



5620 SAM SERVICE AWARE MANAGER

14.0 R9

FlexiPacket Microwave User Guide

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Contents

About this document	5
1 What's new?	7
1.1 What's new in 5620 SAM Release 14.0 for FlexiPacket Microwave.....	7
2 FlexiPacket Microwave overview	11
2.1 FlexiPacket Microwave device support	11
3 FPMR and Hub 800 — device discovery	13
3.1 Introduction	13
3.2 To configure mediation and discover FPMR and Hub 800 devices.....	13
4 External EMS launch from the 5620 SAM	17
4.1 WebLCT — Hub 800 and FPMR.....	17
4.2 To start the WebLCT	17
5 Hub 800 object management	19
5.1 Hub 800 shelf, card, and port objects	19
5.2 To configure a Hub 800 card	21
5.3 To configure a Hub 800 E1 port	21
5.4 To configure a Hub 800 Ethernet port	22
5.5 To configure a Hub 800 SFP port	23
5.6 To configure loopback in Hub 800.....	23
6 FPMR object management	25
6.1 FPMR shelf, card, and port objects.....	25
6.2 To configure FPMR device properties	27
6.3 To configure radio port parameters	27
6.4 To configure an FPMR Ethernet port	28
6.5 To configure FPMR modulation — static or ACM.....	29
6.6 To configure loopback in FPMR	30
7 FPMR and Hub 800 inventory management	33
7.1 Hardware inventory of the equipped cards	33
7.2 FlexiPacket Microwave device hardware and software inventory.....	34
8 FPMR and Hub 800 link discovery	35
8.1 Link discovery from 5620 SAM	35
8.2 To discover links on Hub 800 and FPMR devices.....	36

9	FPMR and Hub 800 device backup	39
9.1	Backup	39
9.2	To configure a backup policy for a FPMR or Hub 800 device	40
9.3	To perform an on-demand backup for a FPMR or Hub 800 device	41
9.4	To view the backup status of a FPMR or Hub 800 device	42
9.5	To export a device configuration backup	42
9.6	To import a FlexiPacket Microwave device configuration backup	43
9.7	To delete backups	44
10	FPMR and Hub 800 performance management	45
10.1	Collecting and reporting statistics	45
10.2	FPMR counters	46
10.3	Hub 800 counters	47
10.4	To configure retention time	47
10.5	To collect and display the statistics values	48
10.6	To configure polling for a MIB statistics class	49
11	FPMR and Hub 800 alarm management	51
11.1	Overview	51
12	FPMR and Hub 800 license management	53
12.1	License management	53
12.2	Feature license reporting	53

About this document

Purpose

The *FlexiPacket Microwave User Guide* describes how to discover, configure, and manage FlexiPacket Microwave devices: Hub 800 and FPMR, from the 5620 SAM.

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1 What's new?

1.1 What's new in 5620 SAM Release 14.0 for FlexiPacket Microwave

1.1.1 General information

This section highlights FlexiPacket Microwave features introduced in Release 14.0 of the 5620 SAM and provides pointers for more information. Feature lists and high-level feature descriptions are also available in the *5620 SAM Release Description*.

1.1.2 What's new in 5620 SAM Release 14.0 R7 for FlexiPacket Microwave

[Table 1, "5620 SAM Release 14.0 R7 FlexiPacket Microwave features" \(p. 7\)](#), lists the features and functions added in 5620 SAM Release 14.0 R7 for FlexiPacket Microwave support. See the *5620 SAM User Guide* for more information about non-FlexiPacket Microwave features and functions.

Table 1 5620 SAM Release 14.0 R7 FlexiPacket Microwave features

Feature	Description and Reference
SAM-83174 — Hub 800 R 2.6.6 Management	The 5620 SAM supports the native management of the Hub 800 device from Release 2.6.6 or later.
SAM-83181 — FPMR R 2.5 Management	The 5620 SAM supports the native management of the FPMR device from Release 2.5 or later.
SAM-84161 and SAM-84163 — Hub 800 and FPMR device discovery	You can discover the Hub 800 and FPMR devices using the 5620 SAM. 3.1.2 "Mediation policy" (p. 13) 3.1.3 "Discovery rule" (p. 13) 3.2 "To configure mediation and discover FPMR and Hub 800 devices" (p. 13)
SAM-85719 — Links on the topology map	The links between two Hub 800 devices appear as solid lines. The links between two FPMR devices appear as dotted lines. The link between a Hub 800 and a FPMR device appears as a solid line. 8.1.6 "Links on the topology map" (p. 35)
SAM-85721 — FlexiPacket Microwave device SNMPv2 management	The 5620 SAM manages the FlexiPacket Microwave devices using SNMPv2. 3.1.1 "SNMPv2 management" (p. 13)
SAM-86030 — License management	Support for license management. Chapter 12, "FPMR and Hub 800 license management"
SAM-86057 — Hub 800 - Node management	The 5620 SAM supports the native management of the Hub 800 device from Release 2.6.6 or later.
SAM-86071 — Hub 800 card management	Support for Hub 800 card management. 5.1.3 "Plugin cards" (p. 19) 5.2 "To configure a Hub 800 card" (p. 21)
SAM-86077, SAM-86147, SAM-87964, and SAM-87964 — Inventory management	Support for inventory management. Chapter 7, "FPMR and Hub 800 inventory management"

Table 1 5620 SAM Release 14.0 R7 FlexiPacket Microwave features (continued)

Feature	Description and Reference
SAM-86879 — Manage Hub 800 alarms SAM-87971 — Manage FPMR alarms SAM-91327 — Fault correlation	Alarm management Chapter 11, "FPMR and Hub 800 alarm management"
SAM-87071 — Hub 800 G.821/G.826 performance statistics SAM-87134 — Hub 800 Ethernet port performance statistics SAM-88002 — FPMR counters SAM-88010 — FPMR performance data management	Support for performance management. Chapter 10, "FPMR and Hub 800 performance management"
SAM-87551 — Hub 800 E1 port management	Support for Hub 800 E1 port management. 5.1.4 "E1 ports" (p. 19) 5.3 "To configure a Hub 800 E1 port" (p. 21)
SAM-87497 and SAM-87950 — Backup configuration	Support for FlexiPacket Microwave device backup configuration. Chapter 9, "FPMR and Hub 800 device backup"
SAM-87561 — Hub 800 SFP module setting SAM-87599 — Hub 800 SFP GE and Ethernet port setting SAM-87601 — Hub 800 STM-1 settings	Support for Hub 800 SFP port management 5.1.6 "SFP ports" (p. 20) 5.5 "To configure a Hub 800 SFP port" (p. 23)
SAM-87607 — Hub 800 DCN port management.	Support for Hub 800 DCN port management 5.1.9 "DCN port" (p. 20)
SAM-87746 — Hub 800 Port loopback	Support for Hub 800 port loopback configuration 5.1.8 "Loopback" (p. 20)
SAM-87749 — Power injector card management	Support for power injector card. 5.1.7 "Power injector card" (p. 20)
SAM-87866 — FPMR node management	The 5620 SAM supports the native management of the FPMR device from Release 2.5 or later.
SAM-87878 — FPMR loopback	Support for performing loopback in FPMR devices. 6.1.7 "Loopback" (p. 26)
SAM-87881 — FPMR - GbEth Interface Configuration	Support for the configuration of FPMR Ethernet port parameters. 6.1.5 "Ethernet port" (p. 26)
SAM-87918 — FPMR - BB Modem Configuration	Support for the configuration of FPMR BB Modem parameters. 6.1.6 "BB modem" (p. 26)
SAM-87948 — FPMR - RF Configuration	Support for the configuration of FPMR radio frequency parameters. 6.1.4 "Radio port" (p. 26)
SAM-87967 — FPMR - Networking settings	Support for FPMR DCN configuration. 6.1.2 "FPMR device information" (p. 25)
SAM-87980 — FPMR - Radio Port Property	Support for the configuration of radio port parameters. 6.1.4 "Radio port" (p. 26)

