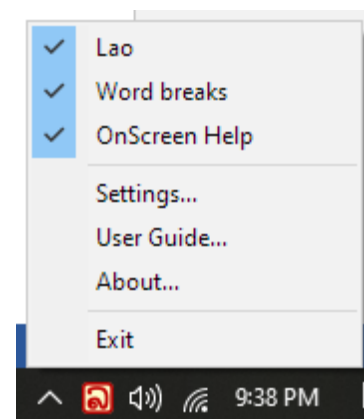


LaoKey10 User Guide

LaoKey10 (Version 1.2) is a new keyboard mapping app from *Lao Script for Windows* that provides much greater functionality than previous keyboard mapping apps. Both *typewriter* and *phonetic* input methods have been extended to support the entry of all characters in the Unicode 13 Lao range¹, and both now have an **On-Screen** entry guide. For both input methods, only minimal changes have been made to previous conventions.

Installing and Using the LaoKey10 Keyboard Mapping App

1. Download **laokey10.zip** from <https://laoscript.net/download/laokey10.zip>. The zip file contains an executable file **LaoKey10.exe**, the keyboard mapping library **LaoKey.dll**, a custom font required for the on-screen help, and a PDF with an explanation of how to use Lao Phonetic Entry. If the executable file **LaoKey10.exe** is moved or copied to another location, the other three files must be copied to the same folder.
2. Unpack the zip archive to a new folder².
3. Double click the executable file **LaoKey10.exe** to start keyboard mapping. (The first time it is used, the application may be scanned for security by your antivirus application.)
4. When the application starts, it will create a *TaskBar icon*, which will appear in the collection of active applications (shown circled here):
5. To make it easier to use the app to enable and disable Lao keyboard mapping, *click and hold the Lao icon* and drag it down to the taskbar notification area, as shown here at the right:
6. Clicking the taskbar icon displays a pop-up menu. Lao keyboard mapping and break insertion may be enabled or disabled by selecting the appropriate menu entry.
7. Alternatively, either double-click the icon, or press the **Pause** key, to enable or disable Lao keyboard mapping. The icon will change colour to indicate that Lao keyboard mapping has been enabled.
8. By default, keyboard mapping will be enabled using Unicode coding and a *typewriter* layout based on the standard input layout for Lao.



Uninstallation of LaoKey10

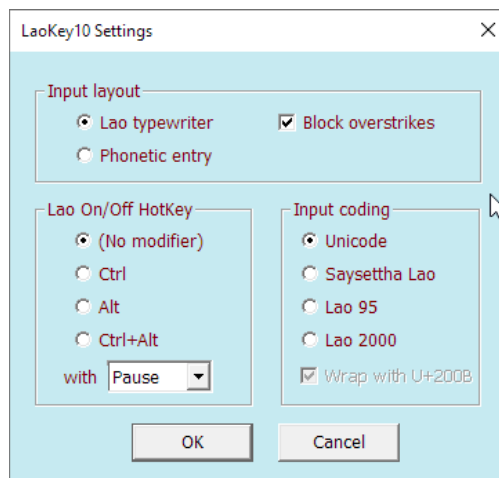
To uninstall **LaoKey10**, simply close the app and delete the folder containing the files unpacked from the installer zip archive.

¹ Also some proposed additions to the Unicode Lao range, currently coded within the Private Use Area.

² The zip archive can be unpacked to any location, but an appropriately named folder such as **C:\Users\<username>\Documents\LaoKey10** is recommended.

LaoKey10 User Settings

Selecting **Settings...** from the pop-up menu opens a small window allowing different user settings:



Select **Lao typewriter** to use the standard Lao input layout (extended for entering Kmhmu and Lao Pali) or **Phonetic entry** to type using a quickly learned entry method *kan* ⇒ ກັນ, *tham* ⇒ ທຳ, *pheuan1* ⇒ ພີອຸນ, etc., see [Phonetic Entry Principles](#).

In typewriter entry mode, check **Block overstrikes** to prevent hard-to-detect typing errors such as when diacritic vowels or tone marks are entered twice.

If **Pause** is not a suitable hotkey for enabling and disabling Lao input mode, a different hotkey combination can be selected and used.

