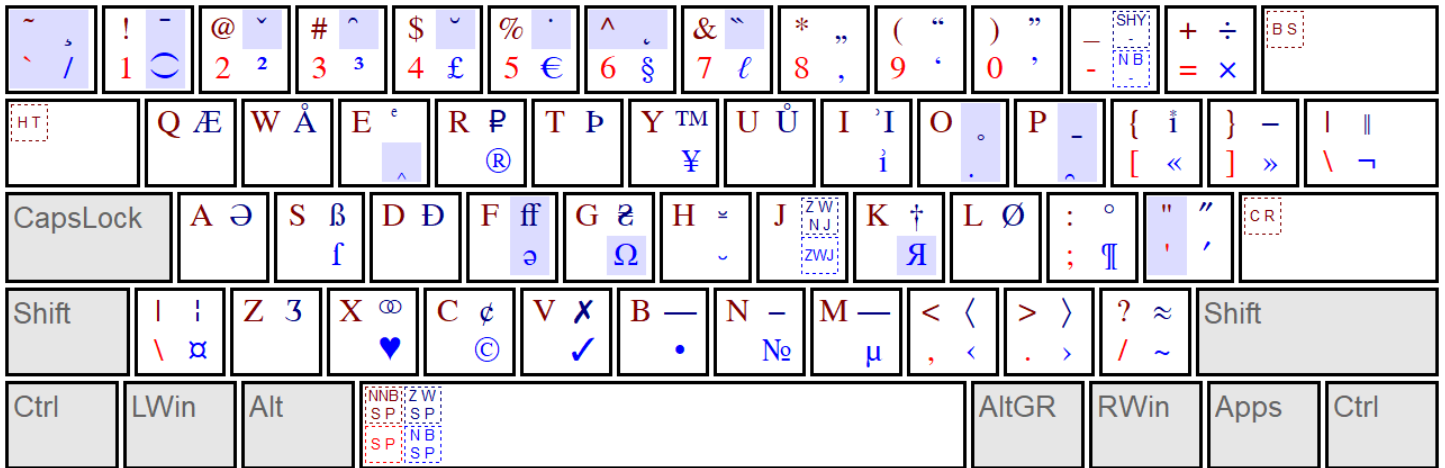


# QWERTY DB (version 0.8)

A multilingual Unicode keyboard



This keyboard layout is loosely based on the [US International](#) keyboard. It preserves all the key combinations of a standard US or UK keyboard. (The only difference between the US and the UK keyboard is the placement of " and @; however, " should hardly be needed anymore with this keyboard because you can directly enter " and " instead.) However, it offers a great variety of additional possibilities:

## 1. Better typography

Key combination	Comment
Shift + AltGr + N	dash, (U+2013, so-called "n-dash")
Shift + AltGr + M	long dash (U+2014, so-called "m-dash")
Shift + AltGr + B	typographically correct long dash with hair spaces before and after (U+200A, U+2014, U+200A)
Shift + AltGr + -	minus sign (U+2212; you will never need to use the hyphen for this again: "7 + 8 - 3 = 12", not "7 + 8 - 3 = 12")
AltGr + -	no-break space (U+2011), prevents word division and is not only independent of the software used but also behaves much better than the special character in Word
Shift + AltGr + -	(SHY) soft hyphen (U+00AD), enables you to enter optional word breaks even outside text processors
AltGr + J	(ZWJ) zero-width joiner (U+200D), can form ligatures in certain contexts
Shift + AltGr + J	(ZWNJ) zero-width non-joiner (U+200C), can prevent the formation of ligatures in certain contexts
AltGr + space	no-break space (U+00A0), prevents a line break (and with justified alignment usually also preserves the width of the space from being changed)
Shift + space	narrow no-break space (U+202F) for arranging numbers, e.g. "1 000 000", or for keeping numbers and units close together, e.g. "12 m <sup>3</sup> "; also prevents a line break
Shift + AltGr + space	(ZWSP) zero-width space (U+200B), provides an optional place for a line break, e.g. in URLs and other long strings of characters where a hyphen at the end of the line might be confusing
Shift + AltGr + 8	This way typographical quotation marks and the typographical apostrophe (AltGr + 0) can be entered directly – independently of the software used, of AutoCorrect, etc.
Shift + AltGr + 8	
AltGr + 9	
Shift + AltGr + 9	
AltGr + 0	
Shift + AltGr + 0	
AltGr + -	
AltGr + -	
AltGr + -	
AltGr + -	
Shift + 6, '	modifier letter apostrophe (U+02BC; looks exactly like the 'normal' apostrophe [U+2019, AltGr + 0] but is treated as a letter by software, so that e.g. when transliterating Ukrainian or Macedonian or in phonetic transcription this modifier letter ought to be used)
Shift + 6, .	ellipsis (U+2026; you will never need to enter separate periods that stand much too close, i.e. "a, b, c..." instead of correct "a, b, c...")
Shift + AltGr + -	angle brackets, e.g. as typographical graphematic brackets } ((a) looks much clearer than <a>)
Shift + AltGr + -	

	AltGr + N	→	№	number sign (U+2116, “№ 1” is more beautiful than “no. 1”)
Shift +	AltGr + F	→	ff	deadkey <b>ligature</b> : f → ff, i → fi, l → fl, I → ffi, L → ffl, s → st, f → ft
	AltGr + B	→	•	bullet (U+2022; much better for enumerating headwords than dashes or hyphens)
	AltGr + I, #	→	••	Aldus leaf (U+2619; as a stylish division between sections without headings)
Shift +	AltGr + I	→	i	i with a <b>gender star</b> instead of the i tittle (U+0131 + U+20F0; for German words like “Professorinnen”)
	I, *	→	*	combining (gender) star (U+20F0; can be placed on words without the <i>-in</i> suffix, e.g. “Vorsitzendê”, “Emeritã”)