Table 1 5620 SAM Release 14.0 R7 FlexiPacket Microwave features (continued)

Feature	Description and Reference
SAM-88004 — FPMR WebLCT launch SAM-88006 — Hub 800 WebLCT launch	You can launch the WebLCT from the 5620 SAM Chapter 4, "External EMS launch from the 5620 SAM"
SAM-91321 — Hub 800 to FPMR link discovery SAM-91323 — Hub 800 to Hub 800 link discovery SAM-91935 — FPMR to FPMR link discovery	Support for discovery of links between Hub 800 to Hub 800, Hub 800 to FPMR, and FPMR to FPMR. Chapter 8, "FPMR and Hub 800 link discovery"

2 FlexiPacket Microwave overview

2.1 FlexiPacket Microwave device support

2.1.1 FlexiPacket Microwave devices

FlexiPacket Microwave is a packet microwave system that meets the requirements of evolved transport networks and has the benefits of an advanced scalable microwave radio and of a carrier grade Ethernet nodal solution. The FlexiPacket Microwave allows the deployment of a cost-effective microwave infrastructure for 3G, WiMAX and LTE backhaul, high speed wireless Internet networks, fixed broadband access backhaul and private wireless networks. The FlexiPacket Microwave solution is a dual mode platform, supporting both packet and hybrid modes on the same hardware.

The 5620 SAM supports the native management of following FlexiPacket Microwave devices:

- FPMR (ODU)
- Hub 800 (IDU)

2.1.2 FPMR

FPMR is a reliable and flexible microwave radio, which efficiently transports Ethernet traffic in RF bands from 3.5 GHz up to 42 GHz. It is used in different transmission networks: mobile networks, fixed networks, or private networks.

FPMR is composed of three boards:

- Baseband Modem
- RF/IF board
- Power Supply

2.1.3 Hub 800

Hub 800 is an indoor unit, 1U in height, that is used for tail, chain, hub, and aggregation site application in the mobile backhaul solution. It is connected to and works with outdoor units (ODUs) to transfer and receive local traffic to and from remote equipment. Hub 800 uses multi-slots structure to support various plug-in cards with various interfaces. With the help of small form-factor pluggables (SFPs), plug-in cards and patch panels, Hub 800 can be connected to various interfaces of local traffic, for example, FE, GE, E1/T1/J1, STM-1 and FlexBus interface.

3 FPMR and Hub 800 — device discovery

3.1 Introduction

3.1.1 SNMPv2 management

The 5620 SAM manages the FPMR (IDU) and Hub 800 (ODU) through the SNMP protocol. Each device supports an SNMP Agent. The default management protocol is the community-based SNMPv2 (SNMPv2C) as defined by ETF RFC 1901. The SNMP notifications are sent to the 5620 SAM as traps to inform the 5620 SAM of relevant status changes in the device. The device inserts a sequential counter in the SNMP traps that increments the value for each transmitted trap. The traps that are transmitted to different IP destination addresses but containing the same information have the same counter value. See [3.2 “To configure mediation and discover FPMR and Hub 800 devices” \(p. 13\)](#) for more information about SNMPv2 configuration.

3.1.2 Mediation policy

You must create a mediation security policy to setup the security and communication infrastructure between the 5620 SAM and each device within the specified discovery rule IP range. You can also optionally configure other mediation policies to specify other network mediation tasks such as specifying the polling interval for MIB configuration changes, how the 5620 SAM processes specific events, and how the 5620 SAM pings devices in the network to ensure they are reachable.

You need a SNMPv2 mediation policy with the default community string “private” for read, write, and security access and a SNMPv2 mediation policy with the community string “public” for SNMPv2 trap access. See [3.2 “To configure mediation and discover FPMR and Hub 800 devices” \(p. 13\)](#) for more information about mediation policy configuration.

3.1.3 Discovery rule

You must create a discovery rule and then scan the network for devices according to the IP addresses or address ranges specified in the discovery rule, to discover one or more devices in your network. See [3.2 “To configure mediation and discover FPMR and Hub 800 devices” \(p. 13\)](#) for more information about discovery rule configuration.

3.2 To configure mediation and discover FPMR and Hub 800 devices

3.2.1 Purpose

Perform this procedure to configure the mediation policies, and discover the FlexiPacket Microwave and Hub 800 devices.

3.2.2 Hub 800 and FPMR mediation policy

- Hub 800 — You need a SNMPv2 mediation policy with the default community string “sysmanager” for read, write, and security access and a SNMPv2 mediation policy with the community string “public” for SNMPv2 trap access.

- FPMR — You need a SNMPv2 mediation policy with the default community string “sysmanager” for read, write, trap, and security access.

3.2.3 Steps

Mediation policy configuration

- 1 _____
Choose Administration→Mediation from the 5620 SAM main menu. The Mediation (Edit) form opens.
- 2 _____
Configure the parameters on the General tab and verify the SNMP trap parameters in the SNMP Trap panel.
- 3 _____
Click on the Mediation Security tab and click Create. The Mediation Policy (Create) form opens.
- 4 _____
Configure the Policy ID and Displayed Name parameters.
- 5 _____
Configure the Security Model parameter to SNMP v2c.
- 6 _____
Perform one of the following:
 - a. Enter ‘public’ in the Community String parameter field, to configure the Hub 800 mediation policy for trap access.
 - b. Enter ‘sysmanager’ in the Community String field, to configure the Hub 800 mediation policy for read, write, and security access.
 - c. Enter ‘sysmanager’ in the Community String parameter field, to configure the FPMR mediation policy for read, write, trap, and security access.
- 7 _____
Configure the parameters in the SNMP panel.
- 8 _____
Configure the parameters in the File Transfer and FTP panels.
- 9 _____
Save your changes and close the form.

Discovery rule configuration


- 10** Choose Administration→Discovery Manager from the 5620 SAM main menu. The Discovery Manager (Edit) form opens.
- 11** Click Create to configure a new discovery rule. The Create Discovery Rule step form opens.
- 12** Configure the required parameters in the Specify General Attributes step and click Next. The Add Rule Elements step form opens.
- 13** Click Create, configure the required IP parameters, and click OK. The rule element is added to the list.
- 14** Click Next. The Add Auto Discovery Rule Elements ACL step form opens.
- 15** Click Create, configure the required IP parameters, and click OK.
- 16** Click Next and the Configure Mediation Security step form opens.
- 17** Click Select in each of the following panels to specify the mediation security policies. Choose the mediation security policy with community string configured as listed in [Table 2, “Mapping of mediation policy and community string” \(p. 15\)](#)

Table 2 Mapping of mediation policy and community string

Device	Mediation policy	Community string
FPMR	<ul style="list-style-type: none"> • Read Access Mediation Policy • Write Access Mediation Policy 	sysmanager
	<ul style="list-style-type: none"> • Trap Access Mediation Policy • Security Access Mediation Policy 	

Table 2 Mapping of mediation policy and community string (continued)

Device	Mediation policy	Community string
Hub 800	<ul style="list-style-type: none"> • Read Access Mediation Policy • Write Access Mediation Policy • Security Access Mediation Policy 	sysmanager
	<ul style="list-style-type: none"> • Trap Access Mediation Policy 	public

 **Note:** If you do not specify a policy, the default policy is applied.

18 _____
Click Finish to close the Create Discovery Rule form.

19 _____
Apply your changes in the Discovery Manager form. If the Administrative State of the newly created discovery rule is set to Up, the 5620 SAM scans the network using the discovery rule.

END OF STEPS _____

4 External EMS launch from the 5620 SAM

4.1 WebLCT — Hub 800 and FPMR

4.1.1 Introduction

You can launch the Hub 800 and the FPMR WebLCT programs from the 5620 SAM.

The WebLCT supports:

- NE management
- Interface management
- Ethernet configuration
- Service management
- Clock synchronization settings
- Performance management
- Maintenance
- OAM settings
- Protection settings
- Security management

4.2 To start the WebLCT

4.2.1 Steps

1

Perform the following to specify the web browser to start the WebLCT:

1. Choose Application→User Preferences. The User Preferences form opens.
2. Click Browse beside the Browser Path parameter. The Browser Path form opens.
3. Choose the **exe** file from the appropriate folder and click Open.
4. Save your changes and close the form.

