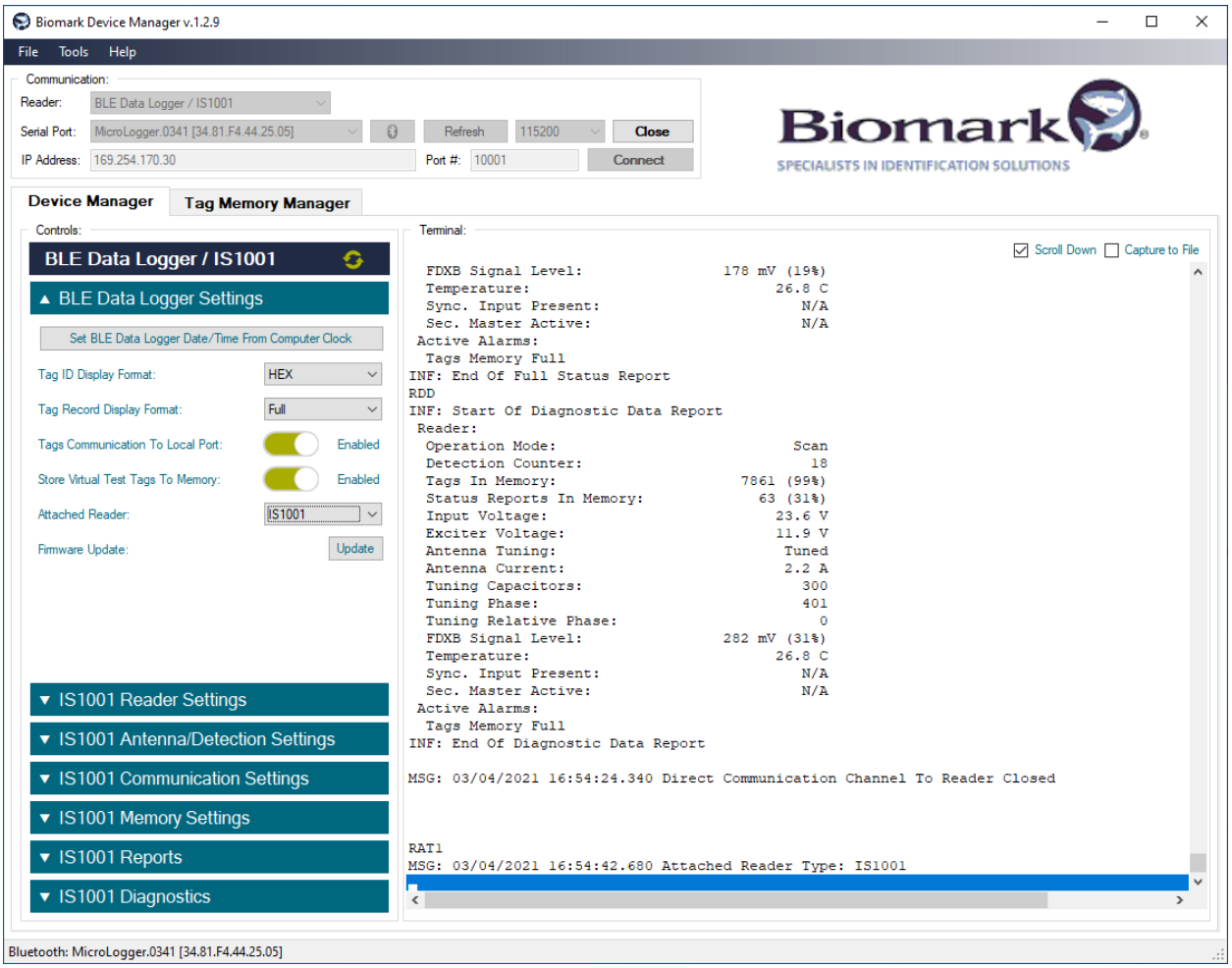
User Manual Revision 1.1

Device Manager

SOFTWARE



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Document History

Release Date	Doc Revision	Firmware Version	Comments
March, 2021	1	Device Manager 1.1	Original release of this guide.

Table of Contents

1 Software Overview

1.1 Product Description

Device Manager is a communication and device managing program developed by Biomark. It is used to connect a computer quickly and easily to a Biomark reader or device. The primary functions of Device Manager are to allow the user to access the device's memory, configure reader or device settings, and download tag data to be displayed and exported.

Software features:

- Quick and easy connection to Biomark readers or devices
- Download reader or device tag memory for export into Microsoft Excel, Access, or text file
- Duplicate tag ID filtering using Tag Memory Manager
- Bluetooth compatible
- Hex/Dec tag ID converter
- Store real-time communication and tag data in a text file to a user-defined location

1.2 Software Download

The software is available to download via the Biomark website:

https://www.biomark.com/software-drivers

1.3 Updating Program

Ensure the PC running Device Manager is connected to the internet. On a weekly basis, Device Manager will automatically check for updates. Checking for updates can also be forced manually at any time by simply selecting **Help** > **Check for Updates**.

If an update is available, follow the prompts to update Device Manager. After the update has been installed, Device Manager will restart automatically.

If an update is not available, a pop-up window will indicate the Device Manager is up to date. Click the **OK** button to close the window.

