an Audit Trail graph.



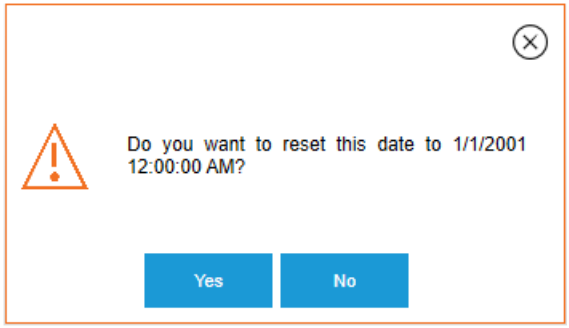
Relate the steps highlighted in the image above with the steps below:

1. Start by selecting the site from the 'Select Sites'.
2. Select one **log** out of 5 logs. from the 'Log selection'.
3. Select the **Date Range**

   Select the date range. Select the check box next to the date range choice.

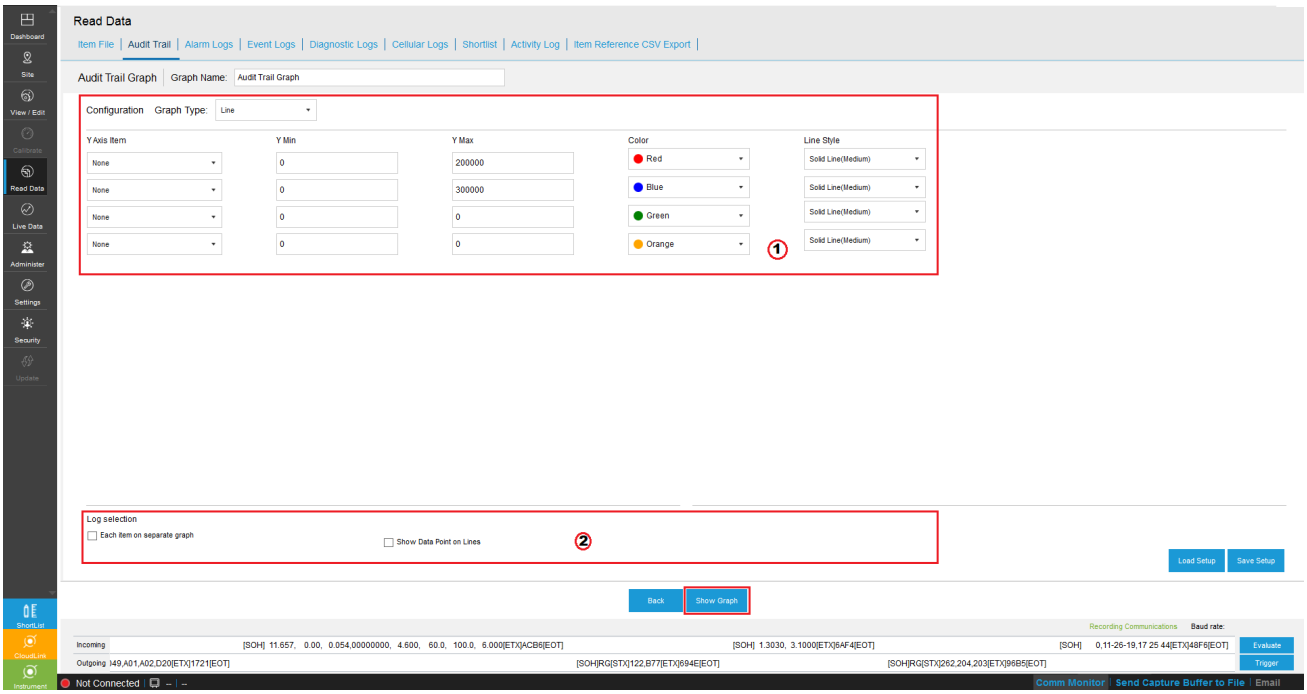
   - **TODAY:** Selecting today, will report data from 12-hours up to the time the report is begun.
   - **YESTERDAY:** Choosing Yesterday will print from a 24-hour span up to the time the report is begun.
   - **THIS MONTH:** Reports only the data for the current month.
   - **LAST MONTH:** Reports back 30 days.
   - **LAST N DAYS:** If chosen, enter the number of days.
   - **SINCE or FROM/TO:** When selecting either of this, date and time fields appear on the screen for input.
4. 'Since last Download' gives you the last downloaded log time and date. Once you select this,

logs are downloaded from the time the report was last generated. You can reset the value to the start of the device setup.



Line Graphs

Click **Graph Options** to customize the audit trail graph.



Relate the steps highlighted in the image with the steps below:

1. Graph can be configured in linear or Circular form (by selecting the drop-down) in 'Graph Type'. Configure the Y-Axis item, Y Min, Y Max, Color and Line Style
2. Select the required option from the **Log selection**

Audit Trail Graph - Y Axis Item

Toggle-click on the box to select/deselect the item(s) to graph. The items chosen will be displayed on the actual graph when the Preview button is clicked.

Audit Trail Graph - Y Min

This option sets the values for the minimum Y scale (vertical scale). To change these defaults, click on that field and enter the new value.

Audit Trail Graph - Y Max

This option sets the values for the maximum Y scale (vertical scale). To change these defaults, click on that field and enter the new value.

Audit Trail Graph - Color

For each of the 4 items, click on the down arrow next to the color fields for selectable options, then click on the selection. The color selections and item titles will be displayed on the actual graph legend when Preview is clicked.

Audit Trail Graph - Line Style

For each of the 4 items, click on the down arrow next to the line style field for selectable options, then click on the selection. Dashed or dotted line styles will not be noticeable on data lines unless the data points are fairly far apart.

Log Selection

Each item on separate graph - Checking this box will draw one item per graph. If this is unchecked, more than one item will be drawn on a graph. A graph can have two Y scales (vertical); one on each side. If two items have the same unit of measure, they can share a Y scale. The Y scales are located along the left and right sides of the graph.

Show data points on lines - Data lines may be drawn with or without dots.

Show Graph on Grid - To make the data in a chart that displays axes easier to read.

Audit Trail Graph - Save Setup

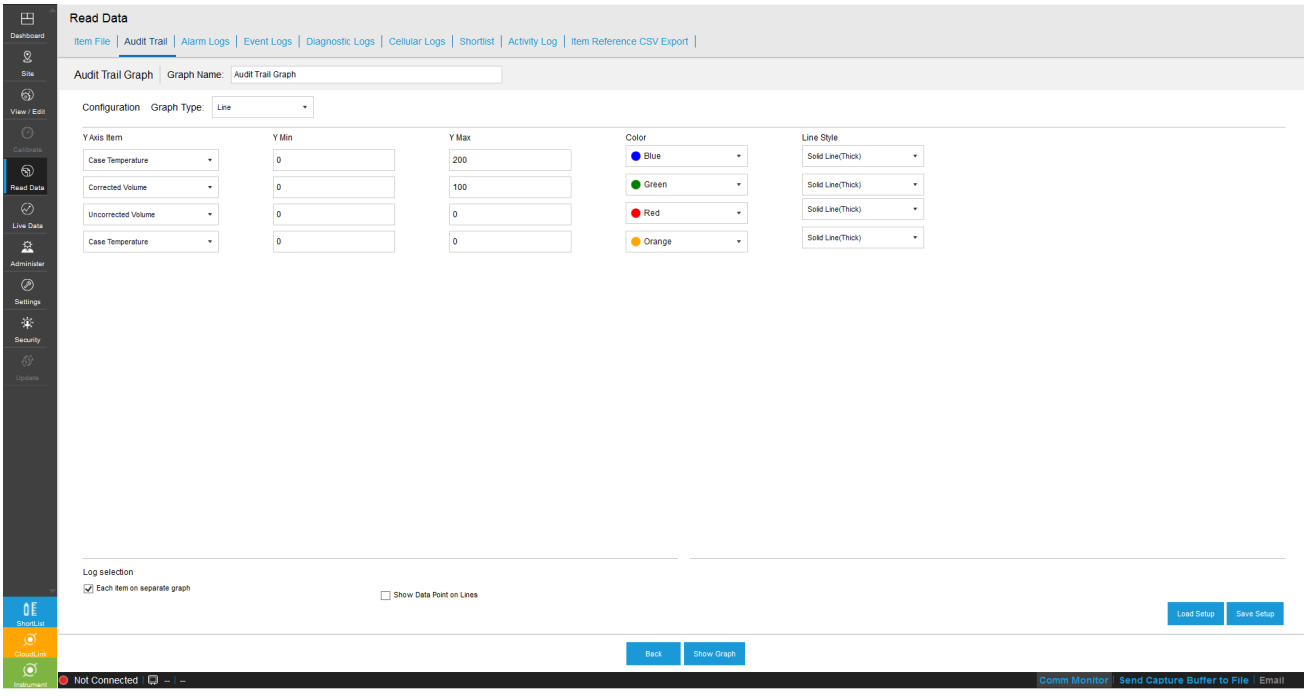
Click this button to save the Audit Trail Graph Setup configuration. These defaults can be reused when you click the Load Setup button. The default file extension is .ags and is saved in the installation designated file folder for report/graph files.

Audit Trail Graph: Load Setup

Click this button to load the Audit Trail Graph Setup configuration which is previously saved to file with the "Save Setup" feature. The file is saved in the installation designated file folder for report/-graph files.

After selecting a file, click the Open button to proceed with this function or Cancel to return to the currently displayed graph setup.

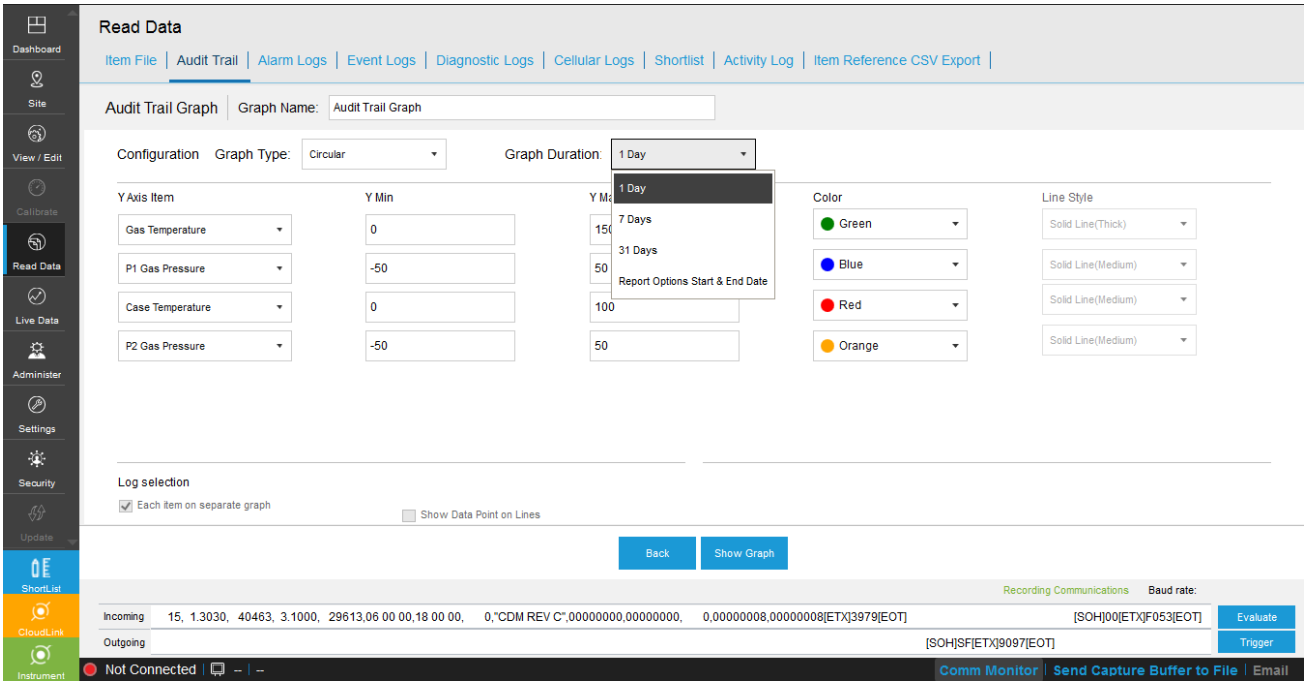
After customizing the graph, finally click **Show Graph**. The Audit Trail Graph appears based on the selected criteria.



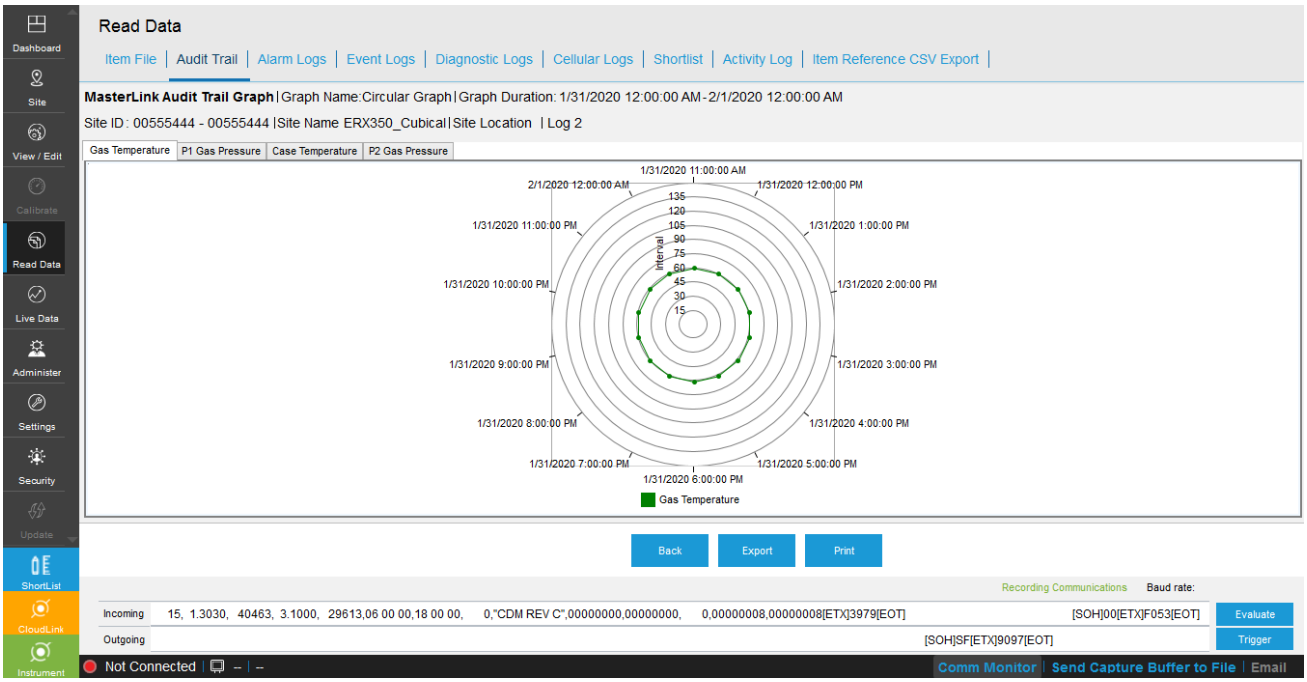
You can choose to **Export** or **Print** the data.

Circular Graphs

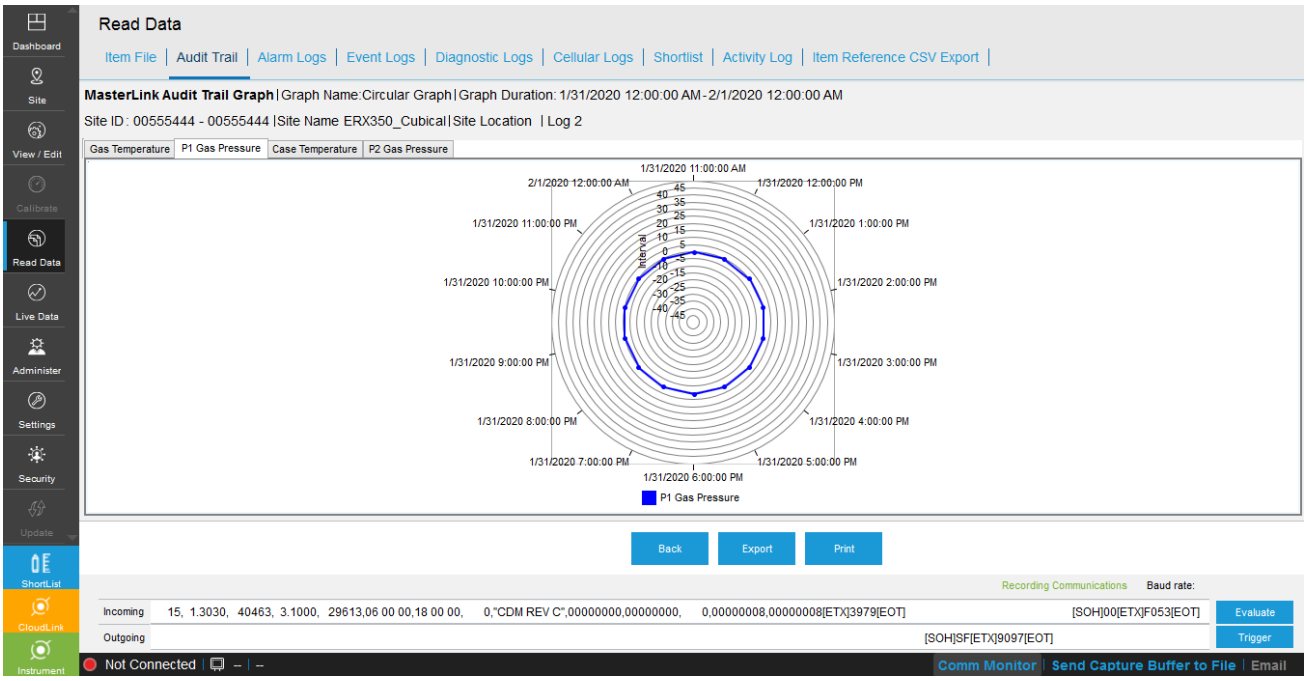
Note: You can add grids to the plot by checking 'Horizontal Grid Line/ Vertical Grid Line' to obtain horizontal and vertical grid lines respectively. Also, one can directly 'Print' the plot or Save it as a PDF copy.



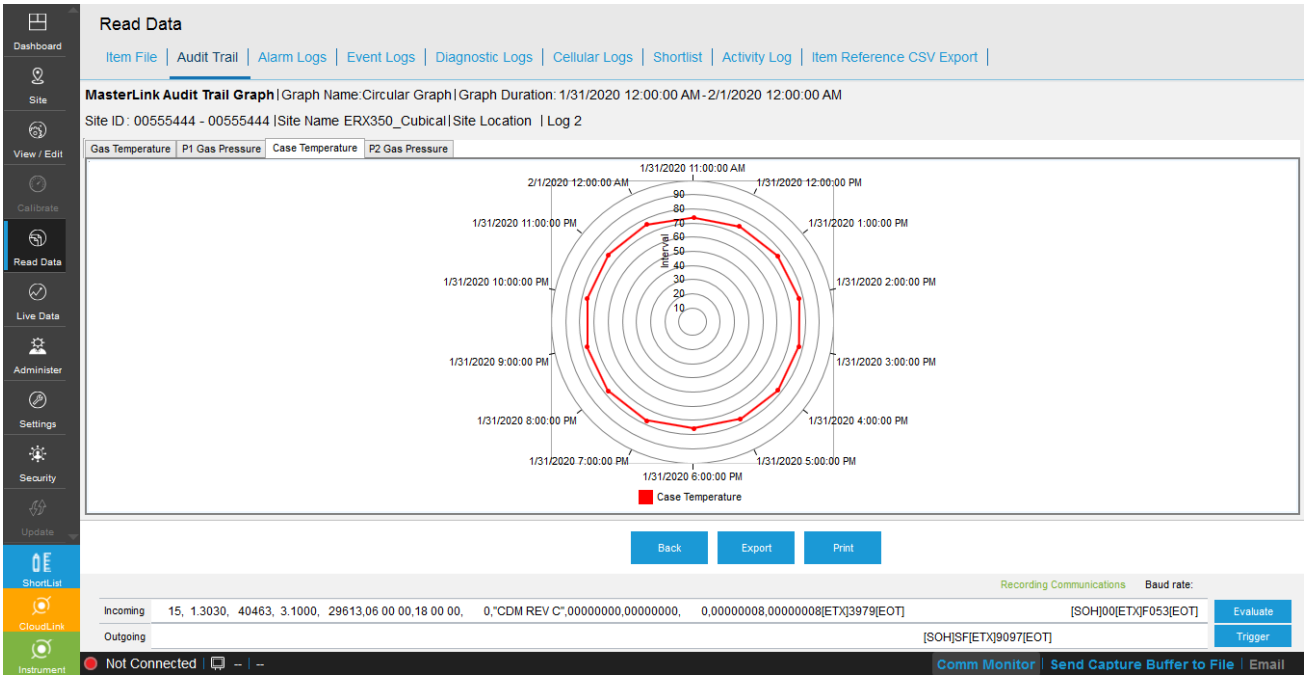
Gas Temperature plot:



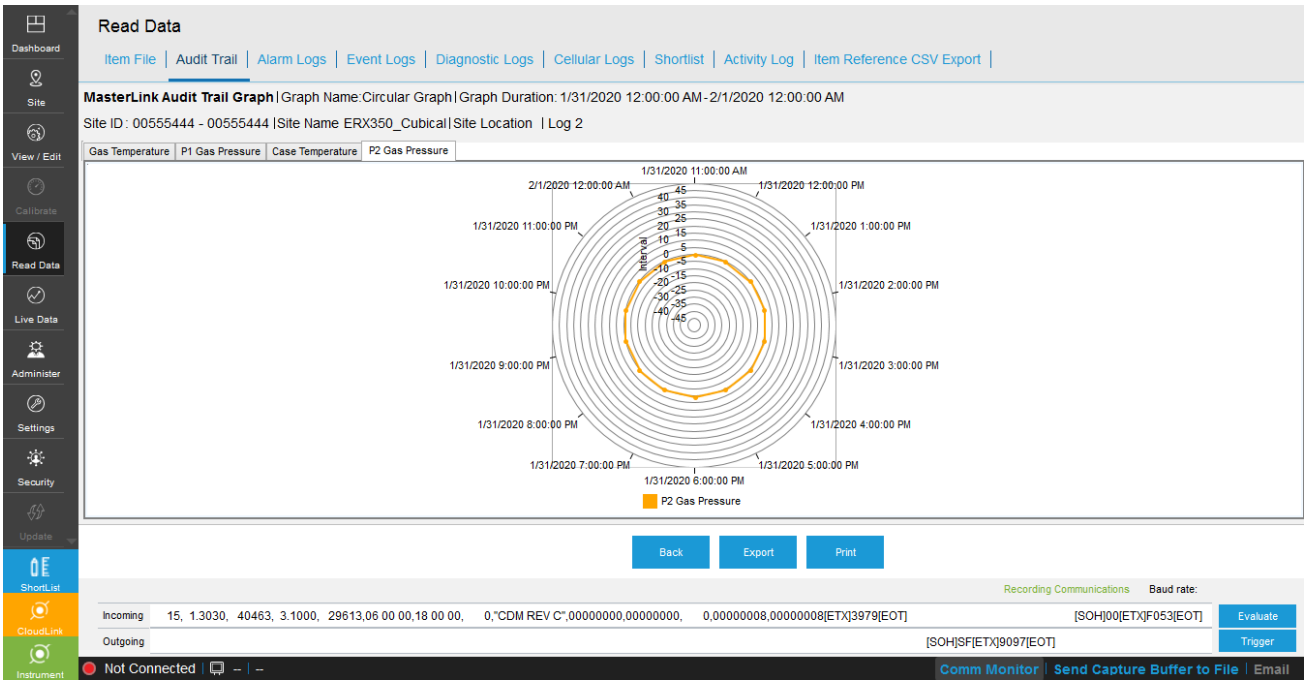
P1 Gas Pressure plot:



Case Temperature:



P2 Gas Pressure:

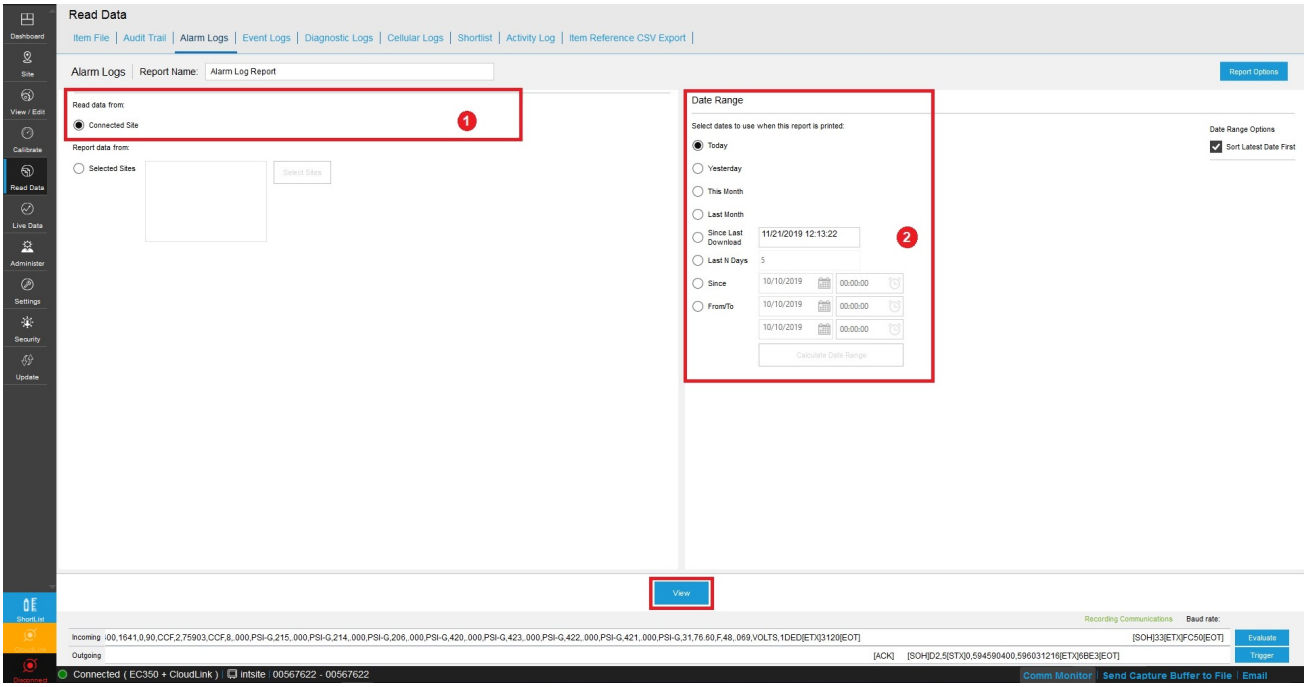

Dashboard
Site
View / Edit
Calibrate
Read Data
Live Data
Administer
Settings
Security
Update
ShortList
CloudLink
Instrument
Read Data
Item File | Audit Trail | Alarm Logs | Event Logs | Diagnostic Logs | Cellular Logs | Shortlist | Activity Log | Item Reference CSV Export |
MasterLink Audit Trail Graph | Graph Name:Circular Graph | Graph Duration: 1/31/2020 12:00:00 AM - 2/1/2020 12:00:00 AM
Site ID : 00555444 - 00555444 | Site Name ERX350_Cubical | Site Location | Log 2
Gas Temperature
P1 Gas Pressure
Case Temperature
P2 Gas Pressure
1/31/2020 11:00:00 AM
2/1/2020 12:00:00 AM
1/31/2020 12:00:00 PM
1/31/2020 1:00:00 PM
1/31/2020 2:00:00 PM
1/31/2020 3:00:00 PM
1/31/2020 4:00:00 PM
1/31/2020 5:00:00 PM
1/31/2020 6:00:00 PM
1/31/2020 7:00:00 PM
1/31/2020 8:00:00 PM
1/31/2020 9:00:00 PM
1/31/2020 10:00:00 PM
1/31/2020 11:00:00 PM
Interval
P2 Gas Pressure
Back
Export
Print
Recording Communications
Baud rate:
Incoming
15, 1.3030, 40463, 3.1000, 29613,06 00 00,18 00 00, 0,"CDM REV C",00000000,00000000, 0,00000008,00000008[ETX]3979[EOT]
[SOH]00[ETX]F053[EOT]
Evaluate
Outgoing
[SOH]SF[ETX]9097[EOT]
Trigger
Not Connected
Comm Monitor
Send Capture Buffer to File
Email

3.6.3 Alarm Logs

Use the 'Alarm Logs' tab to read and view all alarm activity data from a connected instrument. You can either read alarm logs from a connected site or select a list of sites to read logs from.

An Alarm Log record is defined as any alarm activity, which includes new alarms, alarms acknowledged as well as alarms that have been cleared.

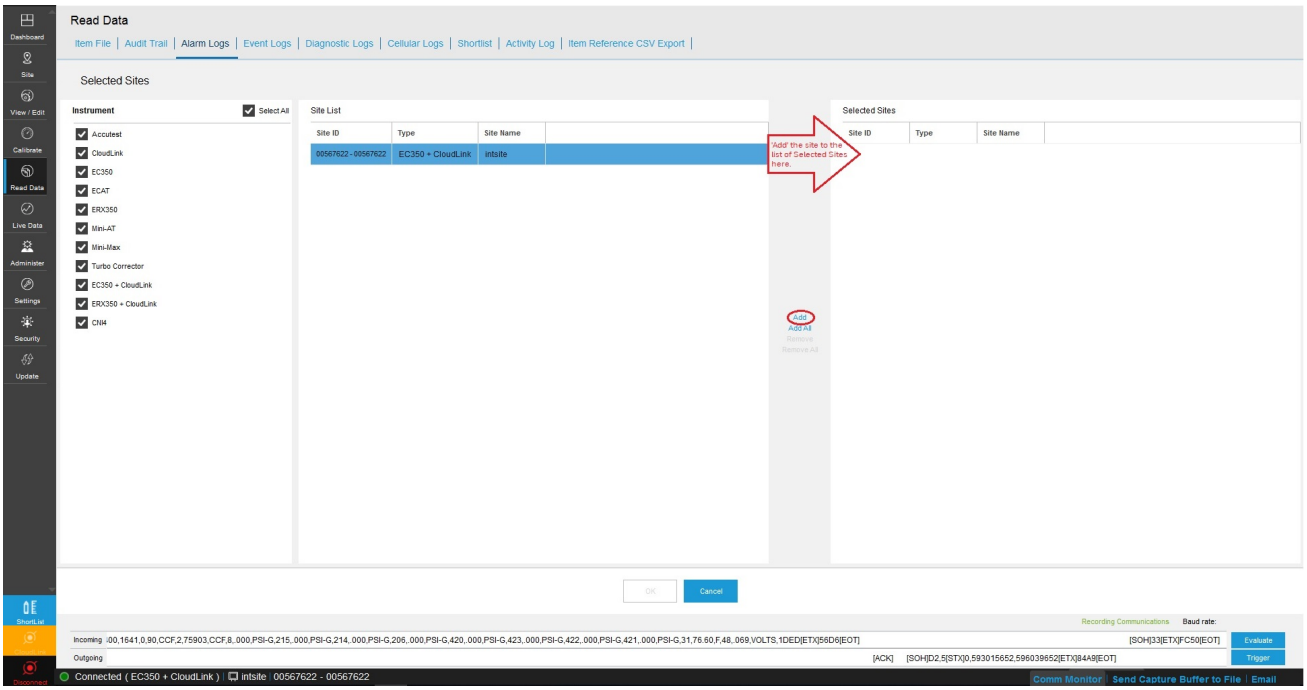
On checking the **Connected Site**, select a **Date Range** and then click **View** tab.



The Alarm report for the connected site is seen here.

