AirQ Scout-LCD Safety Manual

Specifications

Enclosure		8”x7”x4”, IP64
Power	(Internal):	Lithium primary Battery Pack. Field replaceable. SignalFire Order Code: 4DPak SignalFire Part Number: 810-0051-01
	Coin Cell:	Panasonic CR2032
	(External):	External approved power supply can be only used in hazardous locations with the following entity parameters: Ui=5.9V Ii= 3.1A Pi= 0.8W Li=8.75 µH Ci=105.55 µF The SignalFire Sentinel-HCSolar system is compatible with the device for Group C&D only Model: SignalFire Sentinel-Solar-9.0
Temperature Rating Depends on Sensor Type. refer to enclosure		-20°C ≤ T_{amb} ≤ +50°C (-4°F to 122°F) -20°C ≤ T_{amb} ≤ +55°C (-4°F to 131°F) -20°C ≤ T_{amb} ≤ +60°C (-4°F to 140°F) -20°C ≤ T_{amb} ≤ +65°C (-4°F to 149°F) -20°C ≤ T_{amb} ≤ +70°C (-4°F to 158°F) -20°C ≤ T_{amb} ≤ +75°C (-4°F to 167°F)
Radio Frequency		902-928MHz ISM Band, FHSS radio, internal antenna FCC ID: Pending IC: Pending
Compliance & Hazardous Area Approvals		Battery Powered: Class I Zone 0 AEx ia IIC T4 Ga Ex ia IIC T4 Ga Class I Div 1, Groups A-D, T4 Powered by Intrinsic Safety Power Supply: Class I Zone 0 AEx ia IIB T4 Ga Ex ia IIB T4 Ga Class I Div 1, Groups C-D, T4 Certified to UL 913, 62368-1 Conforms to CSA 62368-1 CSA 60079-0, CSA 60079-1
Radio Power		40mW, Receive Sensitivity -109dB

Table of Contents

Specifications 2
Table of Contents 3
Warnings 4
Connections and Components 5
Operation 5
Setup 6
  Sensor Replacement 6
Mounting and Care 9
  Internal Lithium Battery Replacement 10
  Cleaning Instructions 10
  Configuration / Debug 10
Disposal 11
  Lithium Primary Battery: 11
  Electronic Components: 11
  Metal Parts: 11
  Packaging Materials: 11
Technical Support And Contact Information 14

Warnings

WARNING: Use of this equipment in a manner not specified by the manufacturer may impair the protection provided by the equipment.
AVERTISSEMENT: L'utilisation de cet équipement d'une manière non spécifiée par le fabricant peut nuire à la protection fournie par l'équipement.

WARNING: The AirQ Scout-LCD must be mounted in a location free of high vibrations. Over time vibrations can damage the device or battery pack, which could impair its safety ratings. Do not mount directly to continuous vibrating equipment such as pumps or compressors.

WARNING: The use of any parts not supplied by the manufacturer violates the safety rating of the equipment.
AVERTISSEMENT: L'utilisation de pièces non fournies par le fabricant est contraire à la cote de sécurité de l'équipement.

WARNING: Electrostatic Discharge Hazard! Care must be taken to avoid the potential of creating a change on the enclosure or antenna. Do not wipe with a dry cloth. Do not brush against the enclosure with clothing or gloves.
AVERTISSEMENT: Risque de décharge électrostatique! Il faut veiller à éviter tout risque de changement de l'enceinte ou de l'antenne. Ne pas essuyer avec un chiffon sec. Ne pas brosser contre l'enceinte avec des vêtements ou des gants.

