

BD Alaris™ Technical Utility v2.0

Model: 1000SP02158

en User Manual



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BD Alaris™ Technical Utility v2.0 User Manual

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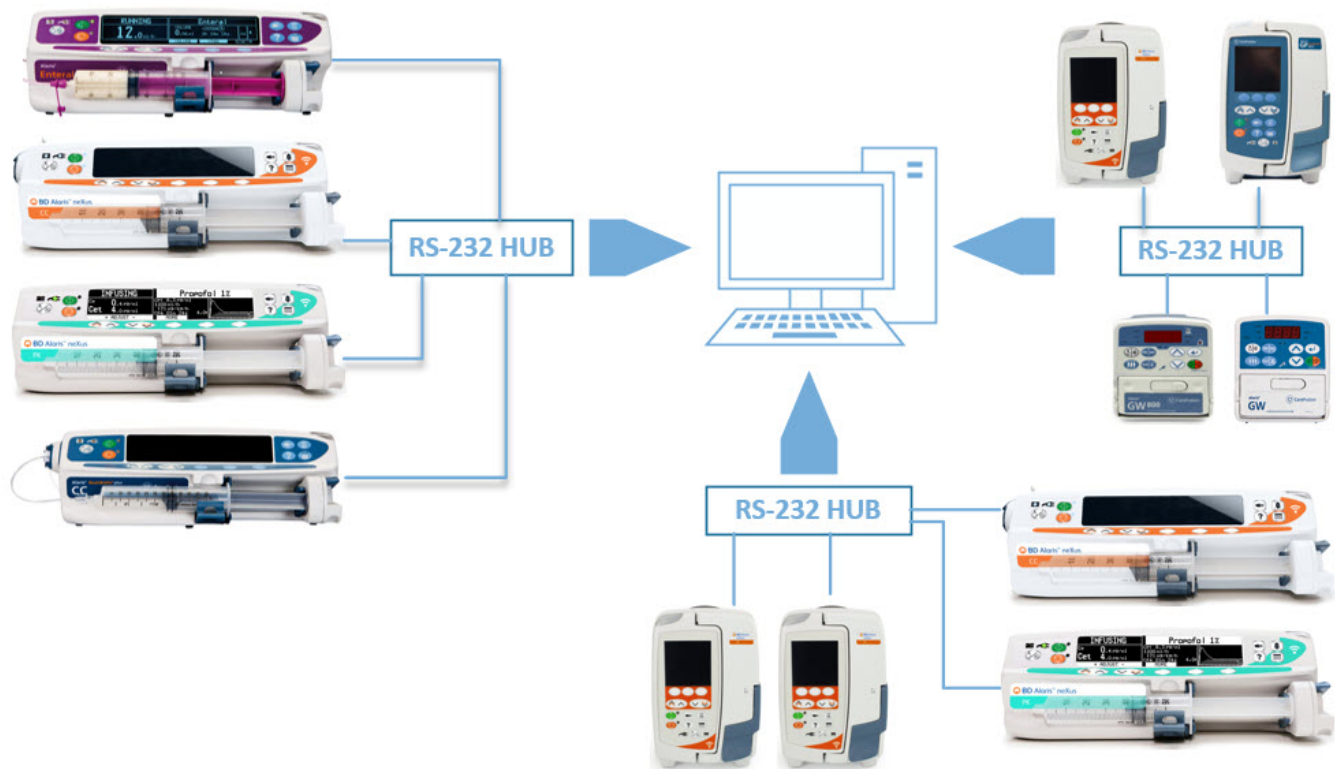
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About This Guide

This manual focuses on the operation and administration of the BD Alaris™ Technical Utility software (hereinafter referred to as Technical Utility). The user must be thoroughly familiar with Technical Utility as described in this manual prior to use. Note that the screenshot images in this manual are for illustrative purposes only, images in this manual may differ depending on the operating system and software version the computer is running.

Overview

This software is provided under and subject to a licence from BD. Technical Utility software provides a single platform for biomedical engineers and field service engineers to maintain and service up to 12 BD Alaris™ Plus and BD Alaris™ neXus pumps simultaneously. Refer to the pump compatibility matrix (see *Technical Utility v2.0 Product Compatibility Matrix* on page 8) for a detailed list of supported pumps.



Intended Use

Technical Utility is intended to be used mainly by trained biomedical engineers and BD Field Service engineers in hospital biomedical departments.

Authorised personnel may use Technical Utility to:

- Flash new pump firmware for syringe and volumetric pumps
- Download Pump Event logs from syringe and volumetric pumps including pump events, key presses, fluid and services logs, when available.
- Create and maintain wireless configuration settings used to connect syringe and volumetric neXus pumps to the hospital's Wi-Fi network.
- Transfer Wi-Fi configurations to syringe and volumetric neXus pumps.
- Clear Wi-Fi configuration for syringe and volumetric neXus pumps.
- Manage Wireless Module software updates for syringe and volumetric neXus pumps.
- Download wireless module logs from syringe and volumetric neXus pumps.
- Display downloaded logs retrieved from the pumps (event logs, key press, service and fluid logs).
- Run reports on service activities performed with Technical Utility.
- View pump logs for analysis, query, print and export.
- Manage pump firmware, wireless module software versions and Wi-Fi configuration packages stored in Technical Utility.
- Manage pump technical documentation.
- Manage users — add new user, reset password, set a user to inactive/active (Administrator only).

Technical Utility is a desktop application that must be installed on a computer running Windows® 7 or Windows® 10 Professional or Enterprise operating system. To service up to 12 pumps at one time, connect the pumps to the computer using a USB to RS-232 hub or connect a single pump directly to the computer using an RS-232 cable. Technical Utility utilises an SQL database, which can be on the same computer as Technical Utility or on a remote server.

NOTE:

Network security is the responsibility of the hospitals. Technical Utility may store collected data in an SQL database that is located on the hospital network server.



NOTE:

For further information and operational assistance, please contact Global Customer Services (GCS). Refer to the Contact section located at the beginning of this manual.

NOTE:

Ensure that the latest version of pump firmware, wireless module software and documentation are stored in the Technical Utility library.

Conventions Used in this Manual

<i>Italics</i>	The names of document titles, cross-references and text that requires emphasis are formatted in <i>italics</i> .
Bold	The names of buttons, menu commands, options, icons, file names and folders are formatted in bold .
Courier bold	User input is formatted in Courier bold .
Arial	For title bars or sections within the graphic user interface (GUI), the text is formatted in Arial font.
	A warning is a statement that alerts the user to the possibility of injury, death or other serious adverse reactions associated with the use or misuse of Technical Utility.
	A caution is a statement that alerts the user to the possibility of a problem with Technical Utility associated with its use or misuse. Such problems may include loss of data, display of out-of-date information or a change in configuration.
NOTE:	Notes contain supplementary information or emphasise a point or procedure.

Equipment Compatibility

The following table lists the compatibility between Technical Utility and various BD Alaris™ infusion devices.

Legend:

- = Supported
- = Not supported

Technical Utility v2.0 Product Compatibility Matrix

Devices				Transfers							
Product Type	Product Family	Product Models	Technical Utility Pump Name	Firmware Update	Event Log	Key Press Log	Service Log	Fluid Log	Wireless Module Logs	Wireless Software Update	Wireless Config Transfer
LVP	GW	GW	GW	●	●	–	–	–	–	–	–
		GW 800	GW	●	●	–	–	–	–	–	–
	GP	GP	GP Plus	●	●	–	–	–	–	–	–
		GP-GR	GP Guardrails	●	●	–	–	–	–	–	–
		GP Plus	GP Plus	●	●	–	–	–	–	–	–
		GP-GR Plus	GP Guardrails	●	●	–	–	–	–	–	–
		neXus GP	Alaris neXus GP	●	●	1)	–	–	●	●	●
	VP	VP-GR plus	VP Plus Guardrails	●	●	1)	–	–	–	–	–

1) GP and VP pumps log key presses as part of the event log.

Technical Utility v2.0 Product Compatibility Matrix

Devices				Transfers								
Product Type	Product Family	Product Models	Technical Utility Pump Name	Firmware Update	Event Log	Key Press Log	Service Log	Fluid Log	Wireless Module Logs	Wireless Software Update	Wireless Config Transfer	
Syringe	GH	GH	GH	●	●	●	●	●	—	—	—	
		GH-GR	GH Guardrails	●	●	●	●	●	—	—	—	
		GH Plus	GH Plus	●	●	●	●	●	—	—	—	
		GH-GR Plus	GH Guardrails	●	●	●	●	●	—	—	—	
	CC	CC	CC	●	●	●	●	●	●	—	—	—
		CC-GR	CC Guardrails	●	●	●	●	●	●	—	—	—
		CC Plus	CC Plus	●	●	●	●	●	●	—	—	—
		CC-GR Plus	CC Plus Guardrails	●	●	●	●	●	●	—	—	—
		neXus CC	Alaris neXus CC	●	●	●	●	●	●	●	●	●
	TIVA	TIVA	TIVA	●	●	●	●	●	—	—	—	
	PK	PK	PK Plus	●	●	●	●	●	●	—	—	—
		neXus PK	Alaris neXus PK	●	●	●	●	●	●	●	●	●
	Enteral	Enteral	Enteral	●	●	●	●	●	●	—	—	—
		Alaris Enteral	Enteral	●	●	●	●	●	●	—	—	—

Operating Environment Compatibility

Operating System		SQL	.NET
Version	Verified Language(s)		
Standalone installation: <ul style="list-style-type: none"> MS Windows 7 Professional (32 bit/64 bit) MS Windows 10 Professional (64 bit) 	English (US)	Local database installation: <ul style="list-style-type: none"> SQL Express 2014 SP2 Remote database installation: <ul style="list-style-type: none"> SQL Server 2012 SP2 SQL Server 2016 	4.6.2

Languages:

The following product languages are supported for BD Technical Utility v2.0:

- Czech
- Danish
- Dutch
- English (UK)
- Finnish
- French (Europe)
- German
- Greek
- Hungarian
- Italian
- Norwegian
- Polish
- Portuguese (Europe)
- Romanian
- Russian
- Serbian (Latin)
- Slovenian
- Spanish (Europe)
- Swedish
- Turkish



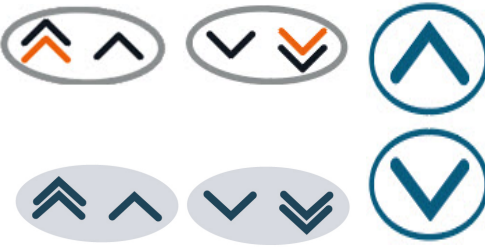





Chapter 2




Getting Started

BD Alaris™ Pumps



Pump Controls

Symbol	Description	Pump
	ON/OFF Press once to switch the pump ON. Press and hold for 3 seconds to switch the pump OFF.	All syringe and volumetric pumps
	RUN/STOP	All syringe and volumetric pumps
	CHEVRON keys Double or single for faster/slower increase/decrease of values shown on display.	All syringe and volumetric pumps
	BLANK SOFT KEYS Use in conjunction with the prompts shown on the pump display.	All Syringe Pumps VP and GP pumps
	ENTER Executes entry configured by the CHEVRON keys.	GW and GW 800 pumps only
	OPTIONS Opens the menu on the pump	All syringe and volumetric pumps
	PRESSURE Press to display the pumping pressure and alarm level.	All syringe and volumetric pumps
	MUTE Press to silence alarm for two minutes. The alarm will resound after this time. To re-enable the alarm audio, press the MUTE button a second time. NOTE: Attention alarm only: when not in alarm, press and hold until four audible beeps are heard to extend the silence period to 15 minutes.	All syringe and volumetric pumps

Symbol	Description	Pump
	PURGE/BOLUS Press to access PURGE or BOLUS keys. Press and hold down soft key to operate.	All syringe and volumetric pumps
	PRIMARY/SECONDARY BUTTON Switches the pump between Primary and Secondary infusion modes (if enabled).	GW and GW 800 pumps only
	CLEAR/MUTE Press to silence alarm or advisory for 1 minute. The audio from the alarm or advisory will resound after this time. Resets numeric values to zero. To re-enable the alarm audio, press any other button or key.	GW and GW 800 pumps only

Connecting the Pumps

It is recommended that users connect all pumps and turn on pumps in tech mode before logging into Technical Utility. Otherwise, a blank Service Pumps screen appears. Refer to each pump's Technical Service Manual for instructions on how to activate tech mode.

NOTE:

Pumps must also be configured for RS-232 communication before Technical Utility can detect them (see *Configuring the Syringe Pump for Detection* on page 14, *Configuring the GW Pump for Detection* on page 14, or *Configuring the GP and VP Volumetric Pumps for Detection* on page 15).

Recommended Equipment

For optimal system performance, use the following recommended equipment.

NOTE:

Technical Utility is only supported when used with BD-supplied hubs with manufacturer's driver installed.

- 4-Port Hub P/N 1000EL00980 with manufacturer's driver installed
- RS-232 Cable P/N DEC1000 with manufacturer's driver installed
- Converter cable USB to serial P/N 1000EL00979 with manufacturer's driver installed
- Torx Screwdriver with T20 Bit (for syringe pump) and T10 Bit (for volumetric pump)

Connecting the Pump to RS-232 Hub

NOTE:

Do not use the universal RS-232 Windows driver for USB-RS-232 cables or hubs. The universal Windows driver may cause issues with firmware flashing.

1. Download and install the driver for the hub.
2. Connect 4-port hub (USB connector) to the computer's USB port.
3. Connect RS-232 cable to the pump.
4. Connect RS-232 cable to the 4-port hub.
5. Optional - Label each COM port number on the corresponding 4-port hub, to identify the pump.

Configuring the Syringe Pump for Detection

NOTE:

Technical Utility can only detect syringe pumps that are configured for RS-232 communication.

NOTE: Performing wireless module tasks for neXus pumps requires special configuration to communicate with Technical Utility. (See *Switching Pumps to Wi-Fi Module Update Mode* on page 46)

1. With the pump **OFF**, press the **ON/OFF** button while holding down the **RUN** button until 000 appears on the pump display.
2. Press the **CHEVRON** keys and the **NEXT** soft key to enter 251 for the user configuration menu on the pump display.
3. Press **OK** soft key.
4. Press the **CHEVRON** keys to select **GENERAL OPTIONS**.
5. Press **OK** soft key.
6. Press the **CHEVRON** keys to select **NURSE CALL FITTED**.
7. Verify that **NURSE CALL FITTED** is set to enabled. If not, press the **MODIFY** soft key to change to enabled (v).
8. Press the **CHEVRON** key to select **NURSE CALL INVERT**.
9. Press the **MODIFY** soft key to change to disabled (x).
10. Press the **CHEVRON** key to select **RS-232 SELECTED**.
11. Verify that **RS-232 SELECTED** is set to enabled. If not, press the **MODIFY** soft key to change to enabled (v).
12. Press the **QUIT** soft key when finished.
13. Press the **QUIT** soft key in the **Configuration Select** screen.