2

Choose Equipment from the navigation tree view selector. The navigation tree displays the Equipment tree.

3

Right-click on a Hub 800 or FPMP device object and choose Launch External EMS Browser.
The WebLCT screen appears on the browser specified in [Step 1](#).

END OF STEPS

5 Hub 800 object management

5.1 Hub 800 shelf, card, and port objects

5.1.1 Hub 800 device

Hub 800 is an indoor unit that is 1 U in height with the following features:

- Hub 800 has a multi-slot structure for a maximum of two plug-in cards.
- The faceplate accommodates the user interface, management interface, power supply interface, alarm interface.
- The grounding point is on the lateral side and the backplate accommodates the stacking and protection interface for dual-IDU structure. LEDs on the faceplate indicate the status of different types of signal or connection.
- The internal fan tray is used for heat dissipation. Hub 800 requires a power supply input of -48 V DC. The USB interface is for the USB key.
- A reset button is located besides the USB interface on Hub 800 faceplate.

5.1.2 Shelf, card, and port objects in the 5620 SAM navigation tree

In the equipment navigation tree, shelf objects are children of device objects. They appear below the device logical group objects in the navigation tree. Card slot objects are children of shelf objects, and appear below the shelf object in the navigation tree. Port slot objects are children of card objects, and appear below the card object in the navigation tree.

The shelf objects appear automatically in the navigation tree when the 5620 SAM discovers an Hub 800 device. The shelves cannot be manually added or deleted from the 5620 SAM.

5.1.3 Plugin cards

The following plug-in cards are supported in the slots:

- 16-port E1/T1 Multi-Service card
- 4-port GE RJ45 Card
- 4-port SFP Card
- 2-port Power Injector
- 2-port FlexBus Card

See [5.2 “To configure a Hub 800 card” \(p. 21\)](#) for more information about card configuration.

5.1.4 E1 ports

The E1 ports are located in the faceplate of the Hub 800 device and appear below the Card Slot 0 object of the 5620 SAM equipment tree. They are labelled E1 Port 1/0/1 to E1 Port 1/0/16. The E1 ports are also automatically provisioned when the 16 x E1/T1 plug-in card is configured. See [5.3 “To configure a Hub 800 E1 port” \(p. 21\)](#) for more information about configuring an E1 port.

5.1.5 Ethernet ports

The Ethernet ports are located in the faceplate of the Hub 800 device and appear below the Card Slot 0 object of the 5620 SAM equipment tree. They are labelled ETH Port 1/0/1 to ETH Port 1/0/4. See [5.4 “To configure a Hub 800 Ethernet port” \(p. 22\)](#) for more information about configuring an Ethernet port.

5.1.6 SFP ports

The SFP ports are located in the faceplate of the Hub 800 device and appear below the Card Slot 0 object of the 5620 SAM equipment tree. They are numbered from 1/0/1 to 1/0/2. See [5.5 “To configure a Hub 800 SFP port” \(p. 23\)](#) for more information about configuring an SFP port.

5.1.7 Power injector card

The Power injector card is used to provide power and Ethernet to two ODUs along with the two ODUs fed with power and Ethernet on the main board. Therefore up to four ODUs can be powered using one IDU. The 5620 SAM supports the configuration of the power injector card. The power supply panel of the power injector card is displayed on ETH1 1/0/1 and ETH2 1/0/2 ports on main board. See [5.2 “To configure a Hub 800 card” \(p. 21\)](#) for more information about configuring a power injector card.

5.1.8 Loopback

The 5620 SAM supports configuration of the E1, ETH, or SFP ports as loopback interfaces. The loopback type is set as local or remote. The release time is configured to determine the duration of setting the E1 port as a loopback interface. The status parameter displays the whether the loopback is in progress, completed, or failed. You can also configure loopback from the Network Element (Edit) form by clicking on the Loopback tab. All the loopbacks are listed in the Loopback tab of the Network Element (Edit) form. You can create a loopback test only from the port level. You can perform a loopback test and edit the parameters from both port and device levels.

See [5.6 “To configure loopback in Hub 800” \(p. 23\)](#) for more information about configuring the E1 port as loopback.

5.1.9 DCN port

DCN port is an Ethernet port for local management through IP packets and it is connected to the switch in IDU. The 5620 SAM displays the DCN port parameters in the DCN panel of the NE Specifics tab→DCN/OOB sub-tab on the Network Element (Edit) form. The IP address, Subnet mask, Default gateway information, DCN auto discovery information are displayed.

5.1.10 OoB port

The OoB port can be used for out-of-band management or for debug purpose. There are two interfaces combined on this port: one is the LCT through Ethernet interface and the other is console through UART interface. This interface creates a management communication channel between the two IDUs in the Dual-IDU configuration. The 5620 SAM displays the OoB port parameters in the OOB panel of the NE Specifics tab→DCN/OOB sub-tab on the Network Element (Edit) form. The IP address and Subnet mask information are displayed.

5.1.11 Management VLAN

The 5620 SAM displays the management VLAN parameters in the Management VLAN tab of the Network Element properties form.

5.2 To configure a Hub 800 card

5.2.1 Purpose

Perform this procedure to configure a card in an empty card slot.

5.2.2 Steps

1 _____

On the equipment tree, expand Network→Hub 800→Shelf→Card Slot (EMPTY)

2 _____

Right-click on the empty Card Slot object and choose Configure Card. The Card Slot (Create) form opens.

3 _____

Configure the required parameters.



Note: You can configure the following values for the Assigned Card Type parameter:

- 16 x E1/T1 Card
- 2 x FlexBus Card
- 4 x GE card
- 4-port GE SFP Optical Card
- 2 x Power Injector Card

4 _____

Save your changes and close the form.

END OF STEPS _____

5.3 To configure a Hub 800 E1 port

5.3.1 Steps

1 _____

On the equipment tree, expand Network→Hub 800→Shelf→Card→E1 port.

2 _____

Right-click on the E1 port object and choose properties. The Physical Port (Edit) form opens.

- 3 _____
Configure the parameters in the General tab.
- 4 _____
Click on the E1/T1 Specifics tab and configure the parameters.
- 5 _____
Save your changes and close the form.

END OF STEPS _____

5.4 To configure a Hub 800 Ethernet port

5.4.1 Steps

- 1 _____
On the equipment tree, expand Network→Hub 800→Shelf→Card Slot 0→ETH port.
- 2 _____
Right-click on the ETH port object and choose properties. The Physical Port (Edit) form opens.
- 3 _____
Configure the parameters in the General tab.
- 4 _____
Click on the Ethernet Specifics tab and configure the parameters.
- 5 _____
Click on the States tab and configure the parameters.
- 6 _____
Click on the Auto Negotiation tab and configure the parameters.
- 7 _____
Save your changes and close the form.

END OF STEPS _____

5.5 To configure a Hub 800 SFP port

5.5.1 Steps

- 1 _____
On the equipment tree, expand Network→Hub 800→Shelf→Card Slot 0→SFP port.
- 2 _____
Right-click on the SFP port object and choose properties. The Physical Port (Edit) form opens.
- 3 _____
Configure the parameters in the General tab.
- 4 _____
Click on the SFP Specifics tab and perform one of the following:
 - a. Perform the following to configure the SDH parameters:
 1. Retain the SFP Mode parameter value as STM-1.
 2. Click on the SDH Specifics tab and configure the parameters.
 - b. Perform the following to configure the Ethernet parameters:
 1. Configure the SFP Mode parameter as GbE.
 2. Click on the Ethernet Specifics tab and configure the parameters.
 3. Click on the Auto Negotiation tab and configure the parameters.
- 5 _____
Save your changes and close the form.

END OF STEPS _____

5.6 To configure loopback in Hub 800

5.6.1 Steps

- 1 _____
On the equipment tree, expand Network→Device→Shelf→Card→Port.
- 2 _____
Right-click on the port object and choose properties. The Physical Port (Edit) form opens.
- 3 _____
Click Start Loopback. The Loopback (Create) form opens.