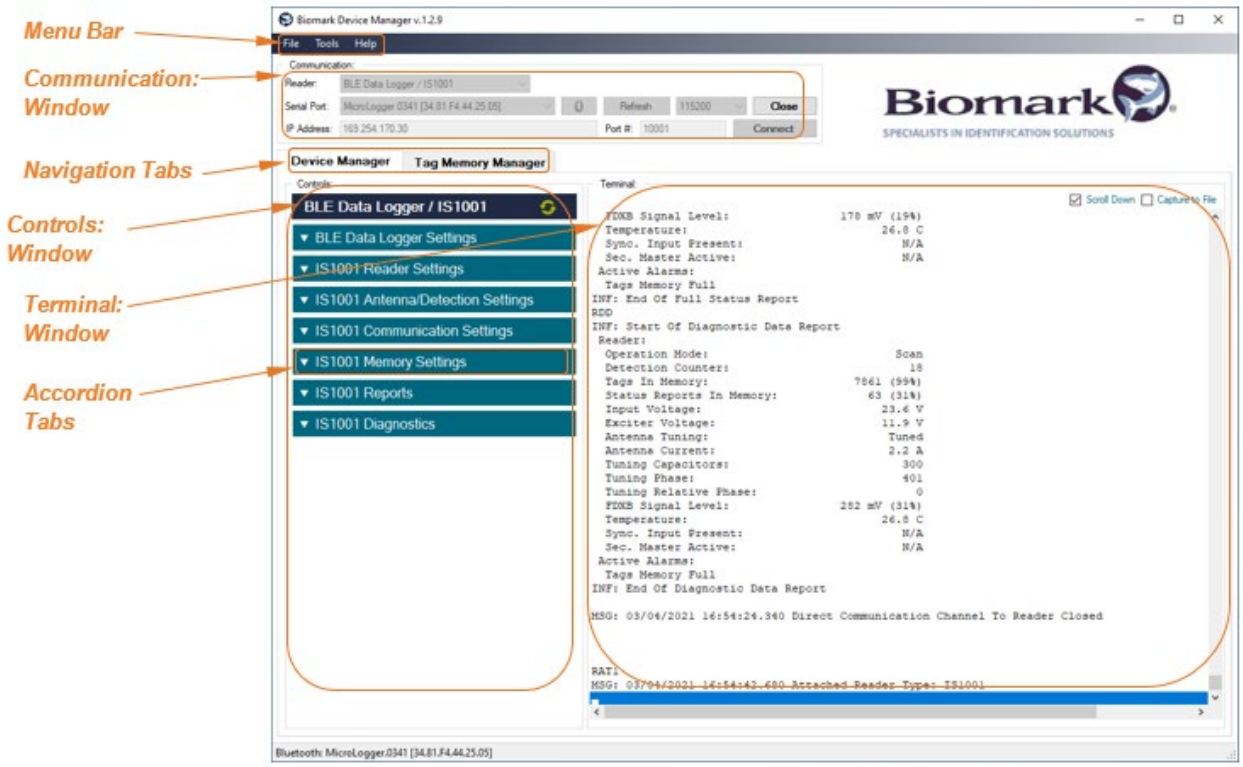
2 Getting Started

2.1 Program Navigation

Upon starting Device Manager, the program will default to the **Device Manager** navigation tab. There are two navigation tabs to choose from located in the middle-left of the program window. Selecting these tabs will toggle between the primary function screens of the program.

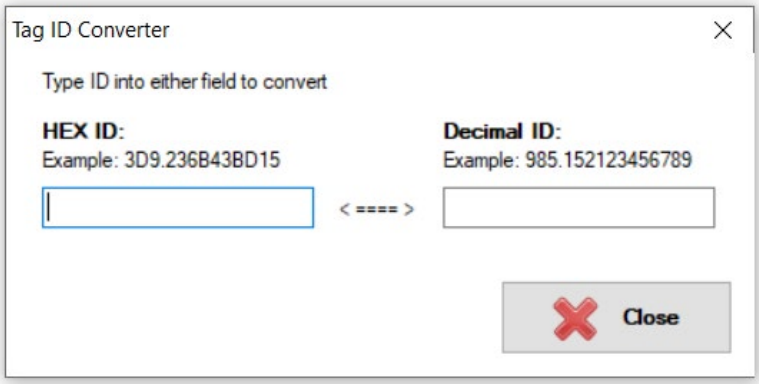
- **Device Manager** – Provides **Controls** and **Terminal** windows specific to the connected reader or device for the purpose of adjusting settings. For more information, see section **3 Device Manager**.

- **Tag Memory Manager** – Allows for downloading of the reader or device tag memory. The selected reader or device memory can also be cleared of all data from this screen. For more information, see section **4 Tag Memory Manager.**



The Menu Bar consist of three drop-down menus:

- **File** – Select **Exit** to close the program.
- **Tools** – This menu contains utilities, sub-menus, and settings that are used on an infrequent basis. Some utilities and application settings may only apply to a specific reader or device selected in the **Communication** window.
    - **Tag ID Converter** – Select to convert a single ISO tag code from Hexadecimal format to Decimal format or vice versa. Type or paste into either field to convert to the corresponding format. A warning is displayed under each field if the code does not match any known ISO format.

