

Series 2000
3G/4G Modem / Router
Firmware Release Notes

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1 Introduction

This document provides a summary of the firmware changes and details the firmware upgrade procedure for the Cybertec Series 2000 of 3G and 4G Modem / Routers.

2 Version

The latest version of the Series 2000 firmware is v1.8.7.0.

The firmware files for the current release are:

- **Series 2000 Model 2155/2155X & Model 2255/2255X** : S2155-v1.8.7.0.zip
- **Series 2000 Model 2455/2455X** : S2455-v1.8.7.0.zip
- **Model DMM-250 & Model DMM-450** : XMM250-v1.8.7.0.zip

The zip file contains two files, the upgrade file, for example S2155-v1.8.7.0.upg and the MD5 hash of the upgrade file. The upgrade file is the file to be used to upgrade the unit.

3 Applicability

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

- Series 2000
 - Model 2155 / 2155X
 - Model 2255 / 2255X
 - Model 2455 / 2455X
- DMM-250
- DMM-450

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

4 Version 1.8.7.0 (29/10/2021)

4.1 General

- This is an enhancement and bug fix release.

4.2 New Features

- TCPdump added. Available on the to diagnostics page.
- Added DNS status page.

4.3 Enhancements

- IPsec IKEv2 improvements:
 - Added support for Liveness check. (Known as Dead Peer Detection or DPD in IKEv1)
 - Added support for NAT traversal.
 - Improved Connection establishment.
- SNMP
 - Improved logging
 - engineID now displayed on webpage.
 - Improved resetting of engineID.
 - MIB updates:
 - Added configMACAddress @ enterprises.16177.1.200.1.1
 - Added wirelessPacketNetworkReg @ enterprises.16177.1.200.3.7
 - Added wirelessGPSSState @ enterprises.16177.1.200.3.17.1
 - Added wirelessGPSPosition @ enterprises.16177.1.200.3.17.2
 - Added wirelessGPSLockTime @ enterprises.16177.1.200.3.17.3
 - Added wirelessGPSSatelliteCount @ enterprises.16177.1.200.3.17.4
 - Added dslDataLinkUp @ enterprises.16177.1.200.6.14
 - Added vrrpState @ enterprises.16177.1.200.7.1
 - Fixed wirelessState trap to correctly indicate return OIDs wirelessNetworkReg, wirelessRFLevel, wirelessPacketState, wirelessCSDState and wirelessPacketNetworkReg
 - Added dslState Trap returning dslLineState, dslSyncSpeedDown, dslSyncSpeedUp, dslDataLinkUp
- Wireless Network Scan
 - Stability improvements.
 - Improved logging.
 - Re-trigger scan on roaming mode configuration change, if necessary, otherwise clear scanned networks list.
- DHCP client:
 - Show static leases if LAN2 DHCP enabled.
- Model 2255X specific:
 - Stability improvements.
 - Serial server performance improvements.
 - Low power mode improvements.
 - GPIO improvements.
- Improved compatibility with a wider range of SSH clients.

- Warning added when enabling extended serial port logging.
- Web page load speeds improvements.
- Logging improvements.
- Connection maintenance improvements.
- Start up improvements
- Stability improvements.

4.4 Bug Fixes

- IPsec IKEv2 Fix for tunnels not always coming up properly on tunnel restart.
- Resolved issue of possible incorrect SNMP engineID.
- Fix to wireless network scan to only use deny list of active SIM.
- Fix issue with multiple phone book entries in the Modem Emulator.
- Fix for Wireless DNS sometimes not correctly applying received DNS server IP address.
- Fixed preferred MTU configuration.
- Fixed wireless MTU setting for 2155X/2255X models.
- Allow blank password for packet profile wireless units (with warning).
- Resolved issue of upgrades not working if there was too long between file upload and upgrade start.
- VDSL Models:
 - Fixed password issue on PPPOA - 5455 Rev2.
 - Resolved issue of VDSL interface reporting power on test failure.

4.5 Known Issues

- No known issues.

5 Version 1.8.6.1 (30/09/2021)

5.1 General

- This is an enhancement.
- Internal release only.

5.2 New Features

- No new features.

5.3 Enhancements

- Added support for revised hardware.

5.4 Bug Fixes

- No bug fixes.