Configuring the GW Pump for Detection

Configuring the GW or GW 800 pump for detection by Technical Utility is a two-part process that consists of determining the COM port number and configuring the pump.

NOTE:

Technical Utility can only detect pumps that are configured for RS-232 communication.

Determining the COM Port Number for the GW Pump

Determining the COM port number that is assigned to the GW pump is required during pump configuration.

1. With the pump **OFF**, press the **ON/OFF** button and the down (v) **CHEVRON** key at the same time until the number zero (0) appears on the pump display.
2. Connect the pump to Technical Utility (see *Connecting the Pump to RS-232 Hub* on page 13).
3. Open the **Windows Control Panel**.
4. From the **Control Panel**, double-click **Device Manager**.
5. From the **Device Manager**, double-click **Ports (COM and LPT)** to expand.
The list of ports appears. The GW pump is displayed as USB Serial Port (COMXX). Where XX is the COM port number.
6. Write down the COM port number to use in the next step, *Configuring the GW Pump* on page 15.

Configuring the GW Pump

Before configuring the GW pump, the user must first determine the COM port number (see *Determining the COM Port Number for the GW Pump* on page 14).

1. Set the pump address communication (COM port) by pressing the **CHEVRON** key until the number **40** appears on the pump display.
2. Press the **ENTER** button.
3. Enter the COM port number by pressing the **CHEVRON** keys until the number of the COM port appears on the pump display (see *Determining the COM Port Number for the GW Pump* on page 14 above).
4. Press the **ENTER** button.
5. Enable RS-232 mode by pressing the **CHEVRON** keys until the number **45** appears on the pump .
6. Press the **ENTER** button.
7. Disable infrared data association (IrDA) communication by pressing the **CHEVRON** keys until **OFF** appears on the pump display.
8. Press the **ENTER** button.
9. Disable American Standard Code for Information Interchange (ASCII) communication mode by pressing the **CHEVRON** keys until the number **38** appears on the pump display.
10. Press the **ENTER** button.
11. Press the **CHEVRON** keys until **OFF** appears on the pump display.
12. Press the **ENTER** button.
13. Disable odd communications parity bit generation by pressing the **CHEVRON** keys until the number **39** appears on the pump display.
14. Press the **ENTER** button.
15. Press the **CHEVRON** keys until **OFF** appears on the pump display.
16. Press the **ENTER** button.

Configuring the GP and VP Volumetric Pumps for Detection

GP and VP volumetric pumps automatically adjust to the proper communication protocol for detection. Therefore, additional configuration is not required.

NOTE: Performing wireless module tasks for neXus pumps requires special configuration to communicate with Technical Utility. (See *Switching Pumps to Wi-Fi Module Update Mode* on page 46).

Database Overview

Technical Utility connects to a database, which can be either a standalone local database or a remote database, for example, on a hospital server. Technical Utility connects to the remote database using TCP/IP connection.

Technical Utility uses a SQL database to store information that can be queried later on. The Technical Utility database enables the user to search for specific error codes or events that are captured in the pump logs to trend issues and troubleshoot equipment.

The pump logs include event, key press, fluid, wireless and service information. Users can search using the following criteria when running queries or reports within the Technical Utility user interface.

Navigation Menu	Search Fields
Pumps > Service Pumps	Task Port Pump Model SN Current Data Set, Version, ID
Pumps > View Pump Event Logs	All Logs Pump Model Start/End Date Serial Number Search Field Apply/Reset Event Number (from the pump) Event Date/Time Last Downloaded Pump Model Serial Number Code Event Log Type (event, service, key press or fluid) Description
ATU Reports > Service Reports	All Service Reports Flash Pump Firmware Pump Logs Downloaded Transfer Wi-Fi Configuration Clear Wi-Fi Configuration Update Wi-Fi Software Download Wireless Module Logs Pump Model Start/End Date Search Date/Time User Pump Model SN Service Task Initial Firmware Updated Firmware Log Type Status

Navigation Menu	Search Fields
ATU Reports > Administrative Reports > Export Reports	Report Type Start/End Date Search Field Date/Time User Report Type Date/Time File Name Stored Location
ATU Reports > Administrative Reports > Library Management	Library Document Firmware Wi-Fi Software Wi-Fi Configuration Package Start/End Date Search Date/Time User Action Firmware Configuration Package Wi-Fi Software Document Status
ATU Reports > Administrative Reports > User Management	Action Add User Change Password Edit User General Preferences Login Attempt Reset Password Start/End Date Search Date/Time User Action Field Old Value New Value
Library > (Syringe and Volumetric) Firmware Files	Pump Model(s) Firmware Version Hardware Date Added Search > Apply/Reset

Navigation Menu	Search Fields
Library > Wi-Fi Configuration	Name Number Of Profiles Date Added Date Updated Status Search > Apply/Reset
Library > Wi-Fi (Syringe and Volumetric) Software	Software Name Version Date Added Search > Apply/Reset
Library > Documentation	Import/Delete Document Number Title Issue Number Date Added Search > Apply/Reset

Starting Technical Utility

It is recommended that users connect all pumps and turn on pumps in tech mode before logging into Technical Utility. Otherwise, a blank Service Pumps screen appears.

NOTE: Please refer to each pump's Technical Service Manual for instructions on how to activate tech mode.

Logging In

The administrator creates the user accounts for all Technical Utility users and will provide the users with temporary login credentials.

1. Double-click the ATU icon from the desktop or navigate to Technical Utility from the files folder.



2. From the Login dialog box, enter the user name and password provided by the administrator.
3. Click **Log In**.

NOTE:

After logging in for the first time, the user will be prompted to create a new password. Follow the prompt to create the new password.

Password Requirements

The password requirements for Technical Utility are:

- Passwords must be 8-20 characters in length (case sensitive) and must meet three of the four criteria shown below:
 - Include an uppercase letter
 - Include a lowercase letter
 - Include a number
 - Include a supported special character: exclamation mark (!), at sign (@), dollar symbol (\$), percent (%), asterisk (*), comma(,), plus sign (+), caret (^), ampersand (&), less than symbol (<), question mark (?) and blank space ()

NOTE:

When changing a password, the previous five passwords cannot be used.

Incorrect User Name or Password

When an incorrect user name or password is entered, an error message appears.

NOTE:

The user has three attempts to enter a correct user name and password before being locked out of Technical Utility. Contact the administrator to have the password reset and the account unlocked.

Chapter 3

Technical Utility Interfaces

There are two interfaces: one for general users and the other for administrators.

Navigating the General User Interface

The general user interface allows the user to download and view pump logs, generate reports, flash pump firmware, update wireless module software and manage pump Wi-Fi configuration. The administrator interface allows a user with administrator credentials to perform user management tasks. The following sections provide more information on the two user interfaces.

Navigation Menu

The navigation menu allows the user to navigate to other screens within the Technical Utility application.

Navigation Menu Features

Name	Description
Pumps > Service Pumps	Displays the connected pumps and starts new service tasks.
Pumps > View Pump Event Logs	Displays the options for viewing previously downloaded pump logs.
ATU Reports > Service Reports	Generates service activity and administration reports, which can be filtered by report type, date range, user name and pump model.
ATU Reports > Administrative Reports (Export Reports, Library Management, User Management)	Generates administrative reports, which can be filtered by report type, user, start/end date and search.
Library > Syringe Firmware	Displays firmware files and versions that may be used to perform firmware updates to service the syringe pumps.
Library > Volumetric Firmware	Displays firmware files and versions that may be used to perform firmware updates to service the volumetric pumps.
Library > Wi-Fi Configuration	Displays the Wi-Fi configuration package that may be used to connect neXus pumps to hospital wireless networks.
Library > Wi-Fi Syringe Software	Displays available wireless module software updates that may be used to update the neXus syringe pumps wireless software.
Library > Wi-Fi Volumetric Software	Displays available Wi-Fi software updates that may be used to update the neXus volumetric pumps wireless software.
Library > Documentation	Displays pump service documentation that can be imported or deleted for the relevant pumps.
Settings	Displays database information, exported file information and user language preferences.
Help	Displays the Technical Utility user manual, administrator contact information and the About Technical Utility page.
User Name	Displays the user name of the user currently logged in to Technical Utility
User Name > Change Password	Option to change user password.
User Name > Logout	Logs user out of the Technical Utility application.

Service Pumps Screen

The Service Pumps option from the Pumps Menu displays the task, port, pump model, serial number, current Data Set name, Data Set version and Data Set ID for connected pumps. Service tasks such as downloading logs, flashing firmware and Wi-Fi management service tasks can be performed from this menu

BD Alaris™ Technical Utility

Pumps | ATU Reports | Library

Pumps

Connected **1**

Transferring **0**

New Task

ATU can only detect pumps set to RS232 communication. [Details](#)

To create a new pump task, click the New Task button.

Task	Port	Pump Model	SN	Current Data Set, Version, ID
	3	Alaris neXus GP	4700-34082	ACE demo. 3. FD81

Service Pumps Screen Fields

Name	Description
Connected	Displays the number of pumps currently connected to Technical Utility.
Transferring	Displays the number of connected pumps with tasks actively running.
New Task	Click to create a new service task (download logs, flash firmware or Wi-Fi tasks).
Task	Displays a created service task and its description.
Port	Displays the port number that the pump is using to connect to Technical Utility.
Pump Model	Displays the pump model.
SN	Displays the pump serial number.
Current Data Set, Version, ID	Displays the current Data Set name, its version number and Data Set ID number.
Chevron	Click to expand or hide the connected pump details.

Click the CHEVRON  to display additional details for the connected pump.

Expanded Pump Details

The screenshot displays the 'BD Alaris™ Technical Utility' interface. On the left, a sidebar shows 'Pumps' with 2 connected and 0 transferring. The main area shows a list of pumps with expanded details for two pumps:

- Pump 4:** Alaris neXus CC, SN 3000-03107, Current Data Set Version ID BD neXus. 1. 653B. Details include: Data Set (BD neXus. 1. 653B), Firmware (v5.0.007), No. of Logs (1439), No. of Event Logs (721), No. of Key Logs (706), No. of Fluid Logs (5), No. of Service Logs (7), Baud Rate (115200), Date/Time on Pump (25/10/2019 15:20:12), AC Connection (OFF - Connect to AC Power Source), Battery State (Charge: 43.56%, Capacity: 2328, Voltage: 7.4V), and Service Date (01/04/2020).
- Pump 5:** Alaris neXus GP, SN 4700-34082, Current Data Set Version ID ACE demo. 3. FD81. Details include: Data Set (ACE demo. 3. FD81), Firmware (v5.0.15), No. of Logs (3671), No. of Event Logs (3671), No. of Key Logs (n/a), No. of Fluid Logs (n/a), No. of Service Logs (n/a), Baud Rate (115200), Date/Time on Pump (25/10/2019 15:31:26), AC Connection (OFF - Connect to AC Power Source), Battery State (Charge: 79.85%, Capacity: 2452, Voltage: 10.2V), and Service Date (01/01/2099).

Expanded Pump Details Fields

Name	Description
Data Set	Displays the name of the currently activated Data Set on the connected pump.
Firmware	Displays the current version number for the firmware on the connected pump.
No. of Logs	Displays the number of pump logs for the connected pump.
No. of Event Logs	Displays the number of events logged for the connected pump.
No. of Key Logs	Displays the number of key press events logged for the connected pump. (Syringe pump only)
No. of Fluid Logs	Displays the number of fluid events logged for the connected pump. (Syringe pump only)
No. of Service Logs	Displays the number of service events logged for the connected pump. (Syringe pump only)
Baud Rate	Displays the rate at which information is transferred between Technical Utility and the connected pump.
Date/Time on Pump	Date and time set on the connected pump.
AC Connection	Displays if the pump is connected to AC power.
Charge	Displays the percentage of battery charge.
Capacity	Displays the battery capacity.
Voltage	Displays the battery voltage.
Service Date	Displays the date that the connected pump is due for service.
Service Message	Displays the customised message from the connected pump.

Task Pane

Once a service task is created, a lettered task tab appears on the left-hand pane. Each task tab displays the task properties. For example, the flashing firmware task displays the pump model and the selected firmware version.

The active task letter tab is in the colour blue. Users can select a tab to view pumps. However, if pumps have been selected but the task has not started, these pumps are automatically deselected when the user moves to another tab.

Each task is labelled with a letter from A-Z to enable users to keep track of which pump is assigned to each task when viewing the Service Pumps screen. Once a service task is created, it can be reused on other pumps connected to Technical Utility if it is applicable to those pumps.

Task Pane Features

Name	Description
Connected	Displays the number of pumps currently connected to Technical Utility.
Transferring	Displays the number of connected pumps with tasks actively running.
X	Cancels the service task.
Task Letters	Displays a sequential letter assigned by Technical Utility for each task.
New Task	Click to create a new service task (download logs, Flash Firmware, Transfer Wi-Fi Configuration, Clear Wi-Fi Configuration, Update Wireless Module Software and Download Wireless Module Logs).

Service Tasks Overview

Service tasks available on Technical Utility:

- Download Pump Event Logs
- Flash Pump Firmware
- Transfer Wi-Fi Configuration
- Clear Wi-Fi Configuration
- Update Wi-Fi Software
- Download Wireless Module Logs

Service Tasks Features

Name	Description
Select All Tick Box	Selects all connected and compatible pumps for the selected service task.
Tick Box	Select or deselect an individual pump for a service task.
Task	Displays the service task letter assigned to the pump for a service task.
Port	Displays the port number that the pump is using to connect to Technical Utility.
Pump Model	Displays the pump model.
SN	Displays the pump serial number.
Wi-Fi Enabled	Indicates whether the pump is Wi-Fi enabled or not.

Name	Description
Status	Displays the current status of the service task.
Quit	Stops the task that is currently running on the connected pump. (If supported by pump)
Chevron (v)	Click to expand or contract the additional information on the connected pump.

Download Pump Event Logs

Enables the user to download pump logs containing various event types through the **New Task** option on the **Service Pumps** screen. Once a service task is created and logs are downloaded, the service task can be reused to download logs from other pumps connected to Technical Utility. See *Service Tasks Features* on page 23.

Flash Pump Firmware

Enables the user to flash pump firmware through the **New Task** option on the **Service Pumps** screen. Once a service task is created and firmware is flashed, the service task can be reused to flash firmware on other pumps connected to Technical Utility. See *Service Tasks Features* on page 23.

