

# Detailing The All New Features RD1200 Reader



2023



## Introduction

The RD1200 was released in 2019, and since then it has been getting routine updates. At Acclima, we pride ourselves in our efforts to deliver world-class user experience in our continuously evolving market. We listen to feedback and try our best to deliver exactly what our customers want and need in their industries. As such, we have continued to improve our current product line-up and are happy to provide all owners of the Acclima RD1200 with a feature full update for 2023.

## Overview

- Multi Sensor Support (bussed)
- Sensor Addressing
- Built-in Sensor Diagnostic
- Enhanced Analysis Mode
- Full Array Sensor Firmware Updates
- BAUD Rate Adjust
- Other changes



## How to Update RD1200 Reader

The RD1200 firmware update version 1.8.0, is now available for the Sensor Reader on the [Acclima.com](https://www.acclima.com) website, you should download it into the `/Acclima/RD1200/Updates` folder on the thumb drive. Then when you plug the thumb drive into the micro-USB port on the Sensor Reader (while powered on), it will automatically update and synchronize new files.

**Caution:** Let this process complete uninterrupted by waiting until you see the message 'Synchronization Complete' before removing the thumb drive. The Reader will only automatically update if a newer firmware file is found on the USB drive.

1.8.0



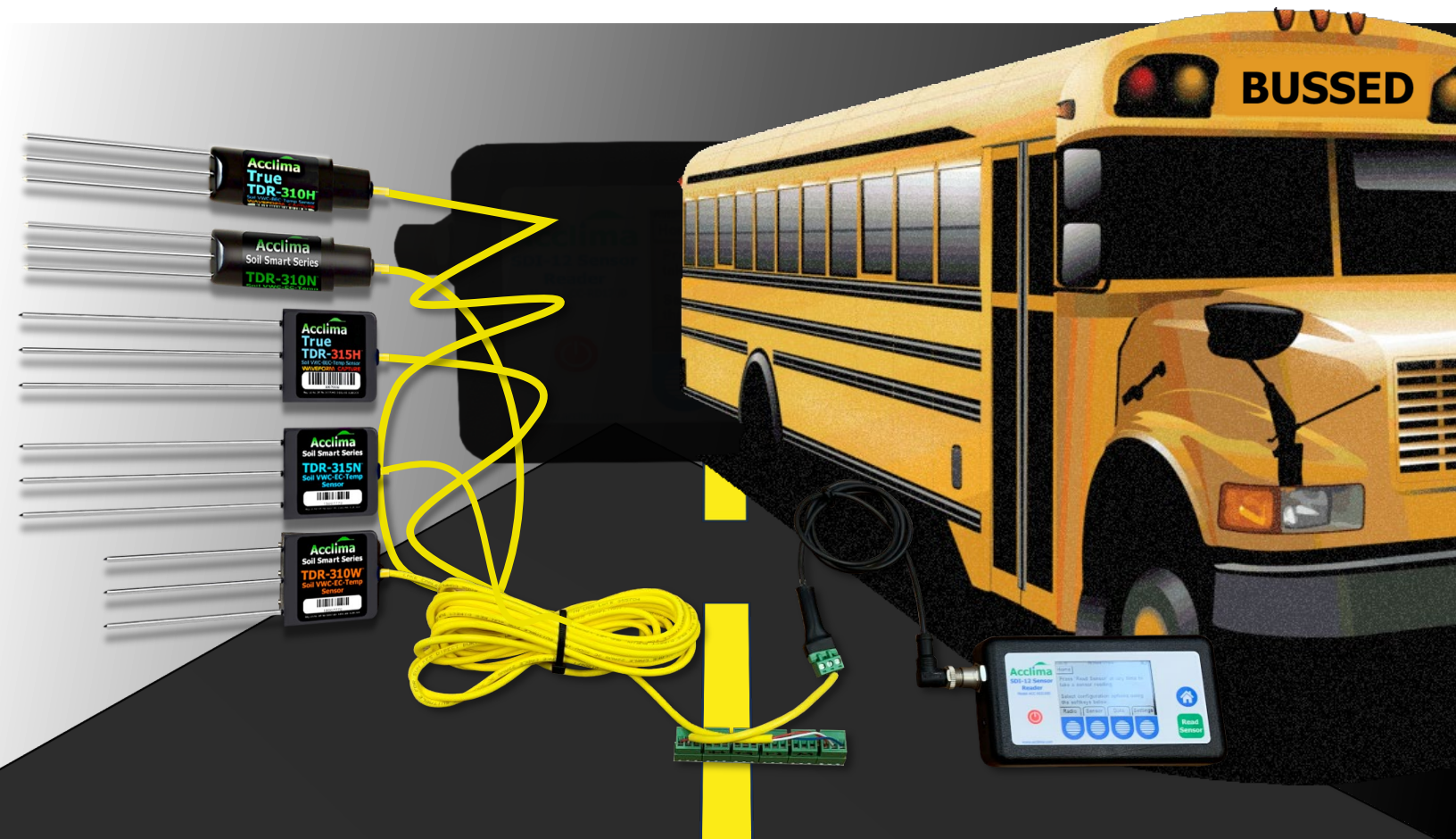
## Bussed Mode

### Improve Efficiency by Reading Multiple Sensors with Bussed Mode!

Say goodbye to the limitation of viewing just one sensor at a time. Our RD1200 Reader now supports "Bussed Mode", a game-changer that lets you effortlessly detect and monitor up to 62 SDI-12 unique devices simultaneously. Dramatically improve your experience with the RD2100 v1.8.0 firmware update!

Activating Bussed Mode is a breeze. Simply navigate to page 2/3 in the 'Sensor Setup' menu by tapping on 'Sensor' from the home page and then selecting the "-More-" button. Once there, pressing Address Mode switches the Reader from "One Sensor" to "Bussed Sensor Mode".

After you've entered 'Bussed Mode,' keep an eye out for the Bus icon that appears in the top left corner of the Reader display, in the icon tray. After entering Bussed Mode, enjoy the speed and efficiency of Reading, Addressing, Updating, and Diagnosing multiple Acclima sensors at a time!





