

Digilant® - Flood Early Warning System™

May 2014

The Digilant® *Flood Early Warning System*™ is a 'wire free' water level imaging system for monitoring rivers & waterways, culverts, river crossings and flood risk areas. The MPixel imaging system is solar powered making it completely independent of external power, and the image and water level data are sent via a 3G or Satellite modem to monitoring stations and emergency services websites. Under normal conditions the system sends images and water level data on a regular basis however when the water level rises quickly, the system automatically changes to high speed imaging, immediately warning the monitoring authorities and providing real time flood status information. Relying on water level data alone is very risky during an emergency flood crisis as large spikes can be ignored as equipment failure – an image however will verify the water data!

The system by default sends images via the 3G network, however during a flood crisis the 3G network may overload or breakdown and if this happens, the system automatically switches over to Satellite communications.

FEATURES

- Solar powered water level imaging system for monitoring waterways, culverts and flood risk areas
- Ultra-low power digital imaging system with 3G modem & automatic Satellite fallback communications.
- Fully integrated impulse Radar technology for non-contact water level measurement
- High Sensitivity colour MPixel camera with wide dynamic range
- Optional Bubble sensor and Doppler water velocity sensor.
- Images & water level data are sent immediately to emergency services monitoring stations and websites
- Full control and configuration of the system via SMS commands
- Solar powered synchronised white or IR LED spotlight for night vision
- Images and water level data are also displayed on a web based map oriented Dashboard
- No bulky & heavy battery compartments as the battery is integrated in the camera itself

FLOOD EARLY WARNING SYSTEM



CAMERAS

MBS-SA04(SPBF)

Water Level Monitoring

Non-contact water level measurement means that the mounting poles can be taller than the highest flood surge.

Water level and water rate of rise (ROR) are sampled every 10 minutes

An Image is sent every hour with the water data. If either the water level or ROR exceeds a pre-set value, the system sends an image immediately with the alarm data.

During this 'alarm' phase, the image frequency is increased and the sampling is also increased to every 5 minutes.

Emergency services operators can also take control of the camera for a period of time to get real-time image sequences.

All settings and pre-set levels including the water level calibration can be programmed via SMS.



