



Aprisa **SR**



Software Release Notes

Software Version 1.3.0

1.3.0a

June 2011

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1. Introduction

Introduction

The previous Aprisa SR software version release relevant to this release is:

Software Version	Release Date
1.2.0	14 th December 2010

This release of Aprisa SR software is:

Software Version	Release Date
1.3.0	7 th June 2011

This document covers the major changes, product enhancements, new functionality, and bug fixes since Aprisa SR software version 1.2.0.

2. Released Files

Release Files

The following is a list of files released for Aprisa SR Software Version 1.3.0.

File Name	File Type	File Function
asraduc_25u	ADUC Code	Discriminator micro controller code UHF 25 kHz radios
asraduc_25v	ADUC Code	Discriminator micro controller code VHF 25 kHz radios
asraduc_u	ADUC Code	Discriminator micro controller code UHF 12.5 kHz radios
asraduc_v	ADUC Code	Discriminator micro controller code VHF 12.5 kHz radios
asrapp	Upgrade App Code	Used to initiate radio software upgrade
asrboot	Bootloader	Used to initiate radio software startup
asrmain	Application Code	Main radio system software
asrrootfs	Root File System	Catalog of system files
asrver	Version File	Release build version
version.txt	Public Version File	Release information

3. Software Upgrade

Upgrade Type


If the Aprisa SR radio is a stand alone radio i.e. not part of a Aprisa SR Protected Station, follow the procedure 'Radio Software Upgrade Process'.

If the Aprisa SR radio is part of a Aprisa SR Protected Station, follow the procedure 'Protected Station Software Upgrade Process'.

Note: If a radio has been configured for a Protection Type of 'Redundant' (see Aprisa SR User Manual 'Terminal > Protection'), and that radio is no longer part of a Protected Station, the Protection Type must be changed to 'None' before the radio software upgrade can be achieved with the 'Radio Software Upgrade Process'.

3.1. Radio Software Upgrade Process

Method



The Aprisa SR radio software is upgraded simply by plugging a USB flash drive containing the new software into the USB A host port  on the Aprisa SR front panel and power cycling the radio.

Procedure

To minimize disruption of link traffic and prevent your radios from being rendered inoperative, please follow the procedures described in this section together with any additional information or instructions supplied with the upgrade package.

The radio software must be identical on all radios in the FAN (Field Area Network).

Process Steps

1. Check that the SuperVisor USB Upgrade setting is set to 'Enabled' (see Possible Upgrade Failure Causes below).
2. Unzip the software release files in to the root directory of a USB flash drive.
3. Power off the Aprisa SR and insert the USB flash drive into the Host Port .
4. Power on the Aprisa SR.
5. The software upgrade process is complete when the OK LED lights solid orange. This can take about 2 minutes.
The software will have loaded in to the radio Standby SW location.
6. Remove the USB flash drive from the Host Port .
7. Power cycle the Aprisa SR.

Upgrade Did Not Start

If the upgrade process did not start, the Aprisa SR could already be operating on the version of software on the USB flash drive. This will be indicated by flashing Display Panel OK LED and then the OK, DATA and CPU will light steady green.

If any Display Panel LED flashes red or is steady red during the upgrade process, it indicates that the upgrade has failed. This could be caused by incorrect files on the USB flash drive or a radio hardware failure.