5.5 Known Issues

- No known issues.

6 Version 1.8.6.0 (05/07/2021)

6.1 General

- This is an enhancement and bug fix release.

6.2 New Features

- Alternative route feature added.

6.3 Enhancements

- IPsec:
 - ikev2 added.
 - Multiple tunnel mapping initialisation improvements.
- Roaming improvements:
 - General scan improvements.
 - Deny list name changed to Ignore list.
 - Added in Preferred PLMN roaming mode.
 - Ability to upload a CSV file of the preferred PLMN list.
 - Strict mode added - scan must match the configured criteria otherwise no connection will be made at all.
 - Roaming mode and lists configurable for SIM 1 and Sim 2 (if available).
- DHCP client improvements:
 - Option to add DNS obtained to DNS list.
 - Option to use obtained gateway as primary default gateway.
- CLI improvements:
 - Config reset command updated to require password and automatically reboot.
 - Upgrade command now has options for username and password.
- Web improvements:
 - Automatically move cursor to username text field on login page.
 - Added ability to configuration reset the unit.
 - Return correct line power state on 5455 Rev2.
 - Band 40 added to custom band selection on DMM450 model.
- Logging improvements.
- Connection maintenance improvements.
- Startup improvements for the 2155X/2255X models.
- Stability improvements.

6.4 Bug Fixes

- Roaming improvements:
 - Fix bugs with scan not completing properly.
 - Fix bug with Rev2 models showing UMTS bands in scan when in LTE Only mode.
 - Ignore list (previously deny list) now saves correctly.
- Serial ports:
 - Fix inversion of CTS / RTS signal when offline.
 - Fixed CTS signal read and web page indicator.
 - Correctly handle signal naming of DCE and DTE ports.
- Web improvements:
 - Web certificate generation issue resolved.
 - Hostname fails with all special characters besides a hyphen. Previous behaviour was to silently fail and full stop and underscore characters were accepted.
- LLDP issue resolved..
- Ethernet MTU issue resolved.
- Fixed ability to specify IP address for PPPOA on 5455 Rev2.

6.5 Known Issues

- No known issues.

7 Version 1.8.5.0 (01/04/2021)

7.1 General

- This is an enhancement and bug fix release.

7.2 New Features

- No new features.

7.3 Enhancements

- Upgrader improvements.
- Max password length increased to 128 characters.
- Wireless MTU configuration support and display.
- DSL “Timeout for network initialisation” setting default changed from 120s to 600s.
- Model 5455 Rev2 ADSL improvements.
- SMS added support for 8 bit and 16 bit modes.

7.4 Bug Fixes

- IPsec fix for packet re-establishments after wireless disconnections.
- DynDNS enable not persistent issue resolved.
- netstat CLI fix.
- SMS resolved buffering issue in modem emulation mode.
- Unsupported hardware failing into CSD mode, due to imported configuration resolved.
- Model 5455 rebooting on 0 failed attempts resolved.

7.5 Known Issues

- No known issues.

8 Version 1.8.4.0 (29/01/2021)

8.1 General

- This is an enhancement and bug fix release.

8.2 New Features

- No new features.

8.3 Enhancements

- Security improvements.
- DNS update.
- OpenVPN: TLS improvements
- Added support for routing between LAN ports, when in split port mode.

8.4 Bug Fixes

- DHCP: resolved issue of custom DNS on LAN2.
- Model 2455X Rev 1 -Wireless Interface:
 - Resolved issue where DNS server provided by the network may not be correctly applied.
 - Resolve issue of no packet traffic over interface.

8.5 Known Issues

- No known issues.

9 Version 1.8.3.0 (18/12/2020)

9.1 General

- This is an enhancement and bug fix release.

9.2 New Features

- No new features.

9.3 Enhancements

- Added in ability to specify the IPSec CA DN required.
- Added 0.3.38 (GSM7) terminal setting for SMS in Modem Emulation Mode.
- Ethernet / LAN
 - Enhanced how MTU is configured.
- Updated and improved SNMP.

9.4 Bug Fixes

- DHCP: Fixed issue with importing DHCP configuration settings from previous firmware revisions.
- Web: Fixed issue with routing table not rendering correctly.
- Wireless Interface: Removed the SetMNB application for non-MNO configured units.
 - This caused an issue with connections on some carriers when using private APNs.