4

Configure the parameters in the Loopback panel and save your changes. The Loopback tab is activated in the Physical Port (Edit) form.

5

a. Perform one of the following:

Configure loopback in the device level.

1. On the equipment tree, expand Network, right-click on the device object, and choose Properties. The Network Element (Edit) form opens.
2. Click on the Loopback tab, choose a port, and click Properties. The Loopback (Edit) form opens.
3. Configure the parameters in the Loopback panel, save your changes, and close the form. The Network Element (Edit) form reappears.
4. Choose one or more ports and click Start Loopback. The Loopback status appears in the Status column.
5. Click Stop Loopback to stop the loopback function.

b. Configure loopback in the port level.

1. On the equipment tree, expand Network→Device→Shelf→Card→Port.
2. Right-click on the port object and choose properties. The Physical Port (Edit) form opens.
3. Click Start Loopback and click on the Loopback tab. The Loopback Status parameter displays the status as In Progress.
4. Click Stop Loopback to stop the loopback function.

6

Save your changes and close the forms.

END OF STEPS

6 FPMR object management

6.1 FPMR shelf, card, and port objects

6.1.1 Introduction

FPMR has the following functional units:

- BB modem board
- Power supply unit
- RF/IF unit
- Duplexer filter (DPX)

The BB-modem board consists of:

- Gigabit Ethernet Physical Layer
- L2 Switch
- Microprocessor
- Baseband Unit
- Modem Unit

6.1.2 FPMR device information

The 5620 SAM provides the FPMR device information in the Network Element (Edit) form. See [6.2 “To configure FPMR device properties” \(p. 27\)](#) for more information.

DCN

The 5620 SAM displays the DCN parameters in the DCN panel of the NE Specifics tab on the Network Element (Edit) form. The IP address, Subnet mask, Default gateway, and base MAC address information are displayed.

Management VLAN

The 5620 SAM displays the management VLAN parameters in the Management VLAN tab of the Network Element (Edit) form.

6.1.3 Shelf, card, and port objects in the 5620 SAM navigation tree

After FPMR device discovery, the shelf, card, and port objects appear automatically in the navigation tree. Each FPMR device has one shelf, one card, and three port objects. The three port objects are, Ethernet port, radio port, and microprocessor port.

6.1.4 Radio port

The 5620 SAM supports the display and configuration of radio port and radio frequency parameters for FPMR devices.

You can only view the following parameters:

- Frequency
- ATPC
- Radio port
- Rx AGC
- Duplexer

You can configure the following parameters:

- Continuous wave test
- Hardware mode

See [6.3 “To configure radio port parameters” \(p. 27\)](#) for more information.

6.1.5 Ethernet port

The Gigabit Ethernet Physical Layer supports a 10/100/1000 Base-T interface towards the Gigabit Ethernet and has a GMII interface to the L2 Switch. It is synchronous Ethernet compliant. The 5620 SAM supports the configuration of the Ethernet port parameters. See [6.4 “To configure an FPMR Ethernet port ” \(p. 28\)](#)

6.1.6 BB modem

The 5620 SAM supports the configuration of BB modem parameters which includes:

- Radio port status — See [6.3 “To configure radio port parameters” \(p. 27\)](#)
- Static modulation — See [6.5 “To configure FPMR modulation — static or ACM” \(p. 29\)](#)
- Adaptive code modulation (ACM) — See [6.5 “To configure FPMR modulation — static or ACM” \(p. 29\)](#)
- ATPC — See [6.3 “To configure radio port parameters” \(p. 27\)](#)

6.1.7 Loopback

The 5620 SAM supports the configuration of loopbacks in local (signal looped back towards the GbE cable) and remote (signal looped back towards the radio interface) modes in the FPMR devices. All the loopbacks are enabled for a specified time, after which the loopback is disabled. Not more than one loopback can be enabled at a given time. When a loopback is enabled, the system moves to a "test mode" configuration designed for transmitting back traffic. The differences between the test and the normal are in the L2 switch configuration. When operating in test mode the auto-learning and filtering functions are disabled; the MAC forwarding table is flushed. During the entire duration of the loopback FPMR is not reachable for management. After loopback is performed, a file is available containing the result of the counters.

You can create a loopback only from port level. You can modify the loopback parameters and perform the loopback test from both the port and device levels. See [6.6 “To configure loopback in FPMR” \(p. 30\)](#) for more information about configuring loopback in FPMR devices.

6.2 To configure FPMR device properties

6.2.1 Steps

1 _____

On the equipment tree, right-click on an FPMR device object and choose Properties. The Network Element (Edit) form opens.

2 _____

Configure the general parameters:

- Name — ID name of the system
- Location — location of the FPMR device
- Contact Information — contact information for the FPMR device

3 _____

Set the Power Supply Source parameter as:

- External PS — when the power supply source is retrieved from an external device
- Midspam Injector — when the power supply is taken from a power injector that is an off-the-shelf mid-spam high power device
- Switch PSE — when the power supply source is located at the switch device

4 _____

Save your changes and close the form.

END OF STEPS _____

6.3 To configure radio port parameters

6.3.1 Steps

1 _____

On the equipment tree, expand Network→FPMR device object→Shelf object→Card Slot object.

2 _____

Right-click on the Radio Port object and choose Properties. The Physical Port (Edit) form opens.

3 _____
Click on the Radio tab and configure the parameters only in the Test and HW Parameters panel. The remaining parameters cannot be configured.

4 _____
Save the changes and close the form.

END OF STEPS _____

6.4 To configure an FPMR Ethernet port

6.4.1 Steps

1 _____
On the equipment tree, expand Network→FPMR→Shelf→Card Slot.

2 _____
Right-click on the ETH port object and choose properties. The Physical Port (Edit) form opens.

3 _____
Configure the parameters in the General tab.

4 _____
Click on the Auto Negotiation tab and perform one of the following:
a. Set the Auto Negotiation Admin State parameter in the Ethernet Auto Negotiation panel to Enabled and configure the parameters.

i **Note:** When you set the Auto Negotiation Admin State parameter in the Ethernet Auto Negotiation panel to Disabled, except the Auto Negotiation Port Status and the Port Default Type, the remaining parameters disappear.

b. Set the Auto Negotiation Admin State parameter in the Ethernet Auto Negotiation panel to Disabled, and configure the Port Default Type parameter.

5 _____
Click on the Ethernet Specifics tab and configure the parameters.

i **Note:** When you set the Shutdown Enable parameter in the Interface Shutdown on Radio Link Failure panel to Disabled, the remaining parameters in the panel are dimmed.

6 _____
Save your changes and close the form.

