SMITHTEK

Industrial Telemetry & Control for Mining Operations





Mining Challenges

Mining assets are often **remote**, widely distributed, and expected to operate unattended. **Access is limited**, site conditions are harsh, and communications are not always reliable.

Borefields, dewatering pumps, tanks, dams, generators, camps, dust suppression systems, environmental sensors, and water management sprinkler systems are commonly spread across large areas, making manual monitoring impractical.

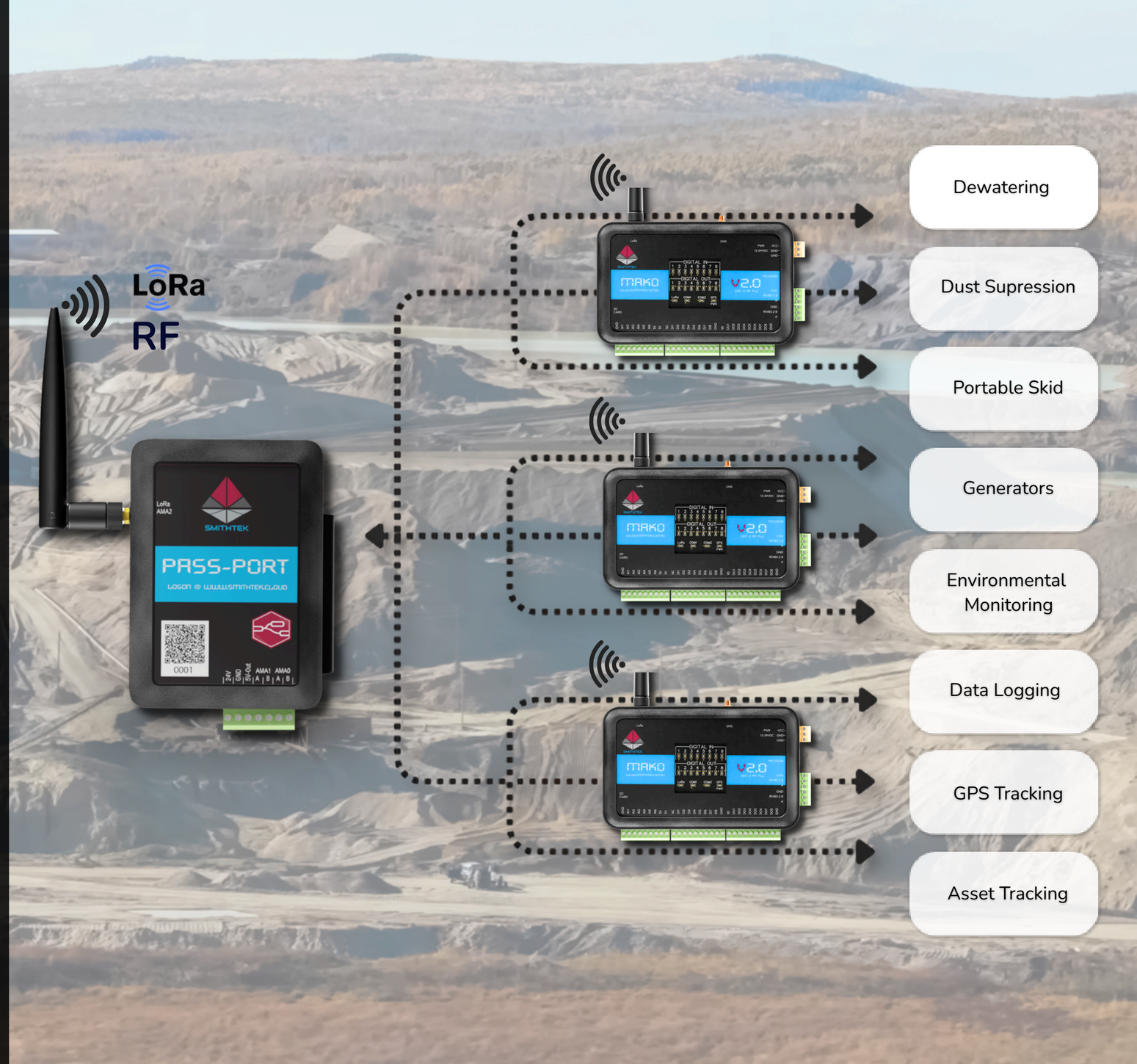
Smithtek systems are designed to maintain local control, continue operating during communications outages, and **provide reliable** remote visibility when links are available. This reduces operational risk, site visits, and unplanned downtime in demanding mining environments.