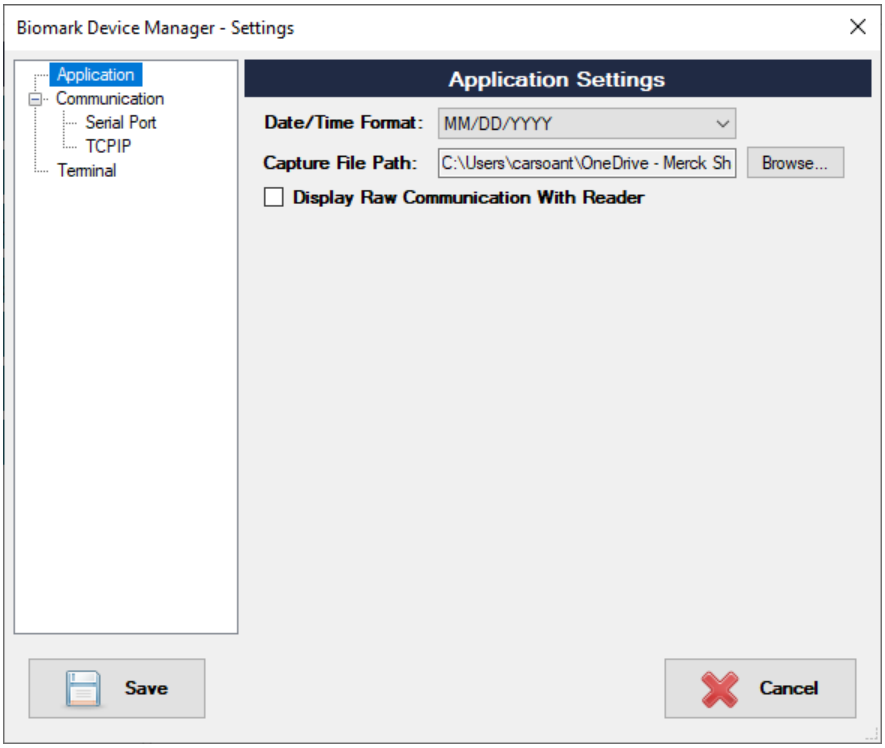


- **Network Device Discovery** – Select to establish an Ethernet communication port connection with supported Biomark devices. If the selected reader or device has this capability, refer to section **5.1 Network Device Discovery** for more information.

  ***Note**: Connection to the reader or device must be closed to use Tools > Network Device Discovery or modify Tools > Settings.*

- **Settings** – Select to access and change the **Application**, **Communication**, and **Terminal** settings of Device Manager. Check the specific reader or device user manual to determine if setting changes are required. For more information on **Communication** and **Terminal** sub menus see section **5.2 Settings**. Configure the **Application Settings** below before making a connection with a reader or device:

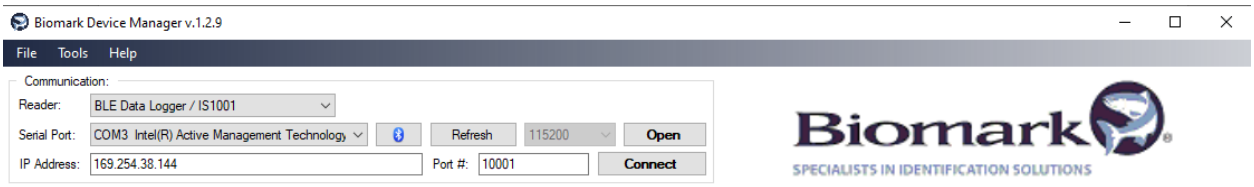
  - **Date/Time Format** – Use the drop-down box to select the correct date/time format for downloaded records and exported data files from the selected reader or device.
  - **Capture File Path** – Configure this path to specify the destination of saved communication data in the **Terminal** window when the **Capture to File** box is checked. The data is automatically stored in DeviceMan.txt, an ASCII text file. This path setting also applies to the **Terminal** section of the **Live Diagnostics** window used with the IS1001 and IS1001 Master Controller. See section **3.3 Live Diagnostics** window for more information. Data captured by the terminal interface of the **Live Diagnostics** is stored in DeviceMan_LiveDiags.txt, an ASCII text file.
  - **Display Raw Communication with Reader** – Checkmark this box if raw data from a reader or device should be displayed in the Device Manager Terminal window. This setting only applies to specific readers such as the BLE Data Logger / ASR650.



- **Help** – Used to manually **Check for Updates** of the Device Manager application and **About** to display the version information of Device Manager.

2.2 Device Setup and Connection

To setup a connection to a reader or device, select the appropriate settings within the **Communication** window.



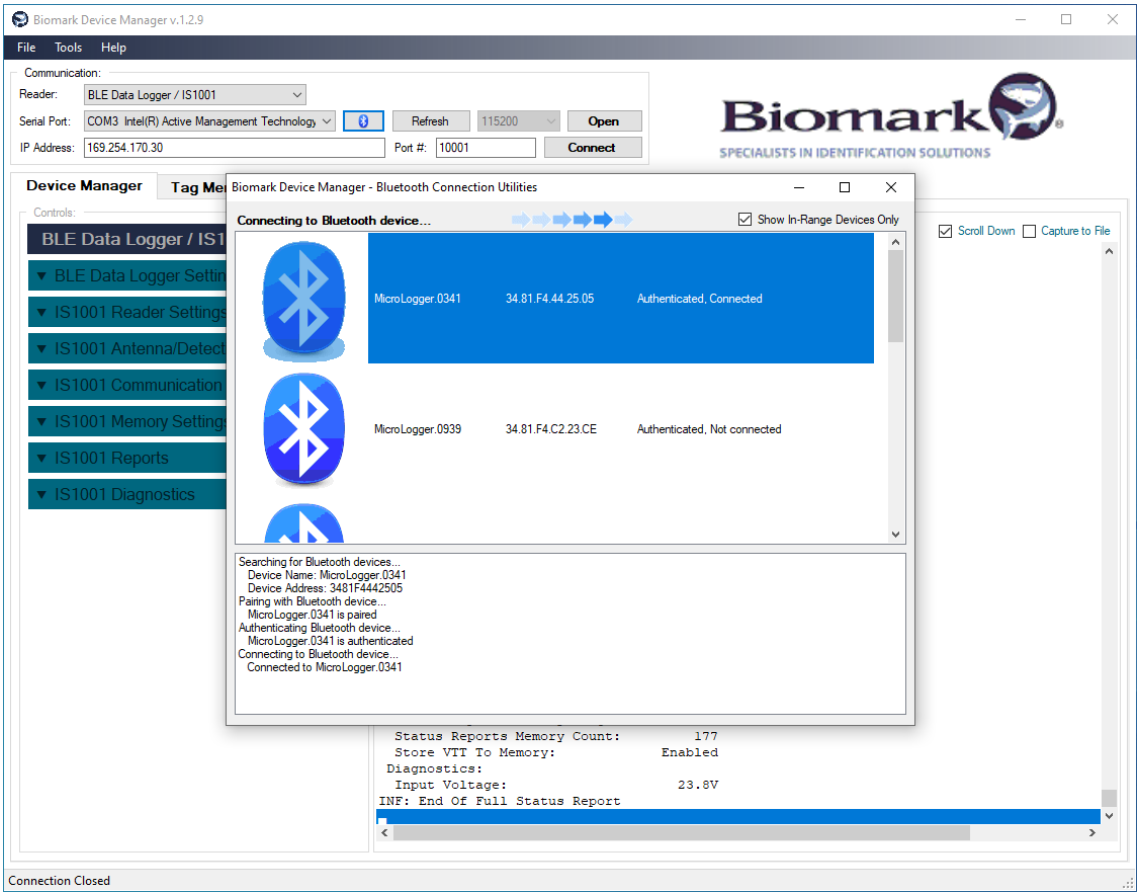
- **Reader** – Select the reader or device type. A **Generic** reader option is available to provide some flexibility connecting to other devices. Refer to section **5.2 Settings** if additional **Serial Port** or **TCP/IP** settings need to be configured.
- **Serial Port** – To achieve communication, select the appropriate information using the steps below:
    - Select the communication method by which your reader or device is connected to the PC. All available COM ports should be displayed when the drop-down box is selected. If a COM port is missing, press the **Refresh** button to the right of the drop-down box.
        - If establishing a RS-232 connection, select the computer's RS-232 port or the COM port assigned by the computer to the USB-to-Serial adapter. Serial port information might vary between computers.
        - If establishing a USB connection, select the COM port assigned to the reader or device. For example: **COM4 Silicon Labs CP210x USB to UART Bridge.**
    - Select the appropriate baud rate for the reader or device in the drop-down box to the left of the **Open** button. This information will autofill depending on the chosen reader or device but can be adjusted if needed.
    - After all information has been entered, select the **Open** button to establish a connection to the chosen reader.