END OF STEPS _____

6.5 To configure FPMR modulation — static or ACM

6.5.1 Steps

1

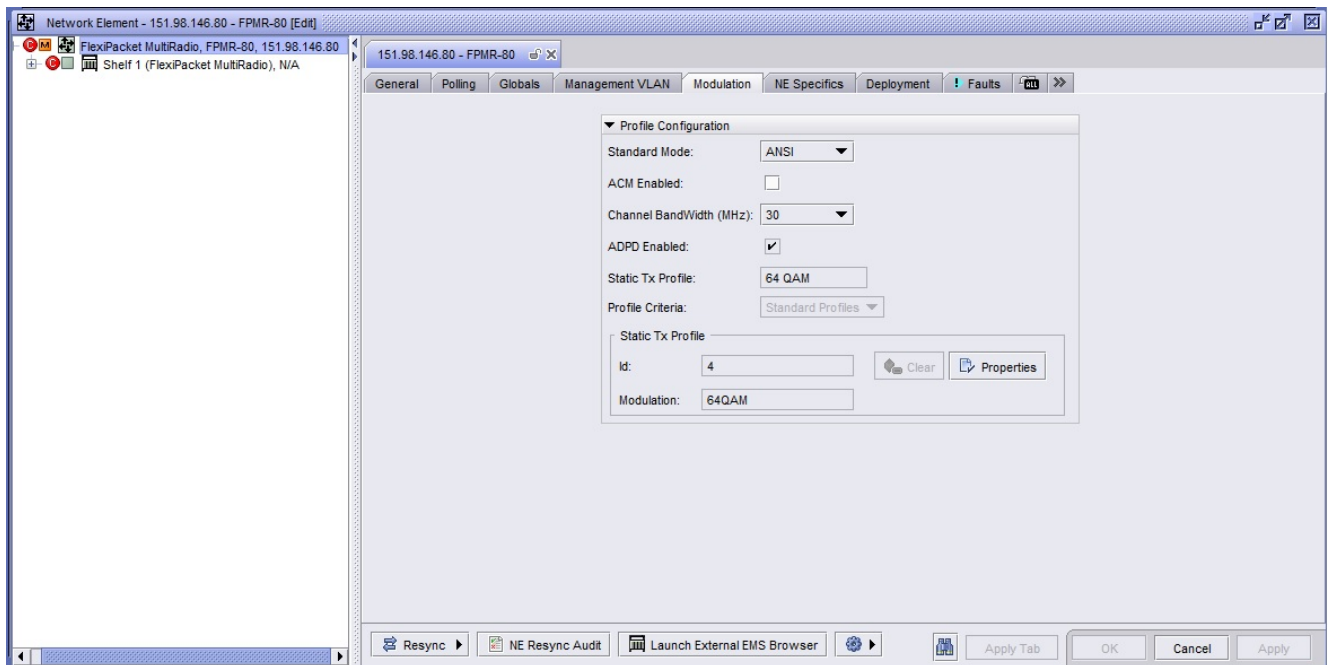
On the equipment tree, right-click on an FPMR device object and choose Properties. The Network Element (Edit) form opens.

2

Click on the Modulation tab and perform one of the following

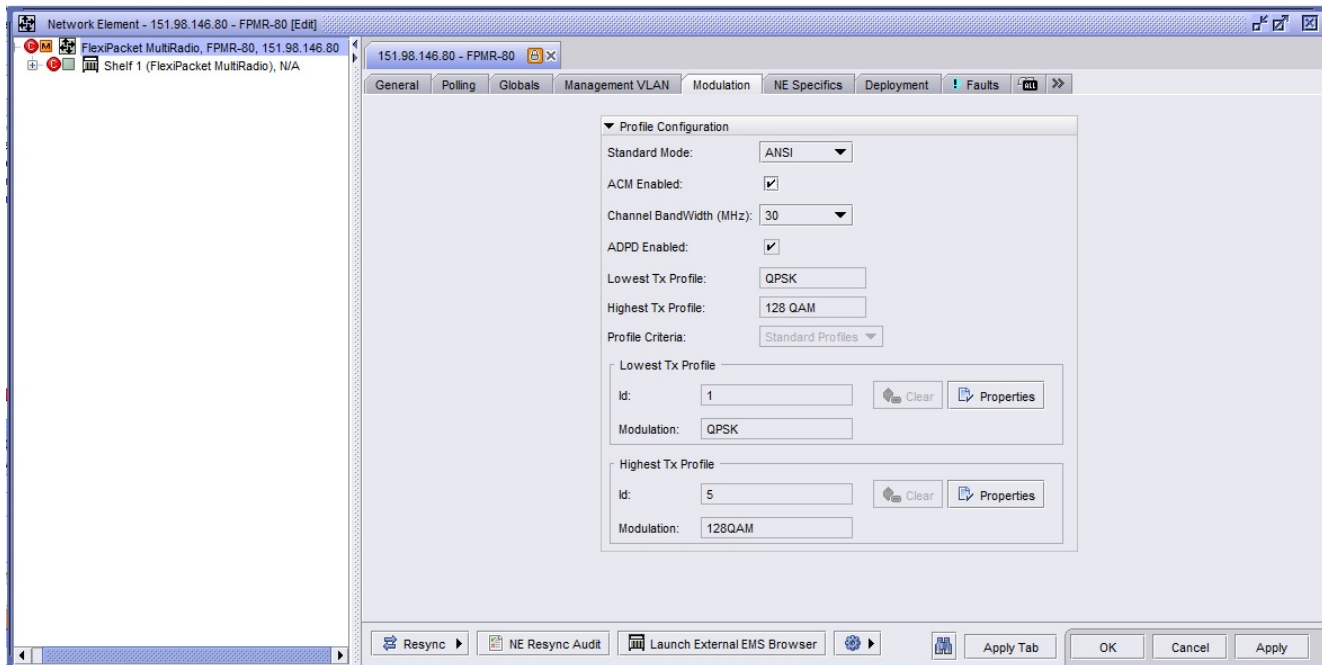
a. Configure the static modulation parameters in the Profile Configuration panel.

Figure 1 Static modulation



b. Select the ACM Enabled check box and configure the parameters in the Profile Configuration panel.

Figure 2 Adaptive code modulation



i **Note:** When you configure the Standard Mode parameter, the Channel BandWidth (MHz) parameter value changes accordingly. When the Channel BandWidth (MHz) parameter value changes, the Profile Criteria parameter values change accordingly.

3 _____
Save your changes and close the form.

END OF STEPS _____

6.6 To configure loopback in FPMR

6.6.1 Steps

1 _____
On the equipment tree, expand Network→Device→Shelf→Card→Port.

2 _____
Right-click on the port object and choose properties. The Physical Port (Edit) form opens.

3 _____
Click Activate Loopback. The Loopback (Create) form opens.

- 4**

Configure the parameters in the Loopback panel and save your changes. The Loopback tab is activated in the Physical Port (Edit) form.
- 5**

Save your changes and close the form.
- 6**

a. Perform one of the following to start loopback:
Configure loopback in the device level.
1. On the equipment tree, expand Network, right-click on the device object, and choose Properties. The Network Element (Edit) form opens.
 2. Click on the Loopback tab, choose an entry, and click Properties. The Loopback (View) form opens.
 3. View the parameters in the Loopback panel and the Release Time panel and close the form. The Network Element (Edit) form reappears.
 4. Choose an entry and click Activate Loopback. The Loopback status appears in the Status column.
 5. Click View Results in External Browser to view the results in WebCT.
 6. Click Download Results to download the file containing the results of the loopback test.
 7. Click Delete Loopback to stop the loopback, if required.
- b. Configure loopback in the port level.
1. On the equipment tree, expand Network→Device→Shelf→Card→Port.
 2. Right-click on the port object and choose properties. The Physical Port (Edit) form opens.
 3. Click on the Loopback tab and configure the parameters, if required, and click Loopback.
 4. Click Delete Loopback to stop the loopback, if required.
- 7**

Save your changes and close the forms.

END OF STEPS

7 FPMR and Hub 800 inventory management

7.1 Hardware inventory of the equipped cards

7.1.1 Introduction

You can use a 5620 SAM GUI or OSS client to inventory the managed network equipment. The inventory information is available to GUI clients on equipment list, properties, and management forms. For information about using the 5620 SAM-O interface to perform inventory management, see the “Inventory management” chapter of the *5620 SAM XML OSS Interface Developer Guide*.