If an older, 8-bit, coding convention is needed, select the coding according to the font being used, *but be aware that 8-bit coding does not work correctly with most applications and cannot be used for Lao Pali*. **Only Unicode should be used for creating new documents.**

Break Insertion

With many current applications using Unicode coding, lines of Lao text will be automatically wrapped at word boundaries without needing the insertion of any kind of break codes between words or syllables. However, for applications that do not wrap Lao text automatically, selecting **Word breaks** on the pop-up menu will insert the ZWSP (U+200B) character between syllables to ensure that text is broken only at syllable boundaries. For 8-bit coded input, the user may choose to insert either the standard ZWSP code or an 8-bit code break code³ but use of the older break codes is not recommended.

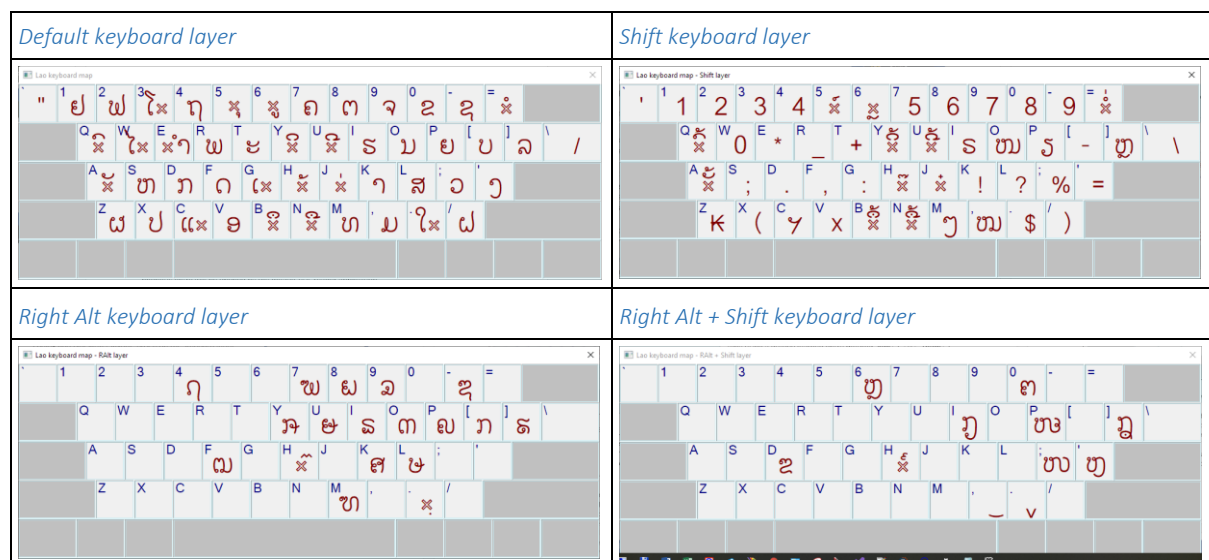
³ Text coded for the font *Saysettha Lao* normally used a hyphen (ASCII 45) as the break code and recoded the visible hyphen to another code point, which caused many difficulties, especially in apps that recognize the hyphen as a minus sign. To avoid that problem, the other two 8-bit code conventions supported for input mapping can insert the 8-bit ASCII code 140 (U+2103) as a break code, but that code was code page dependent and not always recognized as a line-breaking character anyway. So it is best now to use ZWSP as a break code, but that does not resolve the problem with the recoded hyphen in *Saysettha Lao*.

On-Screen Help

Selecting on the pop-up menu will display a resizable window showing the actual keyboard layout if *typewriter* entry is being used or a table of patterns for *phonetic* entry.

On-Screen Help: Typewriter Entry

For *typewriter* entry, the layout will be automatically updated if either **Shift** or **Right Alt**⁴ is pressed, to display the different layout that applies to each keyboard layer:



On-Screen Help: Phonetic Entry

If *phonetic* entry mode is in use, the On-Screen Help is a table showing the keys or key-sequences to generate the Lao consonants and vowels according to their position in the syllable:

Lao phonetic input															
b,-p	bh	c, ch	d,-t	dd	ddh	dh	f	fh	g	gg	gh	h	hf	hg	
ບ	ກ	ຂ	ດ	ທ	ຖ	ຖ	ຟ	ຟ	ກ	ຄ	ຟ	ຮ	ຟ	ຫງ	
hh	hk	hl	hm	hn	hp	hr	ht	hv	hw	j	jh	J	k	kh	
ຫ	ຂ	ຫລ	ຫມ	ຫນ	ຜ	ຫຮ	ຖ	ຫວ	ຮວ	ຈ	ຊ	ຮ	ກ	ຄ	
kk	l	leu'	lh	ll	m	mh	n	ng,-g	nh	nn	nnn	ny,-y	p	ph	
ຂ	ລ	ເລ	ຫ	ຮ	ມ	ຫມ	ນ	ງ	ຫນ	ນ	ນ	ຍ	ປ	ຟ	
r	ຮ	ຮ	ເຣ	ຮ	s	ສ	sh	ss	t	th	tt	ttt	x	y	
ຮ	ຮ	ເຣ	ຮ	ຮ	ສ	ສ	ຮ	ຮ	ຕ	ຫ	ຫ	ຫ	ຊ	ຢ	
-a	-ā-	-aa	-ae	-ai	-am	-an	-ao	-ay	-ay	-e	-e	-ea	-ea	-ee	
ກະ	ກະ	ກາ	ກະ	ກະ	ກາ	ກາ	ກາ	ກາ	ກາ	ກະ	ກະ	ກະ	ກະ	ກະ	
-er	-eu	-eua	-i	-ia	-ia	-iaa	-ii	-o	-o	-oe	-oh	-ohh	-ohh	-oo	
ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	
-ou	-q	-qq	-u	-ua	-ua	-uaa	-ue	-uea	-uo	-uu	-1	-2	-3	-4	
ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	ເຮ	

⁴ The **Right Alt** keyboard layer for input (and On-Screen Help) can also be selected by using the (left) **Ctrl** and **Alt** modifier keys together, since some notebook computers do not have a separate **Right Alt** key.

Phonetic entry of Lao Text

Users who are unfamiliar with the Lao typewriter layout and have any standard, Latin-alphabet, keyboard (for example, English or French), will often find it easier to enter Lao text using a phonetic input method, where each key or key sequence of Latin-alphabet letters generates the nearest equivalent Lao text. This can be especially useful where Lao keyboard stickers are unavailable. With phonetic input, for example, you can type **kan** for ກັນ, **tham** ⇒ ທຳ, **pheuan1** ⇒ ເຟືອນ or **hkian phaa saa lao boh1 nyaak!** ⇒ ຂຽນພາສາລາວບໍ່ຍາກ!

Phonetic Entry Principles

There is no perfect solution for writing Lao text phonetically in Latin alphabet characters, since it is not possible to represent Lao consonant or vowel sounds (or tones) exactly in English. The phonetic input method used by **LaoKey10** has been developed in accordance with the following principles:

1. The convention should be systematic and as intuitive for English speakers as possible.
2. It should be possible to enter most Lao words using only *lower-case* letters, to facilitate text entry.
3. Syllable-final consonants can be entered either phonetically or as written, so **-d** or **-t** ⇒ -ດ, **-b** or **-p** ⇒ -ບ, and **-y** ⇒ -ຍ.
4. Tone marks may be added by typing a number 1 to 4 *immediately after* the pattern used to enter the plain (unmarked) syllable. The tone mark will then be automatically added at the appropriate place in the syllable.
5. *The space bar should be pressed once at the end of each entered syllable to mark the end of the syllable and again only if a visible space should be inserted.*
6. If wrapping is enabled, a hidden ("ZWSP") break character will be inserted at the end of each syllable.
7. Digits, punctuation and symbol keys output the character shown on the key, *except* for the digits 1 to 4 entered at the end of a Lao syllable, which will insert a tone mark, as noted above.
8. Phonetic transcription follows the system keyboard in use, not the physical layout. So whether you are using a QWERTY (English layout) or an AZERTY (French layout) keyboard, typing **kan** according to the active layout will generate ກັນ.
9. Old spelling conventions (such as ຣາຊ, ທັມ, ເກັງ) and entry of Lao Pali consonants and marks are now also supported. In many cases, the accent key (`) is used to prevent the application of the normal Lao spelling rules and allow what would otherwise be considered an irregular spelling. See [Old Spellings and Special Cases – Using the ` Accent Key](#) and [Conventions used for entering Kmhmu and Lao Pali text](#) for more details.

Entering Lao Consonants Phonetically

The letter (or letters) to type for each Lao consonant is shown in the following table. Alternate key sequences are shown in parentheses after the default convention.