## 2. Better typography with numbers, fractions, etc.

Key combination	Comment		
	→ `	deadkey for <b>superscript numbers</b> : 0 → ⁰, 1 → ¹, 2 → ² ... 9 → ⁹	
	→ `	deadkey for <b>subscript numbers</b> : 0 → ₀, 1 → ₁, 2 → ₂ ... 9 → ₉ (you never need to write “CO2” or “H2O” again; write “CO₂” or “H₂O” even in text-only e-mails!)	
Shift +	AltGr + I	→	1 → ⅓, 2 → ⅔, 3 → ⅓, 4 → ¼, 5 → ⅕, 6 → ⅙, 7 → ⅚, 8 → ⅘, 9 → ⅑, 0 → ⅒ (instead of “3 1/2 hours” or “3.5 hours” you can now easily write “3½ hours”; and 3.33 ≠ 3⅓!)
Shift +	AltGr + 2	→	3 → ⅓, 5 → ⅔
Shift +	AltGr + 3	→	4 → ¾, 5 → ⅕, 8 → ⅘
Shift +	AltGr + 4	→	5 → ⅕
Shift +	AltGr + 5	→	6 → ⅙, 8 → ⅘
Shift +	AltGr + 7	→	8 → ⅘
	I, /	→	/ fraction slash (U+2044; together with super- and subscript numbers you can combine any fraction you might need, e.g. ⅞ or ⅓)
	AltGr + =	→	× multiplication sign (U+00D7; do not write “3 x 7 = 21” but “3 × 7 = 21”)
Shift +	AltGr + P, +	→	± plus-minus (U+00B1; never again “+/-”!)
	AltGr + 7	→	ℓ litre sign (U+2113; “1 ℓ” is much clearer than “1 l”!)

## 3. Additional Latin letters

As you can see from the layout image above, numerous AltGr combinations were created to make additional characters available. Apart from that, deadkeys—above all AltGr + I—can be used to access even more special characters.

Key combination	Comment	+ Shift			
	AltGr + W	→	â	a with ring above (U+00E5; U+00C5)	Â
Shift +	AltGr + O, a	→	ą	a with ring below (U+1E01; U+1E00)	Ą
	AltGr + Q	→	æ	ae ligature (U+00E6; U+00C6)	Æ
	AltGr + I, a	→	ª	Romance ordinal number feminine (U+00AA, e.g. “1ª”)	
	AltGr + E, )	→	ʾ	transliteration for aleph or hamza (U+02BE)	
	AltGr + P, a	→	Ⲁ	Egyptological alef (U+A723; U+A722)	Ⲁ
	AltGr + E, (	→	ʿ	transliteration for ayin (U+02BF)	
	AltGr + P, c	→	Ⲁ	Egyptological ayin (U+A725; U+A724)	Ⲁ
	AltGr + D	→	ð	Eth (U+00F0; U+00D0)	Ð
	AltGr + A	→	ə	schwa or Azerbaijani ä (U+0259; U+018F)	Ə
Shift +	AltGr + E	→	°	combining e above (U+0364; to form the old umlaut forms â, ö, û)	
	AltGr + P, h	→	ħ	h with breve below	Ħ
	AltGr + I, h	→	ħ	hv (U+0195; U+01F6)	Ħ
	AltGr + I	→	Ⲑ	Egyptological iota (U+0131 + U+0357; U+02BE + U+0049)	Ⲑ
	AltGr + I, n	→	ŋ	ng (U+014B; U+014A)	Ŋ
	AltGr + L	→	ø	slashed o (U+00F8; U+00D8)	Ø
	AltGr + I, q	→	ŏ	U+A7C1 (with Shift: U+A7C0): <i>proposed Unicode for the Old Polish nasal vowel letter</i>	Ŏ
	AltGr + I, l	→	œ	oe ligature (U+0153; U+0152)	Œ
	AltGr + I, o	→	º	Romance ordinal number masculine (U+00BA, e.g. “2º”)	
	AltGr + S	→	ſ	long s (U+017F)	
Shift +	AltGr + S	→	ß	German sharp s, sz ligature (U+017F)	
	AltGr + T	→	þ	thorn (U+00FE; U+00DE)	Þ
	AltGr + U	→	û	u with ring (U+016F; U+016E)	Û

Key combination	Comment	+ Shift
<b>AltGr</b> + <b>l</b> , <b>w</b> →	p wynn (U+01BF; U+01F7)	Ɔ
<b>AltGr</b> + <b>l</b> , <b>y</b> →	3 yogh (U+021D; U+021C)	Ʒ
<b>AltGr</b> + <b>Z</b> →	3 Gothic z, IPA symbol ezh (U+0292; U+01B7)	Ʒ
<b>AltGr</b> + <b>l</b> , <b>z</b> →	Ʒ Visigothic z (U+A763; U+A762)	Ʒ
<b>AltGr</b> + <b>l</b> →	' } modifier letters prime and double prime (U+02B9, U+02BA)	
<b>Shift</b> + <b>AltGr</b> + <b>l</b> →	" } for the scholarly transliteration of Cyrillic ъ and ѓ	
<b>AltGr</b> + <b>l</b> , <b>&amp;</b> →	7 Tironian sign et (U+204A; also used in Morn Irish instead of “&”)	
<b>AltGr</b> + <b>l</b> , <b>3</b> →	3 Latin abbreviation <i>et</i> etc. (U+A76B; e.g. <i>q3 = que</i> )	
<b>AltGr</b> + <b>l</b> , <b>9</b> →	9 Latin abbreviation <i>us</i> (U+A770; e.g. <i>man<sup>9</sup> = manus</i> )	

#### 4. Greek and Cyrillic letters

Key combination	Comment
<b>AltGr</b> + <b>G</b> →	Ω deadkey <b>Greek</b> : a → α, b → β, c → ϗ, d → δ, etc. (switches the keyboard to a Greek standard keyboard for just one letter)
<b>AltGr</b> + <b>K</b> →	Я deadkey <b>Cyrillic</b> : a → ф, b → и, c → с, d → в, etc. (switches the keyboard to a Russian standard keyboard for just one letter)

#### 5. Diacritics

The keyboard layout “US International” already contains five deadkeys (“accent keys”), which have been enhanced to cover all Unicode characters with the respective diacritic, so that e.g. not only **l** + **E** can be combined to produce é but also **l** + **C** to produce é. Many more deadkeys (marked by lilac background in the layout image above) have been added, partly on the basis of the placement of deadkeys on Central European keyboards.

