



# *Aprisa* **SR** Demo Guide

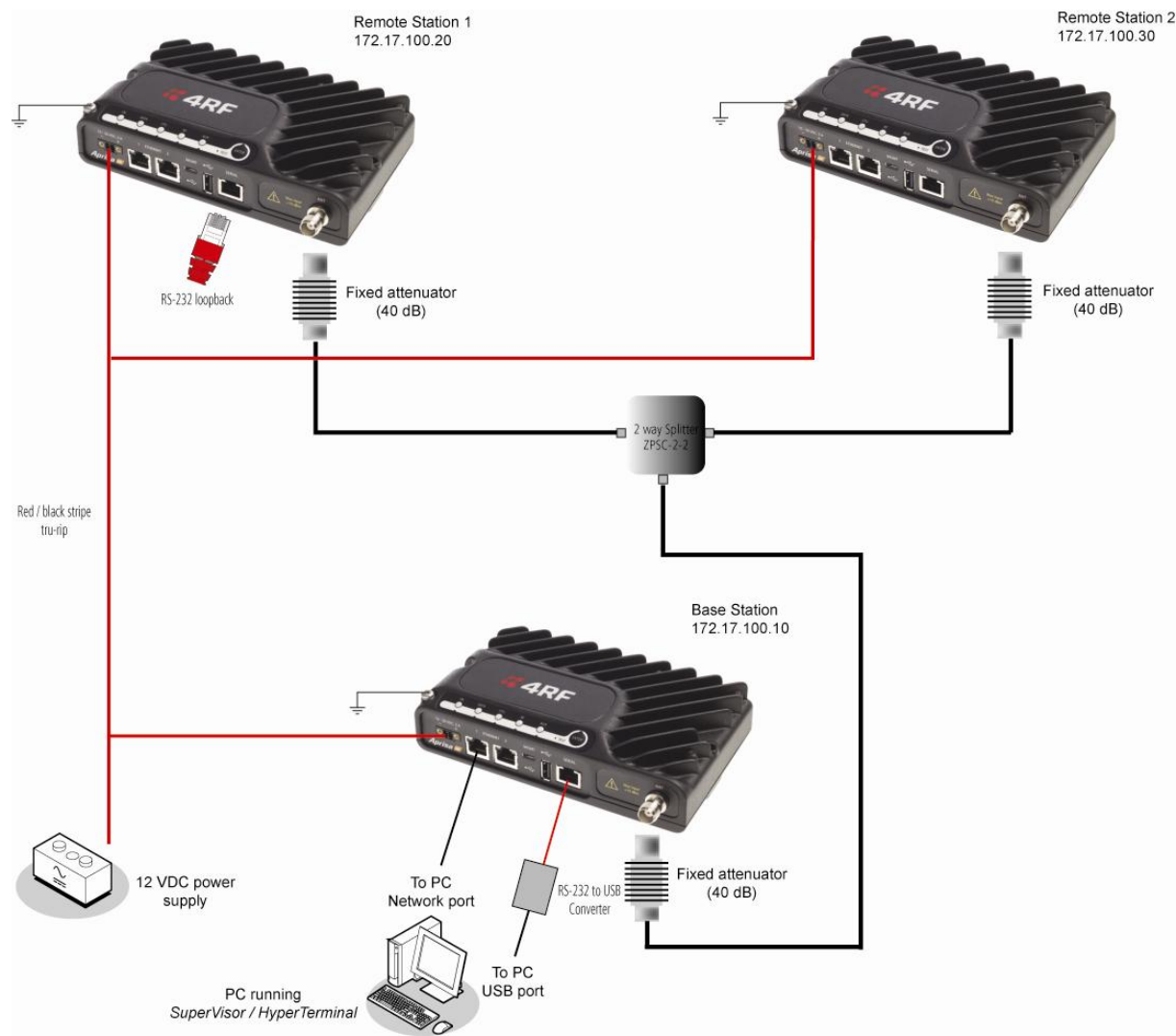


## Introduction

The following instructions outline the equipment and procedure for showing the basic operation of the Aprisa SR. It runs through the steps to show the web browser management and Test Button operation.

It demonstrates concurrent Ethernet and RS-232 serial data communications between an Aprisa SR Base Station and two Aprisa SR Remote Stations.