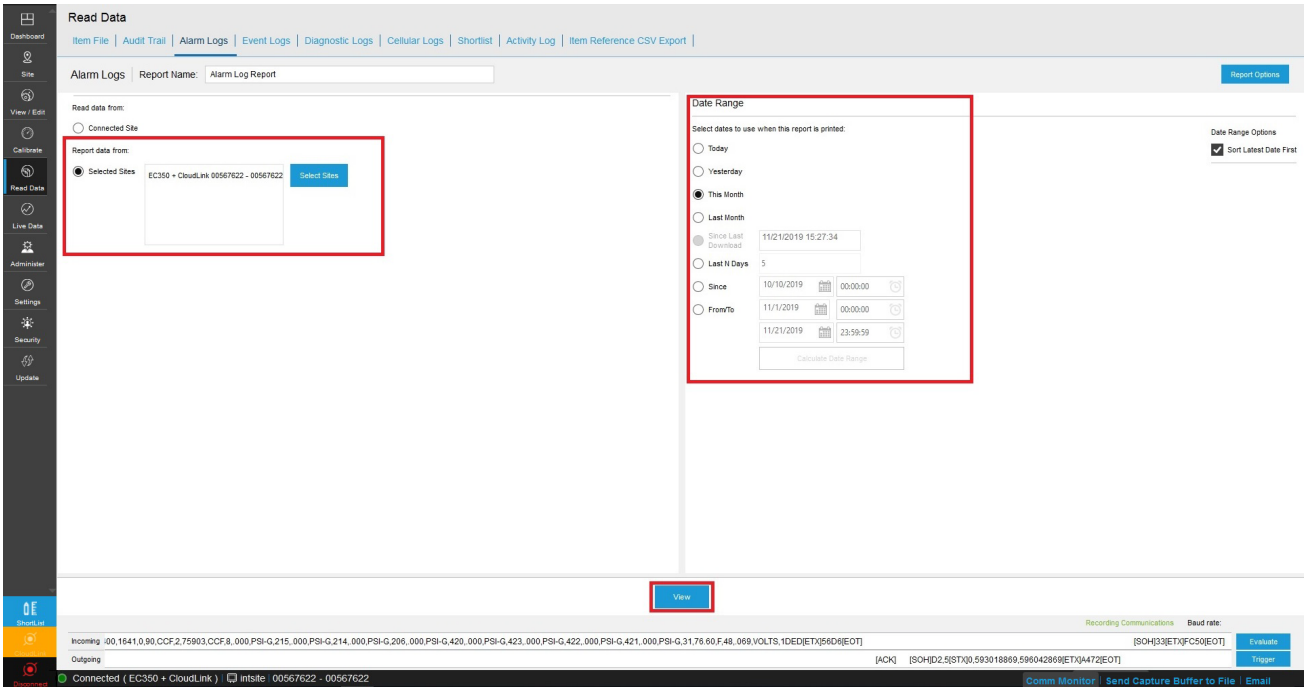
Alternatively, you can choose to select a list of sites and then generate a report.

Start by checking the **Selected Sites**, select a site from the **Select Sites** tab. A new window appears.

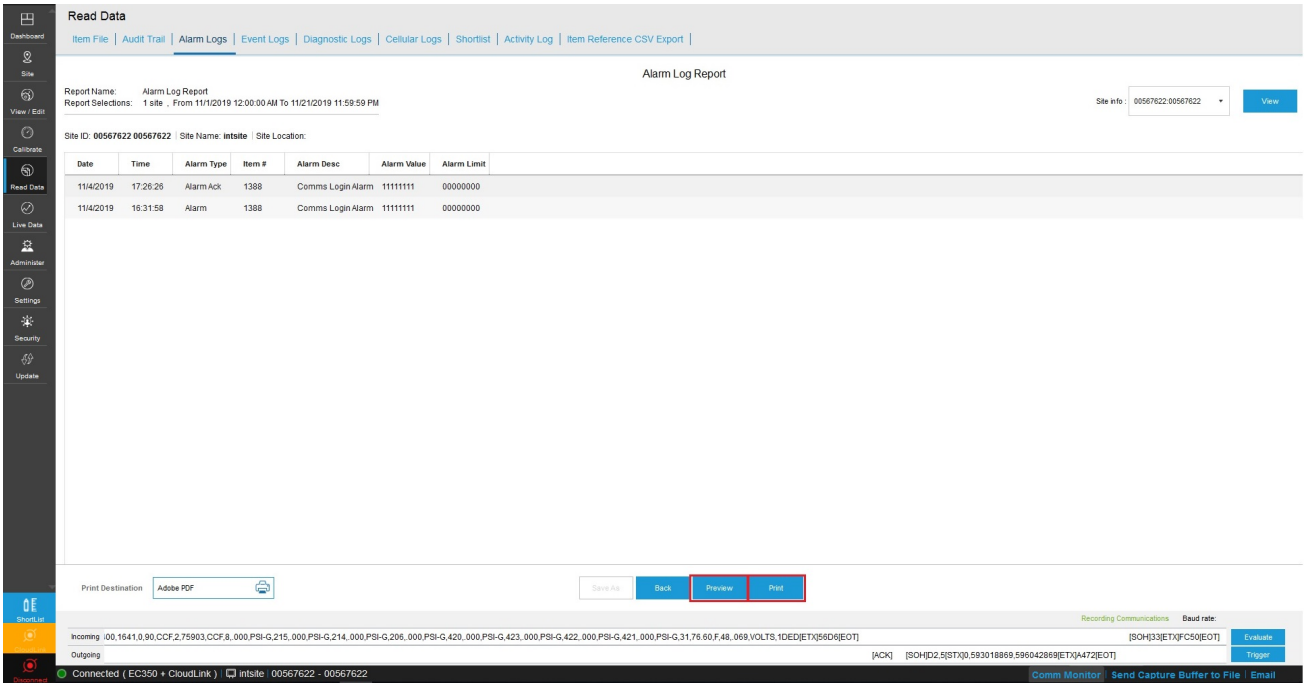


Click **OK**.

Next, select the date range of the report and then click **View**.



The Alarm Logs will appear based on your selected criteria.



You can choose to export with **Preview** or **Print** the data.

3.6.4 Event Logs

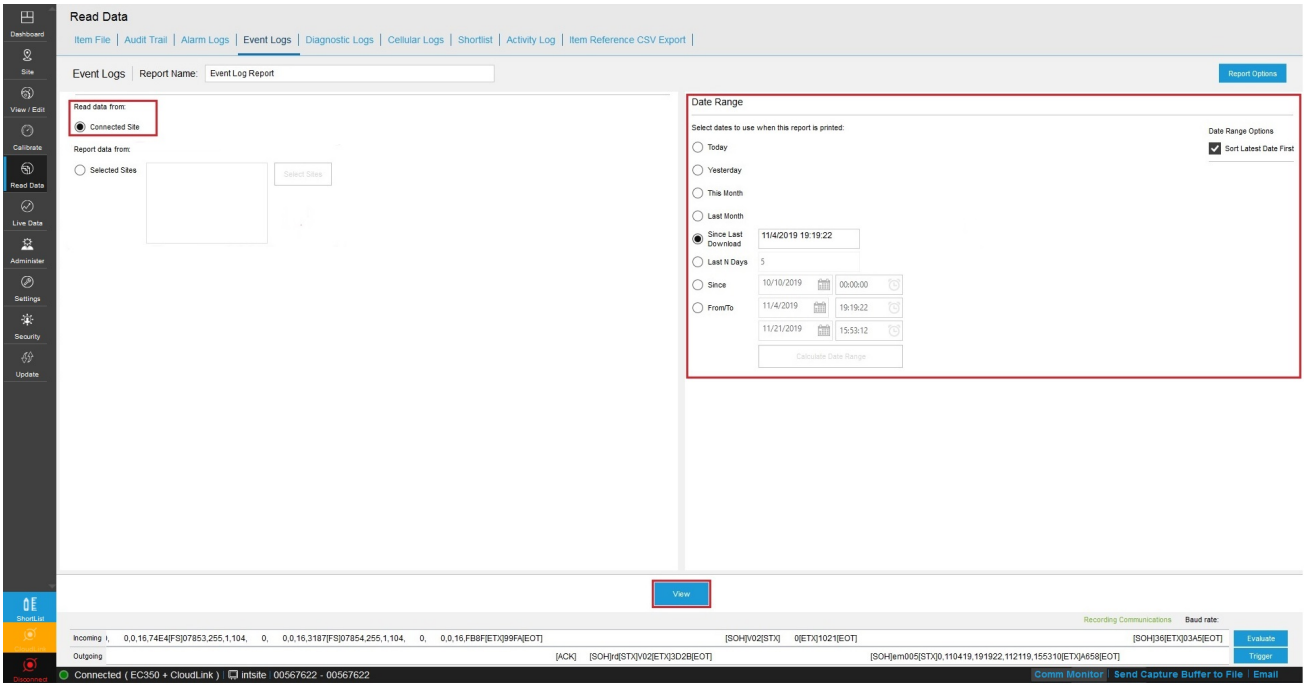
The Event Log records activity that is directly linked to and maintained within the instrument. An "event" documents an item change in the instrument or an instrument download. Event Log activities include:

1. Calibration Changes
2. Access Code Changes
3. Shutdown
4. Item Code Changes
5. Event Log Downloads

Use the 'Event Logs' tab to read event data from a connected instrument.

> **Note:** This log is different from the Activity Log because that log mainly focuses on software activity (and some firmware activity) where the Event Log function records activity that is directly linked to and maintained by the instrument.

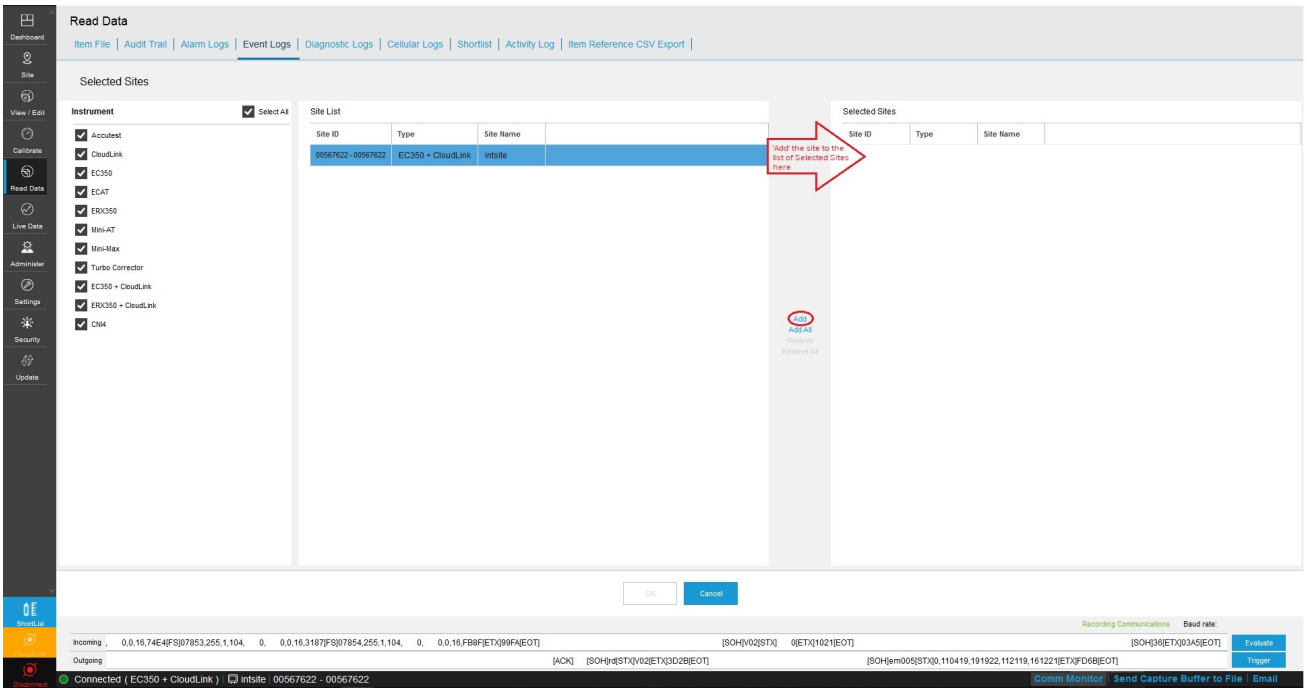
On checking the **Connected Site**, select a **Date Range** and then click **View** tab.



The Event log report for the connected site is seen here.

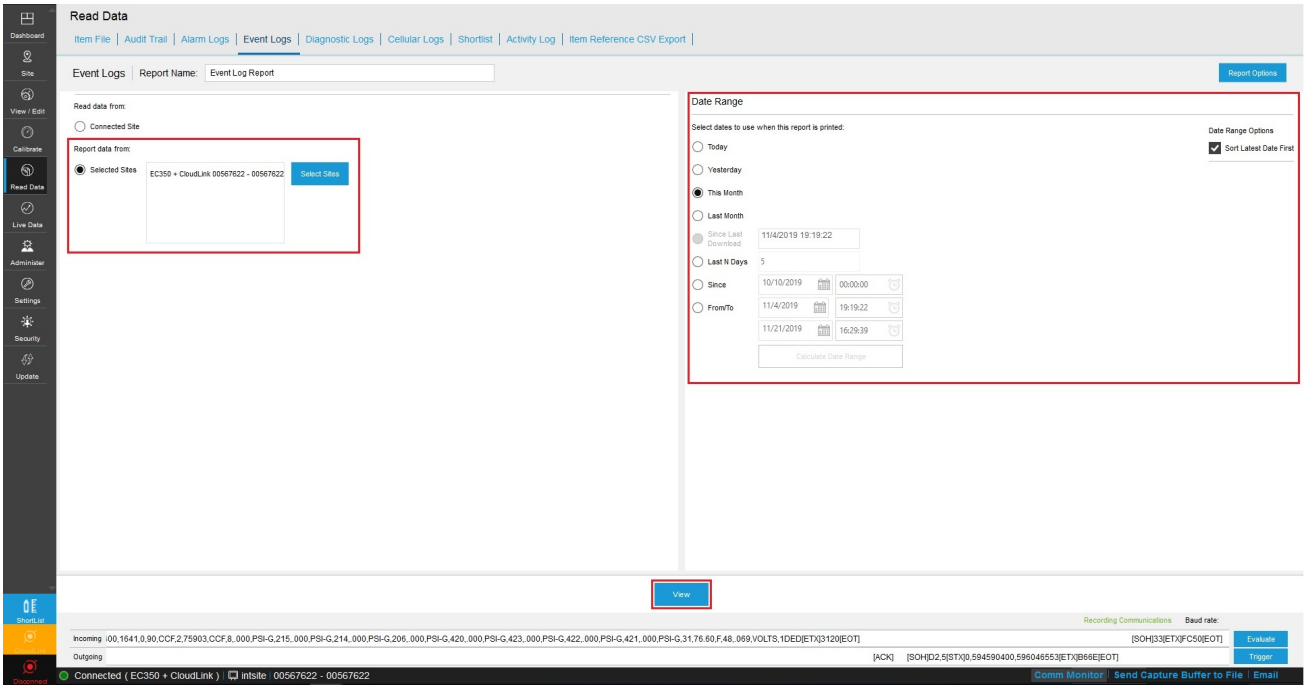
Alternatively, you can choose to select a list of sites and then generate a report.

Start by checking the **Selected Sites**, select a site from the **Select Sites** tab. A new window appears.

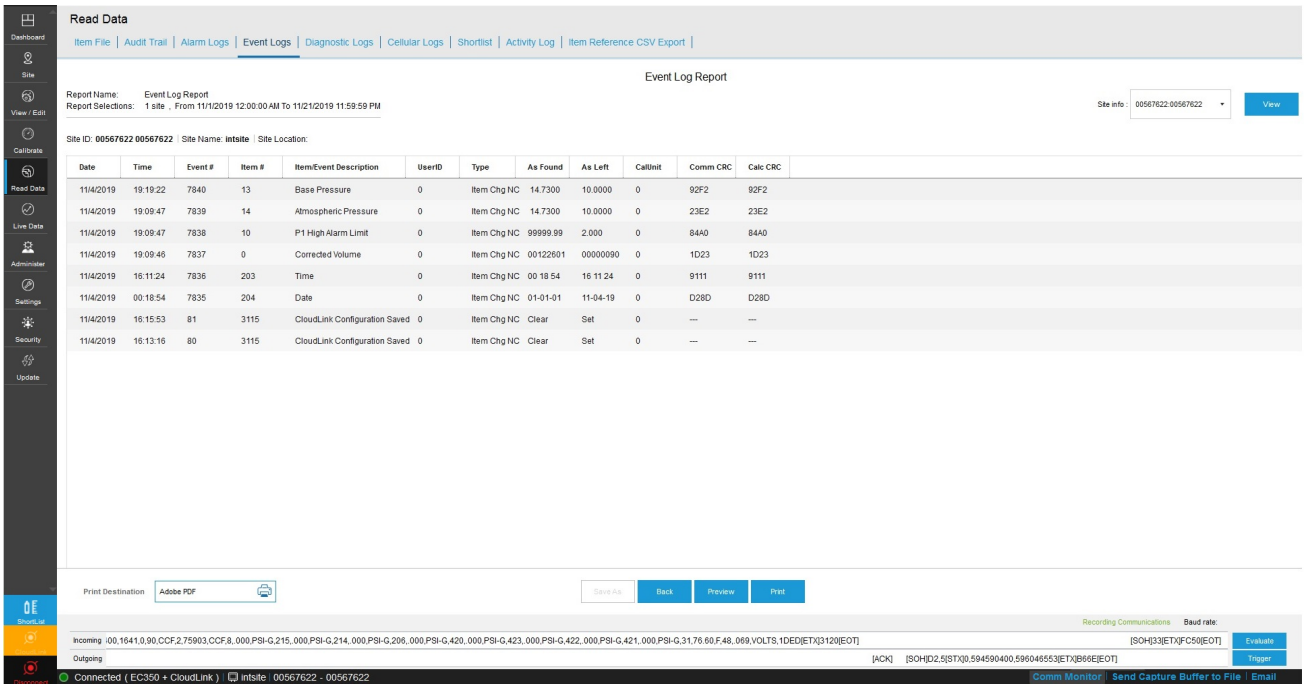


Click **OK**.

Next, select the date range of the report and then click **View**.



The Event Logs will appear based on your selected criteria.



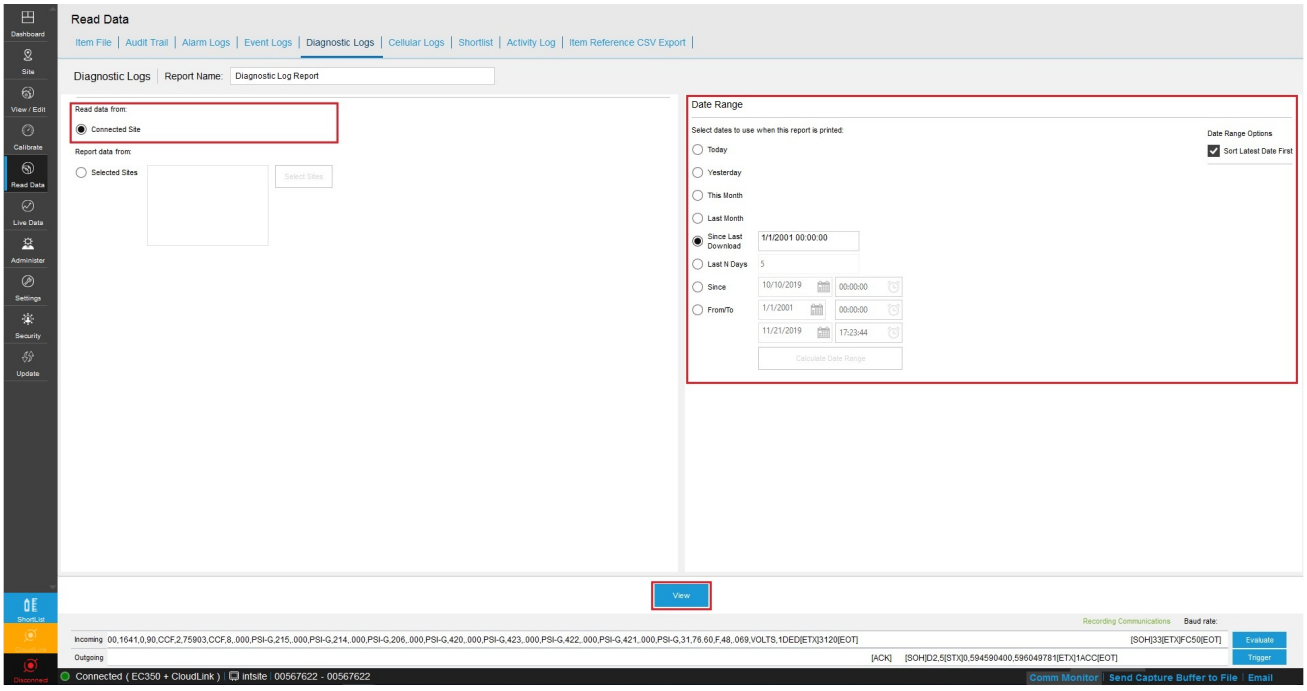
You can choose to export with **Preview** or **Print** the data.

3.6.5 Diagnostic Logs

Use the 'Diagnostic Logs' tab to read diagnostic data from a CloudLink Modem. You can read Diagnostic logs from the currently connected site. Alternatively, you can choose to select a list of sites and then generate a report.

Diagnostic logs are applicable to CloudLink Modem only and would be available when connected to CloudLink Modem or in integrated mode (EC 350 + CloudLink Modem).

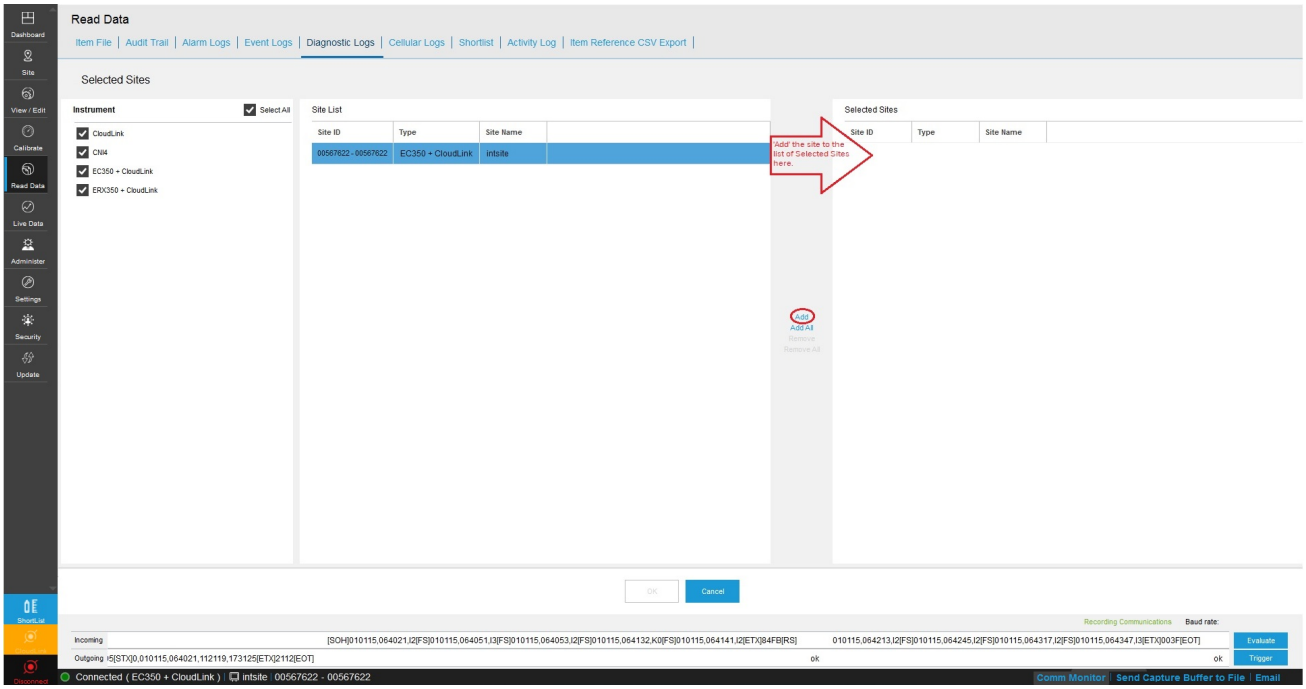
On checking the **Connected Site**, select a **Date Range** and then click **View** tab.



The Diagnostic Log report for the connected site is seen here.

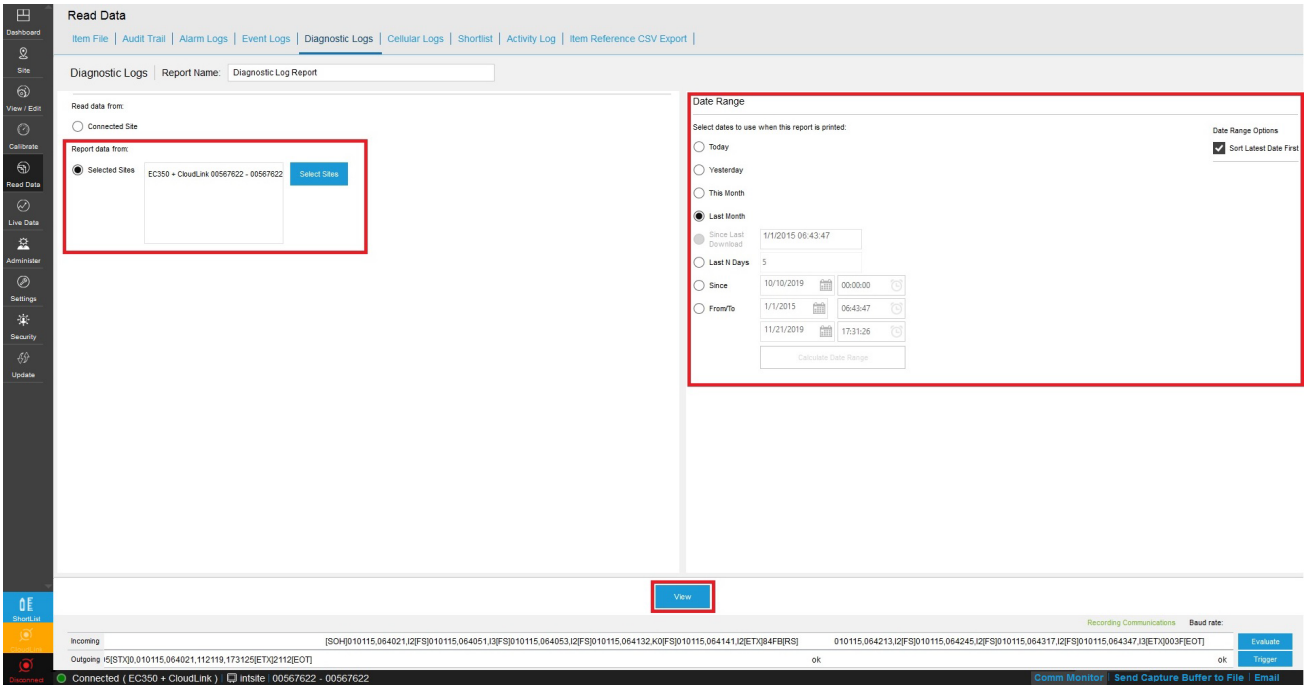
Alternatively, you can choose to select a list of sites and then generate a report.

Start by checking the **Selected Sites**, select a site from the **Select Sites** tab. A new window appears.



Click **OK**.

Next, select the date range of the report and then click **View**.

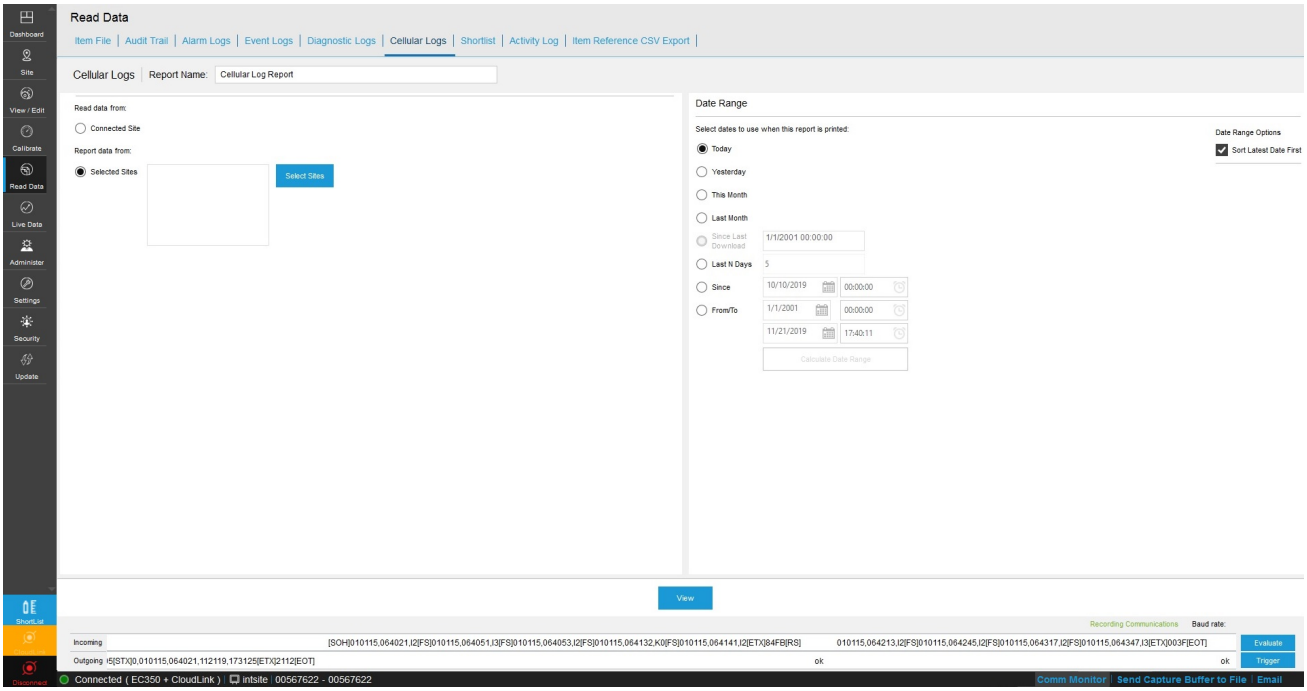


The Diagnostic Logs will appear based on your selected criteria.

