



Dynamite Programmer – User Manual
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User Manual

- English -



Summary

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1. What is the Dynamite.

The Dynamite is one of the most complete and reliable Smartcard programmers currently on the market. It allows you to program most Smartcards available without the need for alternative software. The programmer is 100% reprogrammable which means a firmware upgrade will not be required if new cards based around the Atmel or PIC processors are released. In fact, all PIC and Atmel based Smartcard are supported (e.g. FunCard, AtMega, GoldCard, PrussianCard, SilverCard, GreenCard, JupiterCard etc.). That's not all, Dynamite also allows you to use original ISO 7816-4 emulation in Phoenix / Smart Mouse mode and at various clock speeds. Thanks to this feature you can are still able to use third party software working via the RS-232 Serial Com port of you PC.

Last but not least, you can both re-programme and repair Titanium Cards through your USB port. Titanium Cards are based on the Atmel AT90SC3232C processor and the operating system (Titanium OS) provides them with their name 'Titanium Card'. These devices are very secure Smartcards and need to be programmed with the maximum precision in order to prevent damage. The Dynamite is the best solution for this job.

Why Dynamite?

Here come the most important features that distinguish the Dynamite programmer over other programmers on the market:

- **Full Speed USB connection.** No other unit can reach a programming speed of 12 Mbit
- **Reflashable firmware.** It is possible for the user to completely re-flash the firmware of the programmer, allowing for whole new features to be added if necessary.
- **No need for external Power Supply.** Power is supplied by the USB port.
- **Dedicated drivers.** The Dynamite programmer uses dedicated software and drivers which have not been made by third parties. Most other programmers on the market use third party drivers to work along with their own dedicated software. In most of the cases you cannot change those drivers, while with the Dynamite drivers can be dynamically changed and eventually adapted to specific software.
- **All Atmel-Based and PIC-Based Smartcards supported.**

Supported Smartcards:

PIC-based:

Wafercard (16C84, 16F84, 16F84A)
Goldcard (16F84/16F84A + 24C16)
Silvercard (16F876/16F877 + 24C64)
Greencard (16F876/16F877 + 24C128)
Greencard2 (16F876/16F877 + 24C256)
Bluecard (16F84A + 24C64)
CanaryCard (16F628 + 24C16)
EmeraldCard (16F628 + 24C64)
Singlepic (16F876, 16F627, 16F628).

AVR-based:



Funcard/Funcard2 (AT90S8515 + 24C64)
PrussianCard/Funcard3 (AT90S8515 + 24C128)
PrussianCard2/Funcard4 (AT90S8515 + 24C256)
PrussianCard3/Funcard5 (AT90S8515 + 24C512)
PrussianCard4/Funcard6 (AT90S8515 + 24C1024)
PrussianCard5/Funcard7 (AT90S8515 + 2*24C1024)
JupiterCard (AT90S2343 + 24C16)
JupiterCard2 (AT90S8535 + 24C64)
FunCard ATmega161 (ATmega161 + 24C64)
FunCard ATmega163 (ATmega163 + 24C256)
FunCard Atmega8515/Funkey2 (Atmega 8515 + 24C256)
BlackCard (ATmega128 + 24C256)

All next generation cards bases on the above Microcontrollers can be supported once available.

- Phoenix / Smartmouse emulation supported. One of the most interesting features of this programmer is the possibility of being used as a standard ISO 7816-4 programmer. This emulation can be done in Phoenix and Smartmouse mode with different clock speeds (i.e. 3,579/3,68/4,00/6,00 Mhz). Furthermore the internal clock generator can be set to different frequencies without any hardware replacement. No programmer on the market has a programmable clock generator.

- Titanium Card Programming. This feature allows the user to program the Titanium Card through the USB port connection. Furthermore you can repair damaged cards showing the 'NO ATR' error*.

* This procedure allows you to repair most Titanium Cards that are not showing an ATR. This function is not 100% guaranteed and we advise that this programmer is not purchased solely for the repair of faulty Titanium cards.

Further information can be found on our web site www.duolabs.com. Software updates and much more are available, plus the latest news by subscribing to our online forum.

For technical information please refer to: support@duolabs.com



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2. Dynamite - Kit.

First of all Duolabs would like to thank you for purchasing our product.

Here's what comes in the Kit.



Dynamite Programmer.

The Kit comes in the original yellow box

Together with the programmer you'll find the quick user guide and the software. (*)

(*) on the first kits the software CD may be not available. Please download software directly from our web site at www.duolabs.com



3. Driver Intall.

Download the latest software version from our website www.duolabs.com or use the software CD in the Kit.

(*) on the first kits the software CD may be not available. Please download software directly from our web site at www.duolabs.com

Run the setup.

It's very important to proceed with software download and installation before you connect the Dynamite to the USB port.

