



MRX Firmware Release Notes

Release 1.5.0

Cybertec Pty Ltd

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V1.3.0 - 12/05/2023 - Firmware Version 1.9.4.0 added.

V1.4.0 - 15/11/2023 - Firmware Versions 1.9.4.1, 1.9.4.2 & 1.9.5.0 added.

V1.4.0 - 27/02/2024 - Firmware Version 1.9.5.1 added.

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INTRODUCTION

This document provides a summary of the changes and details for each MRX firmware release. It also includes the firmware upgrade procedure for the Cybertec Series 2000 of 3G and 4G Routers.

1.1 Firmware Version

The latest version of the Series 2000 firmware is: 1.9.5.1

The firmware file appropriate for each model are:

- Model 2155X/2255X
 - Hardware revision 3 - S2155_HW3_V1.9.5.1.zip
 - Hardware revisions 1 & 2 - S2155_HW1-2_V1.9.5.1.zip
- Model 2455X
 - Hardware revision 3 - S2455_HW3_V1.9.5.1.zip
 - Hardware revisions 1 & 2 - S2455_HW1-2_V1.9.5.1.zip
- Model 5455
 - Hardware revision 3 - S5455_HW3_V1.9.5.1.zip
 - Hardware revisions 1 & 2 - S5455_HW1-2_V1.9.5.1.zip
- DMM-450
 - Hardware revision 3 - XMM450_HW3_V1.9.5.1.zip
 - Hardware revisions 1 & 2 - XMM450_HW1-2_V1.9.5.1.zip

1.2 Firmware File Contents

The zip file contains several files, the upgrade file and files containing the hash of the upgrade file.

For example, the S2155_HW3_V1.9.5.1.zip file contains the following files:

- S2155_HW3_V1.9.5.1.upg
- S2155_HW3_V1.9.5.1.upg.md5
- S2155_HW3_V1.9.5.1.upg.sha1
- S2155_HW3_V1.9.5.1.upg.sha256

Note: The hardware Rev 1 & Rev 2 upgrade files only include the MD5 hash.

The upgrade file is the S2155_HW3_V1.9.5.1.upg file, this is the file which is used to upgrade the unit.

The hash contained in each of the hash files can be used to verify the upgrade file on the local machine or once it has been uploaded to the unit to be upgraded.

1.3 Applicability

The firmware described in this document is applicable for the following models:

- Model 2155X
 - Hardware Revision 3 - Firmware versions V1.9.0.0 and above. (All V1.9 series firmware).
 - Hardware Revisions 1 & 2 - Firmware versions V1.9.5.0 and above.
- Model 2255X
 - Hardware Revision 3 - Firmware versions V1.9.0.0 and above. (All V1.9 series firmware).
 - Hardware Revisions 1 & 2 - Firmware versions V1.9.5.0 and above.
- Model 2455X
 - Hardware Revision 3 - Firmware versions V1.9.0.0 and above. (All V1.9 series firmware).
 - Hardware Revisions 1 & 2 - Firmware versions V1.9.5.0 and above.
- DMM-450
 - Hardware Revision 3 - Firmware versions V1.9.0.0 and above. (All V1.9 series firmware).
 - Hardware Revisions 1 & 2 - Firmware versions V1.9.5.0 and above.

The firmware upgrade will fail for any model not listed above.

FIRMWARE VERSIONS

Details are listed for each firmware release.

The firmware versions are listed in reverse order so that the latest release appears first.

2.1 Version 1.9.5.1

Release Date: 27/02/2024

2.1.1 General

- This is an enhancement and bug fix release.

2.1.2 New Features

- No new features.

2.1.3 Enhancements

- Improved the upgrade process
- Improved logging
- Improved handling of network restarts when connection maintenance fails.
- Added limit to the number SSH connections.