# Firmware Updates

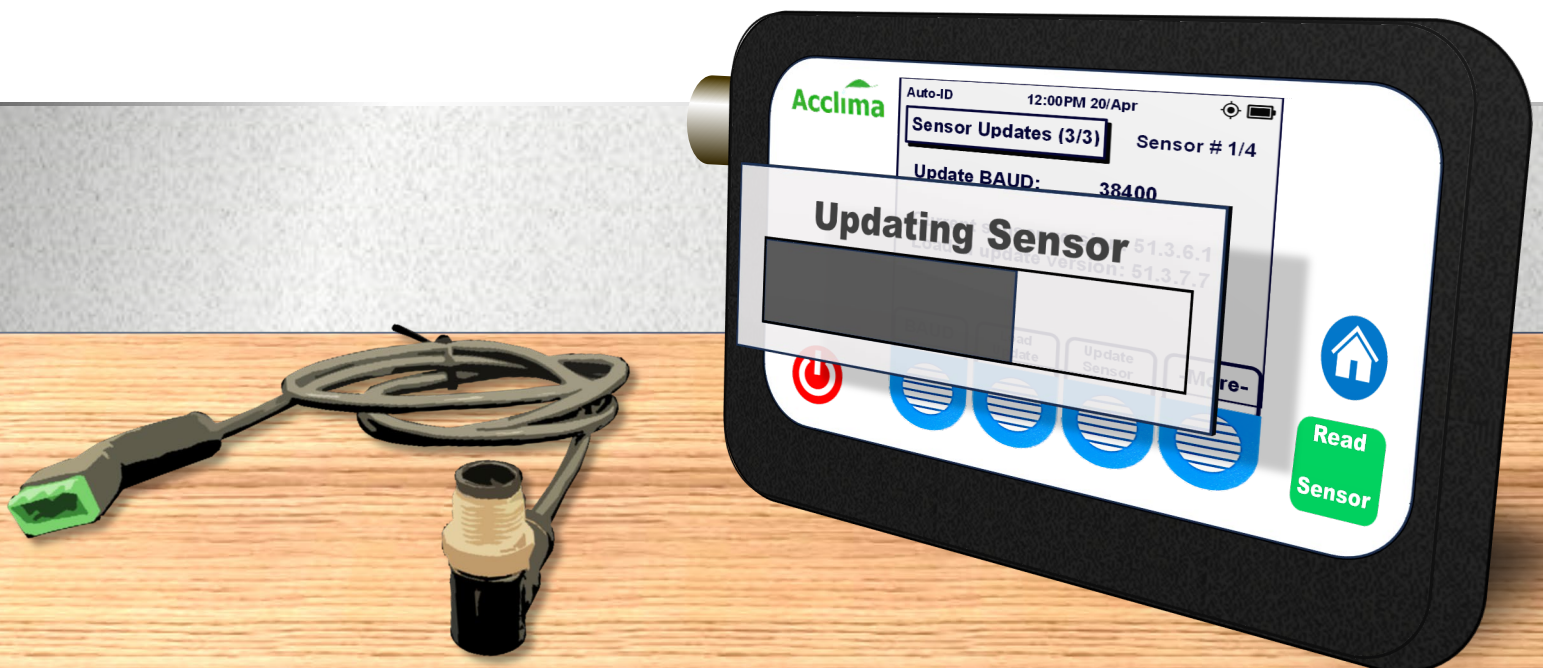
## Deploy Firmware Updates to Sensors In-Situ

The RD1200 Reader can now be equipped with a payload of firmware updates for various Acclima SDI-12 Sensors. Updating multiple sensors is now possible with minimal effort and time.

### Instructions:

To perform sensor updates, first download and copy any new firmware updates sourced from Acclima.com, onto your micro-USB flash drive *inside the Acclima/RD1200/Updates folder structure*. Then plug the USB drive into the Reader and wait a few moments for the synchronization to complete, then remove the drive. Connect the Reader to the sensor's terminal block, using the Quick Connect Cable.

Now that you have the update files and the Reader connected to the sensors. Enter the Reader into Bussed Mode and press "Scan" to detect all the sensors with unique addresses. After detecting the sensors on the Sensor Setup (1/3) page, navigate to the Sensor Updates page (3/3) by pressing the "-More-" button twice. With your sensors connected press "Update Sensor" and watch the magic happen! If an Update fails, you can reduce the BAUD rate by pressing the "BAUD" button on the Sensor Update page (3/3) and try it again.



# Update All Sensors

## Multi-Sensor Updates

The most requested feature is finally here! The new Update All Sensors feature is designed to automate updating all sensors on a terminal block simultaneously! Each unique sensor on the block will receive the update files at a dynamically pre-determined BAUD rate. This allows for the sensors to receive the files and load them at the best possible speeds. Only the newest firmware will be installed onto the sensors. With a push of a button, update multiple devices on a terminal block at once!

### Instructions:

This powerful tool is super easy to use. Simply, connect the Reader to the sensor's terminal block via the Quick Connect Cable. Power the Reader on and press the 'Sensor' button, then press 'Tools'. Finally, you can now press 'Update All Sensors'. Pressing "Begin" after the alert starts the updates. At the end of the process, a report is made available detailing what was updated and what was not. The Update All feature ignores incompatible sensors, so there is no need to worry about damaging any unsupported devices.



