FABERCOM

SEPSIM

Quick Guide
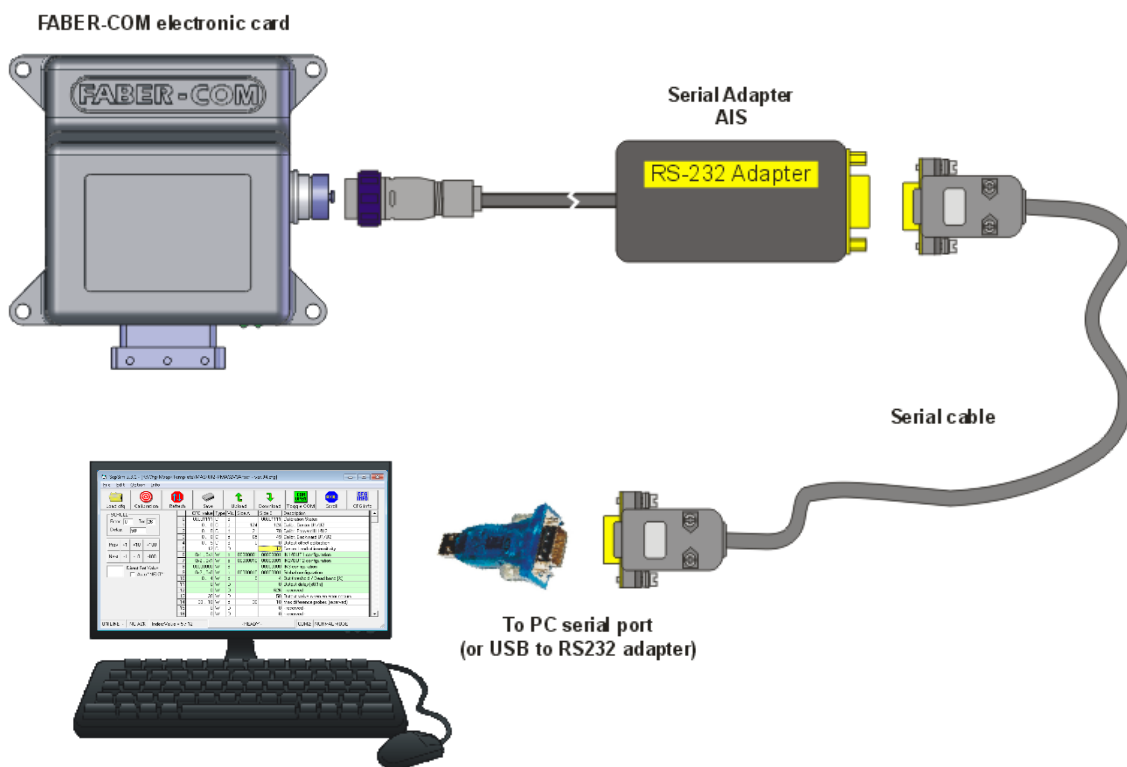Ver. 2.3.1 - lite 26/10/16
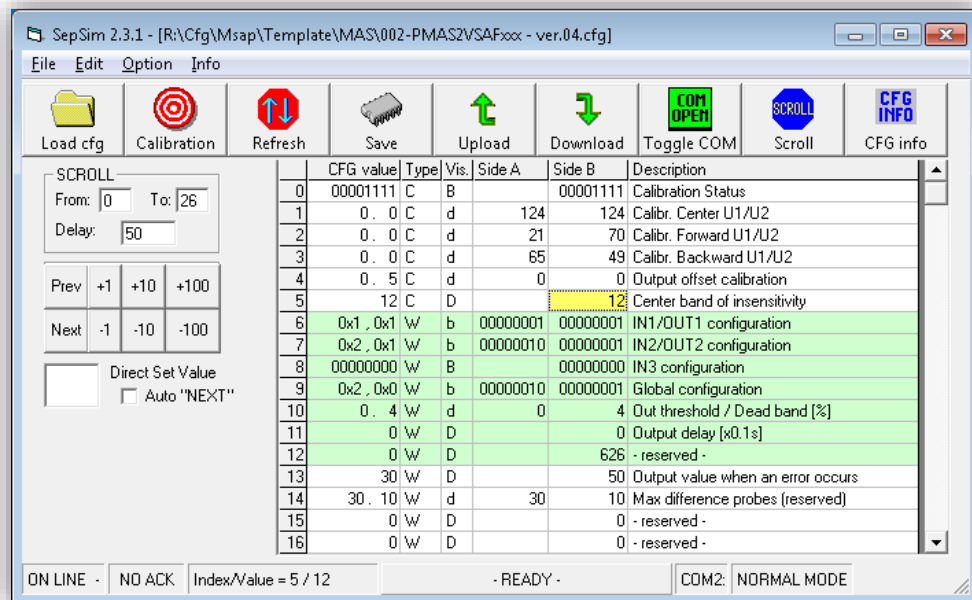
Revisions