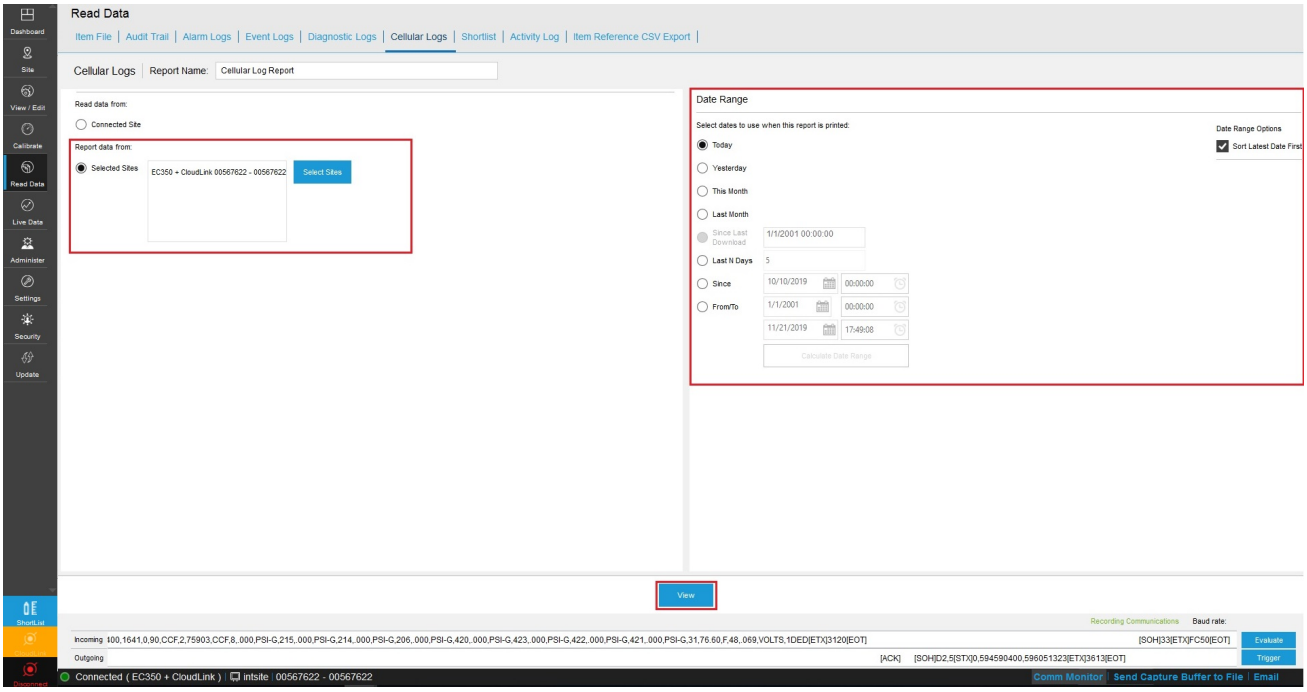
You can also choose to export with **Preview** or **Print** the data.

3.6.6 Cellular Logs

Use the 'Cellular Logs' tab to read cellular data from a connected CloudLink Modem. Cellular Logs contain cellular connectivity and communication data of the connected modem. You can read Cellular logs from the currently connected site.



Alternatively, you can choose to select a list of sites and then generate a report.



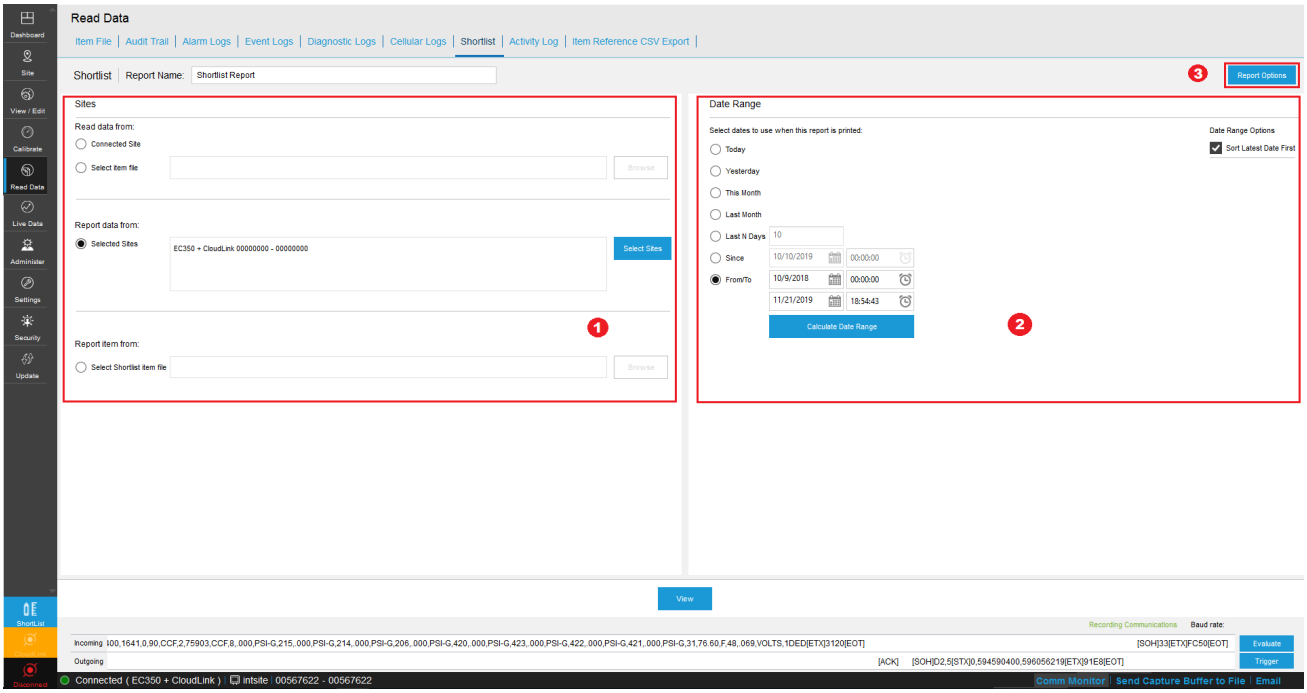
Relate the steps highlighted in the image above with the steps below:

1. Start by selecting the required site
2. Then select the date range, and finally click **View** to read the Cellular log report.

3. You can also choose to export with **Preview** or **Print** the data.

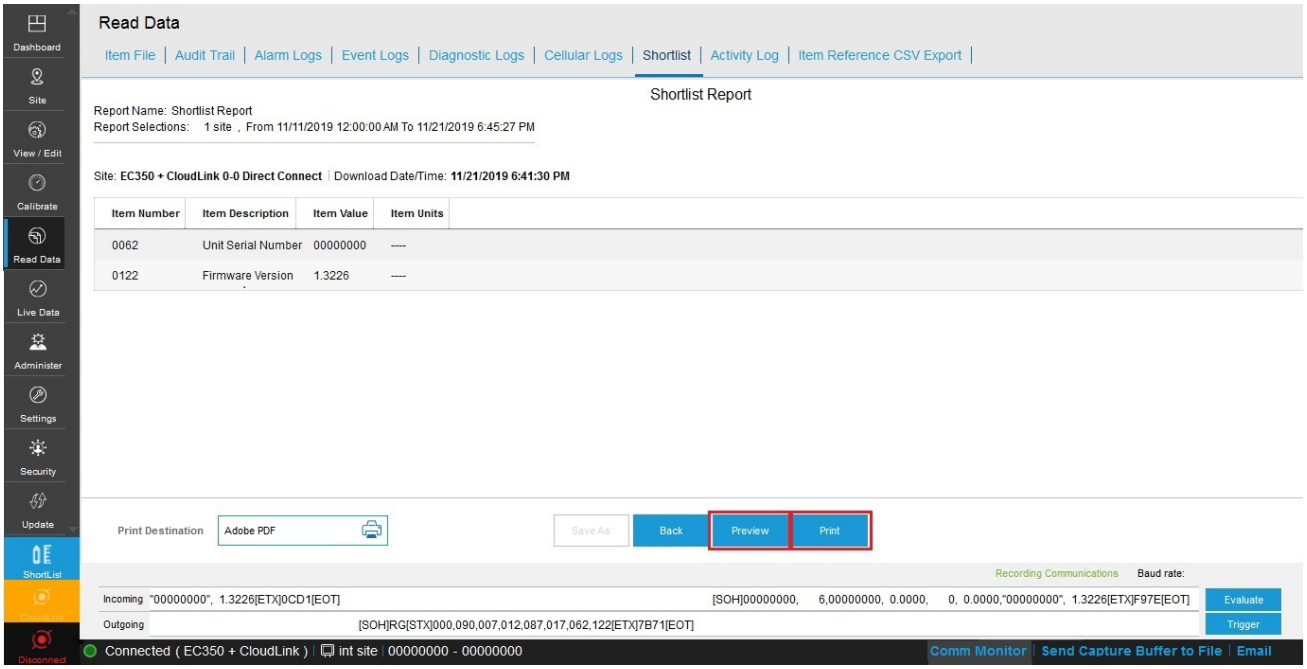
3.6.7 Shortlist

The Shortlist Template created using Manage Shortlist tab can be used to generate report for the corresponding shortlist.



Relate the steps highlighted in the image above with the steps below:

1. Select the site list or the item file.
2. Select the dates to use when the report is printed.
3. Click **Report Options** to enter user text. Check ***Use User Text***, type the text that should appear in the report in the **User Text** box.
4. Click **View** to view the shortlist report.



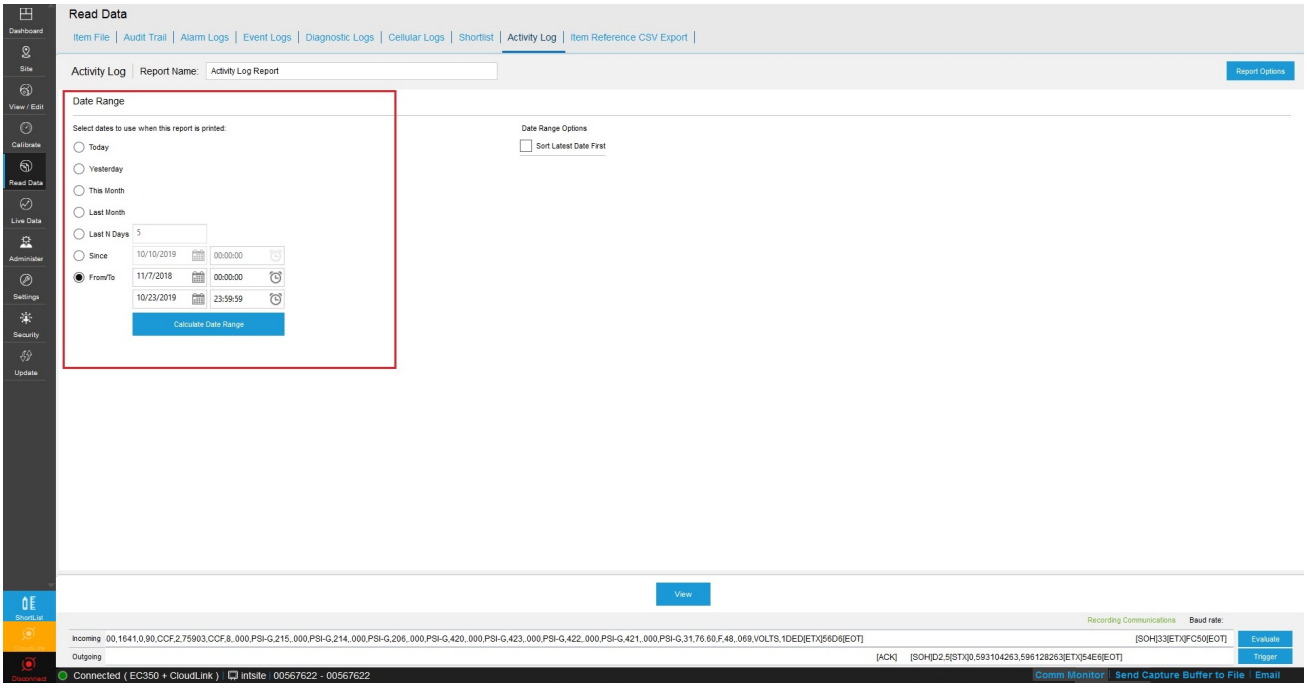
You can choose to export with **Preview** or **Print** the data.

Note: In Shortlist report, firmware version and serial number are not be displayed until the user selects Firmware version (**item #122**) and serial number (**item#62**) in Shortlist.

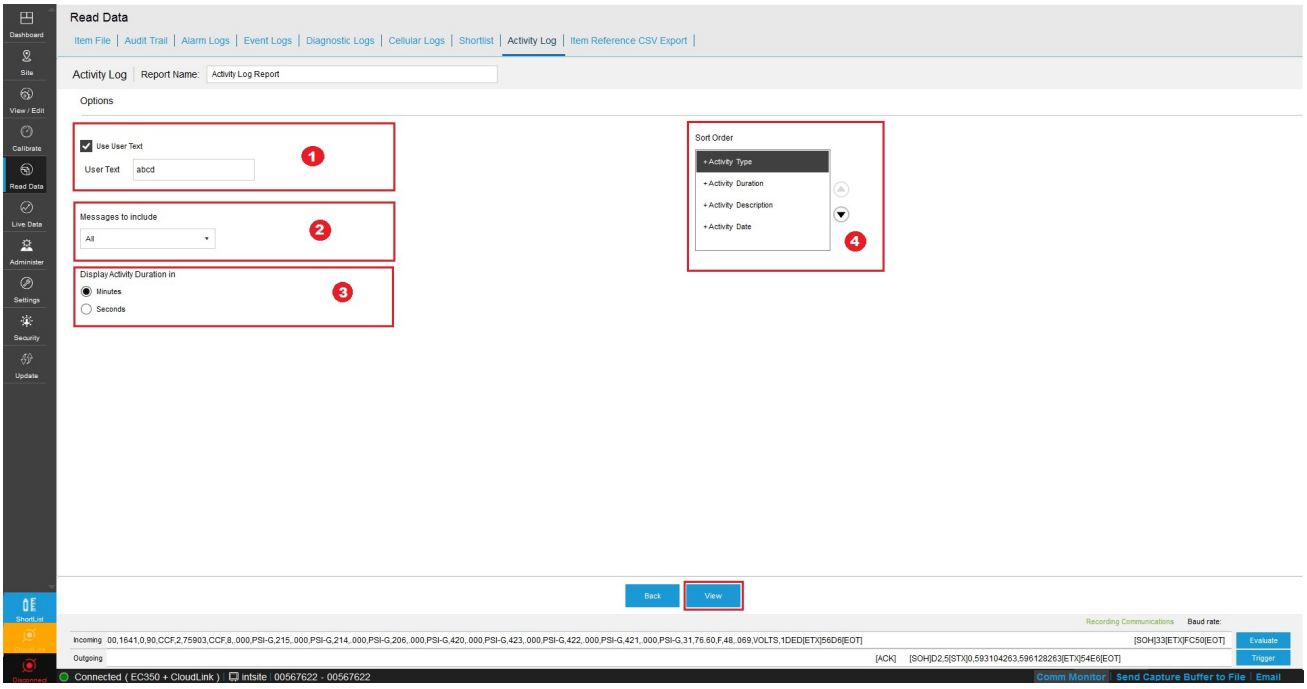
3.6.8 Activity Log

Use the 'Activity log' tab to read data on software activity.

Select the date range of the report and then click **Report Options**.



Customize the report in the **Report Options** page.



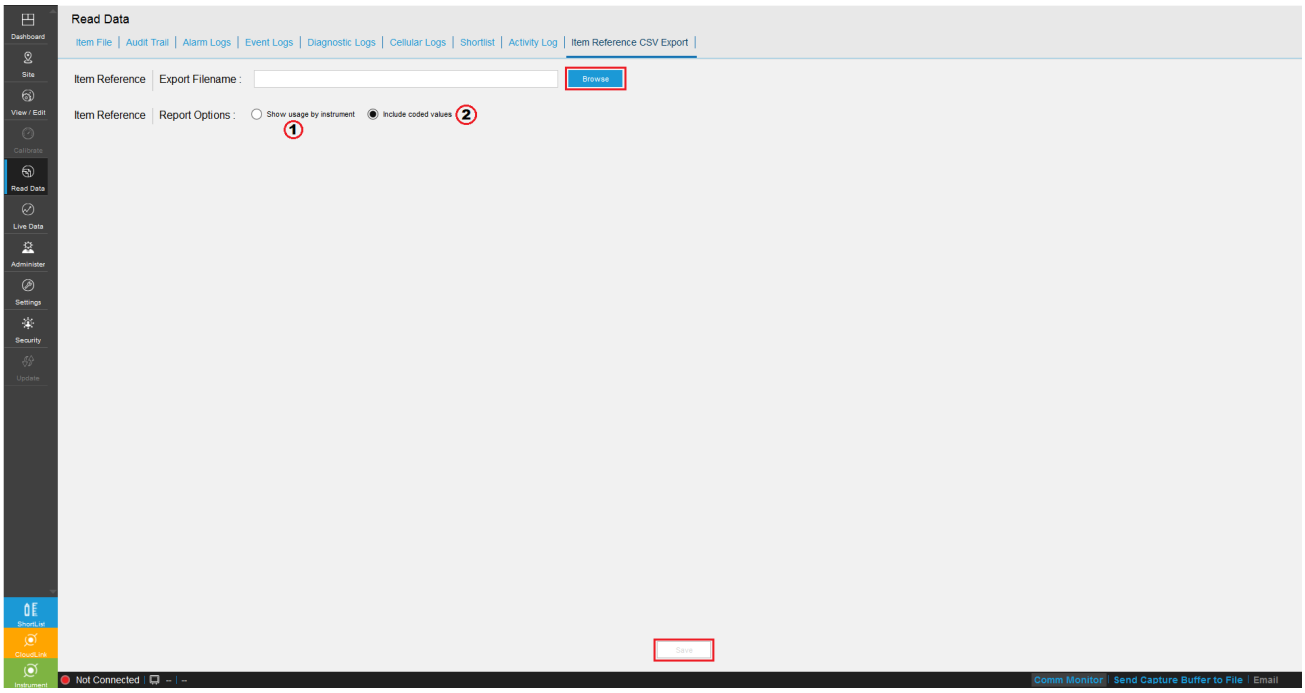
Relate the steps highlighted in the image above with the steps below:

1. Start by checking **Use User Text**. Type the text that should appear in the report in this box.
2. Select the **Messages to include**. There are 3 options for message reporting.
3. Select the **Display Activity Duration in**.

4. Select the **Sort Order**. This list shows the data columns that will be used in the report. Double click on the data type to change the sort order for that column: + (ascending) or - (descending).
5. Finally click **View** to view activity log report.

3.6.9 Item Reference CSV Export

Use the 'Item Reference CSV Export' tab to export the Item Reference files on software activity.

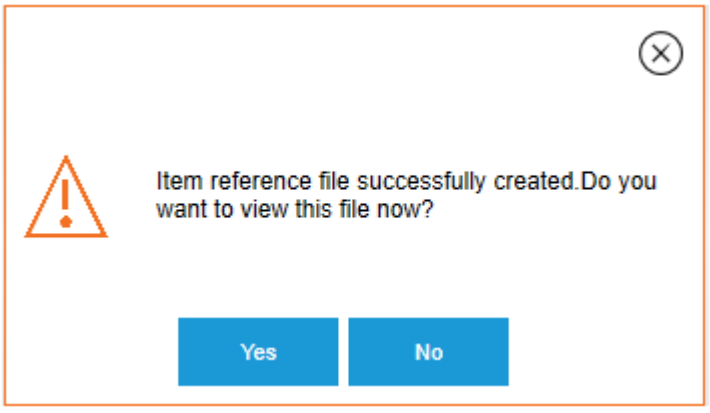


Relate the steps highlighted in the image above with the steps below:

1. Start by clicking on 'Browse'.
2. Save the file in the Reports pop-up window.
3. You can select two Report Options:

1. **Show usage by instrument** - Allows the user to view the generated report wrt the instrument applicable to the corresponding item description. See here.
2. **Include coded values** - You can view the coded values with units for each instrument. See here.

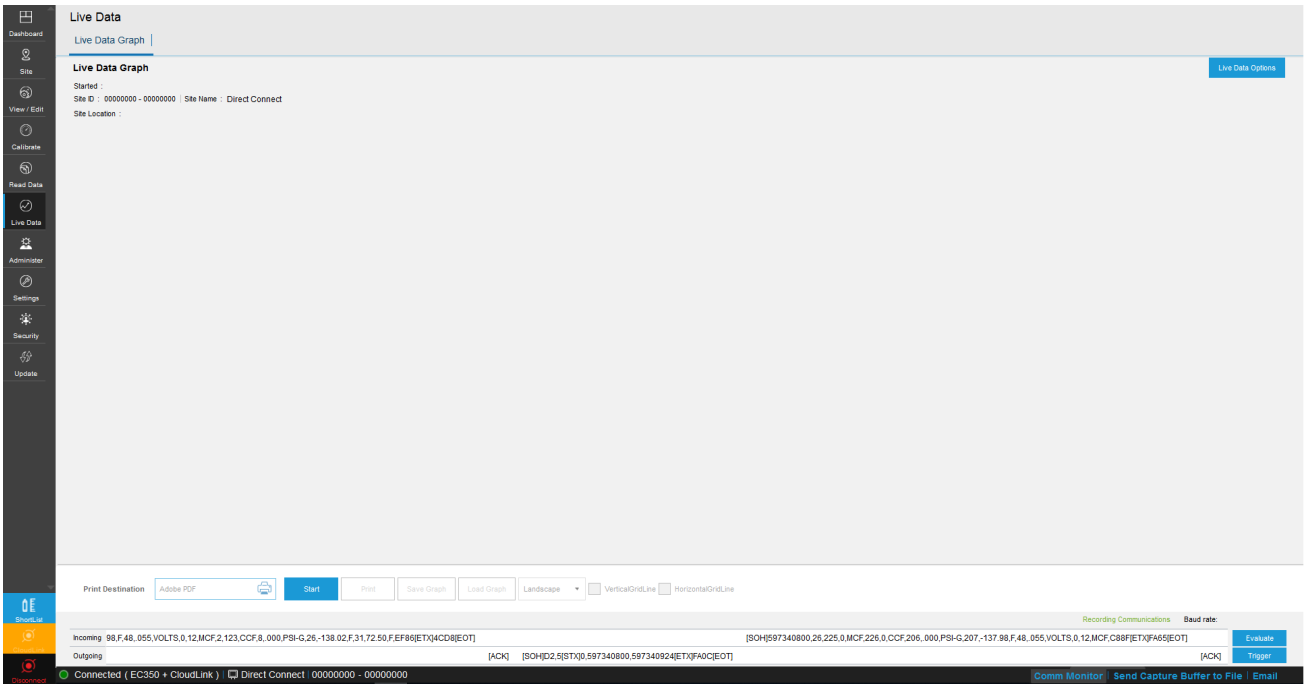
Once you select either of the above options, click Save.



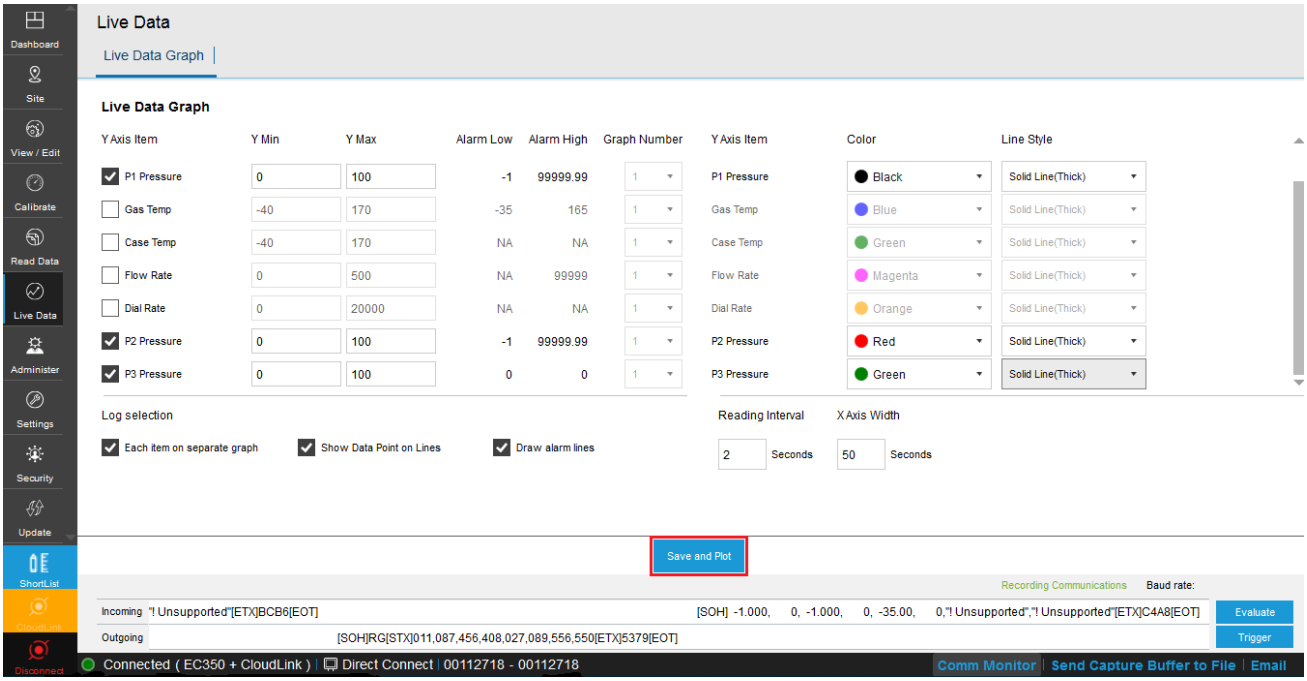
If you want to view the generated file click Yes else No.

3.7 Live Data

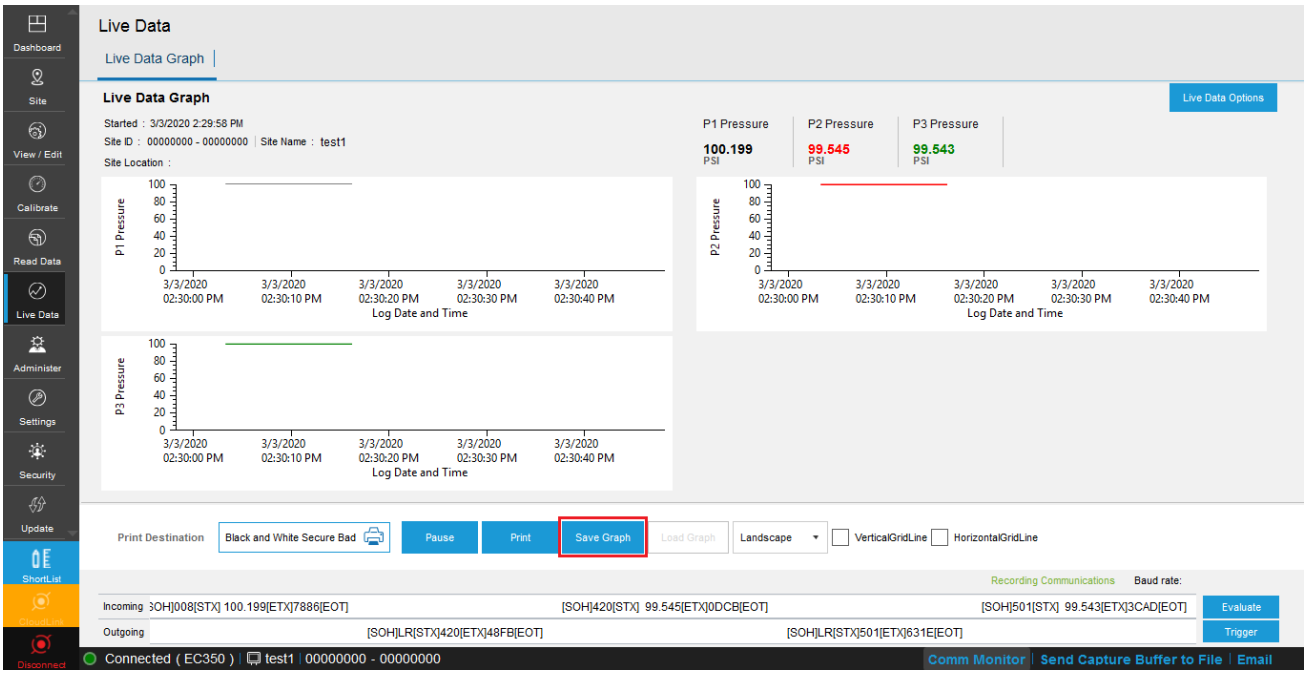
The Live Data Graph function will graph data read directly from connected instruments.

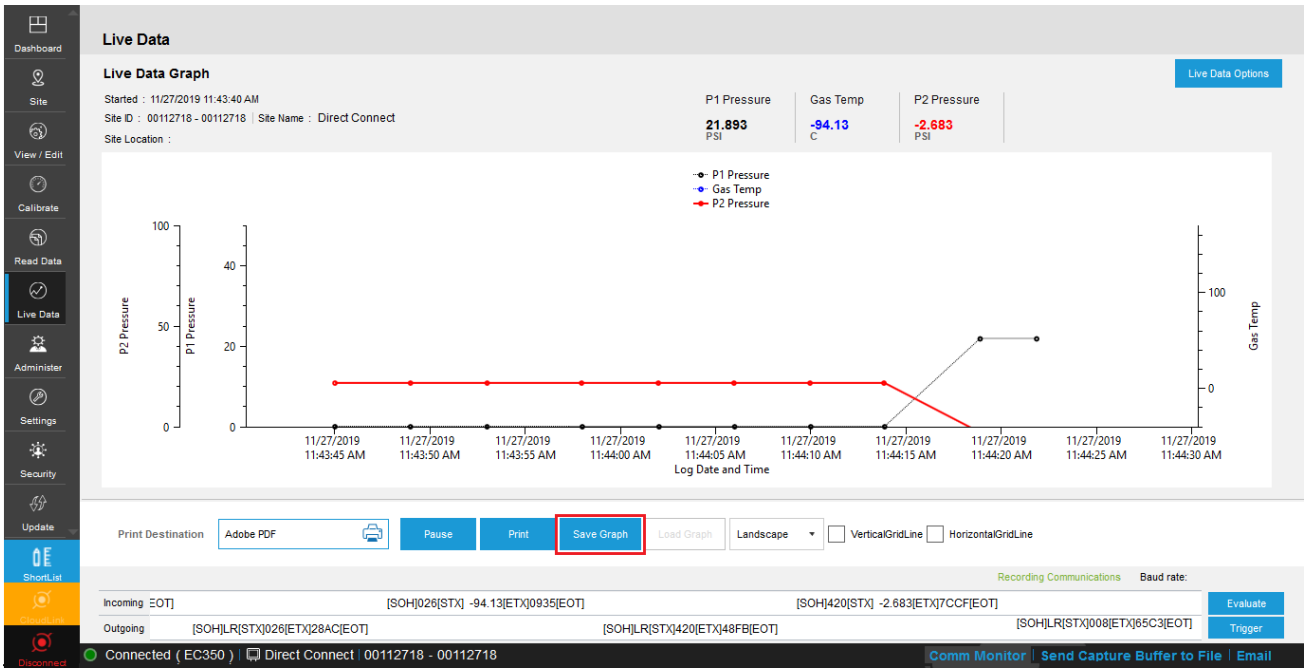


1. The computer/laptop must be connected to an instrument in order to display a live graph.
2. You select which items to graph as well as other graph configuration items.
3. The 'Live Data Graph' screen will display previously selected actual graph items in two graph sections when this function first begins. The device adjusts the upper and lower limits for each items from the settings provided.