Check the Result

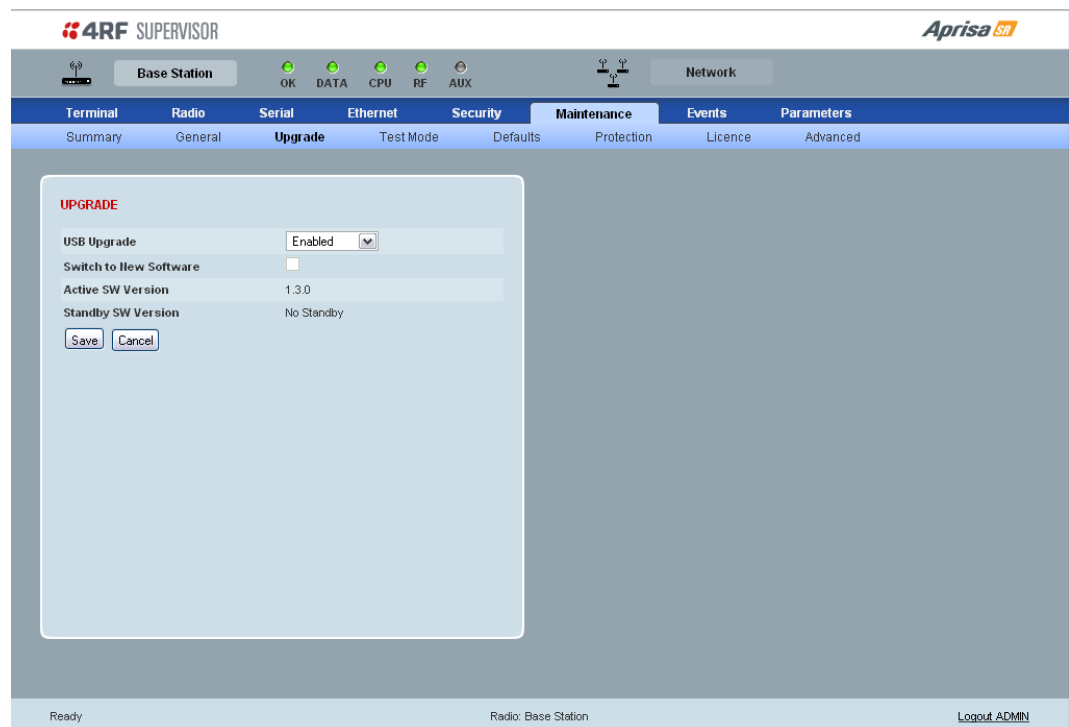
If the upgrade process did complete, you can login in to the radio to view the Active and Standby SW version (see 'View the Software Version' below).

If the upgrade process was successful, the Active SW Version will show the new software version and the Standby SW Version will be shown as 'No Standby'.

Possible Upgrade Failure Causes

1. USB Upgrade setting set to 'Disabled'

Check that the SuperVisor USB Upgrade setting is set to 'Enabled'.



2. USB Upgrade setting set to 'Authenticate'

If the radio is not operating on the new software (after the power cycle), it could be caused by the SuperVisor USB Upgrade setting set to 'Authenticate'.

The new software will have uploaded in to the Aprisa SR but will not have activated. The new software version will be displayed in the Standby SW version.

In this case, tick the 'Switch to new Software' checkbox and click 'Save' to apply the changes.