***Note**: The connection to the reader or device must be closed to modify the serial port settings. Not all reader or devices require a baud rate to be entered during setup. The HPR Plus is a non-serial device and does not need a specific baud rate selected to successfully communicate.*

- **Bluetooth** – If your reader supports Bluetooth connectivity, establish a connection by pressing the Bluetooth devices button  located to the right of the **Serial Port** drop-down box.

  To establish communication, please follow the steps below:
    - Power up the device
    - Start the Device Manager communication program
    - Search for available reader or devices by clicking on the Bluetooth devices button within the main window of Device Manager. The **Bluetooth Connection Utilities** window will appear and start searching for Bluetooth devices. To only show devices

currently active and within range of computer, select the **Show In-Range Devices Only** box.



- Select the appropriate reader or device from the list. The program will begin pairing with the targeted Bluetooth reader or device. When successfully connected, the **Bluetooth Connection Utilities** box will display "Connected" next to the reader or device's name.

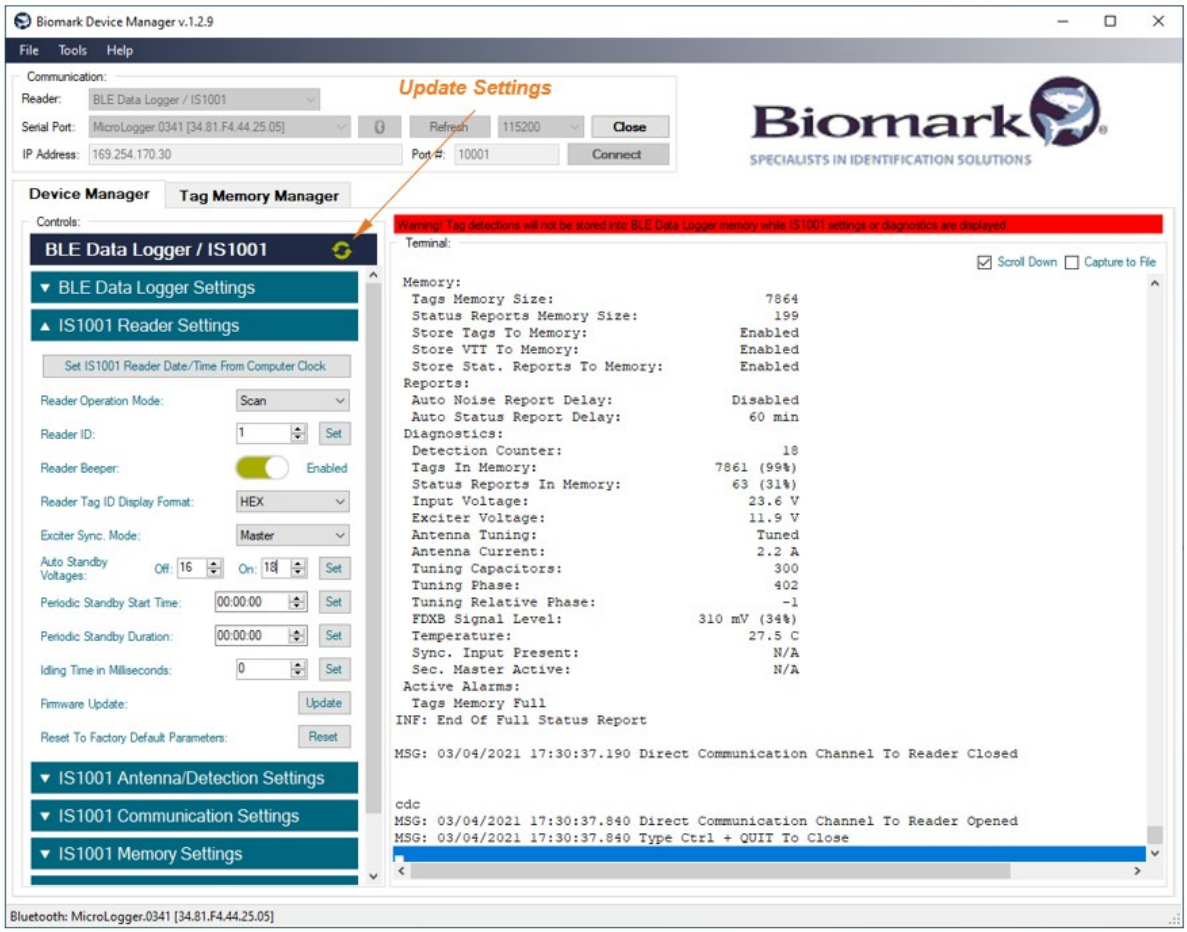
Note: *If the Bluetooth reader or device will not connect via Biomark Device Manager program, refer to the reader or device's user manual for more specific information.*