By pushing a deadkey **twice** you get a **combining diacritical mark**, which can also be placed on (preceding) letters that do not have a ready-made combined character in Unicode. (For deadkeys that produce two different diacritics, the second combining diacritic can be accessed by entering a hyphen after the deadkey.)

The trick of using **l** and **l** as deadkeys (for ´ and ¨, respectively), which was introduced by the “US International” keyboard, means that in order to actually receive ´ or ¨, you have to push the space bar after these keys (unless the following character cannot be combined with ´ or ¨, in which case ´ and ¨ appear automatically when you push the next key). However, outside programming languages and the like, this should hardly be necessary anymore because you will directly enter the typographically correct apostrophe or quotation marks ´, ¨, etc.

Key combination	Comment
<b>l</b> →	˘ deadkey <b>grave</b> : a → à, e → è, etc.; can be combined with macron or diaeresis deadkeys to form è, ò, and ù
<b>Shift</b> + <b>l</b> →	˜ deadkey <b>tilde</b> : a → ã, e → ë, i → ï, etc.
<b>AltGr</b> + <b>l</b> →	/ deadkey <b>strikethrough</b> : a → ¯a, b → ¯b, c → ¯c, d → ¯d, e → ¯e, g → ¯g, h → ¯h, i → ¯i, j → ¯j, l → ¯l, r → ¯r, f → ¯f, t → ¯t, y → ¯y, z → ¯z
<b>Shift</b> + <b>AltGr</b> + <b>l</b> →	ˆ deadkey <b>cedilla or double acute</b> : c → ç, d → đ, e → ě, g → ġ, etc. (also s → ș e.g. for Turkic languages as well as t → ț; but for ș and ț in Romanian use <b>Shift</b> + <b>AltGr</b> + <b>6</b> !); o → ô, u → û; space → ¸ (spacing cedilla); 2 × → ¸ (combining cedilla); _ → ˆ (spacing double acute); - → ˆ (combining double acute)
<b>AltGr</b> + <b>l</b> →	Ⓒ deadkey <b>special characters and ligatures</b> : The characters accessible through this deadkey are referenced individually.
<b>AltGr</b> + <b>l</b> , <b>-</b> →	˘ combining <b>undertie</b> (U+035C; produces something like ab)
<b>Shift</b> + <b>AltGr</b> + <b>l</b> →	ˆ deadkey <b>macron above</b> : a → ā, e → ē, g → ġ, etc.; æ → ǣ; can be combined with the deadkeys grave, acute, macron, and ogonek to form ā, ō, ū, è, ò, é, ó, and ô
<b>Shift</b> + <b>AltGr</b> + <b>2</b> →	ˇ deadkey <b>háček (caron)</b> : a → ǎ, c → č, d → đ, etc.; ü → ů, ž → ǰ
<b>Shift</b> + <b>AltGr</b> + <b>3</b> →	ˆ deadkey <b>round circumflex (inverted breve)</b> : a → â, e → ê, r → ř, etc.
<b>Shift</b> + <b>AltGr</b> + <b>4</b> →	˘ deadkey <b>breve above</b> : a → ǎ, e → ě, g → ġ, etc.
<b>Shift</b> + <b>AltGr</b> + <b>5</b> →	˙ deadkey <b>dot above</b> : a → á, b → ɓ, c → ć, d → đ, etc.; l → ł; I → Ī; f → ƒ; i → ¡
<b>Shift</b> + <b>6</b> →	ˆ deadkey <b>circumflex above</b> : a → â, c → ê, e → ê, g → ġ, etc.
<b>Shift</b> + <b>AltGr</b> + <b>6</b> →	˙ deadkey <b>ogonek or comma accent</b> : a → ą, e → ę, i → ı, etc.; s → ś, t → ʦ (for Romanian); space → ˙ (spacing ogonek); 2 × → ˙ (combining ogonek); - → ˙ (combining comma below)
<b>Shift</b> + <b>AltGr</b> + <b>7</b> →	˘ deadkey <b>double grave</b> : a → ˆa, e → ˆe, r → ˆr, etc.
<b>AltGr</b> + <b>E</b> →	ˆ deadkey <b>circumflex below</b> : d → ɖ, e → ɛ, l → ɭ, etc.
<b>AltGr</b> + <b>O</b> →	˙ deadkey <b>dot below</b> : a → ą, b → ɓ, d → ɗ, etc.
2 × <b>Shift</b> + <b>AltGr</b> + <b>O</b> →	◌ deadkey <b>ring below</b> (voiceless or syllabic consonant, e.g. ɺ)

