



# The **unitipa** package

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 <https://ctan.org/pkg/unitipa>  
 <https://gitlab.com/niruv/unitipa>

This package converts Unicode characters into TIPA commands, which gives us **tipa** typefaces, without actually learning the **tipa** commands in much details. This package needs Lua $\text{\LaTeX}$  as the compiler for correctly typesetting the IPA diacritics. TIPA was designed to match with the Computer Modern design, no other IPA font matches with traditional  $\text{\LaTeX}$  font. This package is helpful for getting the beautiful **tipa** shapes with Unicode characters. This package assumes that the user knows how to type IPA Unicode. Following is the list of symbols that *cannot* be used with the traditional  $\text{\LaTeX}$  font. Every other symbol in the IPA chart is present in the current  $\text{\LaTeX}$  font.

**Plosives** t d j G ?

**Nasals** ŋ ŋ n<sup>1</sup> N

**Trills** B R

**Taps or flaps** v r ɾ

**Fricatives** ɸ β θ ð ʒ ʃ z ʎ χ ʁ ʕ ɦ

**Lateral fricatives** ɬ ɮ

**Approximants** ʋ ɹ ɻ ɰ

**Lateral approximants** ɭ ʎ L

**Affricates** tʃ dʒ ts dz

**Close vowels** i ɪ u

**Near-close vowels** ɪ ʏ ʊ

**Close-mid vowels** e ɜ ɞ

**Open-mid vowels** ɛ ɜ ɔ ʌ ɔ

**Near-open vowels** ɐ ɶ ɔ

**Open vowels** a<sup>2</sup>

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<sup>1</sup>Added in v0.2

<sup>2</sup>Reported ʌ added by Heller, Thomas in v0.2.

Bug report - <https://gitlab.com/niruv/unitipa/-/issues/1>

MR - [https://gitlab.com/niruv/unitipa/-/merge\\_requests/1](https://gitlab.com/niruv/unitipa/-/merge_requests/1)



```

15 \DeclareTextFontCommand{\ipatext}{\ipa}
16 \def\unitipa@ipafont#1{\pgfkeys{unitipa/.cd,#1}}
17 \DeclareOption*{\expandafter\unitipa@ipafont\expandafter{\CurrentOption}}

```

Option ipafont provided using pgfkeys.

```

18 \newif\ifnodiaticritics
19 \nodiaticriticsfalse
20 \DeclareOption{nodiaticritics}{\nodiaticriticstrue}
21 \ProcessOptions\relax
22 \ifnodiaticritics
23 \relax
24 \else
25 \RequirePackage{iftex}
26 \RequirePackage{luacode}
27 \RequireLuaTeX
28 %% Dependent diacritic marks
29 \begin{luacode}
30     function voiceless ( s )
31         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubring{%1}' )
32         return s
33     end
34 \end{luacode}
35 \directlua{luatexbase.add_to_callback("process_input_buffer",
36     voiceless, "voiceless")}
37 \begin{luacode}
38     function voiced ( s )
39         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubwedge{%1}' )
40         return s
41     end
42 \end{luacode}
43 \directlua{luatexbase.add_to_callback("process_input_buffer",
44     voiced, "voiced")}
45 \begin{luacode}
46     function morerounded ( s )
47         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubrhalfring{%1}' )
48         return s
49     end
50 \end{luacode}
51 \directlua{luatexbase.add_to_callback("process_input_buffer",
52     morerounded, "morerounded")}
53 \begin{luacode}
54     function lessrounded ( s )
55         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsublhalfring{%1}' )
56         return s
57     end
58 \end{luacode}
59 \directlua{luatexbase.add_to_callback("process_input_buffer",
60     lessrounded, "lessrounded")}
61 \begin{luacode}
62     function advanced ( s )
63         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubplus{%1}' )
64         return s
65     end
66 \end{luacode}
67 \directlua{luatexbase.add_to_callback("process_input_buffer",

