



VoiceLauncher

What is VoiceLauncher?



VoiceLauncher is the very first voice recognition application publicly announced and made available for palmOne **Treo600**, palmOne **Treo650** and palmOne **Tungsten|T3**. VoiceLauncher has been fully designed to take advantage of palmOne Treo600 and palmOne Treo650 specific features: 5-way navigator, phone application, signal and battery indicators just to give few examples.

VoiceLauncher is working on palmOne **Treo600**, palmOne **Treo650** and palmOne **Tungsten|T3**. Devices with PalmOS 5.2 or higher might work but have not been tested.

VoiceLauncher can launch applications, panels and phone calls with all above devices. It can dial through any helper compatible application, and is fully integrated with TAKEphONE phone application, allowing features likes pauses in phone numbering.

VoiceLauncher measures the surroundings noise level, a well-known feature of BrightCam, to adjust the microphone sensitivity.

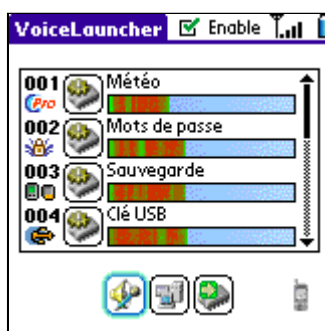
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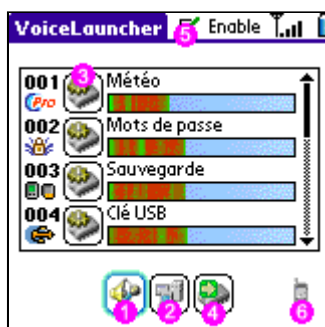
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<http://treoware.com>

Step 1: creating a new command



Before you can launch a command with your voice, you have to create a voice pattern for each command. Voice patterns will be used every recognition, it is very important to create a good set of voice patterns to have the best results. Most of all, you need to be in a very quiet room while recording your patterns to have the cleanest information in your database.



Select [1] to go to "Record a pattern" page and create a new voice pattern, this is the first thing you have to do to create new voice commands.

Select [2] to go to "Search a pattern" page and launch a voice command. VoiceLauncher can also start directly with the "Search a pattern" page, this is explained later in this tutorial.

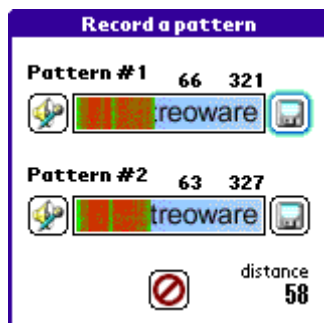
Select [3] to go to the "Edit a command" page for this previously

recorded command.

Green icon [4] lets you move your database from your SD card to the main memory. Red icon lets you move your database from the main memory to your SD card, icon reflects the current configuration.

Uncheck this option [5] to disable VoiceLauncher.

VoiceLauncher is detecting automatically if a headset is plugged into your Treo. This  or  icon [6] tells you in real time the configuration VoiceLauncher has detected.



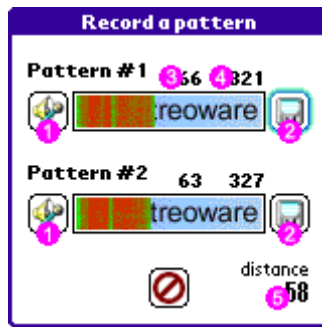
Recording a voice pattern requires five main steps:

- **Starting tone:** If system sounds are enabled and ☒ Play chimes is selected, VoiceLauncher will play a tone before recording a pattern.
- **Noise measure:** After the starting tone, VoiceLauncher will measure the noise level to adjust its recording parameters. You have to wait about 1 second to have a good measure or you might not be able to record properly your pattern. If you notice that you were not able to speak your full pattern you should not speak earlier but do the opposite and wait a little more to give more time for the noise measure. This measure is more important in noisy situations.
- **Detecting your voice:** After the noise measure has been achieved, VoiceLauncher is waiting for your voice and will detect the beginning of your voice pattern. Take your time, timeout is long enough and it won't affect your pattern length!
- **Detecting the end:** VoiceLauncher will detect a silent space to detect when the voice pattern is finished. You can have several words in your pattern but avoid using too long spaces in your pattern: it may confuse VoiceLauncher.
- **Ending tone:** An ending tone will notify if recording has been successful.

