River Level Monitoring Using Ecowitt Sensor

Overview

Ecowitt are a manufacturer of weather stations and have a number of products including sensors which upload data to the cloud and can be displayed on their website or free to download smartphone App.

Notes

- The sensor's maximum range is 0m to 3.5m in daylight and 4.0m in darkness.
- There is no closed user group so the data is available publicly to anyone with the Ecowitt App if you allow it.
- Mounting options are not covered in this document

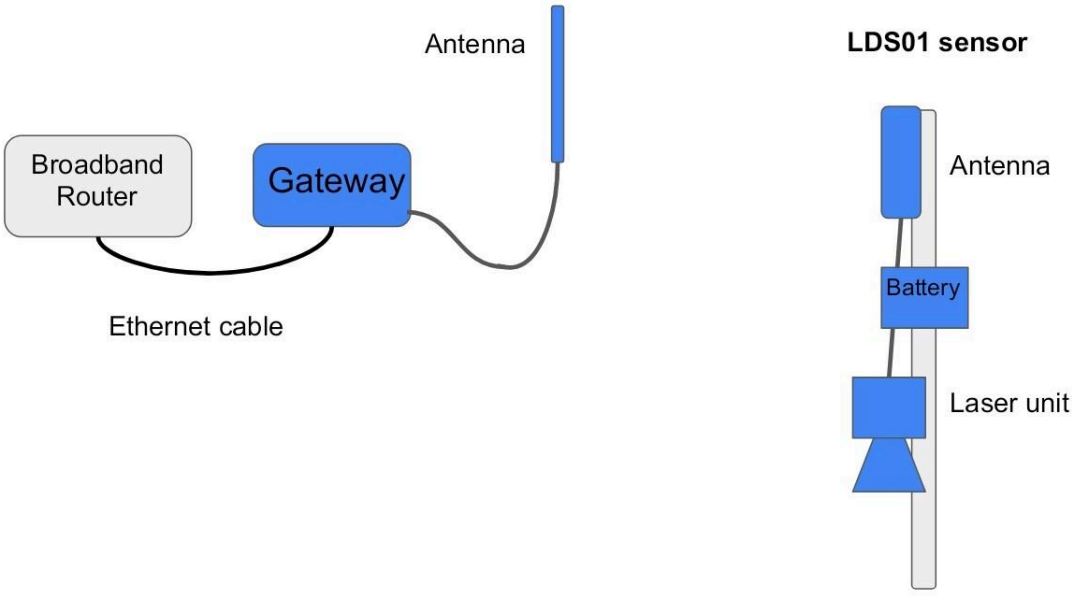
The main equipment used for river level monitoring comprises of the following:

1) Snow depth sensor - LDS01
2) WiFi and LAN Gateway - GW3002
3) Ecowitt App
4) External antenna (optional) for the Gateway + SMA adaptor - used to provide more range than stub antenna supplied with the gateway
5) 8 x AA alkaline batteries for LDS01
6) Ethernet cable (optional)

1) & 2) Purchased through Weather Spares as they had stock and appear to be knowledgeable in this arena.
3) Downloaded from Android Play Store (also available from Apple Store)
4) bought from Amazon

Setup

Architecture diagram



Steps

The instructions supplied with the gateway and sensor are straight forward and it's fairly plug and play. Below is an overview

1) Power on gateway and connect to broadband router, either by WiFi or Ethernet cable following supplied instructions.
2) Download Ecowitt App and set up account (free) on ecowitt.net.
3) Gateway should appear in the app and report on indoor temperature, humidity and pressure.
4) The antenna and sensor are prewired, so just add batteries to the battery unit
5) Sensor should appear in the app.
6) Once the sensor has been mounted in position use the LDS calibration section in the app to set sensor height above river bed.
7) To share the data publicly select Devices on the App, select the 3 dots associated with the gateway, check the box associated with the LDS01 sensor
8) If required, you can set up an alert for an exceeded depth of water, using the alert section in the Ecowitt App. This will send an alert to the email account used when setting up the App. A further 2 email addresses can be added using the settings part of the alert section.

To ensure that I received good signal strength from the sensor I replaced the short antenna with a higher gain antenna, this came with 3m of cable and allowed me to place it in the porch.

Costs

Costs at time of purchase - Feb 2026

GW3002 WiFi LAN Gateway & MicroSD £55.00
LDS01 sensor £90.00
External antenna £8.99
SMA connector £5.98 for 2, only 1 needed if external antenna is required.

Note, I actually bought an Ecowitt 7 in 1 weather station for £140, which included the gateway.

Links to products

LDS01 Laser Distance Sensor https://share.google/Jxa7UxRhgQqaTEadC

GW3000 Ethernet and Wi-Fi Gateway with Data Storage / GW3010 Wi-Fi & Ethernet Weather Station Gateway with Enhanced Omni-directional Antenna
https://share.google/MSVg2iNmSfEUr6SF4

Weather Spares https://weatherspares.co.uk/

External 868 MHz SMA antenna
https://www.amazon.co.uk/dp/B0CRDQSQ7S?ref_=pe_112168041_1111392281_t_fed_asin_title

SMA Female to RP-SMA Male connector
https://www.amazon.co.uk