2.1.4 Bug Fixes

- Fixed connectivity issues for 2455X Rev1 units.
- Improved handling of 2455X Rev1 GNSS data.
- Serial server:
 - Fixed Serial Port Control line issues on Rev1/2 Hardware.
 - Improved serial throughput and latency in Rev3 hardware.
- IPsec:
 - Fixed issues with IPsec routing.
 - Fixed issues with IPsec startup/restarts
 - General IPsec improvements.
- Fixed issue with email not being sent
- DSL:
 - Fixed an issue with with Rev2/Rev3 hardware upgrades failing causing the DSL interface to fail.
 - Add a configuration setting to allow for Specific incoming subnet routes via PPPoA.
 - Improved Rev2/Rev3 hardware interface handling and stability.
 - Fixed issues with some Rev2 hardware being unable to start up the DSL interface.
 - Fixed issues with the MTU settings in a subset DSL configurations.
- Fixed issues with Policy routes not functioning correctly
- Fixed issue with SNMP load protection.
- LAN2 is now hidden on firewall webpages unless independent lan ports is enabled.
- Correctly display the Loopback interface on status pages when enabled.

2.1.5 Known Issues

- No known issues.

2.2 Version 1.9.5.0

Release Date: 15/11/2023

2.2.1 General

- This is an enhancement and bug fix release.

2.2.2 New Features

- No new features.

2.2.3 Enhancements

- Support added for Hardware Rev 1 and 2 models.
- Improved logging
- Roaming:
 - Rotate SIMs when roaming temporary deny list is full and sim rotate is enabled.
 - Timed roaming rescan capability added.
- SNMP:
 - Added SIM and IMEI information to the MIB.
 - Extended signal quality and strength added to 2155X / 2255X Hardware Rev 1

2.2.4 Bug Fixes

- Fixed issue with Model 5455 not starting up correctly under some circumstances.
- Fixed potential connection poller memory leak.
- LLDP: Chassis ID fix.
- Fixed issue where if LAN gateway was configured it did not appear as a default route option.
- Modem emulator: AT parsing error fix.
- Resolved Firewall connection tracking issue.
- IPsec:
 - Resolved issue with IPsec restarting before wireless/dsl connection is up.
 - Resolved issue with IPsec routes sometimes being dropped.
 - Certificate import improvements.
 - 3DES now works for phase 2 (ESP).

2.2.5 Known Issues

- No known issues.

2.3 Version 1.9.4.2

Release Date: 15/10/2023

2.3.1 General

- This is a bug fix release.

2.3.2 New Features

- No new features.

2.3.3 Enhancements

- No enhancements

2.3.4 Bug Fixes

- Fixed an issue where the 2255X hardware Rev 3.1 may not start up correctly after powering off.
- Fixed an issue where log messages could flood the log file under some error conditions.

2.3.5 Known Issues

- No known issues.

2.4 Version 1.9.4.1

Release Date: 09/10/2023

2.4.1 General

- This is an enhancement and bug fix release.

2.4.2 New Features

- No new features.

2.4.3 Enhancements

- Added support for 2255X hardware Rev 3.1

2.4.4 Bug Fixes

- Fixed issue with 2155X / 2255X hardware Rev 3 not monitoring the configuration reset switch correctly after boot.
- Fixed issue with DMM-450 hardware Rev 3 not reading configuration reset switch correctly at boot.

2.4.5 Known Issues

- No known issues.

2.5 Version 1.9.4.0

Release Date: 12/05/2023

2.5.1 General

- This is an enhancement and bug fix release.

2.5.2 New Features

- No new features.