NOTE: To reuse the service task for firmware flashing, the pumps must be the same model and same firmware version. Additional flashing tasks can be created for different pump models and firmware versions.

Transfer Wi-Fi Configuration

Enables the user to transfer Wi-Fi configuration through the **New Task** option on the **Service Pumps** screen. Once a service task is created and a transfer Wi-Fi configuration package is available, the service task can be reused to transfer Wi-Fi configuration packages to other neXus pumps connected to Technical Utility. See *Service Tasks Features* on page 23.

Clear Wi-Fi Configuration

Once a Wi-Fi configuration package is no longer required, the clear Wi-Fi configuration service task can be used to clear the Wi-Fi configuration from the selected neXus pumps. See *Service Tasks Features* on page 23.

NOTE: It is the responsibility of the hospital to remove any sensitive data about the hospital from the pump (such as Wi-Fi Configuration) before it leaves the hospital.

Update Wireless Module Software

The built-in wireless module in neXus pumps may require an occasional update. Once a service task is created and the wireless module software is available for the pump, the service task can be reused to update the wireless module software on other neXus pumps connected to Technical Utility. See *Service Tasks Features* on page 23.

NOTE:

To reuse the service task for updating wireless module software, the pumps must be the same model. Additional update tasks can be created for different pump models and Wi-Fi software versions.

Download Wireless Module Logs

The Download Wireless Module Logs service task is created to aid BD service representatives in the rare instance where troubleshooting component failure is required. Once created, this task can be used to download wireless module logs for neXus pumps connected to Technical Utility. See *Service Tasks Features* on page 23.

NOTE: Wireless module logs are not shown in **View Pump Event Logs** but rather stored in the Technical Utility SQL Database, as it is a BD service representative who will access them.

View Pump Event Logs

The View Pump Event Logs option under the Pumps menu displays the previously downloaded pump logs. This section is populated when the pump logs are downloaded from the connected pumps; otherwise, the “no data displayed” message appears.

NOTE: Wireless module logs are not shown in **View Pump Event Logs** but rather stored in the Technical Utility SQL Database, as it is a BD service representative who will access them.

View Pump Event Logs Fields

Name	Description
Download Pump Event Logs	Click to navigate to the Service Pumps screen to start a service task or download pump logs.
All Logs	Displays all logs, event, key press, fluid, service and system logs.
Pump Model	Select the pump model to apply to the search criteria.
Serial Number	Enter the pump serial number to apply to the search criteria.
Start Date	Select the desired start date to apply to the search criteria.
End Date	Select the desired end date to apply to the search criteria.
Search	Enter a term to search for in the pump log entries.
Apply	Applies the selected criteria to the search.
Reset	Clears the search criteria.
Event No.	Displays the event number from the pump log.
Event Date/Time	Displays the date and time the event occurred.
Last Downloaded	Date and time the pump logs were last downloaded from the connected pump.
Pump Model	Displays the pump model.
Serial Number	Displays the serial number for the pump.
Code	Displays the code used by the pump to identify the type of log entry (event, key press).
Event Log Type	Displays the type of log entry (event, key press, fluid, service and system).
Description	Description of the log entry.
Page Numbers	Click the number to display the log entries on that page number.
Print	Prints the displayed pump log entries.
Export	Exports and saves the displayed pump log entries in the desired format (.csv, .xlsx, .pdf), to the location indicated in the Settings screen.
Download Pump Event Logs	Enables the user to download pump logs containing various event types.

ATU Reports

The ATU Reports option is used to generate service and administration reports, which can be filtered by date range, user name and pump model.

Service Reports

The Service Reports option lists the reports that are related to service tasks performed in Technical Utility. Users can view the firmware updates performed, downloaded pump logs and wireless module management tasks that have been completed by the user. An entry in the list is created for each pump that was serviced. Users can sort and filter the reports.

Service Reports Features

Name	Description
All Service Reports	Select desired report type from the list.
Pump Model	Select the pump model name to apply to the search criteria.
Start/End Date	Select start/end date to apply to the search criteria.
User Name	Select the user name to apply to the search criteria.
Search	Enter a term to apply to the search criteria.
Apply	Applies the selected criteria to the search.
Reset	Clears the search criteria.
Date/Time	Displays the date and time when the service occurred.
User	Displays the user name of the user that performed the service task.
Pump Model	Displays the pump model.
SN	Displays the serial number of the pump.
Service Task	Displays the type of service task (download logs or flash firmware) that was performed on the pump.
Initial Firmware	Displays the initial firmware version on the pump.
Updated Firmware	Displays the new firmware version that was flashed onto the pump.
Log Type	Displays the type of log entry (event, key press, fluid, system or service).
Status	Displays whether the service task was completed successfully or failed.
Details	Description of the log entry.
Page Number	Click on the number to display the service report entries on that page number.
Export	Exports and saves the displayed reports in the desired format (.csv, .xlsx, .pdf) to the location indicated in the Settings screen.

Administrative Reports

From the Administrative Reports option, a user can run three types of reports: Export, Library Management and User Management.

Export Report

The Export Report lists all reports that were created by Technical Utility users and indicates where the report was saved.

Export Report Features

Name	Description
Export Reports	Displays all reports that a user exported, including date/time, user, report type, file name and the location where the exported report was saved.
Report Type	Select a report type to apply to the search criteria.
User Name	Select the user name to apply to the search criteria.
Start Date	Select a start date to apply to the search criteria.
End Date	Select end date to apply to the search criteria.
Search	Enter a term to apply to the search criteria.
Apply	Applies the selected criteria to the search.
Reset	Clears the search criteria.
Date/Time	Displays the date and time when the export was performed.
User	Displays the user name of the user that exported the report.
Report Type	Displays the type of report that was exported. The choices are: all service reports, Clear Wi-Fi Configuration, Download Wireless Module Logs, Export Reports, Flash Firmware, Library Management, Pump Logs, Pump Logs Downloaded, Transfer Wi-Fi Configuration, Update Wireless Module Software, User Management.
File Name	Displays the name of the file that was exported.
Stored Location	Displays the location where the exported report was saved.
Page Number	Click on the number to display the entries on that page number.
Export	Exports and saves the displayed reports in the desired format (.csv, .xlsx, .pdf) to the location indicated in the Settings screen.

Library Management Report

The library management report displays all activities relating to the management of the documentation, firmware, wireless module software and Wi-Fi configuration package libraries. This report indicates when firmware, documents or wireless module software and configuration packages were imported and deleted.

Library Management Report Features

Name	Description
Library Management	Displays all activities relating to the management of the documentation, firmware, wireless module software and Wi-Fi configuration package libraries.
Library	Select library, document, firmware, wireless module software or Wi-Fi configuration package to apply to the search criteria.
User Name	Select the user name to apply to the search criteria.
Start/End Date	Select a start date to apply to the search criteria.
Search	Enter a term to apply to the search criteria.
Apply	Applies the selected criteria to the search.
Reset	Clears the search criteria.
Date/Time	Displays the date and time when the action was performed.
User	Displays the user name of the user that performed the action.
Action	Displays the action that the user performed.
Firmware	Displays the firmware version number.
Configuration Package	Displays the configuration packages.
Wi-Fi Software	Displays Wi-Fi Software
Document	Displays associated document.
Status	Displays report status
Page Number	Click on the number to display the entries on that page number.
Export	Exports and saves the displayed reports in the desired format (.csv, .xlsx, .pdf) to the location indicated in the Settings dashboard.

User Management Report

The user management report shows administrators which user is locked out, if the user account is active or inactive and what actions the user performed.

User Management Report Features

Name	Description
Action	Displays actions performed by a specified user.
User Name	Select the user name to apply to the search criteria.
Start Date	Select a start date to apply to the search criteria.
End Date	Select end date to apply to the search criteria.
Search	Enter a term to apply to the search criteria.
Apply	Applies the selected criteria to the search.
Reset	Clears the search criteria.
Date/Time	Displays the date and time when the action was performed.
User	User who performed the action.
Action	Displays the action that the user performed.
Field	Displays the field that the user changed.
Old Value	Displays the previous value.
New Value	Displays the new value.
Page Number	Click on the number to display the entries on that page number.
Export	Exports and saves the displayed reports in the desired format (.csv, .xlsx, .pdf) to the location indicated in the Settings dashboard.

Library

The Library option displays the firmware and wireless module software files that are available for update to the connected pumps.

NOTE:

Ensure that the latest version of pump firmware and documentation are stored in the Technical Utility library.

Syringe and Volumetric Firmware

The Syringe and Volumetric Firmware options display all firmware files currently available to perform updates to the connected syringe and volumetric pumps.

Syringe and Volumetric Firmware Features

Name	Description
Search	Enter a term to apply to the search criteria.
Apply	Applies the entered criteria to the search.
Reset	Clears the search criteria.
Pump Model(s)	Displays the name of the pump model.

Syringe and Volumetric Firmware Features

Name	Description
Firmware Version	Displays the current firmware version number.
Hardware	Displays the motherboard version number.
Date Added	Displays the date on which the firmware was added to the pump.

Wi-Fi Configuration

The Wi-Fi Configuration option displays the Wi-Fi configuration package that is used to connect neXus pumps to hospital Wi-Fi networks.

Wi-Fi Configuration Features

Name	Description
Search	Enter a term to apply to the search criteria.
Apply	Applies the entered criteria to the search.
Reset	Clears the search criteria.
Name	Wi-Fi configuration package name.
Number of Profiles	Displays the number of profiles that are associated with the Wi-Fi configuration package.
Date Added	Displays the date the Wi-Fi configuration package was created.
Date Updated	Displays the date the Wi-Fi configuration package was updated.
Status	Displays the status of the current Wi-Fi configuration package, for example, Ready to use.

Wi-Fi Syringe and Volumetric Software

The Wi-Fi Syringe and Volumetric software options display currently available software files that can be used to perform updates to the wireless modules for the neXus Syringe and Volumetric pumps.

Wi-Fi Syringe and Volumetric Software Features

Name	Description
Search	Enter a term to apply to the search criteria.
Apply	Applies the entered criteria to the search.
Reset	Clears the search criteria.
Software Name	Displays the current Wi-Fi software version number.
Version	Displays the Wi-Fi motherboard version number.
Date Added	Displays the date the Wi-Fi software was added to the Wi-Fi motherboard.

Documentation

The Documentation option allows the user to import or delete pump service documentation, such as technical service manuals, service bulletins, information notices or user manuals.

NOTE:

- Ensure that the latest version of documentation is stored in the Technical Utility library. The Technical Service Manuals are available in electronic format online at:
<http://www.bd.com/int-alaris-technical>.
- A user name and password are required to access the manuals. Please contact GCS to obtain login details.

Documentation Features

Name	Description
Search	Enter search criteria.
Apply	Applies the criteria entered in the search.
Reset	Clears the search criteria.
Document Number	Displays the document number for the service documentation.
Title	Displays the document title for the service documentation.
Issue No.	Displays the issue number for the service documentation.
Date Added	Displays the date when the documentation was imported into Technical Utility.

Settings for General User

The Settings dialog box shows database information, exported file information and additional settings, including language preferences. Language preferences are set at the user level by the administrator.

Settings Features

Name	Description
Server	Server location.
Name	Displays database name.
Local Database Usage	Displays the percentage of database usage.
Start Cleanup	Starts the cleanup utility, which deletes pump logs, service reports and administrative reports from the database (see <i>Cleaning the Local Database</i> on page 76).
Logs	Location where exported logs are saved.
Reports	Location where exported reports are saved.
Wireless Card Logs	Location where wireless module logs are saved.
Language Preference	Selected language is displayed. Click to select another language from the dropdown list.
Items to Be Displayed per Page	Number of items to be displayed per page.
Save	Click to apply changes made to the settings.
Reset	Click to discard changes and reset to prior settings.
Administrator Contact Information	Administrator contact information. If left blank by administrator, Contact Administrator appears.

Navigating the Administrator Interface

Administrators can import and delete firmware, create, edit, duplicate or delete Wi-Fi configuration settings.

Administrator Menu

Administrator Menu Features

Name	Description
User Management	Manage user accounts in Technical Utility.
ATU Reports	Generates service and administration reports, which can be filtered by report type, start/end date, user name and pump model.
Library	Manage pump firmware, Wi-Fi software files, Wi-Fi configuration package and import or delete pump firmware, Wi-Fi configuration package and wireless module software files.
Settings	Displays database information, exported file information and additional settings.
Help	Displays the Technical Utility user manual, administrator contact information and About page.
User Name	Displays the administrator that is currently logged in to Technical Utility.
Logout	Exit the Technical Utility application.

User Management

The User Management option is used to manage user accounts. The administrator can create new user accounts or edit existing user accounts. Additionally, the administrator can reset a user's temporary password.

User Management Dashboard Features

Name	Description
New	Click to create a new user account.
Edit	Click to edit the selected user account.
Reset Password	Click to reset the selected user's temporary password.
All Users/Active Users/Inactive Users	Filters the displayed list of user accounts by All Users, Active Users or Inactive Users.
First name	Displays the first name for the user account.
Surname	Displays the surname for the user account.
User Name	Displays the user name for the user account
Status	Displays whether the user account is active or inactive.

ATU Reports

Service Reports Features

Name	Description
All Service Reports	Select desired report type from the list.
Pump Model	Select the pump model name to apply to the search criteria.
Start/End Date	Select start/end date to apply to the search criteria.
User Name	Select the user name to apply to the search criteria.
Search	Enter a term to apply to the search criteria.
Apply	Applies the selected criteria to the search.
Reset	Clears the search criteria.
Date/Time	Displays the date and time when the service occurred.
User	Displays the user name of the user that performed the service task.
Pump Model	Displays the pump model.
SN	Displays the serial number of the pump.
Service Task	Displays the type of service task (download logs or flash firmware) that was performed on the pump.
Initial Firmware	Displays the initial firmware version on the pump.
Updated Firmware	Displays the new firmware version that was flashed onto the pump.
Log Type	Displays the type of log entry (event, key press, fluid, system or service).
Status	Displays whether the service task was completed successfully or failed.
Details	Description of the log entry.
Page Number	Click on the number to display the service report entries on that page number.
Export	Exports and saves the displayed reports in the desired format (.csv, .xlsx, .pdf) to the location indicated in the Settings screen.

Administrative Reports

From the Administrative Reports option, a user can run three types of reports: Export, Library Management and User Management.

Export Report

The Export Report lists all reports that were created by Technical Utility users and indicates where the report was saved.

Export Report Features

Name	Description
Export Reports	Displays all reports that a user exported, including date/time, user, report type, file name and the location where the exported report was saved.
Report Type	Select a report type to apply to the search criteria.
User Name	Select the user name to apply to the search criteria.