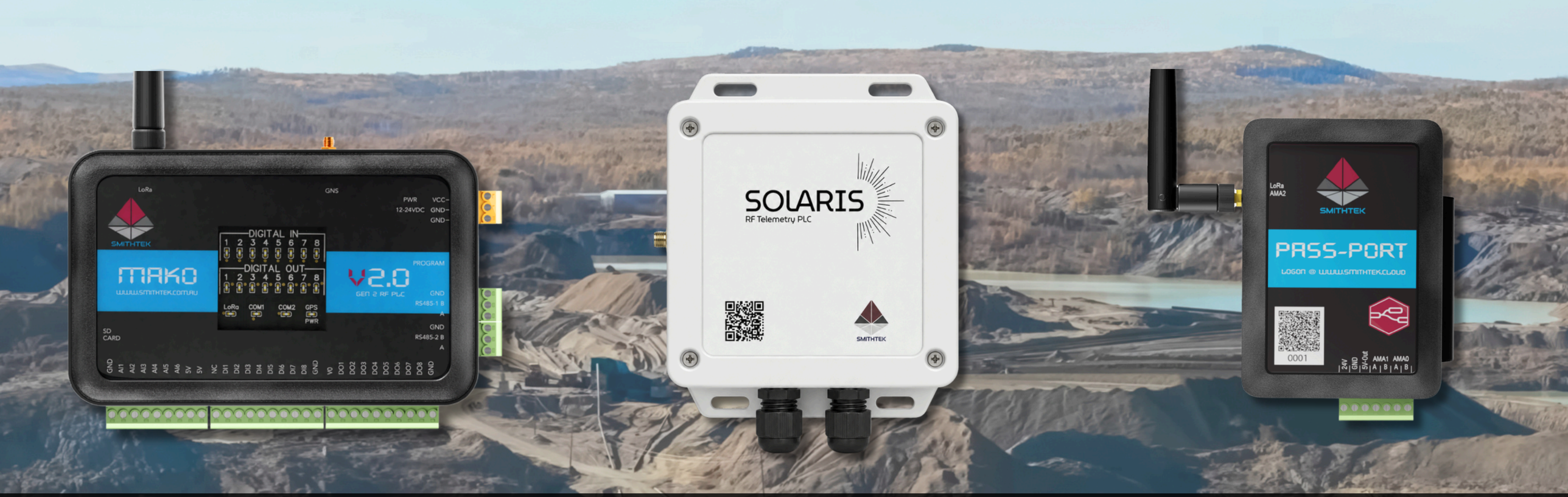
Topology
Overview

Smithtek systems use a distributed topology designed for remote environments. Each asset is controlled locally by a **Mako or Solaris PLC**, which interfaces directly with sensors and equipment and manages all control logic, alarms, and fail-safe functions. Both PLCs continue to operate independently, even during communications outages.

Multiple Mako or Solaris PLCs communicate with a **PassPort Internet Gateway**, which aggregates site data and manages external communications. **Long-range RF links** allow remote assets such as bores, pumps, tanks, dams, and environmental monitoring points to connect back to a central gateway without reliance on cellular coverage.

The **PassPort** forwards data via cellular, satellite, fixed LAN providing remote visibility, alarms, and reporting through dashboards or existing **SCADA** systems, while local control remains at the asset. The PassPort can interface with existing SCADA systems, acting as a data collection agent.





4G

Cellular

Wifi

Satellite - NTN

NBN

LoRa RF

Communications

Smithtek hardware supports multiple communication methods, including cellular, satellite, and private long-range RF systems, allowing sites to select the most suitable option for their environment.

Products

The **Mako PLC**, **Solaris RTU PLC**, **PassPort IGW** and **3DM.Space** work together to form a complete, turn-key telemetry system. Each component performs a defined role, delivering local control, resilient communications, secure management, and remote monitoring within a single integrated solution.