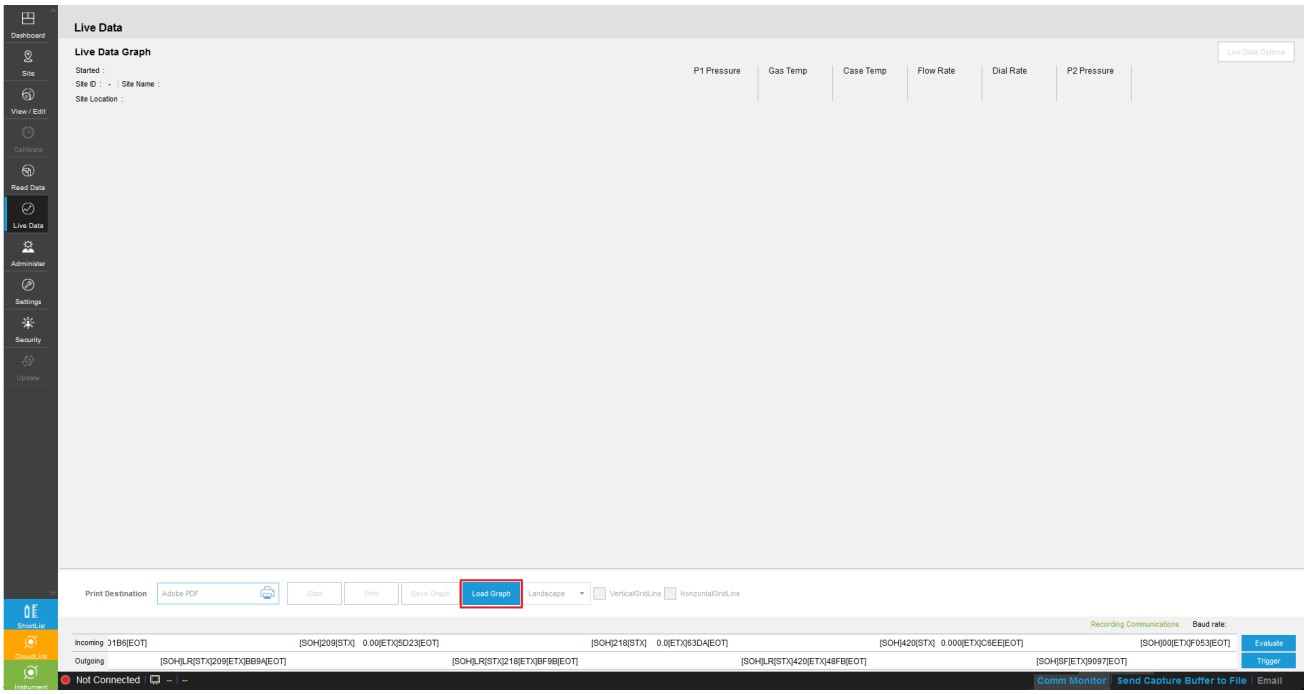
Click **Save and Plot** to view the graph.



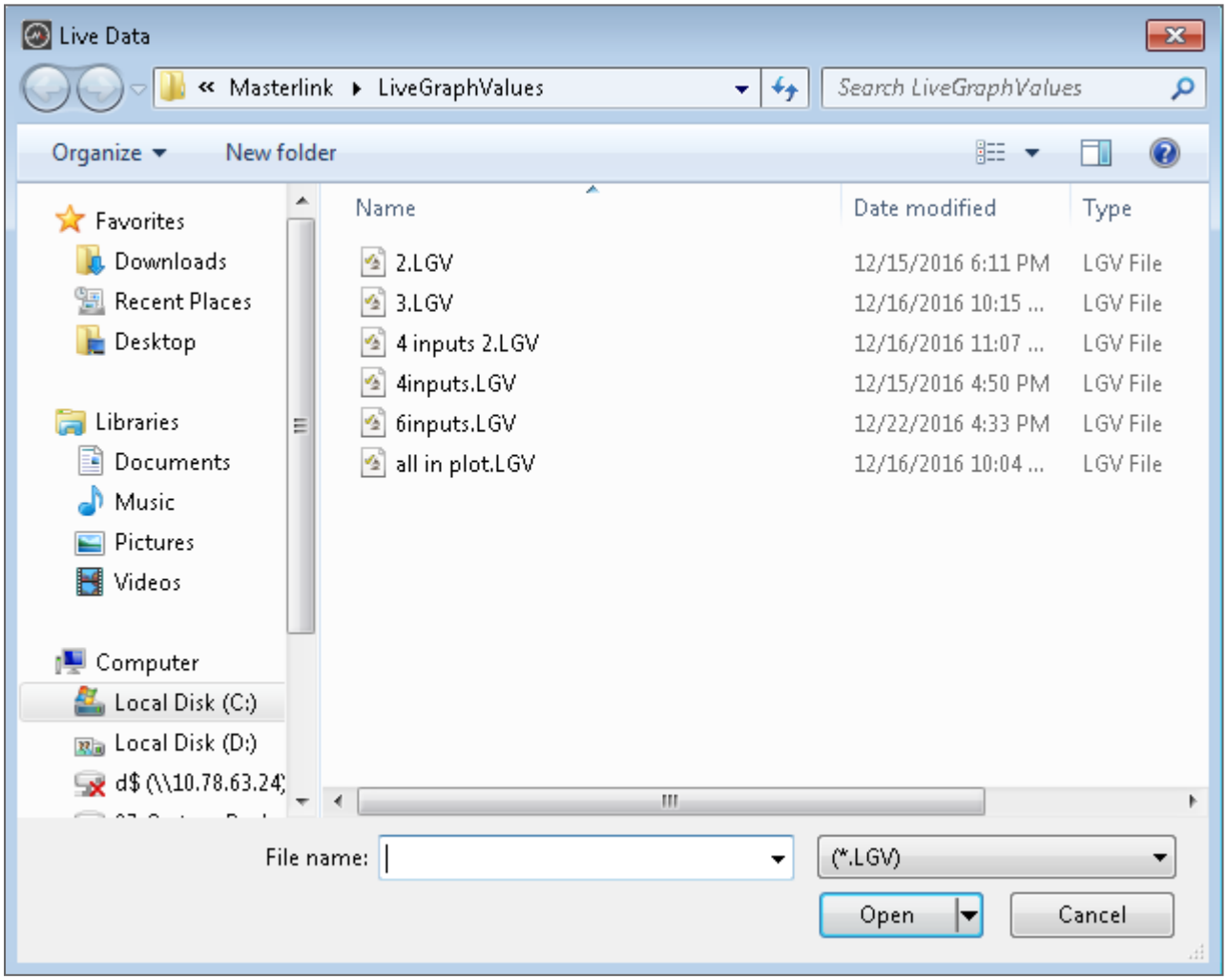


Click **Save Graph** to save the Live Graph Setup. By default, .LGV file is saved in the *C:\ProgramData\Honeywell\MasterLink\LiveGraphValues* folder.

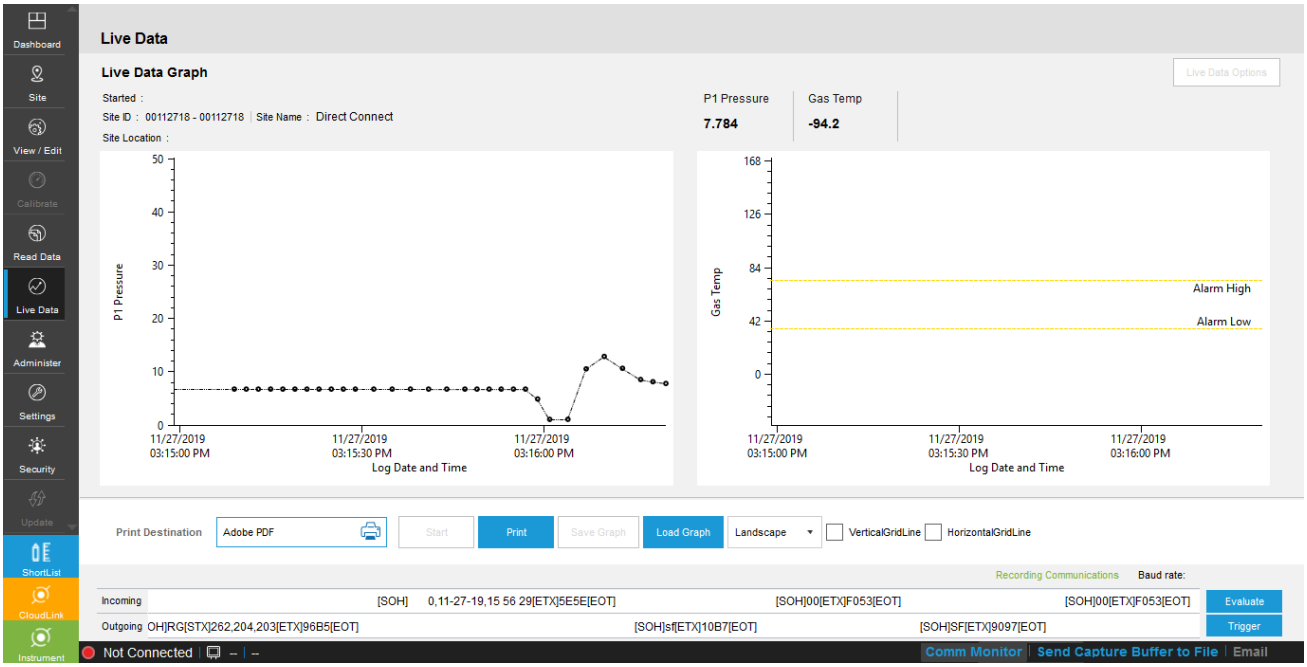
You can view graphs offline as well.



Click **Load Graph** to load saved graphs.



Select the desired graph from the new pop-up window and click **Open**.



Attention: Load Graph is disabled when we have an active connection to the instrument. Please disconnect from the instrument to use this option.

Items to Graph

The availability of items depends on the instrument linked to the computer. Toggle-click on the box to select/deselect the item(s) to graph. The default values for the minimum and maximum Y scale (vertical scale) correspond to the alarm limits. To change these defaults, click on that field and enter the new value.

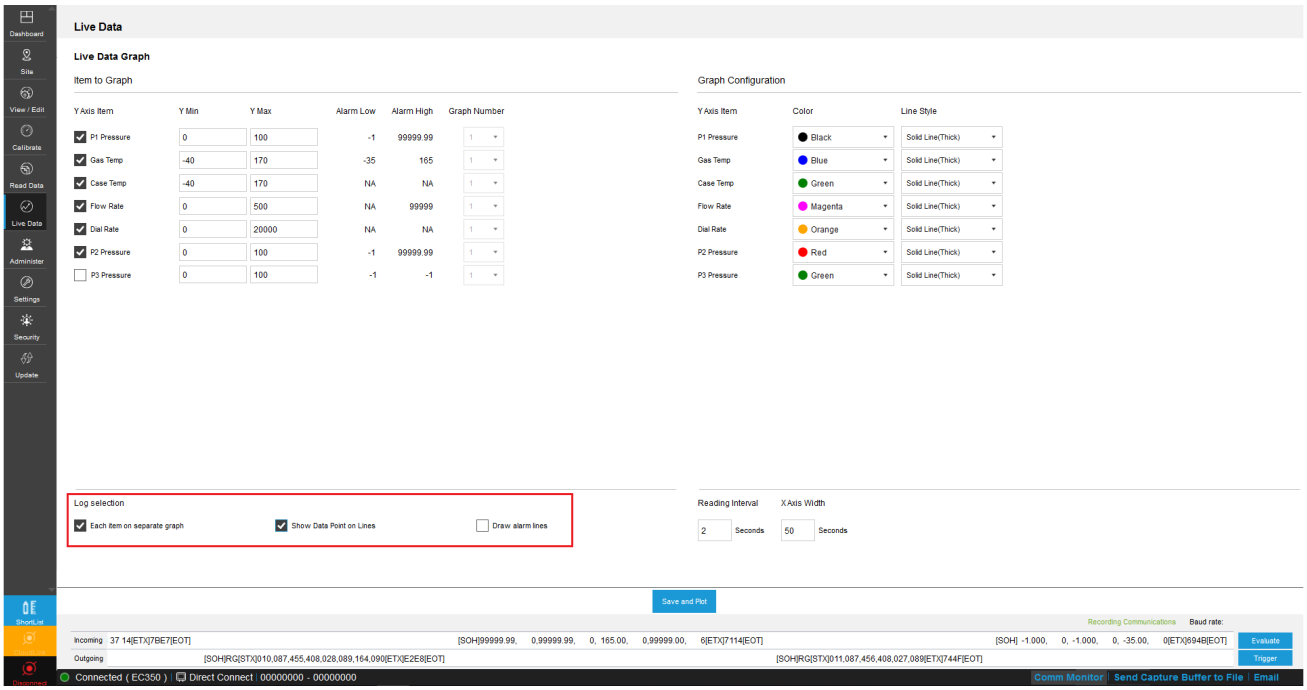
Note: You can select numbers in the Graph Number column to group the items together. For example, if you want to view the Gas temperature and the Case temperature on the same graph, you can assign a value of 1 for both the items, and they will be displayed on the same graph. If you do not assign a graph number, then all 4 items will be displayed on the same graph. Viewing all 6 inputs is possible in 2 or more graphs.

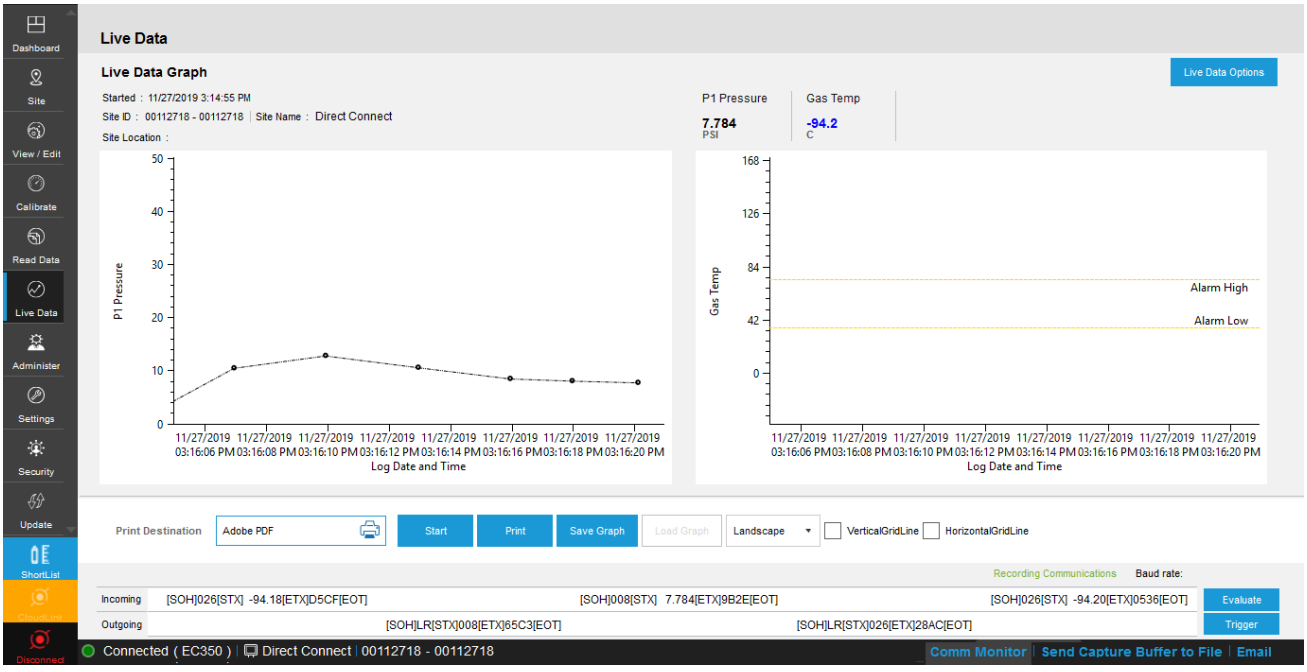
Graph Configuration

Pressure 1, Pressure 2, Gas Temperature, Case Temperature, Dial Rate, and Flow Rate items are available for graph configuration. For each of the 6 items, click on the down arrow next to the color or line style fields for selectable options, then click on the selection. Dashed or dotted line styles will not be noticeable on data lines unless the data points are fairly far apart. Toggling this box next to the following options on the Live Graph Setup dialog screen can activate other selections that affect the display of the graph.

Log selection

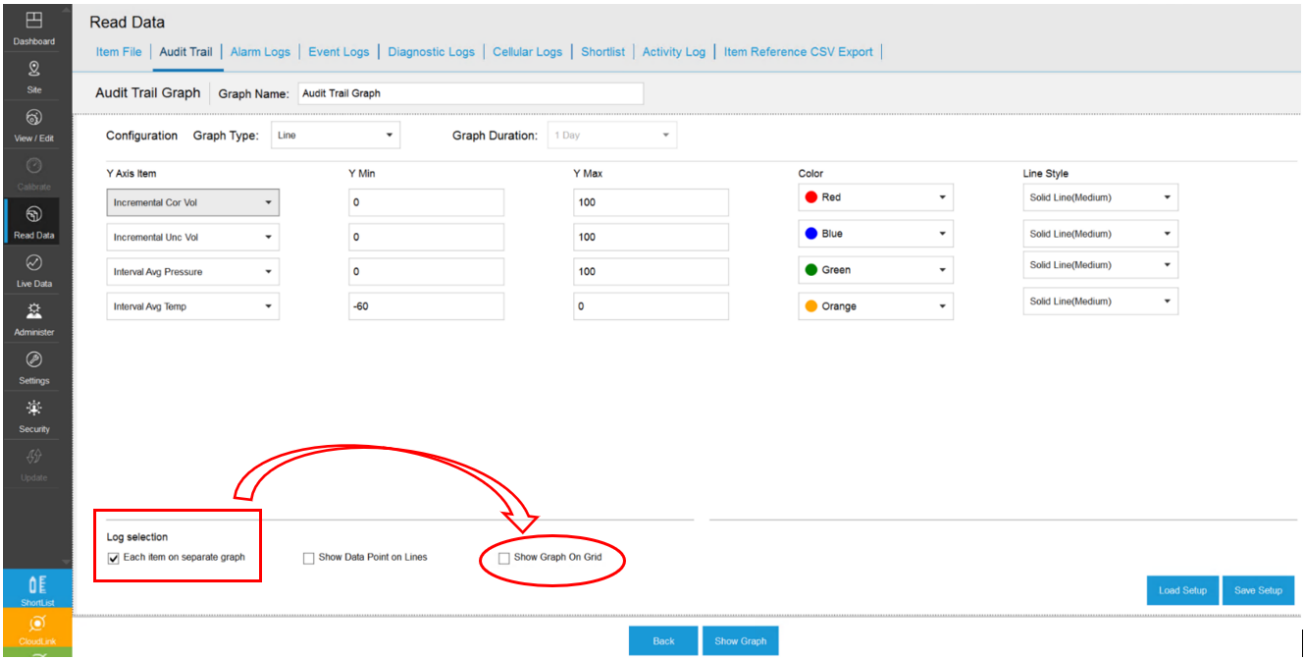
1. **Each item on separate graph**: Checking this box will draw one item per graph. If this is unchecked, more than one item will be drawn on a graph. A graph can have two Y scales (vertical); on each side. If two (up-to 4) items have the same unit of measure, they can share a Y scale . The Y scales are located along the left and right side of the graph.



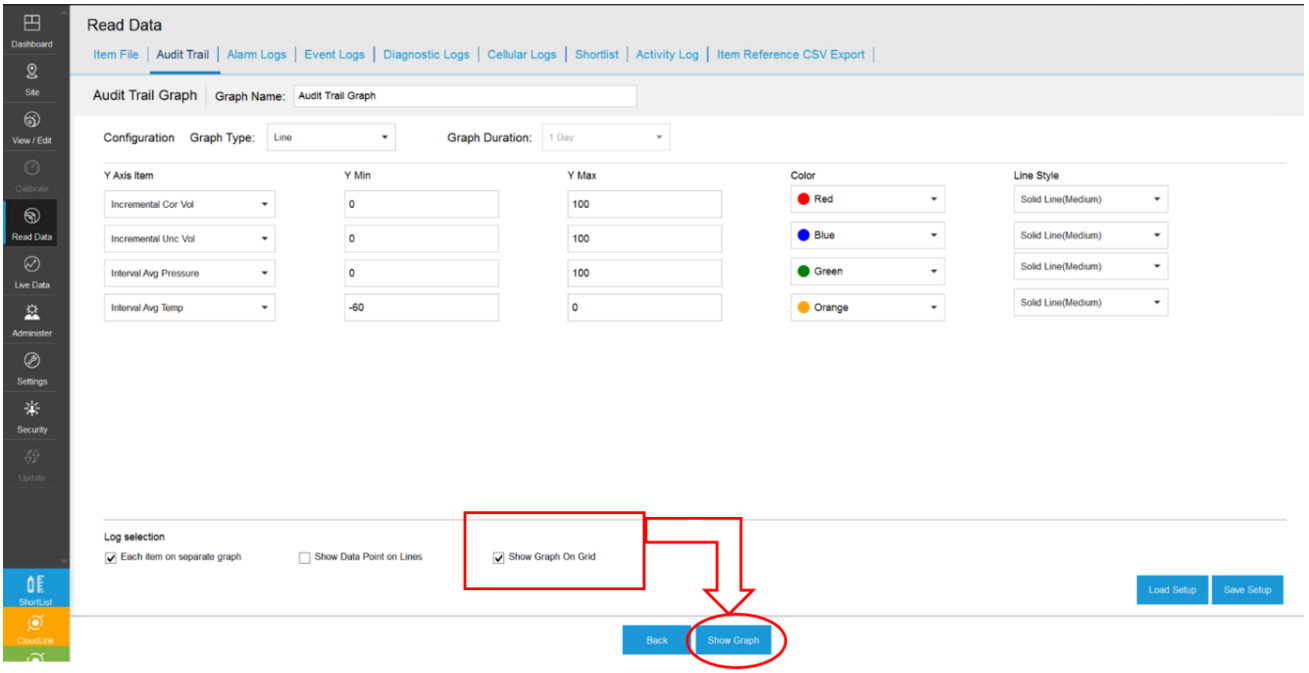


2. **Show data points on lines**: Data lines may be drawn with or without dots.
3. **Show Graph on Grid**: To make the data in a chart that displays axes easier to read.

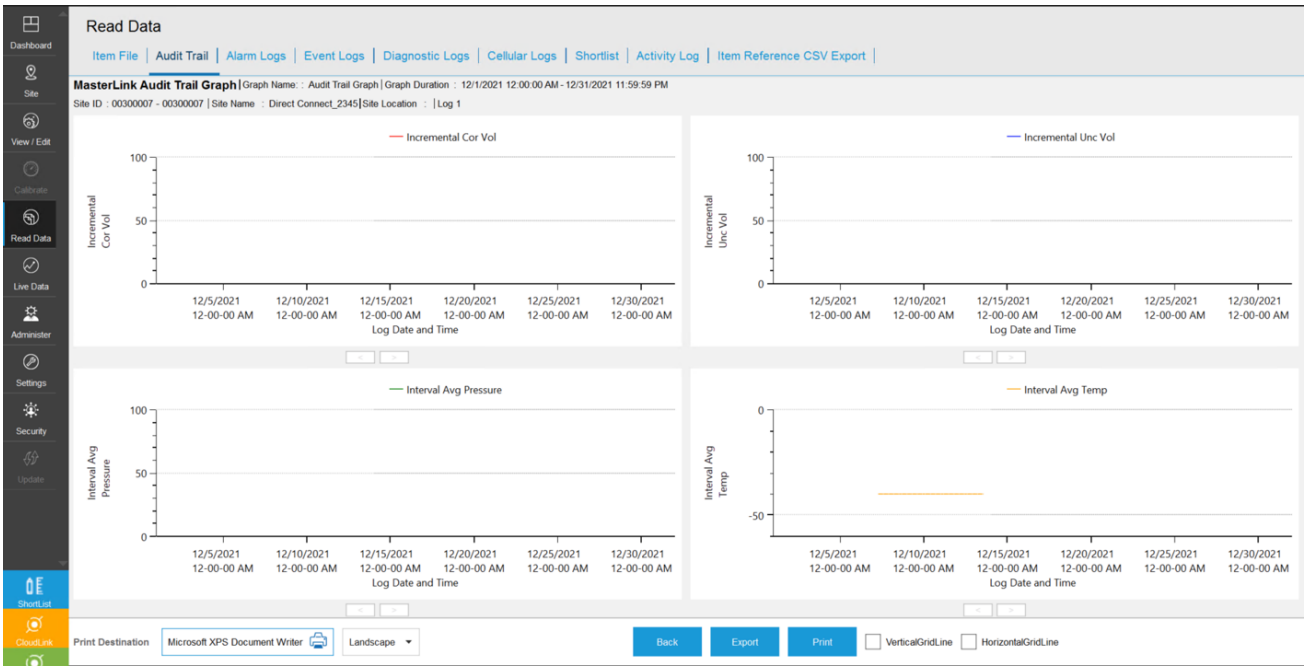
1. To enable the **Show Graph on Grid**, first click on **Each item on separate Graph** check box.



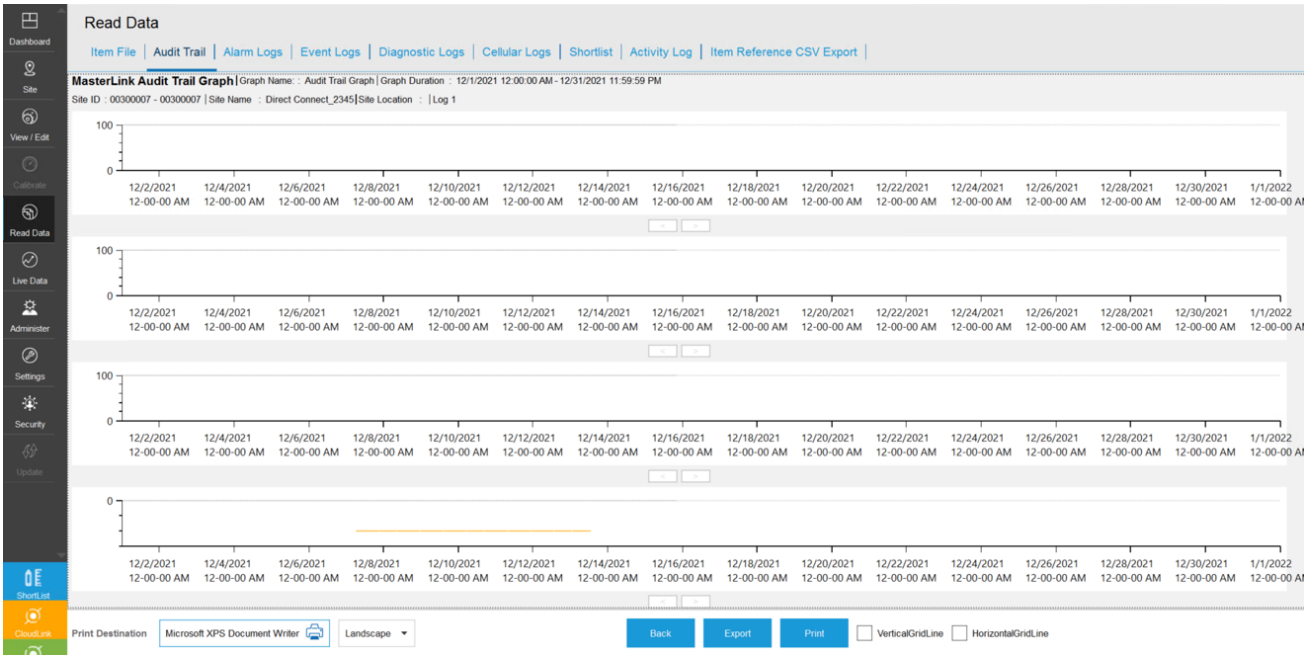
1. Select the check box **Show Graph on Grid**, then click on **Show Graph** to view the graphs.



1. Click on **Show Graph** to see the side-by-side graphical view by selecting the **Show Graph on Grid** check box.



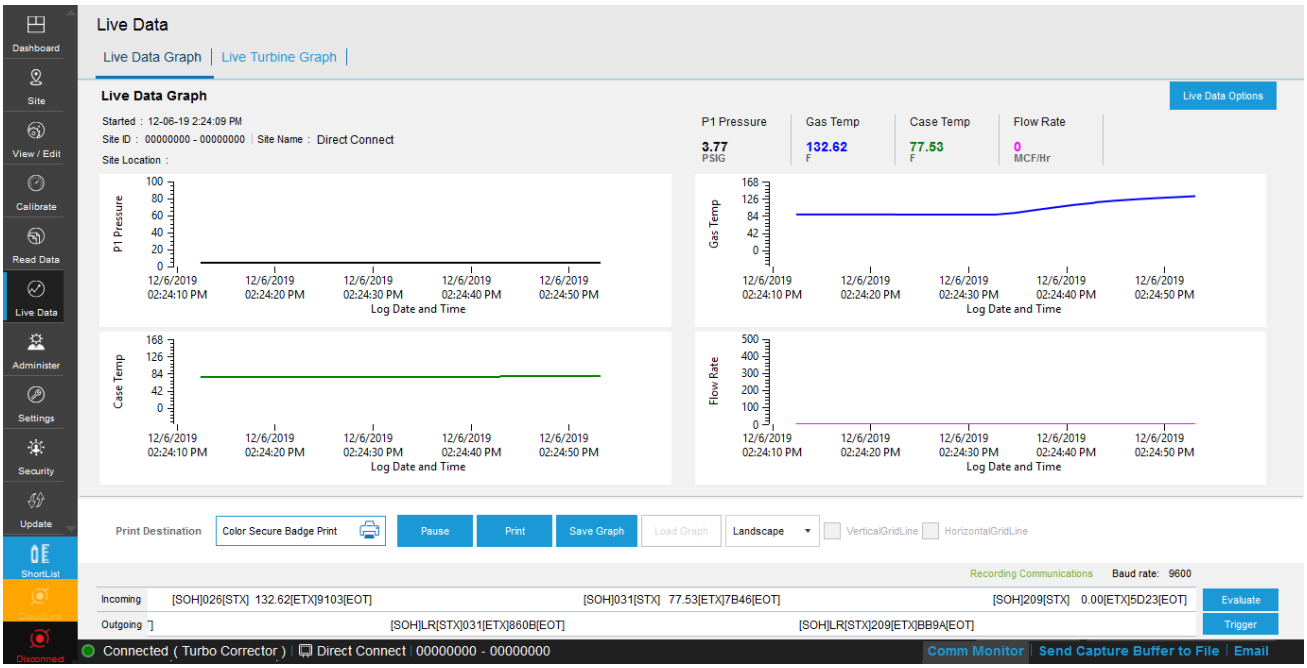
2. Alternatively, you can view the graphs by not selecting the "**Show Graph on Grid**" check box. Click on "**Show Graph**" to see the extended graphical view of x-axis for individual parameter.



4. **Draw alarm lines**: Check this box if the alarm lines are to be drawn on the graph.
5. **Reading Interval**: Enter a number for the Reading Interval (in seconds). This option controls the frequency when data is read from the instrument and thus, how often points are plotted. Please note that point-to-point spacing may vary somewhat due to rounding and screen resolution.
6. **X-Axis Width**: Enter a number for the X-Axis Width (in seconds). The X-axis is located across the bottom of the graph. This option controls the number of data points shown on the graph at one time. Please note that a slightly different number of data points may actually be shown due to rounding and screen resolution.

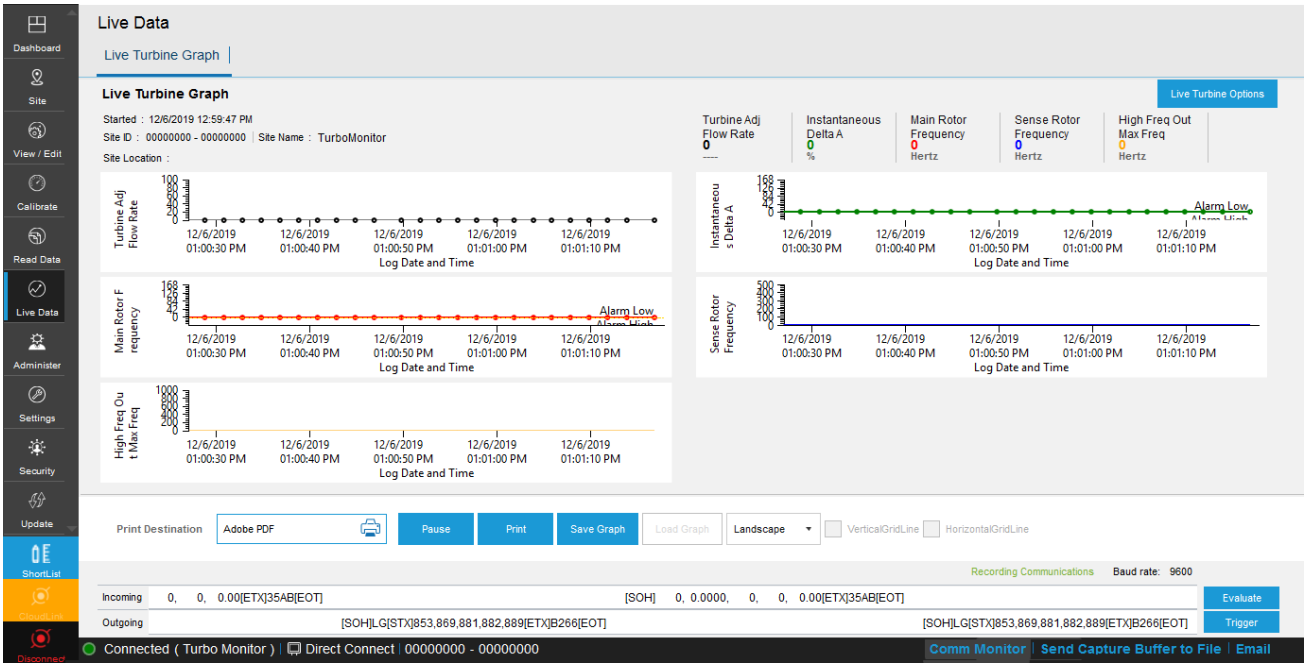
Click **Save and Plot** to view the graph.