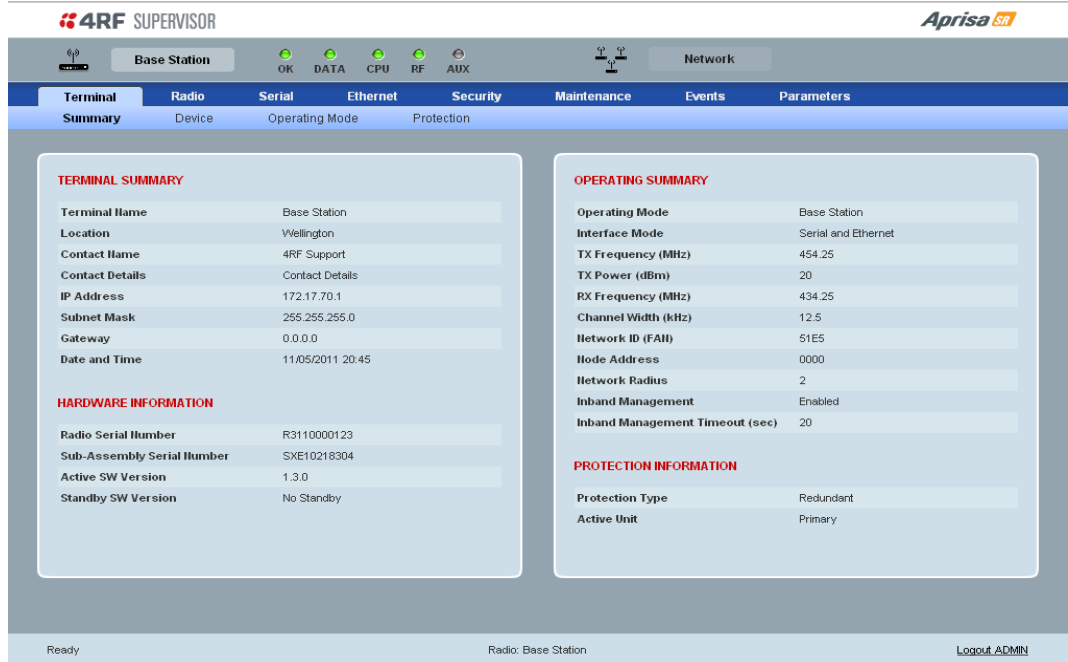
View the Software Version

To view the uploaded software version:

Select Terminal Settings > Terminal > Summary

If USB Upgrade setting is set to 'enabled', then the version of software uploaded will be displayed in 'Active SW Version' field.

If USB upgrade setting is set to 'Authenticate', then the version of software uploaded will be displayed in 'Standby SW Version' field.



The screenshot shows the 4RF SUPERVISOR web interface. The top navigation bar includes 'Base Station' and 'Network' tabs. The 'Terminal' tab is selected, and the 'Summary' sub-tab is active. The interface displays two main sections: 'TERMINAL SUMMARY' and 'OPERATING SUMMARY'.

TERMINAL SUMMARY

Terminal Name	Base Station
Location	Wellington
Contact Name	4RF Support
Contact Details	Contact Details
IP Address	172.17.70.1
Subnet Mask	255.255.255.0
Gateway	0.0.0.0
Date and Time	11/05/2011 20:45

HARDWARE INFORMATION

Radio Serial Number	R3110000123
Sub-Assembly Serial Number	SXE10218304
Active SW Version	1.3.0
Standby SW Version	No Standby

OPERATING SUMMARY

Operating Mode	Base Station
Interface Mode	Serial and Ethernet
TX Frequency (MHz)	454.25
TX Power (dBm)	20
RX Frequency (MHz)	434.25
Channel Width (kHz)	12.5
Network ID (FAN)	51E5
Node Address	0000
Network Radius	2
Inband Management	Enabled
Inband Management Timeout (sec)	20

PROTECTION INFORMATION

Protection Type	Redundant
Active Unit	Primary

The bottom status bar shows 'Ready', 'Radio: Base Station', and a 'Logout ADMIN' link.



3.2. Protected Station Software Upgrade Process

Procedure

The Protected Station software upgrade can be achieved without disruption to traffic.

This procedure assumes that the Primary radio is active and the Secondary radio is standby.

Process Steps

1. Using the Hardware Manual Lock switch, force the primary radio to active.
 2. Carefully remove the Host Port USB cable connecting the secondary radio to the Protection Switch and insert the USB flash drive with the new software release into the secondary radio Host Port .
 3. Power cycle the secondary radio. The radio will be upgraded with the new software.
 4. When the secondary radio upgrade is completed, remove the USB flash drive, restore the Host Port USB cable to Protection Switch, power cycle the secondary radio and wait for it to become standby.
 5. Using the Hardware Manual Lock switch, force the secondary radio to active.
 6. Carefully remove the Host Port USB cable connecting the primary radio to the Protection Switch and insert the USB flash drive with the new software release into the primary radio Host Port .
 7. Power cycle the primary radio. The radio will be upgraded with the new software.
 8. When the primary radio upgrade is completed, remove the USB flash drive, restore the Host Port USB cable to Protection Switch, power cycle the primary radio and wait for it to become standby.
 9. Set the Hardware Manual Lock switch to the Auto position. The secondary radio will remain active and the primary radio will remain standby. To set the primary radio to active, use the hardware lock switch to select the primary radio and wait for it to become active, then set the hardware manual lock switch to the Auto position.
-