Version	Date	Description
Ver. 2.1.7 - lite	17/07/07	First version release
Ver. 2.2.6 - lite	10/09/14	Added "Open Loop" mode. Minor bug fixes
Ver. 2.3.1 - lite	26/10/16	New functions added (see complete manual). Minor bug fixes

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1 – What is SepSim?

SepSim is a program interface towards FABER-COM electronic cards, that through special interface (AIS) allows to read and modify all working parameters.

To use SepSim you need a specific configuration file for your version of electronic card: "Customer.cfg".

With APD (Auto Parameter Description) enabled cards, no configuration files are needed: SepSim can load parameters list and description directly from the card.

> **When you open a configuration file, SepSim checks the file version and then, if the file is not compatible with the card, it shows an "incompatibility warning message".**
> **After this message if you chooses to go on, you must pay attention, because the tables of parameters doesn't show the real mean of them.**

Using a CFG file created for another device, for another version of firmware, or with wrong values, can lead to unexpected and dangerous behaviors.

2 – User interface

SepSim
version

Complete path and name of
loaded configuration file

Title bar

Menu bar

Button bar

Scroll option
configuration

Browse and modify
value buttons

Direct insert
value box

Single bit modify box
in binary parameters
(appears only
if parameter is
"b" or "B" type)

Status bar

Parameters
grid

Click on the rightmost box in status bar to toggle NORMAL mode to DEBUG mode (and vice versa).
In DEBUG mode new parameters appear. These parameters can help you to discover a problem about your device.

3 – Serial port configuration

⚠️ **To avoid frustrating and annoying warning messages, we recommend to run SepSim when the device is already connected to the serial port and powered.**

The first time you run SepSim, you must configure it with the number of serial port you are using. When the COM port is set wrong the "invalid port number" warning message appears. Click on OK button until the main windows of the program opens.
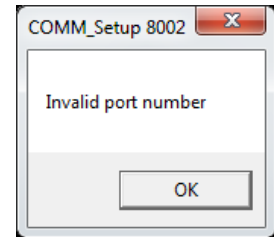
Select from the menu "**File**" the item "**COM port selection…**"
This will open a new windows with the list of the COM ports available in your PC:
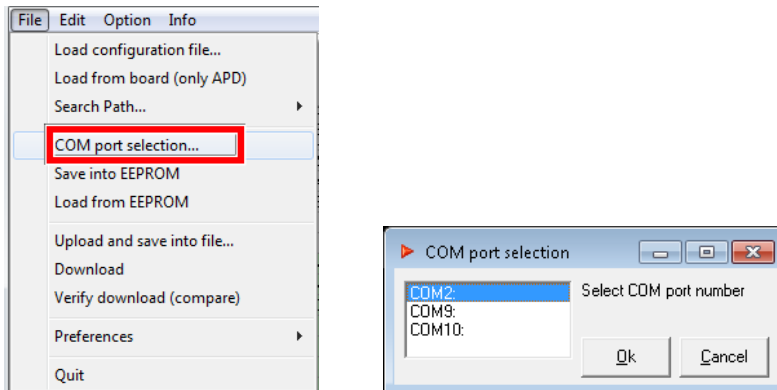
Select the COM port you are using and then click on the button to confirm the choice.
If your PC does not have serial ports, as usually happens in the notebooks of recent production, you have to use an USB/RS232 adapter.
When the adapter is installed and properly configured with the correct driver, a new serial port appears on system properties and can be used by SepSim program.
See on complete manual to verify the number assigned to the USB adapter.

