



ATMswitch 900F Firmware Release Notes Firmware Version 1.0 May 1997

These release notes provide information about the ATMswitch 900 firmware. Note that references to firmware version 2.4 in the documentation are incorrect. These references should indicate firmware version 1.0.

Important: Read This First

You should check that your ATMswitch 900 firmware release is the latest version by checking the latest firmware release notes that are available online from the DIGITAL FTP site, the Network Product Business Web Site, and the Network Product Business Bulletin Board System. If it is not the latest version, you should upgrade it immediately as described in the Installation and Configuration book. To determine the current firmware versions, use the `versions` command at the `ATMswitch->` console prompt.

Introduction

This document contains important notes for the ATMswitch 900F module, including information about:

- Firmware locations and upgrades
- Configuration guidelines
- Support for modular PHY loop timing
- Known problems
- Unsupported features
- Online information access

How to Get a Copy of ATMswitch 900 Firmware

The latest firmware kit is located in a release area at the DIGITAL FTP site (`ftp.digital.com`). Copy the image to your system using these commands:

```
# ftp ftp.digital.com
username: anonymous
password: (your Internet address)
```

```
ftp> cd /pub/DEC/GIGAswitchATM
ftp> bin
ftp> get file-name file-name
ftp> bye
```

where *file-name* is the name of any file that you are copying.

For example, if you are using a UNIX system, you might copy the `A900Rn_n.tar` file where *n_n* indicates the version number (for example, V1.0 would be 1_0). To unpack the new image, use the following UNIX command:

```
# tar -xvf A900Rn_n.tar
```

This command creates a subdirectory named `A900Vn_n` within your current working directory. The following files are unpacked into the `A900Vn_n` subdirectory:

<code>A900Rnn.CTL</code>	Sample control file
<code>A900Rnn.BIN</code>	Application image
<code>A900Rnn.ROM</code>	Kernel image

If you are using another operating system, you might want to copy the files listed in the above table.

Upgrading the Firmware

For more detailed instructions about the firmware upgrade procedure, see the Upgrading the Firmware section of the Installation and Configuration book.

Configuration Guidelines

Slot Restrictions for the DEChub 900 MultiSwitch

If you are using a DEChub 900 MultiSwitch, the ATMswitch 900F Revision A module can only be configured in slots 7 or 8 of the DEChub 900 MultiSwitch. If the module is not in an appropriate slot, you will see the following LED indications:

- Module OK LED is off.
- PHY3 and PHY6 LEDs are amber.
- FRU4 and FRU5 LEDs are amber.

LAN Emulation

If you are using LAN Emulation (LANE), you should be aware of the following guidelines:

- To allow access from other switches to the LECS, create a static route between the switch that has the LECS enabled and the well-known LECS address. The static route's forwarding slot should be set to 1 and the forwarding port should be set to 0. This route must be exported.
- When using LANE over an E1 link, the BUS rate limit must be set to less than 500 kb/s.
- 12 emulated LANs (ELANs) is the maximum number supported. The BUS rate for each ELAN should not exceed 600 kb/s.

Constant Bit Rate Circuits

When configuring constant bit rate (CBR) circuits for E1, E3, T1, or T3 links, set the CBR link rate to a value that is less than 70% of the total allowable link rate.

The maximum CBR bandwidth is 400 Mb/s.

Maximum Sustained Throughput

800 Mb/s is the maximum sustained throughput supported. Traffic might be discarded when this value is exceeded.

Virtual Circuit Range Support

The ATMswitch 900 module supports 2000 switched virtual circuits and 2000 permanent virtual circuits total. These virtual circuits can be distributed across all ports in any fashion. If you are using ports 7 or 8, these ports only support up to 1700 virtual circuit identifiers (VCIs).

Maximum VCI Ranges for a Link

If the remote node has a limited virtual circuit identifier (VCI) range and the VCI ranges are not exchanged with the switch using ILMI link-up procedures, you might have to configure the maximum VCI range with the `set_maxlinkvci` command. This command prompts you for the line card number (always 1 for the ATMswitch 900F module), the head (or port) number, and the maximum VCI. The maximum VCI value should be the maximum VCI of the remote node.

Setting the Module Startup Mode

To set the module startup mode, use the `setStartupMode('mode')` command. The value for *mode* can be one of the following:

- 0 (zero) indicates normal startup mode with self-test.
- F indicates normal startup mode without self-test.
- L indicates image load. If you use this startup mode, you must reset the startup mode to 0 or F and reboot the switch.

Slot Designations When Using ATM Commands or MIBs

When using ATM commands or MIBs, the slot value is always 1 and does not indicate the slot in the DEChub 900 MultiSwitch into which the module is plugged.

Support for Modular PHY Loop Timing

The ATMswitch 900 firmware supports the selection of the transmit timebase. SNMP already supports read-write access of the transmit timebase for DS3, DS1, E3, and E1. The menu interface also supports read-write access to the transmit timebase for all interfaces with menu option 3.8 (Modify Transmit Clock Generation Source).