\*Only applies to spliced sensors on the same bus, with unique addresses.\*



# Sensor Addressing

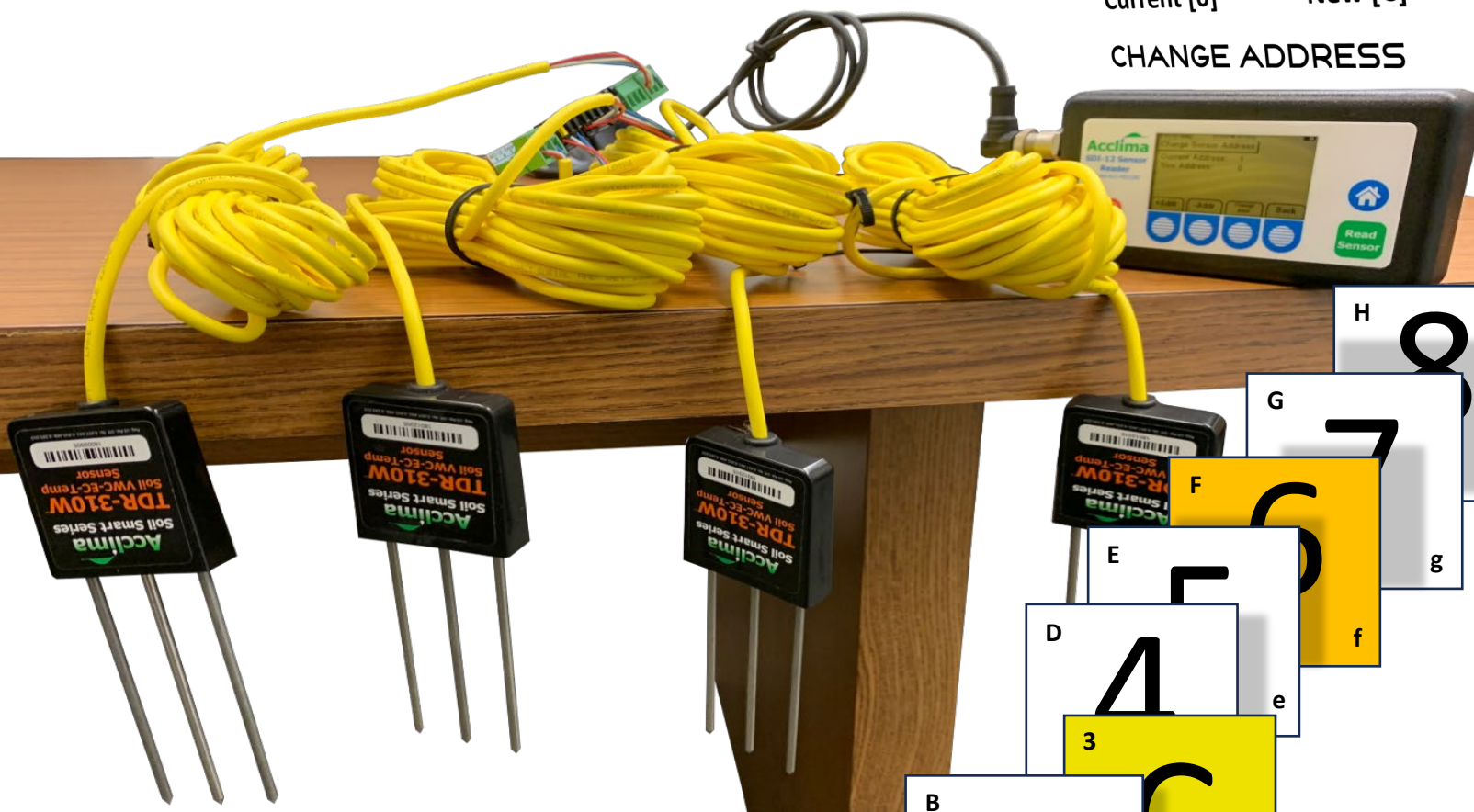
## Change Sensor Addresses on the Fly

Finally, you can now address Acclima SDI-12 sensors without the need of a personal computer. Bring the Acclima Reader with you to your sensor installation site, and not only read, but also modify and troubleshoot your sensors with ease.