Key combination	Comment
$2 \times \text{AltGr} + \text{P}$	→ $\grave{\text{~}}$ combining inverted <b>breve below</b> (for non-syllabic vowels, e.g. $\text{u}$ )
$\text{Shift} + \text{AltGr} + \text{P}$	→ $\_$ deadkey <b>macron below</b> : $\text{b} \rightarrow \text{b}_$ , $\text{d} \rightarrow \text{d}_$ , $\text{h} \rightarrow \text{h}_$ , etc.
$\text{AltGr} + \text{P}$	→ $\acute{\text{~}}$ deadkey <b>acute</b> : $\text{a} \rightarrow \acute{\text{a}}$ , $\text{c} \rightarrow \acute{\text{c}}$ , $\text{e} \rightarrow \acute{\text{e}}$ , $\text{g} \rightarrow \acute{\text{g}}$ , etc.; $\text{a} \rightarrow \acute{\text{a}}$ , $\text{ae} \rightarrow \acute{\text{ae}}$ , $\text{o} \rightarrow \acute{\text{o}}$ ; space $\rightarrow \acute{\text{ '}}$ ; $\_ \rightarrow \acute{\text{ '}}$ (spacing acute); can be combined with umlaut and macron deadkeys to form $\acute{\text{í}}$ , $\acute{\text{ú}}$ , $\acute{\text{é}}$ , and $\acute{\text{ó}}$
$\text{Shift} + \text{AltGr} + \text{P}$	→ $\ddot{\text{~}}$ deadkey <b>umlaut/diaeresis</b> : $\text{e} \rightarrow \ddot{\text{e}}$ , $\text{h} \rightarrow \ddot{\text{h}}$ , $\text{i} \rightarrow \ddot{\text{i}}$ , etc.; space $\rightarrow \ddot{\text{ '}}$ ; $\_ \rightarrow \ddot{\text{ '}}$ (spacing diaeresis); can be combined with acute deadkey to form $\acute{\text{í}}$ and $\acute{\text{ú}}$

## 6. Punctuation etc.

Key combination	Comment
$\text{Shift} + \text{AltGr} + \text{6}, !$	→ $¡$ Spanish initial exclamation mark (U+00A1)
$\text{Shift} + \text{AltGr} + \text{6}, ?$	→ $¿$ Spanish initial question mark (U+00BF)
$\text{AltGr} + \text{AltGr} + \text{1}, ?$	→ $?$ interrobang (U+203D)
$\text{AltGr} + \text{AltGr} + \text{1}, .$	→ $\cdot$ middle dot (U+00B7)
$\text{AltGr} + \text{AltGr} + \text{1}, -$	→ $\text{=}$ double hyphen (U+2E17)
$\text{Shift} + \text{AltGr} + \text{N}$	→ $\ $ double vertical bar (U+2016) as a stronger break
$\text{AltGr} + \text{AltGr} + \text{P}$	→ $\P$ paragraph mark (U+00B6)

## 7. Real arrows

Key combination	Comment
$\text{Shift} + \text{AltGr} + \text{6}, \text{7 8 9}$	↖ ↗ ↘ The circumflex together with the digits 1–9 produces an arrow pointing in the direction where the digit is placed on the number keypad.
$\text{Shift} + \text{AltGr} + \text{6}, \text{4 5 6}$	← ↔ → (You will never need to enter “->”, “<=>”, etc. as a replacement for an arrow anymore!)
$\text{Shift} + \text{AltGr} + \text{6}, \text{1 2 3}$	↙ ↘ ↗
$\text{Shift} + \text{AltGr} + \text{6}, <$	⇐ leftwards double arrow (U+21D0)
$\text{Shift} + \text{AltGr} + \text{6}, -$	⇔ left-right double arrow (U+21D4)
$\text{Shift} + \text{AltGr} + \text{6}, >$	⇒ rightwards double arrow (U+21D2)
$\text{AltGr} + \text{AltGr} + \text{1}, 4$	⇐ leftwards arrow with stroke (U+219A)
$\text{AltGr} + \text{AltGr} + \text{1}, 5$	⇔ left-right arrow with stroke (U+21AE)
$\text{AltGr} + \text{AltGr} + \text{1}, 6$	⇒ rightwards arrow with stroke (U+219B)
$\text{AltGr} + \text{AltGr} + \text{1}, <$	⇐ leftwards double arrow with stroke (U+21CD)
$\text{AltGr} + \text{AltGr} + \text{1}, -$	⇔ left-right double arrow with stroke (U+21CE)
$\text{AltGr} + \text{AltGr} + \text{1}, >$	⇒ rightwards double arrow with stroke (U+21CF)
$\text{AltGr} + \text{AltGr} + \text{1}, >$	☞ rightwards pointing hand, “see” (U+261E)
$\text{AltGr} + \text{AltGr} + \text{1}, <$	☜ leftwards pointing hand (U+261C)

## 8. Mathematical and logical symbols

Key combination	Comment
$\text{Shift} + \text{AltGr} + \text{P}$	→ $-$ minus sign (U+2212)
$\text{AltGr} + \text{AltGr} + \text{P}$	→ $\times$ multiplication sign (U+00D7)
$\text{AltGr} + \text{AltGr} + \text{1}, .$	→ $\cdot$ middle dot (U+00B7), also as a multiplication sign
$\text{Shift} + \text{AltGr} + \text{AltGr} + \text{P}$	→ $\div$ division sign (U+00F7)
$\text{Shift} + \text{AltGr} + \text{P}, +$	→ $\pm$ plus-minus (U+00B1)
$\text{AltGr} + \text{AltGr} + \text{1}, =$	→ $\neq$ not equal (U+2260)
$\text{Shift} + \text{AltGr} + \text{AltGr} + \text{P}$	→ $\approx$ almost equal to (U+2248)
$\text{Shift} + \text{AltGr} + \text{1}, =$	→ $\cong$ approximately equal to (U+2245)
$\text{Shift} + \text{AltGr} + \text{P}, =$	→ $\equiv$ identical to (U+2261)
$\text{Shift} + \text{AltGr} + \text{6}, =$	→ $\ni$ corresponds to (U+2258)
$\text{AltGr} + \text{AltGr} + \text{1}, =$	→ $\stackrel{\text{def}}{=}$ defined as (U+225D)
$\text{AltGr} + \text{AltGr} + \text{N}$	→ $\neg$ not (U+00AC)
$\text{Shift} + \text{AltGr} + \text{6}, ($	→ $\subset$ subset of (U+2282)
$\text{AltGr} + \text{AltGr} + \text{1}, ($	→ $\not\subset$ not a subset of (U+2284)
$\text{Shift} + \text{AltGr} + \text{6}, )$	→ $\supset$ superset of, implies (U+2283)
$\text{AltGr} + \text{AltGr} + \text{1}, )$	→ $\not\supset$ not a superset of, does not imply (U+2285)
$\text{Shift} + \text{AltGr} + \text{6}, +$	→ $\cap$ intersection (U+2229)
$\text{Shift} + \text{AltGr} + \text{6}, v$	→ $\cup$ union (U+222A)