The number of the COM port you are using will always be shown in the status bar:
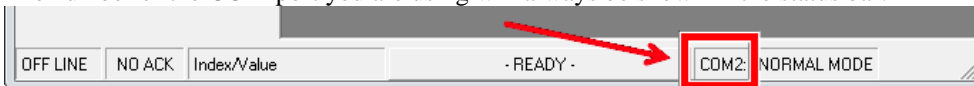
Once the serial port is correctly configured, the communication starts immediately.
ON LINE, with rotating bar aside, means that there is communication between the program and the device.
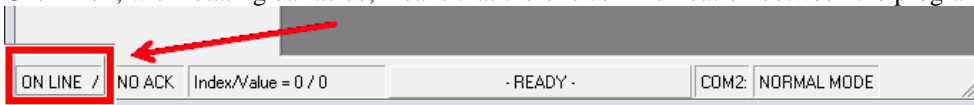
OFF LINE means there is no communication with the device (verify if cable is properly connected and device is supplied).

If SepSim program remains **OFF LINE** and everything else is correct (cable connected, device correctly supplied) the problem is probably with the serial port.

If you are using a USB-to-RS232 adapter, you should connect to the web site of the manufacturer and download and install the last version of drivers for the operative system you are using.

4 – Load CFG file

Now you must open a CFG file: click the "Load CFG" button in the button bar.
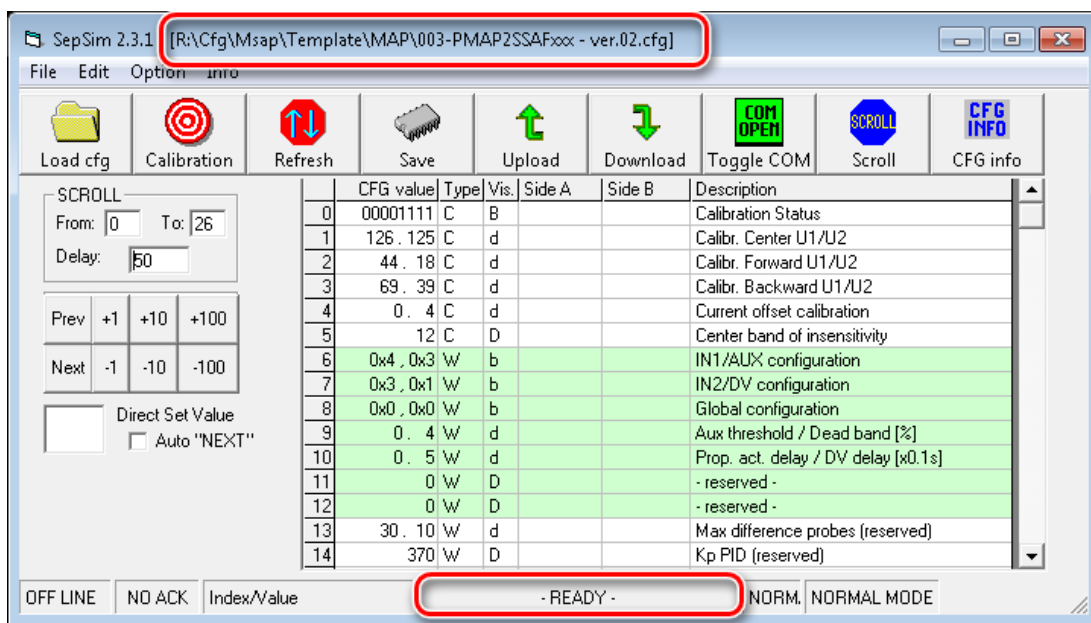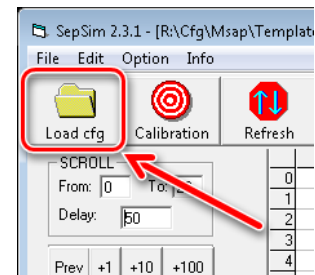SepSim will open a window where you can browse the disk and specify the CFG file you want to use.