2.5.3 Enhancements

- GNSS: Added support for 3V3 Active Power GPS to S2155X and S2455X models.
- SNMP: Improvements to interface consistency.
- Temperature: Added temperature support.
- Dynamic DNS: Added support for DuckDNS
- Hardware: Added support for 2155X Hardware revision 3.1

2.5.4 Bug Fixes

- Diagnostics: Fixed issue with being unable to download TCPDump diagnostics.
- IPSEC:
 - Fixed issues with XAuth not authenticating correctly.
 - Fixed an issue with IPSec stability while using AES128.
- TechSupport: Fixed issue where occasionally the technical support file was zero bytes.
- Upgrade: Fix an issue where some upgrades would result in unexpected reboot.
- Logs: Improved logging messages for better readability.
- LLDP:
 - Fixed incorrect start up issue.
 - Improved the information reported via SNMP
- Interfaces: Fix an issue where sometimes routing between LAN ports wasn't enabled when selected.
- LED indicators: Improved the timings for greater consistency across products.
- Dynamic DNS: Fix an issue with EasyDNS interaction

2.5.5 Known Issues

- No known issues.

2.6 Version 1.9.3.5

Release Date: 06/03/2023

2.6.1 General

- This is an enhancement and bug fix release.

2.6.2 New Features

- No new features.

2.6.3 Enhancements

- Added support for model 2255X Rev3
- Updated OpenReach DSL firmware to version V1.1.1

2.6.4 Bug Fixes

- Fixed an issue with excessive and unnecessary logging of marks on the firewall.
- Fixed an issue where certificates could report the wrong date. Mainly relating to certificates handled by scep.

2.6.5 Known Issues

- No known issues.

2.7 Version 1.9.3.4

Release Date: 06/02/2023

2.7.1 General

- This is an enhancement and bug fix release.

2.7.2 New Features

- No new features.

2.7.3 Enhancements

- IPsec:
 - DES, Blowfish and Twofish support reintroduced.
 - This was done for firmware Version 1.8.x.x compatibility. It should be noted that these encryption methods are considered deprecated.

2.7.4 Bug Fixes

- Serial Server:
 - PPP Server and PPP Dialout Client startup fixed.
- SNMP:
 - Issue with selecting v3 fixed.
 - Issue when restarting or reconfiguring fixed.
 - Fixed issue with DSL units without sync not reporting correctly in MIB.
- Logging cleanup.
- Fixed 2155X hardware not correctly reporting hardware revision.

2.7.5 Known Issues

- No known issues.

2.8 Version 1.9.3.3

Release Date: 18/01/2023

2.8.1 General

- This is a bug fix release.

2.8.2 New Features

- No new features.

2.8.3 Enhancements

- No enhancements

2.8.4 Bug Fixes

- Resolved an issue with P12 certificate where there was only a common name entry as the subject.
- Resolved an issue with common names not always being read properly for openvpn configurations that contain certificates.
- Resolved an issue with some MRD415 units sometimes showing a POST fault on startup.
- Resolves an issue with the DSL firmware version not being displayed correctly.

2.8.5 Known Issues

- No known issues.

2.9 Version 1.9.3.2

Release Date: 04/01/2023

2.9.1 General

- This is an enhancement release.

2.9.2 New Features

- No new features.

2.9.3 Enhancements

- OAM loopback added to Model 5455.

2.9.4 Bug Fixes

- No bug fixes.

2.9.5 Known Issues

- No known issues.

2.10 Version 1.9.3.1

Release Date: 21/12/2022

2.10.1 General

- This is an enhancement release.

2.10.2 New Features

- No new features.

2.10.3 Enhancements

- Added support for model DMM-450 Rev3

2.10.4 Bug Fixes

- Ethernet:
 - The correct MAC Address is assigned to LAN and LAN2 when using independent port mode. Previous versions incorrectly had the MAC addresses swapped.
 - The correct MAC Address is assigned when the ports are in standard/switch mode. Previously there was a chance it would use the 2nd MAC address not the first.
 - The switch ports being reversed on the MRD455 units in version 1.9.2.x has been resolved. If the configuration was saved with firmware version 1.9.2.x the “functional config” will persist as the reversal can be detected and the ports assigned correctly.
- Serial Server:
 - Modem emulator: response time improvements.
 - Modem emulator: multi phonebook server disconnect fix.

2.10.5 Known Issues

- No known issues.