```

```

68     advanced, "advanced"))}
69 \begin{luacode}
70     function retracted ( s )
71         s = unicode.utf8.gsub ( s , '(%a)', '\\textsubbar{%1}' )
72         return s
73     end
74 \end{luacode}
75 \directlua{luatexbase.add_to_callback("process_input_buffer",
76     retracted, "retracted")}
77 \begin{luacode}
78     function midcentralized ( s )
79         s = unicode.utf8.gsub ( s , '(%a)', '\\textovercross{%1}' )
80         return s
81     end
82 \end{luacode}
83 \directlua{luatexbase.add_to_callback("process_input_buffer",
84     midcentralized, "midcentralized")}
85 \begin{luacode}
86     function syllabic ( s )
87         s = unicode.utf8.gsub ( s , '(%a)', '\\textsyllabic{%1}' )
88         return s
89     end
90 \end{luacode}
91 \directlua{luatexbase.add_to_callback("process_input_buffer",
92     syllabic, "syllabic")}
93 \begin{luacode}
94     function nonsyllabic ( s )
95         s = unicode.utf8.gsub ( s , '(%a)', '\\textsubarch{%1}' )
96         return s
97     end
98 \end{luacode}
99 \directlua{luatexbase.add_to_callback("process_input_buffer",
100     nonsyllabic, "nonsyllabic")}
101 \begin{luacode}
102     function breathyvoiced ( s )
103         s = unicode.utf8.gsub ( s , '(%a)', '\\textsubumlaut{%1}' )
104         return s
105     end
106 \end{luacode}
107 \directlua{luatexbase.add_to_callback("process_input_buffer",
108     breathyvoiced, "breathyvoiced")}
109 \begin{luacode}
110     function linguolabial ( s )
111         s = unicode.utf8.gsub ( s , '(%a)', '\\textseagull{%1}' )
112         return s
113     end
114 \end{luacode}
115 \directlua{luatexbase.add_to_callback("process_input_buffer",
116     linguolabial, "linguolabial")}
117 \begin{luacode}
118     function velarized ( s )
119         s = unicode.utf8.gsub ( s , '(%a)', '\\textsuperimposetilde{%1}' )
120         return s
121     end

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```

122 \end{luacode}
123 \directlua{luatexbase.add_to_callback("process_input_buffer",
124     velarized, "velarized")}
125 \begin{luacode}
126     function raised ( s )
127         s = unicode.utf8.gsub ( s , '(%a) ', '\\textraising{%1}' )
128         return s
129     end
130 \end{luacode}
131 \directlua{luatexbase.add_to_callback("process_input_buffer",
132     raised, "raised")}
133 \begin{luacode}
134     function lowered ( s )
135         s = unicode.utf8.gsub ( s , '(%a) ', '\\textlowering{%1}' )
136         return s
137     end
138 \end{luacode}
139 \directlua{luatexbase.add_to_callback("process_input_buffer",
140     lowered, "lowered")}
141 \begin{luacode}
142     function advancedtr ( s )
143         s = unicode.utf8.gsub ( s , '(%a) ', '\\textadvancing{%1}' )
144         return s
145     end
146 \end{luacode}
147 \directlua{luatexbase.add_to_callback("process_input_buffer",
148     advancedtr, "advancedtr")}
149 \begin{luacode}
150     function retractedtr ( s )
151         s = unicode.utf8.gsub ( s , '(%a) ', '\\textretracting{%1}' )
152         return s
153     end
154 \end{luacode}
155 \directlua{luatexbase.add_to_callback("process_input_buffer",
156     retractedtr, "retractedtr")}
157 \begin{luacode}
158     function dental ( s )
159         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubbridge{%1}' )
160         return s
161     end
162 \end{luacode}
163 \directlua{luatexbase.add_to_callback("process_input_buffer",
164     dental, "dental")}
165 \begin{luacode}
166     function apical ( s )
167         s = unicode.utf8.gsub ( s , '(%a) ', '\\textinvsubbridge{%1}' )
168         return s
169     end
170 \end{luacode}
171 \directlua{luatexbase.add_to_callback("process_input_buffer",
172     apical, "apical")}
173 \begin{luacode}
174     function laminal ( s )
175         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubsquare{%1}' )

