

# **Wismo™ software Downloading procedure**

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Reference : **SW/DOC/DWNLD\_PROC**

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## **WARNING**

**AFTER FINISH DOWNLOADING AND POWER ON WISMO, YOU HAVE TO WAIT FOR 10 SECONDS WITHOUT CARRYING OUT ANY POWER OFF, DOWNLOAD, RESET, IMEI DOWNLOAD ALLOWING THE AUTO-INITIALIZATION TO BE DONE, OTHERWISE IT'S HIGHLY RISKY TO CORRUPT PARAMETERS AND DAMAGED COMPLETELY WISMO MODULE**

## Document amendments

| Issue | Date     | Status | Author | Comments                                |
|-------|----------|--------|--------|---|
| 1.0   | 09/08/00 | P      | DCo    | Creation                                |
| 2.0   | 26/09/00 | P      | RMA    | AT+WHWV                                 |
| 3.0   | 10/12/00 | P      | RMA    | Downloader update                       |
| 4.0   | 15/03/01 | P      | RMA    | Downloader and PCB versions             |
| 5.0   | 20/03/01 | P      | RMA    | Update for some PCB versions            |
| 6.0   | 31/07/01 | P      | DCo    | Add recovery procedure                  |
| 7.0   | 22/10/01 | P      | DCo    | Add WISMO™ 2C-2 and WISMO™ 3            |
| 8.0   | 19/11/01 | P      | Jls    | Update add WISMO™ 2C-2 and WISMO™ 3     |
| 8.1   | 28/11/01 | P      | Jls    | Update add WISMO™ 2C-2 and WISMO™ 3     |
| 8.2   | 07/12/01 | P      | Jls    | Update for some PCB versions            |
| 8.3   | 11/01/02 | P      | Jls    | Add Downloader recovery procedure       |
| 8.4   | 17/01/02 | P      | Jls    | Warning information & IK Xmodem feature |

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## 2 Introduction

The software package shall include the followings:

**Documentation:**

- The AT software release note, informing you on the major modifications.
- The AT specification document corresponding to the software release (see Annex 1 for the links)

**Firmware (download in using Xmodem<sup>(1)</sup> protocol):**

- pro-lib.dwl: The software release for WISMO™ module
- Configuration files: (some of those files may not exist depending on software version)
  - ◆ wm12550.dwl: To set up the module to 900/1900 MHz bands
  - ◆ wmmodem.dwl: To set up the external WMOD2 modem (force the audio 2 by default). This file shall not be downloaded for internal modem WMOi3.
  - ◆ wm12792.dwl: Activate the Wavecom echo cancellation
  - ◆ wm12793.dwl: Force the module in 900MHz band
  - ◆ vxxx.dwl: Configure the software to the PCB version.

Please check your PCB reference number by using the AT command: AT+WHWV. PCB version = yyy

The following rules MUST be applied when downloading the Vxxx.dwl file:

- Download Vxxx.dwl, if PCB hardware version yyy = xxx
- In other cases, download Vzzz.dwl. Where zzz is the highest number just below yyy

Example:

If PCB version 4.27, yyy = 427

If the only available configuration files are: V400.dwl / v417.dwl / v500.dwl

The only files which can be download is V417.dwl

- ◆ ADC\_xx.dwl: Battery software calibration (for WISMO™ module manufactured before Week 50 2000)

| Module      | File to download |
|-------------|------------------|
| WISMO™ 2C   | ADC_2C.dwl       |
| WISMO™ 2C-2 | ADC_2C2.dwl      |
| WISMO™ 3    | ADC_W3.dwl       |

## 2.1 **dwl.dwl: The latest downloader<sup>(2)</sup> (see Annex 1 for more detailed information)**

① Wavecom strongly recommends to update the downloader.

The downloader version can be checked with AT+WDWL?