2.11 Version 1.9.3.0

Release Date: 01/12/2022

2.11.1 General

- This is an enhancement release.

2.11.2 New Features

- No new features.

2.11.3 Enhancements

- Added support for model DMM-450 Rev3

2.11.4 Bug Fixes

- No bug fixes.

2.11.5 Known Issues

- No known issues.

2.12 Version 1.9.2.1

Release Date: 12/10/2022

2.12.1 General

- This is a bug fix release.

2.12.2 New Features

- No new features.

2.12.3 Enhancements

- No enhancements.

2.12.4 Bug Fixes

- Resolved issue with Remote syslog.
- CLI log fix
- DSL upgrade improvements.
- Fixed configuration reset switch read issue.

2.12.5 Known Issues

- No known issues.

2.13 Version 1.9.2.0

Release Date: 06/10/2022

2.13.1 General

- This is an enhancement release.

2.13.2 New Features

- No new features.

2.13.3 Enhancements

- Added support for model 2155x Rev3.

2.13.4 Bug Fixes

- No bug fixes.

2.13.5 Known Issues

- No known issues.

2.14 Version 1.9.1.1

Release Date: 05/10/2022

2.14.1 General

- This is an enhancement and bug fix release.

2.14.2 New Features

- No new features.

2.14.3 Enhancements

- Improved importing of certificates into ipsec

2.14.4 Bug Fixes

- Removed strict encryption checkbox from ipsec settings.
 - This setting was redundant as IPsec now always behaves strictly.

2.14.5 Known Issues

- No known issues.

2.15 Version 1.9.1.0

Release Date: 01/09/2022

2.15.1 General

- This is an enhancement release.

2.15.2 New Features

- No new features.

2.15.3 Enhancements

- Added support for model 5455 Rev3.

2.15.4 Bug Fixes

- No bug fixes.

2.15.5 Known Issues

- No known issues.

2.16 Version 1.9.0.1

Release Date: 19/08/2022

2.16.1 General

- This is an enhancement and bug fix release.

2.16.2 New Features

- No new features.

2.16.3 Enhancements

IPsec:

- MODP768 support added.

2.16.4 Bug Fixes

- CLI command fixes.
- IPsec:
 - Fixed restart issue.
 - Fixed IKEv2 active redundancy issue.
 - Added fragmentation support.
- OpenVPN certificate fix.
- TechSupport file cleanup.
- Dynamic routing fixes.

2.16.5 Known Issues

- No known issues.

2.17 Version 1.9.0.0

Release Date: 11/08/2022

2.17.1 General

- Initial release in the V1.9 series firmware.
- Provides support for Revision 3 hardware.
- Support for 2455X Rev3 model only.

2.17.2 New Features

- No new features.

2.17.3 Enhancements

- No enhancements.

2.17.4 Bug Fixes

- No bug fixes.

2.17.5 Known Issues

- No known issues.

FIRMWARE UPGRADE PROCEDURE

The firmware upgrade procedure for the Series 2000 3G/4G Modem / Router is described. The same procedure can be used for all models in the product range.

3.1 Connect to the Web interface

- Connect to the Web interface of the modem either via the Ethernet interface or the wireless interface if web access is enabled.
- If connecting via the Ethernet interface:
 - Connect an Ethernet cable between the modem and the PC which will be used for the upgrade.
 - Open a web browser on the PC and enter the IP address of the LAN address of the modem.

Note: The IP address of the modem may be configured differently for each installation. The default IP address is 10.10.10.10

- If connecting via the wireless interface:
 - Open a web browser on the PC and enter the IP address of the wireless interface.
- When prompted supply the user-name and password.
- The main status page should now be displayed.
- If the main page is not shown check:
 - If using the Ethernet interface:
 - * The Ethernet cable is connected correctly to the modem and the PC.
 - * The IP address of the modem is correct.
 - * The Ethernet ports are enabled.
 - If using the wireless interface:
 - * The wireless IP address is correct and is publicly accessible.
 - * The firewall rules have been set to allow wireless web access.