3 Device Manager

The **Device Manager** tab provides access to easily alter the settings of the connected reader or device as well as adjust the formatting of the data displayed and exported in the **Tag Memory Manager** tab. The reader or device selected will automatically determine the accordion drop down boxes within the **Controls** window.

3.1 Controls Window

The **Controls** window lists the type of reader or device currently connected to Device Manager and associated settings available for adjustment. Each reader or device will have different settings depending on its type and features. Select the update settings refresh arrows to poll the attached device and update the display of all associated settings.



- To change a setting, expand the appropriate accordion tab to reveal the specific settings.
    - Most settings are configured with a single button; however, some settings will require a value entry. When changing such settings, press the **Set** button after entering the desired value. The command and the reader response appear in the **Terminal** window.
    - The **Controls** window may not list every setting available for every device or reader. Refer to the reader or devices manual for available settings.

3.2 Terminal Window

This window allows users to enter specific commands to the connected reader or device to adjust settings or display information. Clicking within the **Terminal** window will change the background

from white to yellow indicating it's actively in focus and ready to receive command entries via keyboard.

- When changing a setting using the **Controls** window, the command and the reader or device's response will appear in the **Terminal** window for supported readers or devices. For example, with an IS1001 reader connected to Device Manager, entering the command **RIS01** via the keyboard into the **Terminal** window will result in the reader's response:

  MSG: 01 03/15/2021 14:28:52.660 Reader ID Set To 01

- If a setting is changed by manually typing commands into the **Terminal** window, refresh the settings displayed in the accordion drop-down boxes by selecting the refresh arrows  located in the top bar of the **Controls** window.

Note: *The commands list for any specific device or reader are listed in the equipment specific manual.*

- **Scroll Down** – When this box is checked, the **Terminal** window will automatically scroll down as information is entered, exceeding the **Terminal** window size.

- **Capture to File** – When this box is checked, any information entered into the **Terminal** window, including settings adjusted using the **Controls** window, will automatically be recorded in the DeviceMan.txt file. This file will be written to the destination defined in the **Tools > Settings > Application > Capture File Path** setting.

- The DeviceMan.txt file is appended to continuously, if the file name remains unchanged. Information will never be overwritten, instead additional information will be added to the end of the file.

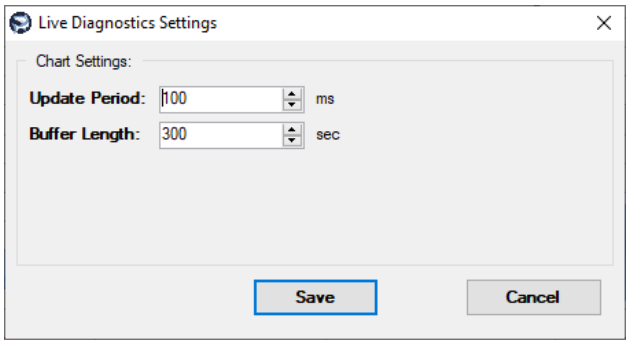
- If the original DeviceMan.txt file is renamed or deleted and the **Capture to File** box is checked, a new DeviceMan.txt file will be created.

3.3 Live Diagnostics Window

The live diagnostics function of Device Manager program acquires a status report from the supported reader or device, such as IS1001, IS1001-MC, etc., on a continual basis and displays the output graphically. This provides an easy-to-read presentation of the reader or device's diagnostic data in real time. The **Live Diagnostics** window is configurable and provides the ability to save diagnostic charts.

- The **Live Diagnostic** window has a terminal window interface which functions similarly to the **Terminal** window within the **Device Manager** tab. When the **Capture to File** box is checked, Device Manager begins automatically storing data displayed in the **Terminal** window in text file named DeviceMan_LiveDiags.txt located in the **Capture File Path** directory. See section **2.1 Program Navigation** for instruction on configuring this file path.

- To configure chart settings, select the settings icon in upper right corner of window. Use the **Live Diagnostics Settings** window to specify how your charts will be generated. Select **Save** after configured.



  - **Update Period** – specifies how often a new data point is added to the chart.
  - **Buffer Length** – specifies the maximum number of data points used in a chart. When the limit is reached, the program will remove the oldest data point and add the most recent data point.
  - Select one of the eight charts to be displayed in the diagnostic window's left pane. Use the chart icons at upper left and right of **Live Diagnostic** window to **Pause**, **Connect**, **Save**, and **Reset** charts.

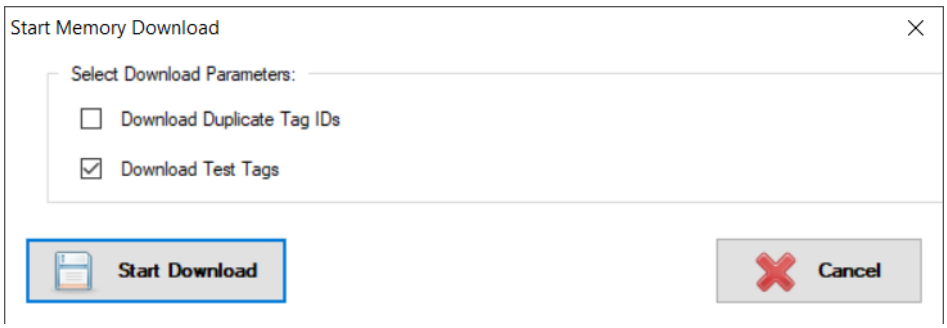
4 Tag Memory Manager

The **Tag Memory Manager** tab provides the ability to download or clear a reader's or device's tag memory with the click of a button. Once downloaded, data may be displayed, filtered, and exported to MS Excel, MS Access, or text file.