4. Software Enhancements

4.1. Major Enhancements

25 kHz Channel Size

In software version 1.3.0, support has been added to manage the new 25 kHz channel size Aprisa SR radios.

See '6. Hardware Enhancements'.

Channel Access Settings

Previously, the Channel Access parameters and Packet Size were fixed depending on the network being deployed e.g. number of remote stations.

In software version 1.3.0, all Channel Access parameters are calculated and set automatically for the network topology and the size of packet that is being transmitted. This improves channel utilization if there are variable size packets on the network.

Maximum Packet Size

Previously, the maximum packet size was 247 bytes.

In software version 1.3.0, the maximum packet size has been increased to 1550 bytes. This allows large packets to be transmitted over the radio without fragmenting packets. This also improves channel utilization by reducing the overhead added due to fragmentation and also reduces number of ACKs (as ACKs are transmitted per fragment).

Following an upgrade to 1.3.0, the Packet Size can be changed up to a maximum of 1550 bytes for optimum performance.

As radios dispatched from the factory have a Packet Size set to the maximum value of 1550 bytes, if a new radio is installed in an existing Field Access Network (FAN), the Packet Size must be changed to ensure it is the same value for all radios in the FAN.

The packet size of the software upgraded radios can be increased or the packet size of the new radio can be decreased.

The new radio will not register in an existing FAN if the Packet Size is not the same as the other radios in the FAN.

However, to take advantage of the new features of 1.3.0, it is recommended that all radios in the FAN be upgraded to this new software version 1.3.0.

Note: If a Repeater Station is deployed in the FAN, the packet size must be set to less than 512 bytes in all radios in the FAN.

Aprisa SR Protected Station

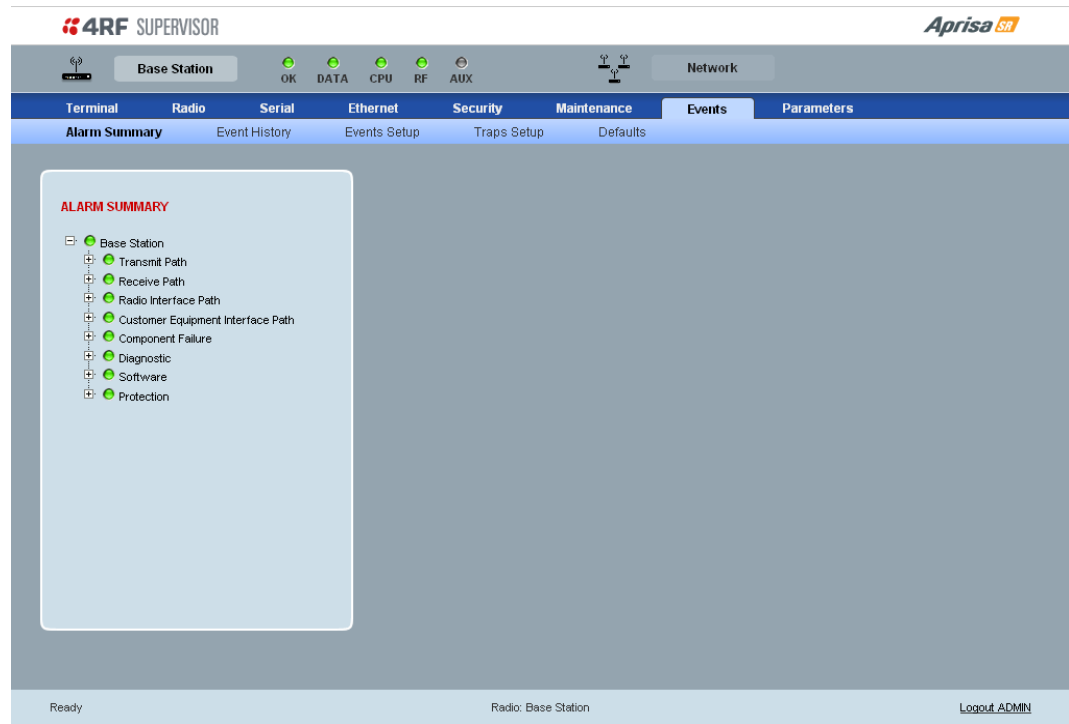
In software version 1.3.0, support has been added for the Aprisa SR Protected Station.