Export Report Features

Name	Description
Start Date	Select a start date to apply to the search criteria.
End Date	Select end date to apply to the search criteria.
Search	Enter a term to apply to the search criteria.
Apply	Applies the selected criteria to the search.
Reset	Clears the search criteria.
Date/Time	Displays the date and time when the export was performed.
User	Displays the user name of the user that exported the report.
Report Type	Displays the type of report that was exported. The choices are: all service reports, Clear Wi-Fi Configuration, Download Wireless Module Logs, Export Reports, Flash Firmware, Library Management, Pump Logs, Pump Logs Downloaded, Transfer Wi-Fi Configuration, Update Wireless Module Software, User Management.
File Name	Displays the name of the file that was exported.
Stored Location	Displays the location where the exported report was saved.
Page Number	Click on the number to display the entries on that page number.
Export	Exports and saves the displayed reports in the desired format (.csv, .xlsx, .pdf) to the location indicated in the Settings screen.

Library Management Report

The library management report displays all activities relating to the management of the documentation, firmware, wireless module software and Wi-Fi configuration package libraries. This report indicates when firmware, documents or wireless module software and configuration packages were imported and deleted.

Library Management Report Features

Name	Description
Library Management	Displays all activities relating to the management of the documentation, firmware, wireless module software and Wi-Fi configuration package libraries.
Library	Select library, document, firmware, Wi-Fi software or Wi-Fi configuration package to apply to the search criteria.
User Name	Select the user name to apply to the search criteria.
Start/End Date	Select a start date to apply to the search criteria.
Search	Enter a term to apply to the search criteria.
Apply	Applies the selected criteria to the search.
Reset	Clears the search criteria.
Date/Time	Displays the date and time when the action was performed.
User	Displays the user name of the user that performed the action.
Action	Displays the action that the user performed.
Firmware	Displays the firmware version number.
Configuration Package	Displays the configuration packages.
Wi-Fi Software	Displays Wi-Fi Software
Document	Displays associated document.
Status	Displays report status
Page Number	Click on the number to display the entries on that page number.
Export	Exports and saves the displayed reports in the desired format (.csv, .xlsx, .pdf) to the location indicated in the Settings dashboard.

User Management Report

The user management report shows administrators which user is locked out, if the user account is active or inactive and what actions the user performed.

User Management Report Features

Name	Description
Action	Displays actions performed by a specified user.
User Name	Select the user name to apply to the search criteria.
Start Date	Select a start date to apply to the search criteria.
End Date	Select end date to apply to the search criteria.
Search	Enter a term to apply to the search criteria.
Apply	Applies the selected criteria to the search.
Reset	Clears the search criteria.
Date/Time	Displays the date and time when the action was performed.
User	User who performed the action.
Action	Displays the action that the user performed.
Field	Displays the field that the user changed.
Old Value	Displays the previous value.
New Value	Displays the new value.
Page Number	Click on the number to display the entries on that page number.
Export	Exports and saves the displayed reports in the desired format (.csv, .xlsx, .pdf) to the location indicated in the Settings dashboard.

Library

The Library option displays the firmware and wireless module software files that are available for update to the connected pumps. Additionally, administrative users can view the Wi-Fi configuration package and import pump service documentation.

NOTE:

Ensure that the latest version of pump firmware and documentation are stored in the Technical Utility library.

Syringe and Volumetric Firmware

The Syringe and Volumetric Firmware options display all firmware files currently available to perform updates to the connected syringe and volumetric pumps.

Syringe and Volumetric Firmware Features

Name	Description
Search	Enter a term to apply to the search criteria.
Apply	Applies the entered criteria to the search.
Reset	Clears the search criteria.

Syringe and Volumetric Firmware Features

Name	Description
Import	Uploads selected firmware versions to the Technical Utility database.
Delete	Removes the selected firmware version from the Technical Utility database.
Pump Model(s)	Displays the name of the pump model.
Firmware Version	Displays the current firmware version number.
Hardware	Displays the motherboard version number.
Date Added	Displays the date on which the firmware was added to the pump.

Wi-Fi Configuration

The Wi-Fi Configuration option displays the Wi-Fi configuration package that is used to connect neXus pumps to hospital Wi-Fi networks.

Wi-Fi Configuration Features

Name	Description
Search	Enter a term to apply to the search criteria.
Apply	Applies the entered criteria to the search.
Reset	Clears the search criteria.
New	Creates a new Wi-Fi configuration package and up to 8 package profiles.
Edit	Updates Package name or Profile information for the selected Wi-Fi configuration package.
Delete	Removes the selected Wi-Fi configuration package and profiles from the Technical Utility database.
Duplicate	Duplicates selected Wi-Fi configuration package.
Name	Wi-Fi configuration package name.
Number of Profiles	Displays the number of profiles that are associated with the Wi-Fi configuration package.
Date Added	Displays the date the Wi-Fi configuration package was created.
Date Updated	Displays the date the Wi-Fi configuration package was updated.
Status	Displays the status of the current Wi-Fi configuration package, for example, Ready to use.

Wi-Fi Syringe and Volumetric Software

The Wi-Fi Syringe and Volumetric software options display currently available software files that can be used to perform updates to the Wi-Fi configuration package for the neXus Syringe and Volumetric pumps.

Wi-Fi Syringe Software Features

Name	Description
Search	Enter a term to apply to the search criteria.
Apply	Applies the entered criteria to the search.
Reset	Clears the search criteria.
Import	Uploads selected Wi-Fi software versions to the Technical Utility database.
Delete	Removes the selected Wi-Fi software version from the Technical Utility database.
Software Name	Displays the current Wi-Fi software version number.
Version	Displays the Wi-Fi motherboard version number.
Date Added	Displays the date the Wi-Fi software was added to the Wi-Fi motherboard.

Documentation

The Documentation option allows the user to import or delete pump service documentation, such as technical service manuals, service bulletins, information notices or user manuals.

NOTE:

- Ensure that the latest version of documentation is stored in the Technical Utility library. The Technical Service Manuals are available in electronic format online at:
<http://www.bd.com/int-alaris-technical>.
- A user name and password are required to access the manuals. Please contact GCS to obtain login details.

Documentation Features

Name	Description
Import	Click to import pump service documentation.
Delete	Click to delete imported pump service documentation.
Search	Enter search criteria.
Apply	Applies the criteria entered in the search.
Reset	Clears the search criteria.
Document Number	Displays the document number for the service documentation.
Title	Displays the document title for the service documentation.
Issue No.	Displays the issue number for the service documentation.
Date Added	Displays the date when the documentation was imported into Technical Utility.

Settings for Administrator

The Settings dialog box shows database information, exported file information and additional settings, including language preferences. Language preferences are set at the user level by the administrator. Additionally, the administrator can set the session timeout duration and provide administrator contact information that is displayed in the general user interface.

Settings Features

Name	Description
Server	Server location.
Name	Displays database name.
Local Database Usage	Displays the percentage of database usage.
Start Cleanup	Starts the cleanup utility, which deletes pump logs, service reports and administrative reports from the database (see <i>Cleaning the Local Database</i> on page 76).
Logs	Location where exported logs are saved.
Reports	Location where exported reports are saved.
Wireless Module Logs	Location where wireless module logs are saved.
Language Preference	Selected language is displayed. Click to select another language from the dropdown list.
Items to Be Displayed per Page	Number of items to be displayed per page.
Session Timeout Duration (in minutes)	(Administrative users only). The amount of time in minutes before a Technical Utility session times out. Minimum 10 minutes, maximum 999 minutes.
Save	Click to apply changes made to the settings.
Reset	Click to discard changes and reset to prior settings.
Administrator Contact Information	Information that is displayed in the general user interface. Maximum 150 characters. If left blank, Contact Administrator appears.

Chapter 4

Servicing Pumps

Pump Service Tasks

General Users can create six types of service tasks in Technical Utility: Download Pump Event Logs, Flash Pump Firmware, Transfer Wi-Fi Configurations, Clear Wi-Fi Configurations, Update Wi-Fi Software and Download Wireless Module Logs. When a task is created, Technical Utility automatically selects the compatible pumps for that task. Each task must have a unique set of criteria to be created; Technical Utility does not allow duplicate service tasks. Service tasks can be performed on up to a maximum of 12 pumps. When an additional service task is needed, one of the six service tasks must be cancelled by clicking the X next to the service task in the task pane. A service task cannot be cancelled until the service task is completed.

Once a service task has been created, the task can be reused on other connected pumps. A Flash Pump Firmware service task and a Wi-Fi Software Update task can only be reused on a pump that is the same model and same firmware version. Wi-Fi Transfer and Clear Wi-Fi service tasks only need to be created once per Technical Utility session because the sole compatibility requirement for these tasks is for the pumps to be neXus. Download Logs service tasks need to be created once per Technical Utility session because this task does not require pump compatibility.

Additional pumps may be added to a service task that is currently running. Newly connected pumps are not automatically selected; the tick box must be manually selected to add pumps to the reusable service task.

Download Pump Event Logs

Pump logs are useful for investigating an event or troubleshooting a pump. The types of pump logs are: event, key press, service and fluid logs.

Once the pump logs have been downloaded from the pump, the logs are stored in the Technical Utility database and are available at any time.

1. Click **Pumps**, then click **Service Pumps**.
2. Click **New Task**.
3. From **New Task**, click **Download Pump Event Logs**. Clear the tick box for any pumps from which downloading of logs is not required. .
4. Click **Start**.

Downloading Logs is displayed in the Status field and the status bar shows the logs download progress. When the download has been completed, the **All Logs Downloaded** link is displayed in the Status field. Click on the link to view the log details.

Flash Pump Firmware on Syringe Pumps

When new firmware is released to comply with new standards or introduce features, the firmware will need to be flashed on the syringe pumps. Flashing the firmware on the syringe pump is a two-part process that consists of flashing the firmware and changing the syringe pump to bootstrap mode (see *Changing the Syringe Pump to Bootstrap Mode* on page 42). It is important that the flashing firmware process is completed in a timely manner to prevent a timeout from occurring

NOTE:

On Wi-Fi capable pumps, Wi-Fi configuration will need to be re-transferred after firmware flashing.

NOTE:

If a cold start is performed after the firmware flashing, the log data will be erased. Users should download any pump logs needed before flashing firmware on the pumps.

1. Ensure that the desired firmware version is compatible with the pump.
2. Configure the pump as described in *Configuring the Syringe Pump for Detection* on page 14.
3. With the pump **OFF**, press the **ON/OFF** button and hold down the **RUN** button until 000 appears on the pump display.
4. Connect the pump to Technical Utility (see *Connecting the Pumps* on page 13).
5. Log in to Technical Utility as a general user.
6. Ensure that the pump is displayed in **Service Pumps**.
7. From **Service Pumps**, click **New Task**.
8. From the **New Task** dialog box, click **Flash Pump Firmware**.
9. From the **Flash Firmware Task Setup** dialog box, select the pump model from the dropdown list.
10. Select desired firmware version to load on the pump from the dropdown list.

NOTE: If the dropdown list of compatible firmware is empty, contact the Technical Utility administrator to add firmware to the database.

11. Click **Next**.
12. All connected pumps of the selected model are automatically selected. Untick any pumps that do not require flashing.
13. Click **Start**.
14. From the **Flash Firmware** dialog box, click **Continue** to flash the firmware on the pump.
15. Change the syringe pump to bootstrap mode by entering the code shown on the Technical Utility interface (see *Changing the Syringe Pump to Bootstrap Mode* on page 42).

Changing the Syringe Pump to Bootstrap Mode

1. On the syringe pump, utilize the **CHEVRON** keys and the **NEXT** soft key to enter **166** for external reprogramming.
2. Press the **OK** soft key.
3. From the **BOOTSTRAP CONTINUE** prompt on the pump display, press the **YES** soft key.
4. From the **SELECT INTERFACE** prompt, press the **RS232** soft key.
Bootstrap in Progress appears on the pump display and an alarm will sound.
5. From the **BAUD RATE** prompt, press the **115,200** soft key (for MK3 pumps only). MK4 pumps do not require the baud rate to be entered.
Bootstrap in Progress appears on the pump display and an alarm will sound.
6. Press the **ON/OFF** button for 3 seconds to silence the pump alarm.
The pump status in Technical Utility will display **Flashing Firmware (%)** in the Status field. The Flash firmware done message will appear in the Status field and the syringe pump will turn off when the firmware flashing has been completed. The pump disappears from Technical Utility because the pump is turned off.

NOTE:

Some pumps may require a cold start, see the technical service manual for instructions.

NOTE:

On Wi-Fi capable pumps, Wi-Fi configuration will need to be re-transferred after firmware flashing.

Flashing Firmware on Volumetric Pumps (GP/VP)

When new firmware is released to comply with new standards or features, the firmware will need to be flashed on the volumetric pumps. Flashing firmware on volumetric pumps GP and VP is a four-part process that consists of configuring Technical Utility, configuring the pump, flashing the firmware and reconfiguring the pump.

Configuring Technical Utility for Volumetric Pump Flashing

NOTE:

If a cold start is performed after the firmware flashing, the pump log data will be erased. Users should download any pump logs needed before flashing firmware on the pumps (wireless module logs are unaffected by the cold start).

1. Ensure that the firmware version is compatible with the pump.
2. Ensure that the pump is connected to an AC power source.
3. With the pump **OFF**, press the **ON/OFF** button and hold down the **RUN** button until **ACCESS CODE 000** appears on the pump display.
4. Connect the pump to Technical Utility (see *Connecting the Pumps* on page 13).
5. Log in to Technical Utility as a general user.
6. Wait for Technical Utility to complete pump detection.
7. Ensure that the pump is displayed under **Service Pumps**.
8. From **Service Pumps**, click **New Task**.
9. From the **New Task** dialog box, click **Flash Pump Firmware**.
10. From the **Flash Firmware Task Setup** dialog box, select the pump model from the dropdown list.
11. Select the firmware version to load on the pump from the dropdown list.
NOTE: If the dropdown list of compatible firmware is empty, contact the Technical Utility administrator to add firmware to the database.
12. Click **Next**.
13. All connected pumps of the selected model are automatically selected. Untick any pumps that do not require flashing.
14. Click **Start**.
15. From the **Flash Firmware** dialog box, click **Continue**.
16. When the message **Put the Pump in Flash Firmware Mode** appears in the **Status** field, turn **OFF** the pump by pressing the **ON/OFF** button and disconnect the AC power from the pump.
17. Configure the pump (see *Configuring the Volumetric Pump* on page 43).

Configuring the Volumetric Pump

NOTE:

Do not disconnect the RS232 cable.

1. On the GP or VP volumetric pump, remove the two case screws in the battery cover.
2. Remove the battery cover.
3. Disconnect the battery and remove the battery.
4. Remove the battery compartment plug.
5. In the rear case, through the battery compartment plughole, there is a set of three DIP switches. Switch 1 should be in the **ON** position and switches 2 and 3 should be in the **OFF** position.