Key combination	Comment
<b>AltGr</b> + <b>l</b> , <b>e</b> → €	small element of (U+220A)
<b>AltGr</b> + <b>l</b> , <b>€</b> → €	element of (U+2208)
<b>AltGr</b> + <b>l</b> , <b>€</b> → ∉	not an element of (U+2209)
<b>AltGr</b> + <b>l</b> , <b>+</b> → ∧	and (U+2227)
<b>AltGr</b> + <b>l</b> , <b>v</b> → ∨	or (U+2228)
<b>AltGr</b> + <b>l</b> , <b>A</b> → ∀	universal quantifier (U+2200)
<b>AltGr</b> + <b>l</b> , <b>E</b> → ∃	existential quantifier (U+2203)
<b>AltGr</b> + <b>l</b> , <b>8</b> → ∞	infinity (U+221E)
<b>AltGr</b> + <b>l</b> , <b>0</b> → ∅	empty set, linguistic zero, etc. (U+2205)
<b>AltGr</b> + <b>l</b> , <b>°</b> → ∅	diameter (U+2300)
<b>AltGr</b> + <b>l</b> , <b>%</b> → ‰	per thousand sign (U+2030)

## 9. Other symbols and special characters

Tastenkombination	Kommentar
<b>Shift</b> + <b>AltGr</b> + <b>C</b> → ¢	cent sign (U+00A2)
<b>Shift</b> + <b>AltGr</b> + <b>G</b> → ₺	hryvnja sign (U+20B4)
<b>AltGr</b> + <b>4</b> → £	pound sterling sign
<b>Shift</b> + <b>AltGr</b> + <b>R</b> → ₰	ruble sign (U+20BD)
<b>AltGr</b> + <b>Y</b> → ¥	yen sign (U+00A5)
<b>Shift</b> + <b>AltGr</b> + <b>H</b> → ˇ	marks for metrics ('short' and 'short/long'; use the dash for 'long', e.g. ˇ ˇ – ˇ ˇ – ˇ ˇ)
<b>Shift</b> + <b>AltGr</b> + <b>H</b> → ˘	
<b>AltGr</b> + <b>C</b> → ©	copyright sign (U+00A9)
<b>AltGr</b> + <b>R</b> → ®	registered trademark sign (U+00AE)
<b>Shift</b> + <b>AltGr</b> + <b>Y</b> → ™	trademark sign (U+2122)
<b>AltGr</b> + <b>X</b> → ♥	heart symbol (U+2665)
<b>Shift</b> + <b>AltGr</b> + <b>X</b> → ∞	marriage symbol (U+26AD)
<b>AltGr</b> + <b>V</b> → ✓	check mark (U+2713)
<b>Shift</b> + <b>AltGr</b> + <b>V</b> → ✕	cross mark (U+2717)
<b>AltGr</b> + <b>l</b> , <b>[</b> → ⌈	top left half bracket (U+2E22)
<b>AltGr</b> + <b>l</b> , <b>]</b> → ⌋	top right half bracket (U+2E23)
<b>AltGr</b> + <b>l</b> , <b>[</b> → ⌌	bottom left half bracket (U+2E24)
<b>AltGr</b> + <b>l</b> , <b>]</b> → ⌍	bottom right half bracket (U+2E25)
<b>AltGr</b> + <b>l</b> , <b>)</b> → 😊	smiling emoji (U+263A)
<b>AltGr</b> + <b>l</b> , <b>(</b> → ☹	frowning emoji (U+2639)
<b>AltGr</b> + <b>l</b> , <b>f</b> → ♀	female sign (U+2640)
<b>AltGr</b> + <b>l</b> , <b>m</b> → ♂	male sign (U+2642)
<b>AltGr</b> + <b>l</b> , <b>c</b> → %	care of (U+2105)
<b>AltGr</b> + <b>7</b> → ℓ	litre sign (U+2113)
<b>Shift</b> + <b>AltGr</b> + <b>K</b> → †	cross (U+2020)
<b>AltGr</b> + <b>G</b> , <b>†</b> → ₯	chi-rho (U+2627)
<b>AltGr</b> + <b>K</b> , <b>†</b> → †	orthodox cross (U+2626)

## 10. International Phonetic Alphabet

The general deadkey for phonetic symbols is **AltGr** + **F** (as in “fonetix”). After this deadkey you enter a letter, which has been chosen to be as straightforward as possible, sometimes with **Shift** or, for additional symbols, with an equals sign as an “expansion prefix” before the actual letter (or a plus sign, which is more mnemonic but needs an additional keystroke). Some groups of symbols have special “prefix keys”. The list below more or less follows the order of the symbols in the well-known IPA table.