For Legacy devices, Turbo Corrector and Turbo Monitor the live graph views are as below:



Note: When Turbo Corrector is connected, the 'Live Turbine Graph' view will be of Turbo Monitor.

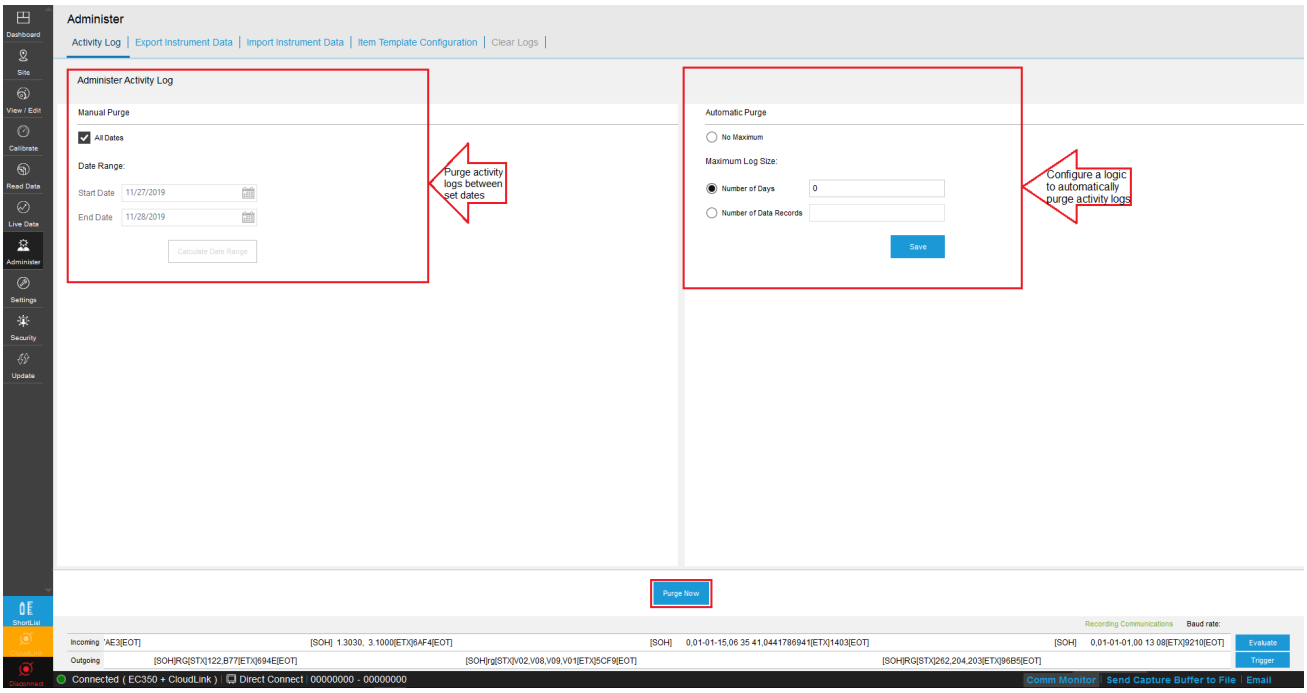
However, when Turbo Monitor is connected the 'Live Turbine Graph' is as below:



3.8 Administer

3.8.1 Activity Log - Purge

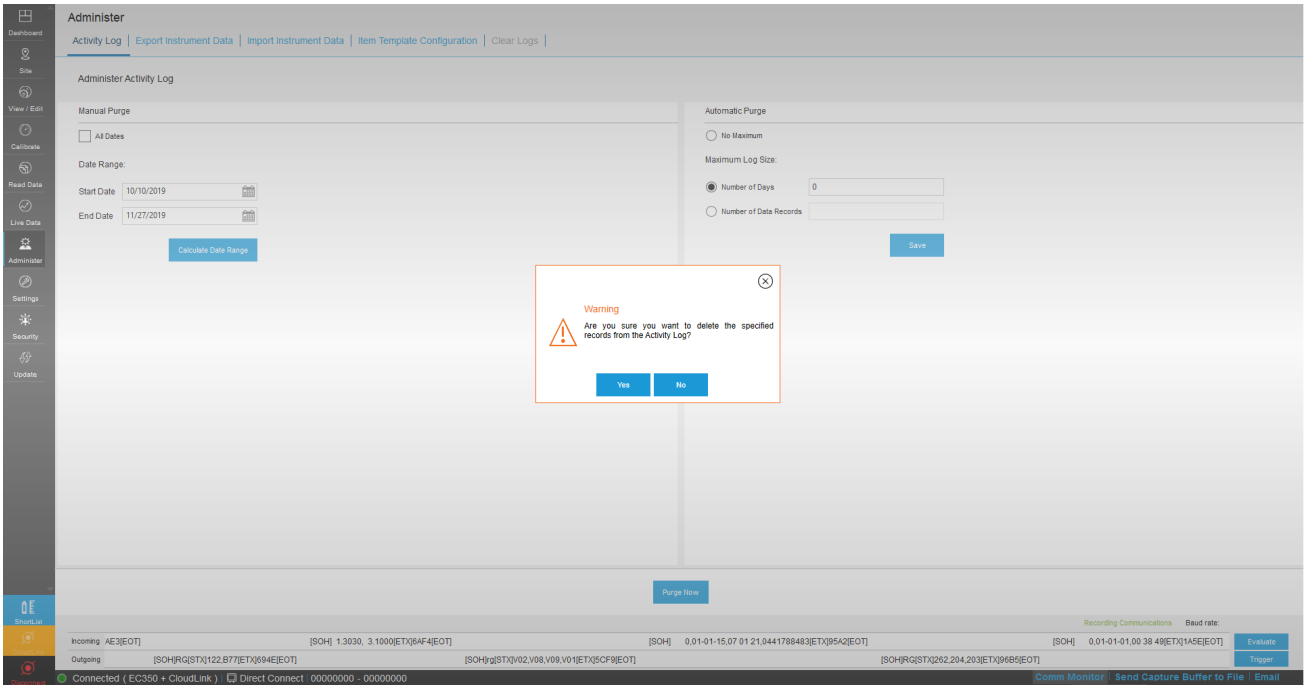
Use Activity log - Purge to permanently delete the activity logs of the MasterLink. Please note that this log is different from the Event Log because this log mainly focuses on software activity (and some firmware activity) where the Event Log function records activity that is directly linked to and maintained within the instrument.

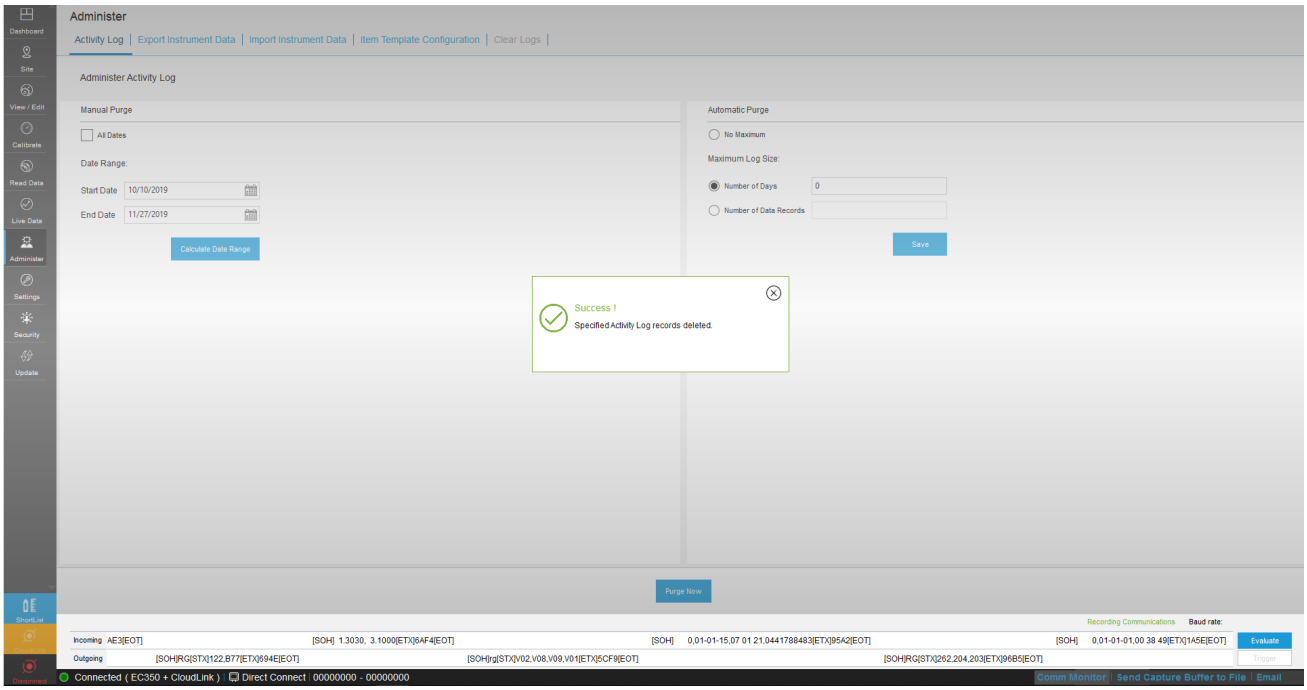


Manual Purge - This method requires that a date parameter be set. The default setting is *All Dates*. If this is set, every record in the activity log will be purged. To de-select this option and open the fields for starting and ending date entries, uncheck on the **All Dates** box. Enter the desired dates, or click the **Calculate Date Range** button to automatically retrieve the database starting and ending dates. After the date range has been set, click the **Purge Now** button to execute this function.

Automatic Purge - Although the default setting is No Maximum (which means that no records are removed until the manual method is executed), records may be automatically removed without user intervention. Records can be removed after the file has reached a set number of days or number of data records. To set one of these two limits, de-select the No Maximum option by clicking on that radio button, and then select the radio button next to *Number of Days* or *Number of Data Records*. Next, enter the number of days for data records in the box for the option that was chosen. Finally click **Save**.

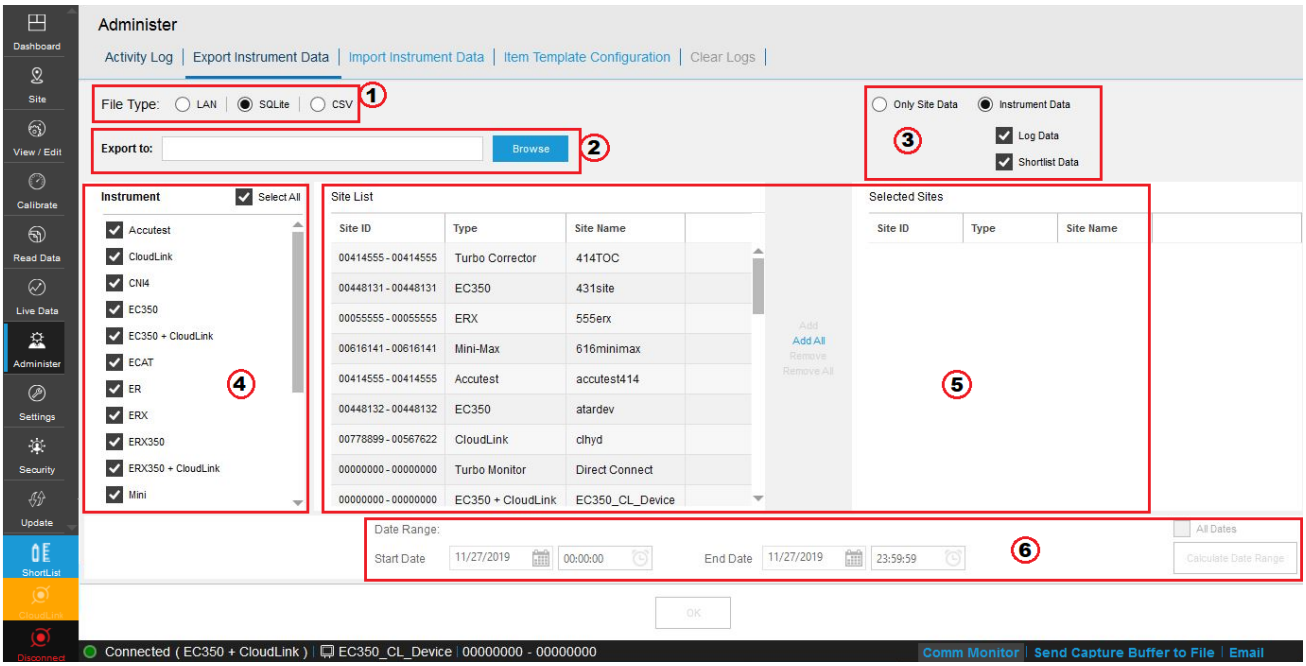
Click **Purge Now**, to manually remove activity logs.





3.8.2 Export Instrument Data

The 'Export Instrument Data' tab can be used to export instrument data.



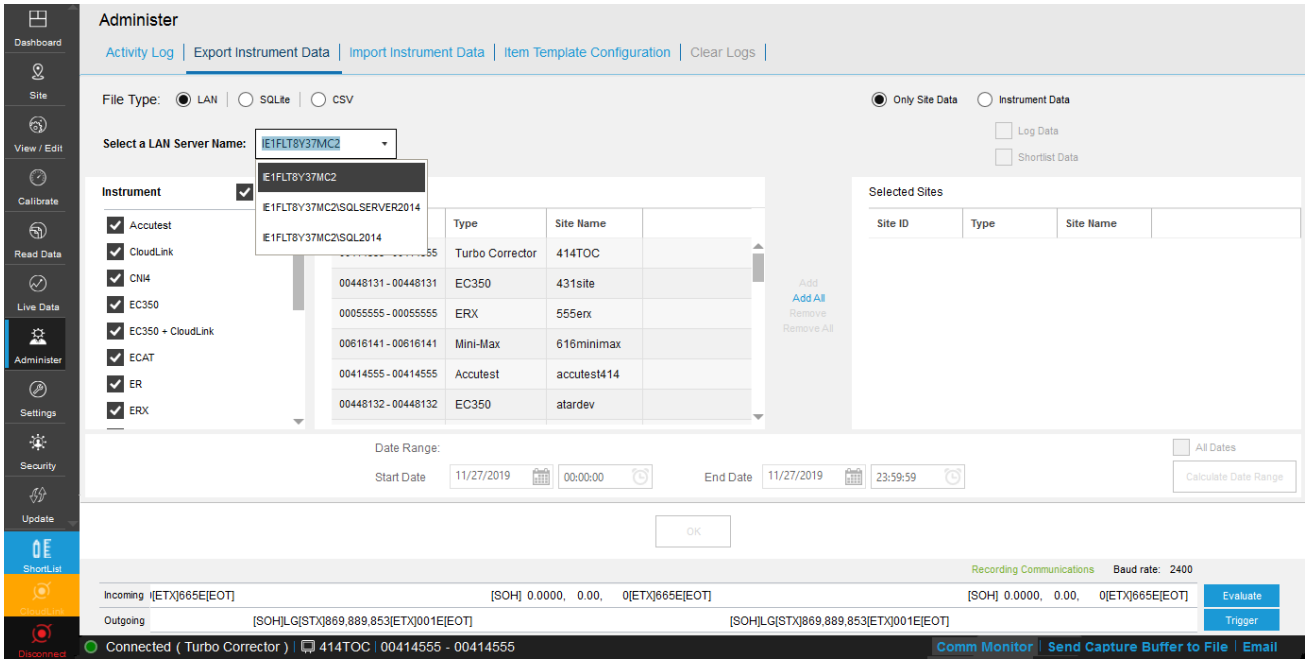
Relate the steps highlighted in the image with the instructions for exporting instrument data.

1. Select the export file type. **LAN**, **SQLite**, and **CSV** are supported when MasterLink is installed.
2. Browse and select the **Export to** location.
3. Select the **Only Site Data** option to export only the site data or select the **Instrument Data** option to be able to export log and Shortlist data for the selected sites.
4. Select **Instrument** type. To select all instruments, click **Select All**.
5. A **Site List** gets populated based on your selected instruments. Select the site(s) and use **Add/Add All/Remove/Remove All** to add or remove sites.
6. Select the **Date Range**.
7. Click **OK** to export instrument data.

> **Note:** In all of the supported exported file types, if Only Site data is chosen, only sites are exported but not Log/Shortlist Data.

Export instrument or Site Data to a remote SQL Server over LAN:

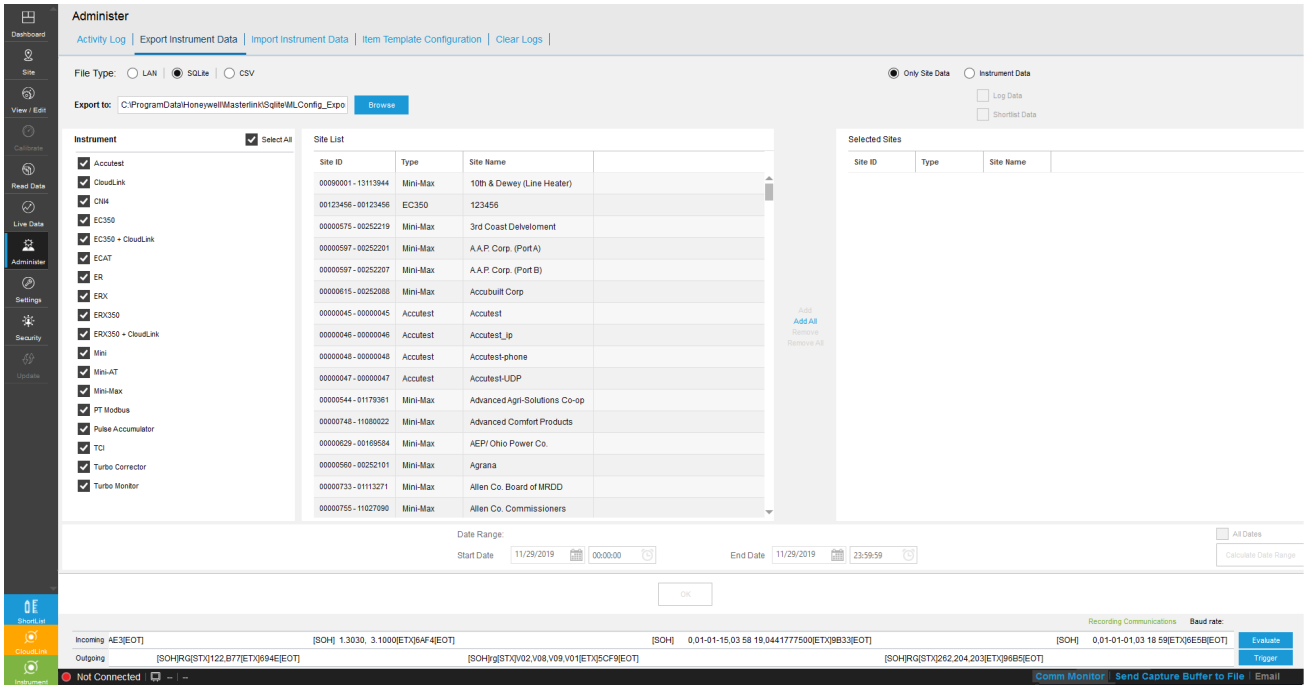
1. Select the **LAN** option. The application would load all available SQL Server on the same network. The user performing this operation must have **db_admin privilges** on the remote SQL Server.



2. Choose appropriate SQL Server. The selected SQL Server must have the MasterLink Database for successful export.
3. Select the **Only Site Data** option to export only the site data or select the **Instrument Data** option to be able to export log data for the selected sites.
4. Select **Instrument** type. To select all instruments, click **Select All**.
5. A **Site List** gets populated based on your selected instruments. Select the site(s) and use **Add/Add All/Remove/Remove All** to add or remove sites.
6. Select the **Date Range**.
7. Click **OK** to export instrument data.

Export instrument or Site Data to SQLite

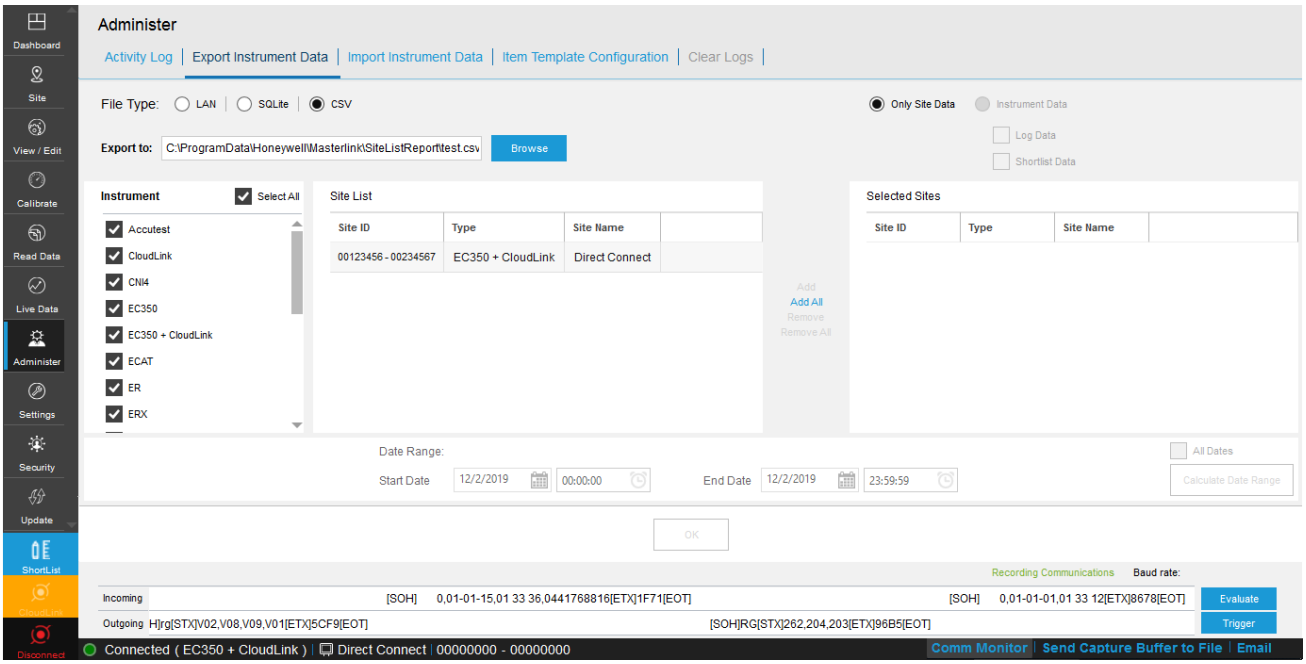
1. Select SQLite file type option.



2. Browse and select the location for the SQLite file. Give a name to the SQLite file. If an existing SQLite file is chosen, it will be overwritten.
3. Select the **Only Site Data** option to export only the site data or select the **Instrument Data** option to be able to export log data for the selected sites.
4. Select **Instrument** type. To select all instruments, click **Select All**.
5. A **Site List** gets populated based on your selected instruments. Select the site(s) and use **Add/Add All/Remove/Remove All** to add or remove sites.
6. Select the **Date Range**.
7. Click **OK** to export instrument data.

Export instrument or Site Data to CSV

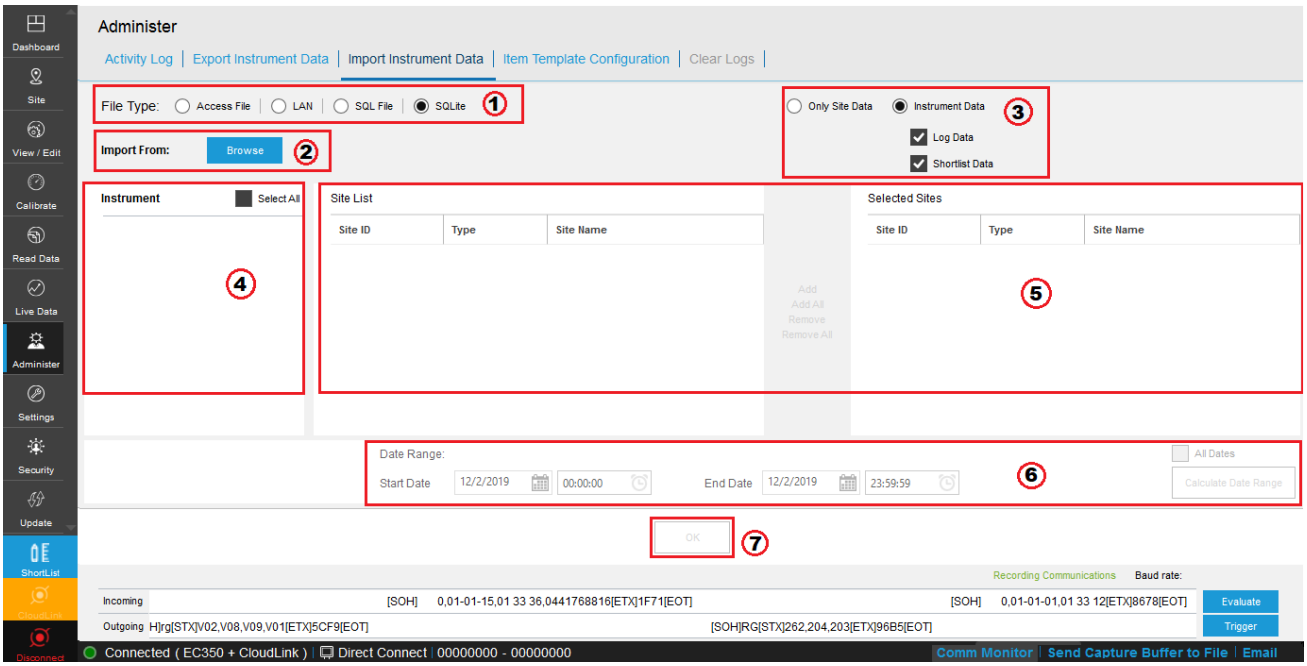
1. Select the CSV file type.



2. Browse and select the location you need instrument data to be exported to CSN file. Give a name to the CSV file..
3. Only Sites are exported to CSV file. Instrument data cannot be exported to CSV file and hence disabled.
4. Select **Instrument** type. To select all instruments, click **Select All**.
5. A **Site List** gets populated based on your selected instruments. Select the site(s) and use **Add/Add All/Remove/Remove All** to add or remove sites.
6. Select the **Date Range**.
7. Click **OK** to export instrument data.

3.8.3 Import Instrument Data

The 'Import Instrument Data' tab can be used to import instrument data.

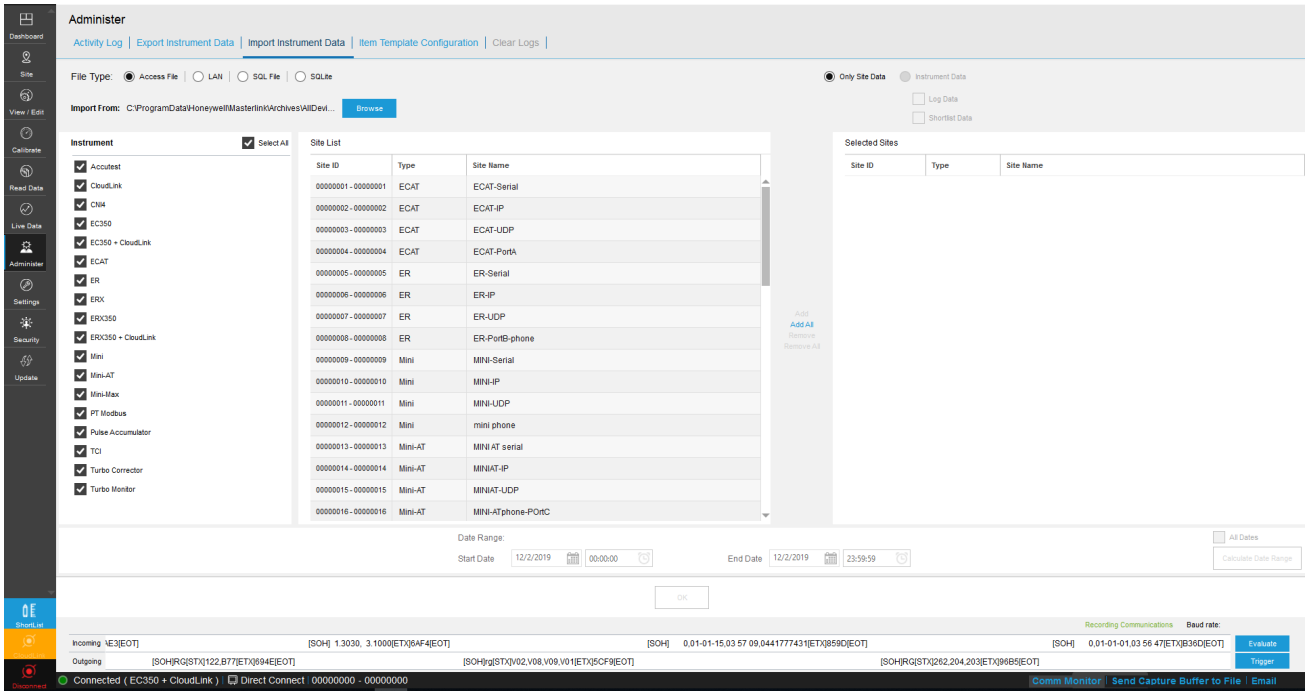


Relate the steps highlighted in the image with the steps below:

1. Start by selecting select the import file type. Access File, LAN, SQL File and SQLite file types are supported when MasterLink is installed.
2. Select the physical location of the file to be imported.
3. Select the type of data source.
4. Select **Instrument** type. To select all instruments, click **Select All**.
5. A **Site List** gets populated based on your selected instruments. Select the site(s) and use **Add/Add All/Remove/Remove All** to add or remove sites.
6. Select the **Date Range**.
7. Click **OK** to import instrument data.

