

# Release Notes

## 4-Gas<sup>PLUS</sup> Sensor Robot

(Version 3.0)

System Component	Summary
Sensors	
	Faster booting and warm-up time for Oxygen (O <sub>2</sub> ) sensor
	Faster display of chemical sensor readings
	Less chemical sensor noise in <b>Plots</b> data graphs
Communications	
	Dashboard displays robot meshing information
	Dashboard displays more communication status information, specifically, signal status (shown as one to four green bars)
	Ability to change the XBee channel for the Chromebook laptop receiver (via the <b>System Settings</b> pop-up window) and the Xbee channel of individual robots (via the <b>Communications Overview</b> pop-up window or the <b>Robot Settings</b> tab)
	<b>System Settings</b> pop-up window includes two tools (a <b>Spectrum Analyzer</b> and a <b>Throughput Analyzer</b> ) for troubleshooting interference and other transmission issues
	<b>System Settings</b> pop-up window's <b>Data Rate</b> button enables micro adjustments of data transmission and packet queuing rates

<p>User Interface (UI) and Software Improvements</p>	
	<p>Automatic connection of the (video) receiver</p> <p><b>Video tab Horizontal Image Correction</b> setting automatically adjusts camera image(s) to reflect a robot's horizontal orientation</p> <p>A metadata file (containing timestamp and GPS coordinates) is now created and saved for every recorded video file</p> <p>Support added for future hardware pan/tilt camera system payload</p> <p>Improvements to <b>Calibration</b> tab user interface (UI)</p> <p>Streamlining of robot renaming feature capabilities</p> <p><b>System Settings</b> pop-up window redesigned to facilitate greater functionality and more streamlined changes to dashboard displays</p> <p>Display of the percentage of an individual robot's remaining battery power</p>
<p>Calibration</p>	
	<p>Improvements to calibration hardware; sensor connector ("cap") now customized for different payload hardware versions (cap color must match the appropriate payload hardware version)</p> <p><b>Span Calibration Settings</b> configuration file(s) can be configured and saved to the Chromebook laptop</p>

Hardware	
	New payload hardware
	Improved waterproofing for payload
	Hot plugging (aka, hot swapping) now supported for both the XBee and the video receiver
	Micro SD card data downloading supported