### **Note:**

#### 1- Xmodem download interface

The applicable protocol for firmware download is Xmodem (Xmodem 128-CHKS or Xmodem 1k-CHKS). This allows almost any data terminal to download a file into WISMO. The actual version uses only 128 bytes packets with a checksum. The very next generation will be 1Kbytes (1024) packets compliant allowing increased velocity (Xmodem 1K). Just note the hardware flow control is obligatory (RTS and CTS signals) since Xmodem 1K protocol. The Xmodem 1K-CHKS is supported with V1.13 downloader version. Most of the terminal applications like "Windows Hyper Terminal" integrate it (for more information check on Internet). See the below example for more information

#### 2- Xmodem within 421 & 411

With this downloader, sometime the download fails if using Hyper Terminal software without enough CPU resources (when a Winpoup message is received or if the network traffic is too important). Download process must be done with a high performance computer without unusefull softwares loaded in memory (no virus scan, no winpoup, no network connection, no email client software).

Settings needed are as following:

- Baud rate: 115200
- Data bits: 8
- Parity: None
- Stop Bit: 1
- Flow Control: Hardware (CTS/RTS)
- Protocol to send file: Xmodem

#### 3- Downloader

The module integrates a downloader (by default). In the case of a new downloader is available, you can download it into the module. Take the above file for example; it is already implemented in the first module series. Before upgrading the firmware, you'd better upgrade the downloader. SO begin downloading the `dwl.dwl` suitable with the firmware, reboot the module and then send the firmware `dwl` file from your terminal.

The downloader version V1.13 is available since the software versions 430a\_09gm.2C, 430a\_09gm2C2, 430a\_09gmm 3a.

The feature introduced by this downloader version is to create a local copy in RAM of the downloader as long as the last packet is not full download. After this operation the new downloader is placed in FALSH memory (activated) and the old version is deleted.

**PS: in case of downgrading the Firmware and the downloader version is different, remember to make sure to download first the correct downloader, reboot, and right after download the firmware release. Always refer to table below to know the right downloader corresponding to the right software release.**

** Attention,**

- 1 If a problem occurs during the downloading of the firmware (excepted the downloader), please refer to the paragraph 3 for recovery process.
  
- 2 If the sentence "BAD SOFTWARE" is sent through the serial link, at power up. It does not mean the software is "bad" or the download failed. The module cannot start and need to be unlocked. In such case send the module back to Wavecom for upgrade..
  
- 3 If a problem happens during the downloading of the downloader, the module or modem cannot be downloaded anymore, it must be send to the nearest Wavecom support centre for recovery.

### 3 Examples (with “Windows Hyper Terminal”)

#### 3.1 Before Starting:

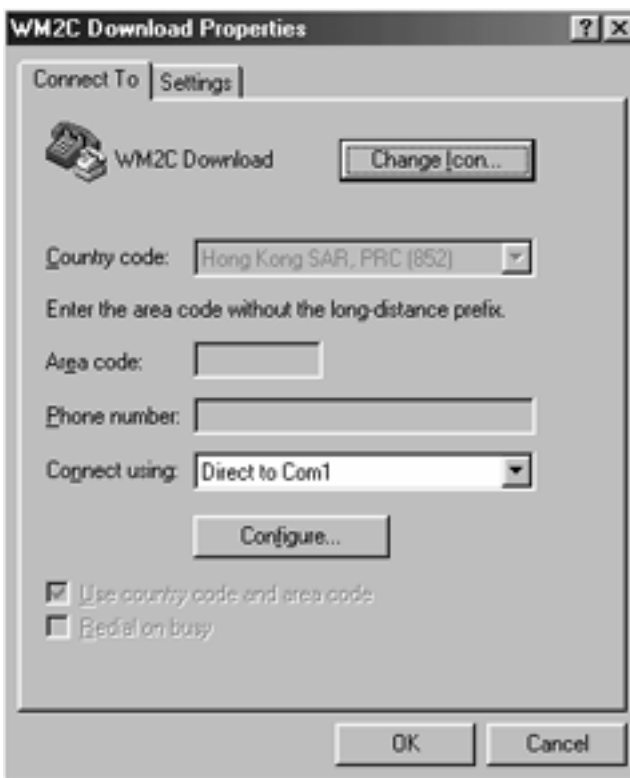
In the following example the connection is called “WM2C Download”.  
To start, the RS232 link is set up at 9600 Bps, with 8 data bits, no parity, one stop bit and a hardware flow control (RTS/CTS).  
The “COM1” is used as serial communication port.

#### 3.2 Step 1: Set up the download speed to 115200 Bps

To speed up the download process, you can set up the communication speed at 115200 Bps maximum.