Daytime Image



Night-time Image



Night-time Image in torrential rain

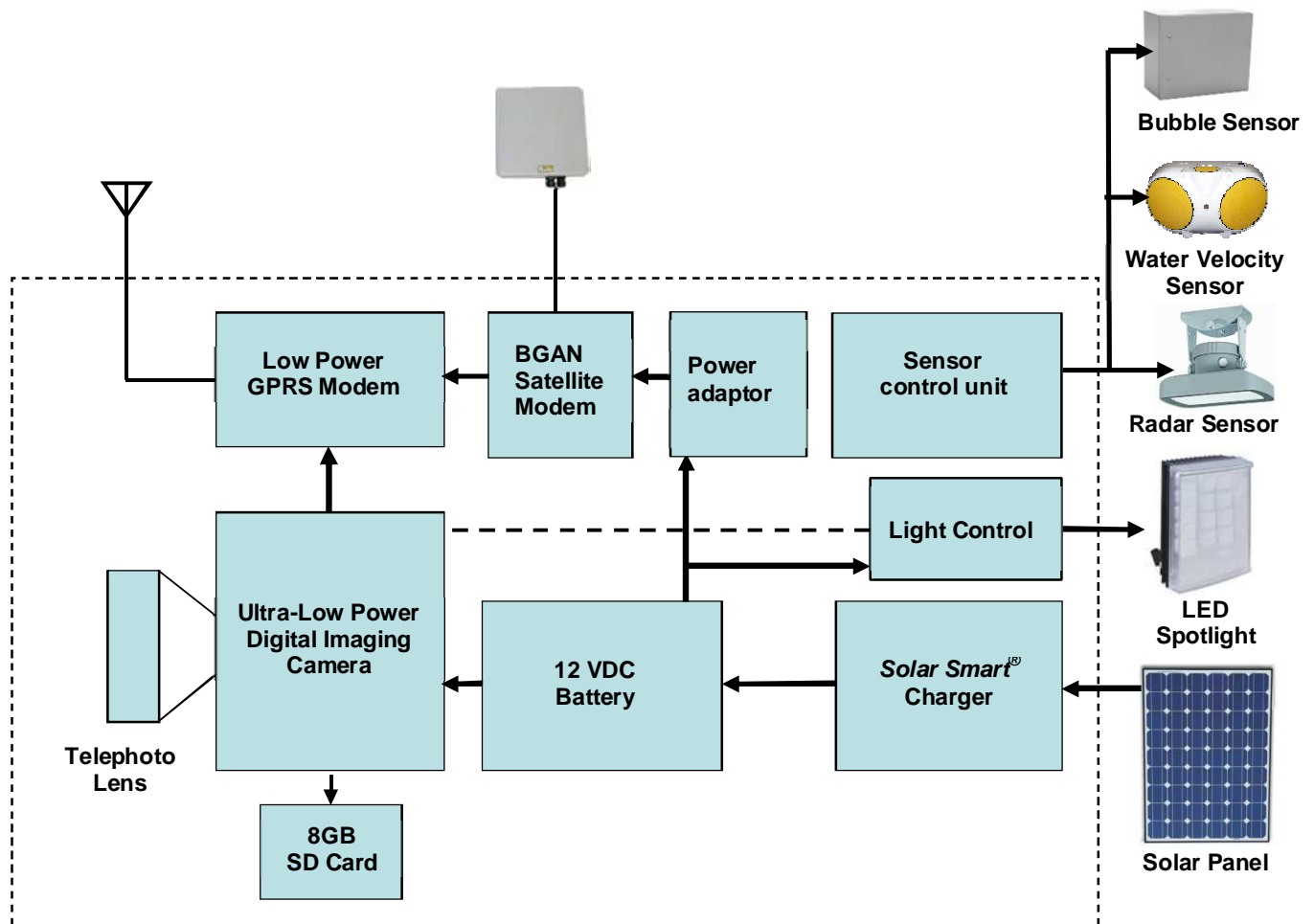


Radar Sensor detects water levels with 3mm accuracy!



New vs Old - Radar FEWS with existing water data logger Hut in the background.

IMAGING CONTROL UNIT DESCRIPTION



SPECIFICATIONS

Image Type	720p HD (1280 x 720) pixel, Wide Dynamic Range, Colour, JPEG
Internal Battery Capacity	3.7 VDC Li-Ion (7.5Ah), 12 VDC SLA (5Ah)
Camera Telephoto Lens range	3.3mm, 3.7mm, 8mm, 16mm, 25mm
RF Frequency	2G & 3G GPRS: 850/900/1800/1900/2100 MHz
Power Consumption (Av.)	Xmit: 300mA, Standby: 4.9mA
BGAN Satellite Tx, Rx, GPS Frequency	@1626.5 – 1660.5 MHz, @1525 – 1559 MHz, @1574.42 – 1576.42 MHz
Serial Interface Bus	RS-485 with SDI-12 protocol
Camera Case Dimensions	410 x 105 x 125 mm
Camera Weight	3 Kg (Including batteries)
Solar Panel Rating	12VDC, 20W
Radar Specifications	24GHz Impulse Radar, Range: 0.8 – 35m, Accuracy: ± 3mm
Spotlight	White or IR LED, 12VDC, (12W, 26W, 64W)
Operating Temperature	-20°C to +60°C
PC Software Requirements	Windows 2000 (SP4), Windows XP (SP2), Windows Vista, Windows 7

Declaration of Conformity

The RF transceiver module in this product conforms with **ETSI EN 300 440-1** and **FCC section 15.249**