9.5 Known Issues

- No known issues.

10 Version 1.8.2.1 (03/12/2020)

10.1 General

- This is an enhancement release.
- First version to fully support Model 5455 Rev2.

10.2 New Features

- No new features.

10.3 Enhancements

- Added support for Model 5455 Rev2.

10.4 Bug Fixes

- No bug fixes.

10.5 Known Issues

- No known issues.

11 Version 1.8.2.0 (13/11/2020)

11.1 General

- This is an enhancement and bug fix release.

11.2 New Features

- DHCP client functionality on LAN ports.

11.3 Enhancements

- Added support for Model 5450 and Model 5455.
- Added support for Model 5455 Rev2.
- Ethernet / LAN
 - Improved split port support.
 - Bridge mode works correctly with PPPoE.
 - Individual LAN port control and monitoring.
 - If a gateway is set on LAN, default/static routes can be specified.
 - MAC filtering added on LAN2.
 - ARPs response mode can be set.
 - The mode are:
 - Strict - Reply only if the target IP address is a local address configured on the incoming interface and both with the sender's IP address are part of the same subnet on this interface.
 - Normal - Reply only if the target IP address is a local address configured on the incoming interface.
 - Permissive - Reply for any local target IP address, configured on any interface.
- DHCP
 - Added client functionality to LAN ports.
 - Added server functionality to LAN2.
 - Added ability to specify NTP and DNS settings on DHCP server.
- Dynamic DNS
 - Added ability to specify refresh period.
- Web:
 - Add routes pages
 - Time and date now displayed on all pages.
- Wireless:
 - General stability improvements.
 - Improved LTE connections for 2155X / 2255X
 - Improvements to Private APN authentication and connection establishment.
 - Improved roaming support. Details as follows:
 - On boot a scan is performed to determine which networks are available.
 - All available networks are scanned.
 - Any network in the "Denied Networks" list will not be included in the scan.
 - Depending on the Roaming Mode a network connection will be attempted.

- If successful, remain on the selected network.
- If connection maintenance (remote ping) is enabled:
 - On failure the network is added to a temporary Deny List.
 - This is a standard ping test, not a performance test.
- If the all available networks are on the temporary deny list:
 - The temporary deny list will be cleared.
 - A network scan will be performed.
 - Attempt to connect to a network based on Roaming Mode setting.
 - This prevents all available networks being locked out should the ping server not respond.
 - Adding a network to the Deny List will have immediate effect.
 - If the network is currently connected it will be disconnected.

11.4 Bug Fixes

- IPsec: Resolved Back to Back ping issue.
- VRRP:
 - Resolved issue of not going to backup when Ethernet interface is disabled.
 - Resolved issue on 5455 not going to backup when xDSL cable is removed.
- Bridged PPPoE: Resolved packet loss issue.
 - For this to work there are restrictions:
 - The Ethernet port configuration must be in split mode; and
 - Bridge mode can only be set to LAN1.
- Resolved the MAC address filtering stability issue.
- Resolved alias IP issue on DMM units.
- Resolved root and subordinate certificate issue.

11.5 Known Issues

- No known issues.

12 Version 1.8.1.0 (11/05/2020)

12.1 General

- This is an enhancement and bug fix release.

12.2 New Features

- DMM-450 & DMM-250: Added remote syslog support.

12.3 Enhancements

- Added SHA2 support to:
 - IPsec
 - Open VPN
 - Web server
 - SNMP
 - SCEP
- IPsec:
 - Added XAuth server
 - Added ability to enforce strict settings.
- Security:
 - General improvements.
 - Password cannot be set to the default.
 - Warning if password has not been changed from default.
 - TLS upgrade.
- Web:
 - Improved Javascript error handling on various web pages.
 - Added hardware version to information page.
- Wireless:
 - Improved LTE connection establishment.
 - Improved LTE authentication prior to network connection. This reduces instances of connection to UMTS prior to connection to LTE.
 - Improved LTE connection times in some situations.
 - Improvement to band swapping on some models.
 - Improved roaming support.
 - Improvements to Private APN authentication and connection establishment.
- Serial Server: DNP3 primary / backup support improved.
- Log: Improvements to log rotation.
- VRRP: Added ability to add polling source address.
- SCEP: added support for non chained certificates.
- PPP: Updated.