You can select from up to 62 unique characters containing letters A-Z, a-z and numbers 0-9. Doing so is simple, first enter "Bussed Mode" if you will be addressing multiple sensors at a time. *Keep in mind that only sensors with already unique addresses will be detected; if the sensors are not addressed, or if they share the same address, you will need to address them individually.*

After enabling Bussed Mode, press "Scan" to detect all the unique sensors. If you would like to change a sensor's address, press "-More-", and then press "Change Address" on the Sensor Addressing (2/3) page. The selected sensor's address will be shown as "Current Address", you can cycle through the available characters by pressing either of the "+Addr or -Addr" buttons. Pressing "Change Addr", locks in the newly selected character for that sensor.

Current [6]      New [C]  
CHANGE ADDRESS





# Sensor Diagnostic

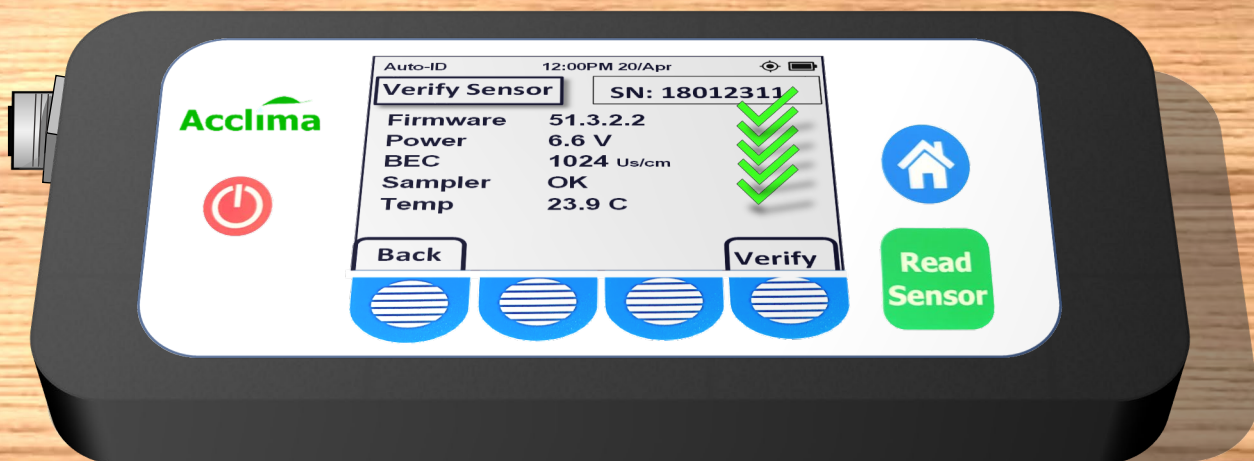
## Sensor Diagnostics and Enhanced Analysis Mode

When it comes to ensuring the peak performance of your sensors, our Verify tool can be a go-to option. Easily accessible through the user interface, this nifty tool simplifies troubleshooting for sensors displaying unusual behaviors. In just a few steps, you can initiate the 'Verify' command to assess five crucial data points:

1. **Firmware:** The firmware version is cross-checked against our internal database for the latest version.
2. **Power:** We test the sensor's power supply to identify any potential cabling or voltage issues.
3. **BEC:** The Bulk EC is examined to ensure it falls within the specified operating range for your sensor model.
4. **Sampler:** The digitizer is scrutinized to confirm the ability to collect readings.
5. **Temp:** The temperature is verified against the sensor's internal thermistor.

If any anomalies are detected, warning indicators will be displayed as a measure to inform you that corrective actions are needed. Experience peace of mind with the Acclima Reader's Verify Sensor Diagnostics.