This Protected Station is a new product which provides radio and user interface protection for Aprisa SR radios when configured as a Base Station. The RF ports and interface ports from two standard Aprisa SR Radios are switched to the standby radio if there is a failure in the active radio.

See '6. Hardware Enhancements'.

Events System

In software version 1.3.0, an Events System has been added to capture and setup all events with the Aprisa SR radio.



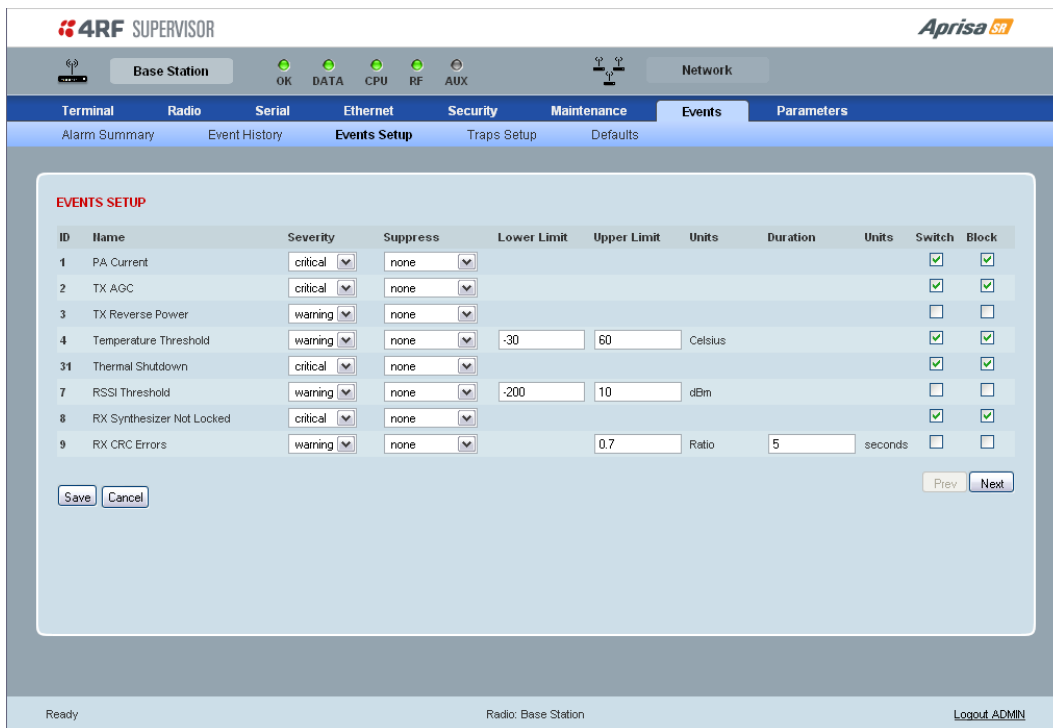
The Alarm Summary is display tree that displays the current states of all radio alarms. The alarm states refresh automatically every 12 seconds.