After the CFG file has been selected, SepSim takes some seconds to read from the device all parameters and prepare the grid with their descriptions. Wait until the yellow cell stops moving and the status bar shows the message "-READY-" (image below).

In the title bar you can see SepSim version (SepSim Lite 2.3.1) and the path and the name of loaded configuration file.

Now you can start to work on parameters.

If you use SepSim mostly with the same type of device, it can be useful that SepSim remembers the last CFG file used for next working session. This will make programming fast and you do not need to browse your disk to search for the CFG file any time you run SepSim.

If you want that SepSim, when run next times, opens automatically the last CFG file used, check the "Remember CFG" option from the "File"/"Preferences" menu
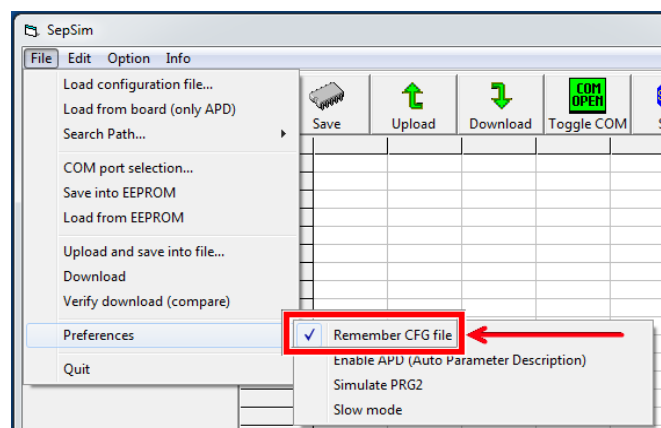
⚠️ The configuration file is written using a special syntax rules.
You should NEVER OPEN OR MODIFY the CFG file, unless you know exactly what you are doing.

The CFG file is specific for each device and for the version of firmware inside.

⚠️ **Using a CFG file created for another device, for another version of firmware, or with wrong values, can lead to unexpected and dangerous behaviors.**

SepSim has a simple way to verify if the CFG is suitable for the connected device. It shows a warning message when something is wrong. It is important, in any case, to be careful, and be sure to use the proper CFG file for your device.
In case of doubts ask to Faber-Com for the CFG file, giving the details to identify your device (code and serial number).

If you do not have the CFG file, maybe you can work using the APD feature described in next paragraph.

4.1 - APD (Automatic Parameter Description)

Some recent device contains internally the description of the parameters. We call this feature "APD". In this case SepSim can load the parameters types and descriptions directly from the device.

Note: with APD the parameter's description are only 16 characters long, while the configuration file (CFG) file do not have this limitation. Because of this, and many other small and useful features, is it highly recommended to use SepSim with the CFG file, whenever it is possible, as it provides a better description of the parameters and a nicer user interface. Furthermore the CFG file can easily translated in another language.