Key combination	Comment
<b>Vowels</b>	
<b>AltGr</b> + <b>F</b> , <b>i</b> → i	unrounded close central vowel (U+0268; auch <b>AltGr</b> + <b>l</b> , <b>i</b> )
<b>AltGr</b> + <b>F</b> , <b>U</b> → ʊ	rounded close central vowel (U+0289; also with <b>}</b> instead of <b>U</b> ; cf. X-SAMPA: })
<b>AltGr</b> + <b>F</b> , <b>m</b> → u	unrounded close back vowel (U+026F)
<b>AltGr</b> + <b>F</b> , <b>I</b> → ɪ	unrounded near-close near-front vowel (U+026A; cf. X-SAMPA: I)

Key combination	Comment
AltGr + F, Y	→ ʏ rounded near-close near-front vowel (U+028F; cf. X-SAMPA: Y)
AltGr + F, u	→ ʊ rounded near-close near-back vowel (U+028A)
AltGr + F, 7	→ ø close-mid rounded front vowel (U+00F8; also AltGr + L)
AltGr + F, =, e	→ ə unrounded close-mid central vowel (U+0258)
AltGr + F, =, o	→ ø rounded close-mid central vowel (U+0275)
AltGr + F, y	→ ʏ unrounded close-mid back vowel (U+0264)
AltGr + F, e	→ ə schwa, mid-central vowel (U+0259; also AltGr + A)
AltGr + F, E	→ ε unrounded open-mid front vowel (U+025B; cf. X-SAMPA: E)
AltGr + F, 9	→ œ rounded open-mid front vowel (U+0153; cf. X-SAMPA: 9)
AltGr + F, 8	→ ɜ unrounded open-mid central vowel (U+025C)
AltGr + F, 6	→ ɞ rounded open-mid central vowel (U+025E)
AltGr + F, V	→ ʌ unrounded open-mid back vowel (U+028C; cf. X-SAMPA: V)
AltGr + F, o	→ ɔ rounded open-mid back vowel (U+0254)
AltGr + F, {	→ æ unrounded near-open front vowel (U+00E6; cf. X-SAMPA: {; also AltGr + Q)
AltGr + F, a	→ ɐ near-open central vowel (U+0250)
AltGr + F, &	→ œ rounded open front vowel (U+0276; cf. X-SAMPA: &)
AltGr + F, A	→ ɑ unrounded open back vowel (U+0251; cf. X-SAMPA: A)
AltGr + F, O	→ ɒ rounded open back vowel (U+0252; also with Q or q instead of O; cf. X-SAMPA: Q)
AltGr + F, =, E	→ ɶ rhotic schwa (U+025A)
AltGr + F, =, 8	→ ɶ rhotic unrounded open-mid central vowel (U+025D)
AltGr + F, =, i	→ ɪ unrounded near-close central vowel ( <i>informal</i> ; U+1D7B; also with I instead of i; cf. X-SAMPA: I\)
AltGr + F, =, u	→ ʉ rounded near-close central vowel ( <i>informal</i> ; U+1D7F)

#### Pulmonal consonants: bilabial, labiodentals, labiovelars

AltGr + F, B	→ ɓ bilabial trill (U+0299; cf. X-SAMPA: B\)
AltGr + F, p	→ ɸ voiceless bilabial fricative (U+0278; cf. X-SAMPA: p\)
AltGr + F, b	→ β voiced bilabial fricative (U+03B2; ≠ Greek beta)
AltGr + F, f	→ ɱ bilabial nasal (U+0271; also with F instead of f; cf. X-SAMPA: F)
AltGr + F, =, v	→ ɸ labiodental flap (U+2C71)
AltGr + F, v	→ ʋ labiodental approximant (U+028B; also with P instead of v; cf. X-SAMPA: P or v\)
AltGr + F, w	→ ɰ voiceless labiovelar fricative (U+028D; also with W instead of w; cf. X-SAMPA: W)
AltGr + F, H	→ ɥ labio-palatal approximant (U+0265; cf. X-SAMPA: H)

#### Pulmonal consonants: dentals, alveolars, postalveolars

AltGr + F, r	→ ɾ alveolar tap/flap (U+027E)
AltGr + F, t	→ ʈ voiceless interdental fricative (U+03B8; also with T instead of t; cf. X-SAMPA: T; identical with Greek theta, so also AltGr + G, u)
AltGr + F, d	→ ɗ voiced interdental fricative (U+00F0; also with D instead of d; cf. X-SAMPA: D)
AltGr + F, S	→ ʃ voiceless postalveolar fricative (U+0283; cf. X-SAMPA: S)
AltGr + F, Z	→ ʒ voiced postalveolar fricative (U+0292; cf. X-SAMPA: Z; also AltGr + Z)
AltGr + F, k	→ ɸ voiceless lateral fricative (U+026C; cf. X-SAMPA: K)
AltGr + F, K	→ ɸ voiced lateral fricative (U+026E; cf. X-SAMPA: K\)
AltGr + F, =, r	→ ɹ alveolar approximant (U+0279; cf. X-SAMPA: r\)
AltGr + F, =, l	→ ɭ alveolar-lateral flap (U+027A; cf. X-SAMPA: l\)
AltGr + F, X	→ ɸ voiceless postalveolar-velar fricative (U+0267; cf. X-SAMPA: x\)
AltGr + F, l	→ ɮ velarized or pharyngealized alveolar lateral approximant (U+026B)

#### Pulmonal consonants: retroflexes ('prefix': >)

AltGr + F, >, t	→ ɽ voiceless retroflex plosive (U+0288; cf. X-SAMPA: t`)
AltGr + F, >, d	→ ɽ voiced retroflex plosive (U+0256; cf. X-SAMPA: d`)
AltGr + F, >, n	→ ɽ retroflex nasal (U+0273; cf. X-SAMPA: n`)
AltGr + F, >, R	→ ɽ retroflex flap (U+027D; cf. X-SAMPA: r`)
AltGr + F, >, s	→ ɽ voiceless retroflex fricative (U+0282; cf. X-SAMPA: s`)