Once you open the “Windows Hyper Terminal” program, on the screen type the command AT+IPR = 115200 and then press “Enter”. (That sets the speed on the module side).

In the “File” menu, click on the “Properties” tab.  
The following dialog box appears on the screen.



Press the “Configure” button (just under the communication port).  
The “COM1 Properties” dialog box appears.



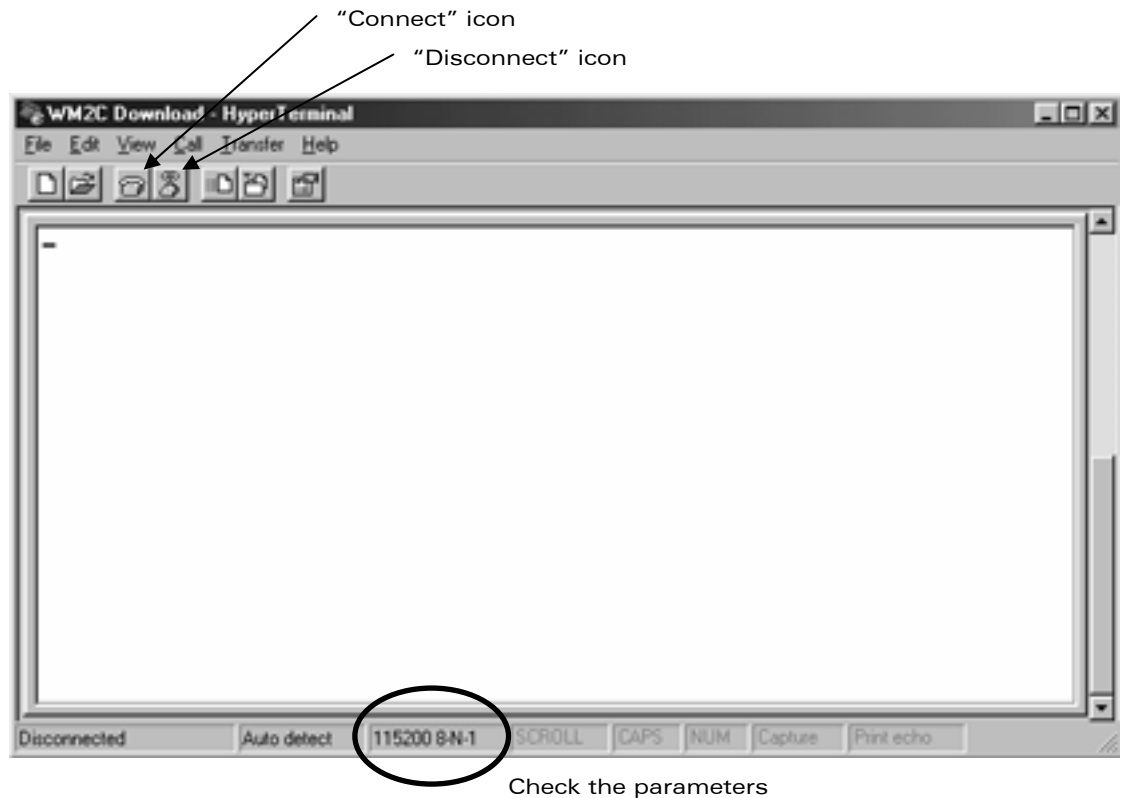
Change the speed from 9600 Bps to 115200 Bps.



Press "Apply button", and then the "OK" button on the next dialog box.



To be sure the link is correctly set up, press the "Disconnect" icon and then the "Connect" icon. ("Windows Hyper Terminal" applies the new setting only after a new connection).



### 3.3 Step 2: Set up the module in downloading mode

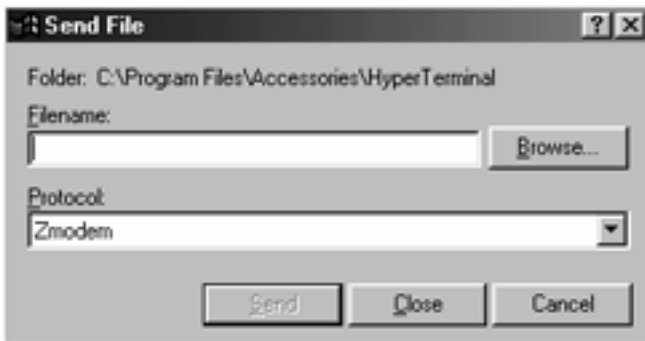
On the screen type the command AT+WDWL and then press "Enter".

