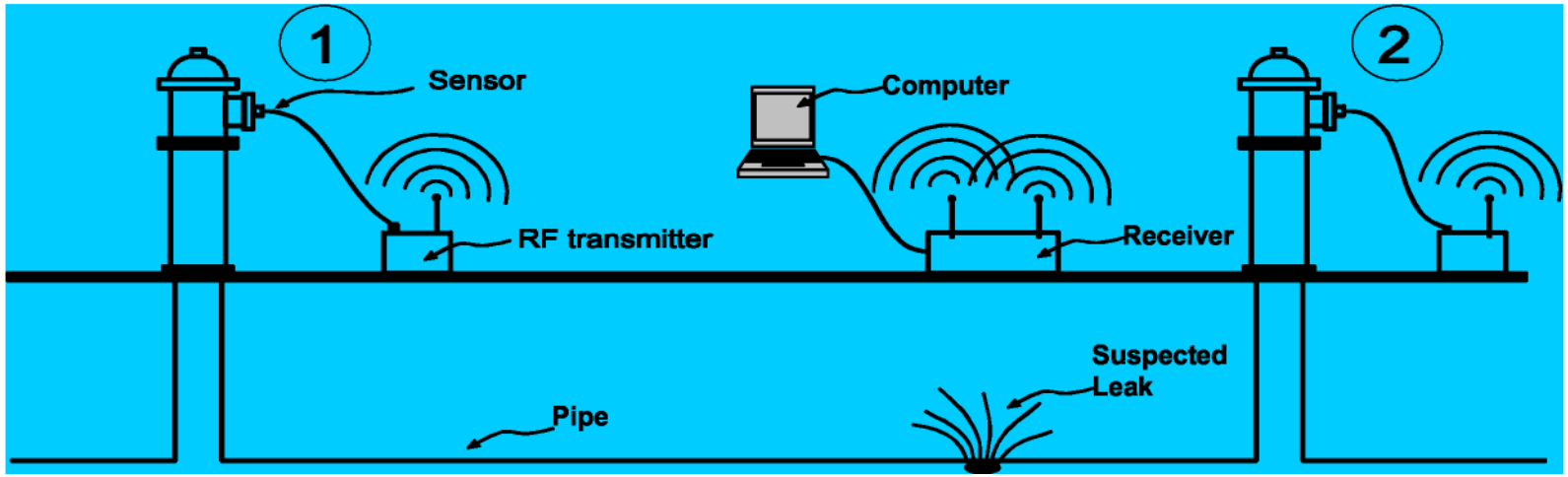
Hardware setup for correlating leak noise



LeakfinderRT can be used in both leak pinpointing and leak survey modes. In leak pinpointing mode, leak noise sensors are attached to the pipe at two positions that bracket the suspected leak. Vibration sensors should be attached directly to the pipe or, if the pipe is not accessible, to suitable fittings such as fire hydrants or underground valves. Signals from the sensors are fed to wireless transmitters and signals from the wireless receiver's line-out are fed into the line-in port of the computer's soundcard. Wireless transmitters and receiver should be placed at least 30 cm (1 ft) above ground to minimize RF signal loss. Transmitters should be in line-of-sight from the receiver's position and the latter should be positioned halfway between transmitters to maximize the range.

Accelerometers can be used for sensing leak noise in metallic pipes; however, hydrophones should be used for plastic and large-diameter pipes. Low-frequency vibration sensors may be used as an alternative to hydrophones. **If low-frequency vibration sensors are used instead of hydrophones for plastic pipes, they should be mounted vertically on top of fully charged and de-aired fire hydrants.** For plastic pipes, it may not be possible to locate leaks with sensor-to-sensor spacing greater than 100 m (328 ft). For metal pipes, sensor-to-sensor spacing can be as large as 500 m (1640 ft) but a maximum spacing of 200 m (656 ft) is recommended.
In leak survey mode, sensors are attached in the same manner as in the pinpointing mode. However, the operator(s) moves the sensors from one position to the next in a pre-determined manner following a marked system map.

Attachment of accelerometers (1)