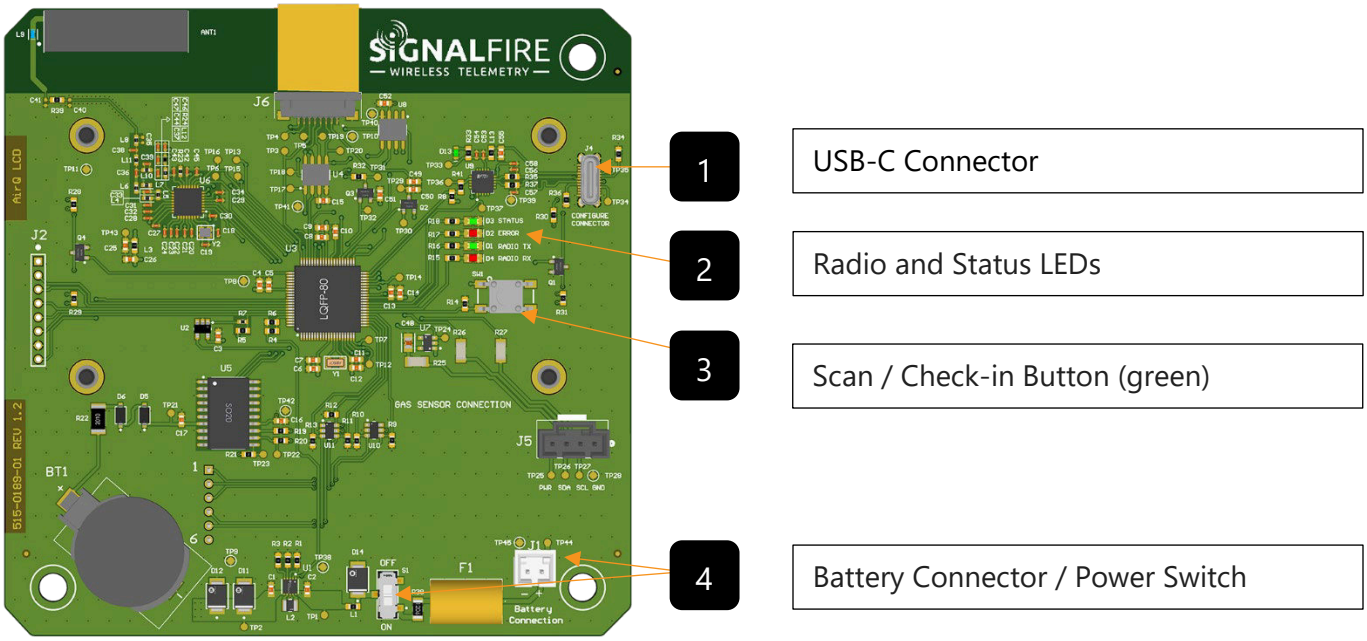
WARNING: Only connect to the debug port in a safe area!
AVERTISSEMENT: Se connecter uniquement au port de débogage dans une zone sûre!

WARNING: Perform setup steps in a safe location.
AVERTISSEMENT: Suivez les étapes de configuration dans un endroit sûr.

WARNING: Use of any battery other than the SignalFire part number 4DPak will impair the protection provided by the equipment.
AVERTISSEMENT: L'utilisation d'une pile autre que la référence SignalFire 4DPak *compromettra la protection fournie par l'équipement.*

The product includes an external conductive part (sensor holder). The product was tested for maximum capacitance, and the measured capacitance of the sensor holder is 10.6 pF. The end user shall determine the suitability of the product for the specific application.
AVERTISSEMENT: Le produit inclut une composante conductrice externe (soutiens du capteur). Le produit a été testé pour une capacitance maximale de 10.6pF du soutiens du capteur. L'utilisateur devra donc déterminer la pertinence du produit pour une application spécifique.

Connections and Components



Radio LEDs

- The Radio TX LED (green) blinks each time a radio packet is sent. This LED will blink rapidly while searching for the radio network and at boot up.
- The Radio RX LED (red) blinks on each received radio packet.

Status LEDs

- The STATUS LED (green) will blink on when the AirQ Scout-LCD sends a message to the Gateway.
- The ERROR LED (red) will blink to indicate an error condition.

Scan/Check-in Button

- If this button is pressed the AirQ Scout-LCD will take a reading from the sensor and send the data to the gateway.

Operation

The Gas Sensor is continuously powered and sampled once a second. Values are updated on the LCD in real time and are reported every check-in interval or immediately if the detected gas level exceeds the configured alarm threshold (10ppm by default).

When the gas concentration is above the alarm threshold, the red alarm LEDs on the AirQ Scout-LCD will flash and the LCD will indicate an alarm condition. While in alarm the AirQ Scout-LCD will report its values to the Gateway every 5 seconds until the concentration goes below the threshold.

Setup

The AirQ Scout needs to be set up for correct operation before being fielded. The configurable items include:

- Network selection
- Check-in period selection
- Modbus Server ID setting
- Optional alarm thresholds

All settings are made using the SignalFire Toolkit PC application and a USB-serial programming cable available from SignalFire.

WARNING: Perform the steps in this section (Setup) in a safe location only.
AVERTISSEMENT: Suivez les étapes de cette section (Configuration) dans un endroit sûr uniquement.