Import from Access File

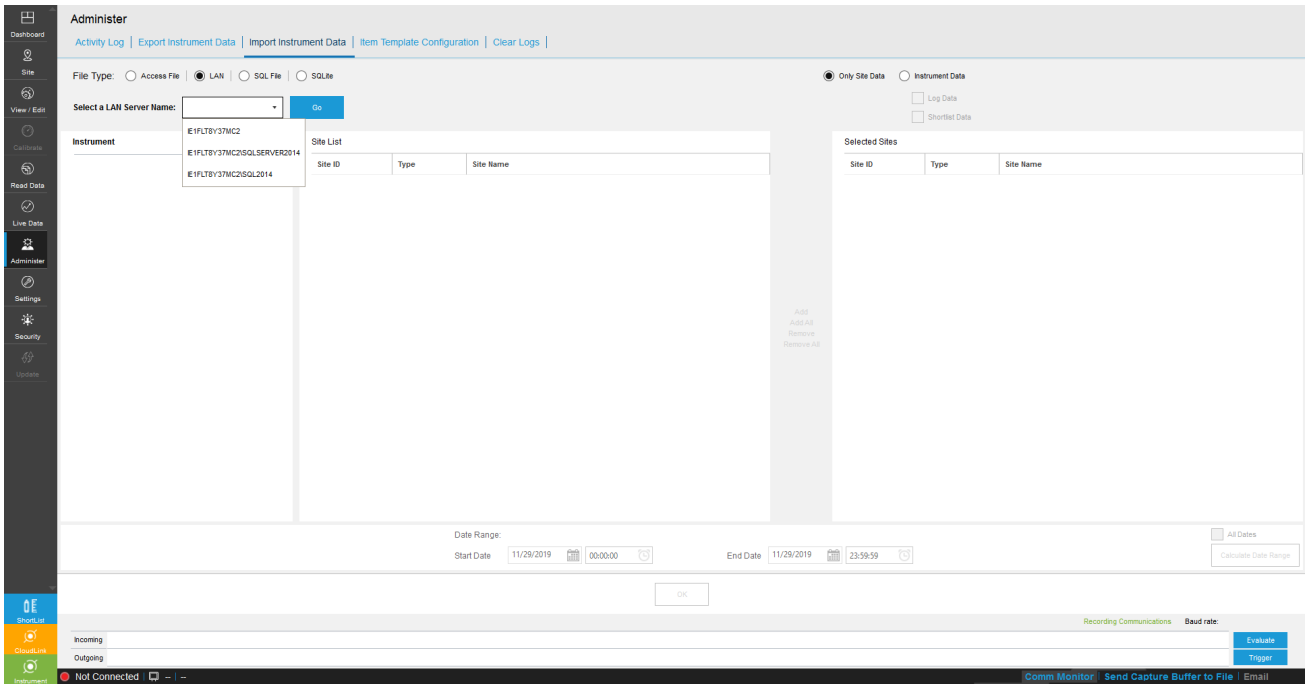
1. Select Access file type option and browse the access file (.ARC or .mdb file).



2. Sites in the selected archive access database would be listed out.
3. By default, site data option is selected. If sites in the archive file does not have logs only Site Data options is enabled.
4. Select **Instrument** type. To select all instruments, click **Select All**.
5. A **Site List** gets populated based on your selected instruments. Select the site(s) and use **Add/Add All/Remove/Remove All** to add or remove sites.
6. Select the **Date Range**.
7. Click **OK** to import instrument data.

Import from LAN

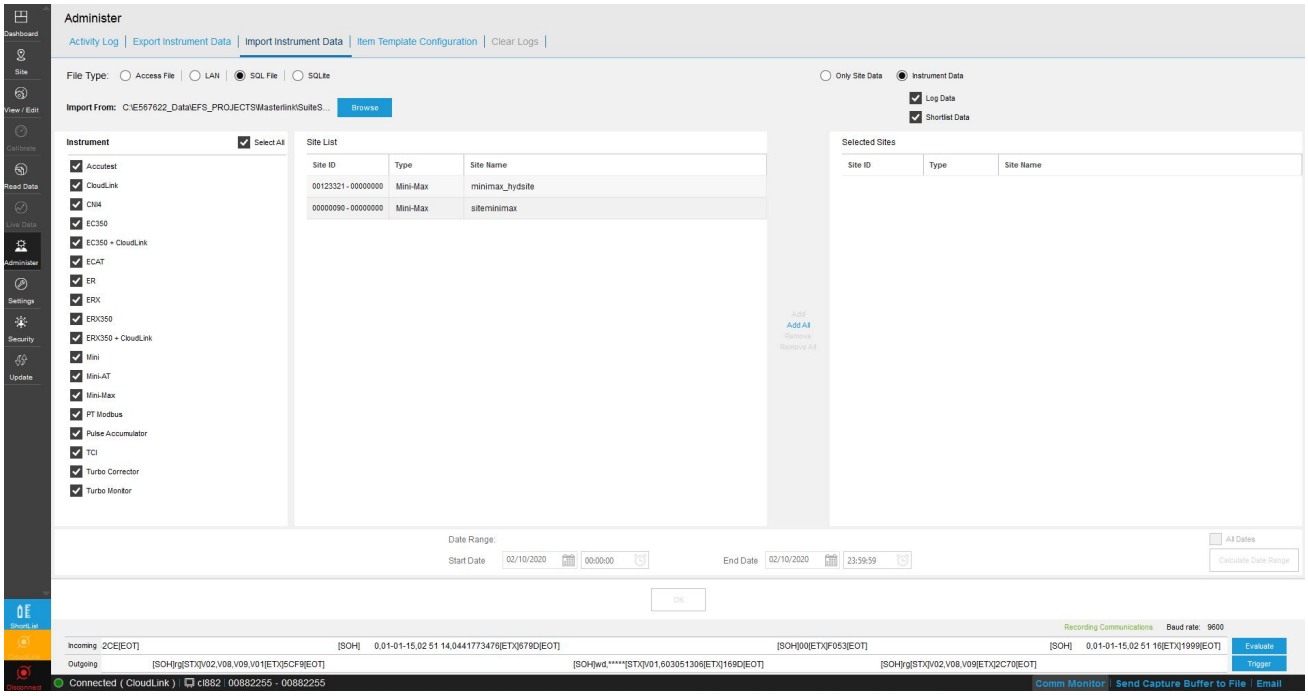
1. Select LAN option, application would list out the SQL Server over LAN.



2. Select appropriate server or type in the right SQL Server and click on **Go**.
    1. Make sure the SQL Server chosen has proper MasterLink Database
3. Sites from the LAN would be listed out.
4. Select **Instrument** type. To select all instruments, click **Select All**.
5. A **Site List** gets populated based on your selected instruments. Select the site(s) and use **Add/Add All/Remove/Remove All** to add or remove sites.
6. Select the **Date Range**.
7. Click **OK** to import Site/instrument data.

Import from SQL File

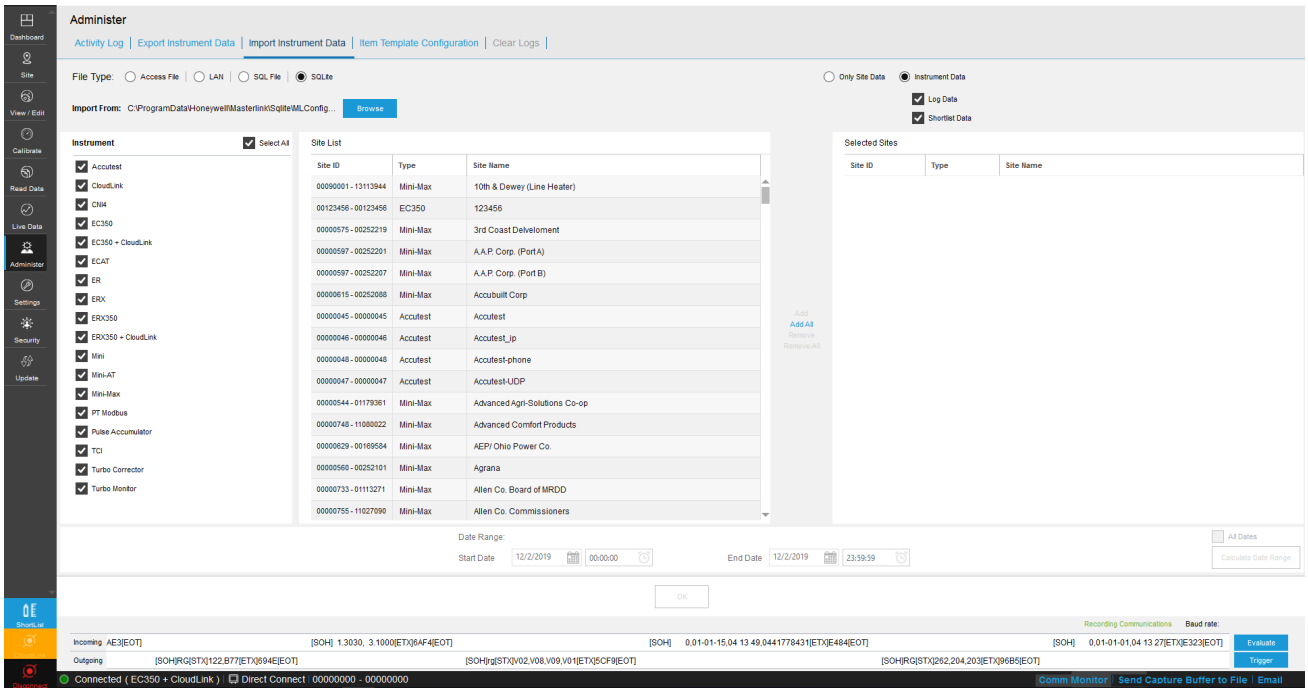
1. Select the **SQL File** option.



2. Browse an appropriate .MDF file to import sites.
3. Pre-requisite for importing from SQL file to MasterLink application installed with Sqlite.
    1. Make sure there is a proper SQL Server is running and able to attach the SQL .mdf file chosen.
    2. Make changes in MLR510 config file AppSettings.xml file. It should have proper SQL Server connection string with master as the default. initial catalogue. This is mandatory to connect to that SQL Server and attach the selected .mdf file to perform Import.
    3. **Note**: Do not try to import from any SQL .mdf which is already attached to SQL Server.
4. Select **Instrument** type. To select all instruments, click **Select All**.
5. A **Site List** gets populated based on your selected instruments. Select the site(s) and use **Add/Add All/Remove/Remove All** to add or remove sites.
6. Select the **Date Range**.
7. Click **OK** to import Site/instrument data.

Import from SQLite

1. Select the SQLite File option.



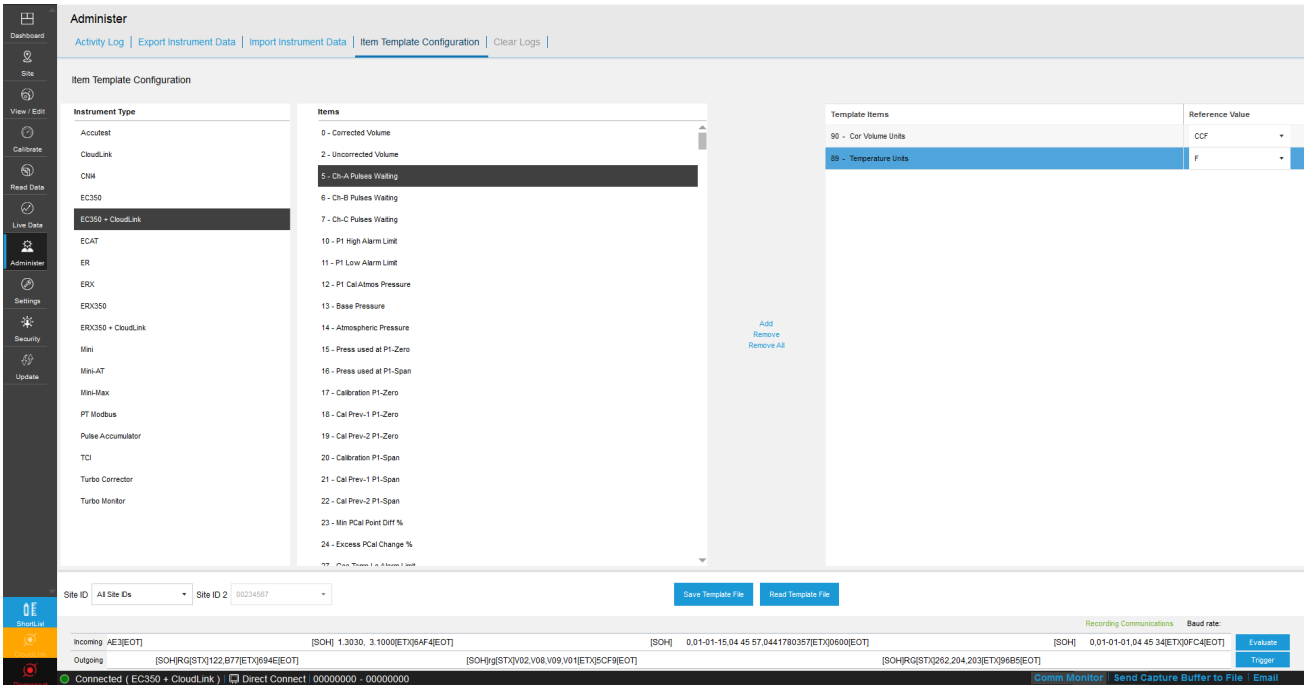
2. Browse an appropriate .sqlite file to import sites.
3. Select the type of data source.
4. Select **Instrument** type. To select all instruments, click **Select All**.
5. A **Site List** gets populated based on your selected instruments. Select the site(s) and use **Add/Add All/Remove/Remove All** to add or remove sites.
6. Select the **Date Range**.
7. Click **OK** to import Site/instrument data.

Note: While importing or exporting shortlist Data, only shortlist Item Data is exported/imported but not the shortlist items configuration.

3.8.4 Item Template Configuration

Item Template Configuration screen can be used to create and save a template containing item numbers (related to the device integrity) along with reference values.

Note: By default, the connected site (here, EC 350+CloudLink) will be selected in the Instrument Type list.

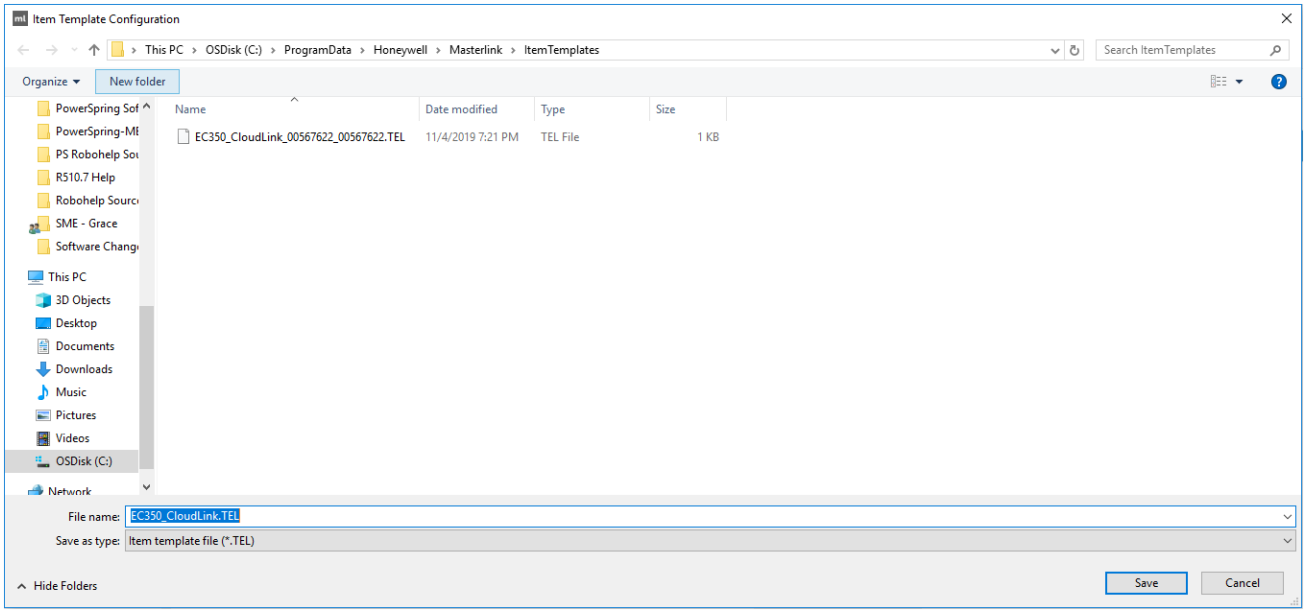


While MasterLink is connecting to an instrument, the values (default) from this template are compared with the values(actual) read from the instrument. If there is a mismatch, then an error is displayed on the *Dashboard - Config Check* widget, and drill down on the widget will display further details.

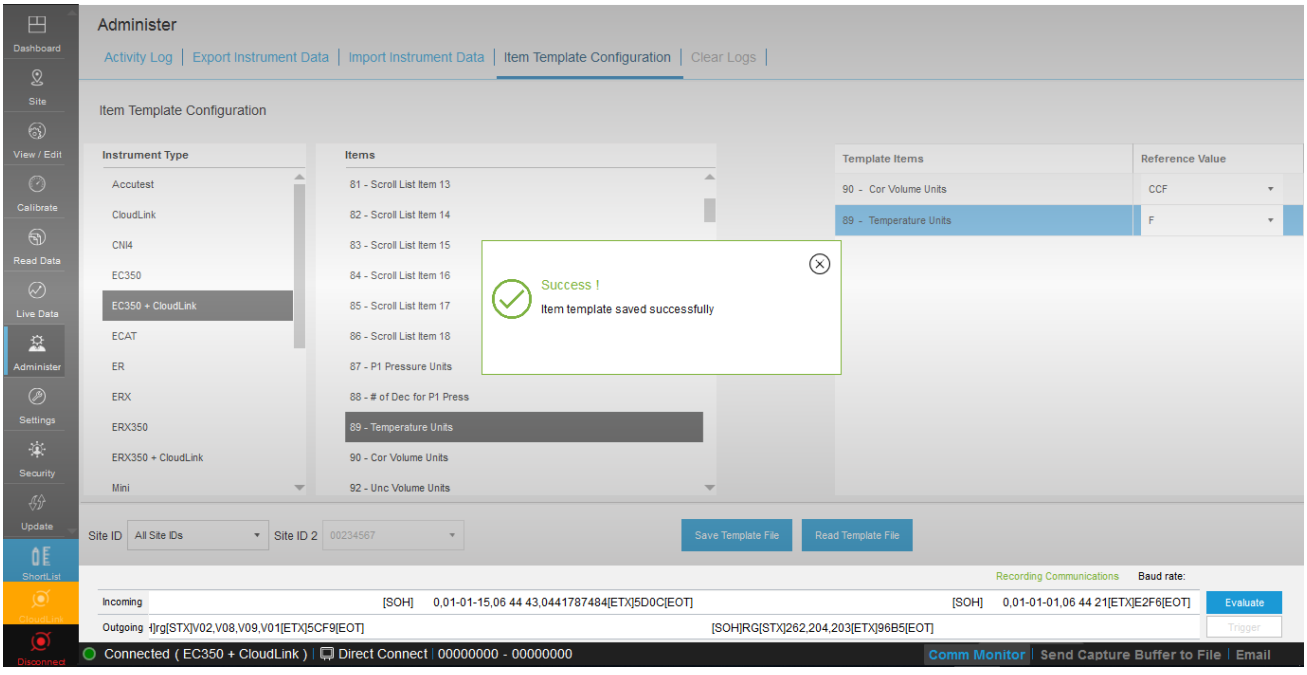
Refer Dashboard Configuration check for more details.

Start by selecting the instrument type. Based on the selected instrument type, the applicable items appear on the screen. Select and **Add** the required items to your list. Add a reference value for the selected items.

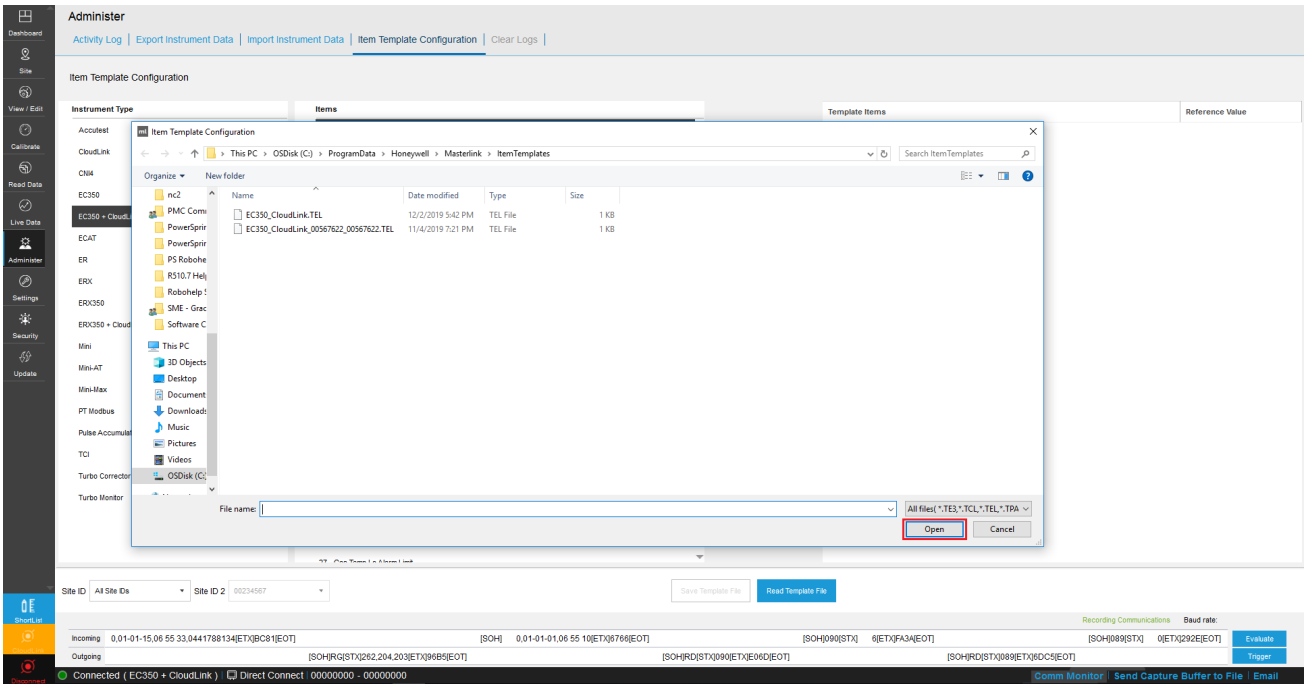
Click **Save Template File** to save a copy of the template that you just created.



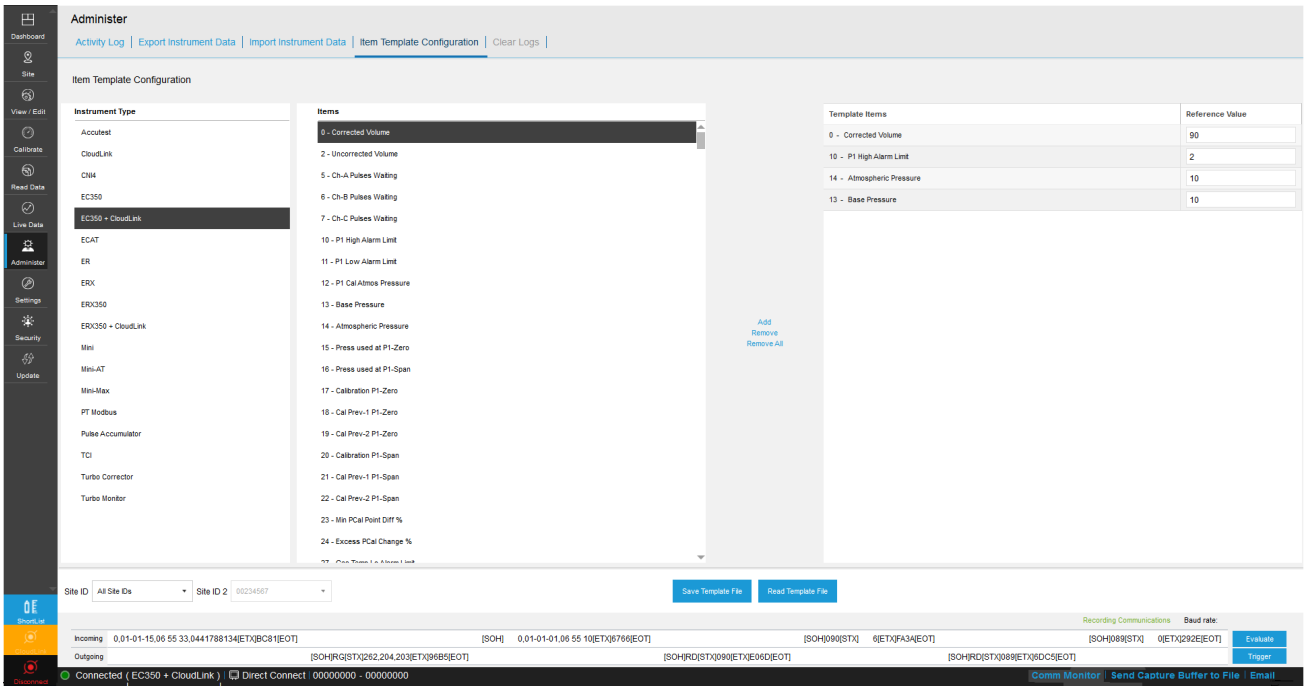
Note: By default, instrument specific Item Templates are created (EC 350.TE3, CloudLink.TE3, EC 350_CloudLink.TE3). Use the Site ID 1 and Site ID 2 fields to create site specific Item templates. The item template files are named as <SiteID1>_<SiteID2>.TE3 file. However, you can customize the File Name with any variable (Custom.TEL, EC 350_configure.TEL). Ensure that the files are saved in *C:\ProgramData\Honeywell\MasterLink\ItemTemplates* folder.



'Read Template File' is to read the saved item configurations. Click Read Template File. A new pop-up window appears.



Select a required template from the list and click **Open**.

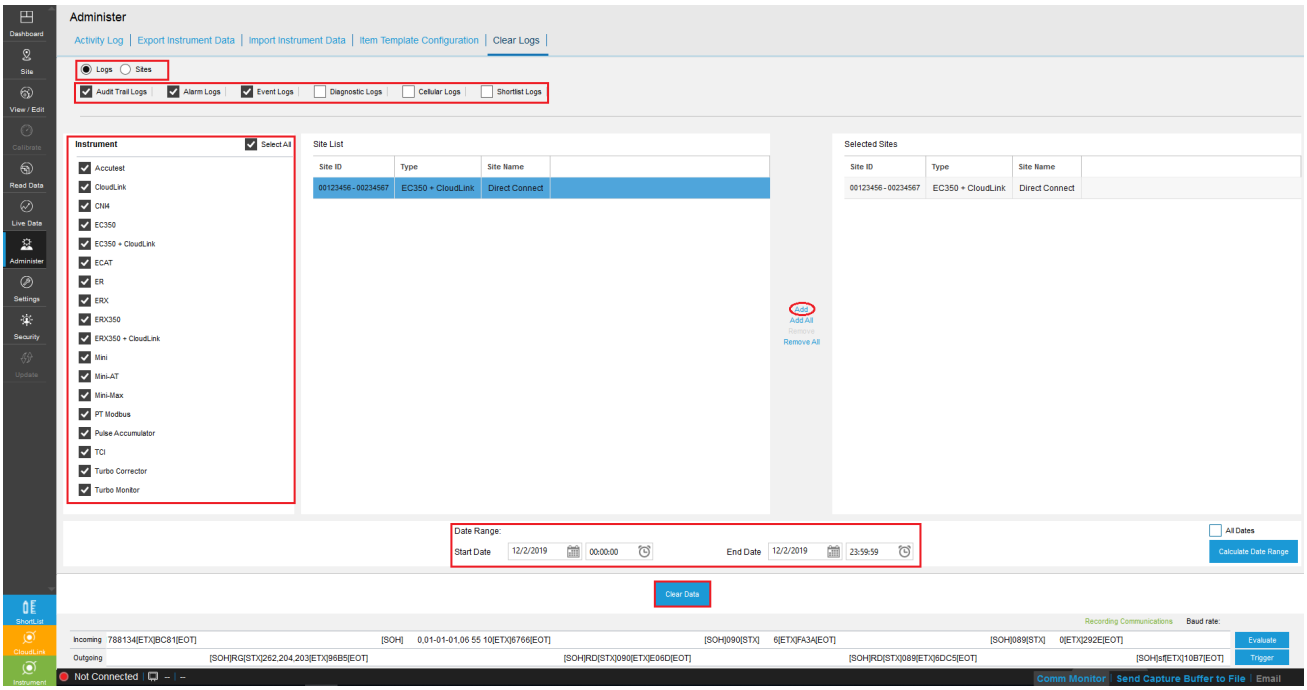


Once opened, you can view the configured items for the respective instrument selection. If you want to make any changes to the existing configuration, add or delete the items and click on **Save Template File.**

3.8.5 Clear Logs

You can use the 'Clear Logs' screen to clear logs from the connected site. the logs are cleared from the MasterLink database, and not from the connected device or site.

Since the purpose of the 'Clear Logs' feature is to clean the MasterLink database without archiving the data, it is recommended to Export Instrument Data before performing this action.



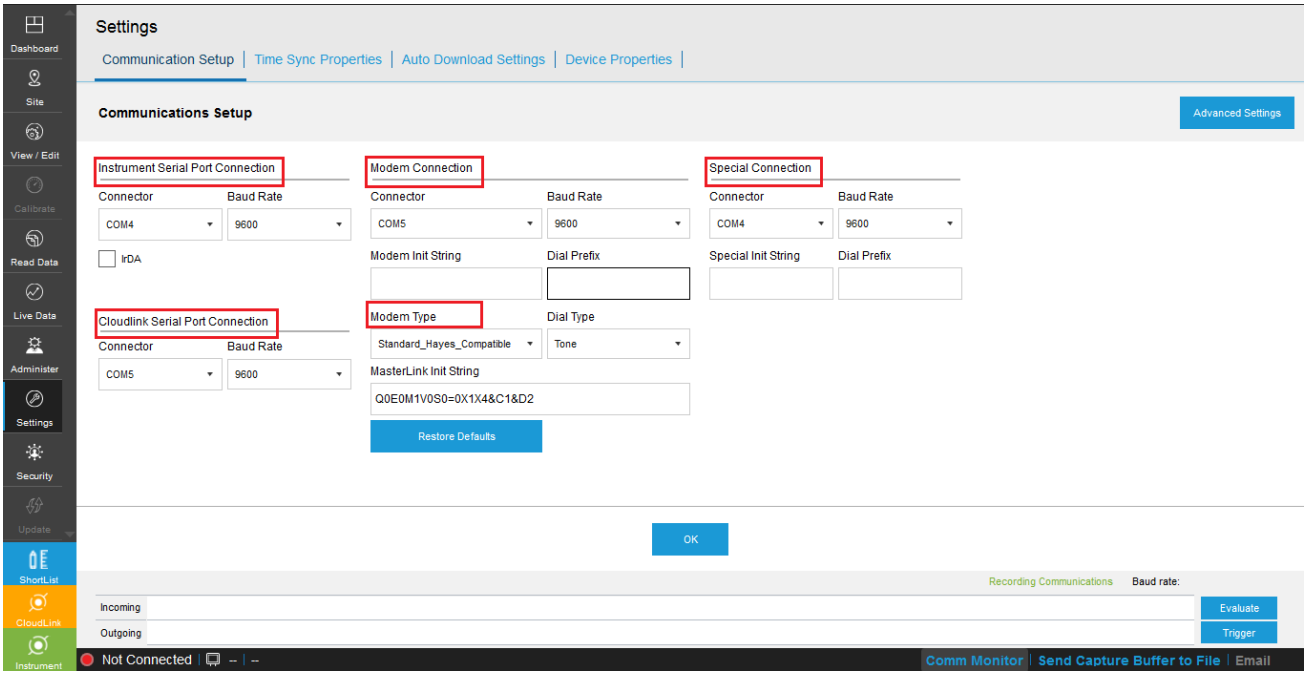
To clear logs:

1. Start by selecting **Logs** or **Sites**. Then select the logs that you want to clear. If you select Sites, then all logs in the selected site will be cleared.
2. Select the instrument type, and then a list of sites will be displayed. Click on the required site (s) and click **Add**.
3. Select the required date range.
4. Finally click **Clear Data** to clear the selected logs.

