

Palm I. Frac (PiFrac)

User Manual

Version 1.0.1

Prepared by [Michael Glickman](#)

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Content

<u>1 Getting Started</u>	1
<u>1.1 Introduction</u>	1
<u>1.2 History</u>	1
<u>1.3 Known bugs</u>	2
<u>1.4 Support</u>	2
<u>1.5 What is new with 1.0.1</u>	2
<u>2 Rules</u>	3
<u>2.1 Speed Levels and Level Count</u>	3
<u>2.2 Scoring</u>	3
<u>3 Operating the Application</u>	5
<u>3.1 Bottom Keys and Jog Wheel</u>	5
<u>3.2 Stylus</u>	6
<u>3.3 Appearance</u>	7
<u>3.4 Out of game</u>	7
<u>4 Registration</u>	12
<u>4.1 Where and how</u>	12
<u>4.2 Advantage of registration</u>	12

1 Getting Started

1.1 Introduction

Frac is a 3D packing (i.e. TETRIS-like) game where you just pack rectangular prisms having at least two reebs of same size. A complete board layer (i.e. no spaces) is discarded, adding points to the score with a chance to see obscured board pieces. You can pick up score faster by:

- ◆ Dropping a block before it rests;
- ◆ Completing several layers at once;
- ◆ Switching to next speed before the game rules force you to;
- ◆ Starting game with "dirty" board;

See [Speed levels](#) and [Scoring](#) for the detailed rule description.

The application can be operated either with [bottom keys](#) , or with [stylus](#) . It provides a variety of settings to get playing game more comfortable.

The application is available in **standard** and **flipped** versions. If you are left-handed, you might find flipped version to be more convenient in use. It can be downloaded from the application web site. We keep the [World-wide score table](#) for the top scores all over the world.

A special edition is available for **Handera™ 330**

1.2 History

FRAC was invented by *Max Tegmark* and *Per Bergland*, two young and talented Sweeds who also called themselves **Simsalabim Software** . The game was apparently named after Mandelbrot fractal, used as the background for the original release for Mac in 1990, and later MS DOS (EGA 640x350x16).

I was very frustrated when my new computer happened to be too fast for FRAC, and felt a need to do something about that ... which could also be a nice present for Linux community. The 'new generation' of FRAC (named **ifrac**, or **Intelligent FRAC**) was released in 2000 for Linux svgalib and X11. It supported a range of screen resolutions and colour modes (4 to 32 bpp).

Though it was not planned originally, after numerous emails (including ones from Max and Per), I released a Windows 95+ port of the game (2001), which happened to become a kind of Linux rep in Windows world.

Porting ifrac to Palm was an enjoyable and challenging task. The code was about 80% rewritten. To emphasize the long game history, I decided to make it fully backward compatible, up to PalmOS 1, which wasn't really easy. I had to give up sound, in hope I can return to this one day with a faster CPU, and a better sound support than is provided by Palm nowadays*.

Taking into account that Palm is typically used without keyboard or joystick, I made the conditions more relaxed, and changed the scoring system to encourage skipping levels, or starting with a non-empty board. I believe that those 'innovations' made the game even more addictive than it was.

This edition is released with the permission from the original authors.

* The final (Draft 12) release of PalmOS eventually brought up the long awaited specifications for wave sound, however the PalmOS 5 simulation is available on (brr) Windows only. Hopefully the Linux release of PalmOS emulator with 5.0+ support wouldn't take long to wait...

1.3 Known bugs

1.

When the "tower" is tall enough, top elements might appear distorted. Unfortunately, by far we can't find a neat way around it.

2.

With PalmOS pre 3.0, pauses via Launcher or POWER key might not be processed correctly. This is related to the known old PalmOS design drawback.

3.

With PalmOS 3.3, 4bpp support is provided for the background image, but not for the blocks. Please, tell us if you believe it to be crucial !

1.4 Support

The application web page is:

<http://palmcrust.tripod.com/PiFrac>

where you can download the latest standard, or flipped version of the application, read the manual online.

Send your feedback (comments, bug reports) to [Michael Glickman <palmcrust@yahoo.com>](mailto:Michael.Glickman@palmcrust@yahoo.com)
Please, check [Known bugs](#) before reporting a bug.

1.5 What is new with 1.0.1

Fixed minor bugs
Added HanderaTM support.

2 Rules

2.1 Speed Levels and Level Count.

While a block is "in the air", it drifts down according to current speed level.