You can record two patterns at the same time, but you will have to choose only one voice pattern at a time. Creating a good pattern is important: you should at least record a second pattern to check if the distance between the two patterns is correct (value 58 in the screenshot). To improve your set, you should try to have all patterns a volume from 315 to 320. To achieve it, don't hesitate to try several times and keep the best pattern for your set.

If needed VoiceLauncher will try to normalize your pattern to improve your database and your recognition, but keep in mind that creating a good pattern without requiring this normalization will give a better recognition.

You can have two patterns at a time, press [1] to record a new pattern or replace a previously recorded one.



Choose the best pattern and press [2] to keep it and go to the next "Edit a command" page.

Length [3] of a pattern depends on the sampling rate, it is equal to 20ms at 8kHz and 15ms at 11kHz. You will be able to change this rate in the "Preferences" menu.

Pattern level [4] is an important point to be able to compare two patterns. If your pattern volume is too low or too high VoiceLauncher will adjust it automatically, but you will have best results if you record yourself patterns with a volume between 315 and 320.

When two patterns are available, [5] gives you the distance between your patterns. A good pattern is not a pattern that sounds good, but a pattern that will give most of the time the lowest distance if you repeat your command. When you have created a pattern with a good volume, you should use the second pattern to test if this pattern gives you good recognition.



You have to select which application to assign to your voice pattern. It can be a panel, an application, or a phone number. To assign a phone number, you can either select **Phone**, **VLauncher**, **VoiceCall** or **TakePhone** if you have it installed. **VLauncher** **VoiceCall** will request for phone helpers, **Phone** and **TakePhone** will use the chosen application to dial your number. To use pauses, you have to assign **TakePhone** as your application.

To dial a number with a palmOne Tungsten|T3, you should use **VLauncher** **VoiceCall** that will use standard helpers to send the command to your system.



In the three above cases, a new field appears to enter a phone number. You can use the **lookup** button to search your address book. The **Treo** and **Headset** options don't have to be used for the moment but will allow creation of patterns specific to the embedded microphone or to your headset microphone. Now, you can name and save your command in your database.

Step 2: editing an existing command

Editing a command is easy, select your command and modify it. You can record a new voice pattern, change the command name or application. Saving will replace the previous command in your database with the new one, you can also delete the command or cancel your changes.

Commands can be stored in the main memory or on a SD card. Please refer to memory card section of this document.



The most important point is the command [1] you want to assign to your voice pattern: this is the command that will be executed after your voice command has been recorded, compared and found by VoiceLauncher. Your command can be any application, a preferences panel, a phone number to call or an URL address to open with a browser. Some fields may appear or disappear depending on the command you have selected.

You can name [2] your command, this text will appear to show the command VoiceLauncher has recognized and is about to launch.

You may want to create different voice commands for a headset or normal use. You can enable and disable a command [3] for each mode. If you never use a command when you are in headset mode, it is a good idea to disable it for this mode: VoiceLauncher won't compare your voice command to this pattern, it will improve both recognition and speed.

When you select a phone application, the default one, TAKEphONE or VLauncher VoiceCall, four buttons [4] will let you search a phone number in your address book. First button reports the first available number for a contact, other buttons are reporting work, home or mobile numbers.

The number to dial or the URL address to open has to be configured in the [5] field. You may be confused by the three lines, this is just the same field but you may need to have more digits to enter and one line could be too limited, same if you are entering an long URL address for your browser.

