

## Infrastructure Monitoring State wide regional Fire Authority uses RTU32R controllers for management of critical remote assets

### Application Note

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Brodersen RTU32R 19" Rack Mount Controller



### Overview

Brodersen RTU hardware is used in a wide range of applications for the remote management of assets that form the critical infrastructure that keeps our cities and towns operational and safe. These applications include the monitoring and control of wind farms, electrical substations, airports, railways, tunnels, broadcast equipment, water distribution systems and oil/gas pipelines.

The Country Fire Authority in Victoria operates more than 100 radio base stations that provide a high availability communications backbone for the routing of voice and data for emergency services personnel. Brodersen RTU32R controllers are used in the base stations to provide remote monitoring and control of the radio equipment and associated power supplies, antennas and building services. The RTU32R is a 19" rack mount product that fits within a 1U high rack slot, making it easy to deploy with communications and IT style equipment that is typically mounted within free standing cubicles. The RTU32R includes 60 IO points (48x DI, 8x DO, 4x AI) that connect via rear terminations. For large applications additional IO expansion modules can be easily connected via the IO bus interface.

Key requirements specified for this application include; rack mount hardware, logic for advanced monitoring, data logging of system events, alarm notification via SNMP protocol and a web interface for remote display.

## Radio Base Station Monitoring and Control System Overview



The Country Fire Authority project uses RTU32R controllers for remote monitoring and control of radio base stations that are distributed around Victoria. With a geographic area of 227,600 km<sup>2</sup>, Victoria is the second smallest state in Australia, with diverse regional areas that include sweeping coastline, pristine beaches, forests, lakes and mountains. The climate is varied and often very hot and dry for prolonged periods in summer, with the threat of bushfires always present.

### 2009: 7 February 'Black Saturday'

On 7 February 2009, Victoria was devastated by the worst bushfires in Australia's history when 173 people lost their lives. Around 78 communities were directly impacted and entire towns were left unrecognisable. The fires burnt more than 2,000 properties and 81 businesses. Police stations, schools and kindergartens, fire and emergency services facilities, churches, community halls and sporting clubs were also destroyed or badly damaged. Almost 430,000 hectares of land were directly affected, including 70 national parks and reserves and over 3,550 agricultural facilities.

The regional radio base stations providing emergency services with communications coverage to remote areas are interfaced to a SNMP host via a state-wide IP network. Each Brodersen RTU32R is regularly polled by the host and will send SNMP 'Traps' (alarm/event messages) when significant changes are detected. RTUs are configured from a web server interface that allows rapid setup of the messages content and 'rules'.

**Simple Network Management Protocol (SNMP)** is an Internet-standard protocol for managing devices on IP networks. Devices that typically support SNMP include routers, switches, servers, workstations, printers, modem pools, and more. It is used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention. SNMP is a component of the Internet Protocol Suite and consists of a set of standards for network management, including an application layer protocol, a database scheme, and a set of data objects.

Note: all RTU firmware and application code can be setup/updated remotely using the embedded web server and/or FTP server.

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