**The software has been tested on Windows 98/ME/2000/XP.
The software has been tested on the following computers:**

**Toshiba Satellite 2,4 Ghz Laptop with Windows XP
2 x HP Vectra desktop 800 Mhz with Win 2000
IBM Thinkpad 1000 Mhz Laptop with Windows XP
Toshiba 700Mhz desktop with Windows 98
Toshiba 433 Mhz laptop with Windows 98
Toshiba 700 Mhz laptop with Windows ME
IBM ThinkPad T41 1,5 Mhz Centrino with Windows XP Professional
IBM ThinkPad R50 1,7 Mhz Centrino with Windows XP Professional
Dell Latitude C840 Laptop with Windows XP Professional**

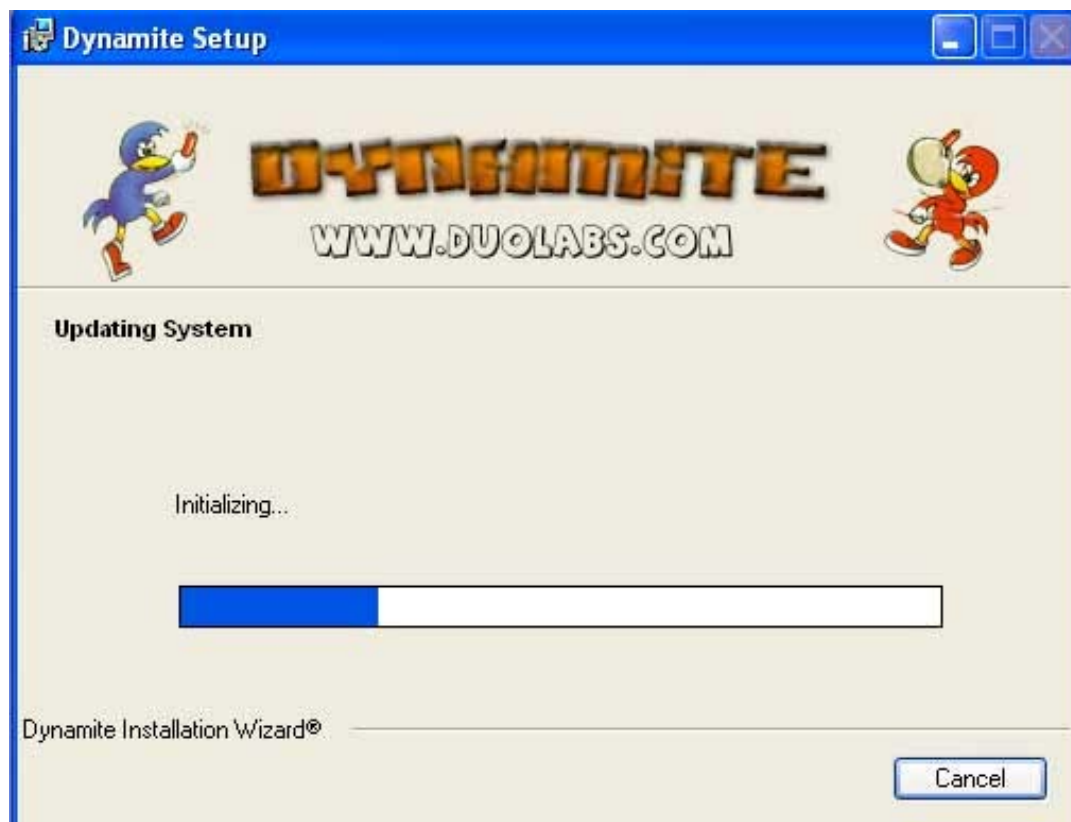
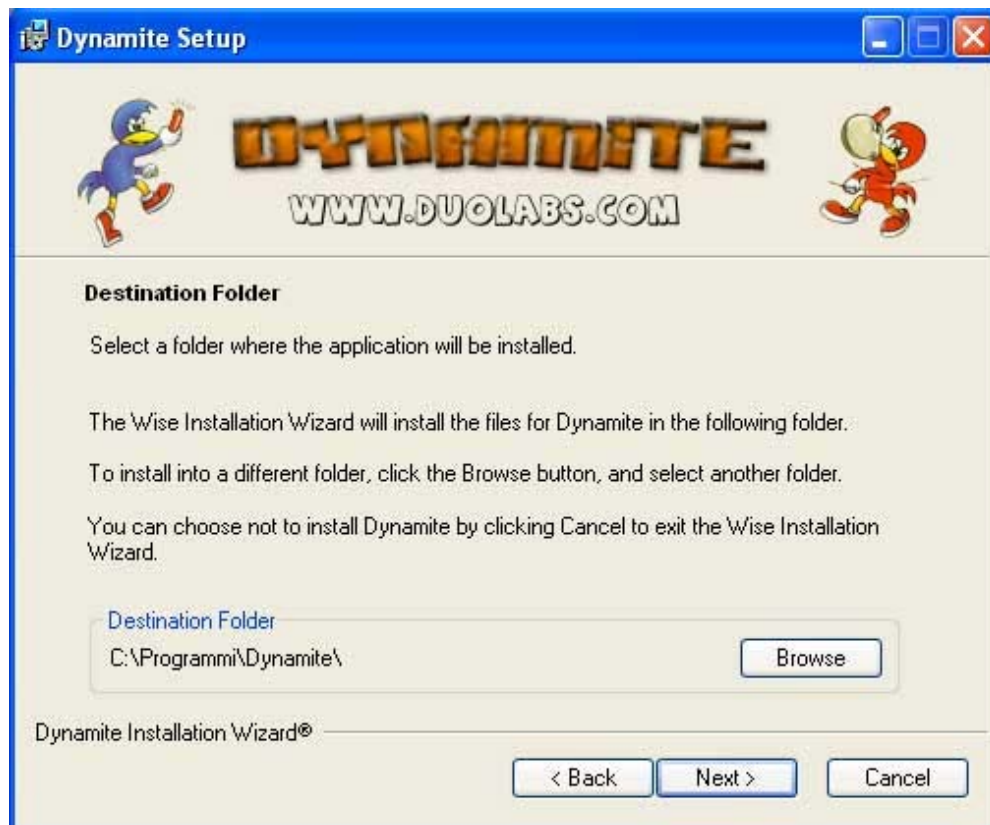
Here come some snapshots of the software.
(some software changes could be applied).





