

This document will detail the procedure for updating the PC software used to connect and configure the AEM AQ-1 Data Acquisition System as well as updating the firmware within the device itself. This procedure is as follows; please make careful note of the steps detailed in red, below.

#### 1. Preparation

1.1. Connect to your AQ-1 device with your existing software and make note of what firmware version is currently installed. This information will be required by technical support should you have any problems with the update process.

· · ·			
Device Information			
SN: 123456789			
Firmware: 1.15			
Total Data Rate:			
17%			
Memory Card Used: (N:\)			
1%			
Remaining Log Time:			
11 days 5 hours 50 minutes 19 seconds			

- 1.2. Make sure all logs have been downloaded from the AQ-1 and saved as DAQ files on your hard drive.
- 1.3. Save any custom sensor calibrations into the sensor/wizard database as the AQ-1 configuration will be reset as part of this process.

Configuration: Device*				
Channel Options	Live Data			
Enabled 🔽	Raw (V / Ohms)	Scaled (°C	)	
Name My Custom Sensor	4 09 / 98	-04	6	
Sample Rate (Hz) 10	<u></u>		<u> </u>	
Sensor Wizard				_
Vizard Name			··· Save	
Calibration Data	Save			X
inits °C				Wizard Notes
	Name: My Custom Sens	or	•	Here's the custom sensor calibration I made for my Mocal temp sensor
caling Type Interpolate	Sensor Type: Not Specified Air/Fuel Ratio	Sensor Manufacturer; Not Specified AEM	Car Make; Not Specified	
140	Pressure Temperature	Bosch Delphi	Audi BMW E	
120	Lap/Split Beacons	Hitachi	Cadilac	
100	Voltage	Omega	Chrysler	
. 80		Autometer	Eagle	
0 60			Fiat	
and the second s			Geo GMC	
20			Honda *	
				Save Cancel
-20		105.000		·
		180 100.000		
20,000 40,00	0 60,000 80,000 100,000	210 95.000		
	an (chino)	245 90.000		-



### 2. Download

2.1. Navigate to the <u>AEM Performance Electronics Homepage</u> and download the latest AQ-1 installer from the 'Catalog & Software Downloads' section.

## 3. PC Software Installation

- 3.1. Close any AEM software that may be running on your PC.
- 3.2. Run the AQ-1 installation file and follow the on-screen prompts.
- 3.3. Launch the newly installed AQ-1 application and attempt to connect to the AQ-1 device through USB.

#### 4. AQ-1 Firmware Update

4.1. The software will detect if your device's firmware requires update and present the dialog below. Do not proceed unless you have completed step 1 above.

Device F	irmware Version Check
1	It has been detected that the attached device requires a firmware update.
	Update Firmware
	→ <u>C</u> ancel
	Cancel

- 4.2. Select 'Update Firmware...' after which the 'AEM AQ-1 Bootloader v2.6a' window should appear.
- 4.3. The 'Open Firmware File' button should become active and the message 'Device attached' should appear in the message box. This may take up to sixty seconds if Windows needs to configure this USB device prior to use. If this button does not become active within sixty seconds then contact AEM Technical Support at 1-800-423-0046 or <a href="mailto:emstech@aempower.com">emstech@aempower.com</a>. See the 'Troubleshooting' section at the end of this document for additional information.



🔑 AEM AQ-1 Bootloa	der v2.6a
Open Firmware File	
Program/Verify	
Device attached	

4.4. Click 'Open Firmware File', select the hex file, and click open.

Image: Comparate Files (366) + AEM + AQ-1 Data Acquisition System v1.2 + Tools + Bootloader   4 fg   Search Bootloader   P     Organize * New folder   Image: Comparate Files (366) + AEM + AQ-1 Data Acquisition System v1.2 + Tools + Bootloader   Image: Comparate Files (366) + AEM + AQ-1 Data Acquisition System v1.2 + Tools + Bootloader   P     Organize * New folder   Image: Comparate Files (366) + AEM + AQ-1 Data Acquisition System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   P     Image: Comparate * New folder   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Bootloader   Image: Comparate File System v1.2 + Tools + Boo	🔑 Open						x
Organize -     New folder     Image: Construction of the system o	🕜 🖓 🖉 🖉 🖉 🖉	86) 🕨	AEM + AQ-1 Data Acquisition System v1.2	Tools  Bootloader	• <del>i</del> j	Search Bootloader	٩
30 - 2500 Logger Name Date modified Type Size   31 - 2500 John Size Intervention Intervention Intervention   30 - 2500 John Intervention Intervention Intervention Intervention   30 - 4500 Wideband Faitafe Intervention Intervention Intervention   30 - 4500 Wideband Faitafe Intervention Intervention   Intervention Intervention Intervention Intervention   Intervention Interve	Organize 👻 New folder					)II •	0
Ibraries     Documents     SVN Repositories     File name:     100927_30-2500, Alpha_v178.hex     Hex files (".hex)	30-2500 Logger 32/XK FRM 20/XK FRM 30-2510 Dyno Shaft Gauge FORMS 30-2510 Dyno Shaft Gauge 30-3050 Water Injection 30-4900 Wideband Failsafe 24F FRM Torpobox	E	Name ^ 121019.30-2500_v1181_APP.hex	Date modified 10/19/2012 9:49 AM	Type HEX File	Size 748 KB	
	ibraries	120927_	30-2500_Alpha_v178.hex		•	Hex files (*.hex)	-

4.5. Once loaded, click Program/Verify and following the status updates in the message window until the update process has completed. Close the 'AEM AQ-1 Bootloader v2.6a' window.

### 5. Completion

5.1. The device should now reset and connect to the new PC software. The currently loaded firmware is as displayed in the lower left hand corner of the AQ software.



#### Troubleshooting

*Problem*: The 'Open Firmware File' button does not become active within sixty seconds (Section 4.3).

- Unplug USB connection and reconnect, preferably into a different PC USB port. Make notice of any activity in the Windows "System Tray" notification area. Windows must configure and install devices when they are plugged into each USB port of the PC.

p	AEM AQ-1 Bootloader v2.6a
	Open Firmware File Program/Verfy

- Reboot PC and try process again, starting at step 3.3
- If the user is still unable to get an active 'Open Firmware File' button and is unable to update to the latest firmware then the newly installed PC software will be unable to connect to their device. In this case, the user should uninstall the PC software and re-install AQ-1 software v1.1 as downloaded from <u>www.aemelectronics.com</u>. The user should then connect to the device using the v1.1 software and check to see if the device is in "Calibration Mode" as depicted below

whole as depicted below.	
Total Data Rate:	· · · · · · · · · · · · · · · · · · ·
17%	
Memory Card Used: (N:\)	
1%	
Remaining Log Time:	
11 days 5 hours 50 minutes 19 seconds	
PERFORMANCE ELECTRONICS	
AO-1 Connected CalibrationMo	de

- If the device is in 'Calibration Mode' and the firmware version, as noted in Section 1.1, is "v1.15" then the user should contact AEM Technical Support at 1-800-423-0046 or <u>emstech@aempower.com</u>.