6. Using a small flat-head screwdriver, configure the DIP switch settings to the following positions:
 - Switch 1 = **OFF**
 - Switch 2 = **ON**
 - Switch 3 = **ON**
7. Reconnect the battery to the battery cable.

NOTE:
Screen backlight will turn on and the pump alarm may start to sound.
8. Reconnect the AC power to the pump.
9. Flash the firmware on the pump (see *Flashing Firmware on the Volumetric Pump* on page 44).

Flashing Firmware on the Volumetric Pump

1. Briefly hold the **ON/OFF** button to silence the alarm and turn on the pump.
The Flashing Firmware % appears in the Status field in Technical Utility.

NOTE:

Screen backlight will remain on for the duration of the firmware flashing.

NOTE:

When firmware flashing is complete, Flash Firmware Done will briefly appear in the pump's Status field followed by the pump's disappearance from Technical Utility.

2. When the flashing firmware task has been completed, disconnect the battery from the battery cable.
3. Disconnect the AC power from the pump.
4. Configure all three DIP switches to **OFF**.
5. Wait 5 seconds and reconnect the battery to the battery cable.
6. Reconnect the AC power to the pump.
7. Configure the DIP switch settings to:
 - Switch 1 = **ON**
 - Switch 2 = **ON** and then quickly switch to **OFF**
 - Switch 3 = **OFF**

NOTE:

Pump alarm may sound. Silence the alarm by briefly pressing and holding the **ON/OFF** button.

8. Refit the battery compartment plug into the battery compartment hole to prevent fluid ingress.
9. Place the battery cover back onto the pump.
10. Screw the two case screws into the battery cover.
11. Disconnect the RS-232 cable and refit the port cover on the pump.
12. Reconfigure the pump (see *Reconfiguring the Volumetric Pump* on page 44).

Reconfiguring the Volumetric Pump

1. Press the **ON/OFF** button and hold down the **RUN** button until **ACCESS CODE 000** appears on the pump display.

NOTE:

If pump alarm sounds due to its internal clock (RTC) reset, press the **CANCEL** soft key to dismiss the alarm.

2. Utilize the **CHEVRON** keys and **NEXT** soft key to enter **212**.
3. Press the **OK** soft key to enter service mode.
4. From the **SERVICE** menu, use the **CHEVRON** keys to scroll to **Configuration** and press the **OK** soft key.

5. From the **CONFIGURATION** menu, use the **CHEVRON** keys to scroll to **Date/Time** and press the **OK** soft key.
6. Use the **CHEVRON** keys to enter the current date and time and press the **OK** soft key when finished.
7. Use the **CHEVRON** keys to scroll to **Software Versions** and press the **OK** soft key.
Software versions appear on the pump display.
8. Verify that the software version shown on the pump display is correct and then press the **OK** soft key.
9. Use the **CHEVRON** keys to scroll to **Serial Number** and press the **OK** soft key.
10. Verify that the serial number on the pump display matches the black label on the pump and press the **OK** soft key.
Write Success (√) appears on the pump display.
11. Press the **PASS** soft key.
12. From the **CONFIGURATION** menu, press the **QUIT** soft key.
13. From the **SERVICE** menu, press the **QUIT** soft key.
14. Calibrate the pump following the procedure in the technical service manual for the appropriate pump.

NOTE:

Some pumps may require a cold start, see the technical service manual for instructions.

NOTE:

On Wi-Fi capable pumps, Wi-Fi configuration package will need to be re-transferred after firmware flashing.

Flashing Firmware on GW Pumps

When new firmware is released to comply with new standards or features, the firmware will need to be flashed on the pumps.

NOTE:

Firmware flashing erases the log data on the pump. Users should download any logs needed before flashing the pumps.

Before flashing firmware on a GW pump it must first be configured for detection, (see *Configuring the GW Pump for Detection* on page 14).

1. Ensure that the firmware version to be transferred is compatible with the pump.
2. With the pump **OFF**, press the **ON/OFF** button and the down (v) **CHEVRON** key at the same time until the number zero (0) appears on the pump display.
3. Connect the pump to Technical Utility (see *Connecting the Pumps* on page 13).
4. Log in to Technical Utility as a general user.
5. Ensure that the pump is displayed in **Service Pumps**.
6. From **Service Pumps**, click **New Task**.
7. From the **New Task** dialog box, click **Flash Pump Firmware**.
8. From the **Flash Firmware Task Setup** dialog box, select the pump model from the dropdown list.
9. Select the firmware version to load on the pump from the dropdown list.
10. Click **Next**.
11. All connected pumps of the selected model are automatically selected. Untick any pumps that do not require flashing.
12. Click **Start**.

13. From the **Flash Firmware** dialog box, click **Continue**.

The Flash Upload Controller appears in the computer task bar, while the message **Flashing Firmware %** appears in the Status field.

When the **Flashing Firmware** reaches 10%, power cycle the pump by turning the pump **OFF** and then turning the pump **ON** again. **PROG** appears on the pump display. A green progress bar appears in the **Flash Upload Controller** dialog box, while the **Flashing Firmware 10%** continues to be displayed in **Technical Utility**. **Flashing Firmware Complete** is displayed when the flashing has been completed, the pump turns **OFF** and the pump no longer appears in **Technical Utility**.

NOTE:

Power cycling the pump must be performed within 6 minutes. Otherwise, the service task will time out. If **PROG** does not appear on the pump display, power cycle the pump again.

14. Press the **ON/OFF** button and the down (v) **CHEVRON** key at the same time. The new firmware version number appears on the pump display before the number zero (0) appears.

Performing Wi-Fi Tasks

Technical Utility is used to perform Wi-Fi configuration tasks such as entering network SSID or password, creating a Wi-Fi package with up to 8 profiles and transferring Wi-Fi configurations. Wireless network settings may be periodically changed by the IT department for security reasons. In this instance, the pumps must be updated with the new information.

If upcoming updates are known in advance, multiple network settings profiles can be added by the administrator as part of the Wi-Fi configuration package. This will allow the pumps to use the new configuration once it is activated by hospital IT.

Pumps may roam between different Wi-Fi networks within the hospital while maintaining connection to **Communication Engine** if the corresponding configuration profiles are added to the Wi-Fi configuration package.

NOTE:

The Wi-Fi package is created by the administrator, while Wi-Fi tasks are performed by a general user.

Switching Pumps to Wi-Fi Module Update Mode

Technical Utility only has the ability to communicate with the pump and the wireless module at different times. The pumps must be switched to **Wi-Fi Module Update Mode** when prompted by **ATU** to perform Wi-Fi tasks.

NOTE:

The connection between the pump and **Technical Utility** will time out if the pumps are not configured within six minutes.

Switching the Syringe Pump to Wi-Fi Module Update Mode

1. On the syringe pump, from **Service Mode 000**, utilise the **CHEVRON** keys and the **NEXT** soft key to enter 376.
2. Press the **OK** soft key. This displays the service configuration menu on the pump.
3. Use the down (v) **CHEVRON** to navigate to **Wi-Fi Module Update**.
4. Press the **OK** soft key.

Switching the Volumetric Pump to Wi-Fi Module Update Mode

1. On the volumetric pump, from **Service Mode 000**, utilize the **CHEVRON** keys and the **NEXT** soft key to enter 212.
2. Press the **OK** soft key. This displays the service configuration menu on the pump.
3. Use the down (v) **CHEVRON** to navigate to **Wi-Fi Module Update** menu option
4. Press the **OK** soft key.

Transferring Wi-Fi Configurations

Once a Wi-Fi configuration package is created by the administrator user, it is stored in the ATU library. Use Technical Utility to select and transfer a Wi-Fi configuration package to wireless enabled BD neXus pumps. The wireless module settings are then updated on the wireless pumps based on the Wi-Fi configuration package that was transferred.

NOTE:

Users should download any logs needed before wireless configuration transfer.

1. Ensure that the Wi-Fi configuration package to be transferred is compatible with the pump.
2. With the pump **OFF**, press the **ON/OFF** button and hold down the **RUN** button until access code 000 appears on the pump display.
3. Connect the pump to Technical Utility (see *Connecting the Pumps* on page 13).
4. Log in to Technical Utility as a general user.
5. Ensure that the pump is displayed in the **Pumps** menu item.
6. From **Pumps**, click **Service Pumps**.
7. Click **New Task**.
8. From the **New Task** dialog box, click **Transfer Wi-Fi Configuration**.
9. From the **Transfer Wi-Fi Configuration** task setup dialog, select the Wi-Fi configuration package to transfer.
10. Click **Next**.
11. All compatible connected pumps are automatically selected. Untick any pumps that do not require a Wi-Fi Configuration package transfer.
12. Click **Start**. The pump must be configured to Wi-Fi Module Update Mode to perform Wi-Fi tasks. When the “Ready to transfer Wi-Fi Configuration” message appears in the status field, enter the Wi-Fi Module update mode from the pump display. See *Switching Pumps to Wi-Fi Module Update Mode* on page 46.

Transfer Wi-Fi Configuration

To transfer the WIFI configuration package, the pumps will first need to be placed in WIFI Module Update mode.

Step 1 - On the Alaris Pump

For Syringe Pump:



- Enter 376 on the pump using the CHEVRON keys and NEXT soft key
- Press the OK soft key
- Navigate with CHEVRON keys and select WIFI MODULE UPDATE from the menu
- Press the OK soft key

For Volumetric Pump:



- Enter 212 on the pump using the CHEVRON keys and NEXT soft key
- Press the OK soft key
- Navigate with CHEVRON keys and select WIFI MODULE UPDATE from the menu
- Press the OK soft key

When all connected pumps are placed in Wi-Fi Module Update mode click the NEXT button below.

Cancel

Next

13. Once the pumps are in the Wi-Fi Module Update mode, click **Next** twice to start transferring the Wi-Fi configuration package. When the Technical Utility task has been completed, press the **QUIT** soft key twice on the pumps.

NOTE: Technical Utility only has the ability to communicate with the pump and the wireless module at different times. Once the Wi-Fi task has been completed, the pumps will disappear from Technical Utility and will not reappear until the **QUIT** soft key is pressed on the pumps.

Clearing Wi-Fi Configuration Package

If a certain Wi-Fi configuration package becomes obsolete, Technical Utility can be used to delete the Wi-Fi configuration package for the selected pumps.

NOTE:

Deleting Wi-Fi configuration package erases the wireless package log data on the pump. Users should download any logs needed before deleting the Wi-Fi configuration package from the pumps.

1. Click **Pumps**, then click **Service Pumps**.
2. Click **New Task**.
3. From the **New Task** dialog box, click **Clear Wi-Fi Configuration**.
4. From **Clear Wi-Fi Configuration**, select the pumps that require their Wi-Fi configuration package to be removed.
5. The pump must be configured to Wi-Fi Module Update Mode to perform Wi-Fi tasks. When the “Ready to clear Wi-Fi Configuration” message appears in the status field, enter the Wi-Fi Module update mode from the pump display. See *Switching Pumps to Wi-Fi Module Update Mode* on page 46.
6. Click **Next** to start clearing the wireless package.
7. Initializing and then Data Sent messages are shown in the status field, and the status bar shows the deletion progress. A Completed message is displayed when all the Wi-Fi configurations for the selected pumps are removed.
8. When the Technical Utility task has been completed, press the **QUIT** soft key twice on the pumps.

NOTE:

Technical Utility only has the ability to communicate with the pump and the wireless module at different times. Once the Wi-Fi task has been completed, the pumps will disappear from Technical Utility and will not reappear until the **QUIT** soft key is pressed on the pumps.

Updating Wi-Fi Software

After the Administrator imports Wi-Fi software for the required pump’s wireless module, it is stored in the Wi-Fi software library. Use Technical Utility to update the software to the required pumps to ensure their Wireless module’s software is updated.

NOTE:

Updating Wi-Fi software on selected pumps erases the previous Wi-Fi software log data on the pump. Users should download any logs needed before updating the Wi-Fi software on the pump.

1. Ensure that the Wi-Fi software to be updated is compatible with the pump.
2. With the pump **OFF**, press the **ON/OFF** button and hold down the **RUN** button until 000 appears on the pump display.
3. Connect the pump to Technical Utility (see *Connecting the Pumps* on page 13).
4. Log in to Technical Utility as a general user.
5. Ensure that the pump is displayed in the **Service Pumps** menu item.
6. Click **Pumps**, then **Service Pumps**.
7. Click **New Task**.

8. From the **New Task** dialog box, click **Update Wi-Fi Software**.
9. From the **Update Wi-Fi Software** dialog box, select the pump model.
10. Select the Wi-Fi software version to load on the pump from the dropdown list.
11. Click **Next**.
12. All compatible pumps are automatically selected. Untick any pumps that do not require a Wi-Fi Software update.
13. The pump must be configured to Wi-Fi Module Update Mode to perform Wi-Fi tasks. When the “Ready to update Wi-Fi Software” message appears in the status field, enter the Wi-Fi Module update mode from the pump display. See *Switching Pumps to Wi-Fi Module Update Mode* on page 46.
14. Click **Next** to start updating the Wi-Fi Software.
When the Technical Utility task has been completed, press the **QUIT** soft key twice on the pumps.
15. Initializing and then Data Sent messages are shown in the status field, and the status bar shows the progress. An ‘Update Wi-Fi Software done’ message is displayed when all the Wi-Fi Software for the selected pumps are updated.

NOTE:

The pumps will disappear from Technical Utility and will not reappear until the **QUIT** soft key is pressed on the pumps.

Downloading Wireless Module Logs

Wireless module logs are useful for investigating an event or troubleshooting issues with wireless modules on the pump.

Once the wireless module logs are downloaded from the pump, the logs are stored in the *Technical Utility Logs\Wireless_Module* folder of the machine where Technical Utility was installed and are available at any time.

1. Click **Pumps**, then click **Service Pumps**.
2. Click **New Task**.
3. From the **New Task** dialog box, click **Download Wireless Module Logs**.
4. All compatible pumps are automatically selected. Untick pumps that are not required.
5. The pump must be configured to Wi-Fi Module Update Mode to perform Wi-Fi tasks. When the “Ready to Download Wireless Card Logs” message appears in the status field, enter the Wi-Fi Module update mode from the pump display. See *Switching Pumps to Wi-Fi Module Update Mode* on page 46.
6. Once the pumps are in the Wi-Fi Module Update mode, click **Next** to start downloading wireless module logs. When the Technical Utility task has been completed, press the **QUIT** soft key twice on the pumps.

NOTE:

The pumps will disappear from Technical Utility and will not reappear until the **QUIT** soft key is pressed on the pumps.