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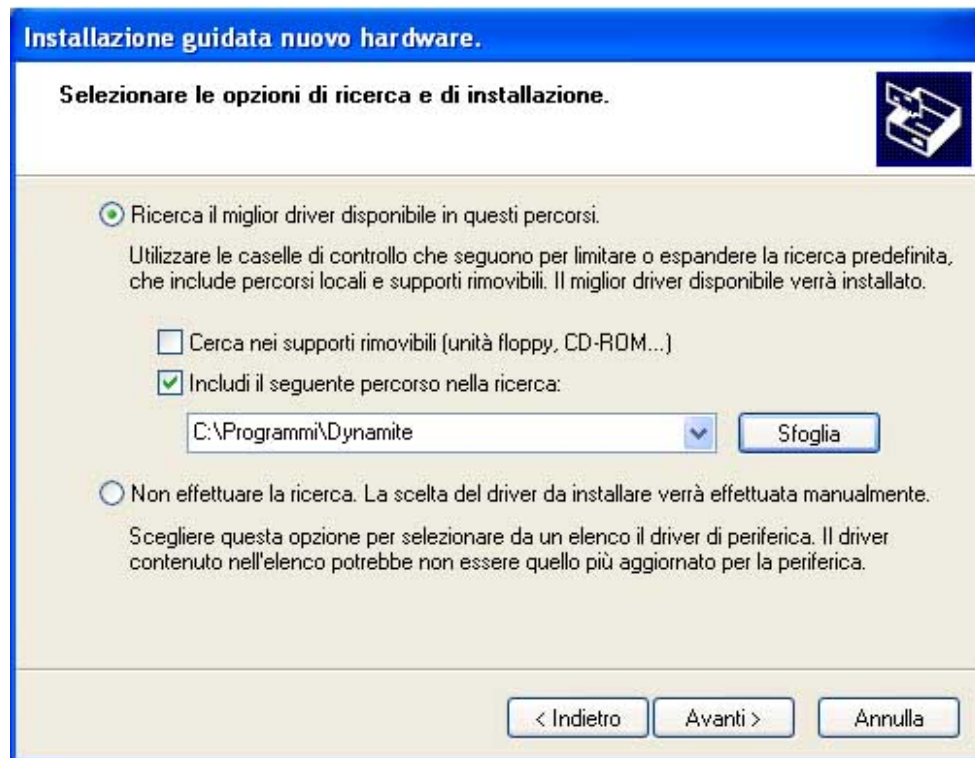