Performing the Verify Diagnostics command is simple. If there are multiple sensors attached, make sure that you enable bussed mode and run a scan to detect all the devices. After the scan is complete and all your sensors are reported on Sensor Setup (1/3) page, simply press the “Tools” button. Here you will see the Analysis Mode, which is set to ‘Normal’ by default. You can change it to ‘Enhanced’ by pressing “Change Mode” to greatly increase the number of samples taken, to smooth the incoming readings. Pressing the ‘Verify’ button performs the sensor diagnostics. You can verify the following devices after pressing ‘Next Sensor’.



# Cheat Sheet

## Condensed Instructions

### Bussed Mode

1. To enable Bussed Mode, simply reach page 2/3 from the 'Sensor Setup' by pressing the "Sensor" button on the home page. Then press the "-More-" button.
2. After a new start up, the Address Mode will be set to 'One Sensor'. Press the "Address Mode" option to change it to 'Bussed Mode'. Then press 'Scan' to detect all unique sensors.

### Firmware Updates

1. Load the update file onto the Acclima USB drive using the folder structure: /Acclima/RD1200/Updates.
2. Plug the drive into the micro-USB port on the Acclima Reader.
3. After the synchronization, Remove the USB drive, then press the 'Sensor' option.
4. On the 'Sensor Setup page 1/3'. Press the '-More-' button until you reach "Sensor Setup page 3/3".
5. Finally, press 'Update Sensor'. The selected sensor will be updated at the current BAUD.
6. A list of each update stored within the Reader's memory can be found on the screen after pressing 'Select Update' and then 'Show Updates'.

### Update All Sensors

1. Connect the Reader to the sensor block with the Quick Connect cable.
2. From the home page press "Sensor" and then press "Tools".
3. Finally, press "Update All Sensors", read the warning message, and then press "Begin".
  - The Reader will automatically Scan and dynamically adjust the BAUD rate to transmit the updates to each sensor on the bus.

### Sensor Addressing

1. With a single sensor connected, on the home page press 'Sensor', then press 'Detect'.
2. To change the address press "-More-" and then press "Change Address".
3. Press the [+ Addr] or [- Addr] buttons to select an available character.
4. Confirm the selection by pressing "Change Addr".

### Sensor Tools - Verify and Enhanced Analysis Mode

1. Performing the 'Verify' command or enabling the Enhanced Analysis Mode.
  - a. To perform the Verify command. Press the button for 'Sensor' on the home page then press 'Tools', then press "Verify", to perform a quick diagnostic of the sensor.
  - b. To Enable Enhanced Analysis Mode, press the button for 'Sensor' on the home page, then press "Tools". Finally, press "Change Mode" to change the analysis mode from 'Normal' to 'Enhanced' to smooth noisy readings.



## Patch Notes

### 20.1.8.0 Patch Notes:

- Fixed a bug that caused inconsistent behavior when the GPS was running.
- Fixed a bug that caused sensor updates to report a false failure.
- Added the ability to select the next sensor in order after performing the Verify command in Sensor Tools.
- Added the feature that automates enabling Bussed Mode.
- Added the feature that automates, detecting the most suitable BAUD rate, using a small data packet transmission test.
- Added the feature that allows sensor updates to occur sequentially.
- Added the feature that allows the reader to compensate for update failures by selecting a BAUD rate of 2400 and retrying automatically.
- Added an update report window, that keeps count of the sensors that were updated and is displayed as a report after completion.
- Moved the change address button to Sensor Addressing (2/3)
- Removed the Load update option from Sensor Updates (3/3)
- Added new page, that shows the user what folder updates should be saved onto.
- Added a new page that shows the user what updates are stored on the Reader.
- Added feature that allows user to manually select an update when a USB drive is plugged into the Reader.
- Added the ability to cancel an update while in progress.
- Removed Power, Home, and Read Sensor button control when an update begins.

For questions or support

contact

[support@acclima.com](mailto:support@acclima.com)

Acclima, Inc

1763 W. Marcon Lane, Ste. 175  
Meridian, Idaho, USA 83642

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

call toll-free within the USA:  
866-887-1470

email: [sales@acclima.com](mailto:sales@acclima.com)