SENQUIP Quarterly Update

Welcome to the Senquip quarterly update. If you would like to be added to the distribution list, please send us a mail at support@senquip.com.

Giving new life to old machines

This old CAT engine fitted to a water pump hasn't received much love in a long time. Fitted with a Senquip Telemetry device, the pump can now be remotely started and stopped and is fully monitored including engine hours, fuel level, position, RPM, and fault codes.

The data received is sent to the same endpoint as all the other equipment on the mine site, and so service intervals and other management can be achieved with a single set of tools.

Excellent to see an old machine given a life extension thorough monitoring and control that brings it to a level comparable with much newer technology.

Telemetry over mesh networks

Senquip has completed an off-highway machine monitoring trial for a major Australian mine with data transmitted over a Rajant Corporation Kinetic Mesh network.

Every node in a Rajant Kinetic Mesh network can act independently and with full routing capabilities, making it a true peer-to-peer network that is completely mobile-enabled.

With no single point of failure and self-healing capabilities, Kinetic Mesh networks guarantee uptime of mission-critical applications.

Starlink as a comms network

Senquip has successfully completed a trial using a SpaceX Starlink terminal to connect Senquip telemetry devices to the internet.

The trial is significant as it offers customers in very remote locations a low-cost method to connect their machines to the internet over a low latency, high bandwidth connection. Starlink as a connectivity solution makes economic sense where machines are clustered and can share the Wi-Fi hotspot or where the Wi-Fi is also utilised for other functions like emergency voice calls.

REV 2 Operating System

Senquip has released the next generation of firmware for Senquip ORB devices. The new firmware, SFW002, is based on a next generation operating system that allows Senquip to continue to add features to the device and scripting language.

The new operating system supports larger memories, enhanced security with additional certificate types, and adds full Bluetooth functionality. Immediate enhancements include faster boot times, quicker over-the-air updates, low power pulse counting, and magnetic activation.

During the transition to the new operating system, please request SFW002 when ordering devices.

Interesting sensors: Low-cost dust sensor

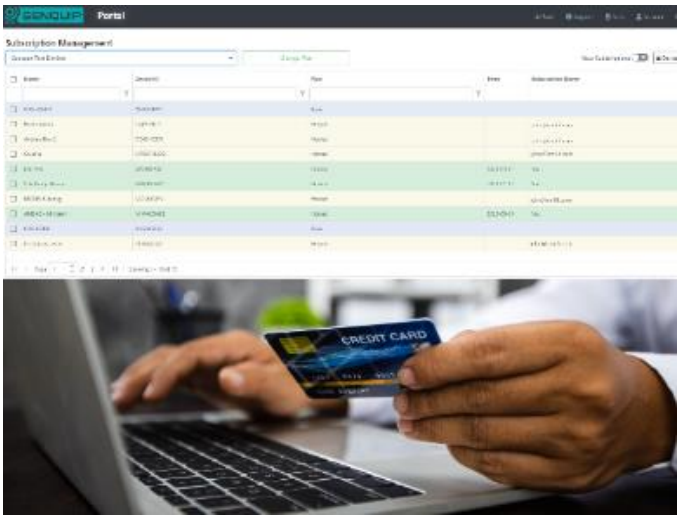
The RK300-02 dust sensor uses the principle of laser scattering to detect dust particle concentration in air. The minimum particle size measurable is 1.0um and the sensor can report PM1.0, PM2.5, and PM10 concentration individually or together.

The outdoor version includes an anti-radiation housing. An indoor version is also available.

The sensor runs off 12-24V and communicates over RS485 MODBUS. It draws 50mA at 24V with a warm-up time of 3 minutes and so is suitable for solar powered applications.

In a recent install, a Senquip ORB is solar powered and in turn powers the RK300 for 5 minutes every hour including through the night.

Online Subscriptions Portal



Senquip has launched online subscription services on the Senquip Portal. Customers in 192 countries can now add and cancel monthly and annual hosted plans quickly and simply, as required, to better manage business requirements including seasonal demand.

Senquip has worked with global financial services provider Stripe to ensure the highest possible level of security for the subscriptions service. All credit card transactions including storage of card details are handled by Stripe, a Level 1 certified PCI Service Provider. Level 1 is the most stringent level of certification available in the payments industry.

The free basic plan on the Senquip Portal remains and has been enhanced to allow scripting. For customers forwarding data directly from Senquip devices to their own servers, there is no change. No cost forever.

Good Design Award

Senquip is thrilled to be a winner in Australia's International Good Design Awards for Design Excellence.

The Good Design Australia Awards is the country's oldest and most prestigious international awards for design and innovation with a proud history dating back to 1958.

The Good Design Awards Jury commented: "The Senquip ORB offers an innovative new interface for industrial sensors in remote mining conditions. The end-user engagement throughout the design process is evident in the product's thoughtful form, exceptional ergonomics and impactful functionality."