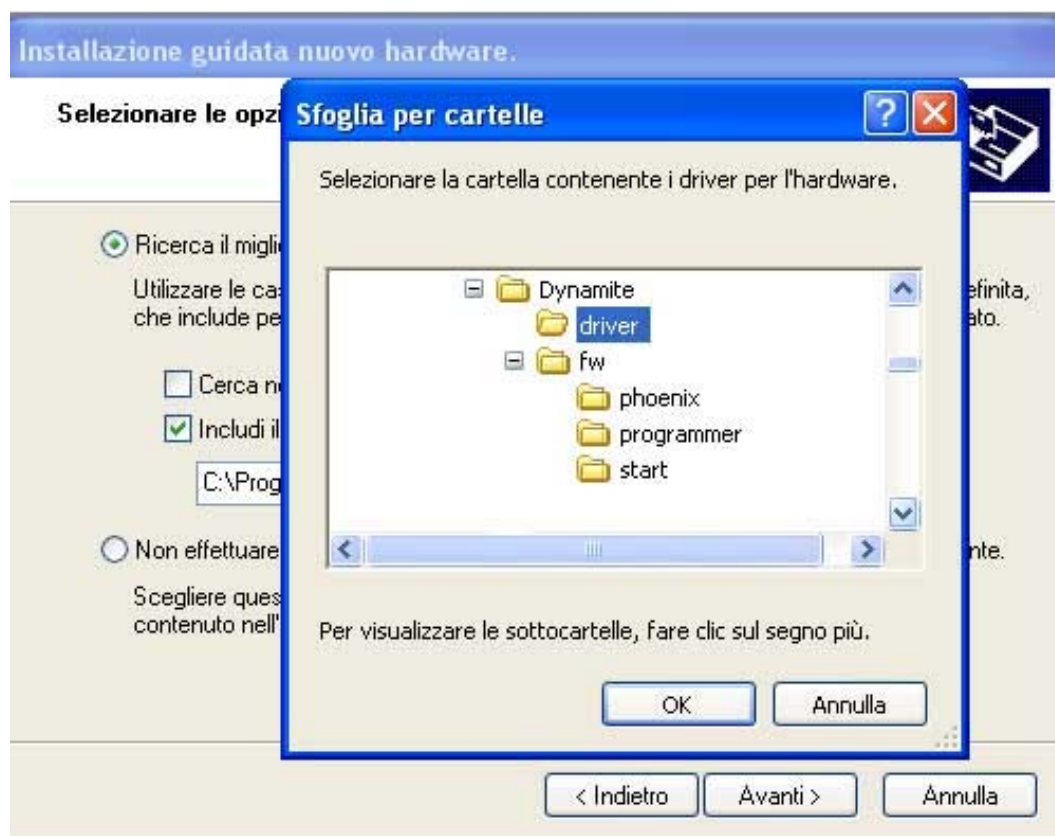
Firstly, please connect the Dynamite to the USB port and when asked for drivers please follow this procedure:

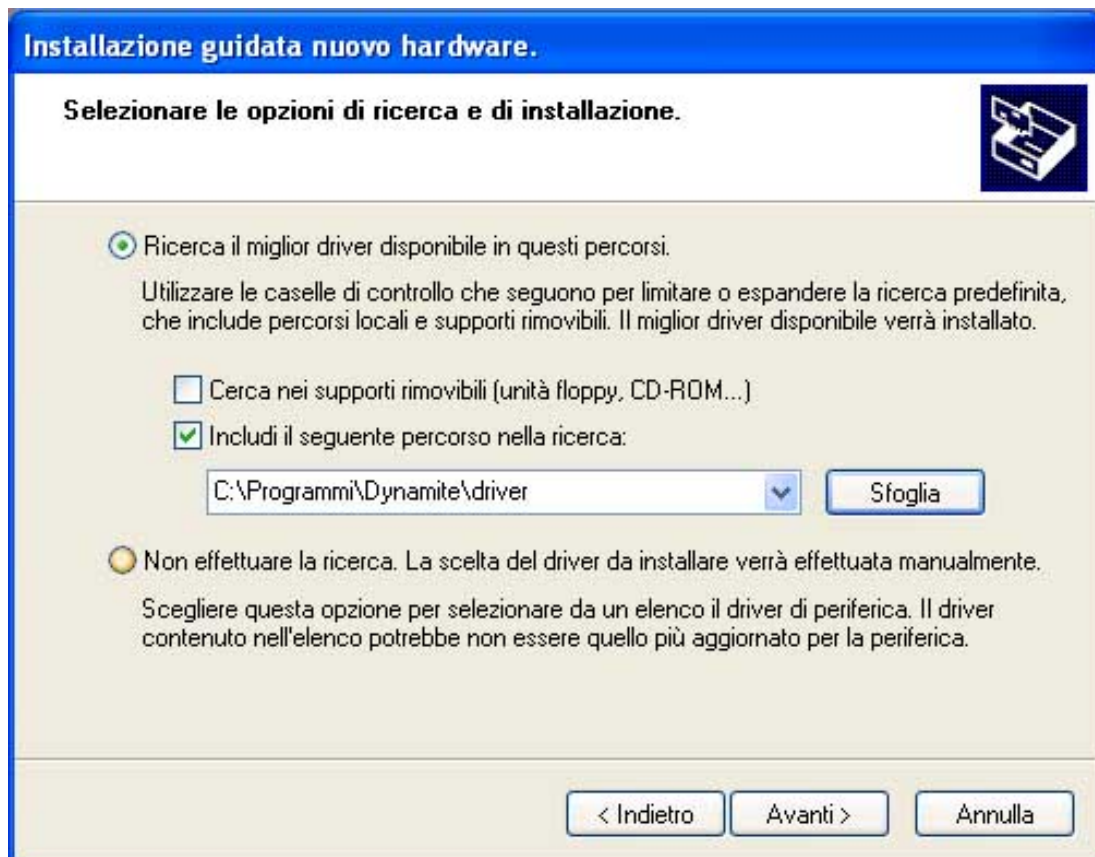


Select the 2nd Option.