Key combination	Comment
<b>AltGr</b> + <b>F</b> , <b>&gt;, z</b>	→ ẓ voiced retroflex fricative (U+0290; cf. X-SAMPA: z`)
<b>AltGr</b> + <b>F</b> , <b>&gt;, r</b>	→ ɽ retroflex approximant (U+027B; cf. X-SAMPA: r\`)
<b>AltGr</b> + <b>F</b> , <b>&gt;, l</b>	→ ɭ retroflex lateral approximant (U+026D; cf. X-SAMPA: l`)
<b>Pulmonal consonants: palatals, alveolo-palatals</b>	
<b>AltGr</b> + <b>F</b> , <b>=, j</b>	→ ɟ voiced palatal plosive (U+025F)
<b>AltGr</b> + <b>F</b> , <b>J</b>	→ ɲ palatal nasal (U+0272; cf. X-SAMPA: J)
<b>AltGr</b> + <b>F</b> , <b>C</b>	→ ç voiceless palatal fricative (U+00E7; cf. X-SAMPA: C; also <b>Shift</b> + <b>AltGr</b> + <b>]</b> , <b>c</b> )
<b>AltGr</b> + <b>F</b> , <b>j</b>	→ ɟ voiced palatal fricative (U+029D; cf. X-SAMPA: j\)
<b>AltGr</b> + <b>F</b> , <b>L</b>	→ ʎ palatal lateral approximant (U+028E; cf. X-SAMPA: L)
<b>AltGr</b> + <b>F</b> , <b>c</b>	→ ç voiceless alveolo-palatal fricative (U+0255; also with <b>s</b> instead of <b>c</b> ; cf. X-SAMPA: s\)
<b>AltGr</b> + <b>F</b> , <b>z</b>	→ ʐ voiced alveolo-palatal fricative (U+0291; cf. X-SAMPA: z\)
<b>Pulmonal consonants: velars and Uvulars</b>	
<b>AltGr</b> + <b>F</b> , <b>g</b>	→ ɣ voiced velar plosive (U+0261; ≠ g!)
<b>AltGr</b> + <b>F</b> , <b>n</b>	→ ŋ velar nasal (U+014B)
<b>AltGr</b> + <b>F</b> , <b>G</b>	→ ɣ voiced velar fricative (U+0263; cf. X-SAMPA: G)
<b>AltGr</b> + <b>F</b> , <b>M</b>	→ ɰ velar approximant (U+0270; cf. X-SAMPA: M\)
<b>AltGr</b> + <b>F</b> , <b>=, L</b>	→ ʟ velar lateral approximant (U+029F; cf. X-SAMPA: L\)
<b>AltGr</b> + <b>F</b> , <b>=, g</b>	→ ɢ voiced uvular plosive (U+0262; also with <b>G</b> instead of <b>g</b> ; cf. X-SAMPA: G\)
<b>AltGr</b> + <b>F</b> , <b>N</b>	→ ɴ uvular nasal (U+0274)
<b>AltGr</b> + <b>F</b> , <b>=, R</b>	→ ʀ uvular trill (U+0280; cf. X-SAMPA: R\)
<b>AltGr</b> + <b>F</b> , <b>x</b>	→ χ voiceless uvular fricative (U+03C7)
<b>AltGr</b> + <b>F</b> , <b>R</b>	→ ʁ voiced uvular fricative (U+0281; cf. X-SAMPA: R)
<b>Pulmonal Consonants: pharyngeals, glottals, epiglottals</b>	
<b>AltGr</b> + <b>F</b> , <b>=, h</b>	→ ħ voiceless pharyngeal fricative (U+0127; also with <b>X</b> instead of <b>h</b> ; cf. X-SAMPA: X\)
<b>AltGr</b> + <b>F</b> , <b>=, ?</b>	→ ʕ voiced pharyngeal fricative (U+0295; cf. X-SAMPA: ?\)
<b>AltGr</b> + <b>F</b> , <b>?</b>	→ ʔ voiceless glottal plosive (U+0294; cf. X-SAMPA: ?)
<b>AltGr</b> + <b>F</b> , <b>h</b>	→ ɦ voiced glottal fricative (U+0266)
<b>AltGr</b> + <b>F</b> , <b>=, H</b>	→ ʜ voiceless epiglottal fricative (U+029C)
<b>AltGr</b> + <b>F</b> , <b>=, &lt;</b>	→ ʕ voiced epiglottal fricative (U+02A2; cf. X-SAMPA: <\)
<b>AltGr</b> + <b>F</b> , <b>=, &gt;</b>	→ ʔ epiglottal plosive (U+02A1; cf. X-SAMPA: >\)
<b>Clicks</b>	
<b>AltGr</b> + <b>F</b> , <b>=, O</b>	→ ɔ bilabial click (U+0298; cf. X-SAMPA: O\)
<b>AltGr</b> + <b>F</b> , <b>=,  </b>	→ ǀ dental click (U+01C0; cf. X-SAMPA: \ ; ≠ vertical bar!)
<b>AltGr</b> + <b>F</b> , <b>=, !</b>	→ ǃ (post)alveolar click (U+01C3; cf. X-SAMPA: \!; ≠ exclamation mark!)
<b>AltGr</b> + <b>F</b> , <b>=, =</b>	→ ǁ palato-alveolar click (U+01C2; cf. X-SAMPA: \=; ≠ not-equal sign!)
<b>AltGr</b> + <b>F</b> , <b>=,   </b>	→ ǂ alveolar-lateral click (U+01C1; cf. X-SAMPA: \ ; ≠ double vertical line!)
<b>Voiced implosives ('prefix': &lt;)</b>	
<b>AltGr</b> + <b>F</b> , <b>&lt;, b</b>	→ ɓ bilabial implosive (U+0253; cf. X-SAMPA: b_<)
<b>AltGr</b> + <b>F</b> , <b>&lt;, d</b>	→ ɗ dental/alveolar implosive (U+0257; cf. X-SAMPA: d_<)
<b>AltGr</b> + <b>F</b> , <b>&lt;, j</b>	→ ɟ palatal implosive (U+0284; also with <b>J</b> instead of <b>j</b> ; cf. X-SAMPA: J_<)
<b>AltGr</b> + <b>F</b> , <b>&lt;, g</b>	→ ɠ velar implosive (U+0260; cf. X-SAMPA: g_<)
<b>AltGr</b> + <b>F</b> , <b>&lt;, G</b>	→ ɢ uvular implosive (U+029B; cf. X-SAMPA: G_<)
<b>Ejectives</b>	
<b>AltGr</b> + <b>F</b> , <b>-, &gt;</b>	→ ʼ modifier letter apostrophe (U+02BC; cf. X-SAMPA: _>; also <b>Shift</b> + <b>]</b> , <b>'</b> )
<b>Suprasegmentals (partially with 'diacritic prefix': -)</b>	
<b>AltGr</b> + <b>F</b> , <b>'</b>	→ ˈ primary stress (U+02C8; also with <b>"</b> instead of <b>'</b> ; cf. X-SAMPA: ")