Supported modPHY Types

The following modular PHY (modPHY) cards are supported for this release:

modPHY Type	Part Number
E1 (2 Mb/s) UTP/ScTP	DAGE1-AA
E3 (34 Mb/s) coaxial	DAGGE-AA
DS1/T1 (1.54 Mb/s) UTP/ScTP	DAGT1-AA
DS3/T3 (44 Mb/s) coaxial	DAGGT-AA
STS-3c (155 Mb/s) UTP/ScTP	DAGGU-AA
OC-3 (155 Mb/s) MMF	DAGGM-AA
OC-3 (155 Mb/s) SMF	DAGGS-AA

Transmit Timebase Selection and Nonvolatile Parameter Storage

Transmit timing sources are established for each link. Each physical link can be configured to derive its transmit timing from either a local oscillator or the recovered receive clock. Local timing specifies that the transmit timing is derived from the local oscillator. Loop timing specifies that the transmit timing is derived from the recovered receive clock.

System Behavior at Switch Reboot and Across modPHY Hotswap

When the switch is rebooted, the nonvolatile records for each populated link are examined. If a record is found for the PHY type detected, the stored setting is used. If a record is not found, local timing is used. This implies that if a PHY type is changed while the switch is powered down, switch initialization will not necessarily yield the default setting.

The same sequence of actions occurs if a link is unpopulated at switch powerup, but is populated later.

When modPHY hotswap yields a PHY type change, the new link is initialized with the default setting (local timing). When modPHY hotswap does *not* result in a PHY type change, the link is reinitialized with its last known setting (if it is not overridden by a condition described in the next section). Note that hotswap does *not* trigger a nonvolatile record update. So, a subsequent switch reboot might, by virtue of a previously stored record for that link and type, change the timing setting.

Effect of Port Conditions on the Transmit Timebase Setting

Two conditions, loss of signal and loss of frame, will force a loop-timed link to revert to local timing. Subsequent clearing of the condition will force such a port back to loop timing. Neither of these forced transitions will cause a nonvolatile record update.

Known Problems

References to Firmware Version 2.4

Note that references to firmware version 2.4 in the documentation are incorrect. These references should indicate firmware version 1.0.

reset_factory_defaults Command Is Invalid

The `reset_factory_defaults` command is invalid. Use the `restart_factory_defaults` command instead.

Control File Errors

The sample control file listed in the Upgrading the Firmware section of the Installation and Configuration book is wrong. It should contain lines that resemble the following:

```
000000000notused
notused
A900          A900R10.ROM          A900R10.BIN
```

Password Protection for Telnet Access

The default passwords described in the *ATMswitch 900F Installation and Configuration* and the *ATMswitch 900 Management* books are incorrect. This section provides the correct information about the password protection feature.

Accounts and Default Passwords

The following two accounts can be used for password protection:

Account/login name	Default password
user	username
manager	managername

These accounts (login names) cannot be changed. You are only required to use a named account when password protection is enabled. Passwords can be changed as described below.

Using Password Protection

It is important for security reasons to change the default passwords of both accounts if you want password protection.

The `password_enable` command or the menu interface can be used to activate password operation. Both the user and the manager accounts are enabled (or disabled) together through either method. Password protection is disabled in the default configuration.

When passwords are used, the Telnet login process using the default values resembles the following example:

```
ATMswitch login: user
Password: username
ATMswitch->
```

The user and manager accounts have equal access and control over the ATMswitch 900 module's functions and characteristics. The difference between the accounts is the password, which is useful in a large organization.

Note that passwords are never used on the local console terminal, which is secured only by limiting physical access.

Changing Passwords

The passwords for both accounts can be changed whether or not you are logged in to either account. However, you must know the old password to change a password unless the old password is also the default password.

The `password_set` command only changes the user account password. The menu interface lets you change both account passwords.

If you lose your passwords, restart your module with the factory defaults by using the `restart_factory_defaults` command or the appropriate ATMswitch 900F INSTALLATION MENU option described in the Installation and Configuration book.

UNI Version and IISP Links

When there is an IISP link between two DIGITAL ATM switches, the UNI version is specified as UNI 3.1 by default. Do not specify any UNI version other than UNI 3.1.

Telnet Session on Existing Connection

Invoking a Telnet session to a switch that is already used by a serial line connection causes the initial session to be locked out until the Telnet session is terminated.

Unsupported Features in This Release

The following features are not supported in this release:

- IP switching
- Rate-based flow control
- ATM connections using the backplane (redirecting ports to the backplane)
- clearVISN (MultiChassis Manager)
- EFCI
- SLIP/OBM port

Accessing Online Information

Further information on this network product or topic is available on the Network Product Business Web Site and Bulletin Board System. Both systems maintain a common, rich set of up-to-date information about DIGITAL networking products, technologies, and programs.

Network Product Business Web Site

The Web Site can be reached at geographic locations via the following URLs:

Americas Network Product Business Home Page	http://www.networks.digital.com/
Europe Network Product Business Home Page	http://www.networks.europe.digital.com/
Australia Network Product Business Home Page	http://www.digital.com.au/networks/
Digital Equipment Corporation Home Page	http://www.digital.com/

To get firmware and MIB information, choose the “Technical Information” link, and from there choose the “Technical Information (Drivers, Manuals, Tech Tips, etc.)” link.

Network Product Business Bulletin Board System

To connect to the Network Product Business Bulletin Board System, you need a PC and a modem. Dial 508-486-5777 (U.S.A.). Set your modem to 8 bits, no parity, 1 stop bit.