Lao	Keys	Lao	Keys	Lao	Keys	Lao	Keys
ກ	k	ຂ	hk(K)	ຄ	kh		
ດ	d(t*)	ຕ	t	ຖ	ht(T)	ທ	th
ບ	b(p*)	ປ	p	ຝ	hp(P)	ຟ	ph
ງ	ng	ຫງ	hng(G)	ຍ	ny	ຫຍ	hny(Y)
ຈ	j	ສ	s(S)	ຊ	x		
ນ	n	ຫນ	hn	ຫນ	nh(N)		
ມ	m	ຫມ	hm	ຫມ	mh(M)		
ຟ	f	ຝ	hf(F)				
ລ	l	ຫລ	hl(L)	ຫລ	lh		
ຮ	r	ຫຮ	hr	ຮ	rr		
ວ	v(w)	ຫວ	hv(V,W)	ຮວ	hw	ຢ	y
ອ	(**)	ຮ	h	ຫ	hh(H)		

* When used at the end of a syllable.

** For any syllable that starts with a vowel, the character ອ will be inserted automatically when the vowel character is typed. To insert ອ without a vowel, just type any vowel letter, then press backspace to delete the Lao vowel character, leaving ອ.

Entering Lao Vowels Phonetically

In the following table, each short and long vowel is shown in the open and closed (where allowed) syllable patterns with ກ and ນ as place-holders for initial and final consonants:

Lao	Keys	Lao	Keys	Lao	Keys	Lao	Keys
ກະ	ka	ກາ	kaa (kA)	ກັນ	kan	ການ	kaan
ເກະ	ke	ເກ	kee (kE)	ເກັນ	ken	ເການ	keen
ແກະ	kea (kz)	ແກ	kae (kzz,kZ)	ແກັນ	kean (kzn)	ແການ	kaen (kzzn,kZn)
ກິ	ki	ກີ	kii (kI)	ກິນ	kin	ກິນ	kiin (kIn)
ກື	kue	ກື	keu	ກືນ	kuen	ກືນ	keun
ໄກະ	ko	ໄກ	koo (kO)	ກົນ	kon	ໄກນ	koon (kOn)
ເກາະ	kohh (kq)	ກໍ	koh (kqq,kQ)	ກ້ອນ	kohn (kqn)	ກອນ	kohn (kqqn,kQn)
ກຸ	ku	ກູ	kuu (kU)	ກຸນ	kun	ກູນ	kuun (kUn)
ເກີ	koe	ເກີ	ker	ເກີນ	koen	ເກີນ	kern
ເກ້ຍ	kiaa	ເກຍ	kia	ກ້ຽນ	kiaan	ກຽນ	kian
ເກືອ	kuea	ເກືອ	keua	ເກືອນ	kuean	ເກືອນ	keuan
ກົວະ	kuaa	ກົວ	kua	ກ້ວນ	kuaan	ກວນ	kuan
ເກີ	kou	ເກີ	kuo	ເກີນ	koun	ເກີນ	kuon
ກຳ	kam	ກັມ	kam`	ເກົາ	kao	ກາວ	kaaw (kaoo,kaO)
ໄກ	kai	ກັຍ	kai`	ໃກ	kay	ກັຍ	kay`

Notes:

1. Repeating the last letter of a two- or three-letter sequence used to enter a vowel (before the final consonant is typed) changes the vowel pattern between short and long forms.
2. For the 'diphthong' vowel patterns ເອຍ [-ia] and ອົວ [-ua], the *shorter key sequence is used for the long vowel*, repeating the final /a/ to get the *short vowel syllable pattern* rather than the reverse (which would be more intuitive), since for both vowels the long vowel pattern is much more often found in both open and closed syllables.
3. The orange shaded cells show how to enter a vowel pattern for the sound [ʌ] found in Kmhmu and other minority languages. (The sound [ʌ] is not represented in standard Lao.)
4. The blue shaded cells show old spelling conventions – see the next section.