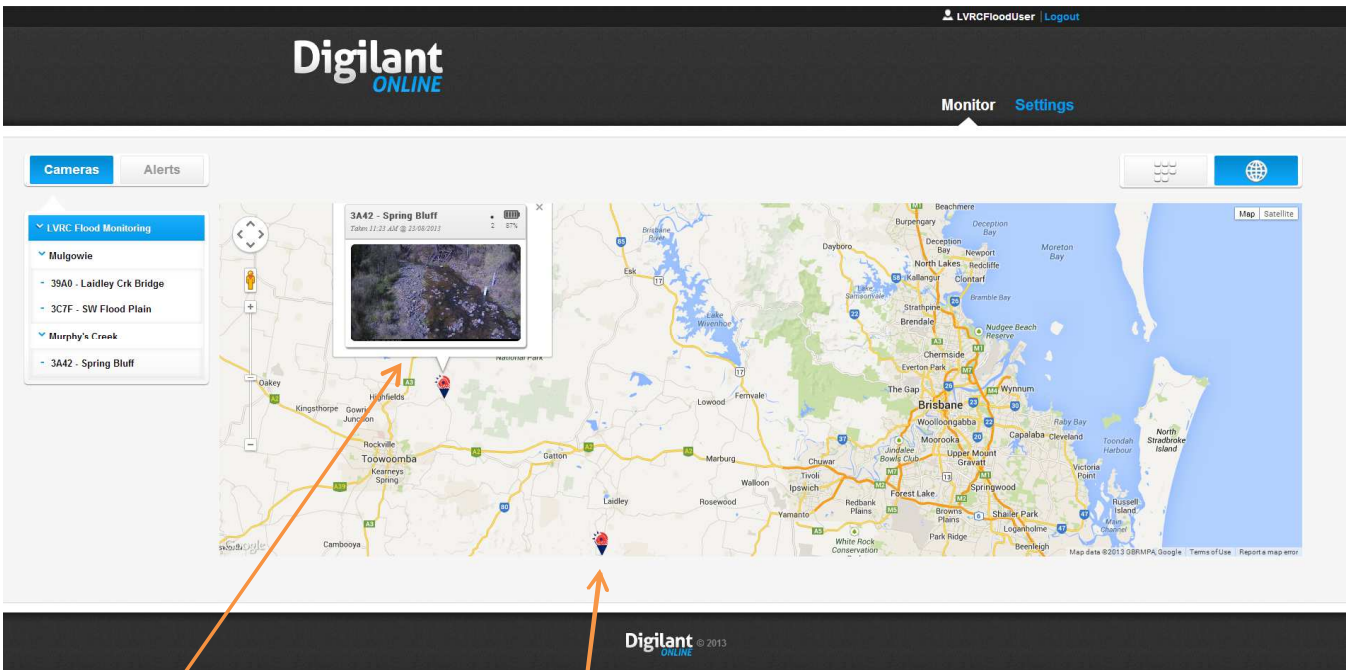
CAMERAS

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WIRELESS TO WEB™ 'Alert' DASHBOARD

The 'Wireless To Web' (WTW) proprietary network is a fast, secure and reliable means of sending images from Diligent wireless cameras to the end user's PC, mobile phone, monitoring station, or Dashboard.

The Diligent WTW 'Alert' Dashboard enables images and water level data to be displayed in real time from multiple cameras on a reference map. Each camera is displayed as an icon and when selected, opens an image viewer to display real time or historical images. Water level alerts with images are displayed on the Dashboard for Disaster management and Alert SMS's which contain the HTML link to the camera alert image, can also be sent to key emergency personnel for immediate response.

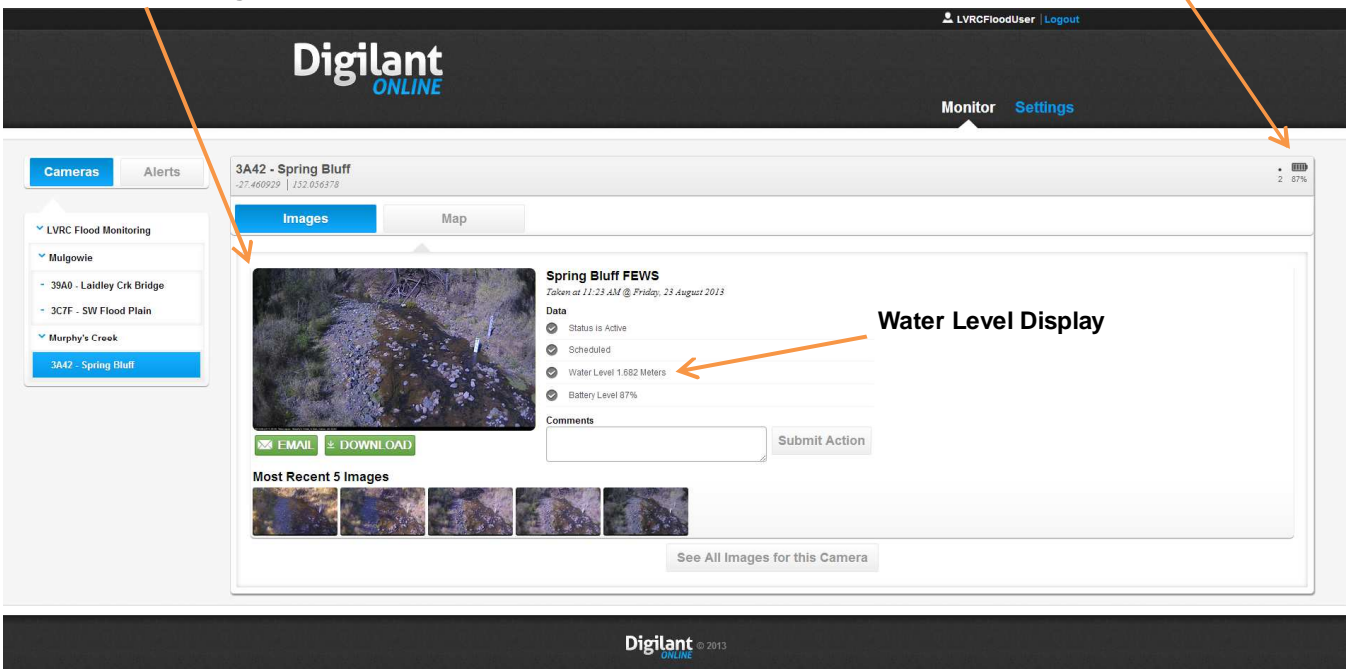


Drop down viewer

Google Map showing camera positions as icons.

Signal Strength & Battery level

Real time viewer showing most recent image



Water Level Display

Image viewer also displays historical images