Speed level is a number from 1 to 9 shown in the top corner of the screen opposite to score board. The time-out between two consecutive drifts varies from 2.5 sec on level 1 to 0.2 sec on level 9. The speed level increments after a designated number of levels is completed, which for score below 10000 is:

Level	1	2	3	4	5	6	7	8	9
Layers	2	3	4	5	6	5	4	3	2

while number of layers is incremented by 1 with each 10000 of the score. A registered copy rolls over speed level from 9 back to starting level, while an unregistered copy never leaves level 9, once it is reached. You can increase level before completing required number of layers, by entering LEVEL command. Though this does not affect your score immediately, you will pick up score faster, because the remaining layers are completed at a higher speed level thus contributing more to the score. As opposed to speed level, level count is a plain number that always goes up, e.g. level count 10 refers to speed level 1. after a rollover, count 19 refers to speed level 1 after two rollovers. Level count is shown in **Top Scores** .

2.2 Scoring.

2.2.0.1 Maximum Score.

The maximum score is **999999** . Game terminates if your score is over it. Hopefully this will never happen :=)

2.2.0.2 Score for a landed block.

Every landed (dropped or rested) block adds to score a value shown as Bonus on the score board. The bonus starts from 20, and decrements with any down drift, while being unaffected by a move down as a result of LOWER command.

2.2.0.3 Score for completed layers.

At speed level 1:

Layers:	1	2	3	4
Points:	100	300	600	1000

For higher speed levels the above numbers are multiplied by a factor:

Level	2	3	4	5	6	7	8	9
Factor	1.125	1.25	1.375	1.5	1.625	1.75	1.875	2

100 points are added to score with each rollover.

2.2.0.4 Bonus for a non-empty board

If a game starts with a non-empty board, you get an initial bonus depending on the number of "dirty" layers:

Layers	1	2	3	4	5	6	7	8
Bonus	500	1000	1750	3500	4500	6000	8000	10000

2.2.0.5 Penalty for [pauses](#) .

Starting from **4th** pause, the penalty is computed as $(\text{PauseCount} - 3) \times 1000$

3 Operating the Application

3.1 Bottom Keys and Jog Wheel

This documentation uses the following notation for six bottom ('hard') keys:



Down Keys **H1–H4** are also known as *Date Book*, *Address Book*, *To Do*, and *Memo* resp.

Within the game, the keys operate as the following (standard version):

<u>Key</u>	<u>Operation</u>	<u>Key</u>	<u>Operation</u>
H1	LOWER	H4	TURN
H2	LEFT	H3	RIGHT
Up	BACK	Down	FRONT

Keys **H1**, **H3**, **Up** and **Down** move falling block horizontally. You can use **key combinations** by pressing two keys simultaneously, for moving a block in a horizontal diagonal direction, e.g. **H2+ Down** – move FRONT–LEFT.

H4 key rotates falling block, while **H1** key moves the block down. By lowering a block before the timeout, you can avoid losing bonus points (see [Score for a landed block](#)).

More often you will wish to **drop** current block and get a new one. To do this, just press **H1** key for a bit longer. This requires *Drop on Down auto-repeat feature* to be enabled in [Settings](#)). Alternatively, you can use **H1+H4** key combination which works in all cases. Here is the full list of **H1**–combinations. To use them, press **H1** first, and *while keeping H1 down*, press the second key (in the opposite way, the combination may be misinterpreted):

<u>Key Combination</u>	<u>Operation</u>
H1 + H4	DROP
H1 + Up	PAUSE
H1+ Down	NEXT LEVEL

3.1.1 Hints

1.

To prevent a block from being dropped accidentally, next block doesn't appear, before you release all keys. *Don't forget to take your fingers off the keys after DROP* . You also have to release all keys before you can enter PAUSE screen.

2.

On the [flipped version](#) keys **H1** and **H4** are swapped. In particular, **H1** –combinations become H4–combinations.

3.1.2 SPECIAL CASES.

3.1.2.1 Demo mode.

Only two operations are available in demo mode (swapped on the [flipped version](#)):

<u>Key</u>	<u>Demo Operation</u>	<u>Key</u>	<u>Demo Operation</u>
H1	NEXT LEVEL	H4	TERMINATE

3.1.2.2 Board scan

You can stop scanning the board after completing layer(–s) by pressing either **H1**, or **H4**. This doesn't give you bonus points.

3.1.2.3 Pause and between games

Refer to [Out of game](#) section.

3.1.3 HANDERA 330 JOG WHEEL

Available with specail HandEra™ 330 release. JogWheel is used out of games. Rotation in most cases is equivalent to pressing **Up** and **Down** keys, pressing Jog Wheel accepts changes, pressing Auxiliary Button discards changes.

