
Firmware upgrade instruction GiSMO®

1. Note of Caution

The firmware upgrade procedure is very sensitive to failures. A failure of the upgrade might cause GiSMO not to work at all. The only way to repair GiSMO after an upgrade failure is to send it to an authorized repair shop or other facility approved by Wireless House AB. Wireless House AB will not take any responsibility for this failure and you will be charge for any repairs needed. With this in mind you should not do this upgrade yourself if you are not familiar with these kind of operations.

2. Background

This document is an extension of Wavecom firmware upgrade instruction for GiSMO. The environment described in Wavecom paper Xmodem_dwl_v1.3.PDF, relates to a PC. The Compaq iPAQ® used with GiSMO is however operating with PocketPC 2002 which is a different operating system than normally used in a PC. Hence a different application than Hyper Terminal is needed for the firmware downloads.

3. What is needed

- GiSMO
- Compaq iPAQ
- PocketPC 2002 for Compaq iPAQ
- An xmodem terminal software for iPAQ.

4. The Xmodem terminal iPAQ software

The software company Ruksun has a software that is suitable for upgrading the GiSMO. The software is called Termforce. A trial version of the software can be found on Ruksun home page <http://www.ruksun.com>.

5. Procedure

Follow the instructions in the Wavecom manual Xmodem_dwl_v1.3.PDF but instead of Hyper Terminal, use an iPAQ application.

1. Move the firmware file to a directory on your iPAQ with the Microsoft Active Sync®.
2. Install Termforce
3. Attach iPAQ to GiSMO
4. Remove the automatic turn-off function on the iPAQ.
5. Attach the charger (so that you don't loose battery during upgrade)
6. Configure Termforce according to Wavecom manual.
7. Upgrade.
8. Reset the iPAQ.

6. XModem download interface

6.1. Download protocol

The applicable protocol for firmware downloading is Xmodem (Xmodem128-CHKS or Xmodem 1K-CHKS). This allows almost any data terminal application to upgrade GiSMO. The actual version uses only 128 bytes packets with a checksum.

Note that the **flow control is mandatory** (RTS and CTS signals).

The XModem 1K-CHKS is supported with V1.12 downloader version.

6.2. Download procedure and V24 recommendation

6.2.1. Terminal application configuration

For detailed description, see your terminal applications manual.

6.3. Global behaviour

Trough a Terminal window or similar, you are able to send data to GiSMO by sending the character "A" (uppercase) until it is echoed by the GiSMO.

Send the AT command "**AT+WDWL**" to switch the GiSMO on download mode.

The module sends "**+WDWL : 0** " : to inform that it turns in download mode.

Start sending files using Xmodem protocol to GiSMO. *See your terminal application manual.*

Notice that the XModem protocol specifies that the receiver initiates the communication by sending a character. The user may not see this character, because it is a control character. If the transmitter is not ready, a new start character is repeated by GiSMO every 10 seconds.

At the end of the file transmission, when there is no more file to be downloaded, the user exits the download mode by sending the AT command "**AT+CFUN=1**", then user receives "**OK**" if the speed and format configuration that are set in EEPROM are the same that the one used for download.

Another recommended approach is to temporarily separate the iPAQ from GiSMO. This is similar to a hard reset of GiSMO.

WARNING: in the general case the EEPROM settings saved in the modules before the download will be overwritten thus, among other things, hence your terminal application communication speed might need to be adjusted back to 9600 Baud in order to start communicating with GiSMO again.

7. Download procedure

7.1. Introduction

For a software version you've got two files. You have a zip file that contains two dwl files:

- **version532a.zip**: Which contains:

- **X532A.dwl**: This is the new firmware to be downloaded
- **dwl.dwl**: Which is the downloader v1.12 (You will probably not need this)
- **Firmware upgrades instructions for GiSMO A2.PDF**: This paper

PS: dwl.dwl is only to be downloaded to upgrade the downloader from a lower version than 1.12

7.2. Dwl upgrade

The **dwl.dwl** is the **downloader** itself. Before upgrading the firmware, you'd better upgrade the downloader. So begin downloading the dwl.dwl file, reset the GiSMO and then send the dwl.dwl file from your terminal application.

7.3. Firmware upgrade

- The **X532A.dwl** contains the new firmware.

7.4. How to download the dwl.dwl file

WARNING: the "downloader download" is a fussy operation. To know the software and downloader version type:

- AT+I3 (or AT+CGMR) gives the software version
 - AT+WDWL? gives the downloader version
- => so with the list in annexe, it will be easy to know if the downloader must be upgraded or not.

7.5. Configure the speed of the GiSMO at the highest baud rate

By default the GiSMO is configured at 9600bps:

AT+IPR=115200

This command will maximize the communication speed in the GiSMO.

7.6. Match the baud rate on the GiSMO and the Terminal application:

Find the connection speed parameter in your terminal application and change it to 115200. After this you might need to disconnect and reconnect the communication between the application and GiSMO.

7.7. Transmission of the dwl.dwl file (Optional)

When the "dummy" characters appear: choose **Transfer** or equivalent and then choose **"Send File"** or equivalent. You will also need to **define the path** of the file to download. Remember to **select XModem protocol**:

After clicking on **"Send"** button, your file is in the download process. At 115200 bps this operation should last about 30sec.

If you want to check if the downloader has been well upgraded, use: **AT+WDWL?**

The response to this command will be the downloaded version.

After the end of the download, execute the command **AT+CFUN=1**

You can also hard reset the GiSMO by separating the iPAQ and GiSMO.

This command is used to leave the download mode properly and restart in command mode.

The **“OK”** may not be received if the used speed on the terminal is not the same than the one programmed in the EEPROM.

Response of the GSM to application: **OK**

7.8. How to download the X532A.dwl file.

7.8.1. Process

The file contains the new firmware. The procedure to download this file is exactly the same as for “the dwl.dwl” except that the downloaded file is “X532A.dwl”.

7.9. In Short

- Check the baud rate: **AT+IPR?**
- Increase the baud rate (115200bps) in case it has not be done before
- Send the files using Xmodem protocol.
- Check the software version: **ATI3** or **AT+CGMR**
- Reset the GiSMO: **AT+CFUN=1** or separate iPAQ from GiSMO