Sensor Replacement

The smart H_2S sensor module is field replaceable. Replacement sensors must be obtained from SignalFire Telemetry and must match the required gas type and measurement range.
Use of unapproved sensors may result in incorrect readings, loss of diagnostic functionality, or degradation of system performance.

Procedure:
IMPORTANT: Power the unit off prior to replacing the sensor

1. When it is safe to do so, locate the smart sensor module on the bottom of the enclosure.

2. Gently grip the lower section of the smart sensor module and turn it counterclockwise to remove it (the lower section has two flats 180° apart to make this process simpler).

3. Once the lower section of the smart sensor module has been removed, the actual sensor will be exposed.

4. Gently grip the sensor and slowly pull on it until it comes out. The sensor is secured into place with 4 pins. Do not try to rotate the sensor.

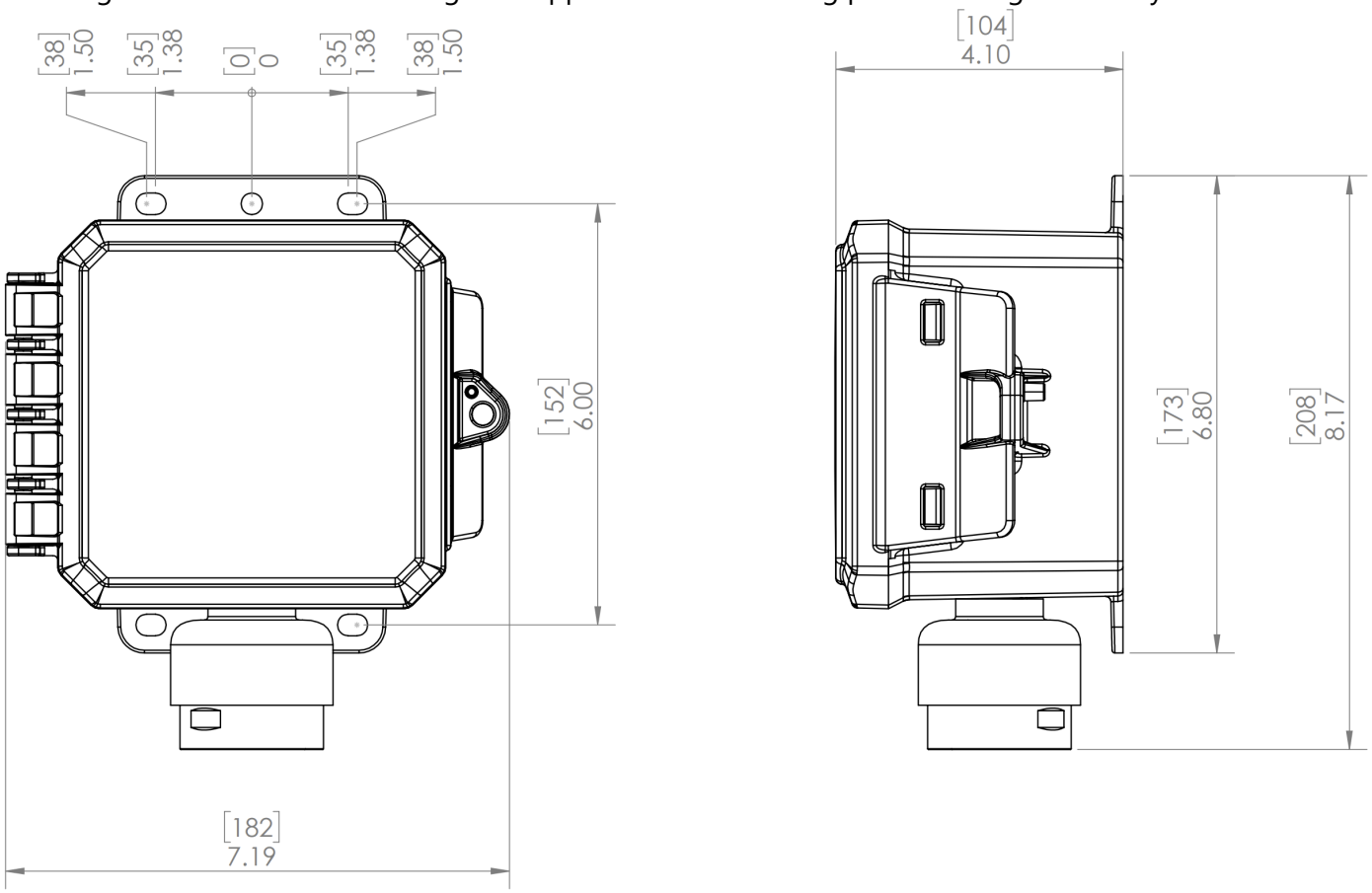
5. Install the new sensor by carefully aligning the four pins of the sensor with the four holes on the enclosure.