To load parameters description from the device, instead of using the usual Load command, use the "Load from board (only APD)" from menu "File":
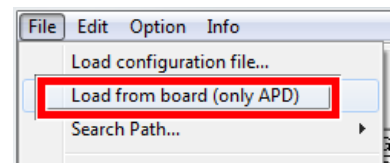
With card that don't have the APD feature a specific a configuration file is always needed.
If the device does not support the APD feature the following message will inform you:
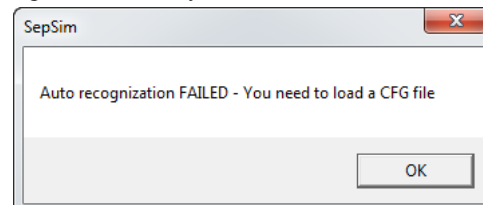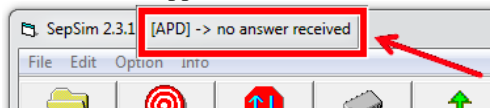
If the device supports the APD feature, after loaded parameter from board, title bar shown hardware and firmware version.

T:\Prodotti\Programmatori e adattatore seriale\SepSim\Documentazione\SepSim231\sm#guida rapida_SepSim_v231_e.docx

5 – Working with parameters

When SepSim is running on your PC, there is a continuous communication with the connected device.
The communication protocol allows access to only one parameter at a time.

The yellow cell shows the parameter selected. Only this cell can be modified.
To select a cell, click directly on the row of the grid of the parameter you want modify (or click on buttons Prev / Next on the left side of the window to increase or decrease cell's row).

C → Calibration parameter (Can only be modified at the factory. Never change these parameters.)

W → Writable parameter (These parameters can be modified by the user in order to set the correct working of the device.)

R → Read-only parameter (These parameters can only be read by the user. They provide information on the device and on how it is working. They can be very useful to solve problems when something do not work as you expect (diagnostic use).)

D → a single decimal number (0-65535)

d → a couple of decimal numbers (each 0-255)

B → a group of 8 independent bits, each with a different meaning

b → two groups of 8 independent bits, each with a different meaning

NOTE: The two parts (side A and side B) of parameters type "d" must be modified independently.

Parameter 18 selected (upper part = side A)

Parameter 18 selected (lower part = side B)

When a binary parameter type "B" or "b" is selected an additional window appears on the left side of the window with the description of each bit:

T:\Prodotti\Programmatori e adattatore seriale\SepSim\Documentazione\SepSim231\sm#guida rapida_SepSim_v231_e.docx

5.1 – How to change the parameters values

Only parameter with functional type "W" (writable) can be changed.
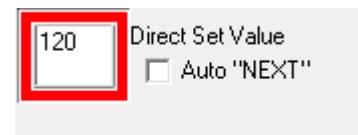
⚠️ **Usually every change of the parameters value has effect in real time on the device.**
Only some special configuration parameters, that are described in the manual of the device, may require a restart of the device to take effect.

To adjust cell's value, select a cell (it must became yellow) and you can:

1) Use buttons +1, -1, +10, -10, +100 and +100 to adjust value as you need.
   If a command causes the value to exceed the allowed range, the value is automatically limited.

Prev	+1	+10	+100
Next	-1	-10	-100
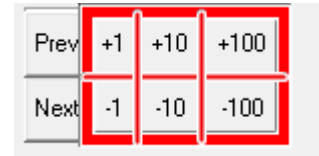
2) Use the "Direct insert value" box:
   o   Click inside the box.
   o   Type the value you want
   o   Press the **Enter** button
   No validity check is performed on the value entered. Be sure not to exceed the permitted values.

Direct Set Value: 120 □ Auto "NEXT"

If the "*Auto NEXT*" option is checked, the yellow cell moves automatically to the next parameter when you press Enter. This makes it easy to set many consecutive parameters to the same value, simply pressing Enter many times.