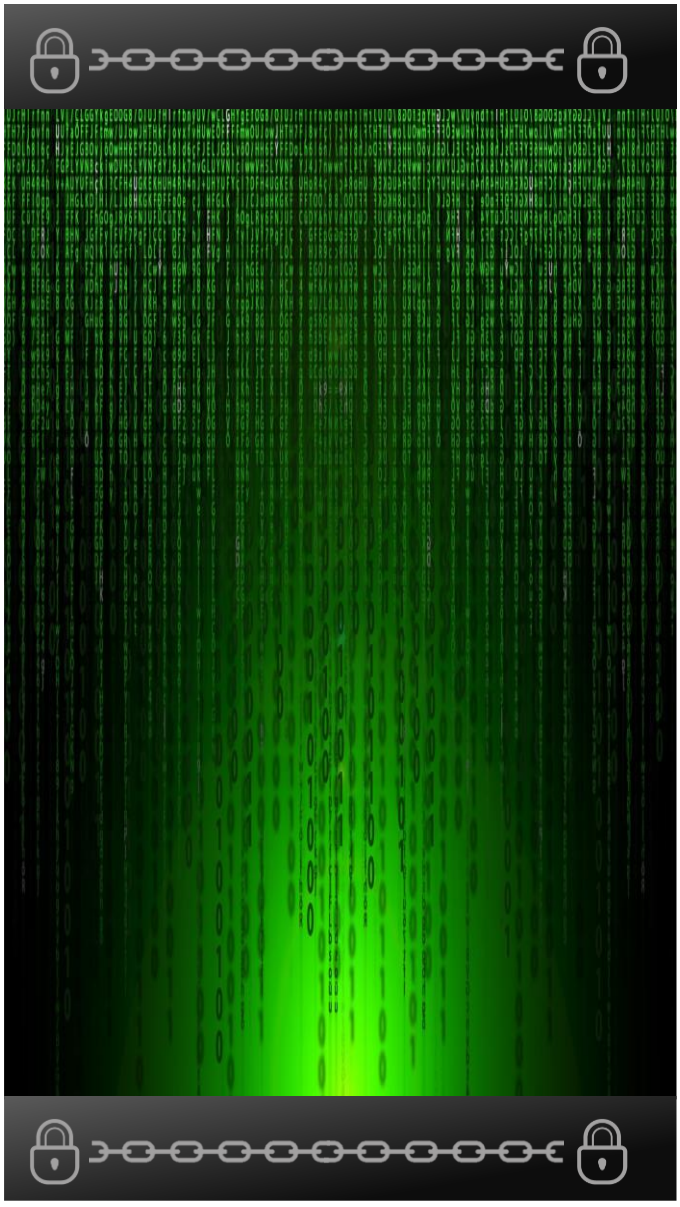
Dr. Brandon Gien, CEO of Good Design Australia and Chair of the Australian Good Design Awards said: "To be recognised with an Australian Good Design Award is a significant achievement, given the incredibly high standard of projects submitted in this year's Awards. The Good Design Award is a valuable independent endorsement of professional design quality. It tells the world this project not only represents design excellence, but it also surpasses the criteria for design innovation and design impact."

Interesting Sensors: 3 Phase meter

SEM Three is a three-phase 4 quadrant energy meter that allows the monitoring of electrical parameters including active energy, reactive energy, voltage, current, power, maximum demand and more. Parameters are measured separately for each phase, giving SEM Three the versatility to work as a three-phase analyser or a triple single-phase analyser. The module additionally counts operating hours based on voltage, current or power thresholds.

The design occupies a single DIN rail module for easy installation. Communications is via RS485 MODBUS RTU.

Security is Not Optional



IoT security refers to the methods of protection used to secure remote internet-connected devices. A lack of IoT security may expose sensitive data or lead to a broader network vulnerability.

Default, pseudo random and guessable passwords are unacceptable. Your IoT device should have a unique, randomised password that is stored in an encrypted format.

Certificates validate identities ensuring only authorised users have access. They enable encrypted links that transmit data privately and ensure data integrity. Your IoT device should be secured with unique, trusted device certificates.

IoT devices may become vulnerable as hackers expose new security flaws. If they are not fixed with regular updates, the IoT devices become exposed over time. Your IoT device should allow for secure, trusted over-the-air firmware updates.

Data encryption prevents data visibility in the event of unauthorised access or theft. It is commonly used to protect data in motion and is increasingly used for protecting data at rest. Your data should be stored encrypted at rest.

Senquip takes the challenge of cyber-security seriously and utilises a NIST validated, ultra-secure hardware crypto element for key and certificate storage and cryptographic processing. Secure trusted certificates allow for authentication of devices, encryption of confidential data, and the maintenance of data and system integrity.