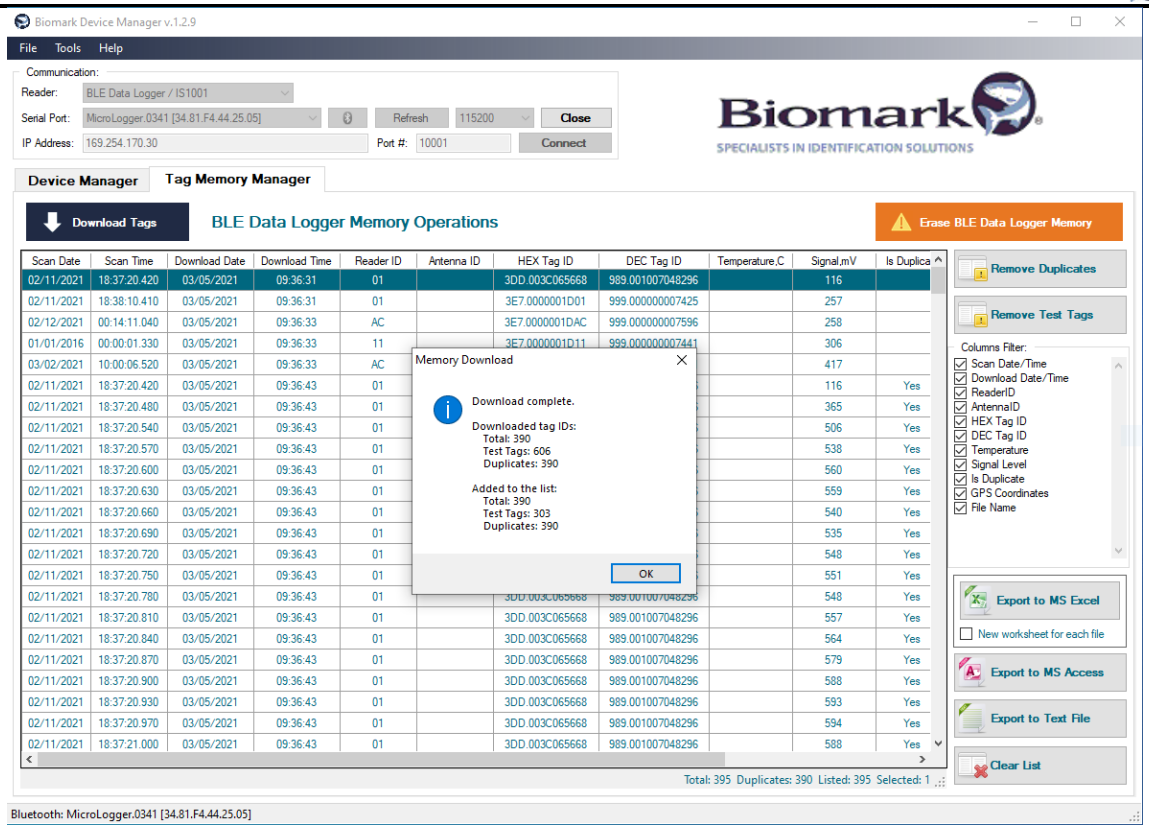
4.1 Downloading Data

- Use the **Download** Tags button within the **Tag Memory Manager** tab to download the connected reader's or device's tag memory. Please note that this can take several minutes,

depending on the number of records to be downloaded. A **Start Memory Download** window provides the ability to select the download parameters before starting the download process.



- Select Download Parameters:
  - **Download Duplicate Tag IDs** – If checked, the program will download and display all tag records contained in the reader or device's memory. If unchecked, the program will only display non-duplicate tag records.
  - **Download Test Tags** – If checked, the program will download and display test tags contained in supported reader's or device's memory.
- Select **Start Download** to begin the tag memory download process. Upon successful completion, a **Download complete** notification window will appear containing the total number of tag IDs and test tags successfully download, and how many of the downloaded tag IDs were duplicates.
- To stop a tag download process before it is complete, select **Cancel**.



4.2 Erase Memory

Erase Reader Memory – Deletes the memory of the connected device, erasing all tag ID records. A confirmation window will appear if this button is selected to verify this is the desired action.

Note: *If erasing memory of a BLE Data Logger from within the Tag Memory Manager tab, an Erase Logger Memory box will be displayed. Proceeding will erase all tag memory from the BLE Data Logger but not from the attached reader. To erase the reader's memory, use the Memory Settings accordion of the Device Manager tab. Select Erase Entire Memory option and confirm to proceed with erase process.*

4.3 Exporting Data

Downloaded data displayed in the **Tag Memory Manager** tab can be altered before being exported. Use the options below to edit data as needed. Removing duplicates and removing test tags functions require confirmation to proceed.

- **Remove Duplicates** – Removes all duplicate tag ID records from the **Tag Memory Manager** list leaving only the first detection of each recorded tag ID.
- **Remove Test Tags** – Removes all test tag ID records from the **Tag Memory Manager** list.
- **Column Filter** – Selects which tag record ID fields are displayed in the **Tag Memory Manager** list. Unselected columns/fields and associated data will not appear in exported MS Excel, MS Access or text files.

Note: When exporting tag ID records to any file format, be aware that newly downloaded information will not be automatically reflected in previously exported files. If new tag records are downloaded from a reader or device AFTER a Tag Memory Manager list is exported, a new export will be required to record these new tag ID records in a file.