3.2 Stylus

Game can be controlled with a stylus (pen) using a control pad, located on the bottom–right (bottom–left on the [flipped version](#)) corner of the screen. You can move current block horizontally in one of eight directions, or turn it in either direction. Additional operations:

 LOWER	 PAUSE
 DROP	 NEXT LEVEL

You can also use the following **Graffiti Strokes** (case insensitive):

- P** PAUSE
- Q** or **T** TERMINATE GAME

3.2.1 SPECIAL CASES.

3.2.1.1 Demo mode

Only two operations are available:

▣ TERMINATE ▣ NEXT LEVEL

3.2.1.2 Board scan

Tap anywhere to stop scanning board after completing layer(-s). This does not give you bonus points.

3.2.1.3 Pause and between games.

Refer to [Out of game](#) section.

3.3 Appearance

While you are playing, or watch demo, you see **play board, score board, next block** , and **control pad**.

On the standard version the *play board* is located on the left, other controls are on the right, while on the [flipped version](#) is vice versa.

The *score board* shows:

Full:	number of completed layers since start of the game
Score:	current score
Bonus:	number of points scored if current block is dropped right now (see Score for a landed block)

A *number in upper left* (upper right on flipped version) corner shows [speed level](#) .

A *notice below the board* shows:

DEMO	in demo mode
P:n	where n is the number of pauses you can have without loosing points (See Pause)
blank	no more "free" pauses

3.4 Out of game

The following forms are available apart from the game:

[Game startup \(Top Scores\)](#)

[Top scorer](#)

[World-wide score](#)

[Pause](#)

[Tally](#)

[Settings](#)

[Help](#)

3.4.1 Game startup (Top Scores)

This screen contains top 10 scores for the current unit. Each score line shows:

- ◆ place,
- ◆ short name (initials),
- ◆ score,
- ◆ starting level–layers,
- ◆ date.

The form presents a six–item menu:

About , Help, Settings	As the names suggest
Demo	See, how Palm can do it !
Exit	Exit to Application Launcher
Continue	Resume last game
New	Start a new game

Instead of tapping buttons, you can use bottom "hard" keys, located in a similar position:

H1 (the leftmost)	bottom left action: Demo for standard version, New for flipped version
H2 or H3	Exit or Continue
H4 (the rightmost)	bottom right action: New for standard version, Demo for flipped version

To select a *top action* (**About**, **Settings** , **Help**) you simply hold **Up** key while pressing the corresponding key:

Up+H2 – top right action (**About** on standard, **New** on flipped),
etc.

3.4.1.1 Top Scorer

If you reached a top score, you can either discard the result, or save it in the local data base, to be seen later in *Top Scorers* form. Before saving the score, you may change scorer name. Use **Up** and **Down** keys, or Graffiti strokes to change the letter in highlighted position.

To move the highlighting, either tap the required position, or use **H2** and **H3** keys. Keys **H1** and **H4** implement Discard and Accept functions.

3.4.1.2 World-Wide Score

If your score is at least 6000 (this value may change in future) and not less than 1.5 the original score (in case of a non-empty board at start), you are given a code for submitting your result to the World-Wide Score Table. In order to succeed, the result should be among 30 world top scores. You don't need to be a registered user for score submission. Wireless submission is not supported as yet, however the details can be stored as a memo, so that you can view them later in MemoPad – a standard PalmOS component.

If you select **Discard**, the memo is not stored, however if you remember the code, you can still submit the result: go to the application web page (see [Support](#)), and follow the instructions in **World-Wide Score Table** section. *Be aware that score submission code is case-sensitive* (i.e 'A' and 'a' are different). A recorded memo also includes the full submission URL for your score. Just open the URL in an Internet browser (where you might wish to enter some optional details), and press **Submit Score** button.

3.4.1.3 Pause

You get to Pause screen by selecting **Pause** command in the game (see [Bottom Keys](#) and [Stylus](#)). A pause is also assumed, when you go to the Application Launcher, or turn power off (more precisely, set Palm to sleep).

You don't get penalty for first three pauses, 1000 points score penalty is given for the 4th pause, then penalty grows by 1000 points with every new pause.

The pause screen shows:

- ◆ pause count
- ◆ current score
- ◆ position in the top score table corresponding to current score
- ◆ penalty value
- ◆ 'pure' game duration.

You can use <-- and --> to show [Tally](#), or [Top Score Table](#). Alternatively you can use bottom keys:

Up + H1 same as <--
Up + H4 same as -->

Other menu items are:

<u>Button</u>	<u>Bottom Key</u>	<u>Description</u>
Terminate	H1	quit the game (the score is processed as usually)
Exit	H3	exit the application

Continue **H4** return to game

For the [flipped version](#) , keys **H1** and **H4** are swapped..