Inventory information may be required for the following purposes:

- spare equipment management
- SLA audits
- license capacity tracking

7.1.2 Viewing inventory information in the GUI

Using the 5620 SAM Equipment Manager, you can list the license information for the following object types:

- cards, using Card (Physical Equipment) as the search criterion
- card child objects

You can use a GUI client to retrieve the inventory information for equipment objects in the following contexts:

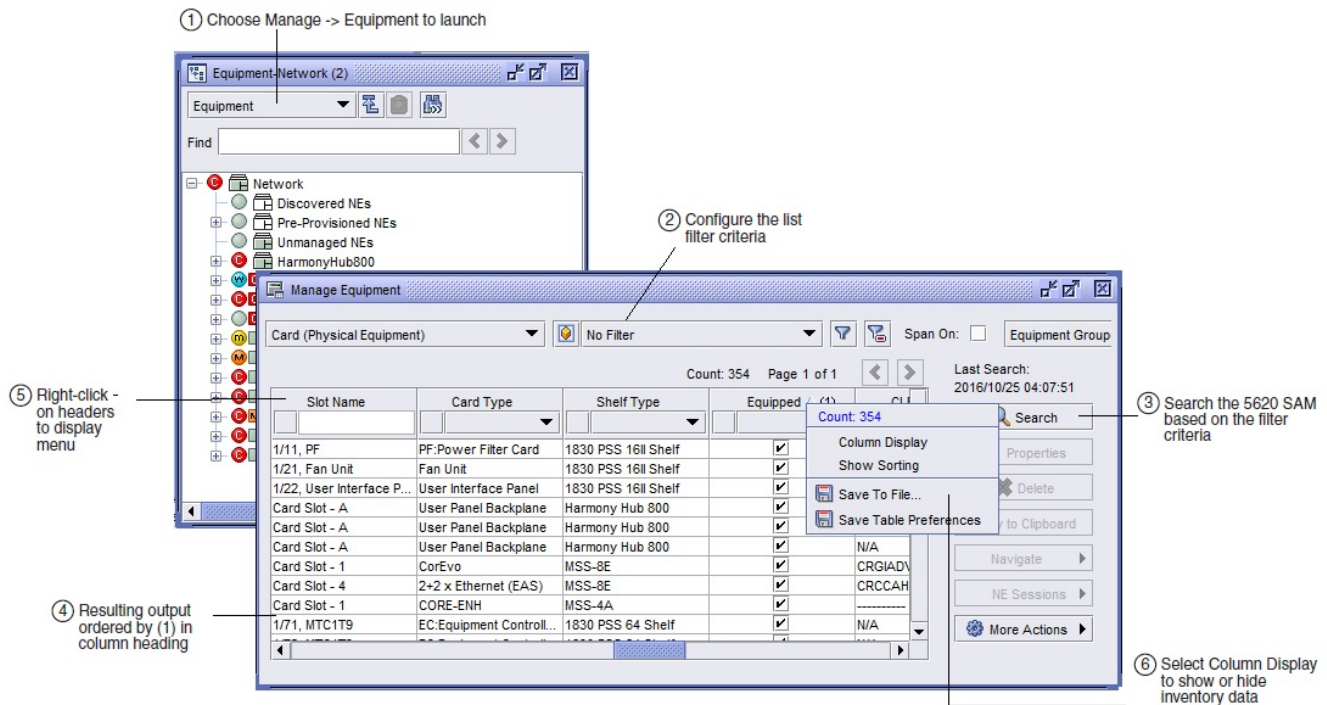
- one managed NE
- entire managed network

 **Note:** Not all columns in an inventory list apply to all equipment types.

7.1.3 Generating inventory data for all managed devices

[Figure 3, “Generating inventory data for managed devices” \(p. 34\)](#) shows the steps to generate inventory data for managed devices.

Figure 3 Generating inventory data for managed devices



7.2 FlexiPacket Microwave device hardware and software inventory

7.2.1 FlexiPacket Microwave device hardware inventory

You can view the hardware inventory parameters in the NE Specifics tab→Hardware Inventory sub-tab of the Network Element (Edit) form.

7.2.2 FlexiPacket Microwave device software inventory

You can view the software inventory parameters in the NE Specifics tab→Software Inventory sub-tab of the Network Element (Edit) form.

8 FPMR and Hub 800 link discovery

8.1 Link discovery from 5620 SAM

8.1.1 Introduction

The 5620 SAM supports the discovery of the physical links and radio links.

8.1.2 LLDP

LLDP is supported in FPMR and Hub 800. LLDP is neighbor-discovery protocol that allows devices to advertise the system key capabilities on the Ethernet LAN and also learn the key capabilities of other systems on the same Ethernet LAN. Information like system name and description, IP management address, and so on, can be sent or received as LLDPDU (LLDP data unit) using SNMP MIB for every station to know the neighbors. LLDP frames are sent at a fixed rate on each port of every station and no acknowledgement is expected from the receiver. One way connectionless data link layer protocol runs on MAC layer. LLDP allows the 5620 SAM to build the physical topology of the network. The 5620 SAM can only get a complete picture of the controlled network when all the devices support LLDP.

8.1.3 Hub 800 to Hub 800 link discovery

The 5620 SAM supports the automatic discovery of the link between two Hub 800 devices. See [8.2 “To discover links on Hub 800 and FPMR devices” \(p. 36\)](#) for more information about link discovery from the 5620 SAM. See the FPMR node documentation for more information about how to perform the connections.

8.1.4 Hub 800 to FPMR link discovery

The 5620 SAM supports the automatic discovery of the link between a Hub 800 and a FPMR. See [8.2 “To discover links on Hub 800 and FPMR devices” \(p. 36\)](#) for more information about link discovery from the 5620 SAM. See the FPMR node documentation for more information about how to perform the connections.

8.1.5 FPMR to FPMR link discovery

The 5620 SAM supports the automatic discovery of the 1+0 radio link between two FPMR devices. See [8.2 “To discover links on Hub 800 and FPMR devices” \(p. 36\)](#) for more information about link discovery from the 5620 SAM. See the FPMR node documentation for more information about how to perform the connections.

8.1.6 Links on the topology map

The links appear as follows on the 5620 SAM topology map:

- Link between two FPMR devices (Radio link) — dotted line
- Link between two Hub 800 devices (Ethernet link) — solid line

- Link between a Hub 800 and a FPMR devices (Ethernet link) — solid line

When two FPMR devices have a radio link and one of the device is un-managed, the radio link is deleted from topology map.

When two Hub 800 devices have a Ethernet link and one of the device is un-managed, the Ethernet link points to the Unmanaged NE group in topology map.

When Hub 800 and FPMR devices have a Ethernet link and one of the device is un-managed, the Ethernet link points to the Unmanaged NE group in topology map.

8.2 To discover links on Hub 800 and FPMR devices

8.2.1 Steps

1

On the equipment tree, expand Network→Hub 800 or FPMR→Shelf→Card Slot →ETH or Radio port.

2

Right-click on the port object that is one end of the link and choose properties. The Physical Port (Edit) form opens.

3

Click on the LLDP tab and set the Administrative Status as Tx, Rx, or Tx and Rx.



Note:

- If the Administrative Status parameter is correctly configured, and the 5620 SAM has discovered the devices, then the 5620 SAM automatically discovers the physical and radio links.
- If the Administrative Status parameter is set to Down, the link is deleted.
- If the 5620 SAM has not discovered the neighboring device, an Ethernet link is automatically created to the unmanaged device. The radio link is only created if both devices are discovered in the 5620 SAM.

4

Save your changes and close the form.

5

Repeat [Step 1](#) to [Step 4](#) for port that is the other end of the link.

6

Right click on both the port objects (that are end points of the link) on the equipment tree and choose Turn Up. The link appears between the nodes on the topology map.



Note: The radio links appear as dotted lines and the physical links appear as solid lines on the topology map.

END OF STEPS

9 FPMR and Hub 800 device backup

9.1 Backup

9.1.1 Backup policy

A 5620 SAM backup policy specifies the conditions under which the 5620 SAM performs device configuration backups. A FPMR or a Hub 800 that is not associated with a policy is assigned to a Dragon Wave Based Default Policy, but you can create multiple additional policies and assign FlexiPacket Microwave devices to the policies according to your requirements. See [9.2 “To configure a backup policy for a FPMR or Hub 800 device” \(p. 40\)](#) for more information about configuring a backup policy.

A backup policy specifies settings that include the following:

- the backup schedule
- the files that a backup is to retrieve
- the type of file compression to use, if any
- the age and number of backup files that the 5620 SAM retains

9.1.2 On-demand backup

An on-demand backup takes priority over scheduled backup operations, and is processed as soon as the 5620 SAM has the required resources. A 5620 SAM user that has the network element software management scope of command role can perform device backup operations. See [9.3 “To perform an on-demand backup for a FPMR or Hub 800 device” \(p. 41\)](#) for more information about performing an on-demand backup.