- **Export to MS Excel** – Creates an Excel-formatted file containing all tag ID records displayed in the **Tag Memory Manager** list. When selected, a prompt requesting a storage path and file name will be displayed.
    - For readers which contain multiple tags ID record files, the **New Worksheet for Each File** option checkbox allows for each reader file to be exported into separate Excel-formatted files.
- **Export to MS Access** – Creates an Access-formatted file containing all tag ID records displayed in the **Tag Memory Manager** list. When selected, a prompt requesting a storage path and file name will be displayed.
- **Export to Text File** – Creates a text-formatted file containing all tag ID records displayed in the **Tag Memory Manager** list. When selected, a prompt requesting a storage path and file name will be displayed.
- **Clear List** - Deletes all information currently in the **Tag Memory Manager** list. This function requires confirmation to proceed.

4.4 Console Mode for Pocket Reader & Pocket Reader EX Readers

The Pocket Reader and Pocket Reader EX readers require the reader to be in Console Mode to successfully download stored tag data. Device Manager automatically transitions the readers into Console Mode when **Download Tags** is selected. The reader will remain in Console mode until the download is complete and will automatically exit Console Mode and return to normal operation.

5 Tools

The Tools menu contains utilities, sub-menus, and settings to configure connections. Some utilities and application settings only apply to specific readers or devices selected in the **Communication** window.

The **Tag ID Converter** utility, described in section **2.1 Program Navigation**, can be used with or without an active reader or device connection. The **Network Devices Discovery** utility and **Settings** may only be accessed or modified when no active connection to a reader or device is established.

5.1 Network Devices Discovery

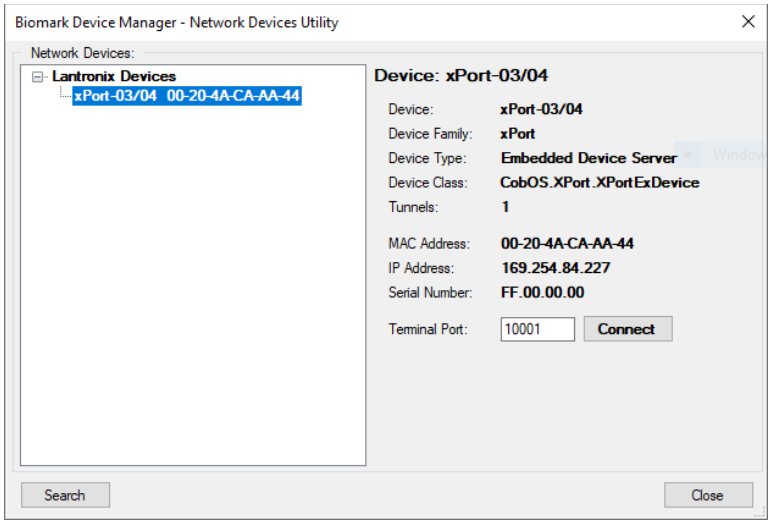
The **Network Devices Discovery** utility is used to establish a TCP/IP connection over Ethernet network or cable with supported Biomark readers or devices such as the IS1001 and Master

Controller (MC). If the reader or device is supplied with this connectivity option, it can be configured to allow remote interaction over a local area network or a remote network.

Note: *Biomark devices and readers incorporate Lantronix XPort Ethernet modules. For additional information see the Lantronix XPort User Guide available at: https://www.lantronix.com/pdf/XPort_UG.pdf or refer to the Biomark reader's or device's user manual.*

- Connect the reader or device to a local area network with an available Dynamic Host Configuration Protocol (DHCP) server using a CAT5 or greater Ethernet cable (not supplied). With the PC attached to the same local area network, start the Device Manager program and select the supported reader or device from the **Reader** drop down box located in the **Communications** window.

- Select **Tools > Network Device Discovery** and **Network Device Utility** will begin searching the network for Lantronix products (Biomark reader and devices uses a Lantronix XPort Ethernet module) and will display the IP addresses of the devices it finds. If there are multiple readers or devices on the network use the MAC address of the reader's Ethernet module to help identify each one.



- Select the desired reader or device and then click the **Connect** button to make a connection. If you receive an error when attempting the connection, make sure the Device Manager communication parameters are configured as follows:
    - IP address = the reader's or device's IP address
    - Terminal Port = 10001
    - If needed, check Communication TCP/IP settings, see section **5.2 Settings**.

5.2 Settings

The **Settings** window contains sub-menus and settings to configure the connections to a device or reader. The three sub-menus are described below.

- **Application Settings** – This is used to edit the **Date/Time Format**, **Capture File Path**, and **Display Raw Communication with Reader Data**. Refer to section **2.1 Program Navigation** as they need to be configured before making a connection to a reader or device.