For binary parameters (type "B" and "b") each bit can be modified independently.
Click directly on the box with the value to toggle it from "0" to "1" and viceversa. The value in the main window will be updated accordingly

4	0 . 4	C	d		9	46	Current offset calibration
5	12	C	D			20	Center band of insensitivity
6	0x0 , 0x46	W	b		00000100	00000011	IN1/AUX configuration
7	0x3, 0x1	W	b		00000011	00000001	IN2/BW configuration
8	00100000	W	B			00000100	Global configuration
9	0 . 4	W	d		0	4	Aux threshold / Dead band [%]
10	20 . 20	W	d		0	254	Prop. act. delay / DV delay [x0.1s]
11	0	W	D			0	- reserved -
12	0	W	D			0	- reserved -
13	20 . 5	W	d		30	10	Max difference probes (reserved)
14	370	W	D			370	Kp PID (reserved)
15	50	W	D			50	Ki PID (reserved)
16	1	W	D			1	Kd PID (reserved)
17	0x0 , 0x40	W	b		00000000	00010000	PWM frequency
18	18 . 18	W	d		30	25	SET1 - min current [x10mA]
19	51 . 51	W	d		70	85	SET1 - max current [x10mA]

|		
0	1=Power on test disable	
0	FW/BW to out side A (TBD)	
1	curve SET1 0=lin. 1=parab.	
0	curve SET2 0=lin. 1=parab.	
0	Unilateral action (TBD)	
0	L2 selection	
0	Exchange FW with BW	
0	- reserved -	

⚠️ **All changes will be lost when the device is switched off. To save parameters in permanent memory you must send to the device a SAVE command (see next chapter).**
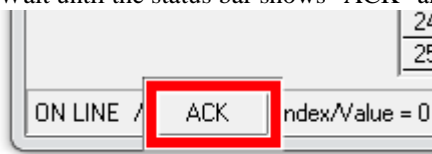
6 – Button bar

SAVE: it allows to save parameters in permanent memory. At the next power on, this new parameters are used.
After clicking the save button, the status bar shows the message "WAIT ACK":
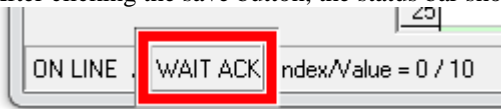
Wait until the status bar shows "ACK" and a BEEP occurs (could take a few seconds):

This means that the parameters have been correclty saved in memory.

If this do not happens, resubmit the SAVE command until it works as described above.

Thanks to this separate "SAVE command" you can play with parameters to test how they work.

Be careful to put the system in a safe condition to prevent damage and injuries caused by unexpected behavior.

At any time you can turn off the device and, if you have not saved, all parameters will return to the original values.

UPLOAD e DOWNLOAD

In the first column of SepSim's grid (CFG value) there are values read from configuration file.
Values are shown in a different format depending on the visualization type.
These values are not into the device. They are only visualized here for your convenience.
These value can be transferred to the device with the **Download** command.

If you want to save new configuration value in a new configuration file, click on **Upload** button. It will open a window where you can browse the disk and specify the name of news CFG file you want to save.

REFRESH

Refresh button reads all parameters and updates grid values.

TOGGLE COM

If the box is green the port is open: click to close the port. If the box is red the port is closed: click to open the port.

SCROLL

SCROLL mode is a special operative mode where more parameters can be continuously monitored.

FROM: it contains the first parameter to control.
TO: it contains the last parameter to control.
Then click on SCROLL button in the button bar to enable/disable scroll mode.
NOTE: Refresh speed will depend on PC speed.

DELAY. This parameter defines the delay (in milliseconds) between each data transmission, between the PC and the connected card. This delay value is ignored when operation of Scroll, Upload, Download, Refresh are active.

⚠️ **Do not use delay lower than 50 ms.**

CFG INFO

It will open a windows where you can see the configuration file heading (file name, suitable device and firmware version, main value).

IMPORTANT
When a file UPLOAD is executed, the header of the CFG file is copied identically inside the new generated CFG file. The user must edit the file (using a text editor) and modify the header to have a description that matches with the value that have been modified.

The descriptions shown inside the CFG INFO window are read from lines of the CFG file that begin with "##".

The default text editor "Notepad" can be run directly from the menu "**Edit/Edit Configuration file…**".