NOTE:

Downloading Wireless Module Logs is displayed in the status field and the status bar shows the logs download progress. When the download is complete, “Download Wireless Card Logs Complete” is displayed in the Status field. Click on the link to view the log details.

Chapter 5

Pump Logs

Pump logs contain event, key, fluid, service and system information for a connected pump. The pump logs can be used to troubleshoot a pump or to help investigate an event.

Viewing Downloaded Pump Logs

NOTE: The user can view previously downloaded pump logs that are stored in the database in the **Pumps** menu. The user must first download the pump logs from the connected pump before pump logs can be viewed (see *Download Pump Event Logs* on page 41).

1. Click **Pumps**, then **View Pump Event Logs**.
2. From **View Pump Event Logs**, select the type of logs to view (All Logs, Event, Key, Fluid, Service or System).
 - Optional: Click **Start Date** and **End Date** to view pump logs for a specific date range.
 - Optional: Select a pump model from the **Pump Model** dropdown list.
 - Optional: Enter the pump serial number in the **Serial Number** field to view only the pump logs for a specific pump.

3. Click **Apply**.

The pump logs are displayed in the **View Pump Event Logs** list.

Sorting Pump Logs

Pump logs can be displayed in the list using any of the fields: Event No, Event Date/Time, Last Downloaded, Pump Model, Serial Number, Code, Event Log Type or description.

1. Click the field name to sort the pump logs using the selected field.
2. Click the up/down CHEVRON (^) (v) beside the field name to change the sort order to ascending or descending order.

Exporting Pump Logs

Pump logs can be exported in comma-separated values (CSV), Excel® or PDF files and saved to a location on the computer.

NOTE:

Microsoft Excel and PDF reader software are required to view Excel and PDF file formats.

1. Click **Pumps**, then click **View Pump Event Logs**. Display the pump logs to export in the pump logs list.
2. Click **Export**.
3. From the **Save As** dialog box, select a location on the computer to save the exported pump logs.
4. Select the file type (CSV, Excel or PDF) from the **Save as type** dropdown list.
5. Click **Save**.

The pump log file is saved to the specified location and a message appears notifying that the Exported Report Successfully Saved.

NOTE:

If the user forgets the location where the exported pump log file was saved, the location can be viewed in the Settings dialog box or an export report can be run.

Printing Pump Logs

Pump logs can be printed using Technical Utility.

1. Click **Pumps**, then click **View Pumps Logs**. Display the pumps logs to print in the pump logs list.
2. Click **Print**.
3. From the **Print** dialog box, select the printer name from the **Name** dropdown list and click **OK**.
The pump log is sent to the selected printer for printing.

Chapter 6

ATU Reports

Service Reports

Service reports document service tasks such as flashing pump firmware, pump logs downloaded, wireless neXus pumps configuration tasks, update Wi-Fi software and download wireless module logs service tasks that were performed on a pump during a Technical Utility session.

The user can generate service and administration reports that can be filtered by date range, user name, SN, Service Task, Initial Firmware, Updated Firmware, Log Type and Status.

Generating a Service Report for All Service Tasks

The user can generate a report showing all service tasks that were performed using Technical Utility.

1. Click **ATU Reports**, then click **Service Reports**.
2. Select **All Service Reports** for the report type.
 - Optional: enter start and end dates and the pump model to filter the search results.
3. Click **Apply**.

The service report displaying all of the service tasks appears in the list.

Generating a Service Report for Pump Firmware Flashing

The flash pump firmware report displays all pumps that were flashed during a Technical Utility session.

1. Click **ATU Reports**, then click **Service Reports**.
2. Select **Flash Pump Firmware** for the report type.
 - Optional: enter start and end dates and the pump model to filter the search results.
3. Click **Apply**.

The service report is displayed in the list.

Generating a Service Report for Pump Logs Downloaded

The user can generate a service report that displays when pump logs were downloaded.

1. Click **ATU Reports**, then click **Service Reports**.
2. Select **Pump Logs Downloaded** for the report type.
 - Optional: enter start and end dates, pump model and log type (all logs, event, key press, fluid or service) to filter the search results.
3. Click **Apply**.

The service report is displayed in the list.

Generating a Service Report for Transferred Wi-Fi Configurations

The Wi-Fi Configurations Transfer report displays all Wi-Fi Configuration packages that have been transferred to neXus pumps.

1. Click **ATU Reports**, then click **Service Reports**.

2. Select **Transfer Wi-Fi Configuration** for the report type.
 - Optional: enter start and end dates and the pump model to filter the search results.
3. Click **Apply**.

The service report is displayed in the list.

Generating a Service Report for Cleared Wi-Fi Configurations

The Cleared Wi-Fi Configurations report displays all Wi-Fi configuration package that have been deleted from a specific or multiple neXus pumps.

1. Click **ATU Reports**, then click **Service Reports**.
2. Select **Clear Wi-Fi Configuration** for the report type.
 - Optional: enter start and end dates and the pump model to filter the search results.
3. Click **Apply**.

The service report is displayed in the list.

Generating a Service Report for Updated Wi-Fi Software

The Updated Wi-Fi software report displays all Wi-Fi software that has been updated for a specific or multiple neXus pumps.

1. Click **ATU Reports**, then click **Service Reports**.
2. Select **Update Wi-Fi Software** for the report type.
 - Optional: enter start and end dates and the pump model to filter the search results.
3. Click **Apply**.

The service report is displayed in the list.

Generating a Service Report for Downloaded Wireless Module Logs

The user can generate a service report that displays when wireless module logs were downloaded.

1. Click **ATU Reports**, then click **Service Reports**.
2. Select **Download Wireless Module Logs** for the report type.
 - Optional: enter start and end dates and the pump model to filter the search results.
3. Click **Apply**.

The service report is displayed in the list.

Sorting a Service Report

The user can sort the service reports displayed in the reports list using any of the fields: Date/Time, User, Pump Model, serial number (SN), Initial Firmware, Updated Firmware, Status or Details.

1. Click the field name to sort the service reports using the selected field.
2. Click the up/down CHEVRON (^)/(v) next to the field name to change the sort order to ascending or descending order.

Exporting a Service Report

Service reports can be exported in comma-separated values (CSV), Excel or PDF file formats and saved to a location on the computer.

NOTE:

Microsoft Excel and PDF reader software is required to view Excel and PDF file formats.

1. Click **ATU Reports**, then click **Service Reports** to display the service reports to export.
2. Click **Export**.
3. From the **Save As** dialog box, select the desired location on the computer to save the exported reports.
4. Select the file type (CSV, Excel or PDF) from the **Save as type** dropdown list.
5. Click **Save**.

The report file is saved to the specified location and a message appears notifying that the Exported Report Successfully Saved.

NOTE:

If the user forgets the location where the exported report was saved, the location can be viewed in the Settings dialog box, or an export report can be run.

Administrative Reports

The administrative reports document activities such as exported reports, imported firmware, wireless module software and documentation that were exported, firmware uploading, imported documentation and user actions performed in Technical Utility. Reports can be filtered by date/time, user, report type, file name and stored location.

Generating an Export Report

View the location where reports were exported and saved to:

1. Click **ATU Reports**, then click **Administrative Reports**.
2. Select **Export Reports** for the report type.
 - Optional: enter start and end dates, user name and report type to filter the search results.
3. Click **Apply**.

The exported reports appear in the reports list.

Generating a Library Management Report

Actions captured on the library management report include: importing and deleting details for firmware, importing, deleting and editing details for Wi-Fi configuration, and importing and deleting details for documentation. The user who performed the action is also displayed.

Library management reports generated by a general user only display the actions that they performed; whereas, an administrator user's report includes actions performed by all users.

The user must be logged in to Technical Utility as an administrator to generate the library management report that displays actions performed by all users.

1. Click **ATU Reports** , then click **Administrative Reports**.
2. Select **Library Management** for the report type.
 - Optional: enter start and end dates, user name, report type to filter the search results.
3. Click **Apply**.

The library management report is displayed in the reports list.

Generating a User Management Report

User management reports track user actions such as login attempts and when new user accounts are created.

1. Click **ATU Reports** , then click **Administrative Reports**.
2. Select **User Management** for the report type.
 - Optional: enter start and end dates, user name, action to filter the search results.
3. Click **Apply**.

The user management report is displayed in the reports list.

Sorting an Administrative Report

After generating any of the administrative reports (export report, library management report or user management report), the user can sort the report contents using any of the column names such as date/time, user, report type, file name or stored location.

1. Click **ATU Reports**, click **Administrative Reports**, select the report type and click **Apply**.
2. In the reports list, click the field name to sort the report entries based on the selected field. The entries are sorted in alphabetical order (A to Z) when the field contains text and in numerical order (lowest to highest) when the field contains numbers.
3. Click the CHEVRON (^) next to the field name to change the sort order to ascending or descending order.

The entries appear in the list sorted by the selected field.

Exporting an Administrative Report

Administrative reports can be exported in comma-separated values (CSV), Excel or PDF file formats and saved to a location on the computer.

NOTE:

Microsoft Excel and PDF reader software is required to view Excel and PDF file formats.

1. Click **ATU Reports**, then click **Administrative Reports**, display the administrative reports to export in the reports list.
2. Click **Export**.
3. From the **Save As** dialog box, select the desired location on the computer to save the exported reports.
4. Select the file type (CSV, Excel or PDF) from the **Save as type** dropdown list.
5. Click **Save**.

The report file is saved to the specified location and a message appears notifying that the Exported Report Successfully Saved.

NOTE:

If the user forgets the location where the exported report was saved, the location can be viewed in the Settings dialog box or an export report can be run.

Chapter 7

Library

Technical Utility Library for General Users

Technical Utility offers a repository for pump firmware, Wi-Fi configuration package, Wi-Fi software and technical documentation that can be managed over time.

NOTE:

General users only have the permissions to import or delete documentation.

Syringe and Volumetric Firmware

The Technical Utility Firmware library displays all the firmware files currently available to Technical Utility users. There are menu items for Syringe Firmware and for Volumetric Firmware.

NOTE:

Ensure that the latest version of pump firmware is stored in the Technical Utility library. Contact GCS for the latest firmware updates.

Viewing Syringe and Volumetric Pump Firmware

General users can view syringe and volumetric pump firmware versions that are available for flashing using Technical Utility.

1. Click **Library**.
2. Click **Syringe Firmware** or **Volumetric Firmware**.

The available firmware files are shown in a list.

Viewing Wi-Fi Configurations

General users can view the Wi-Fi configuration package that is used to connect neXus pumps to the hospital network.

1. Click **Library**.
2. Click **Wi-Fi Configuration**.

The available wireless configuration package is displayed.

Viewing Wi-Fi Syringe and Volumetric Software

General users can view available software updates that can be applied to the wireless software of the pumps. Software updates must be completed to ensure that communication security is maintained.

1. Click **Library**.
2. Click **Wi-Fi Syringe Software** or **Wi-Fi Volumetric Software**.

The software, date and version is displayed in a list.

Documentation

General users have the ability to import and delete documentation in Technical Utility. Documentation must be in PDF format to import into Technical Utility.

NOTE:

- Ensure that the latest version of documentation is stored in the Technical Utility library. The Technical Service Manuals are available in electronic format online at: <http://www.bd.com/int-alaris-technical>.
- A user name and password are required to access the manuals. Please contact GCS to obtain login details.

Importing Pump Documentation

When new pump documentation becomes available, import the documentation into the Technical Utility library.

NOTE:

Documentation must be in PDF format to import into Technical Utility.

1. Click **Library**, then click **Documentation**.
2. Click **Import**.
3. From the **Import Document** dialog box, click **Browse**.
4. From the **Open** dialog box, navigate to the location on the computer where the documentation is stored.
5. Double-click the documentation to import.
6. From the **Import Document** dialog box, enter the document number for the imported documentation.
 - Optional: enter the issue number and document title.
7. Click **Import**.

The imported documentation appears in the document list and a message appears notifying that the document has been imported successfully.

Deleting Pump Documentation

When new pump documentation becomes available, the user can delete the existing documentation from the Technical Utility library.

1. Click **Library**, then click **Documentation**.
2. Select the tick box next to the documentation to delete.
3. Click **Delete**.
4. From the **Delete Document** dialog box, click **Delete**.

The documentation is deleted from the list and a message appears notifying that the document has been deleted successfully.

Technical Utility Library for Administrative Users

Administrators have the permissions to manage firmware, Wi-Fi software updates, Wi-Fi configuration package and documentation in the Technical Utility library.

The Technical Utility Firmware library displays all the firmware files currently available to Technical Utility users. There is an option for Syringe Firmware and Volumetric Firmware. Administrators have the ability to import and delete firmware. They cannot service pumps using the administrator user role.

The Technical Utility Wi-Fi Software library displays all the Wi-Fi software files currently available to Technical Utility users. There are options for Syringe Wi-Fi software and Volumetric Wi-Fi Software. Administrators have the ability to import and delete Wi-Fi software.

The Technical Utility Wi-Fi Configuration package library displays all available Wi-Fi configuration packages that are available to Technical Utility users. Administrators have the ability to maintain a current Wi-Fi configuration package and their associated package profiles, as well as the ability to create and delete existing Wi-Fi configuration packages.

Administrators can also import and delete relevant pump service documentation into the library for the users to access. Multiple firmware, Wi-Fi software files and documentation (in PDF format) can be imported at the same time.

Importing Firmware onto Technical Utility for Syringe and Volumetric Pumps

NOTE:

Ensure that the latest version of pump firmware is stored in the Technical Utility library. Contact GCS for the latest firmware updates.

1. Click **Library**.
2. Click either **Syringe Firmware** or **Volumetric Firmware**. Click **Import**.
3. From the **Import Firmware** dialog box, select the pump model from the dropdown list.
4. Import the file by browsing the computer or network.
5. For syringe only, select the hardware type.
6. Click **Import**.

The selected firmware is imported into the Technical Utility library.

Deleting Firmware from Technical Utility for Syringe and Volumetric Pumps

1. Click **Library**.
2. Click either **Syringe Firmware** or the **Volumetric Firmware** option.
3. In the list of firmware files, select the tick box for the firmware version to be deleted.
4. Click **Delete**.
5. From the **Delete Firmware Version** dialog box, click **Delete**.

The firmware version is deleted from the firmware files list and a message appears notifying that the firmware version was deleted successfully.

NOTE:

If a firmware file is deleted in error, contact GCS for assistance in recovering the file.

Wi-Fi Configuration Packages and Profiles

Administrative users have the ability to create a new Wi-Fi configuration package that is used to store the associated package profiles.

Create New Wi-Fi Configuration Package

To set up a wireless connection, follow the directions below.

