

**The IoT Platform  
that gives you the  
power!**

# DAYTECH

Modular IoT SmartNode | Wireless Mesh Sensors & Controls

## INTRODUCING DAYTECH

At DAYTECH, we research and develop, manufacture and integrate, state of the art electronic and software systems for Industrial Automation and Control. We specialise in developing Wireless Mesh Networks, Rugged Edge Computing, Cellular M2M, Smart Microprocessor Wireless Sensor and Control Technology, Off-Grid battery powered systems, together with Full-Stack IoT software and Edge Intelligence.

It get's complicated and can be expensive to build advanced, interoperable IoT systems. That's why we developed the SmartNode™ and ControlMesh™ platforms, to be rugged, cost effective and easy to use, so that you can specialise in what you do best and reduce time and cost to take your automation and control system to the next level!

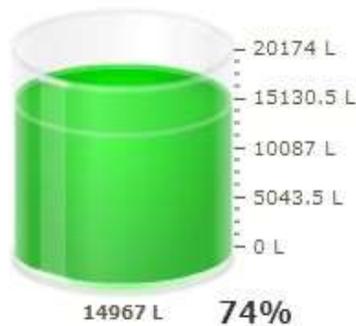


## SMARTNODE TECHNOLOGY

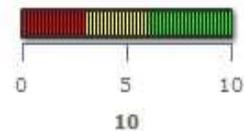
The modular hardware is designed from the ground up to be easily connected to the internet for remote monitoring or control – collectively known as ‘Internet of Things’. Our platform empowers you, through an easy to use modular “building blocks” approach, similar to the concept of Lego. The SmartNode™ and ControlMesh™ Platform, might be fun to use, however, being industrial grade it’s far from a toy.

“Build your own IoT system – create your own Apps!”

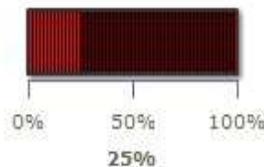
Tank Level



Signal Strength

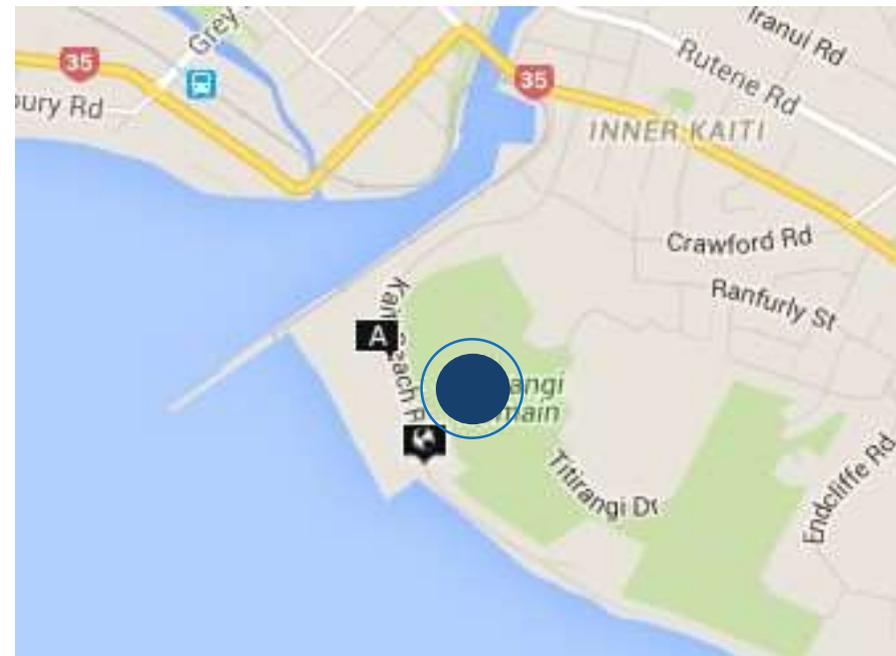


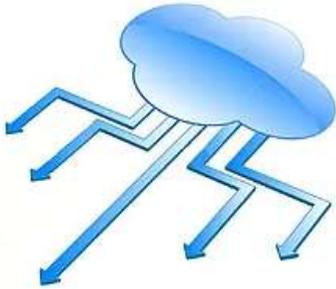
Battery Level



We have been developing technology for the **Industrial IOT boom** for over 8 years and have invested heavily in R&D, allowing you to leverage the digital revolution and merge your physical and digital worlds.