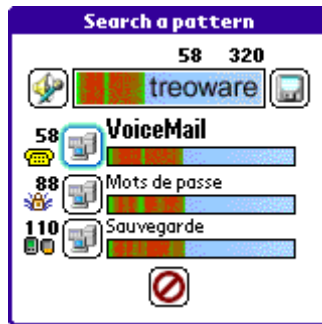
When selecting a phone call, and only in normal mode and not in headset mode, you can configure the [6] option to have your call automatically in handfree mode.

You are currently editing a command, but you can go back to the "Record a patter" page [7] to re-record your voice pattern.

If you need to listen to the current voice pattern, press the [8] button.

Finally, you can cancel your changes or save it with the [9] button.

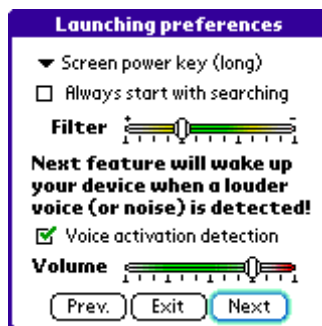
Step 3: launching a command



Default method to search for a command is a long press of the 5-way navigator center button, but you can set it to any another key. Depending on your applications, you might not be able to use the 5-way center button: in this case please select another choice that won't conflict with your existing configuration.

Depending on your configuration, you will have to press the 5-way center button to confirm the recognized command is correct, you can talk to confirm this command, wait for it to be launched automatically, ... **If VoiceLauncher finds the right command but doesn't launch it automatically, this is probably because you don't have configured VoiceLauncher to do so! Please select your preferred launching method in the "Preferences" menu as described in the next section of this document.**


Advanced launching options



You can configure how to launch voice commands in different ways, the following might differ on different devices. If you have a palmOne Treo600 for example you can select:

- **5-way navigator center button:** press a long time the center button will launch recognition
- **Phone key (hard 1):** press a very short time the key to launch recognition, press a normal time to have default application
- **Calendar key (hard 2):** press a very short time the key to launch recognition, press a normal time to have default application
- **Messaging key (hard 3):** press a very short time the key to launch recognition, press a normal time to have default application
- **Screen power key (hard 4):** this is the default key, press a long time to launch recognition
- **Any other key:** you can assign VoiceLauncher to any other key with a third party application, in this case you might confirm VoiceLauncher to start with the recognition page with the next option

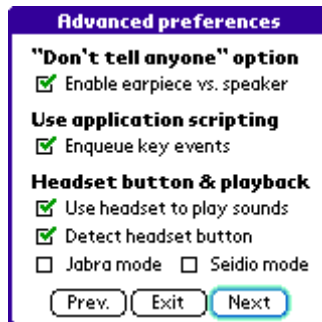
☐ Always start with searching

If this option is selected, VoiceLauncher will start with the recognition page. To go to the main page you have to wait for the recognition timeout and press the  button.

☒ Voice activation detection
Volume 

VoiceLauncher can measure the noise to detect a voice command and launch the voice recognition when the noise is above a defined threshold. When this feature is enabled, VoiceLauncher is measuring the noise level every second and it will reduce your battery duration. Please note that you should configure the threshold properly if you want VoiceLauncher to start only when needed! Voice detection is enabled only when the Treo is off, and it takes a few seconds before detection really begins...

Headset and earpiece options



When headset button detection is enabled, you can launch a voice command with your headset button. The headset button can launch VoiceLauncher at any time. When searching a command, the button will be mapped to let you confirm the command depending on your preferences.

VoiceLauncher will also detect if a headset is present, and if headset playback wizard is enabled will redirect system sounds to your headset. Detection of the current setting occurs in real time when VoiceLauncher is running, or when switching from one application to another.

☒ Enable earpiece vs. speaker

This option is used when searching a voice command with the device microphone or the headset microphone. If VoiceLauncher is configured to repeat the best matching pattern, command will be repeated through the device earpiece or headset instead of the device speaker.

☒ Use headset to play sounds

You may have noticed that your device don't play system sounds through your headset unless you install a third-party application. When this option is selected, VoiceLauncher will enable playback through your headset without additional application needed.