The module answer +DWL: 0, and then a series of "□" characters appears (the module is sending the first characters of the Xmodem protocol).

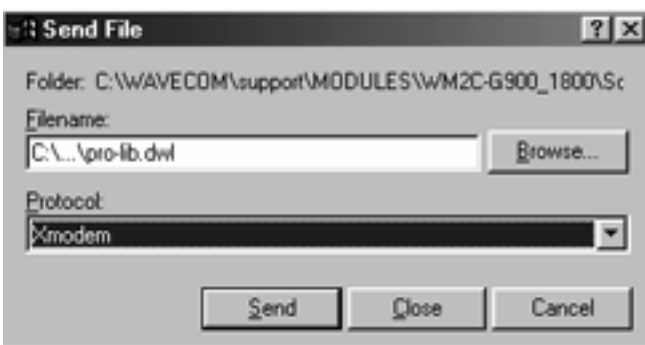
```
AT+WDWL
+DWL: 0
□□□
```

### 3.4 Step 3: Launch the downloading

Click on the "Transfer" menu and then on the "Send File ..." tab. The dialog box " Send File" appears.

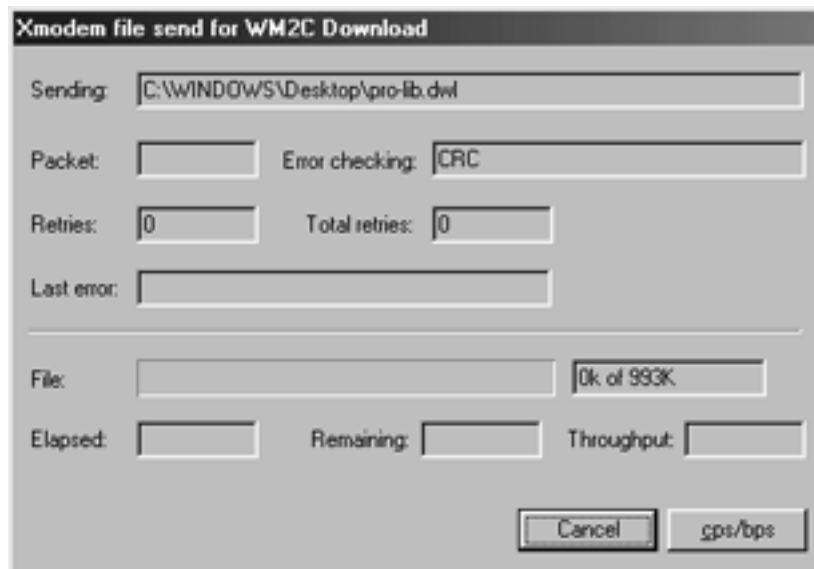


Select the file<sup>(1)</sup> you want to send (in clicking on the "Browse..." button) and then choose the "Xmodem" protocol on the second line.



Click the "send" button.

The following dialog box appears on the screen.



You can see the downloading processing.

The downloading lasts around 3 to 4 minutes, after that the dialog box closes automatically.

**Note:**

1- If you want to download two files in one operation (for example to configure the dual band external modem WMOD2), you can merge the files to download in using the DOS command "Copy" + the option "-b":

ex:

To create the new file "onefile.dwl", type:

copy /b pro-lib.dwl + wmmodem.dwl onefile.dwl

### 3.5 Step 4: Restart the module

On the screen type: AT+CFUN=1 and then press "Enter".

The module is automatically set up to communicate at 9600 Bps with 8 data bits, no parity, one stop bit and a hardware flow control (RTS/CTS).

Also to type AT command, you must set the communication port with those parameters.

In the "File" menu, click on the "Properties" tab.

The dialog box "...properties" appears on the screen, press the "Configure" button (just under the communication port). The "COM1 Properties" dialog box appears.

Change the speed from 115200 Bps to 9600 Bps.

Press "Apply button", and then the "OK" button on the next dialog box.

To be sure the link is correctly set up, press the "Disconnect" icon and then the "Connect" icon. ("Windows Hyper Terminal" applies the new setting only after a new connection).