3DM.Space
Cloud SCADA

PassPort
Edge Gateway

Mako V2
Industrial PLC

Solaris
RTU PLC



Mako V2
PLC

Telemetry RTU

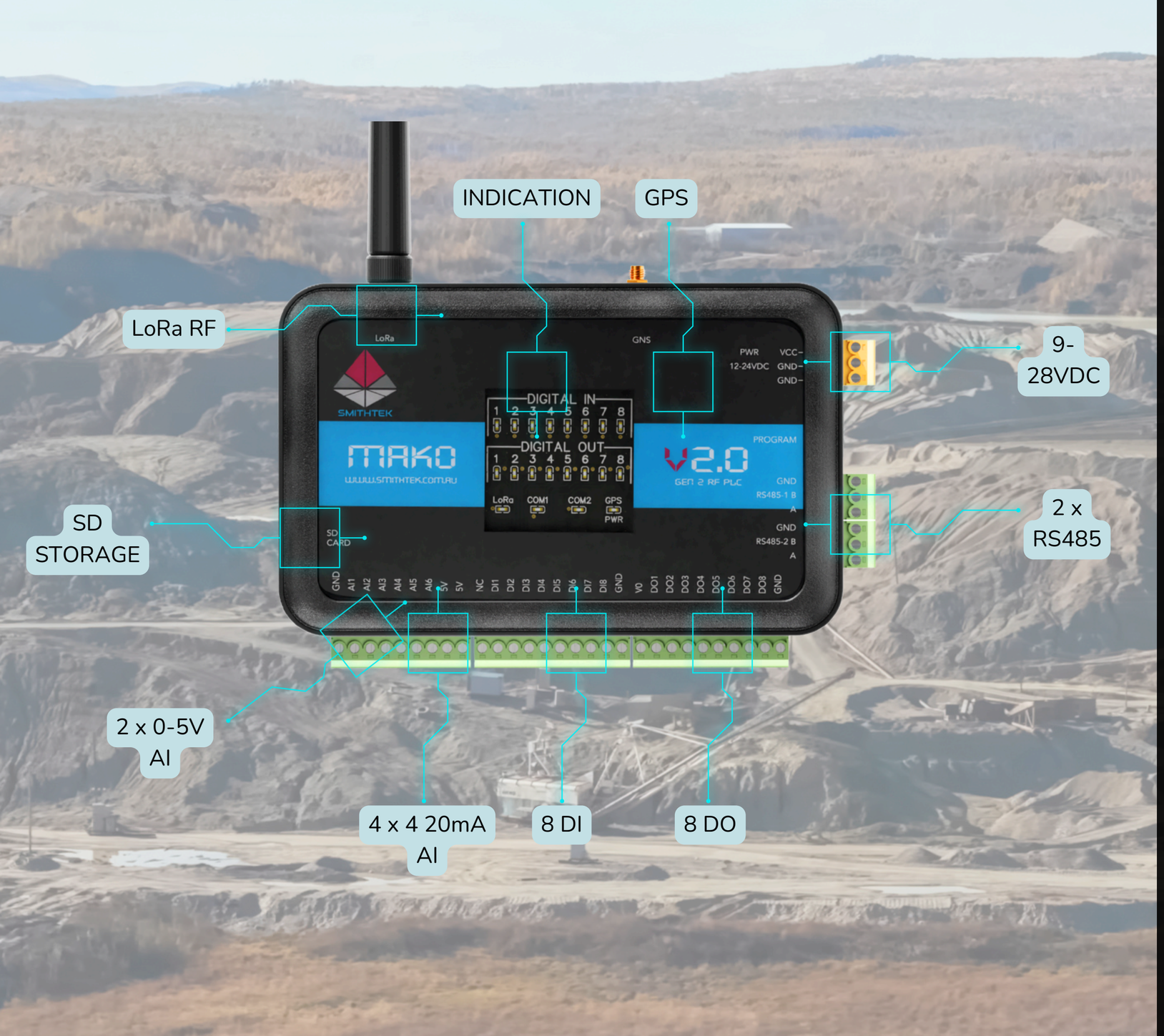
- 240MHz, dual-core Xtensa® 32-bit LX6 MCU.
- Multi communication ability, RF WIFI, RS485, at the same time.
- High precision 16bit 20mA analog inputs.
- Low power mode.
- RF, bandwidth 433 to 472 Mhz.
- 15KM LOS RF link
- Single, mesh, master, slave capable
- Micro SD storage for data logging.
- GNS (GPS, GLONASS, Galileo).
- 8 * Digital inputs all assignable to pulse inputs 1 to 1Khz.
- 8 digital outputs isolated / PTC fused
- 2 * 0-5V inputs, assignable to digital inputs