9.1.3 Backup status

You can view the status of backup. See [9.4 “To view the backup status of a FPMR or Hub 800 device” \(p. 42\)](#) for more information.

9.1.4 Export backup file

You can export a backup file set from the 5620 SAM to a GUI client file system. See [9.5 “To export a device configuration backup” \(p. 42\)](#) for more information.

9.1.5 Import backup file

You can import a backup file set from a GUI client file system to the 5620 SAM. See [9.6 “To import a FlexiPacket Microwave device configuration backup” \(p. 43\)](#)

9.1.6 Trap destination

Backup only works when the trap destination, that is, the management system IP address and the ports to receive traps, are configured on the *FlexiPacket Microwave User Guide* and Hub 800 devices. During the 5620 SAM discovery of the *FlexiPacket Microwave User Guide* and Hub 800

devices, the 5620 SAM automatically sets the trap destination. In case the devices reject the trap destination set request, the 5620 SAM generates the TrapDestinationNotSet alarm. If you initiate backup in this scenario, the back up fails and the “Time Out Receiving Trap” error message is displayed. Initiate a backup only if the TrapDestinationNotSet alarm is not present in the 5620 SAM.

You need to configure the trap destination manually using the WebCT. See the node documentation for more information.

9.1.7 Delete backups

You can delete the backup files from the 5620 SAM. See [9.7 “To delete backups ” \(p. 44\)](#) for more information.

9.2 To configure a backup policy for a FPMR or Hub 800device

9.2.1 Steps

- 1 _____
Choose Administration→NE Maintenance→Backup/Restore from the 5620 SAM main menu. The Backup/Restore form opens.
- 2 _____
Click on the Backup/Restore Policy tab.
- 3 _____
Click Create, or select the Dragon Wave Based Default Policy and click Properties. The Backup Policy (Create | Edit) form opens.
- 4 _____
Configure the required parameters.
- 5 _____
Configure the Policy Type parameter as Dragon Wave Node if you are creating the policy.
- 6 _____
Configure the parameters in the Backup Triggering, Backup Purging panels, and Dragon Wave Backup/Restore Settings panels.
You can schedule backups based on a time interval, or based on the number of configuration saves initiated by the 5620 SAM.
Backup purge parameters allow you to specify the number of backup files that are retained. The purge settings eliminate the need for manual backup file deletion. The purge criteria can be the number of files, the age of the files, or both.
- 7 _____
Click Apply.

8 _____
Click on the Backup/Restore Policy Assignment tab and assign one or more FlexiPacket Microwave devices to the policy, as required.

9 _____
Close the form.

END OF STEPS _____

9.3 To perform an on-demand backup for a FPMR or Hub 800 device

9.3.1 Prerequisites

The following must be true in order for you to perform this procedure:

- You have a 5620 SAM user account with an administrator or network element software management scope of command role, or a scope of command role with write access to the mediation package.
- FTP is configured in the FlexiPacket Microwave mediation policy. See [3.2 “To configure mediation and discover FPMR and Hub 800 devices”](#) (p. 13).


9.3.2 Steps

1 _____
Choose Administration→NE Maintenance→Backup/Restore from the 5620 SAM main menu. The Backup/Restore form opens.

2 _____
Click on the Backup/Restore Status tab. The managed devices are listed.

3 _____
Select a FlexiPacket Microwave device and click Backup.

4 _____
Click Yes. The operation begins, and the current operation state is indicated in the appropriate column.

 **Note:** The backup is successful only when the trap destination is configured on the FlexiPacket Microwave devices. The 5620 SAM configures the trap destination automatically during device discovery. If the device rejects the trap destination request, configure the trap destination using the WebLCT. See the customer documentation for FlexiPacket Microwave device WebLCT for more information about configuring the trap destination using the WebLCT.

5 _____
You can resynchronize the device with the 5620 SAM, if required, by clicking Resync.

6 _____
Close the form.

END OF STEPS _____

9.4 To view the backup status of a FPMR or Hub 800 device

9.4.1 Steps

1 _____
Choose Administration→NE Maintenance→Backup/Restore from the 5620 SAM main menu. The Backup/Restore form opens.

2 _____
Click on the Backup/Restore Status tab. The column displays Backup State status for each listed devices as follows:

- Not Attempted—The operation has not begun.
- Transferring Files—A file transfer is in progress.
- Success—The operation is complete and successful.
- Failure—The operation is complete but unsuccessful.

3 _____
To view more information about the operations performed on a FlexiPacket Microwave device, select the FlexiPacket Microwave device and click Properties. The NE Backup/Restore Status form opens. The Last Operation Details indicator describes the most recent operation type.

4 _____
Click on the Backups tab to display a list of the recent device backups, if required.

5 _____
Close the forms.

END OF STEPS _____

9.5 To export a device configuration backup

9.5.1 Steps

Perform this procedure to export a backup file set from the 5620 SAM to a GUI client file system.

- 1 _____
Choose Administration→NE Maintenance→Backup/Restore from the 5620 SAM main menu. The Backup/Restore form opens.
- 2 _____
Click on the Backup/Restore Status tab.
- 3 _____
Select the FlexiPacket Microwave device for which you are exporting a backup and click Properties. The NE Backup/Restore Status form opens.
- 4 _____
Click on the Backups tab. A list of backups for the FlexiPacket Microwave device is displayed.
- 5 _____
Select a backup and click Export. A file browser form opens.
- 6 _____
Specify the local directory that is to contain the exported file set and click OK. The backup file set is saved in the directory.
- 7 _____
Close the forms.

END OF STEPS _____

9.6 To import a FlexiPacket Microwave device configuration backup

9.6.1 Steps

Perform this procedure to import a backup file set from a GUI client file system to the 5620 SAM.

- 1 _____
Choose Administration→NE Maintenance→Backup/Restore from the 5620 SAM main menu. The Backup/Restore form opens.
- 2 _____
Click on the Backup/Restore Status tab.
- 3 _____
Select the FlexiPacket Microwave device for which you are importing a backup and click Properties. The NE Backup/Restore Status form opens.

- 4 _____
Click Import. A file browser form opens.
- 5 _____
Specify the directory that contains the backup file set and click OK. The 5620 SAM imports and stores the backup file set.
- 6 _____
Close the forms.

END OF STEPS _____

9.7 To delete backups

9.7.1 Steps

- 1 _____
Choose Administration→NE Maintenance→Backup/Restore from the 5620 SAM main menu. The Backup/Restore form opens.
- 2 _____
Click on the Backup/Restore Status tab.
- 3 _____
Select the FlexiPacket Microwave device for which you are deleting backups and click Properties. The NE Backup/Restore Status form opens.
- 4 _____
Click on the Backups tab, select backups, and click Delete.
- 5 _____
Close the forms.

END OF STEPS _____

10 FPMR and Hub 800 performance management

10.1 Collecting and reporting statistics

10.1.1 Statistics policy

The 5620 SAM supports collecting and reporting statistics from the managed FPMR devices. You can use the 5620 SAM GUI to view statistics data in tabular or graphical form, and save the tabular or graphical data to a file. A 5620 SAM OSS client can retrieve statistics data using the 5620 SAM-O interface. See *5620 SAM Statistics Management Guide* for more information about statistics management.

To collect performance or accounting statistics, the 5620 SAM uses policies that specify the following:

- the network or service objects to collect statistics from
- the statistics counters to collect
- the collection rate
- how long the 5620 SAM is to retain the collected statistics data

The FPMR and Hub 800 devices use the 5620 SAM default policy and the policy applies automatically when the devices are managed by the 5620 SAM.

10.1.2 Collection interval

The collection interval for each counter in the default policy is 15 min, and collection is disabled by default to conserve NE resources. The FPMR and Hub 800 counters are collected for a time interval of 15 min and 24 hrs. Four bins are collected in 24 hrs and 16 bins are collected in 15 min, including the current bin.

You can configure the polling interval to decrease the collection frequency, if duplicate records are collected at shorter time intervals. See [10.6 “To configure polling for a MIB statistics class” \(p. 49\)](#) for more information about configuring the polling interval.