Mounting and Care

The AirQ Scout-LCD has a built-in mounting flange. Mount device so that the gas sensor faces downward. When mounting to a flat surface use at least three exterior rated screws. Screws should be installed in both enclosure flanges.
Provided screws may be substituted for screws with a shear strength in excess of 25lbs(11.3 kg) and a head in excess of 0.31in (7.9mm) A washer may be substituted for the head diameter requirement. Screws should be of sufficient length to not pull out of mounting location.

Example: ¼" bolt, #10 construction screw, #6 screw with washer.

If mounting location is not thick enough to support device a backing panel or flange nuts may be used.



WARNING: The AirQ Scout-LCD must be mounted in a location free of high vibrations. Over time vibrations can damage the device or battery pack, which could impair its safety ratings. Do not mount directly to continuous vibrating equipment such as pumps or compressors.

This equipment is not suitable for use in locations where children are likely present

Note This equipment design typically applies to commercial equipment expected to be installed in locations where only adults are normally present

Internal Lithium Battery Replacement

Battery Packs and can be changed with the node in place.

1. Open the cover of the AirQ Scout-LCD
2. Turn Power switch to "OFF"
3. Unplug the battery from the PCB, by depressing the locking clip on the connector.
4. Remove the two screws holding the battery strap to the battery bracket
5. Remove/Replace the battery.
6. Reinstall the batter strap and screws
7. Connect the battery to the main PCB battery connector
8. Close the enclosure cover, use care to ensure that the wires are not pinched by the cover.

WARNING: Use of any battery other than the SignalFire part number 4DPak will impair the protection provided by the equipment.
AVERTISSEMENT: L'utilisation d'une pile autre que la référence SignalFire 4DPak *compromettra la protection fournie par l'équipement.*

Coin cell: Pry out old battery and snap in new battery.

Cleaning Instructions

The outside of the enclosure may be cleaned with water, mild soap, and a damp cloth as needed. High Pressure washing is not recommended.

WARNING: Electrostatic Discharge Hazard! Care must be taken to avoid the potential of creating a change on the enclosure or antenna. Do not wipe with a dry cloth. Do not brush against the enclosure with clothing or gloves.
AVERTISSEMENT: Risque de décharge électrostatique! Il faut veiller à éviter tout risque de changement de l'enceinte ou de l'antenne. Ne pas essuyer avec un chiffon sec. Ne pas brosser contre l'enceinte avec des vêtements ou des gants.

Configuration / Debug

Debug and configuration information is available if a connection is made via the debug port on the main board. A USB-C cable must be used for this interface.

Debug and advanced configurations may be done using the SignalFire Toolkit PC application.

WARNING: Only connect to the debug port in a safe area!
AVERTISSEMENT: Se connecter uniquement au port de débogage dans une zone sûre!

Disposal

To ensure environmental safety and compliance, please follow these disposal instructions for the product and its components:

Lithium Primary Battery:

This product contains lithium primary batteries, which must be removed before disposal. Lithium batteries must be recycled through specialized facilities due to their fire risk. Do not place batteries in regular trash.

Electronic Components:

This product contains electronics that must be recycled through approved e-waste recycling programs. Electronics can contain harmful materials and should be prevented from entering landfills. Do not place electronics in regular trash.

Metal Parts:

Any metal components can be separated and recycled through your local metal recycling facility.

Packaging Materials:

Recycle or reuse packaging materials such as cardboard or plastics, following local recycling guidelines.