☒ Detect headset button

You can launch VoiceLauncher to search for a voice command from your headset button. When this option is selected, and even if the device is turned off, VoiceLauncher will detect the button. During a phone call this feature is disabled to let you start and end your call. During the countdown after searching a command, headset button is used to confirm or cancel execution depending on your choice.

Button mapping during VoiceLauncher countdown **in non-Jabra mode:**

- **Manual confirmation:** Simulates a "5-way navigator center" event, VoiceLauncher will launch the command.
- **Voice confirmation:** Simulates a "5-way navigator center" event, VoiceLauncher will launch the command.
- **Automatic confirmation:** Simulates a "5-way navigator down" event, VoiceLauncher will cancel the command.
- **Audible confirmation:** Simulates a "5-way navigator down" event, VoiceLauncher will go to the next command.

☐ Jabra mode

Jabra BT200 for Non-bluetooth phones can send button events to your phone. It may or may not send a second event when you move it from standby to active mode, a very annoying situation that would terminate your call just after beginning it! If you encounter such a problem, this option will detect and delete this second event.

Button mapping during VoiceLauncher countdown **in Jabra mode:**

- **Manual confirmation:** Simulates a "5-way navigator up"

event, VoiceLauncher will cancel the command.

- **Voice confirmation:** Simulates a "5-way navigator up" event, VoiceLauncher will cancel the command.
- **Automatic confirmation:** Simulates a "5-way navigator up" event, VoiceLauncher will cancel the command.
- **Audible confirmation:** Simulates a "5-way navigator up" event, VoiceLauncher will cancel the command.

When you move your Jabra headset from active mode to standby mode, a button event is sent to the device: you can use this to cancel your command. If you want to disable your headset without sending this event you should turn the headset off: turning the headset on or off won't send a headset button event.

☐ Seidio mode

Seidio 2-in-1 is sending a button event when you move it from phone mode to mp3 mode. When this option is selected, VoiceLauncher detects if headset is disabled when receiving a headset button event and will delete this event if needed. As VoiceLauncher has to wait a moment to detect your Seidio status when detecting the button event, you may not use this option if you don't have a Seidio 2-in-1 or don't want to ignore this event.

Filter and scripting options

Filter 

You can configure the distance calculation filter. Moving the slider to the left will reduce the engine threshold: it will reduce wrong recognitions but might increase recognitions without any matching voice pattern. Moving it to the right will increase the engine threshold: VoiceLauncher will search for the best pattern even if the resulting distance is important.

Configuring this parameter is up to you: if you want only good results you should move to the left but VoiceLauncher may fail to find a matching pattern, if you don't mind having several results and choose the good one in a short list you should move the slider to the right.

Whatever you prefer, you should move this parameter step by step and make experiments to be sure you have the configuration you need. Default center value may be a good value for most users, and it is not recommended to modify this parameter during the first week of use unless you really know what you are doing.

☒ Enqueue key events

This option will enable advanced application scripting feature. When enabled, a new field "Add keys" is available when creating a new voice command to let you specify virtual keys to enqueue when launching the command. Enqueued virtual keys are seen by the system as if you were really pressing these keys. A space must separate two commands and commands can be:



- **Predefined keys:** available keys are up, down, left, right, center, hard1, hard2, hard3, hard4, power, cradle, menu, command and confirm

- **Quoted strings:** for example "password" will send events as if you were pressing keys P, A, S, S...
- **Key by number:** center key is number 0136, you can specify directly any key number but you should not do that if unsure of what you are doing!

For example you can automate **SplashID** password with **up** "password" **down center**, start **BackupBuddyVFS** with **center...** This feature can do whatever you need, but you should use it with care: VoiceLauncher will virtually press keys you are requesting but won't know anything about the meaning!

Advanced recording options




You can set different preferences when using VoiceLauncher from your device or from your headset. For example you can have automatic confirmation when using your device, and choose a manual confirmation when using your headset and then press the headset button to confirm a command. The little  or  and the title of the form reflect which parameters you are modifying.