3.4.1.4 Tally

This screen appears after a game, unless disabled in [Settings](#) . It shows counts for each block type, and other stats: duration, total block count, score, number of full layers. You can also also watch tally from [Pause](#) . A tally brought up after game is seen for 20 sec (4 sec in Demo mode). If impatient, just press any key, or tap anywhere on screen to get it disappear.

3.4.1.5 Settings

The following custom features can be set up:

<u>Feature</u>	<u>Default</u>	<u>Description</u>
Starting speed level	1	Enable starting game from a higher level. Also applies to demo. If starting level is higher than 1, the lower levels will also be skipped during a rollover. See Speed Levels and Level Count . and Scoring
Starting dirty layers	0	Enable starting game from a non-empty board. Also applies to demo. See Scoring
Tally After Game	ON	Whether on not to show Tally after a a game
Auto-resume at start	ON	If ON, the application will automatically resume an interrupted game (if any) at start. If OFF, you can resume the game by selecting Continue option from the Game startup menu.
Enable combined keys	ON	If you don't use key combinations (see Bottom Keys), you might wish to disable them and make using bottom keys safer.
Drop on Down auto-repeat	ON	If ON, keeping LOWER key pressed long enough produces DROP . Since DROP is a frequent operation, you can find it convenient, however to move a block several steps down, you have to press and release LOWER several times. If OFF, auto-repeated LOWER can be used for moving a block several steps down, while a combined key must be used for DROP (see Bottom Keys for details).
Key autorepeat rate	NORM	How long a bottom key has to be kept pressed, before its action is repeated. Three rates are accepted: SLOW (the longest timeout), NORM and FAST .

Operating settings. You can change settings by tapping a button surrounding the value, which is not marked as inactive. If you prefer using keys, use **Up** and **Down** to highlight a line, then **H2** and **H3** to modify corresponding value. Select **Accept** (**H4** on standard version) to accept the new settings, or **Discard** (**H1** on standard version) to cancel all

changes.

3.4.1.6 Help

Help operations are:

Button Name	Bottom Key	Description
<--	H1	Show the parent page (i.e. the page from where from where you came to the current page)
Close	H2	Close help
-	Up	Scroll page up
+	Down	Scroll page down
Top	H3	Show top help page (Main Help Index). The button is inactive, if top page is either current, or the parent of current page.
-->	H4	Show the recently visited link from the current page

Link . A **green** (**highlighted** on a monochrome screen) area represents a link. Tap it to open the corresponding page. Sorry, this can be done by keys.**Deleting Help** Help text is separated from the main data, and can be deleted. This will save save about 24K storage on your Palm. To delete Help text, select **Remove Help Data** from the Main Help Index. You can reinstall help by reloading **PiFrac_Help** file on your Palm.

4 Registration.

4.1 Where and how

You can purchase the product for **\$12.95 US**, or equivalent from:

<http://www.palmgear.com> (USD)

<http://www.pdassi.de> (Euro)

FYI: This is the introductory price and may change in future.

While registering the product, you will have to quote the *user name*. The application normally uses HotSync user name, in case the name cannot be obtained from HotSync, a random user name is generated. You can find current user name from the **Registration** form.

To bring up the Registration form, start **PiFrac** , go to **About** page and tap **Registration** button. After the registration, you get a *registration code* , which needs to be entered.

The registration code is valid for all future releases of the application and any Palm unit, having same user name.

The registration code is case-INsensitive. A letter for the current (highlighted) position is specified by tapping a letter button, or using bottom keys **Up** and **Down** . To change current position, just tap the new one, or use **H2** and **H3** bottom keys.

When the code is ready to be processed, select **Register (H4)** on standard version). You will have to restart the application to active the new code.

Select **Cancel (H1)** on standard version) to postpone the registration.

4.2 Advantage of registration.

As you can see, PiFrac is void of nag screens or other deliberately annoying features.

There is only one advantage, you get after the registration: with an unregistered copy you find yourself trapped at level 9: once you reached this level, you can't leave it! As opposed to that, with a registered copy you only need to complete few layers on level 9 to rollover back to starting level and relax ! As a matter of fact, the rollover feature was introduced with PiFrac, while some players feel quite comfortable with previous FRAC releases, where there is not way relax at all!

If you are comfortable with a unregistered copy, you may also consider registration, to support our effort in creating first class software for PDA and mobile phones, and encourage further PiFrac development.