10.1.3 Retention period

Statistics are stored for a configurable retention period that is defined in a 5620 SAM statistics policy. When the retention period elapses, the statistics are removed. However, statistics that are collected for real-time display are not stored; the statistics are available only for the duration of the current session, and only for the operator that initiates the session. See [10.4 “To configure retention time” \(p. 47\)](#) for more information about configuring the retention period.

10.1.4 Scheduled and on-demand

Performance statistics counters are collected from NE MIBs using SNMP. The collection can be scheduled, or performed on demand. See [10.5 “To collect and display the statistics values” \(p. 48\)](#) for more information.

10.2 FPMR counters

10.2.1 Ethernet and radio port counters

The statistics data is available in the Statistics tab of the radio port and Ethernet port Physical Port (Edit) form. See *5620 SAM Statistics Management Guide* for the detailed list of the counters and the descriptions.

The counters are collected for classes:

- Ethernet Port Current Data Stats — 15 Min
- Ethernet Port Current Data Stats — 24 Hrs
- Ethernet Port History Stats — 15 Min
- Ethernet Port History Stats — 24 Hrs
- Interface Additional Statistics
- Interface Statistics
- LLDP Frame Reception Stats
- LLDP Frame Transmission Stats

10.2.2 RSPI counters

The statistics data is available in the Statistics tab of the Network Element (Edit) form. See *5620 SAM Statistics Management Guide* for the detailed list of the counters and the descriptions.

The counters are collected for classes:

- RSPI Rx Current Data Stats — 15 Min
- RSPI Rx Current Data Stats — 24 Hrs
- RSPI Rx History Stats — 15 Min
- RSPI Rx History Stats — 24 Hrs
- RSPI Tx Current Data Stats — 15 Min
- RSPI Tx Current Data Stats — 24 Hrs
- RSPI Tx History Stats — 15 Min
- RSPI Tx History Stats — 24 Hrs
- LLDP System Stats

10.2.3 ACM counters

The ACM profile modulation types are listed in the ACM Profile tab of the Network Element (Edit) form. Choose the modulation type and click Properties ACM Profile (View) form opens. The statistics data is available in the Statistics tab of the ACM Profile (View) form. See *5620 SAM Statistics Management Guide* for the detailed list of the counters and the descriptions.

The counters are collected for classes:

- ACM Current Data Stats — 15 Min
- ACM Current Data Stats — 24 Hrs

- ACM History Stats — 15 Min
- ACM History Stats — 24 Hrs

10.3 Hub 800 counters

10.3.1 E1 port counters

The statistics data is available in the Statistics tab of the E1 port Physical Port (Edit) form. See *5620 SAM Statistics Management Guide* for the detailed list of the counters and the descriptions.

The counters are collected for classes:

- E1 Port Additional History Stats — 15 Min
- E1 Port Additional History Stats — 24 Hrs
- E1 Port Current Additional Statistics — 15 Min
- E1 Port Current Additional Statistics — 24 Hrs
- E1 Port Current Statistics — 15 Min
- E1 Port Current Statistics — 24 Hrs
- E1 Port History Stats — 15 Min
- E1 Port History Stats — 24 Hrs

10.3.2 Ethernet port counters

The statistics data is available in the Statistics tab of the Ethernet port Physical Port (Edit) form. See *5620 SAM Statistics Management Guide* for the detailed list of the counters and the descriptions.

The counters are collected for classes:

- Ethernet Port Current Data Stats — 15 Min
- Ethernet Port Current Data Stats — 24 Hrs
- Ethernet Port History Stats — 15 Min
- Ethernet Port History Stats — 24 Hrs
- LLDP Frame Reception Stats
- LLDP Frame Transmission Stats

10.4 To configure retention time

10.4.1 Steps

1

On the navigation tree, expand Network→FPMR or Hub 800→Shelf→Card Slot→Port.

- 2 _____
Right-click on the Port and choose Properties. The Physical Port (Edit) form opens.
- 3 _____
Click on the Statistics tab and choose an object type from the Select Object Type drop-down menu.
- 4 _____
Click Statistics Policies and choose the Statistics Policy from the drop-down menu. The Statistics Policy form opens.
- 5 _____
Configure the required parameters.
- 6 _____
Click Purge Statistics Records to purge all statistics records, if required.
- 7 _____
Save your changes and close the forms.

END OF STEPS _____

10.5 To collect and display the statistics values

10.5.1 Steps

- 1 _____
Open the properties form of the object for which you want to view statistics. The General tab is displayed.
- 2 _____
Click on the Statistics tab and perform one of the following.
 - a. View scheduled statistics.
 1. Choose a statistics class that is not identified as on-demand from the object drop-down menu.
 2. Specify a filter to create a filtered list of statistics records, if required, and click Search.
 - b. View on-demand statistics.
 1. Choose a statistics class identified as on-demand from the object drop-down menu.
 2. Specify a filter to create a filtered list of statistics records, if required, and click Collect.
Note: The Collect button is not displayed when you choose a statistics class that does not support on-demand statistics collection.

c. View statistics for all classes.

1. Choose a statistics class identified as on-demand from the object drop-down menu.

Note: The Collect and Collect All buttons are not displayed when you choose a statistics class that is not identified as on-demand.

2. Specify a filter to create a filtered list of statistics records, if required.

3. Click Collect All to collect statistics for all classes.

3

Choose a statistics record and perform one of the following.

a. Scroll horizontally to view the statistics counter values for the statistics record.

b. Open the statistics record to view it.

1. Select the statistics record and click on the Properties button. The Statistics Record form opens.

2. View the statistics record.

3. Click on the Close button to close the Statistics Record form.

4

Close the object properties form.

END OF STEPS

10.6 To configure polling for a MIB statistics class

10.6.1 Steps

1

Choose an object on which to configure the MIB statistics polling interval.

2

Right-click on the object and choose Properties from the contextual menu. The properties form for the object opens with the General tab displayed.

3

Click on the Statistics tab.

4

Choose a statistics class from the object drop-down menu.

5

Click on the Statistics Policies button and choose MIB Entry Policy from the drop-down menu. The MIB Entry Policy form opens with the General tab displayed.

i **Note:** The MIB Entry Policy menu item is dimmed if you choose an invalid performance statistics class.

6

Configure the parameters:

- Polling Interval
- Administrative State
- Number of Varbind per PDU

7

Click on the OK button. A dialog box appears.

8

Click on the Yes button. The MIB Entry Policy form closes and the object properties form reappears.

9

Close the object properties form.

END OF STEPS

11 FPMR and Hub 800 alarm management

11.1 Overview

11.1.1 Introduction

The 5620 SAM supports alarms of FPMR and Hub 800 devices.

See the following for more information:

- *5620 SAM User Guide* for information about alarm behavior, configuring alarm policies, and general information about using the Alarm Window
- *5620 SAM Troubleshooting Guide* for workflows that describe acknowledging, clearing, and correlating alarms using the 5620 SAM
- *5620 SAM Alarm Reference* for a list of alarms and events that the 5620 SAM can raise for the FPMR and Hub 800 devices and all other supported NE types

11.1.2 Fault correlation to network topology

The faults affecting the radio and Ethernet ports are correlated to the corresponding radio link or physical link. When you double-click on the Ethernet link or radio link on the topology map that is red in color, the faults are listed in the Faults→Affecting Alarms sub-tab of the Radio or Ethernet Link (Edit) form.

12 FPMR and Hub 800 license management

12.1 License management

12.1.1 Overview

You can view the 5620 SAM license information by choosing Help→5620 SAM License Information from the 5620 SAM main menu. The 5620 SAM License form lists information that includes the following, which you can export to a file, if required:

- 5620 SAM software release and license type
- main server associated with the license
- licensed 5620 SAM software options
- total consumed and remaining license points
- number of allowed operator positions

12.2 Feature license reporting

12.2.1 Introduction

You can view the current available feature licenses and the operating status on the License tab of the Network Element (Edit) form.