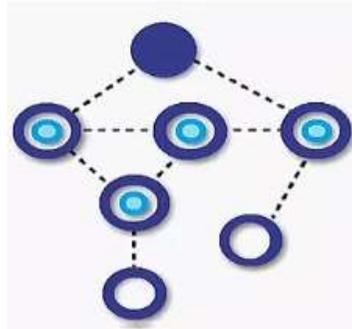
The end to end platform allows you to build incredible automation systems, with IoT capability including apps for your company or customers, remote access, monitoring and control, sophisticated wireless mesh networks (DT-MESH Zigbee) and cellular 3G/4G gateways, with minimal learning curve and low barriers to entry.





### IoT - MONITOR & CONTROL

Industrial grade IoT - Internet of Things Technology - software development, rapid prototyping, product engineering, smart gateways, nodes and sensors, Ready for Industry 4.0!



### WIRELESS SENSOR NETWORKS

Zigbee, LoRa, WiFi - Industrial grade Wireless Sensor Networks - intelligent mesh networks, product design & engineering, remote sensor monitoring and control.



### SENSORS AND ACTUATORS

Industrial grade sensors and actuators for control and monitoring, product engineering, industrial automation and IoT applications.



### M2M COMMUNICATIONS

Industrial grade M2M Technology - gateways, 3G/4G modems, remote access and control, communications systems integration.



### INDUSTRIAL COMPUTERS & HMI

Industrial grade fanless PCs, touchscreens and Human Machine Interfaces, remote control, GUI software systems development & integration.



### SOLAR AND BATTERY POWER

Industrial grade solar and battery powered systems - packaged solutions, product engineering, remote monitoring and off-grid powered equipment.



# DAYTECH SMART SENSOR TECHNOLOGY + COIN

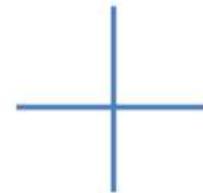
Go wireless and control your process and equipment directly from DAYTECH smart sensors.



Wireless smart temperature and pressure – complete with digital display setup for switching at setpoints for remote wireless control.



Wireless flow switch – complete with sensitivity control for switching flow at setpoints for remote wireless control.



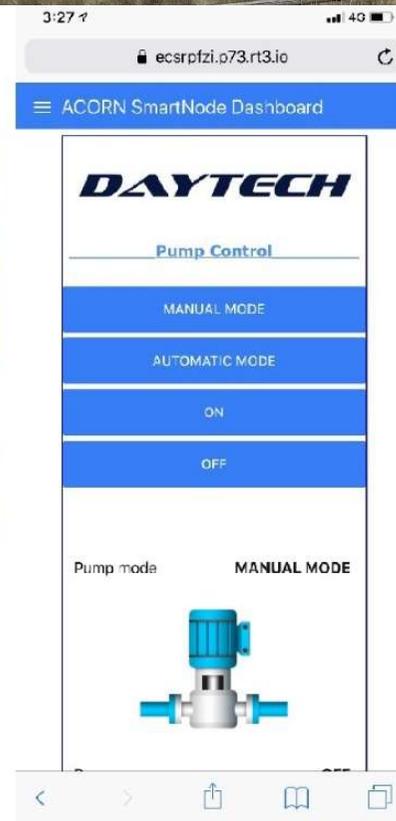
Wireless level sensor – point to point for control and switching pumps, motors or valves wirelessly for tanks, dams or bore level control.

You're only limited by your imagination – the possibilities are endless!

## IoT-SmartNode-Gateway – Automation Application Example – Pump Control

In this example, the IoT-SmartNode-Gateway has been used as a remote pump monitoring and automation system. Multiple remote SmartNodes are wireless connected on the mesh network to the SmartNode-Gateway.

Water level in the tank, dam and the bore is monitored and the pump is controlled in manual or automatic mode, with user defined control setpoints, email notifications, data historian for collecting and saving time/date stamped data to CSV, graphics for tank level gauges, trend graphs, maintenance and configuration.