Events

There are two types of events that can be generated on the Aprisa SR radio. These are:

1. Alarm Events: These are generated to indicate a problem on the radio.
2. Informational Events: These are generated to provide information on key activities that are occurring on the radio. These events do not indicate an alarm on the radio and are used to provide information only.

Alarm event parameters can be configured for all alarm events (see Aprisa SR User Manual 1.3.0 'Alarm Events').



4RF SUPERVISOR **Aprisa SR**

Base Station OK DATA CPU RF AUX Network

Terminal Radio Serial Ethernet Security Maintenance **Events** Parameters

Alarm Summary Event History **Events Setup** Traps Setup Defaults

EVENTS SETUP

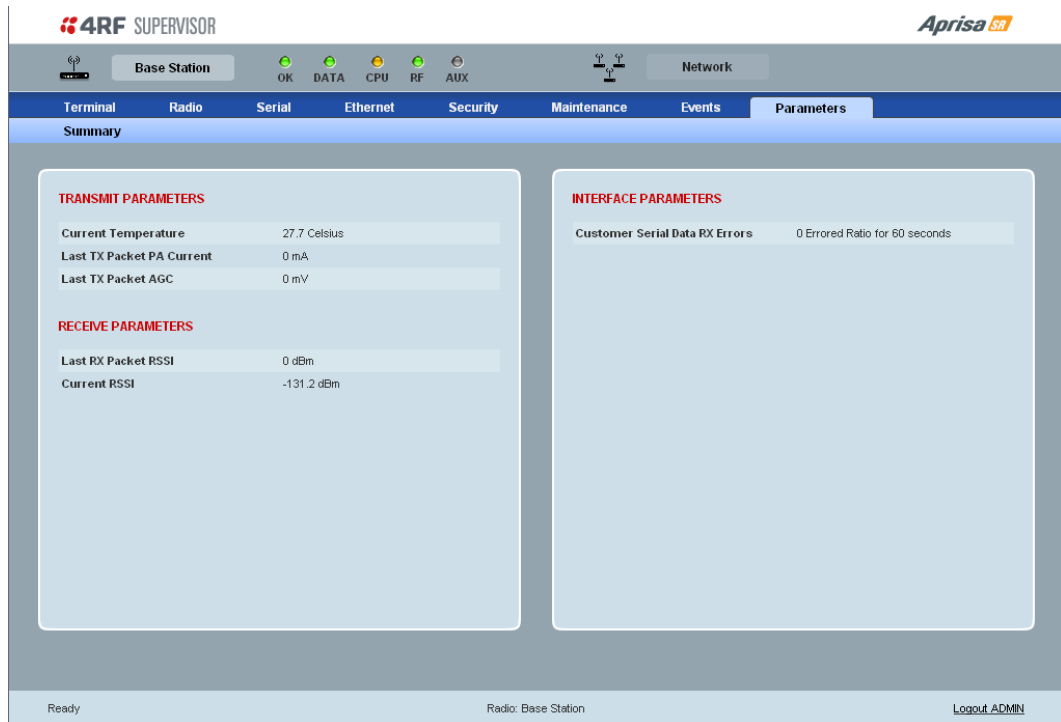
ID	Name	Severity	Suppress	Lower Limit	Upper Limit	Units	Duration	Units	Switch	Block
1	PA Current	critical	none						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	TX AGC	critical	none						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	TX Reverse Power	warning	none						<input type="checkbox"/>	<input type="checkbox"/>
4	Temperature Threshold	warning	none	-30	60	Celsius			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
31	Thermal Shutdown	critical	none						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	RSSI Threshold	warning	none	-200	10	dBm			<input type="checkbox"/>	<input type="checkbox"/>
8	RX Synthesizer Not Locked	critical	none						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	RX CRC Errors	warning	none		0.7	Ratio	5	seconds	<input type="checkbox"/>	<input type="checkbox"/>

Save Cancel Prev Next

Ready Radio: Base Station Logout ADMIN

Parameters

In software version 1.3.0, a Parameters Summary screen has been added which displays the parameters associated with the active alarms, setup with 'Events Setup'. This page is dynamic depending on the events that have been setup (example only shown).