3.2 Hardware Revision Check

Before proceeding to the Series V1.9 firmware upgrade a check of the Hardware Revision is required. This is because Hardware Revisions 1 & 2 can only be upgraded to the Series V1.9 firmware from firmware version 1.8.8.9.

Note: Attempting to upgrade from a firmware version earlier than V1.8.8.9 will result in the unit rebooting with no change to the installed firmware.

Warning: Once upgraded to the V1.9 series firmware the unit cannot be downgraded back to the V1.8 series firmware.

To check the Hardware revision navigate to the *System* → *Information* page. A page similar to that shown in Fig. 3.1. will be displayed.

The screenshot shows the web interface for a Series 2000 Modem. The 'System' tab is active, and the 'Information' sub-tab is selected. The page displays the following information:

Series 2455X Information	
Model	2455X
Hardware Revision	2
Serial Number	000000
Application Version	1.8.8.9
Bootloader Version	3.70

Hardware Addresses	
LAN MAC	00:00:00:00:00:00
Wireless IMEI	0000000000000000
SIM 1 IMSI	0000000000000000
Wireless Software Version	00.000.0000000000

Fig. 3.1: The System Information page.

The Hardware revision is listed in the Model Information table.

If the hardware revision is 3.0 or higher then proceed to the Series V1.9 firmware upgrade.

If the Hardware Revision is 1 or 2 then check the application version. The possibilities are:

- The application version starts with 1.9 and so has already been upgraded to a version of the Series V1.9 firmware.
 - Proceed with the Series V1.9 firmware upgrade.
- The application version is 1.8.8.9

- Proceed to the V1.9 series firmware upgrade.
- The application version is in the 1.8 series or earlier.
 - Upgrade to version 1.8.8.9 before proceeding.
 - The Proceed to upgrade to the Series V1.9 firmware.

In Fig. 3.1 the indicated Hardware Revision is 2 and the Application firmware version is 1.8.8.9 This indicates that this unit can now be upgraded to Series V1.9 firmware.

3.3 System Backup and Upgrade

Select the backup & Upgrade page by selecting *System* → *Backup Upgrade*. The System Backup & Upgrade page will be displayed as shown in Fig. 3.2.