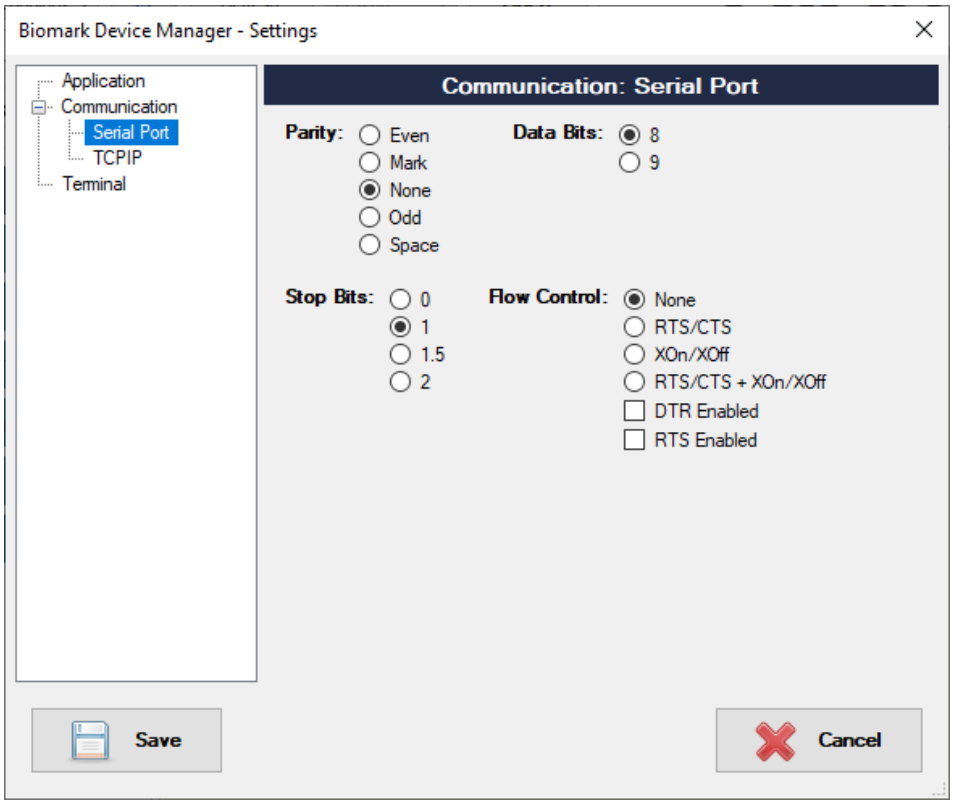
- **Communication** – This window provides access to additional settings to configure the communication with a reader or device. Specific readers or devices may require modifications to the **Serial Port** or **TCP/IP** settings to make a connection. After making adjustments, use the **Terminal** window to confirm the connection of the reader or device. For example, most Biomark devices and readers will reply with a list of available commands when the question mark (**?**) is issued followed by pressing **Enter**.

  Below are terminal settings within the **Communication** window:

  - **Send Line Ends with Line Feeds** – Checkmark this box to issue a line feed after every line that Device Manager sends, if the reader or device requires it, or if **Echo Typed Characters Locally** is enabled.
  - **Echo Typed Characters Locally** – Checkmark this box to display each character typed on the keyboard instead of depending on the host to echo each character. Remove the checkmark from this box if characters are unnecessarily repeated.

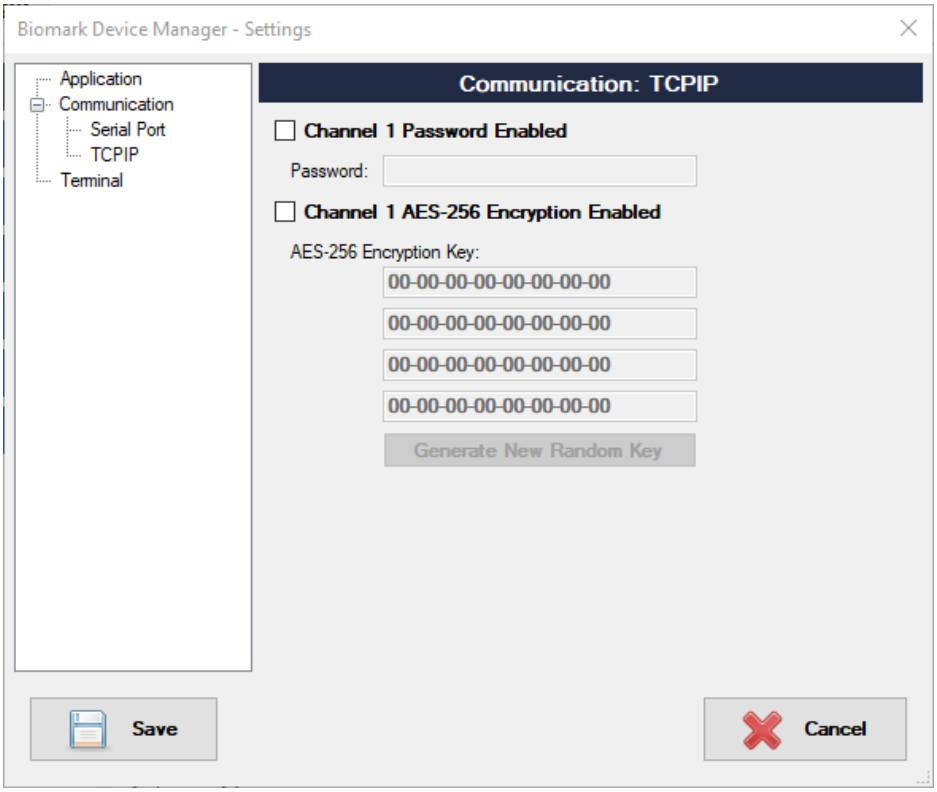
- **Serial Port** – Adjust the serial port settings of the PC to match those required by the connected reader or device. Most Biomark devices and readers, by default, are configured as follows:
    - **Parity**: None
    - **Data Bits**: 8
    - **Stop Bits**: 1
    - **Flow Control**: None

    Click the **Save** button to apply changes.



- **TCP/IP** – Biomark readers or devices equipped with Lantronix XPort modules may be secured by password and/or encrypted communication. For Device Manager to interact with these devices or readers, use the **TCP/IP** section of **Settings** window:
    - **Channel 1 Password Enabled** – Checkmark this box and supply the password configured on the device or reader.
    - **Channel 1 AES-256 Encryption Enabled** – Checkmark this box and supply the AES-256 Encryption key configured on the device or reader.

      ***Note**: For more information on configuring passwords or using AES-256 encryption on the Lantronix XPort module, refer to the Lantronix XPort User Guide available at: https://www.lantronix.com/pdf/XPort_UG.pdf or refer to the Biomark reader's or device's user manual.*



Click the **Save** button to apply changes.

- **Terminal** – Use this window to **Choose Font** and **Set Default Font** of the Terminal window in Device Manager.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