By browsing the directories as shown below, please choose the folder where you would like the Dynamite software to be installed:

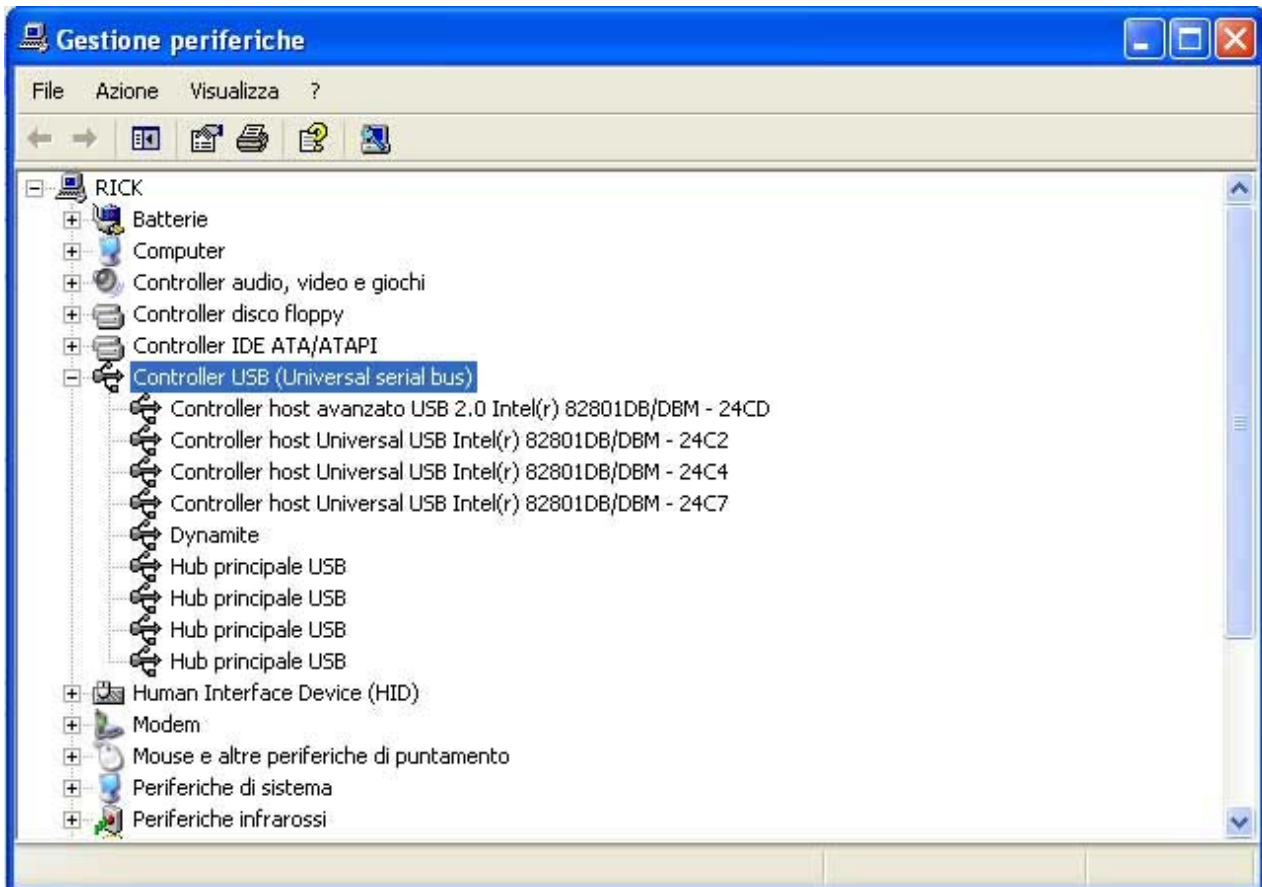




Now press “Next” to proceed with the driver installation:



Press “Continue Anyway” and “Next” until the end.



Check Windows Control Panel to see if the Dynamite is recognized or not.

**If the device comes with a Yellow exclamation mark, re-boot your PC and try again.
If the problem still exists, upgrade drivers.**

Reminder: Drivers will need to be installed on each USB port if you have more than one.



4. Software.

Now simply browse your windows program menu and launch the Dynamite software with the programmer connected on the USB port.

A window like the following will appear on your screen:
(some changes can be applied to the software without notice)





Once the programmer is connected the serial number will appear on the bottom left side of the maintenance software window and the words "Dynamite connected" will appear on the left upper side of the screen:



Here comes an explanation of the displayed buttons:

Help – Goes directly to our internet web site help page.

Forum – Connects to our online forum.

Register – Connects to our online forum for registration.

Status – Programmer's Status.

Exit – Quit the software.

Serial Number– There must be a valid serial number for the programmer to function. If no number is displayed at this point, then something is wrong.



At this time please choose one of the options on the right side on the Administration software.

Let's start explaining the various software features:

ISO MODE – Phoenix

With this mode you can use 3rd party software running on the RS-232 Serial Com port.

To use this Mode connect the programmer to the Serial port and launch the maintenance software, then click on Phoenix Icon.