3.9 Settings

3.9.1 Communications Setup

The 'Communications Setup' tab can be used to define the relevant communication settings required for connecting to the instrument.



Communication settings can be defined for:

1. Serial Port
2. CloudLink Serial Port
3. Modem
4. Special Connectivity option

Serial Port Connection type connects the PC directly to the instrument using a serial cable. Follow the steps to communicate using a serial port connection:

1. **Connector**: Select the COM port
2. **Baud Rate:** Select the applicable baud rate from the drop down list.
3. **IrDA:** Check IrDA only for IR communication and uncheck for serial communication

CloudLink Serial Port Connection type connects the PC directly to the modem using a serial cable. Follow the steps to communicate using a serial port connection:

1. **Connector**: Select the COM port
2. **Baud Rate:** Select the applicable baud rate from the drop down list.

Modem Connection type connects the PC to a Hayes modem using POTS (plain old telephone service) to another Hayes modem then to the instrument. Follow the steps to communicate using a modem connection:

1. **Connector**: Select the COM port
2. **Baud Rate:** Select the applicable baud rate from the drop down list.
3. **Modem Init String**: Enter the modem initialization string. This string is modem specific.
4. **Dial Prefix:** If required, enter a dial prefix. These characters will precede the site list phone number in the site list. This is commonly used to access an outside line (9,) or on a portable computer, to temporarily enter an area code without modifying the site list.
5. **Modem Type**: Select either **Standard Hayes Compatible** (default) or the **Racal Radio Pad** from the drop down list.
6. **Dial Type**: Select either **Tone** (default) or **Pulse** from the drop down list. You can also chose **None** if you don't wish to set any type.

> **Note:** Please note that a description of the modem configuration settings are detailed in the operation manual that was supplied with modem. Please refer to modem manual and find the command that turns off error control. This command, following the command to reset the modem to factory defaults, is usually all that is needed for the modem initialization string.

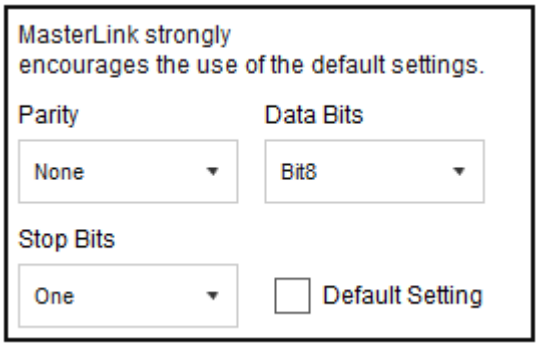
> **Attention:** For Racal Radio Pad configuration, set the Modem Init String to: **&FQ0E0V0S0-0=0S12=0X0**

Special Connection type can be used to support standard modems (i.e., a second standard modem), which may have special configuration requirements. In addition, they can support some models of wireless TCP/IP modems (CDPD modems for example.) They are connections that have modems on both the PC (host) and instrument ends. Follow the steps to communicate using a modem connection:

1. **Connector**: Select the COM port
2. **Baud Rate:** Select the applicable baud rate from the drop down list.
3. **Dial Prefix:** If required, enter a dial prefix. These characters will precede the site list phone number in the site list. This is commonly used to access an outside line (9,) or on a portable computer, to temporarily enter an area code without modifying the site list.
4. **Special Init String**: Select the special initialization string from the drop down list.

The **Restore Defaults** will reset all the selected options to their original configuration.

Click **Advanced Settings** to use default settings. These are additional settings used for serial connection for all Honeywell devices. If required, change these values to establish communication with 3rd Party devices.



The default settings will be automatically read and entered. Click on each of the drop-down boxes and select a choice from those lists.

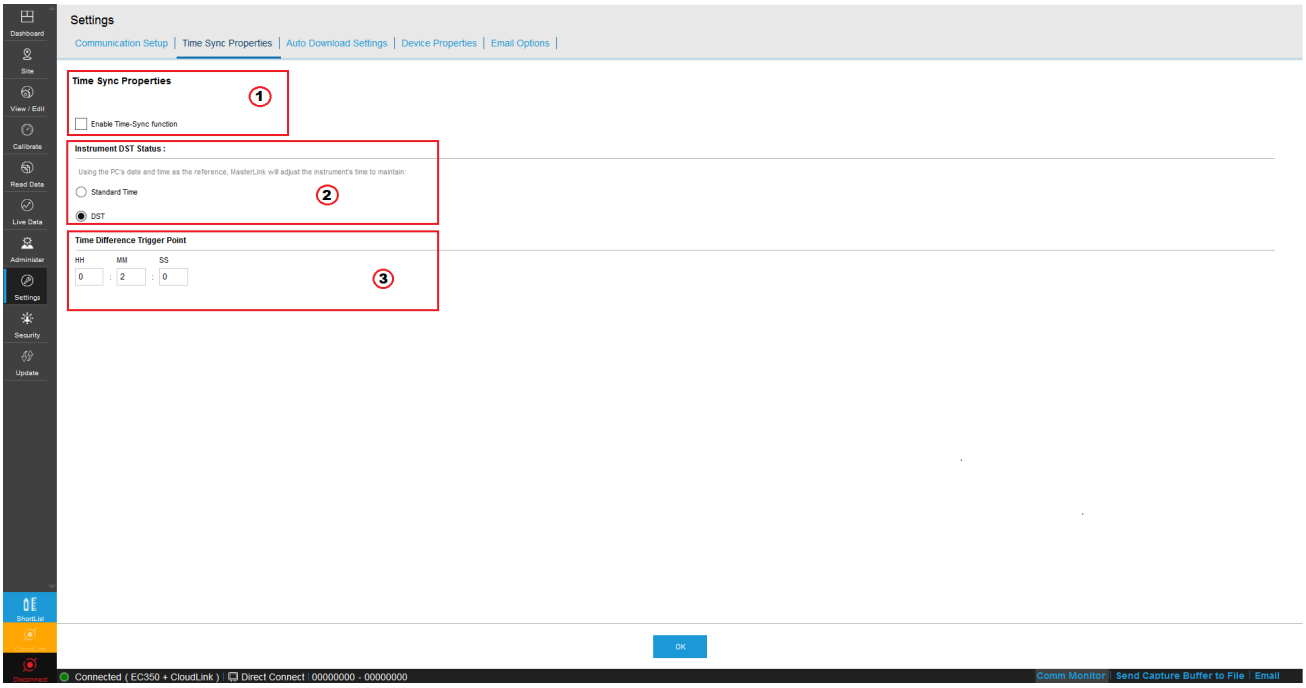
The **Default Setting** check box will reset the parity, data bits, and stop bits to their original configuration.

> **Note:** Please note that more description of the modem configuration settings are detailed in the operation manual that should have been supplied with modem.

After configuring the communications settings, click **OK** to save the changes.

3.9.2 Time-Sync Properties

'Time-Sync Properties' tab can be used to configure the Time Sync settings. The Time Sync function is used to synchronize instrument time with host time.



To configure Time Sync properties:

1. Check **Enable Time-Sync function**
2. Select either **Standard Time** or **DST**.
3. View or modify **Time Difference Trigger Point**. A Time Sync will be triggered based on the time difference configured in this field.

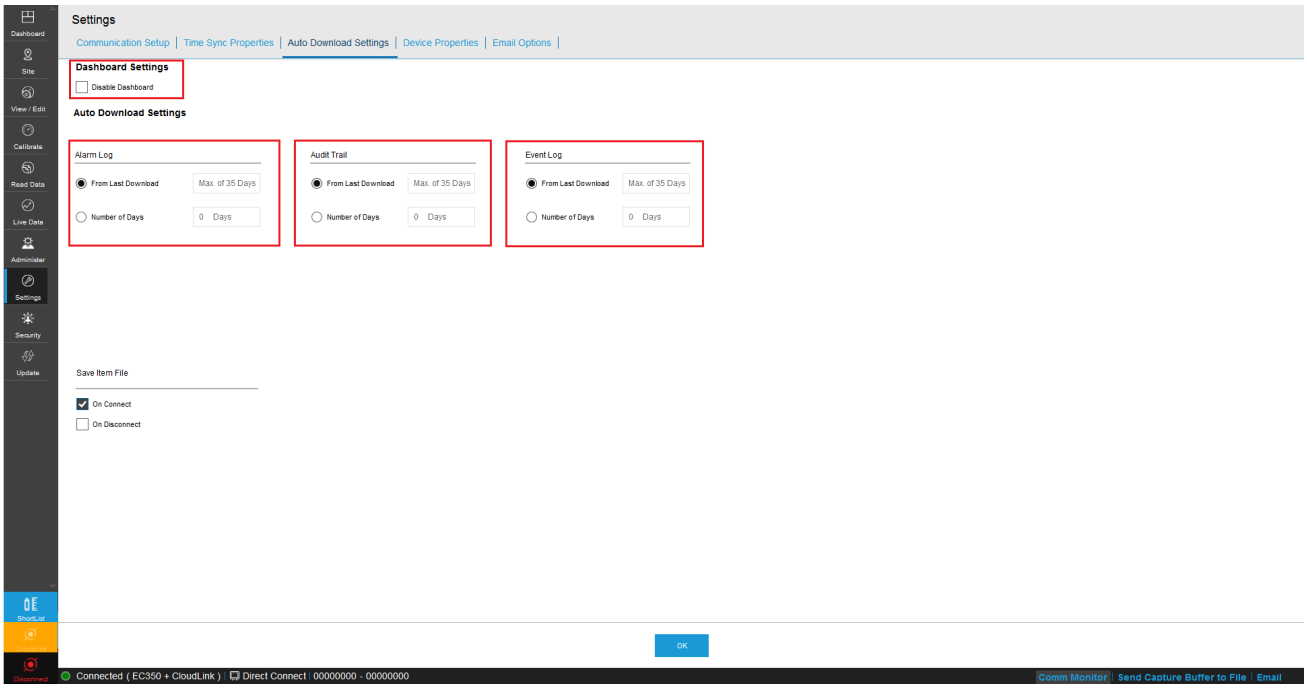
Click **OK** to save the changes.

> **Note:** It is recommended that for any change in settings, you need to disconnect and then reconnect the instrument, for the settings to take effect. You can verify time-sync from the dashboard.

3.9.3 Auto Download Settings

The 'Auto Download Settings' tab is used to configure the number of days for which dashboard data is loaded.

> **Note:** It is applicable only for Dashboard data.



Dashboard Settings allows you to 'Disable Dashboard'. This option when checked will not download the dashboard when connecting to an Instrument or Modem.

Edit or modify the auto download settings for the following logs:

1. Alarm
2. Audit Trail and
3. Event

Check either **From Last Download** or **Number of Days** , enter the number of days and then click **OK**.

The **Save Item File** option lets you automatically download the item file from the connected device when you **Connect** or **Disconnect** a site.

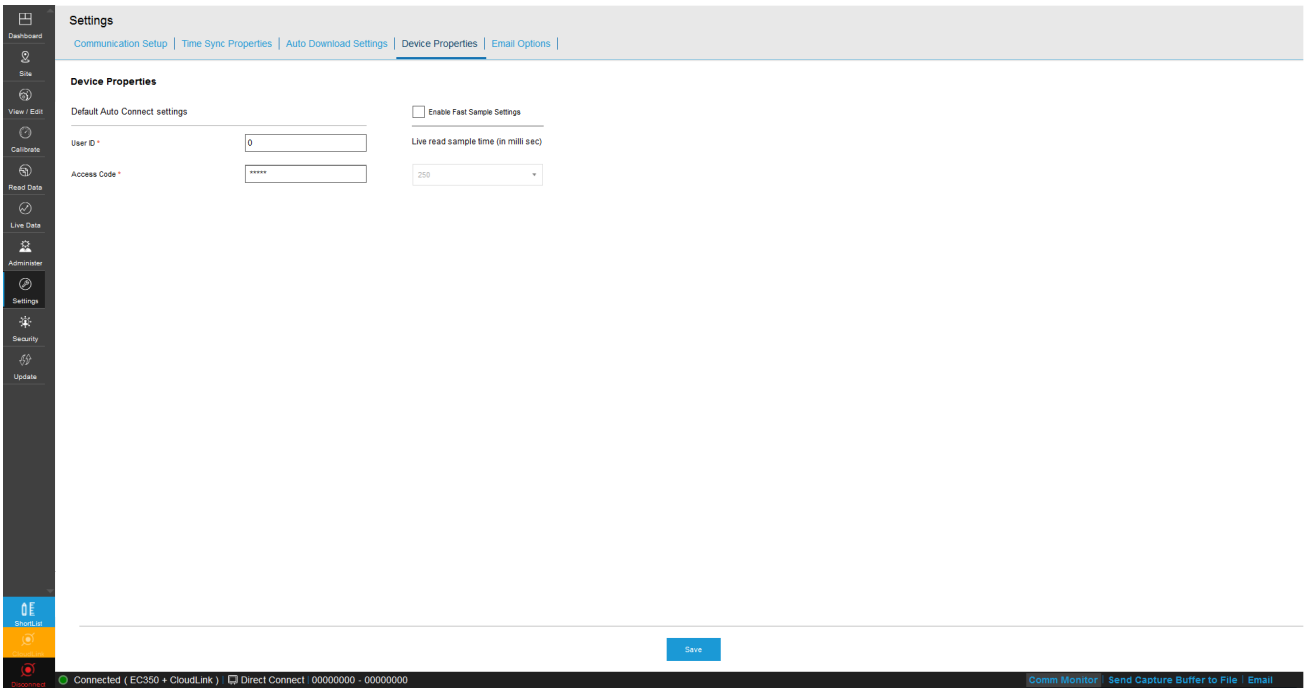
> **Note:** Configure the Number of days as 0 to disable auto download of logs on dashboard.

> **Note:** The Auto download settings would be applicable only when the site is added. If user connects to the device using Direct Connect/Short list connect without adding a site, then the Auto Download settings won't effect. In dashboard logs download will be disabled.

3.9.4 Device Properties

The Device Properties include the **User ID** and the **Access Code** used to connect to a site in case of Direct Connect.

While using the 'Direct Connect' feature, enter the **User ID** and the **Access Code** of the instrument, and then click **Save** to continue connecting to the site.



Note: Fast Sample settings is used to increase the sampling rate while reading packets from the device to avoid ML session disconnection. Also, note that this setting is not applicable for EC350 as it supports minimum 1 millisecond sampling rate.

3.10 Security and User Management

MasterLink supports a role based access control mechanism. A MasterLink administrator can create roles and assign permissions to the role. The administrator can then create users and assign roles to users. With this role based access mechanism, user is restricted to the operations that are associated with assigned role. This is a mechanism used to control access to different MasterLink operations.

User Management enables the utilities to secure the access to different MasterLink functionalities by its Technicians / operators. This should not be confused with the User Table functionality as User Table helps to manage access to device functionalities.

User Management is typically an administrative function. It allows an Administrator to

1. Create Users who could log into MasterLink application
2. Restrict the user's operation capabilities by assigning roles with specific privileges
3. Group different operational privileges in terms of roles.

A role defines a set of permissions that are assigned to a user, which allow them to perform a set of actions. Example of a role could be "Level 1 Technician" who can only read information from the device using MasterLink and a "Level 2 Technician" who can read and write information. The created roles can then be assigned to different users needing similar access privileges.

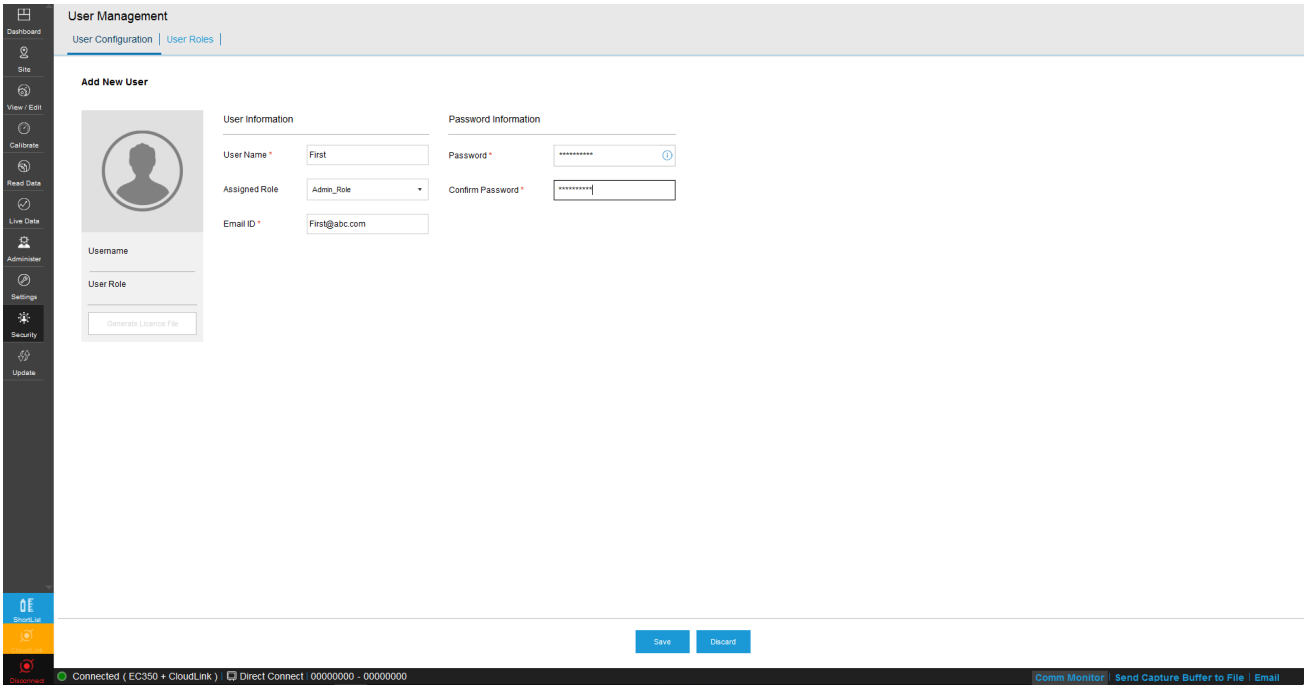
3.10.1 User Configuration

The 'User Configuration' screen shows a list of all existing MasterLink users and this screen also allows you to create new MasterLink users.

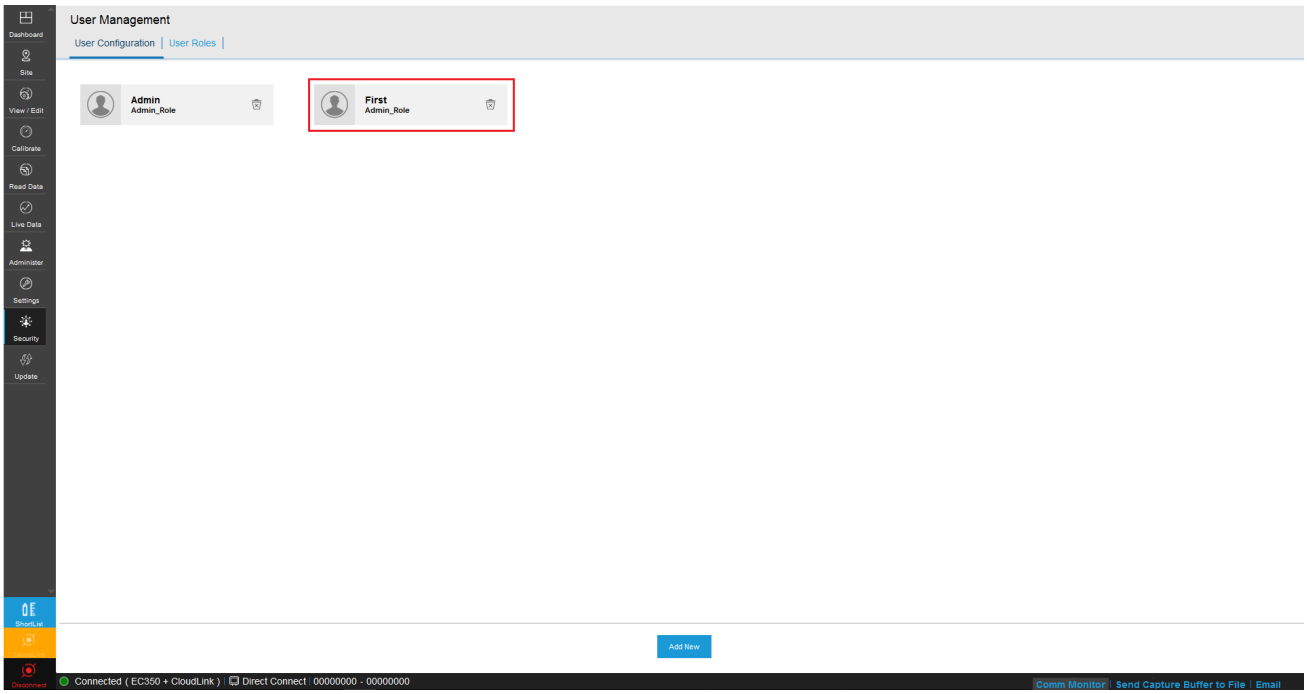
> **Attention:** Before creating a new user, ensure that you have already created a user role, and necessary permissions are assigned to that role. To learn more about creating a new role, refer to the section on Creating User Roles.

To create a new user:

1. On the 'User Configuration' screen, click **Add New.**
2. Type the user name of the new user.
3. Select a role from the **Assigned Role** drop-down list. Roles configured in the User Roles tab, appear in this drop-down list. If you need to change permissions assigned to this role, or if you need to create a new role, then you can make the required changes in the User Roles tab.
4. Provide your email address in the **Email ID** box.
5. Type a password for the user account, and then re-type it to confirm the password.
6. Click **Save**.



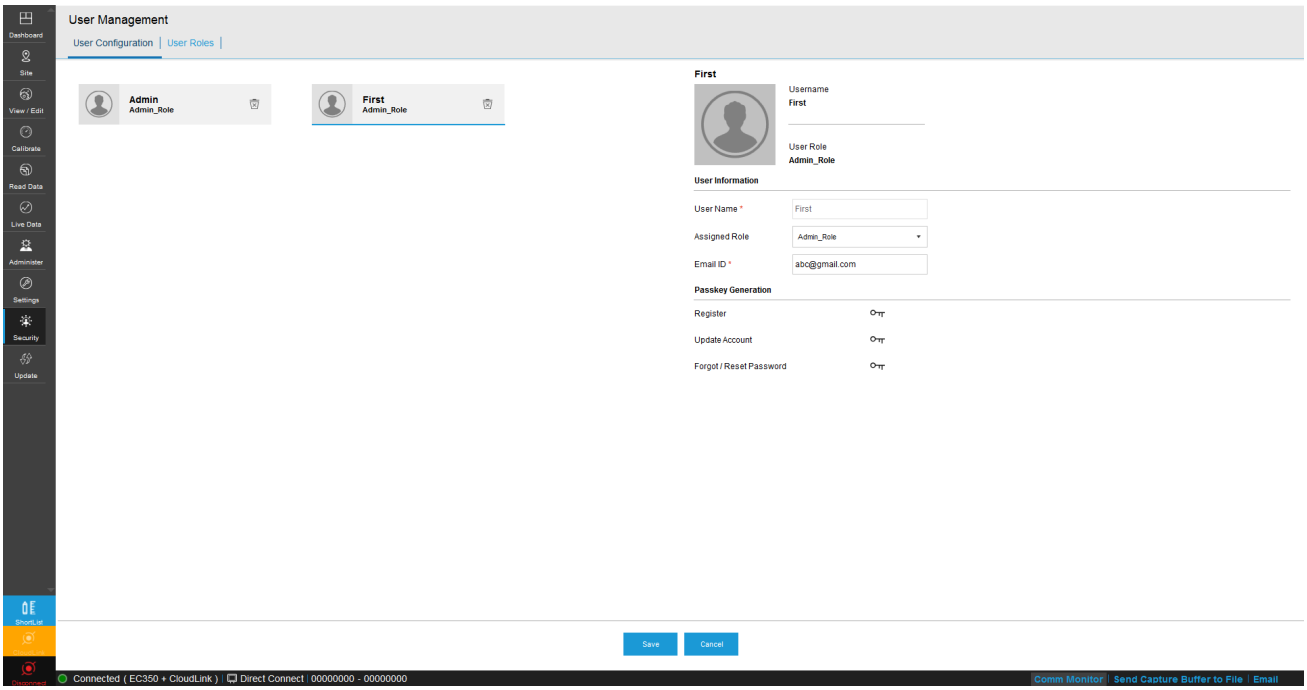
The newly created user is added to the list of users.


User Management
User Configuration
User Roles
Admin
Admin_Role
First
Admin_Role
Add New
Dashboard
Site
View / Edit
Calibrate
Read Data
Live Data
Administer
Settings
Security
Update
Connected (EC350 + CloudLink) | Direct Connect | 00000000 - 00000000
Comm Monitor
Send Capture Buffer to File
Email

3.10.1.1 Passkey Generation

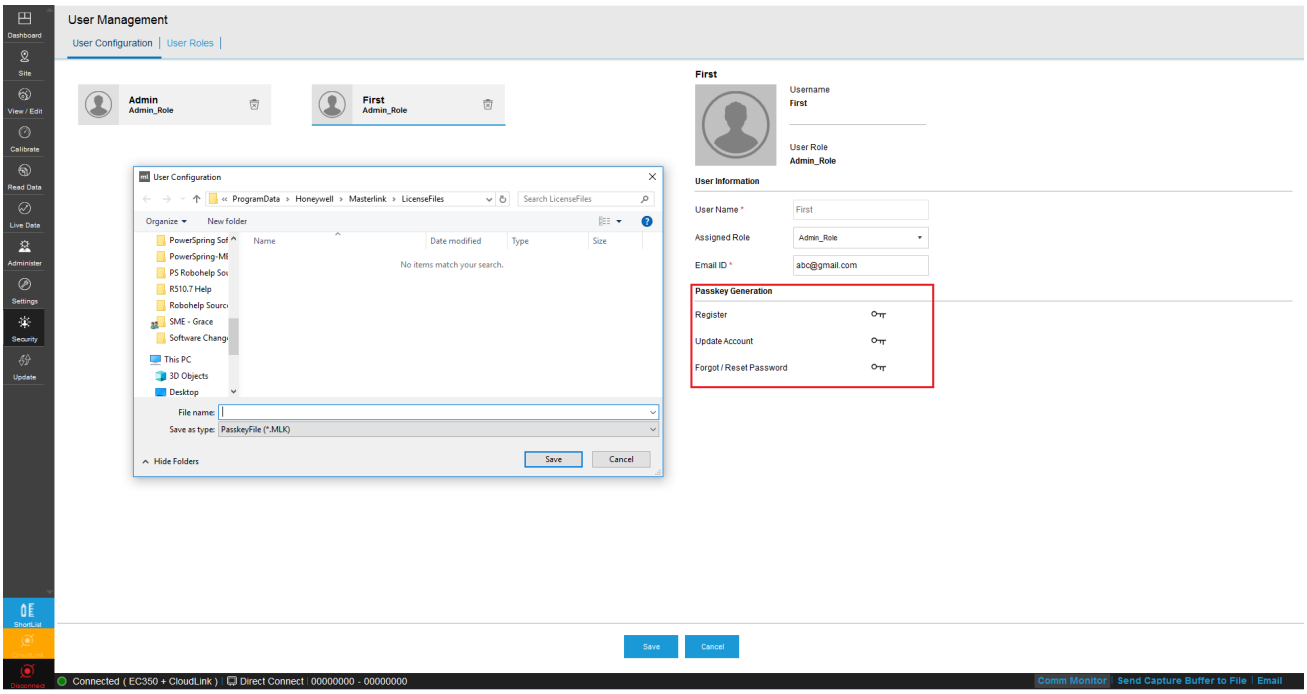
A Passkey contains encrypted information of user name and privileges. For a user to be effected in other MasterLink instances a Passkey needs to be generated by the Administrator and sent to the user. The site Administrator can create the following passkey files:

1. **User Registration** - This is used to create license files to allow new users to register to the MasterLink application.
1. **Update Account** - This is to change privileges of an existing user. Privileges can be added/removed based on the business requirement.
1. **Forgot Password** - If a user forgets their password, site administrator can create passkey files allowing users to reset their password.



To generate a passkey:

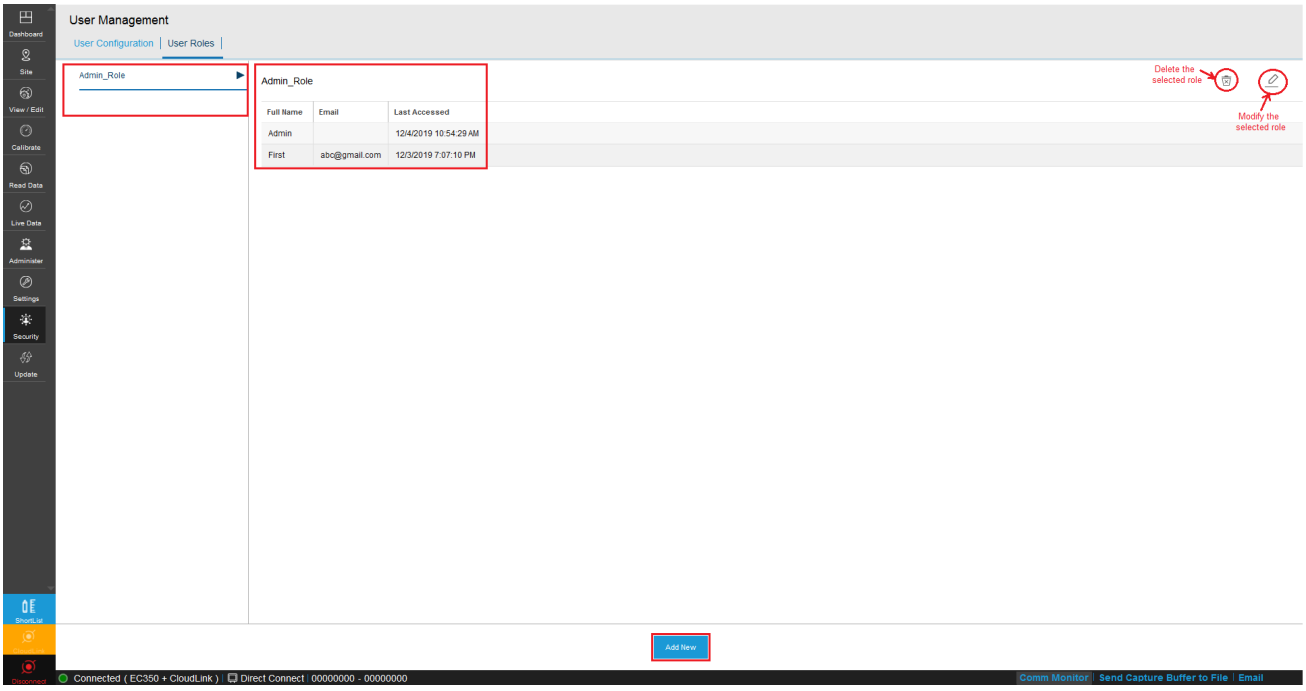
1. On the User Configuration screen, select a user account to view details of the user.
2. Under Passkey Generation, click on the key icon next to the activity. You can generate the following keys:
    1. **Register**: A key to register a new MasterLink user
    2. **Update Account**: A key to update an existing MasterLink user account.
    3. **Forgot/Reset Password**: A key to reset a forgotten or lost password.
3. Browse and select a location to save the passkey.
4. Send the passkey as an attachment to the user through an email.