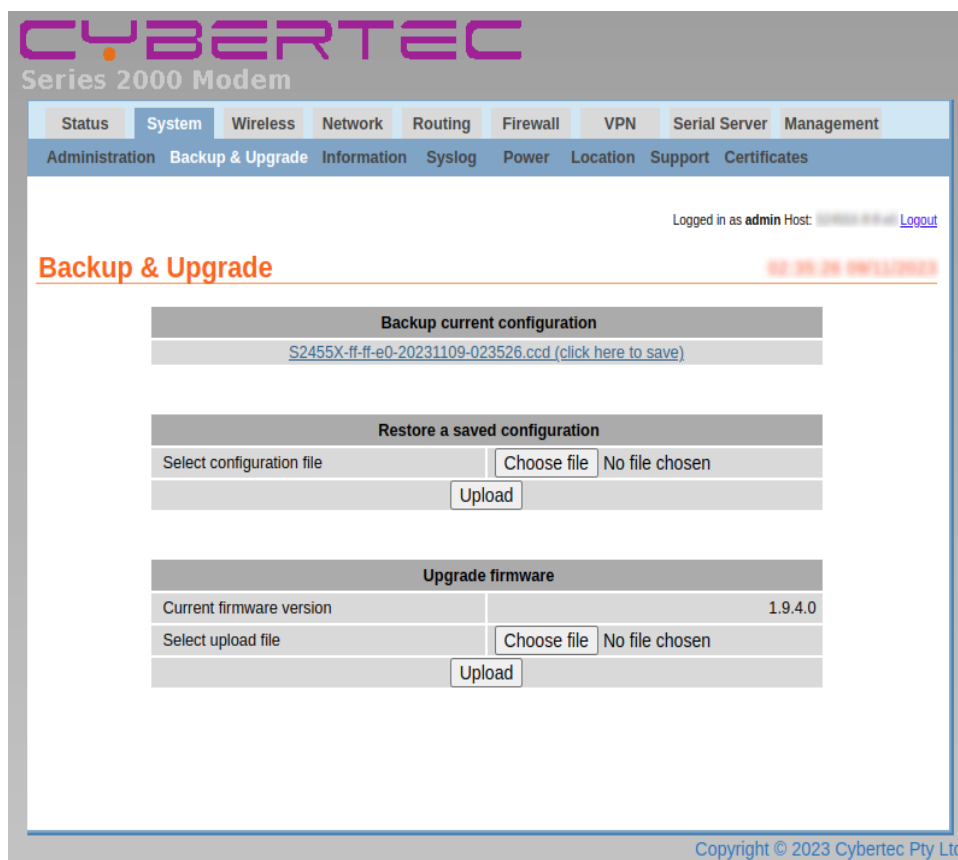


Fig. 3.2: The System Backup & Upgrade page.

3.4 Backup Configuration

Note: It is strongly recommended to backup the configuration of the unit before proceeding with the up.

Note: The configuration of the modem is forward compatible. This means the configuration of the modem will still be correct after a firmware upgrade to a later version even though the format used to store the configuration may be changed.

Warning: The configuration of the modem is not always backward compatible. This means that if the modem firmware is replaced with an earlier version of firmware the configuration file may not be readable by the earlier version of firmware and so the configuration will revert to the default settings. If the configuration file from the earlier version was saved prior to the upgrade then this configuration can be loaded into the modem to restore the previous settings after reverting to the earlier revision of firmware.

To save the configuration click the link in the section titled “Backup current configuration” as shown in Fig. 3.3 and save the file to the local machine.



Fig. 3.3: System configuration backup.

To restore a configuration click the *Browse* in the section title “Restore a saved configuration” as shown in Fig. 3.4 then click the *Upload* button.

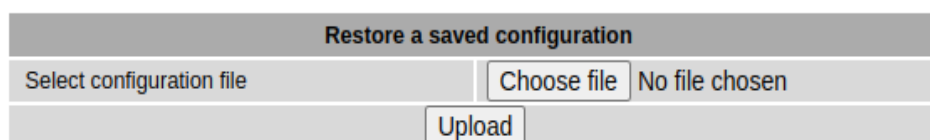


Fig. 3.4: System configuration restore.

3.5 Firmware upgrade

- In the section titled “Upgrade Series 2000 firmware” click the *Browse* button and navigate to and select the upgrade file appropriate for the modem being upgraded as shown in Fig. 3.5.

Note: Refer to the section *Firmware Version* in the *Introduction* for the firmware filename and version number details.

- If the incorrect file is selected the upload will fail and report an error.

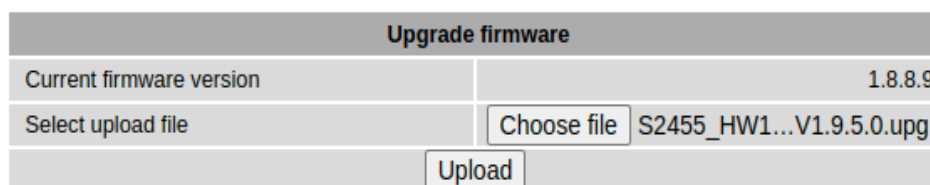


Fig. 3.5: Select the upgrade file.

- Click the *Upload* button. The file will now be transferred to the unit.
- When the upload is complete the Upgrade section of the page will change to be similar to that shown in Fig. 3.6.
- Check that the information shown is correct.
- If the data is correct click the *Upgrade* button.