Mako V2
PLC

Telemetry RTU

- WiFI- IEEE 802.11, WPA2- AES.
- Modbus RTU/TCP, 2 channels can act as slave or master independently.
- Internal power supply sensing assignable on the V-NET software
- HTTP and HTTPS SSL security.
- MQTT. 3.1 secure
- Advanced data type tools, Json, binary, packets, ASCI, base 64.
- V-NET programmer IDE. Dedicated software to program the Mako. Simple, packed with tools to assist simplify programming functions.
- Super small size, tough robust with hardened 35mm din-rail connectors.





IO

- 10.5-28VDC supply
- 4 * 4-20mA analog inputs
- 2 * 0-5VDC analog inputs
- 8 * Digital inputs / pulse inputs 1khz
- 8 * Digital outputs, Opto /NPN
- 2 * RS485 serial ports
- 1 * Micro SD (data storage)
- 1 * GNS- GPS/GLONASS/GALILEO
- 1 * RF (data radio)
- LED Coms indication
- Internal battery supply sensor



Solaris
RTU PLC

Telemetry RTU

- Low-power PLC designed for remote monitoring and control.
- Long-range LoRa RF communications, up to 20 km LOS.
- Compatible with Mako V2 and PassPort RF networks.
- 12–24 VDC operation, suitable for off-grid installations.
- 2 × digital inputs for monitoring equipment status.
- 1 × hybrid pulse input for flow meters and counters.
- 1 × 4–20 mA analogue input for industrial sensors.
- 2 × relay outputs for local equipment control.
- 1 × RS485 Modbus RTU communication port.
- Weatherproof enclosure for outdoor installations.
- Optional 30 W solar panel and 12 V 8 Ah battery system.
- Local PLC automation without an internet connection.
- Remote monitoring, alarms and control through 3DM.space via PassPort Gateway.