4RF SUPERVISOR **Aprisa SR**

Base Station OK DATA CPU RF AUX Network

Terminal Radio Serial Ethernet Security Maintenance Events **Parameters**

Summary

TRANSMIT PARAMETERS

Current Temperature	27.7 Celsius
Last TX Packet PA Current	0 mA
Last TX Packet AGC	0 mV

RECEIVE PARAMETERS

Last RX Packet RSSI	0 dBm
Current RSSI	-131.2 dBm

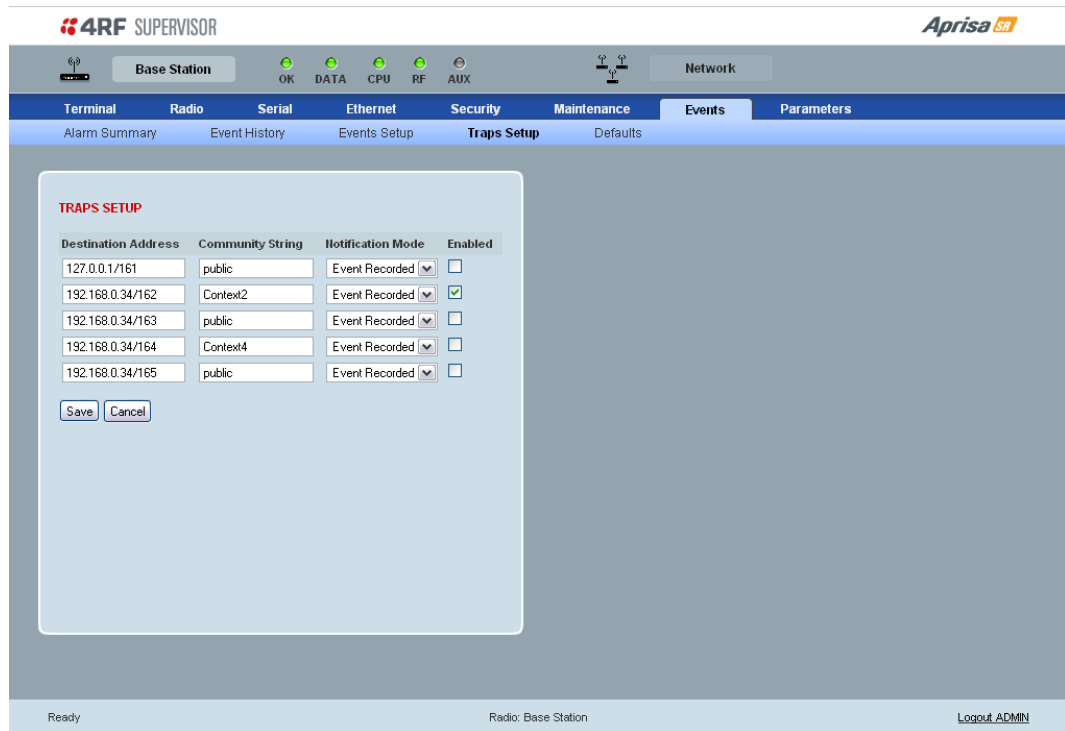
INTERFACE PARAMETERS

Customer Serial Data RX Errors	0 Errored Ratio for 60 seconds
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Ready Radio: Base Station Logout ADMIN

SNMP Traps

In software version 1.3.0, SNMP Traps have been moved from Security > SNMP to Events > Traps Setup.



