

## 1+1 Redundancy for Master and Remotes

The Aprisa SR+ Protected Station provides the only fully monitored hot standby, hot swappable, redundant SCADA radio solution. Designed not only for master or base station use, it can be deployed at any critical communications site, including at remotes. Supports all Aprisa SR+ radio variants including Full Duplex.



### HOT STANDBY

Hot standby operation improves availability and reliability by guaranteeing the readiness of the standby radio, removing start up or initialization delays, minimizing switchover time, ensuring standby configuration is kept updated, and removing the risk of standby hardware failure at the time a switchover occurs.

### FULLY MONITORED

A redundant system is only effective if the operational state of the standby hardware can be guaranteed when a switchover occurs. This requires full monitoring of the standby radio, most critically the RF circuitry, including actively operating and monitoring the transmitter and receiver while in standby mode.

### HOT SWAPPABLE

An effective redundant solution should support the non-intrusive replacement of a faulty unit. The two Aprisa SR+ radios are mounted on a pull-out tray making it possible to replace a failed radio without powering down, disassembling the unit or most importantly interrupting user traffic.



### OPERATING CONFIGURATIONS

The Aprisa SR+ Protected Station can operate as a base station, repeater station or remote station, with the same protection behavior and switching criteria. Now you can provide protection for critical repeater and remote sites.

## Aprisa SR+



The Aprisa SR+ provides smart, secure point-to-multipoint communications for oil, gas and utility monitoring and control.

- 135 MHz, 220 MHz, UHF and 900 MHz licensed bands
- RS-232 and IEEE 802.3 protocols with multiple port options
- Software selectable: 12.5 kHz, 25 kHz, and 50 kHz channel sizes
- Software selectable single / dual frequency selection
- Gross data rates up to 216 kbit/s
- 256, 192, or 128 bit AES encryption
- CCM to NIST SP 800-38C
- Adaptive Coding and Modulation: QPSK, 16, and 64 QAM
- Advanced forward error correction
- Software selectable dual / single antenna port operation
- Dedicated alarm port per radio
- Layer 2 bridge (VLAN aware) and layer 3 router modes
- VLAN add/remove, single or double VLAN (QinQ)
- QoS priority enforcement
- L3/L4 filtering and ICMP-ping, Telnet, HTTPS, SNMP, SNMP proxy protocol filtering
- Power supply options of:
  - 12 VDC (+10.5 to +30 V DC)
  - 48 VDC (18 to 60 V DC)
- -40 to +70°C (-40 to +158°F) operating temperature without fans
- Class I, Div 2 for hazardous locations
- Dimensions:
  - Width = 432.6 mm (17")
  - Depth = 372 mm (14.6")
  - Height = 83 mm (3.27") 2 RU
- ETSI, FCC, and IC standards compliant

## OPERATIONAL OVERVIEW

The Aprisa SR+ Protected Station provides radio and user interface protection for Aprisa SR+ radios. The radios are continually monitored for correct operation and alarms are raised if either radio should fail. In the event of a failure on the active radio, the RF ports and interface ports are automatically switched to the standby radio.

## SWITCHOVER

The switchover to the standby radio can be initiated automatically on fault detection, manually via the hardware manual lock switch on the Protection Switch or via the SuperVisor software. Additionally, it is possible to switchover the radios remotely without visiting the station site, via the remote control connector on the front of the Protection Switch.

## PROTECTED PORTS

The protected ports are located on the protected station front panel. Switching occurs between the active radio ports and the standby radio ports based on the switching criteria.

The protected ports include:

- Common antenna port or separate TX and RX ports (to support external filters)
- Ethernet ports (depending on interface port option purchased)
- Serial ports (depending on interface port option purchased)

## ETHERNET / IP SWITCHING

Each Radio is configured with its own unique IP and MAC address and partner radio address. On failure switchover the new active radio automatically sends out a gratuitous ARP to update MAC learning tables / ARP tables of upstream bridge / router for appropriate traffic flow. This eliminates the need for operator intervention post a switchover to recover Ethernet or IP network traffic.

## OPERATING TEMPERATURE

Due to the superior thermal dissipation and construction of Aprisa SR+ radios the Protected Station operates across the full temperature, duty cycle and output power range of stand alone remotes without de-rating or the addition of fans.

## POWER SUPPLY

The protection switch supports redundant power supply inputs, each radio is individually powered from which ever power supply input is available. Power supply options of 12 VDC and 48 VDC are available.

## MANAGEMENT

Configuration and management of the Protected Station is done via the 4RF SuperVisor web-based browser application. With its comprehensive, easy to use graphical user interface SuperVisor enhances network configuration and set up, improves fault identification and isolation, and increases asset visibility.

## RADIO OPTIONS

The Aprisa SR+ Protected Station supports the extensive range of Aprisa SR+ radio frequency bands, channel sizes, interface port options and single or dual antenna port options.

## FOR MORE INFORMATION

The technical specification and performance characteristics for the protected station radios can be found on the Aprisa SR+ datasheet.



**Aprisa SR+**

## ABOUT 4RF LIMITED

Operating in more than 140 countries, 4RF Limited provides radio communications equipment for critical infrastructure applications. Customers include utilities, oil and gas companies, transport companies, telecommunications operators, international aid organisations, public safety, military and security organisations. 4RF point-to-point and point-to-multipoint products are optimized for performance in harsh climates and difficult terrain, supporting IP, legacy analogue, serial data and PDH applications.

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For more information please contact

EMAIL [sales@4rf.com](mailto:sales@4rf.com)

URL [www.4rf.com](http://www.4rf.com)

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