```

```

176     return s
177 end
178 \end{luacode}
179 \directlua{luatexbase.add_to_callback("process_input_buffer",
180     laminal, "laminal")}
181 \begin{luacode}
182     function unaudible ( s )
183     s = unicode.utf8.gsub ( s , '(%a) ', '%1\\textcorner' )
184     return s
185     end
186 \end{luacode}
187 \directlua{luatexbase.add_to_callback("process_input_buffer",
188     unaudible, "unaudible")}
189 %% Tie bars
190 \begin{luacode}
191     function tiebarup ( s )
192     s = unicode.utf8.gsub ( s , '(%a) (%a)', '\\texttoptiebar{%1%2}' )
193     return s
194     end
195 \end{luacode}
196 \directlua{luatexbase.add_to_callback("process_input_buffer",
197     tiebarup, "tiebarup")}
198 \begin{luacode}
199     function tiebardown ( s )
200     s = unicode.utf8.gsub ( s , '(%a) (%a)', '\\textbottomtiebar{%1%2}' )
201     return s
202     end
203 \end{luacode}
204 \directlua{luatexbase.add_to_callback("process_input_buffer",
205     tiebardown, "tiebardown")}
206 \begin{luacode}
207     function risefall ( s )
208     s = unicode.utf8.gsub ( s , '(%a) ', '\\textrisefall{%1}' )
209     return s
210     end
211 \end{luacode}
212 \directlua{luatexbase.add_to_callback("process_input_buffer",
213     risefall, "risefall")}
214 \begin{luacode}
215     function rising ( s )
216     s = unicode.utf8.gsub ( s , '(%a) ', '\\texthighrise{%1}' )
217     return s
218     end
219 \end{luacode}
220 \directlua{luatexbase.add_to_callback("process_input_buffer",
221     rising, "rising")}
222 \begin{luacode}
223     function falling ( s )
224     s = unicode.utf8.gsub ( s , '(%a) ', '\\textlowrise{%1}' )
225     return s
226     end
227 \end{luacode}
228 \directlua{luatexbase.add_to_callback("process_input_buffer",
229     falling, "falling")}

```

230 \fi

Option `nodiacritics` provided for using the package without Lua $\text{\LaTeX}$ . Enabling this option won't print any diacritics. Help from Samcarter and Mico Loretan on different platforms<sup>3</sup> gave a right direction to this code.

```
231 %% Pulmonic Consonants
232 %% Plosives
233 \newunicodechar{t}{\texttrtailt}
234 \newunicodechar{d}{\texttrtaild}
235 \newunicodechar{j}{\textbardotlessj}
236 \newunicodechar{c}{\textscg}
237 \newunicodechar{ʔ}{\textglotstop}
238 %% Nasals
239 \newunicodechar{ɱ}{\textltailm}
240 \newunicodechar{ɳ}{\texttrtailn}
241 \newunicodechar{ɲ}{\textltailn} %% Added in v0.2
242 \newunicodechar{ɴ}{\textscn}
243 %% Trills
244 \newunicodechar{ʙ}{\textscb}
245 \newunicodechar{ʀ}{\textscr}
246 %% Taps or flaps
247 \newunicodechar{ɸ}{\ipatext{v}} %% Sorry for the bad typography!
248 \newunicodechar{ɾ}{\textfishhookr}
249 \newunicodechar{ɽ}{\textrtailr}
250 %% Fricatives
251 \newunicodechar{ɸ}{\textphi}
252 \newunicodechar{β}{\textbeta}
253 \newunicodechar{θ}{\texttheta}
254 \newunicodechar{ʃ}{\textesh}
255 \newunicodechar{ʒ}{\textyogh}
256 \newunicodechar{ɬ}{\textrtails}
257 \newunicodechar{ɮ}{\textrtailz}
258 \newunicodechar{ɟ}{\textctj}
259 \newunicodechar{ɣ}{\textgamma}
260 \newunicodechar{χ}{\textchi}
261 \newunicodechar{ɰ}{\textinvscr}
262 \newunicodechar{ʁ}{\textrevglotstop}
263 \newunicodechar{ɦ}{\textthth}
264 %% Lateral fricatives
265 \newunicodechar{ɬ}{\textbeltl}
266 \newunicodechar{ɮ}{\textlyoghlig}
267 %% Approximants
268 \newunicodechar{ɹ}{\textscriptv}
269 \newunicodechar{ɻ}{\textturnr}
270 \newunicodechar{ɹ̥}{\textturnrrtail}
271 \newunicodechar{ɹ̥̥}{\textturnmrleg}
272 %% Lateral approximants
273 \newunicodechar{ɭ}{\textrtaill}
274 \newunicodechar{ʎ}{\textturny}
275 \newunicodechar{ɻ}{\textscscl}
276 %% Affricates
277 \newunicodechar{tʃ}{\texttेशlig}
278 \newunicodechar{dʒ}{\textdyoghlig}
```