1. Click **Library**.
2. Click **Wi-Fi Configuration**.
3. Click **New**.

4. Enter desired connection name in the **Package Name** field.

NOTE: There are character limitations for **Wi-Fi Configuration Package** fields. See *Creating a New User Account* on page 73 for parameters.

5. Click **Add**.

New Create Profile window appears.

6. Create a profile.

- a. Type a profile name.
- b. Add settings in the **Wireless, Network** and **Server** sections. See *Network Options* on page 60.
- c. Click **Save Profile** to save the package or **Cancel** to cancel the operation.

A warning screen will appear if **Cancel** is selected. Click **Yes** to cancel, click **No** to stay in **Edit Profile**.

Update Wi-Fi Configuration Package

1. Click **Library**.
2. Click **Wi-Fi Configuration**.
3. In the list of Wi-Fi configuration packages, select the tick box for the desired package.
4. Click **Edit**.
5. In the list of profiles, select the tick box for the profile for which an update is required.
6. Click **Edit**.
7. Make updates to fields.
8. Click **Save Profile** to save the package or **Cancel** to cancel the operation.

Warning screen will pop up if **Cancel** is selected. Click **Yes** to cancel, click **No** to stay in **Edit Profile**.

Delete Wi-Fi Configuration Package

1. Click **Library**.
2. Click **Wi-Fi Configuration**.
3. In the list of Wi-Fi configuration packages, select the tick box for the Wi-Fi configuration package to be deleted.
4. Click **Delete**.

NOTE:

If a Wi-Fi configuration package is deleted in error, contact GCS for assistance in recovering the file.

Duplicate Wi-Fi Configuration Package

1. Click **Library**.
2. Click **Wi-Fi Configuration**.
3. Identify the wi-fi configuration package to be duplicated, then select the tick box. In the list of Wi-Fi configuration packages, select the tick box for the Wi-Fi configuration package to be duplicated.
4. Click **Duplicate**.

New duplicate package will appear.

Duplicate Package Profile

1. Click **Library**.
2. Click **Wi-Fi Configuration**.
3. In the list of Wi-Fi configuration packages, select the tick box for the Wi-Fi configuration package which contains the profile to duplicate.
4. Click **Edit**.
5. In the list of profiles, select the tick box for the profile to be duplicated.
6. Click **Duplicate**.
 New duplicate profile will appear.

The table below represents network options supported by Technical Utility. Individual network options should be obtained from the network administrator.

Network Options

Section	Setting	Options
Wireless	SSID	Manual Entry(1)
	Security	WPA2-PSK
		WPA2 – EAP – TLS
		WPA2 – EAP – TTLS
		WPA2 – EAP – FAST
		WPA2 – PEAP
		WPA – EAP – TLS
		WPA – EAP – TTLS
		WPA – PEAP
		WEP
		No Security
Network	IP Address	DHCP
		Static IP
	DNS Server	Automatic Entry
		Manual Entry
Server	Host Name	Manual Entry
	Server Port	Automatic Entry

(1) Profiles for SSID Wi-Fi Configuration Packages

If the Wireless Configuration Package contains multiple profiles, the BD Alaris neXus pump will try to connect to a wireless network using the configuration from the profiles in the defined order. If the pump cannot connect to the first profile, it will try connecting to the 2nd and so on. (If 2 profiles are set up with the same wireless configuration, the 2nd profile will usually never be used.)

Wireless Network Security Options

The following sections provide an overview of the wireless network options supported by Technical Utility. Wireless network configuration parameters should be obtained from the network administrator.

Identify the network options which have been configured by the administrator from the options below.

WPA2-PSK

Enter the details provided by the network administrator.

1. Type the SSID name.
2. From the Security dropdown, select **WPA2-PSK**.
3. Select Encryption Type from the dropdown menu.
4. Enter the Passphrase in the WPA2 PSK Passphrase field.

The screenshot displays the 'Wireless' configuration window. On the left, there are four main sections: 'SSID*' with a text input field containing 'eir19806239-5G'; 'Security*' with a dropdown menu set to 'WPA2 - PSK'; 'Encryption Type' with a dropdown menu set to 'AES'; and 'WPA2 PSK Passphrase*' with a text input field containing seven dots and a 'Show' button, and an unchecked 'Hex' checkbox. On the right side, there are two bulleted lists. The first list, titled 'SSID names support the following', includes: Latin Alphabet Uppercase/Lowercase characters, ASCII Digits 0-9, Optional special characters: - _ = +, and SPACE cannot be the first or last character but is allowed between two characters. The second list, titled 'Passphrase supports the following:', includes: Latin Alphabet Uppercase/Lowercase characters, ASCII Digits 0-9, Optional special characters: \ @ % [] : . . { } - _ = ` & () ' < > ; \$ * ? ~ # + " / ! | ^, and SPACE cannot be the first or last character but is allowed between two characters.

WPA2-EAP-TLS

Enter the details provided by the network administrator.

1. Type the SSID name.
2. From the Security dropdown, select **WPA2-EAP-TLS**.
3. Select Encryption Type from the dropdown menu.
4. Type the Identity name.
5. Upload the User Certificate
 - a. Click **Browse**.
 - b. Select the file to be uploaded. Click **OK**.
 - c. Ensure that the desired format is chosen from the dropdown menu.
 - d. Enter the passphrase provided by the administrator.
6. If Server Certificate Validation is desired, select the tick box.
7. Upload the Certificate Authority.
 - a. Click **Browse**.
 - b. Select the file to be uploaded. Click **OK**.
 - c. Ensure that the desired format is chosen from the dropdown menu.

Wireless ⌵

SSID*

- SSID names support the following
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: - _ = +
 - SPACE cannot be the first or last character but is allowed between two characters
- Passphrase supports the following:
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: \ @ % [] : . , { } - _ = ' & () ' < > ; \$ * ? ~ # + " / ! | ^
 - SPACE cannot be the first or last character but is allowed between two characters

Security*

Encryption Type

Identity*

	Upload File*	Format*	Passphrase*
User Certificate	<input type="text"/> Browse	PKCS12 <input type="text"/>	<input type="text"/> Show
<input type="checkbox"/> Validate Server Certificate			
Certificate Authority*	<input type="text"/> Browse	BER <input type="text"/>	

WPA2-EAP-TTLS

Enter the details provided by the network administrator.

1. Type the SSID name.
2. From the Security dropdown, select **WPA2-EAP-TTLS**.
3. Select Encryption Type from the dropdown menu.
4. Type the Identity name.
5. If Server Certificate Validation is desired, select the tick box.
6. Upload the Certificate Authority.
 - a. Click **Browse**.
 - b. Select the file to be uploaded. Click **OK**.
 - c. Ensure that the desired format is chosen from the dropdown menu.
7. Enter the User Name and Password.

Wireless

SSID*

eir19806239-5G

Security*

WPA2 - EAP - TTLS

Encryption Type

AES

Identity*

Validate Server Certificate

Certificate Authority*

Browse BER

Inner Authentication

User Name*

Password*

Show

- SSID names support the following
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: - _ = +
 - SPACE cannot be the first or last character but is allowed between two characters
- Passphrase supports the following:
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: \ @ % [] : . , { } - _ = ` & () ' < > ; \$ * ? ~ # + " / ! | ^
 - SPACE cannot be the first or last character but is allowed between two characters

WPA2-EAP-FAST

Enter the details provided by the network administrator.

1. Type the SSID name.
2. From the Security dropdown, select **WPA2-EAP-FAST**.
3. Select Encryption Type from the dropdown menu.
4. Type the User Name and Password.
5. If PAC File is desired, select the tick box.
6. Upload the PAC File.
 - a. Click **Browse**.
 - b. Select the file to be uploaded. Click **OK**.
7. Enter the password.

Wireless ⬆

SSID*

- SSID names support the following
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: - _ = +
 - SPACE cannot be the first or last character but is allowed between two characters
- Passphrase supports the following:
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: \ @ % [] : . . { } - _ = ` & () ' < > ; \$ * ? ~ # + " / ! | ^
 - SPACE cannot be the first or last character but is allowed between two characters

Security*

WPA2 - EAP - FAST ⬇

Encryption Type

AES ⬇

User Name*

WPA2-PEAP

Enter the details provided by the network administrator.

1. Type the SSID name.
2. From the Security dropdown, select **WPA2-PEAP**.
3. Select Encryption Type from the dropdown menu.
4. Type the Identity name.
5. If Server Certificate Validation is desired, select the tick box.
6. Upload the Certificate Authority.
 - a. Click **Browse**.
 - b. Select the file to be uploaded. Click **OK**.
 - c. Ensure that the desired format is chosen from the dropdown menu.
7. Select the Type from the dropdown menu.
8. Enter the User Name and Password.

Wireless ⬆

SSID*

- SSID names support the following
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: - _ = +
 - SPACE cannot be the first or last character but is allowed between two characters
- Passphrase supports the following:
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: \ @ % [] : . { } - _ = ' & () ' < > ; \$ * ? ~ # + " / ! | ^
 - SPACE cannot be the first or last character but is allowed between two characters

Security*

Encryption Type

Identity*

Validate Server Certificate

Certificate Authority*

Inner Authentication

Type

User Name*

Password*

WPA-EAP-TLS

Enter the details provided by the network administrator.

1. Type the SSID name.
2. From the Security dropdown, select **WPA-EAP-TLS**.
3. Select Encryption Type from the dropdown menu.
4. Type the Identity name.
5. Upload the User Certificate
 - a. Click **Browse**.
 - b. Select the file to be uploaded. Click **OK**.
 - c. Ensure that the desired format is chosen from the dropdown menu.
 - d. Enter the passphrase provided by the administrator.
6. If Server Certificate Validation is desired, select the tick box.
7. Upload the Certificate Authority.
 - a. Click **Browse**.
 - b. Select the file to be uploaded. Click **OK**.
8. Ensure that the desired format is chosen from the dropdown menu.

Wireless ⤴

SSID*

- SSID names support the following
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: - _ = +
 - SPACE cannot be the first or last character but is allowed between two characters
- Passphrase supports the following:
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: \ @ % [] : , . { } - _ = ` & () ' < > ; \$ * ? ~ # + " / ! | ^
 - SPACE cannot be the first or last character but is allowed between two characters

Security*

Encryption Type

Identity*

	Upload File*	Format*	Passphrase*
User Certificate	<input type="text"/> Browse	PKCS12 <input type="text"/>	<input type="text"/> Show
<input type="checkbox"/> Validate Server Certificate			
Certificate Authority*	<input type="text"/> Browse	BER <input type="text"/>	

WPA-EAP-TTLS

Enter the details provided by the network administrator.

1. Type the SSID name.
2. From the Security dropdown, select **WPA-EAP-TTLS**.
3. Select Encryption Type from the dropdown menu.
4. Type the Identity WPA name.
5. If Server Certificate Validation is desired, select the tick box.
6. Upload the Certificate Authority.
 - a. Click **Browse**.
 - b. Select the file to be uploaded. Click **OK**.
 - c. Ensure that the desired format is chosen from the dropdown menu.
7. Enter the User Name and Password.

Wireless

SSID*

eir19806239-5G

Security*

WPA - EAP - TTLS

Encryption Type

TKIP

Identity*

Validate Server Certificate

Certificate Authority*

Browse BER

Inner Authentication

User Name*

Password*

Show

- SSID names support the following
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: - _ = +
 - SPACE cannot be the first or last character but is allowed between two characters
- Passphrase supports the following:
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: \ @ % [] : . . { } - _ = ` & () ' < > ; \$ * ? ~ # + " / ! | ^
 - SPACE cannot be the first or last character but is allowed between two characters

WPA-PEAP

Enter the details provided by the network administrator.

1. Type the SSID name.
2. From the Security dropdown, select **WPA-PEAP**.
3. Select Encryption Type from the dropdown menu.
4. Type the Identity name.
5. If Server Certificate Validation is desired, select the tick box.
6. Upload the Certificate Authority.
 - a. Click **Browse**.
 - b. Select the file to be uploaded. Click **OK**.
 - c. Ensure that the desired format is chosen from the dropdown menu.
7. Select the Type from the dropdown menu.
8. Enter the User Name and Password.

The screenshot displays the 'Wireless' configuration window. On the left, there are several fields: 'SSID*' with the value 'eir19806239-5G', 'Security*' set to 'WPA - PEAP', 'Encryption Type' set to 'TKIP', and an empty 'Identity*' field. Below these is a checkbox for 'Validate Server Certificate' which is unchecked. The 'Certificate Authority*' section includes a greyed-out text box, a 'Browse' button, and a dropdown menu currently showing 'BER'. The 'Inner Authentication' section has a 'Type' dropdown set to 'MS-CHAP v2'. At the bottom are empty fields for 'User Name*' and 'Password*', with a 'Show' button next to the password field. On the right side of the window, there are two expandable sections: 'SSID names support the following' and 'Passphrase supports the following:'. The first section lists: Latin Alphabet Uppercase/Lowercase characters, ASCII Digits 0-9, Optional special characters: - _ = +, and SPACE cannot be the first or last character but is allowed between two characters. The second section lists: Latin Alphabet Uppercase/Lowercase characters, ASCII Digits 0-9, Optional special characters: \ @ % [] : . . { } - _ = ` & () ' < > ; \$ * ? ~ # + * / ! | ^, and SPACE cannot be the first or last character but is allowed between two characters.

WEP

Enter the details provided by the network administrator.

NOTE:

Due to security concerns, the use of WEP is not advised.

1. Type the SSID name.
2. From the Security dropdown, select **WEP**.
3. Select Authentication type from the dropdown menu.
4. Select Key Length and Transmission Key Index from the dropdown menus.
5. Type the Key Index in the field.

The screenshot displays the 'Wireless' configuration page. On the left, there are several input fields: 'SSID*' with the value 'eir19806239-5G', 'Security*' set to 'WEP', 'Authentication' set to 'Open', 'Key Length' set to '40', and 'Transmission Key Index' set to '1'. Below these is a 'Key Index 1*' field with a 'Show' button. On the right, there are two sections of information: 'SSID names support the following' with a bulleted list of character sets, and 'Wep Key supports the following:' with a bulleted list of key requirements.

Wireless ⤴

SSID*

eir19806239-5G

Security*

WEP

Authentication

Open

Key Length **Transmission Key Index**

40 1

Key Index 1*

Show

- SSID names support the following
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: - _ = +
 - SPACE cannot be the first or last character but is allowed between two characters
- Wep Key supports the following:
 - Valid key length is 10
 - Combination of 0-9 digits
 - A-F alphabet characters

No Security

Enter the details provided by the network administrator.

NOTE:

Due to security concerns, the use of WEP is not advised.

1. Type the SSID name.
2. From the Security dropdown, select **No Security**.

Wireless ⌵

SSID*

Security*

Security configuration not required.