You can modify advanced parameters, but this is only for advanced users: if you want to revert to default values, press the cancel button!

- *First column configures the microphone sensitivity depending on the noise level. If the noise level is greater than **Threshold**, the microphone volume is decreased by **Percent** until **Minimum** is reached. Experiments show that automatic adjustment works fine with the Treo microphone, but should not be used with a Seidio headset.*
- *Second column configures the voice detection. VoiceLauncher measures the current noise volume and will start recording if the volume is greater than $\text{noise} + \text{Threshold}$ or greater than $\text{Minimum} + \text{Threshold}$ if noise is lower than **Minimum**. **Percent**, if not null, will increase **Threshold** depending on the noise measured. If VoiceLauncher has some difficulties to detect your voice, you may increase **Minimum** and decrease **Threshold**, but you should keep the sum unchanged.*

Because noise might be a problem with voice detection in very noisy situations, here is a trick reported by a user if you want to use VoiceLauncher in noisy conditions like in a car. Select a low threshold so that VoiceLauncher can detect when your command starts and stops and record patterns in your car with the engine running: you will create cropped voice patterns. Now, set a high threshold for normal use, so that you get a same cropped pattern while recording, et voila! Thanx to Les for finding the trick...



This option will be probably the most useful to fit your needs, and it is quite simple to configure. You can use the  button to reset to the default value. Green-red limit is the default

×1.0 sensitivity, yellow-green limit is a ×0.5 sensitivity, white-yellow limit is a ×0.25 sensitivity, and most right value is a ×1.5 sensitivity. Setting a lower sensitivity reduces the surroundings noise recorded when you talk a command to your device. Obviously, if the microphone sensitivity is lower, you will have to speak louder or closer to the microphone. The selected value will also be used as a reference for the previously described ☒ Adjust mic. option.

☒ Play chimes

You can enable or disable a sound notification while recording a pattern. This notification requires the system sounds to be enabled.

☐ Flash LCD

If you don't want to enable system sounds, it might be useful to have a visual notification when recording a pattern. If enabled, the screen brightness will change while recording.

Format ▼ Thin 11kHz

VoiceLauncher can record patterns at different sampling rate. A higher rate will give more details and will increase recognition result, but it will create a bigger voice pattern and will require more calculation time. 8kHz can give good results most of the time, but you can select a higher rate if needed.

During recognition, if your current command sampling rate is different than the one used for your voice pattern in your database, the lowest sampling rate will be used to compare patterns. As a higher sampling rate is most useful for short patterns, you can create long patterns with a 8kHz sampling rate and short patterns with a 11kHz sampling rate. During recognition, if 11kHz is selected, VoiceLauncher will use 11kHz to compare your command with short patterns for a best recognition and will use 8kHz for long pattern reducing the calculation time.

Best recognition results are available with a 11kHz setting, 12kHz doesn't improve quality in a noticeable manner.

☒ Adjust mic.

VoiceLauncher can measure the surroundings noise level to adjust the microphone sensitivity. If the option is enabled, it will reduce the surroundings noise recorded with your command and will increase recognition in noisy situations. At the same time, you will have to speak louder or closer to microphone...

▼ Automatic confirmation



After a pattern recognition, you can select different ways to confirm your command:

- **Manual confirmation:** The 5-way navigator focus is placed on the best matching pattern, to confirm the command you just have to press the center button.
- **Voice confirmation:** VoiceLauncher will measure the noise level to check if you are speaking during about two seconds. If you say anything, that will launch the command. If you keep silent, the command won't be launched. For obvious security reasons, this option can't work in noisy situations...

- **Automatic confirmation:** VoiceLauncher will wait about two seconds and will launch the command unless you move the focus with the 5-way navigator. The 5-way focus is on the record button, pressing it will record a new pattern.
- **Audible confirmation:** This is about the same option as above, but if you press the 5-way down button VoiceLauncher will repeat the second command and will wait again for two seconds, and so on.