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<sup>3</sup>Samcarter's [answer](#) on TopAnswer & Mico Loretan's [answer](#) on TeX.SE.

```

279 \newunicodechar{ts}{\texttslig}
280 \newunicodechar{dz}{\textdzlig}
281 %% Vowels
282 %% Close
283 \newunicodechar{i}{\textbari}
284 \newunicodechar{u}{\textbaru}
285 \newunicodechar{u}{\textturnm}
286 %% Near-close
287 \newunicodechar{ɪ}{\textsci}
288 \newunicodechar{ʏ}{\textscy}
289 \newunicodechar{ʊ}{\textupsilon}
290 %% Close-mid
291 \newunicodechar{ø}{\textbaro}
292 \newunicodechar{ɤ}{\textramshorns}
293 %% Open-mid
294 \newunicodechar{ɛ}{\textepsilon}
295 \newunicodechar{ɜ}{\textrepsilon}
296 \newunicodechar{ɜ}{\reflectbox{\textclosepsilon}} %% Latest changes
297 \newunicodechar{ʌ}{\textturnv}
298 \newunicodechar{ɔ}{\textopeno}
299 %% Near-open
300 \newunicodechar{ʊ}{\textturna}
301 \newunicodechar{æ}{\textscoelig}
302 \newunicodechar{ɒ}{\textturnscripta}
303 %% Open
304 %% Reported and added by Heller, Thomas on 2021/03/13
305 %% Bug report - https://gitlab.com/niruvt/unitipa/-/issues/1
306 %% MR - https://gitlab.com/niruvt/unitipa/-/merge\_requests/1
307 \newunicodechar{ɑ}{\textscripta}
308 %% Non-Pulmonic
309 \newunicodechar{O}{\textbullseye}
310 \newunicodechar{|}{\textpipe}
311 \newunicodechar{!}{\textipa{!}}
312 \newunicodechar{#}{\textdoublebarpipe}
313 \newunicodechar{||}{\textdoublepipe}
314 %% Voiced Implosives
315 \newunicodechar{ɓ}{\texthtb}
316 \newunicodechar{ɗ}{\texthtd}
317 \newunicodechar{ɟ}{\texthtbardotlessj}
318 \newunicodechar{ɠ}{\texthtg}
319 \newunicodechar{ɠ}{\texthtscg}
320 \newunicodechar{'}{'}
321 %% Suprasegmentals
322 \newunicodechar{'}{\textprimstress}
323 \newunicodechar{.}{\textsecstress}
324 \newunicodechar{:}{\textlengthmark}
325 \newunicodechar{˙}{\texthalflength}
326 \newunicodechar{᳚}{\textturnw}
327 \newunicodechar{᳚}{\textturnh}
328 \newunicodechar{᳚}{\textsch}
329 \newunicodechar{᳚}{\textbarrevglotstop}
330 \newunicodechar{᳚}{\textbarglotstop}
331 \newunicodechar{᳚}{\textctc}
332 \newunicodechar{᳚}{\textctz}

```



```

333 \newunicodechar{l}{\textturnlonglegr}
334 \newunicodechar{h}{\texththeng}
335 %% Diacritics
336 \newunicodechar{^h}{\textsuperscript{h}}
337 \newunicodechar{^h}{\textsuperscript{h}}
338 \newunicodechar{^w}{\textsuperscript{w}}
339 \newunicodechar{^j}{\textsuperscript{j}}
340 \newunicodechar{^y}{\textsuperscript{y}}
341 \newunicodechar{^i}{\textsuperscript{i}}
342 %% Tones independent diacritics
343 \newunicodechar{^v}{\textdownstep}
344 \newunicodechar{^u}{\textupstep}
345 %% \newunicodechar{ }{\textglobrise} %% Not working :(
346 %% \newunicodechar{ }{\textglobfall} %% Need help here
347 \end{package}

```

## Change History

v0.1	General: Initial version . . . . . 9	v0.3	General: Updated repository path . . . . 9
v0.2	General: Added characters ‘a’ and ‘p’ . 9		