User Management
User Configuration
User Roles
Admin
Admin_Role
First
Admin_Role
User Configuration
ProgramData › Honeywell › Masterlink › LicenseFiles
Search LicenseFiles
Organize
New folder
Name
Date modified
Type
Size
No items match your search.
File name:
Save as type: PasskeyFile (*.MLK)
Hide Folders
Save
Cancel
First
Username
First
User Role
Admin_Role
User Information
User Name *
First
Assigned Role
Admin_Role
Email ID *
abc@gmail.com
Passkey Generation
Register
Update Account
Forgot / Reset Password
Save
Cancel
Connected (EC350 + CloudLink) Direct Connect | 00000000 - 00000000
Comm Monitor
Send Capture Buffer to File
Email

3.10.2 User Roles

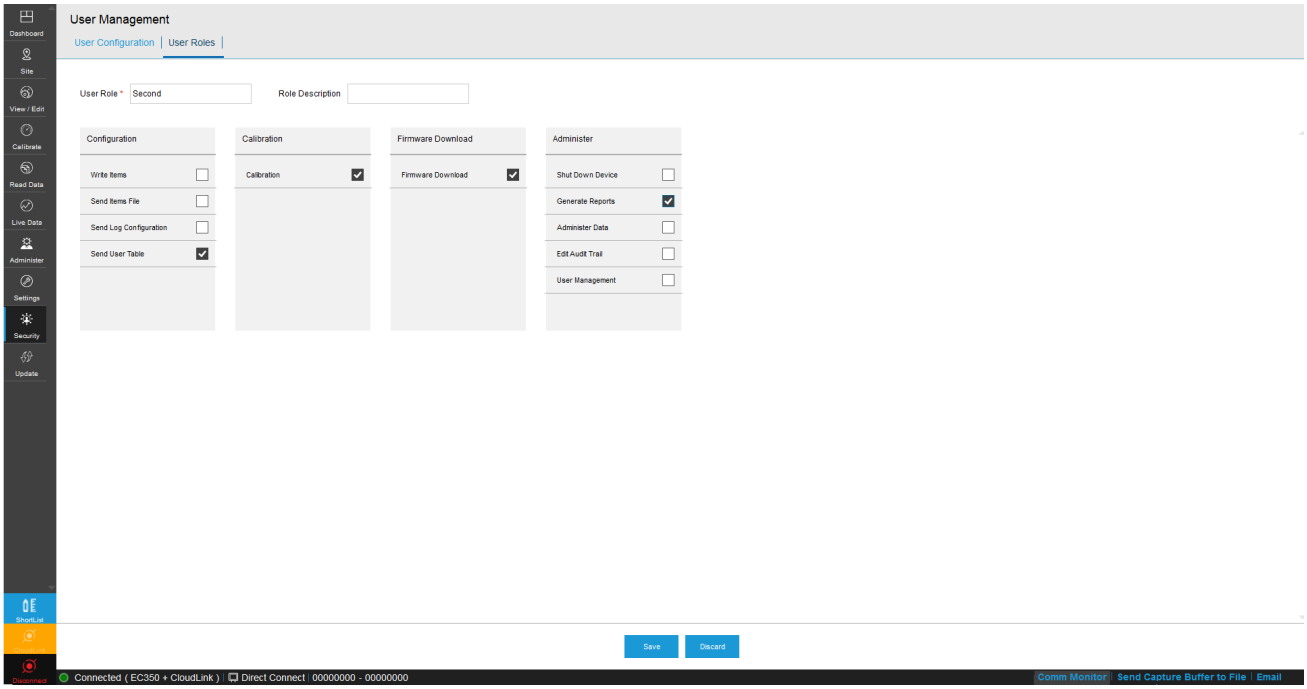
A role is a collection of permissions that defines a function, such as the Administrator or a Field Service Engineer. Users who are placed in this role will inherit these permissions. Roles are created by users (usually administrators) and are used to group together privileges or other roles. They are a means of facilitating the granting of multiple privileges or roles to users.

On the 'User Roles' screen, you can view a list of all the roles configured in the system, and the list of users assigned to a selected role.

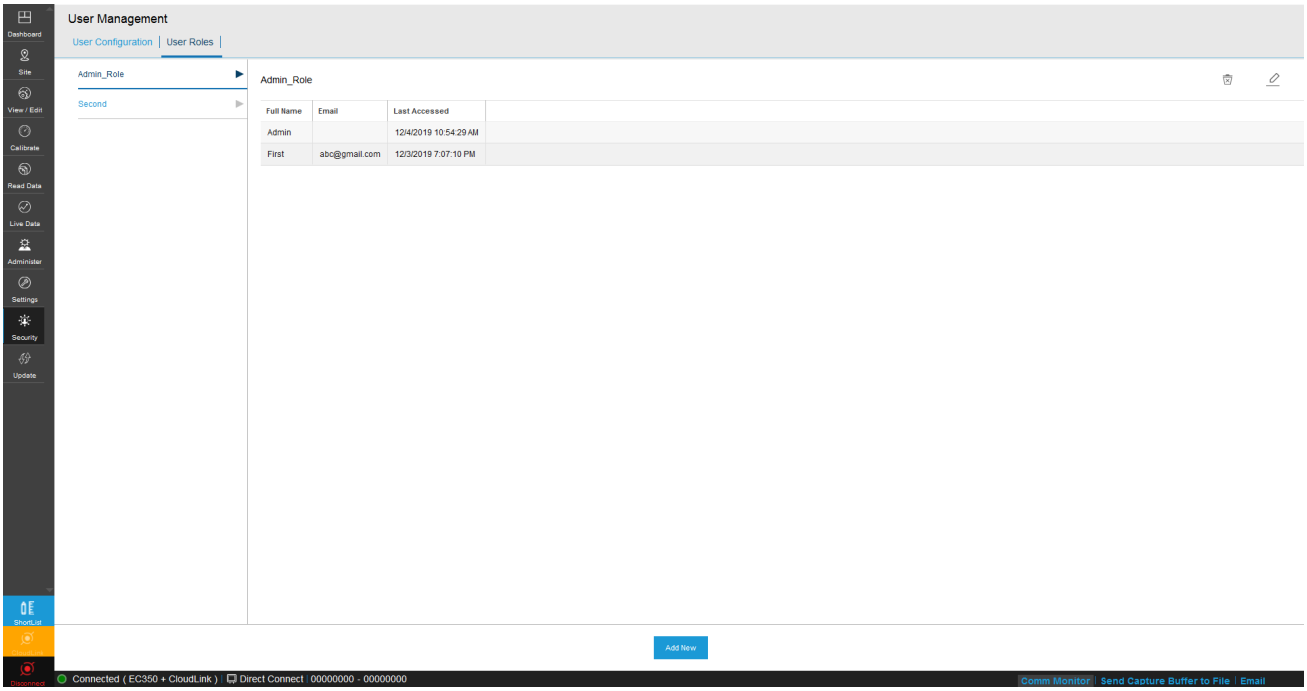


To create a new role:

1. On the 'User Roles' screen, click **Add New**.
2. Type the name and description of the role.
3. Select the check-box next to a privilege to assign it to the role being created.
4. Click **Save**.



The new role will appear in the list of roles on the 'User Roles' screen.



Using the table, you can then edit the role name, the description, and the role privileges.

To delete a role, select the role from the list of roles and then click on the top-right corner of the screen.

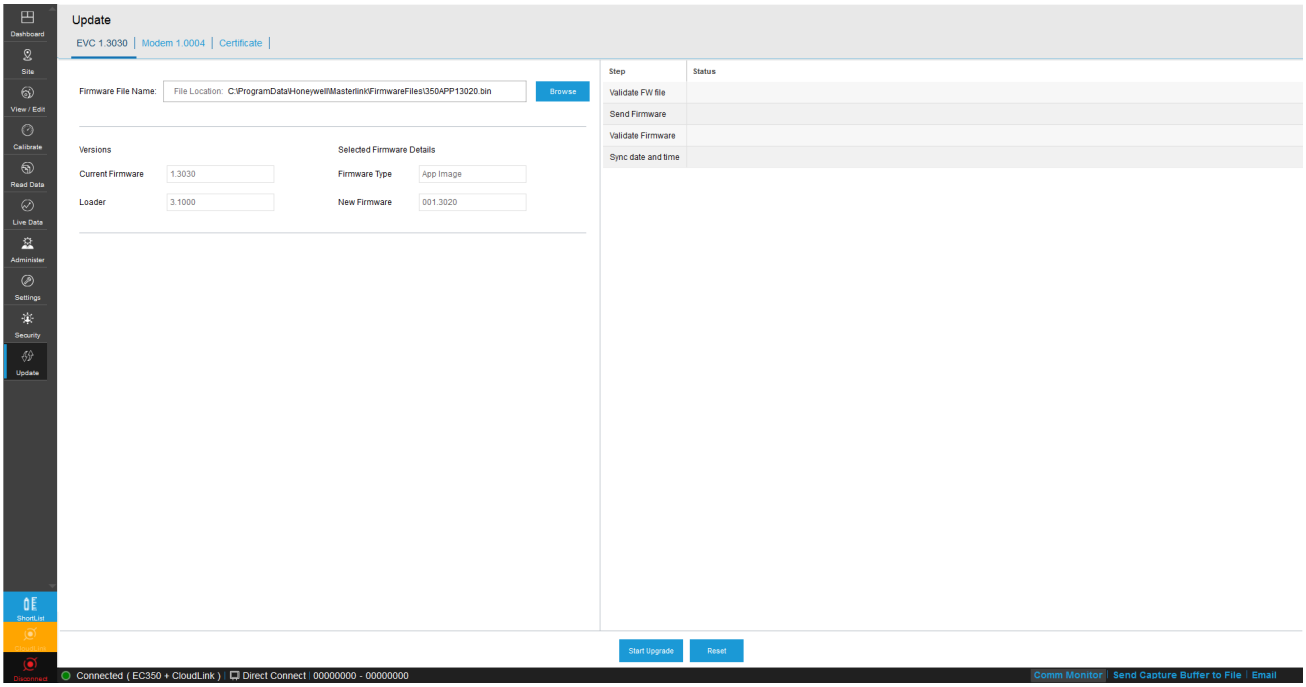
4 Updates and Upgrades

You can use MasterLink to update the EC 350/ERX 350 device or Modem firmware, and can also load the instrument with security certificates. This chapter describes the process of updating field instrument firmwares and loading security certificates.

4.1 EC 350/ ERX 350 Firmware Update

You can use MasterLink to upgrade EC 350/ ERX 350 firmware.

To get started, click **Browse** and select the firmware file.



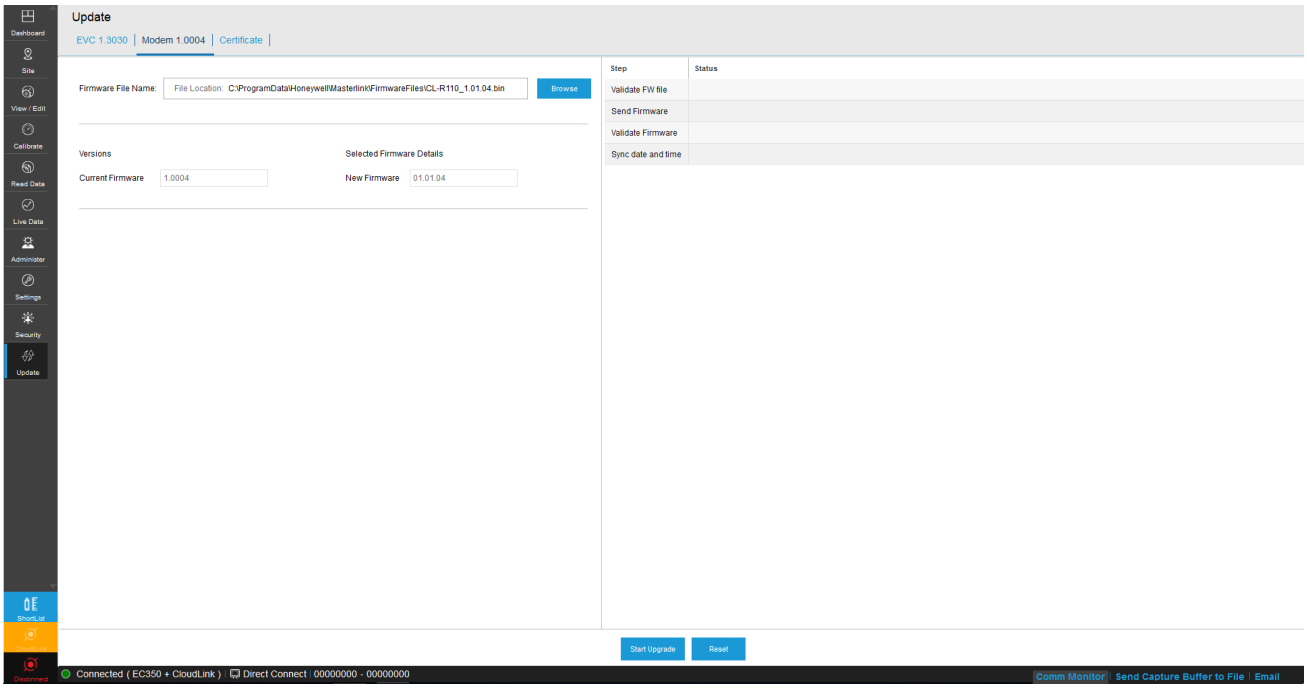
Click **Start Upgrade** to upgrade the EC 350/ERX 350 firmware. As the firmware upgrade progresses, you can observe the status on the right pane.

> **Note:** If only a limited chunk of packets have been released for the upgrade this 'Reset' button allows you to commence the firmware upgrade from the starting point. When not clicked, the update will resume from the point where it stopped.

4.2 CloudLink Modem Firmware Update

You can use MasterLink to upgrade CloudLink Modem firmware.

To get started, Click **Browse** and select the firmware file.



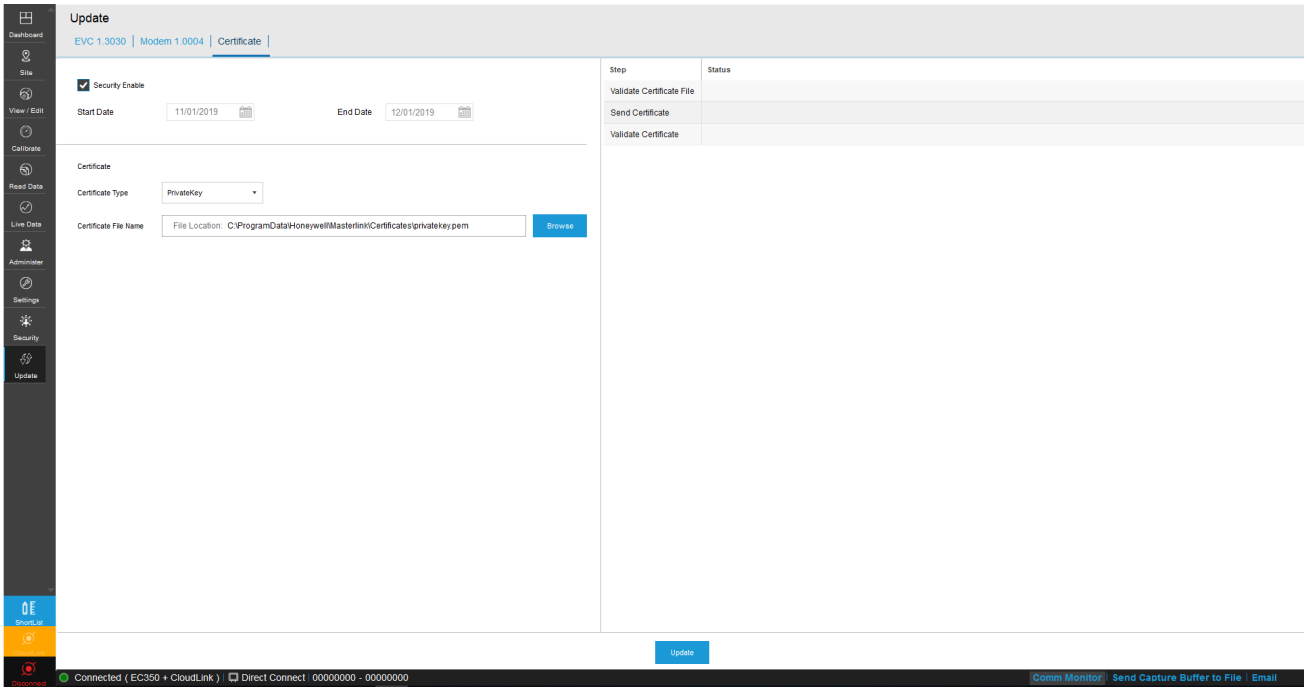
Click **Start Upgrade** to upgrade the CloudLink Modem firmware. As the firmware upgrade progresses, you can observe the status on the right pane.

> **Note:** If only a limited chunk of packets have been released for the upgrade this 'Reset' button allows you to commence the firmware upgrade from the starting point. When not clicked, the update will resume from the point where it stopped.

4.3 Upload CloudLink Modem Certificates

This tab is enabled if application is connected to EC 350 or integrated EC 350.

To enable SSL communication, **Security Enable** check box under certificate tab must be checked. Then upload a valid security certificate to the MasterLink and host. These certificates can be self-signed or signed by a third party.



Select the certificate type from the dropdown.

Browse and select a certificate file.

The certificate can be a:

1. Private Key, or
2. Server Certificate,
3. Ca Certificate, or
4. Client Certificate

Click **Update** to send the certificate to the instrument.

Loading certificates to MasterLink

> **Note:** It is Mandatory to load security certificates to CloudLink using Serial interface. Renewal of certificates can be done using any of the supported interfaces.

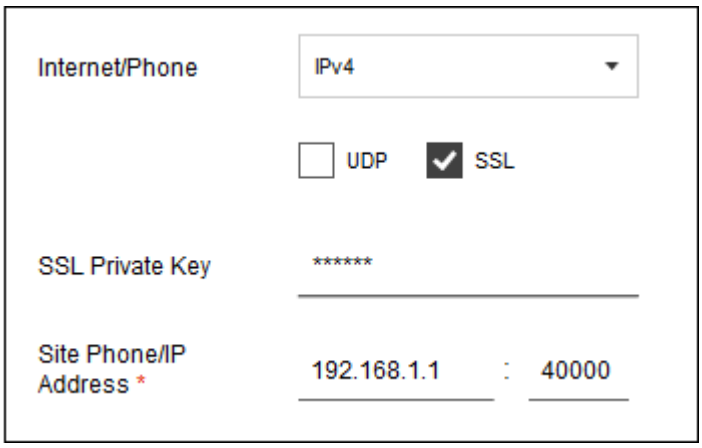
1. The following order to must be followed to load certificates to CloudLink:
    1. Key Certificate
    2. Client Certificate

3. Server Certificate
4. CA certificate

1. Configure SSL private key in CloudLink (Item Number: 3086)
2. Enable SSL in CloudLink (Item Number: 3017)
3. Restart CloudLink
4. Make sure that Time Sync is applied after restart of CloudLink. This step is not required if SIM card with static IP address is used.
5. Add/Edit site as IPv4 with SSL enable as shown in below screen.

   Note: The IP address and the port number can vary based on the customer network settings.

6. Configure SSL Private Key. This key should match the one configured in CloudLink (Item Number: 3086)
7. Configure IP address and port number.



Note: Place the certificates (CA, Client and Private Key file) in *C:\ProgramData\Honeywell\MasterLink\Certificates*. Certificate names should match with following naming convention:

CA Certificate SiteId1_SiteId2_ca.pem

Client Certificate SiteId1_SiteId2_clientcertificate.pem

Private Key file SiteId1_ SiteId2_keyfile.pfx

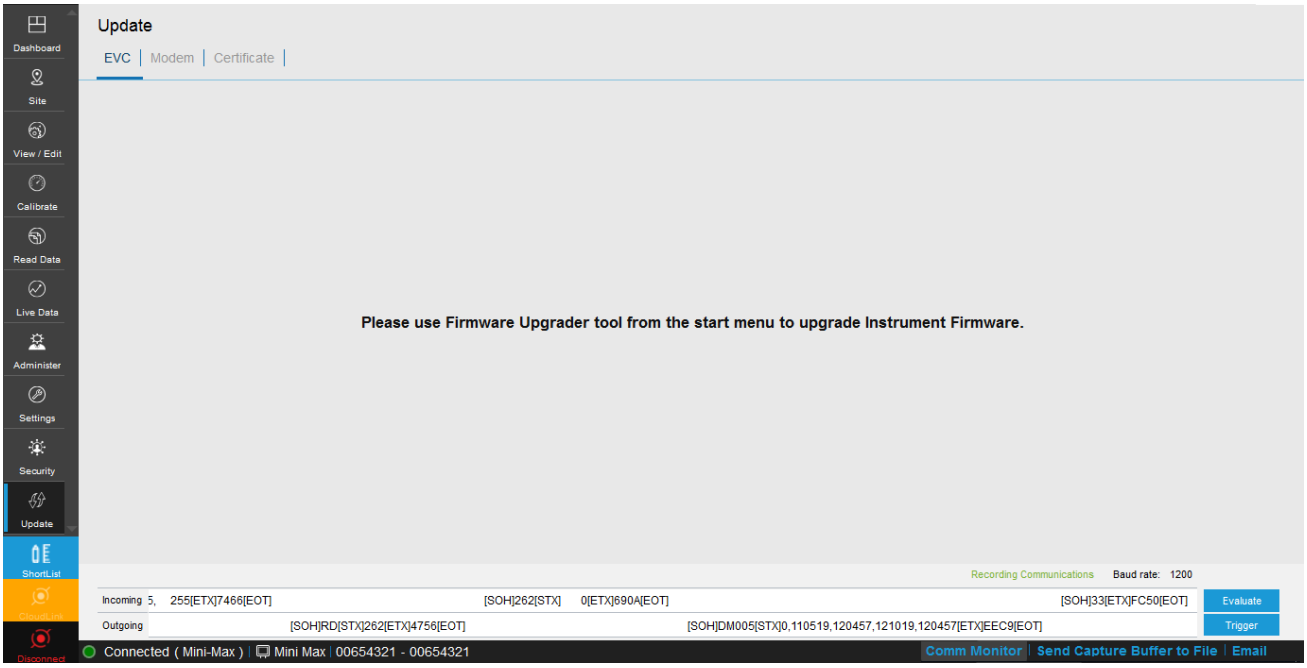
4.4 Legacy Devices Firmware Upgrades

Mercury Instruments legacy devices include:

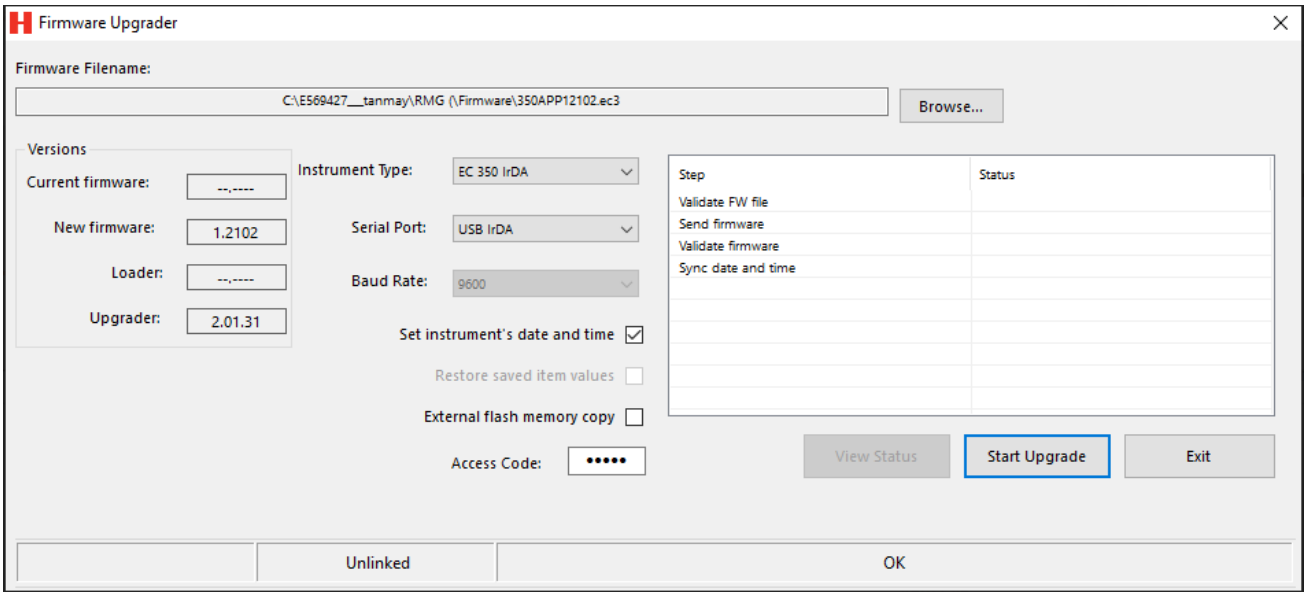
1. Accutest 2. CNI4 3. ECAT 4. ER 5. ERX 6. Mini 7. Mini-AT	8. Mini-Max 9. PT Modbus 10. Pulse Accumulator 11. TCI 12. Turbo Corrector 13. Turbo Monitor

For Mercury Instruments legacy devices, you need to use the **Firmware Upgrader** tool to upgrade firmware.

MasterLink displays the following message if you try to update firmware of legacy devices:



The **Firmware Upgrader tool** is installed along with MasterLink 515.1, and an icon will be available on your desktop.


Firmware Upgrader
Firmware Filename:
C:\E569427__tanmay\RMG (\Firmware\350APP12102.ec3
Browse...
Versions
Current firmware:
--.----
New firmware:
1.2102
Loader:
--.----
Upgrader:
2.01.31
Instrument Type:
EC 350 IrDA
Serial Port:
USB IrDA
Baud Rate:
9600
Set instrument's date and time
Restore saved item values
External flash memory copy
Access Code:
•••••
Step
Status
Validate FW file
Send firmware
Validate firmware
Sync date and time
View Status
Start Upgrade
Exit
Unlinked
OK

5 Glossary

A

Activity Log

This function is used to quickly view the Activity Log on screen. Please note that this log is different from the Event Log because this log mainly focuses on software activity (and some firmware activity) where the Event Log function records activity that is directly linked to and maintained within the instrument.

Alarm Log

The alarm log contains descriptions of all significant problems detected by the system

Audit Trail

You can use the 'Audit Trail' tab to view and download Audit Trial data from the instrument. The term "Audit Trail" has different meanings in MasterLink Software Application that depend on the type of connected instrument.

D

DBO

Database Owner. dbo is the default schema in SQL Server. You can create your own schemas to allow you to better manage your object namespace.

Diagnostic log report

Displays log files containing messages that record all types of events, including startup and shutdown information, errors, warning messages, and access information

E

Event Log

The Event Log records activity that is directly linked to and maintained within the instrument.

I

Item File

An Item File stores the current instrument’s item code values on your computer in a file.

Item Report

Displays comprehensive information for items

K

key

Passkey generated by the site Administrator

L

Load Graph

Loads saved graphs when offline

Log trigger

A log trigger is an action that caused a record to be written to the audit trail log in the instrument.

S

Serial port

Port of your system to which the device is connected

Short List

A Short List is the same as the standard Item List (stores the current instrument's item code values), except that you can customize it.

Site Report

Displays the number of workers/employees and work equipment at the construction site

SSL

SSL (Secure Sockets Layer) is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral.

5.1 Troubleshooting scenarios

Scenario	001
Problem	MasterLink stops communication with EVC over IrDA though Link is connected.
Environment	All OS
Resolution	Remove IrDA link and connect back.

Scenario	002
Problem	Connection fails over serial.
Environment	All OS
Resolution	1. It could be mismatch of baud rate of MasterLink and device. 2. It could be mismatch of comm port selection.

Scenario	003
Problem	Load graph button is disabled when a user is connected to the site.
Environment	All OS
Resolution	Disconnect the instrument to activate the Load Graph button.

Scenario	004
Problem	User is unable to view certain dash board and Instrument data when connected to Android mobiles.
Environment	All OS
Resolution	Double tap the item to view the details.

Scenario	005
Problem	Application does not display device ID in 'Add/Pair' tab of MasterLink Android application once instrument session is timed out .
Environment	All OS
Resolution	Use Site Management screen to connect to the device.

Scenario	006
Problem	Application does not display device ID in "Add/Pair tab of MasterLink Android application once instrument session is timed out .
Environment	All OS
Resolution	Use Site Management screen to connect to the device.

Scenario	007
Problem	Item value/description is not completely visible in the Dashboard/Configure by Group screens.
Environment	All OS
Resolution	Tap the item value field to view the data

Scenario	008
Problem	User is unable to abort send log configuration file transfer.
Environment	All OS
Resolution	The transfer would be completed in a minute. Please wait till the operation is done.

Scenario	009
Problem	Sometimes site id's are duplicated in Add/Pair site screen.
Environment	iOS and Android
Resolution	This issue usually happens if site ID's CloudLink 4G Modem are changed after an instrument is paired with the mobile. Advised to not to change the site IDs of CloudLink 4G Modem once they are installed in the field. To resolve the issue: 1. Download any Bluetooth Low Energy app from App Store / Play Store 2. Scan for CloudLink 3. Still you can see the CloudLink site id as previous names. 4. Try to connect the CloudLink 5. Scan once again. You will able to see new site id's

	6. Now connect from MasterLink

Scenario	010
Problem	In TCP/IP connection, the device is not responding
Environment	All OS
Resolution	Then check the session timeout. By default the item is set to 30 seconds. Increase the session timeout.

Scenario	011
Problem	Device connectivity issue after a application is force closed or hanged
Environment	All OS
Resolution	If the device is not connecting, wait for 10-15 minutes until the communication session timeout of CloudLink expires.

Scenario	012
Problem	Post uninstallation of MasterLink installed with SQL Server, if the user wants to delete existing MasterLink Database
Environment	All OS
Resolution	Perform the following steps: 1. Detach the SUITE32 Database from the SQL Server (make sure you know the path for database files). 2. Delete the SUITE32 database files (both .mdf & .ldf) physically from the disk.

Scenario	013
Problem	Post uninstallation of MasterLink installed with SQLite, if the user wants to delete existing MasterLink SQLite Database
Environment	All OS
Resolution	Delete MLConfig.sqlite file from the below locations: 1. C:\Program Files (x86)\Honeywell\MasterLink 2. C:\ProgramData\Honeywell\Masterlink\Sqlite

Scenario	14
Problem	Configuration check functionality not working for Integrated EC350 and CL
Environment	Desktop and Mobile
Resolution	Ensure you have the template file with new file extensions

Scenario	15
Problem	Preview of log data results in error or truncation of report data
Environment	All OS
Resolution	Change the default printer to “Microsoft XPS Document Writer” or ensure the default printer page size is configured as A4

Scenario	16
Problem	Communication buffer is not showing any data
Environment	Desktop
Resolution	Open the Communication Buffer window to start capturing the communication log in the file

Scenario	17
Problem	Edit Audit Trail button disabled
Environment	All OS
Resolution	Ensure user has the privilege to edit audit trail data. If user has privilege but still disabled then logoff and login to get it enabled.

Scenario	18
Problem	Memory allocation options for Log 4 and Log5 are not visible
Environment	All OS
Resolution	Ensure user has the privilege to edit audit trail data. If user has privilege but still disabled then logoff and login to get it enabled.

Scenario	19
Problem	When Bluetooth Security Type is set as Passkey Entry, MasterLink is not connecting to Integrated site
Environment	MasterLink Mobile Application
Resolution	Please retry 3-4 times by switching the device bluetooth ON and OFF. It may take some time for the CloudLink device to start bluetooth communication if the security type is set as Passkey Entry.

Scenario	20
Problem	When the user searches for an item (e.g. "Corrected Volume"), cancels the search, then searches for a different item (e.g "Uncorrected Volume"), cancels it again, and finally searches for the item in the original search (Which was "Corrected Volume"), they are unable to write a value for the originally searched item (Which was "Corrected Volume").
Environment	MasterLink Mobile Application
Resolution	Search for the item number again. Switch between tabs. This is a page-refresh issue. If the page gets refreshed, the item value can be edited.