Old Spellings and Special Cases – Using the ` Accent Key

Differences between old (pre-1975) and current spelling conventions include:

- In the older convention, any consonant (rather than its phonetic equivalent) could be written syllable finally. To use this convention, press the accent key *before* the final consonant, for example:

ra`ht baan ⇒ ຮັຖບານ

- Some syllables ending (phonetically) with [-am] or [-ai] were formerly written with an explicit final consonant, e.g. ທັມ, ຊັຍ. To switch between conventions, press the accent key *after* entering the syllable:

tham ⇒ ທຳ + ` ⇒ ທັມ + ` ⇒ ທຳ, xai ⇒ ໄຊ + ` ⇒ ຊັຍ + ` ⇒ ໄຊ

- The [-ia-] diphthong vowel was formerly written with a different convention in open syllables. Pressing the accent key *after* entering the complete vowel sequence changes from current to old spelling convention (and back if pressed again):

Convention	Long vowel		Short vowel	
Current	kia	ເກຍ	kiaa	ເກັຍ
Older	kia`	ເກັງ	kiaa`	ເກັຽະ

- Pressing the accent key after the *dollar* symbol will change the currency symbol to *Kip*, to *Euro* and back to the *dollar* symbol:

\$ + ` ⇒ ₭ + ` ⇒ € + ` ⇒ \$

Entering Lao Tones and Special Symbols

To add a tone or punctuation mark to a syllable, enter a digit 1 – 4, the % sign, or the (upper-case) letter R or X *at the end of the syllable*, as shown here:

Lao	Keys	Lao	Keys	Lao	Keys	Lao	Keys
ວຸນ	vun1	ຂ້າ	hkaa2	ຈິວະ	juaa3	ບໍ່	ba4
ໄມລ໌	mail%			ໄວໆ	vaiR	ຯລຯ	XIX

The keys for digits 1-4 and % are only translated to tone marks *at the end of a syllable*. If entered elsewhere, they will enter digits and the % symbol normally.

If **CAPS LOCK** is on, the numeral keys (in the top row) will be mapped as the Lao numerals ໐, ໑, ໒... ໙ instead of standard numerals 0, 1, 2,... 9. When **Num Lock** is on, the **Number Pad** keys will always output the digit shown on the key.

Conventions used for entering Kmhmu and Lao Pali text

The consonant ກ [g] used in Kmhmu is entered using the letter /g/. The syllable final consonant -ນ [ny] is entered by typing /ny/ at the end of a syllable and the syllable-final pattern -ຍ໌ [-yh] found in Kmhmu language is entered by typing /yh/ at the end of a syllable. Upper-case J can be used to enter ຈ either at the start of a syllable, e.g. /Jaep/ ⇒ ຈຽບ (Kmhmu) or syllable finally, as in /dooJ/ ⇒ ໂດຽ.

The distinct long and short vowel patterns for the sound [ʌ] used in Kmhmu language (e.g. ເວີສ) are included in the table of vowel patterns shown above at [Entering Lao Vowels Phonetically](#).

Keys and key sequences for entering Lao Pali consonants are shown with the name⁵ of each character in the following table.

Lao	UN	Keys	Lao	UN	Keys	Lao	UN	Keys	Lao	UN	Keys
ກ	BHA	bh	ຂ	CHA	c (ch)	ພ	GHA	gh	ຊ	JHA	jh
ຜ	DHA	dh	ທ	DDA	dd	ຝ	DDHA	ddh	ຣ	LLA	ll
ຝ	TTA	tt	ຖ	TTHA	tth	ຖ	NNA	nn	ຮ	NYA	nny
ຮ	SHA	sh	ຮ	SSA	ss	ຮ	(0EA4)	reu`	ຮ	(0EA6)	leu`
ຮ	(F001)	HG	ຮ	(F003)	HR	ຮ	(F002)	HY	ຮ	(F004)	HW
ຂ	(0E83)	kk	ຄ	(0E85)	gg	ກ	(035C)		ກ	(2304)	
ກ	VIRAMA	k>	ກ	(0ECE)	k^	ກ	(F005)				

For consonants and marks that have not yet been adopted by Unicode, the code point used is indicated in parentheses instead. Various marks used in Lao Pali (LAO VIRAMA, YAMAKKAN etc.) are shown at the end of the table with k-kai as placeholder.

If you have any questions or comments on using this phonetic entry system, please use the [Contact Form](#) on the [LaoScript for Windows](#) website to email me.

Dr John Durdin, 30 December 2021

⁵ The distinct part of the Unicode name for the character, e.g. TTHA for LAO LETTER PALI TTHA.