Key combination	Comment
AltGr + F, %	→ ˘ secondary stress (U+02CC; cf. X-SAMPA: %) )
AltGr + F, :	→ ː long (U+02D0; cf. X-SAMPA: :) )
AltGr + F, =, :	→ ˙ half-long (U+02D1; cf. X-SAMPA: :) )
AltGr + F, =, X	→ ˇ extra short (U+0306; cf. X-SAMPA: _X; also Shift + AltGr + 4) )
AltGr + F, _	→ ˘ undertie, indicates liaison, phonetical words, etc. (U+203F) )
AltGr + F, 1	→ ˘ low tone (U+02E9) )
AltGr + F, 2	→ ˘ low-mid tone (U+02E8) )
AltGr + F, 3	→ ˘ middle tone (U+02E7) )
AltGr + F, 4	→ ˘ high-mid tone (U+02E6) )
AltGr + F, 5	→ ˘ high tone (U+02E5) )
AltGr + F, -, R	→ ˘ rising tone (U+030C; also with / instead of R; cf. X-SAMPA: _R or _/) )
AltGr + F, -, f	→ ˘ falling tone (U+0302; also with F or \ instead of f; cf. X-SAMPA: _F or _\) )
AltGr + F, -, M	→ ˘ intermediate tone (U+0304; cf. X-SAMPA: _M) )
AltGr + F, -, 0	→ ˘ low-falling tone (U+1DC6) )
AltGr + F, -, 1	→ ˘ extra low tone (U+030F) )
AltGr + F, -, 2	→ ˘ low tone (U+0300) )
AltGr + F, -, 3	→ ˘ low-rising tone (U+1DC5) )
AltGr + F, -, 4	→ ˘ high tone (U+0301) )
AltGr + F, -, 5	→ ˘ extra high tone (U+030B) )
AltGr + F, -, 6	→ ˘ high-falling tone (U+1DC7) )
AltGr + F, -, 7	→ ˘ high-rising tone (U+1DC4) )
AltGr + F, -, 8	→ ˘ falling-rising tone (U+1DC9) )
AltGr + F, -, 9	→ ˘ rising-falling tone (U+1DC8) )
AltGr + F, ^	→ † upstep (U+A71B; cf. X-SAMPA: ^) )
AltGr + F, !	→ ‡ downstep (U+A71C; cf. X-SAMPA: !) )
AltGr + F, 9	→ ↗ global rise (U+2197) )
AltGr + F, 3	→ ↘ global fall (U+2198) )

} In fonts allowing this, these symbols can be combined to form contours, e.g. ˘ + ˘ → ˘, ˘ + ˘ + ˘ → ˘, etc.

Diacritics ('prefix': -)	
AltGr + F, -, V	→ ˚ voiceless (U+0325; also 2 × Shift + AltGr + O) )
AltGr + F, -, v	→ ˇ voiced (U+032C; cf. X-SAMPA: _v) )
AltGr + F, -, h	→ ˆ aspirated (U+02B0; cf. X-SAMPA: _h) )
AltGr + F, -, O	→ ˚ more rounded (U+0339; cf. X-SAMPA: _O) )
AltGr + F, -, c	→ ˚ less rounded (U+031C; cf. X-SAMPA: _c) )
AltGr + F, -, +	→ ˚ advanced (U+031F; cf. X-SAMPA: _+) )
AltGr + F, -, -	→ ˚ retracted (U+0320; cf. X-SAMPA: _-) )
AltGr + F, -, "	→ ˚ centralized (U+0308; cf. X-SAMPA: _") )
AltGr + F, -, x	→ ˚ mid-centralized (U+033D; cf. X-SAMPA: _x) )
AltGr + F, -, =	→ ˚ syllabic (U+0329; cf. X-SAMPA: = or _=) )
AltGr + F, -, ^	→ ˚ non-syllabic (U+032F; cf. X-SAMPA: _^; also 2 × AltGr + P) )
AltGr + F, -, '	→ ˚ rhotic (U+02DE; cf. X-SAMPA: `; see also ʀ and ʁ under "Vowels" above) )
AltGr + F, -, t	→ ˚ breathy voiced (U+0324; cf. X-SAMPA: _t) )
AltGr + F, -, k	→ ˚ creaky voiced (U+0330; cf. X-SAMPA: _k) )
AltGr + F, -, N	→ ˚ linguolabial (U+033C; cf. X-SAMPA: _N) )
AltGr + F, -, w	→ ˚ labialized (U+02B7; cf. X-SAMPA: _w) )
AltGr + F, -, j	→ ˚ palatalized (U+02B2; cf. X-SAMPA: _j) )
AltGr + F, -, g	→ ˚ velarized (U+02E0; also with G instead of g; cf. X-SAMPA: _G) )
AltGr + F, -, p	→ ˚ pharyngealized (U+02E4) )
AltGr + F, -, e	→ ˚ velarized or pharyngealized (U+0334; cf. X-SAMPA: _e; see † under "Dentals..." above) )
AltGr + F, -, r	→ ˚ raised (U+031D; cf. X-SAMPA: _r) )
AltGr + F, -, o	→ ˚ lowered (U+031E; cf. X-SAMPA: _o) )
AltGr + F, -, A	→ ˚ advanced tongue root (U+0318; cf. X-SAMPA: _A) )
AltGr + F, -, q	→ ˚ retracted tongue root (U+0319; cf. X-SAMPA: _q) )