12.4 Bug Fixes

- IPsec: Individual tunnel restart no longer causes all tunnels to restart.
- Custom route: Fixed issue where custom routes were not maintained through upgrade.
- CLI: Fixed issue with firmware upgrade command.
- SMS: Fixed case sensitivity issue for VPN tunnel trigger.
- Firewall: Fixed issue with limit on number of rules. Limit is now 150.

12.5 Known Issues

- No known issues.

13 Version 1.8.0.1 (19/12/2019)

13.1 General

- This is an enhancement and bug fix release.
- When upgrading from firmware version V1.8.0.0 NAPT settings should be checked.

13.2 New Features

- No New features

13.3 Enhancements

- Improved upgrader.
- Improvements to web pages.
- Improvements to CLI.

13.4 Bug Fixes

- Fixed issue with 3G connection on some 3G only models.
- Fixed RADIUS server authentication.
- Fixed issue with OpenVPN dropping route on configuration update.
- Fixed interface issue when NAPT disabled.

13.5 Known Issues

- No known issues.

14 Version 1.8.0.0 (15/11/2019)

14.1 General

- This is an enhancement and bug fix release.

14.2 New Features

- Web: Improve the web authentication process.
- Web: All web interactions are now Session based.
- Web: Added logout capabilities.
- LLDP: Added support for LLDP
- LLDP: Disable flooding of LLDP packets by default (can be re-enabled).
- mDNS: Added basic mDNS capabilities.
- LAN: A Link Local address can be enabled on the LAN interface (and discovered through mDNS)
- LAN: Allow ethernet ports to be separated into two independent networks.
- DMM-450: Added Loopback Interface configuration.
- DMM-450: Added support for MAC filtering.

14.3 Enhancements

- Web: Improved Javascript and functionality of various web pages.
- DMM-450: Raised the number of certificates from 1 to 4.
- DMM-450: Increase the number of IPSec tunnels from 1 to 3.
- IPSEC: Allow the specification of the Source Address various connections.
- Interface: Allow strict ARP checking to be enabled on Ethernet ports (default off).
- DHCP: Move configuration to DHCP specific web page.
- DNS: Move “Automatically obtain DNS from WAN interface” to the dns page.
- MSP: Better reporting of Signal Quality information for Rev2 Units.
- MSP: Improve the roaming code to support more networks and moving between technologies better.
- Wireless: Add additional LTE band Connectivity on some units.
- Wireless: Add option to enable or disable case sensitivity for SMS triggers.
- SNMP: Added Configurable Sysname.
- SNMP: Add button to send a “test” trap to all trap destinations. This is a temperature trap with a 237C value.
- SNMP: Added the device MAC address to the unit’s MIB (Cybertec OID enterprise.15428.1.5.1.4).
- General: Shutdown improvements.
- General: Enable the LinkLocal Interface and MDNS on the initial boot (until a configuration has been saved).
- General: Improve the routing efficiently through better interrupt management.

14.4 Bug Fixes

- Loopback: Correctly set address when changed while enabled.
- SerialServer: Fixed an issue with Reverse Telnet.
- SerialServer: Fixed issues with disconnection and reconnection of dnp3, modem emulation and tcp serial modes.
- HW: Fixed an issue with frequency band display on Model 2455X Rev2 Hardware.
- GPS: Correctly save and restore the authentication required config.
- DynDNS: Fix an issue where the password was not being correctly restored after reboot.
- Time: If a date has not be saved previously default to the BuildDate rather than Epoch.
- SMS: Remove triggers that are not valid for that unit (EG CSD on a unit without CSD capabilities).
- SNMP: Block SNMP traffic until the SNMP agent has time to correctly initialise.
- SNMP: Do not Populate SysContact or SysLocation if empty.
- Interface: Update packet counters periodically to remove “Large Jump” errors.
- CLI: Fixed an issue displaying SMS support.
- Diagnostics: Clear Ping trace on Config Reset.
- OpenVPN: Display the import OpenVPN configuration.

14.5 Known Issues

- No known issues.

15 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.

15.1 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.

15.2 System Backup and Upgrade

- Select System ▸ Backup & Upgrade. The System Backup & Upgrade page will be displayed as shown in Figure 1.