### Pump Control

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Pump Control

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MANUAL MODE

AUTOMATIC MODE

ON

OFF

Pump mode **MANUAL MODE**

Pump **UNKNOWN**

### Node 1 (Gateway / Pump)

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Node Status

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Input Voltage	<b>12012 mV</b>
Node Temperature	<b>22 °C</b>
Node Battery Voltage	<b>11332 mV</b>

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Pump Control Settings

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Tank Level Start

Tank Level Stop

Change Tank Level Start (0 - 100) \*

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Change Tank Level Stop (0 - 100) \*

---

SAVE

CANCEL

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Device Error Status

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Error State **No Error**

### Node 2 (Remote / Tank)

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Node Status

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RSSI	<b>-72 dBm</b>
Voltage	<b>11780 mVolts</b>
Temperature	<b>11 °C</b>

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Water Tank

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Tank Volume	<b>20348.43 L</b>
Tank Level	<b>01460 mm</b>

25.44%

IoT-SmartNode-Gateway – Node Configuration, IO/Comms Status Dashboards – Examples

The screenshot displays a web browser window titled "SmartNode Dashboard" with the URL "192.168.1.130:1880/#/2?socketid=PGLb0kp0QT1XGdQGAAAB". The dashboard is titled "ACORN Network Status" and features a sidebar with navigation options: "HOME NETWORK INFORMATION", "MY NODE INFORMATION", "VIEW CURRENT INFORMATION", and "FACTORY RESET".

The main content area is divided into seven columns, each representing a different SmartNode. Each column contains the following data:

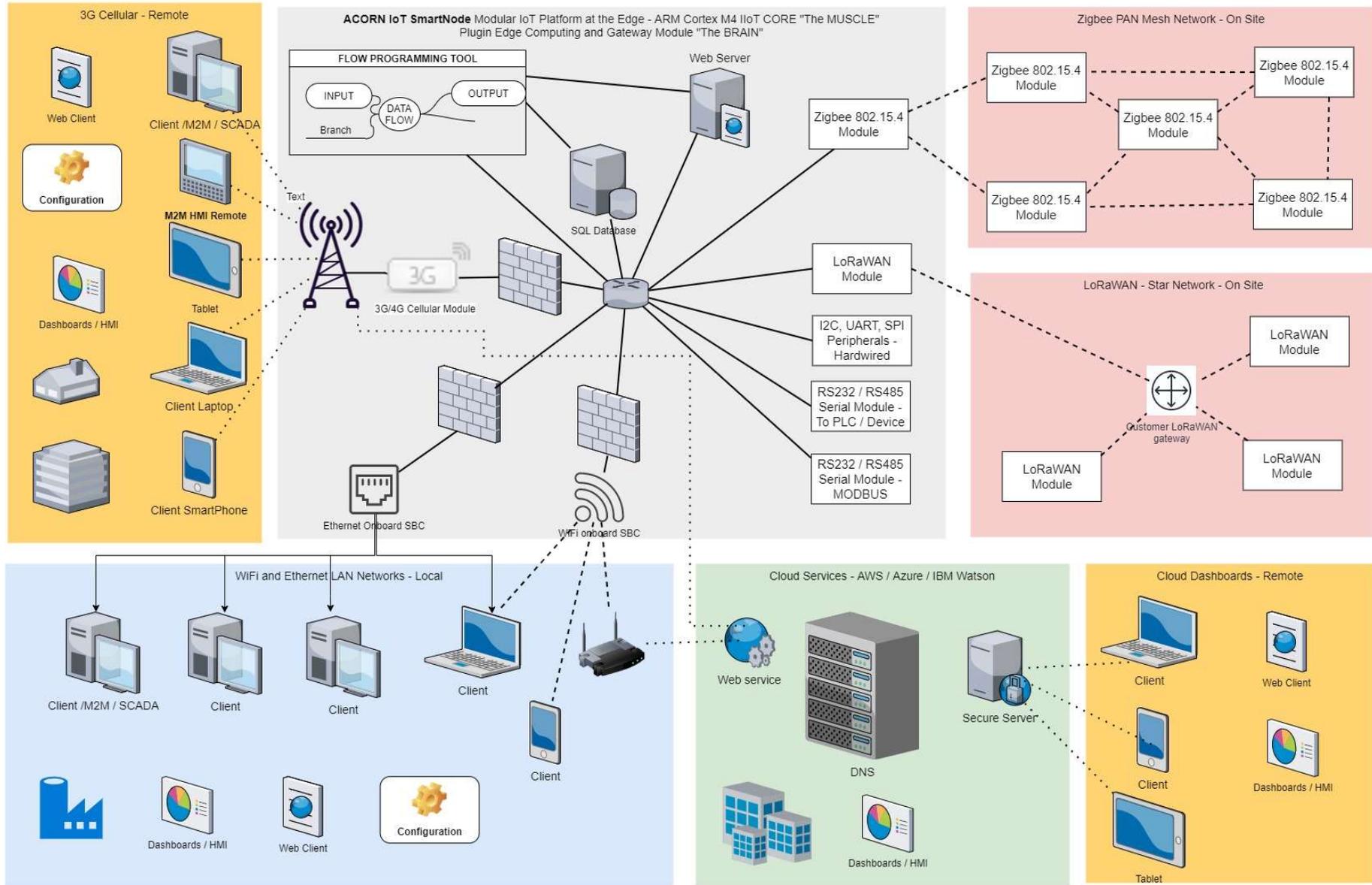
- Network Configuration:** Associated Node Number, Search Node Number, Discovery Timeout, and Input Node Number (with "ADD" and "CANCEL" buttons).
- Remote Node# Status:** Status (Connected), Mac Address, RSSI (with signal strength indicator), Response Time, and DI/DO status (DI 1, DI 2, DO 1, DO 2).
- Power and Temperature:** Input Voltage, Battery Voltage, AI 1 Input, Temperature, and PWM Input (with "CLEAR PWM COUNTER" button).
- Additional Metrics:** Response Time, DI 1 Status, DI 2 Status, and DO 1 Status.