Upgrade firmware	
Status of uploaded file	Passed
Filename	S2455_HW1-2_V1.9.5.0.img
Release	V1.9.5.0
Build date	15/11/2023
MD5Sum	edcdce29580fbf1fe8399dbe7b164d37
SHA1Sum	a00647925d32f70e0779675a8e299441fe2a4e2a
<input type="button" value="Upgrade"/>	<input type="button" value="Cancel Upgrade"/>

Fig. 3.6: File has been uploaded to the modem.

Warning: Once the Upgrade has started power must be maintained to the modem to prevent corruption of the Flash memory.

- The Upgrade section of the page will now show a message as shown in Fig. 3.7.

Upgrade firmware
The upgrade is now starting.
The upgrade will take several minutes to complete and the modem will be offline during this time.
The modem will reboot once the upgrade is complete.

Fig. 3.7: The Upgrade page.

- During the upgrade:
 - the top two front panel LEDs will flash alternatively Red then Green.
 - the modem will disconnect from the wireless network.
 - the modem will not respond to any network traffic.
 - the modem will re-boot when the upgrade has completed
- When the Upgrade has completed and the modem has re-booted the new firmware version can be checked in the System Information page. Fig. 3.8 is an example of the System Information page after the upgrade has completed.

Note: Only the Application Version is shown.

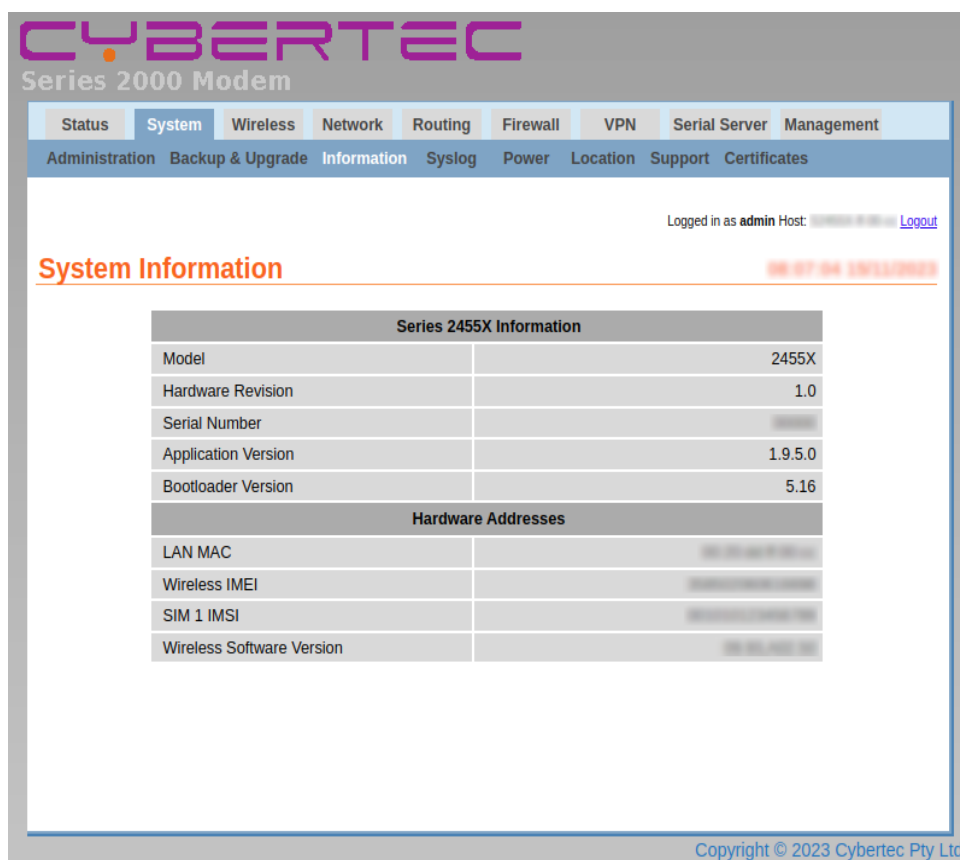


Fig. 3.8: The System Information page after the upgrade.

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