The screenshot shows the 4RF Supervisor web interface. The top navigation bar includes 'Base Station', 'OK', 'DATA', 'CPU', 'RF', 'AUX', and 'Network'. Below this is a menu bar with 'Terminal', 'Radio', 'Serial', 'Ethernet', 'Security', 'Maintenance', 'Events', and 'Parameters'. The 'Events' menu is expanded, showing 'Alarm Summary', 'Event History', 'Events Setup', 'Traps Setup', and 'Defaults'. The 'Traps Setup' window is open, displaying a table for configuring SNMP traps.

Destination Address	Community String	Notification Mode	Enabled
127.0.0.1/161	public	Event Recorded	<input type="checkbox"/>
192.168.0.34/162	Context2	Event Recorded	<input checked="" type="checkbox"/>
192.168.0.34/163	public	Event Recorded	<input type="checkbox"/>
192.168.0.34/164	Context4	Event Recorded	<input type="checkbox"/>
192.168.0.34/165	public	Event Recorded	<input type="checkbox"/>

At the bottom of the window are 'Save' and 'Cancel' buttons. The status bar at the bottom of the interface shows 'Ready', 'Radio: Base Station', and a 'Logout ADMIN' link.

The Events > Traps Setup allows for SNMP traps to be defined:

The trap Destination Address is the IP address of a station running an SNMP manager and the Community String is sent with the IP address for security.

The Notification Mode defines when an event related trap is sent and the Enabled parameter determines if the entry is used.

Please contact 4RF if the SNMP MIB files are required.

4.2. Minor Enhancements

Community String Display

Previously, SNMP community strings were displayed as hidden text (similar to a password).

In software version 1.3.0, community strings are displayed as plain text to conform to standard international practices for displaying community strings.

5. Software Bug Fixes

5.1. Major Bug Fixes

None.

5.2. Minor Bug Fixes

L2 Filter Rules

Previously, L2 Filtering Rules setup with SuperVisor > Ethernet > L2 Filtering were lost if the radio was rebooted (soft boot or hard boot).

L2 Filtering provides the ability to filter radio link traffic based on specified Layer 2 MAC addresses.

In software version 1.3.0, any L2 Filtering Rules setup will not be lost if the radio is rebooted.

Event History Log

Previously, the Event History Log was cleared during a radio software upgrade.

In software version 1.3.0, the Event History Log is not cleared during subsequent radio software upgrades.

Note: Upgrading to software version 1.3.0 will still clear the previous Event History Log.

6. Hardware Enhancements

25 kHz Channel Size

In software version 1.3.0, support has been added to manage the new 25 kHz channel size Aprisa SR radios.

The 25 kHz channel size Aprisa SR radios are new products providing a gross radio capacity of 19.2 kbit/s in both the VHF and UHF frequency bands.

Option Examples	Part Number
VHF Radio single antenna port	APSR-N136- <u>025</u> -SO-12-ETAA
VHF Radio dual antenna port	APSR-N136- <u>025</u> -DO-12-ETAA
UHF Radio single antenna port	APSR-N400- <u>025</u> -SO-12-ETAA
UHF Radio dual antenna port	APSR-N400- <u>025</u> -DO-12-ETAA

Aprisa SR Protected Station

In software version 1.3.0, support has been added for the Aprisa SR Protected Station. This Aprisa SR Protected Station is a new product which provides radio and user interface protection for Aprisa SR radios when configured as a Base Station. The RF ports and interface ports from two standard Aprisa SR Radios are switched to the standby radio if there is a failure in the active radio.



The Aprisa SR Protected Station is comprised of an Aprisa SR Protection Switch and two standard Aprisa SR radios. The Aprisa SR radios can be any of the currently available Aprisa SR radio frequency bands, channel sizes or single / dual antenna port options.

Option Examples	Part Number
Aprisa SR Radio	APSR-N <u>400</u> -012-SO-12-ETAA
Aprisa SR Protected Station	APSR-R <u>400</u> -012-SO-12-ETAA
Aprisa SR Protected Station	APSR-R <u>136</u> -025-SO-12-ETAA

See the Aprisa SR User Manual 1.3.0 for more information.