A new window will pop-up saying: "Loading module. Please wait..."



Wait until the new window appears.



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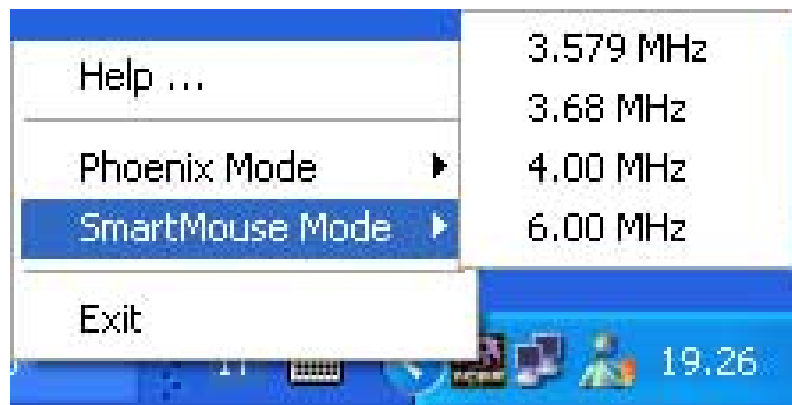


This window means that the programmer has successfully initialized. A new tray icon will appear in the windows tool bar in the right bottom corner. The icon will be blinking.

Like in this picture:



At this point press the left mouse button and choose the frequency and mode:



Now start your favourite RS-232 COM port application.

You are now ready to make it working and change the mode during the programmer usage.



Prog MODE.

This mode allows you to program every Atmel and PIC based smartcard. A list of supported Smartcards can be found in the introduction area of this user manual plus an updated list can be found directly on our web site www.duolabs.com

Just before starting this application make sure you have the RS-232 cable disconnected. In some cases we reported failure in programming a Smartcard whilst the cable was connected.

Now press the “Prog” icon button and let the form start as in the above mode.

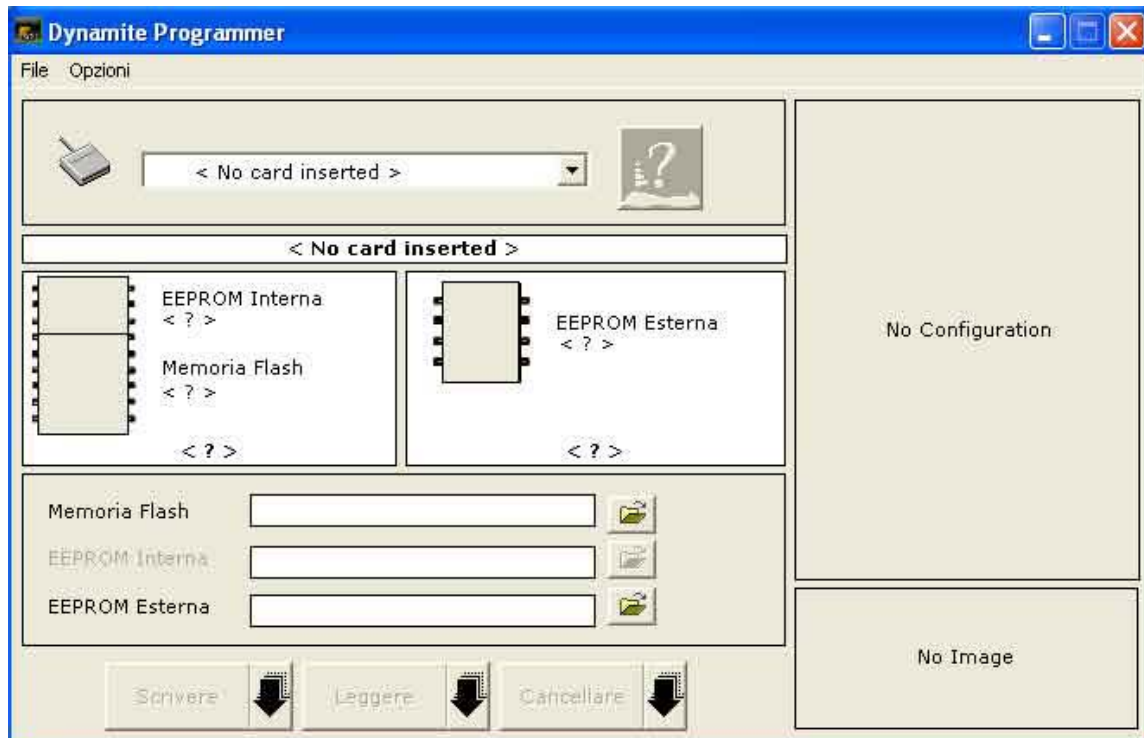


After loading the module you'll be directed to the following software:

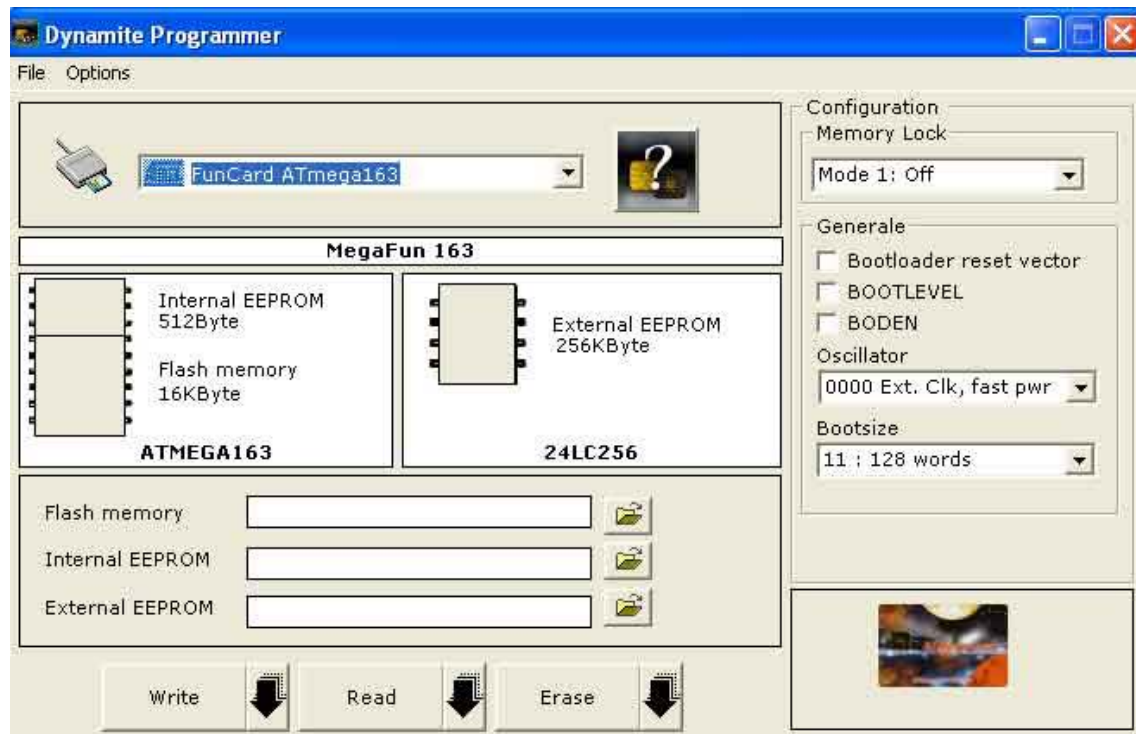


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Now to try some simple functions, slide a Smartcard into the Smartcard reader:



The Smartcard will be automatically recognized by the Dynamite programmer.



Many of the options on the menu are quite intuitive and easy to use. You can set most of the features and programmer settings directly from the Options, including language.

We don't provide much information on the card programming because it's all very simple to use.

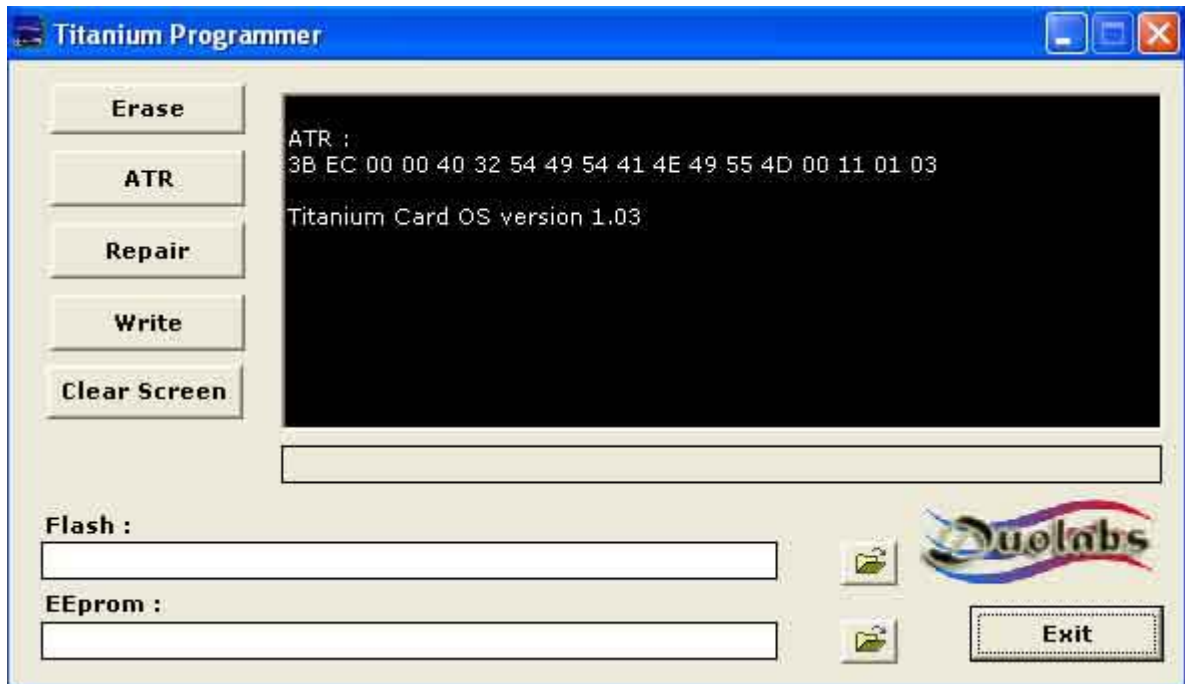
If you face any difficulties please connect to our online forum at www.duolabs.com to discuss the problem

Titanium Card programming Mode.