The first six columns show nodes that are "Connected" with various RSSI and Response Time values. The seventh column shows a node that is "Not Connected".

# IoT-SmartNode-Gateway – Flow Programming Platform Editor – Examples

The screenshot displays the ACORN Flow Platform Editor interface. At the top, there is a navigation bar with tabs for Dashboard, Control, Firmware OTA Update, Configuration, Business Logic, Data Storage, Trendlines, and Trunk. Below this is a search bar for filter nodes. The left sidebar is divided into 'subflows' and 'common' sections. The 'subflows' section lists: Business Display, Node 1 Display (Gateway), Comms / Network Display, and Node 2 Display (Remote). The 'common' section lists: inject, debug, complete, catch, status, link in, link out, and comment. The main workspace is a grid where a flowchart is being built. It starts with a 'Daytech Logo' node, followed by 'Pump Control Label'. An 'interval' node triggers 'Log File access' (last: 2020-02-22 07:07:17, next: 2020-02-22 07:07:17) and 'Debug\_I2C\_Slave'. A 'delay 5ms' node follows, leading to 'Delete log file' (last: 2020-02-22 06:27:14, next: 2020-02-22 07:27:14). The flowchart then branches into several paths: one through 'Read I2C save data' to 'Other input value' and 'Get batt, voltage, temp and AIN1 value'; another through 'API data extractor'; and a third through 'Relay ON/OFF Buttons' to 'Send RELAY ON button' and 'Send RELAY OFF button'. A 'mode timeout timer' node is connected to 'Send MANUAL MODE button' and 'Send AUTO MODE button'. A 'UI controller' node is connected to 'Disable UI elements at start up' and 'Get switch mode'. A 'Switch mode controller' node is connected to 'Get switch mode' and 'Momentary Level Switch'. The right sidebar shows 'Info' for the project 'ACORN-Flow-Platform', flow ID 'c88b0c040f9af8', name 'Dashboard', and status 'Enabled'. A description section is empty. A tooltip at the bottom right says: 'Hold down ctrl when you click on a node to add or remove it from the current selection'.

# DAYTECH - ACORN IoT Node AND CONTROLMESH - NETWORK TOPOLOGY



Highly Inter-operable & Powerful Industrial IoT Platform - Start Your Journey Today!!

FOR MORE INFORMATION VISIT: [www.daytech.io](http://www.daytech.io)