For local disposal sites refer to:

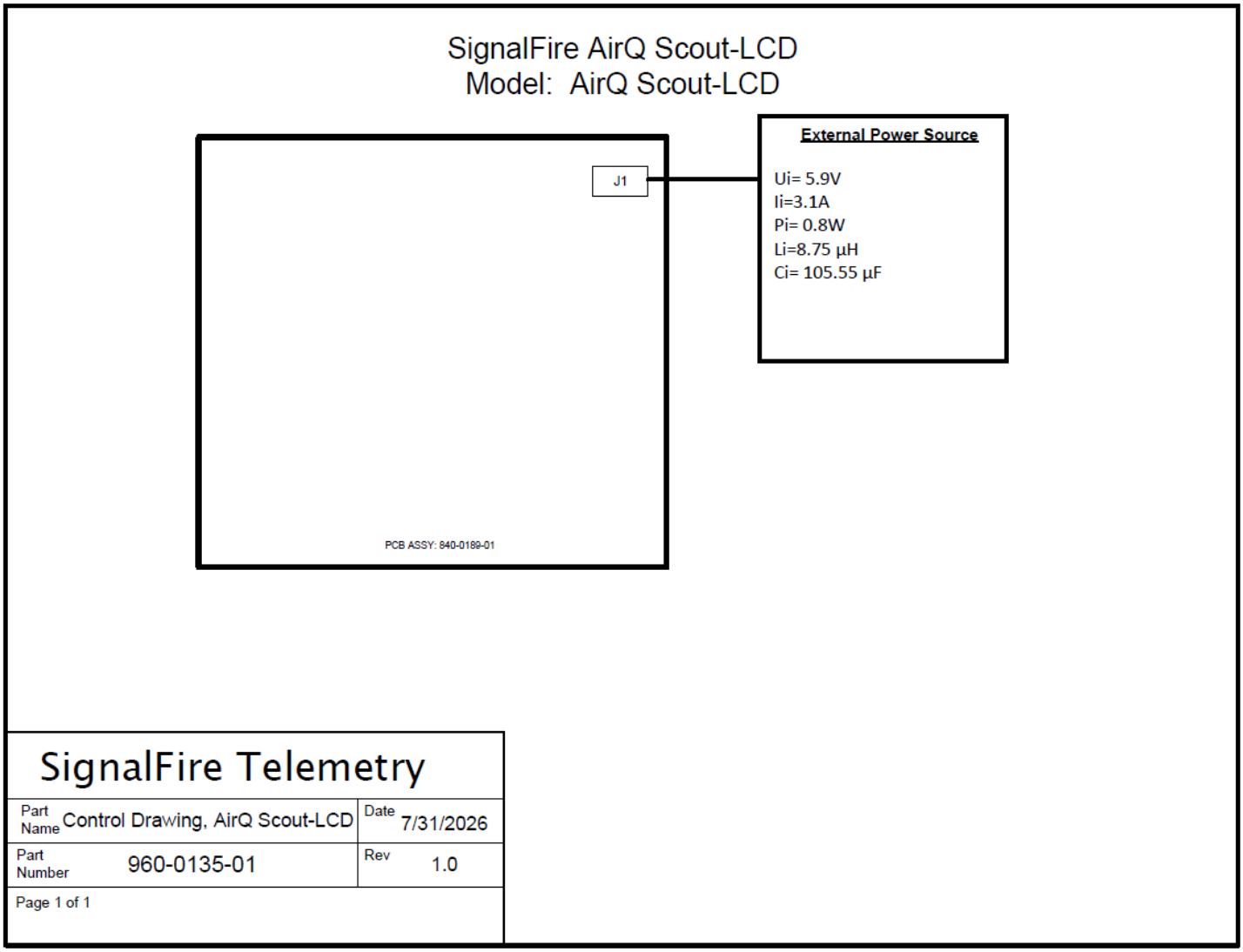
- Call2Recycle (USA, Canada)
- Earth911 (USA, Canada)
- SERI (International)

In the USA or more information, visit:

- EPA's battery disposal guide
- EPA's electronics recycling page

By following these guidelines, you help reduce waste and support environmental sustainability.

Control Drawing



Revision	Date	Changes/Updates
1.0	8/6/26	Initial release

APPENDIX - FCC and IC Statements

Changes or modifications not expressly approved by SignalFire Telemetry, Inc could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.

WARNING!
FCC and IC Radiation Exposure Statement:
This equipment complies with FCC's and IC's RF radiation exposure limits set forth for an uncontrolled environment under the following conditions:

1. This equipment should be installed and operated such that a minimum separation distance of 20cm is maintained between the radiator (antenna) & user's/nearby person's body at all times.
2. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a maximum (or lesser) gain approved for this transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.r.i.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Technical Support And Contact Information

SignalFire Telemetry
140 Locke Dr., Suite B
Marlborough, MA 01749

(978) 212-2868
support@signal-fire.com

SIGNALFIRE
WIRELESS TELEMETRY