PassPort IGW

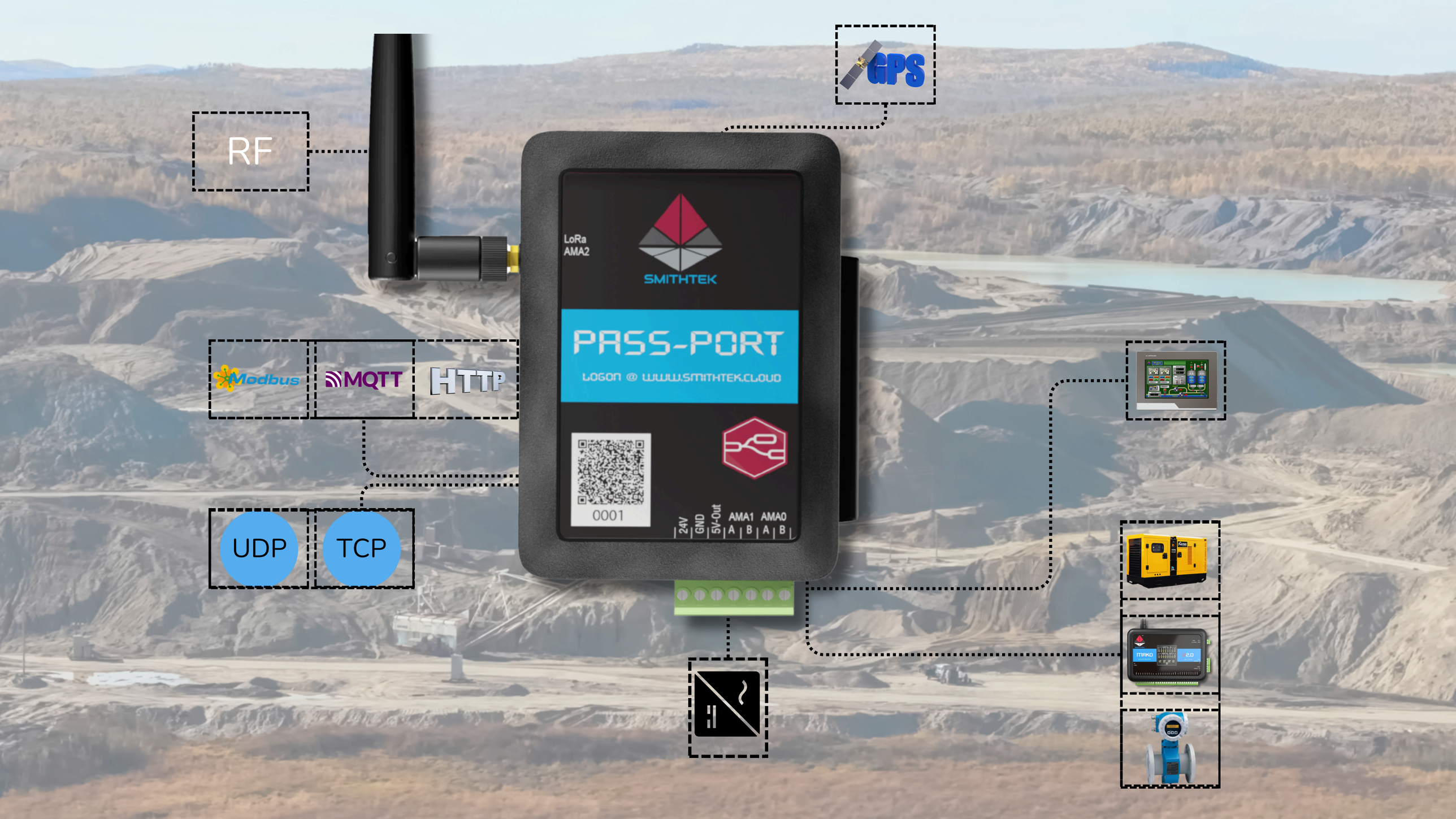
Telemetry Gateway

The PassPort gateway acts as the central link between field devices and the cloud, bringing together communications, local logic, and data handling in a single platform. Designed for remote sites and unreliable networks, it connects multiple devices over long-range RF, runs local automation, and reliably stores and forwards data when connections are available.

Key features:

- Connects directly to the Mako V2 PLC using the integrated RF
- Flow-based automation with Node-RED built in
- Provides long-range RF connectivity of up to 15 km when paired with the Mako V2 PLC
- Runs locally even without internet
- Scales to many devices and sensors
- Secure, reliable data delivery
- Store & forward protects data when networks drop

Node-RED


RF
GPS
LoRa
AMA2
SMITHTEK
PASS-PORT
LOGON @ WWW.SMITHTEK.CLOUD
0001
24V
GND
5V-Out
AMA1
AMA0
A
B
A
B
Modbus
MQTT
HTTP
UDP
TCP

3DM.SPACE

Telemetry Monitoring Platform

3DM.Space is a secure, **cloud-based SCADA** platform designed to bring your telemetry data to life. Built for Smithtek's PassPort Gateways, Mako PLCs and Solaris PLCs, it provides live monitoring, remote equipment control, alarms and historical data in one easy-to-use platform. Whether you're managing water infrastructure, monitoring environmental conditions or controlling equipment across multiple sites, 3DM.Space makes it easy to visualise data, build custom dashboards and manage your assets from anywhere with internet access.

Key features:

- Customisable SCADA dashboards
- Live monitoring and remote control
- Data updates as fast as 30 seconds
- Historical data and trends
- Alarms and notifications
- Event tracking and management
- User roles and permissions
- Multi-site monitoring
- Interactive graphs, maps and tables
- Easy integration with Smithtek devices



Our Mission

Founded in 2016, Smithtek is an Australian company that designs and manufactures industrial telemetry hardware and software for use across multiple industries. Based in Perth, Western Australia, Smithtek develops practical, field-ready systems with a strong focus on reliability, flexibility, and long service life.

Smithtek's products are used to monitor and control remote and critical assets in a wide range of operating environments. Smithtek technologies are deployed across industries including:

- Mining Water and wastewater utilities
- Agriculture and irrigation
- Environmental monitoring
- Marine and coastal infrastructure
- Remote infrastructure and facilities

Smithtek works closely with operators, contractors, and asset owners to deliver systems that are straightforward to deploy, support, and scale as site requirements evolve



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