## Demonstration Setup



The RS-232 serial to USB converter included in the Demo Kit is to be used if the laptop or PC does not have a RS-232 serial port. The user must install the USB drivers for this (included in the CD in the Kit).

### Warning:

On low capacity radio based IP networks used for SCADA, general network broadcast traffic can overload the radio communication channel. This broadcast traffic may come from servers, laptops, and other network devices e.g. DHCP requests, DNS traffic, NetBIOS traffic, and ARP requests.

Low capacity radio networks must be isolated from other LANs such as the main SCADA and corporate LANs using routers to block all traffic not intended for the SCADA radio network.

This needs to be considered when demonstrating and testing the Aprisa SR radios.

See Demonstration Settings > Network Connections > Local Area Connection for disabling NetBIOS traffic if applicable.

### Notes:

#### 1. Terminal Emulator:

If your PC is running Windows XP, HyperTerminal can be used for the Terminal Emulator.

If your PC is running Windows 7, or later, you will need to download and run a Terminal Emulator like 'Putty' or 'TeraTerm'.

## Demonstration Settings

### PC Settings

The following are the PC settings required for the demo:

Network Connections		Terminal Emulator	
Local Area Connection		COM Port Settings	
Properties		BaudRate	38400
Internet Protocol TCP/IP Settings		Data	8 bit
IP Address	172.17.100.1	Parity	none
Subnet Mask	255.255.0.0	Stop	1 bit
Default Gateway	0.0.0.0 (none)	Flow Control	none
Advanced TCP/IP Settings		Terminal Settings	
WINS	Disable NetBIOS over TCP/IP	ASCII Receiving	CR+LF (line feed after receiving a text file)
Wireless Network Connection		Character delay	0
		Line delay	0

### Radio Settings

The demo kit radios have been preset with User Defaults. The radio settings can be reset to these defaults if required.

On SuperVisor, click on Maintenance > Defaults > Restore User Defaults

When activated, all radio parameters will be set to User Defaults.

## Demonstration Procedure

All radios should be turned on.

Make sure that the radio RF LEDs are not flashing before beginning the demonstration. This can take around 60 seconds from turn on and is due to the laptop trying to discover the network and sending IP packets over the radios. Make sure the PC antivirus and/or other web services are disabled on the laptop.

Please refer to the Aprisa SR User Manual on the Information and setup CD for more information.

All commands to be typed are shown in *italics*.

- Open Internet Explorer and access 172.17.100.10
  - Username *admin*
  - Password *admin*
- Show basic Web browser management
  - Tab through the various screens and explain about remote management.
- Show Test Button operation:
  - Press and hold the Test Button on Remote Station 1 until the LEDs flash. Five green LEDs should appear indicating >-80 dBm RSSI.
  - Disconnect the RF cable but hold it close to the RF connector. The LEDs should turn orange.
  - Pull the cable away completely and the LEDs should turn red.
  - Reconnect the cable. The LEDs should turn back to all green.
  - Press and hold the Test Button to exit the test mode.
- Open Terminal Emulator<sup>1</sup> configured for RS-232 serial data and show transfer of a text file.
  - Send a text file from the Base Station. The details should reappear on the screen indicating that the file has been sent to the Remote Station, looped back at the Remote Station RS-232 serial port and sent back to the Base Station.
  - Remove the RS-232 loopback connector on Remote Station 1 if they don't believe you.
- Open cmd window and show Ethernet data transfer – can note flashing RF LEDs
  - ping 172.17.100.20*
  - ping 172.17.100.30*
- Show data compression
  - In cmd window: *ping 172.17.100.30 -l 1000*
  - Ping test should show transfer of 1000 Bytes to be almost as fast as the 32 Byte transfer from previous test
- Show Ethernet and RS-232 serial. This test pings Remote Station 2 and loops back serial data through Remote Station 1
  - In cmd window : *ping 172.17.100.30 -t*
  - With the Terminal Emulator, send serial data
  - In cmd window *Ctrl C* to stop the Ethernet test
- Show RSSI change
  - In Web browser, browse to the Base Station Maintenance Summary page and note the RSSI
  - Browse to the Remote Station 1 Radio Setup page
  - Change the Tx Power from +37 dBm to +27 dBm and save this change
  - Return to the Base Station Maintenance Summary page
  - ping 172.17.100.20*
  - In Web Brower RSSI should drop by 10 dB
  - Return to the Remote Station 1 Radio Setup page and change the power back to +37 dBm