Now, you can check the new software release in typing the command AT+CGMR + "Enter".

For example The module answer "401\_M11B.55 ..." Is the software release is the V4.01.

```
AT+WDWL
+DWL: 0
AT+CFUN=1AT
OK
AT+CGMR
401_M11B.55 1014652 022800 15:39
OK
```

## 4 Recovery procedure

In case of failure or crash during the downloading process do the following:

- i- Stay logged on your Windows Hyper Terminal session
- ii- Hard reset the module or modem (connect the RESET pin to the ground)
- iii- Then type continuously the capital letter "A" on your keyboard
- iv- After few second the module or modem will echo the "A"
- v- Then type "AT" <CR>
- vi- The module will respond either "ERROR" or "OK", if "ERROR" it displays start again from the step v- until "OK" finally appears
- vii- Finally follow the downloading procedure from the paragraph 2.3

### **Attention,**

This procedure is not applicable if a failure occurs during the download of the downloader.

If for whatever reasons, the recovery process does not work, the module or modem must be send to the nearest Wavecom support centre for recovery.

## 5 Annex 1: Software releases

| Step    | Module | WISMO™ 2C    | WISMO™ 2c-2   | WISMO™ 3     | Downloader Step | Documents                    |
|---------|--------|--------------|---------------|--------------|-----------------|------------------------------|
| GSM     |        |              |               |              |                 |                              |
| 4       | 4.00   | 400_m11b.54  | -             | -            | V1.01           | V8.4                         |
|         | 4.01   | 401_m11b.55  | -             | -            | V1.03           | "                            |
|         | 4.02   | 402_m11b.56  | -             | -            | V1.04           | V8.6                         |
|         | 4.02a  | 402am11b.56  | -             | -            | "               | "                            |
|         | 4.02b  | 402bm11b.56  | -             | -            | "               | "                            |
| 4.1     | 4.10   | 410_m11b.58  | -             | -            | V1.08           | "                            |
|         | 4.10a  | 410am11b.58  | -             | -            | "               | "                            |
|         | 4.11   | 411_m11b.59  | -             | -            | V1.09           | "                            |
|         | 4.11a  | 411am11b.59  | -             | -            | "               | "                            |
| 4.2     | 4.20   | 420_09gm.2c  | 420_09gm.2c2  | 420_09gm.3a  | V1.10           | V8.7                         |
|         | 4.21   | 421_09gm.2c  | -             | -            |                 | "                            |
|         | 4.22   | -            | 422_09gm.2c2  | -            |                 | "                            |
|         | 4.23   | 423_09gm.2c  | -             | -            |                 | "                            |
| 4.3     | 4.30   | 430_09gm.2c  | 430_09gm.2c2  | 430_09gm.3a  | V1.12           | V9.0                         |
|         | 4.30a  | 430a_09gm.2c | 430a_09gm.2c2 | 430a_09gm.3a | V1.13           | V9.1                         |
|         | 4.30d  | 430d_09gm.2c |               |              | V1.14           | V9.1                         |
|         | 4.31   |              | 431_09gm.2c2  | V431_09gm.3a | V1.13           | V9.1                         |
| GPRS    |        |              |               |              |                 |                              |
| 4.2     | 4.20   | -            | 420_09gg.2c2  | 521_09gg.3a  |                 | Gprs_at_cmd_v13/<br>Gsm_v8.7 |
| 5.2     | 5.20   | -            | 520_09gg.2c2  |              |                 | "                            |
| 5.2     | 5.21   | -            | 521_09gg.2c2  |              |                 | Gprs_at_cmd_v13/<br>Gsm_v8.7 |
| 5.2     | 5.26   |              | 526_09gg_2c2  |              | V1.09           | Gprs_at_cmd_v13/<br>Gsm_v8.7 |
| 5.2     | 529b   |              | 529b_09gg_2c2 | 529b_09gg_3a | V1.09           | Gprs_at_cmd_v13/<br>Gsm_v8.7 |
| Open At |        |              |               |              |                 |                              |
| 4.2     | 4.20   |              |               |              |                 |                              |
| 4.3     | 4.31   |              | 431_09gm_2c2  |              | V1.13           | V9.1                         |