Programming a Titanium card through the USB port can be done easily by simply pressing the Titanium ICON button and then waiting a second for the module to be loaded, as in the following picture:



After which you will come to this software:



Once you insert a Titanium Card into the Smartcard reader the software will perform the ATR check and will come up with the OS version.
If a Titanium card is already programmed it will show a non-recognized ATR which means you might need to erase the card before programming it.

Here come some functions:

"Erase": Erases completely the full contents (Flash and EEprom) of the Titanium Card. This procedure normally takes around 3-5 seconds. If everything goes OK the ATR will be performed and you will be presented with the Titanium Card OS version and original ATR. If the ATR doesn't change the Smartcard is probably not a Titanium Card.

"ATR" : Performs the ATR and shows you the result.

"Repair": This function will try to repair the Titanium card. The function of Repairing Cards tries to 'kick start' the ATR. This function works on some damaged Smartcards, but not on all. Therefore this function is not guaranteed 100%.

"Write": This function will write the Flash and EEprom files into the card. This step takes almost 2 minutes to carry out. Please don't remove the card in the meanwhile.



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7. Genaral Information.

If you have any problem using your Dynamite programmer please refer to www.duolabs.com

All official releases of software are on our web site only.

No test files will be given out for any reason ever.

You can find more updates and information on our Web Forum.

To purchase the Dynamite programmer please refer to www.duolabs.com or any of our authorized dealers.

Any re-production of this User Manual is prohibited.

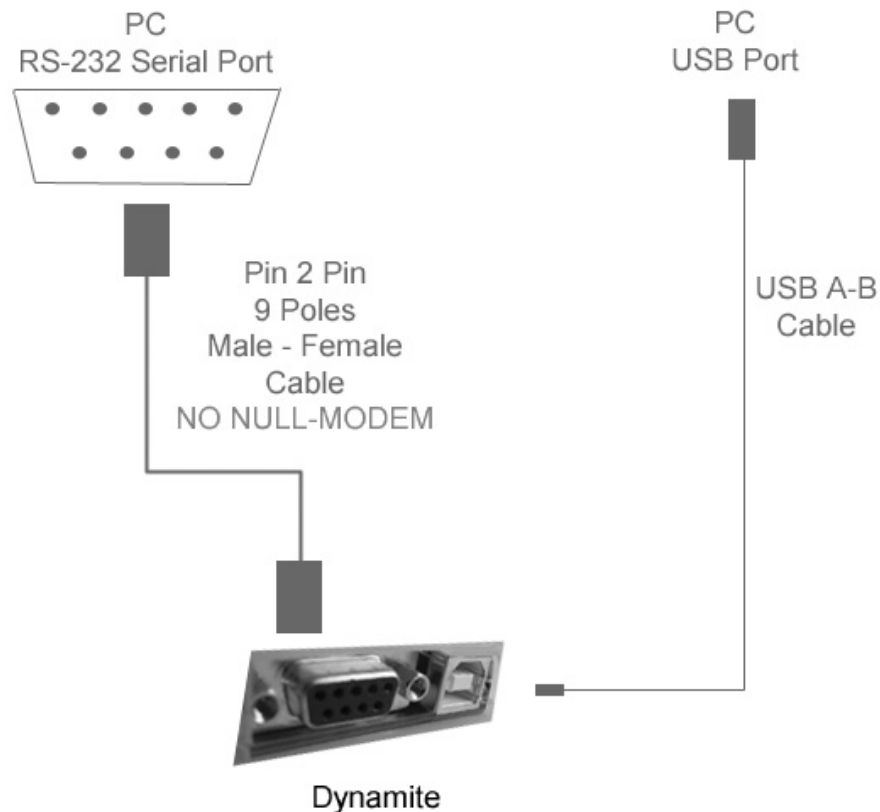
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**Sincerely,
Duolabs Srl
Riccardo Alessi**

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6. Appendix A – Connections.

Here comes the connection between the programmer and the PC:



ATTENTION: ISO-Phoenix MODE:

Serial Cable	Connected
USB Cable	Connected

PROG MODE:

Serial Cable	NOT CONNECTED - IMPORTANT
USB Cable	Connected

TITANIUM CARD MODE:

Serial Cable	NOT CONNECTED - IMPORTANT
USB Cable	Connected