Memory card support

Commands can be saved either on the main memory or on a memory card. When the application is launched and if no database exists in the main memory, or if this database is empty, VoiceLauncher searches for a database in the memory card (if one is available) in standard /PALM/Launcher/ directory. Database is copied in the main memory and removed from the main memory when exiting, changes if any are copied to the memory card. **Please note that using the database from the memory card requires a short delay when starting and exiting the application.**

You can move the database from the memory card to the main memory, or from the main memory to the memory card. Use the  button to move the database from the main memory to the memory card, database is removed from the main database. Use the  to move the database from the memory card to the main memory, database is removed from the memory card.

Any existing database on a memory card won't be used if a non-empty database exists on the main memory. If, for any reason, you need to restore a different one from a memory card, delete all commands from your local database and launch VoiceLauncher again. As your local database is now empty, the one on your memory card will then be used.

VoiceLauncher can also run from a memory card, but special searching keys and background voice detection won't be available. These features require VoiceLauncher to receive some events from the system, and events are not sent to applications on a memory card... As the application is not that big and the database can be saved to the memory card, you should prefer using VoiceLauncher from the main memory.

VoiceLauncher version history

2005-01-13: VoiceLauncher 0.9.8

- New virtual keys added
- Fix a problem while updating very old database
- Fix a problem in menus with palmOne Tungsten/T3

2005-01-11: VoiceLauncher 0.9.7

- Application scripting with virtual keys to enqueue
- Improved general recognition
- Minor fix when not using quickstart keys
- Minor graphic and user interface fixes

2004-12-17: VoiceLauncher 0.9.5

- "Don't tell anyone" option extended to headset mode

2004-12-15: VoiceLauncher 0.9.4

- Jabra button workaround when moving to active mode
- Seidio 2-in-1 button workaround when moving to mp3 mode
- Earpiece support when repeating voice patterns

2004-12-07: VoiceLauncher 0.9.0

- Headset playback/detection are now two options
- Minor changes and fixes

2004-12-01: VoiceLauncher 0.8.8

- Automatic headset detection

2004-11-30: VoiceLauncher 0.8.7

- Improved speed
- Enable recording from a headset
- Enable system sounds on your headset
- Headset button detection when Treo is sleeping
- Increased threshold range for voice detection
- Improved noise measure for a better mic. adjustment
- Improved phone number lookup
- Different settings for device and headset

2004-11-23: VoiceLauncher 0.8.5

- Improved general recognition
- palmOne Tungsten|T3 support
- New pattern level calculation
- New pattern normalization algorithm
- New improved microphone sensitivity adjustment

2004-11-18: VoiceLauncher 0.8.2

- Some minor bug fixes and code cleanup

2004-11-15: VoiceLauncher 0.8.0

- Memory card support to store the database
- Application can run from the memory card

2004-11-13: VoiceLauncher 0.7.6

- Treo650 keyboard API support
- Treo650 side button support
- Keyguard disabled when PowerOn button is used
- Some minor bug fixes

2004-11-05: VoiceLauncher 0.7.4

- Phone numbers lookup
- Browser URL address
- Background voice detection
- Silent mode (no repeat)

2004-11-03: VoiceLauncher 0.6.9**2004-10-29: VoiceLauncher 0.6.6**

- New launch option
- New microphone sensitivity option

2004-10-28: VoiceLauncher 0.6.5

- Extended automatic launch
- Increased phone number length

2004-10-26: VoiceLauncher 0.6.3

- TAKEphONE integration
- Automatic confirmation
- Standard phone helpers

2004-10-25: VoiceLauncher 0.6.2

- Better recognition in noisy surroundings

2004-10-25: VoiceLauncher 0.6.2

- Better recognition in noisy surroundings

2004-10-24: VoiceLauncher 0.6.1

- Headset button first support

2004-10-22: VoiceLauncher 0.6.0

- First official public release

Last update 2005-01-13

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