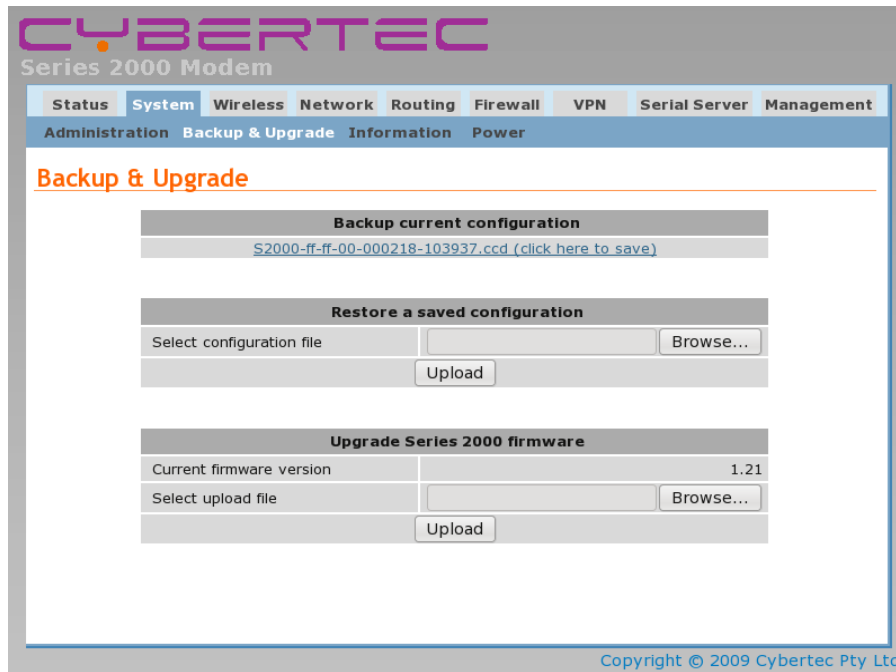


Figure 1: The System Backup & Upgrade page.

15.2.1 Backup Configuration

- It is recommended to save the current configuration file.
- 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.
- The configuration of the modem is not always backward compatible. This means that if the modem firmware is replaced with an earlier version 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 Figure 2 and save the file to the local machine.



Figure 2: System configuration backup.

- To restore a configuration click the Browse button in the section title “Restore a saved configuration” as shown in Figure 3 then click the Upload button.

Restore a saved configuration	
Select configuration file	<input type="text"/> Browse...
Upload	

Figure 3: System configuration restore.

15.2.2 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 Figure 4. Refer to Section 2 on page 1 for the firmware file name and version number details.
- If the incorrect file is selected the upload will fail and report an error.

Upgrade Series 2000 firmware	
Current firmware version	1.21
Select upload file	<input type="text" value="00-images/S2000-v140.upg"/> Browse...
Upload	

Figure 4: Select the upgrade file.

- Click the Upload button. The file will now be transferred to the modem.
- When the upload is complete the Upgrade section of the page will change to be similar to that shown in Figure 5.

Upgrade Series 2000 firmware	
Status of uploaded file	Passed
Filename	series-2000-v140.img
Release	1.40
Build date	24/04/2010
Upgrade	Cancel Upgrade

Figure 5: File has been uploaded to the modem.

- Check that the information shown is correct.
- If the data is correct click the “Upgrade” button.



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 Figure 6.

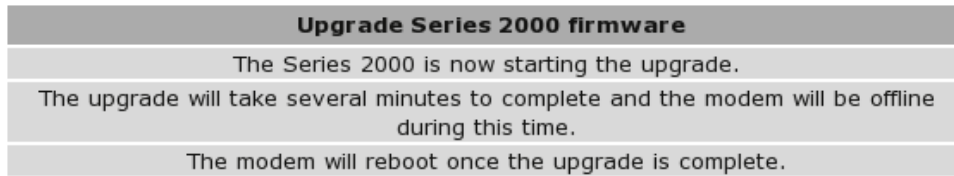


Figure 6: The Upgrade page.

- 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. Figure 7 is an example of the System Information page after the upgrade has completed. Note only the Application Version is shown.



Figure 7: The System Information page after the upgrade.

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