- SSID names support the following
 - Latin Alphabet Uppercase/Lowercase characters
 - ASCII Digits 0-9
 - Optional special characters: - _ = +
 - SPACE cannot be the first or last character but is allowed between two characters

Network

Enter the details provided by the network administrator.

Network ⌵

IP addresses can be assigned automatically using DHCP. Alternatively, Static IP addressing can be used but is not recommended.

Obtain IP Address Automatically (DHCP) Enter IP Address Manually

IP Address*

Subnet Mask*

Default Gateway*

DNS Server Information

Obtain DNS Server Address Automatically Enter DNS Address Manually

Server

Enter the details provided by the network administrator.

Server ⬆

Host Name*

Server Port*

Chapter 8

User Management

Defining User Accounts

Users have access to certain functionality and screens and can perform certain tasks based on their user account. Technical Utility has the following predefined account types:

- General User
- Administrator

NOTE:

The administrator cannot perform service tasks using their administrator user account. The administrator must create a general user account to perform service tasks.

User Accounts

A user account allows a user to authenticate and to receive authorisation to access Technical Utility. The user account stores the user's first name and surname, user name, password and language preference.

Technical Utility supports one administrator account and multiple general user accounts. Refer to the table below for the list of functions that are available to administrator and general users.

NOTE:

There is only one administrator account named Administrator.

Functionality by User/Admin Account

Functionality	General User	Administrator
Flash Firmware	•	
Download Pump Logs	•	
Transfer Wi-Fi Configuration Packages	•	
Clear Wi-Fi Configuration Packages	•	
Update Wi-Fi Software	•	
Download Wireless Module Logs	•	
View Pump Logs	•	
Run Reports	•	•
Export Reports	•	•
Create/Edit User Accounts		•
Reset User Passwords		•
Import Firmware		•
Delete Firmware		•

Functionality by User/Admin Account

Functionality	General User	Administrator
Import Wi-Fi Software		•
Delete Wi-Fi Software		•
Create, Edit, Delete and Duplicate Wi-Fi Configuration Packages		•
Create, Edit, Delete and Duplicate Package Profiles		•
Change Database Path	•	•
Change Export Location	•	

Creating a New User Account

NOTE:

The user must be logged in to Technical Utility using the administrator account to access the user management interface.

1. Click **User Management**, then **Users**.
2. Click **New**, then complete the following fields:
 - **First name:** 2-40 characters (not case sensitive)
 - **Surname:** 2-40 characters (not case sensitive)
 - **User name:** unique, Latin alphanumeric 3-40 characters long (not case sensitive, no spaces allowed) (.,_,-' are allowed).

NOTE:

The user name cannot be changed after it is saved to a user account.

- **Password and Confirm Password:** 8-20 characters long and must meet three of the four conditions:
 - At least one lowercase letter
 - At least one uppercase letter
 - At least one number
 - At least one special character: !, @, #, \$, %, *, (,), ^, &, <, ?, empty space allowed.
3. Select the language for the user account from the **Language Preference** dropdown list. The interface will be displayed in the selected language when the user logs into Technical Utility.
 4. Click **Save** when finished.

The new user account appears in the user list and a message notifying that a new user has been created appears in the upper right-hand corner of the screen.

Editing a User Account

The administrator can change the user's first name, surname, language preferences and status by editing a user account.

NOTE:

The user must be logged in to Technical Utility using the administrator account to access the user management interface.

1. Click **User Management**, then click **Users**. Select the tick box next to the user account to edit from the user list.
2. Click **Edit**.

3. From the **Edit User** dialog box, make the changes to the user account.

NOTE:

The user name for a user account cannot be changed.

4. Click **Save**.

The edits are saved to the user account and a message appears notifying that the profile has been updated.

Resetting a User Account Password

When a user forgets their password it can be reset to a new temporary password.

NOTE:

The user must be logged in to Technical Utility using the administrator account to access the user management interface.

1. Click **User Management**, then click **Users**. Select the tick box next to the user account from the user list.
2. Click **Reset Password**.
3. From the **Reset Password** dialog box, enter a new temporary password in the **Password** and **Confirm Password** fields.
4. Click **Save**.

The new temporary password is saved to the user account and a message appears notifying that the password was reset.

Changing the Administrator Password

NOTE:

The user must be logged in to Technical Utility using the administrator account to access the user management interface.

1. From the top right-hand corner, click on the arrow beside **Administrator**.
2. Click **Change Password**.
3. In the **Change Password** dialog box, enter the current password and the new password.

Password must be 8-20 characters in length and must meet three of the four criteria shown below:

- Uppercase letter
- Lowercase letter
- Number
- Supported special characters: !, @, \$, %, *, (,), +, ^, &, <, ? and blank space ().

4. Click **Save**.

A prompt will be displayed confirming that the password was changed successfully.

NOTE:

If the administrator password is lost or forgotten, contact BD Global Customer Services to have the Administrator password reset.

Deactivating a User Account

When a user no longer needs access to Technical Utility, their user account can be deactivated. A user with an inactive user account cannot log in to Technical Utility.

NOTE:

A user account cannot be deleted.

NOTE:

The user must be logged into Technical Utility using the administrator account to access the user management interface.

1. Click **User Management**, then click **Users**. Select the tick box next to the user account to make the user inactive from the user list.
2. Click **Edit**.
3. From the **Edit User** dialog box, select **Inactive** from the **Change User Status** field.
4. Click **Save**.

The user account is inactivated and the Status column in the user list is changed to Inactive.

Reactivating an Inactive User Account

NOTE:

When a user account is currently inactive, the user account can be reactivated to provide access to Technical Utility.

NOTE:

The user must be logged in to Technical Utility using the administrator account to access the user management interface.

1. Click **User Management**, then click **Users**. Select the tick box next to the user account to reactivate from the user list.
2. Click **Edit**.
3. From the **Edit User** dialog box, select **Active** from the **Change User Status** field.
The Password and Confirm Password fields will appear in the dialog box.
4. Enter a temporary password for the user account in the **Password** and **Confirm Password** fields.
5. Click **Save**.

The user account is reactivated and the Status column in the user list is changed to Active.

Chapter 9

Settings

Technical Utility Settings

Clean the local database, view database information, view the export file location and set language preferences, change the number of items displayed on the screen and change the session timeout duration.

Cleaning the Local Database

When the local database usage reaches 75% or more it is recommended that the user clean the database using the cleanup utility to continue using Technical Utility. The user cannot log in to Technical Utility once the database usage reaches 95%.

The clean-up utility can be run from the Settings dialog box or from the login screen when the database usage reaches 90%.

NOTE:

Back up the database before starting the cleanup. The cleanup utility deletes pump logs, service reports and administrative reports from the database.

1. Click the **Settings** icon.
2. From the **Settings** dialog box, click **Start Cleanup**.
3. From the **ATU Database Cleanup Utility Tool** dialog box, select the **Yes** tick box.
4. Select the date range to delete data from the database.
5. Click **Start Cleanup**.
6. From the **Info** dialog box, click **OK**.
7. From the **ATU Database Cleanup Utility Tool** dialog box, click **Close**.

Viewing the Export File Location

View the location where the last exported log and report files were saved:

Click the **Settings** icon and view the exported log and report locations in the **Exported File Information** section.

Setting Language Preferences

The Technical Utility interface can be viewed in 20 different languages. Language preferences can also be changed from the Login dialog box.

NOTE:

Language preferences cannot be changed while a service task is running.

1. Click the **Settings** icon.
2. From the **Settings** dialog box, click to select the language from the **Language Preference** dropdown list.
3. Click **Save**.

The selected language is saved to the user account and the interface appears in the selected language.

Viewing Local Database Information

Click the **Settings** icon and view the Server and Name fields for the local database information.

Changing the Number of Items Displayed

Change the number of items displayed in Technical Utility to 20, 50, 75 or 100

1. Click the **Settings** icon.
2. From the **Additional Settings** dialog box, click to select the number: 20, 50, 75 or 100 from the **Items to Display per Page** dropdown list.

Changing the Session Timeout Duration

Change the number of minutes of inactivity that pass before a Technical Utility session times out.

NOTE:

Changing the session timeout duration can only be performed by the administrator user account.

1. Log in to Technical Utility using the administrator account.
2. Click the **Settings** icon.
3. From the **Additional Settings** dialog box, enter the number of minutes in the **Session Timeout Duration (in Minutes)** field. The minimum timeout duration is 10 minutes and the maximum is 999 minutes.
4. Click **Save**.

The session timeout duration is saved and applied to all users of Technical Utility.

Chapter 10

Troubleshooting

Troubleshooting Technical Utility

Error Message	Issue	Solution
No hub(s) and/or pumps detected.	Pump not detected.	<ol style="list-style-type: none"> 1. Verify that the pump is in tech mode. 2. Check cable connections between the computer, hub and pump. 3. If using an RS232 hub, verify that the correct manufacturer's driver is installed for the hub. 4. If using a single RS232 cable, verify that the correct manufacturer's driver is installed for the cable. 5. Verify that COM port is recognised in Device Manager.
No hub(s) and/or pumps detected.	Syringe pump not detected.	<ol style="list-style-type: none"> 1. Verify that the pump is in tech mode. 2. Check cable connections between the computer, hub and pump. 3. If using an RS232 hub, verify that the correct manufacturer's driver is installed for the hub. 4. If using a single RS232 cable, verify that the correct manufacturer's driver is installed for the cable. 5. See <i>Configuring the Syringe Pump for Detection</i> on page 14.
No hub(s) and/or pumps detected.	GW pump not detected.	<ol style="list-style-type: none"> 1. Verify that the pump is in tech mode. 2. Check cable connections between the computer, hub and pump. 3. If using an RS232 hub, verify that the correct manufacturer's driver is installed for the hub. 4. If using a single RS232 cable, verify that the correct manufacturer's driver is installed for the cable. 5. Verify that COM port is recognised in Device Manager. 6. See <i>Configuring the GW Pump for Detection</i> on page 14.

Error Message	Issue	Solution
Flash Error	Firmware flashing failed	<ol style="list-style-type: none"> 1. Flashing process started on Technical Utility; however, user did not follow through with pump steps. 2. Verify that the firmware version is compatible with the pump (see <i>Equipment Compatibility</i> on page 8). 3. Check cable connections between the computer, hub and pump. 4. If using an RS232 hub, verify that the correct manufacturer's driver is installed for the hub. 5. If using a single RS232 cable, verify that the correct manufacturer's driver is installed for the cable. 6. Restart the service task in Technical Utility and follow the procedure for the pump type. <ul style="list-style-type: none"> • <i>Flash Pump Firmware on Syringe Pumps</i> on page 41. • <i>Flashing Firmware on Volumetric Pumps (GP/VP)</i> on page 43. • <i>Flashing Firmware on GW Pumps</i> on page 45.
Download Logs Error	Download log failed.	<ol style="list-style-type: none"> 1. Verify that the pump is in tech mode. 2. Check cable connections between the computer, hub and pump. 3. If using an RS232 hub, verify that the correct manufacturer's driver is installed for the hub. 4. If using a single RS232 cable, verify that the correct manufacturer's driver is installed for the cable. 5. Restart the download log service task.
Bootstrap Failed message on syringe pump. Flash firmware failed on Technical Utility.	Using IrDA communication.	<ol style="list-style-type: none"> 1. From the Retry prompt, press the YES soft key. <p>NOTE: The YES soft key must be pressed within 6 minutes to retry; otherwise, the pump will time out.</p> 2. From the SELECT INTERFACE prompt, press the RS232 soft key. Bootstrap in Progress appears on the pump display and an alarm will sound. 3. Follow the remaining steps in the procedure (<i>Changing the Syringe Pump to Bootstrap Mode</i> on page 42).
No Response from Pump	No response from the pump while a service task is running.	<ol style="list-style-type: none"> 1. Check cable connections between the computer, hub and pump. 2. If using an RS232 hub, verify that the correct manufacturer's driver is installed for the hub. 3. If using a single RS232 cable, verify that the correct manufacturer's driver is installed for the cable. 4. Restart the service task and ensure that the steps are performed before the pump times out.

Error Message	Issue	Solution
Flash Error or No Response from Pump	Syringe pump frozen in bootstrap mode and disappears from Technical Utility.	<ol style="list-style-type: none"> 1. Check cable connections between the computer, hub and pump. 2. Verify that the firmware version is compatible with the pump (see <i>Equipment Compatibility</i> on page 8). 3. If an incompatible firmware version was flashed to the syringe pump, do the following: <ol style="list-style-type: none"> a. Disconnect AC power to the pump. b. On the syringe pump, remove the two case screws in the battery cover. c. Remove the battery cover. d. Disconnect the battery from the battery cable. e. Reconnect the battery to the battery cable. f. Place the battery cover back onto the pump. g. Screw the two case screws into the battery cover. h. Reconnect the AC power to the pump. i. Press the ON/OFF button and hold down the RUN button until ACCESS CODE 000 appears on the pump display. j. Restart the flashing firmware service task in Technical Utility with a compatible firmware version.
Flash Error	TAPNOK error	<ol style="list-style-type: none"> 1. Check cable connections between the computer, hub and pump. 2. If using an RS232 hub, verify that the correct manufacturer's driver is installed for the hub. 3. If using a single RS232 cable, verify that the correct manufacturer's driver is installed for the cable.
Please make sure that database connectivity is fixed and try again.	Database connection error (Database installed locally)	<ol style="list-style-type: none"> 1. Navigate to Services and verify that Technical Utility SQL server status has been started. 2. Contact IT administrator.
Please make sure that database connectivity is fixed and try again.	Database connection error (Database installed remotely)	<ol style="list-style-type: none"> 1. Verify that the network connection is working. 2. Contact IT administrator.
Incorrect User Name or Password	Cannot log in to Technical Utility	Contact the administrator to create a user account, reset password or reactivate the user account.

Error Message	Issue	Solution
Incorrect User Name or Password	Administrator cannot log in to Technical Utility	Contact global customer support (GCS).
N/A	Cannot read language shown on interface	From the Login dialog box, select the language from the dropdown list.
You are not allowed to log in to Technical Utility. Please archive and clean your local Technical Utility database.	Cannot log in to Technical Utility: Local Technical Utility database is 95% full	<ol style="list-style-type: none"> 1. Back up the Technical Utility database. 2. Run the cleanup utility. <ol style="list-style-type: none"> a. From the Database Notice dialog box, click Start Cleanup. b. From the Technical Utility Database Cleanup Utility Tool dialog box, select the Yes tick box. c. Select the date range to delete data from the database. d. Click Start Cleanup. e. From the Info dialog box, click OK. f. From the Technical Utility Database Cleanup Utility Tool dialog box, click Close.