RED EDGE RESOURCES

REMOTE ASSET MONITORING
MINING · QUARRY · CIVIL



REMOTE J1939 ENGINE & MACHINE MONITORING

KNOW BEFORE IT BREAKS DOWN.

Your machines already know when something is wrong — the ECU logs it the moment it happens. The problem is that nobody sees it until the operator reports it, or the machine stops. **Remote monitoring puts live engine data, fault codes and position in front of you** while there is still time to plan the fix.

LIVE J1939 DATA | FAULT CODES WITH FULL TEXT | GPS & ACCELEROMETER | 4G, WI-FI OR SATELLITE

THE GAP IN MOST MAINTENANCE SYSTEMS

YOUR MACHINES ARE ALREADY TELLING YOU. NOBODY'S LISTENING.

Every J1939 engine on your site continuously reports its own condition — speed, load, coolant temperature, oil pressure, fuel rate, hours — and raises a fault code the moment something moves outside limits. That data exists whether or not anyone is reading it.

On most sites, it is read at two moments: at scheduled service, and after a failure. In between, a machine can run for weeks with a rising coolant temperature or a logged fault that nobody sees until it becomes a breakdown — usually on the wrong shift, in the wrong part of the pit, with a float and a fitter to organise.

Remote monitoring closes that gap. The ORB reads the ECU directly, sends parameters and fault codes to the portal, and adds GPS position and machine movement. You see the condition of every machine on one screen, from anywhere, without walking the pit.



LIVE ENGINE PARAMETERS READ STRAIGHT FROM THE MACHINE ECU AND DISPLAYED ON THE PORTAL.

The cost isn't the repair. It's the unplanned part of it.

01

CONNECT

The ORB wires to the machine's J1939 CAN bus and to power. No ECU reprogramming, no OEM subscription, no proprietary gateway.

02

READ

Standard J1939 parameters are read continuously, along with fault codes including SPN, FMI and full text description.

03

SEND

Data goes to the portal over 4G, Wi-Fi or satellite — configurable intervals, with buffering when a machine is out of coverage.

04

ACT

Alerts fire on the conditions you set. Maintenance is planned around the data rather than triggered by a stoppage.

WHAT IT READS

ENGINE DATA, FAULT CODES, POSITION AND MOVEMENT

Standard J1939 parameters from CAT, Cummins and other compliant ECUs, plus the ORB's own on-board sensors. Available parameters vary by engine and ECU configuration.

ENGINE PARAMETERS

FROM THE MACHINE ECU · J1939

- **Engine speed** and **engine load**
- **Coolant temperature**
- **Oil pressure** and **oil temperature**
- **Fuel rate** and instantaneous fuel economy
- **Engine hours**
- **Throttle position**
- **Road speed**

FAULT CODES

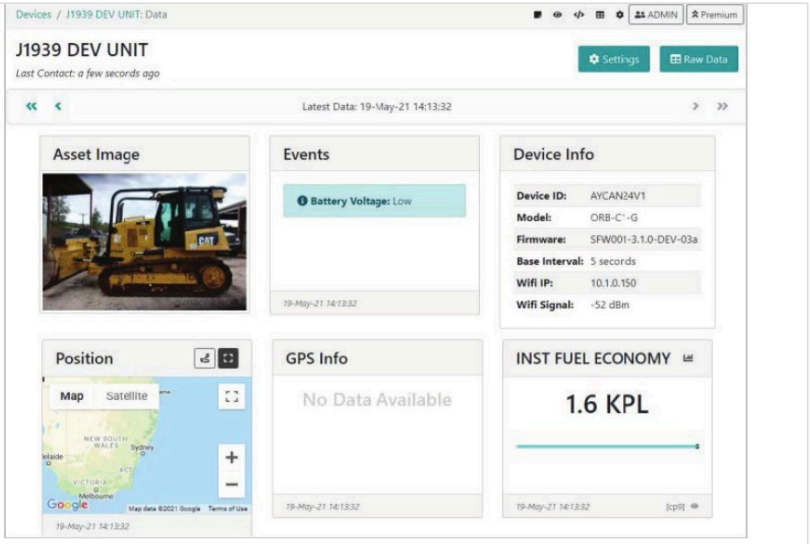
DIAGNOSTIC TROUBLE CODES · DTC1

- **SPN** — suspect parameter number
- **FMI** — failure mode identifier
- **Full text description**, not just a number to look up
- Dedicated **DTC widget** on the portal
- Active and historical fault history

ON-BOARD SENSORS

BUILT INTO THE DEVICE

- **GNSS position** and speed
- **Accelerometer** — movement, pitch and roll
- **Vibration**
- **Ambient temperature** and pressure
- **Supply and battery voltage**
- **Tamper detection**



DEVICE VIEW · Asset image, event log, device and firmware status, map position and live parameters on a single page per machine.

One screen for the whole fleet.

Machines are grouped, and the overview shows the fleet at a glance. Open any machine for live values, trend charts and its event history. Data downloads as CSV, or automates out through the API into whatever maintenance system you already run.

- Fleet overview with grouping
- Custom infographics and charts
- Configurable alerts and event forwarding
- Remote configuration and firmware updates
- Scripting for site-specific calculations
- CSV export and API access

Parameter availability depends on the engine, ECU and what the manufacturer broadcasts on the J1939 bus. We confirm what is available on your specific machines before quoting.

THE DEVICE

BUILT TO LIVE OUTSIDE



SPECIFICATION	DETAIL
ENVIRONMENT	
INGRESS PROTECTION	IP67 enclosure; IP68 at the cable gland with suitable wiring
OPERATING TEMPERATURE	−40 °C to +85 °C
ENCLOSURE	UV-stabilised glass-filled nylon, resistant to salt spray and petro-carbons; captive stainless lid screws
MOUNTING	Ships with stainless pole and wall brackets; designed for external mounting on machines
INTERFACES	
MACHINE BUS	CAN bus — J1939, CAN FD compatible
SERIAL	RS232, RS485, MODBUS
ANALOGUE & DIGITAL	4–20 mA, pulse, frequency, voltage inputs; digital output
WIRELESS	Bluetooth
CONNECTIVITY & POWER	
NETWORK	4G LTE CAT-M1 or CAT-1, Wi-Fi variants; micro-SIM or soldered SIM
ENDPOINT	Senquip Portal, or your own MQTT(S), HTTP(S) or UDP server
SUPPLY VOLTAGE	10–75 V — suits 12 V, 24 V and higher plant systems
BACKUP	Internal rechargeable lithium-polymer battery

START WITH THE MACHINES THAT HURT MOST

Send us your fleet list and the makes and models of the engines. We'll confirm what data is available on each, recommend a configuration and give you an indicative cost — and we're happy to fit a single machine first, so your maintenance team can see the data before you commit the fleet.

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Remote monitoring supports a maintenance programme; it does not replace scheduled servicing, pre-start inspections or manufacturer maintenance requirements. Available parameters and fault codes depend on the engine, ECU and what the manufacturer broadcasts on the J1939 bus, and vary between machines. Specifications sourced from manufacturer documentation and subject to change without notice; confirm against current documentation before ordering. Senquip and ORB are trademarks of Senquip Pty Ltd. All other trademarks are the property of their respective owners.