

The `manchuxetex` package*

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1 Introduction

The `manchuxetex` package aims at providing an easy-to-use interface for entering texts in the Manchurian script. It is, in fact, a modification of the `ArabXeTeX` package by François Charette, with actually very few changes.

I also want to thank Khaled Hosny, who pointed to `\XeTeXupwardsmode`¹ and which became `\vmanchu` in this package.

There is also the `montex` package by Dr. Oliver Corff, which also provides support for typesetting texts in Manchu.

2 Description

`manchuxetex` The package is loaded via `\usepackage[⟨mode⟩]{manchuxetex}`. The `⟨mode⟩` argument is optional and there are currently three `⟨mode⟩`s which can be used:

- `manchu` is the default and will be loaded if no `⟨mode⟩` has been selected. In this mode, Latin letters can be typed and will be converted to Unicode-encoded Manchu letters.

*This document corresponds to `manchuxetex` v0.5, dated 2016/02/01.

¹In a comment to a question about Manchu and Mongolian script on `TEX.StackExchange` (https://tex.stackexchange.com/questions/87259/manchu-and-mongolian-script#comment188660_87264).

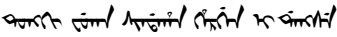

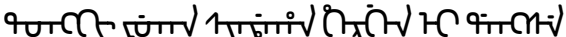

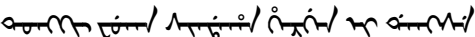
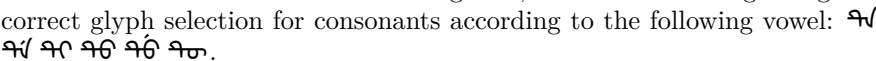
- **trans** is for transliteration purposes, where Latin letters can be typed in and will be converted to a transliteration of Manchu.
- **utf** means that Unicode-encoded Manchu letters can be typed in and will stay that way.

As this global selection of a *mode* changes it for the whole document, one is best advised to leave it as **manchu** and change it only for the respective sections, if needed.

manchufont The font to be used to typeset Manchu text can be defined with the regular **fontspec** commands for font selection, that is `\newfontfamily\manchufont[font options]{font name}`. The selected font *must* be Unicode-compliant! The default font is “Mongolian Baiti” by Microsoft:

```
\newfontfamily\manchufont[
  Script=Mongolian,%
  Language=Manchu,%
  Scale=MatchUppercase%
]{Mongolian Baiti}%
```

Examples for different fonts:

- Daicing Bible: 
- Daicing Harmony: 
- Daicing Round: 
- Daicing White: 
- Daicing Xiaokai: 
- Noto Sans Mongolian (version 1.4 unhinted), even though Google claims² that it covers Manchu as well as Mongolian, contains errors regarding the correct glyph selection for consonants according to the following vowel: .
- On a side note, Menksoft’s fonts do not work as they rely on Menksoft’s Mongolian IME.

SetTranslitStyle `\SetTranslitStyle{style}`, sets the styling for transliterations, the default is `\itshape`. In this documentation, for example, I have set it to the font “Brill italic”, which can be easily achieved with the following commands:

```
\newfontfamily\brill{Brill}
\SetTranslitStyle{\brill\itshape}
```

SetTranslitConvention `\SetTranslitConvention{convention}`, default is **mdf** (Möllendorff). Options are:

²<https://www.google.com/get/noto/#sans-mong>

- `mdf` for Paul Georg von Möllendorff's transliteration
- `haen` for Erich Haenisch's transliteration
- `xmhdcd` for the transliteration used in the *Xīn Mǎn-Hàn dà cídiǎn*³

`textmanchu` The command `\textmanchu[⟨mode⟩]{}` can be used to typeset short portions
`textmnc` of Manchu text, which will be rotated 90 degrees counterclockwise, i. e. which will
be written in the same direction as the regular text in Latin letters. One of the
`⟨mode⟩`s can be selected to change the output. Examples:

```
\textmanchu{abkai fulingga}           ᠠᠪᠠᠭᠠ ᠭᠤᠯᠢᠩᠭ᠎ᠠ
\textmanchu[trans]{hUwaliyasun tob}   hūwaliyasun tob
\textmanchu[utf]{ᠠᠪᠠᠭᠠ ᠭᠤᠯᠢᠩᠭ᠎ᠠ}  ᠠᠪᠠᠭᠠ ᠭᠤᠯᠢᠩᠭ᠎ᠠ
```

A shorthand `\textmnc` is also available.

`manchu` The `manchu` environment can be invoked with `\begin{manchu}[⟨mode⟩]` and
is ended with `\end{manchu}` and is intended for longer passages of Manchu text,
with possible line and paragraph breaks. It takes one optional argument, `⟨mode⟩`.
Example:

```
\begin{manchu}
mini sefu lama-i hUbilgan aika   ᠮᠢᠨᠢ ᠰᠡ᠋᠋᠋᠋ᠰᠡ᠋ ᠯᠠᠮᠠ-ᠢ ᠬᠤᠪᠢᠯᠭᠠᠨ ᠠᠶᠢᠭᠠ
unenggingge oci, tacibure-be     ᠤᠨᠡᠩᠭᠭᠢᠭᠭᠡ ᠣᠴᠢ, ᠲᠠᠴᠢᠪᠦᠷᠡ-ᠪᠡ
baiburakU, fucihi abka karmatame ᠪᠠᠶᠢᠪᠦᠷᠠᠭᠤ, ᠋ᠹᠤᠴᠢᠬᠢ ᠠᠪᠬᠠ ᠬᠠᠷᠠᠮᠠᠲᠠᠮᠡ
ainaha seme hUwanggiyarakU,      ᠠᠢᠨᠠᠬᠠ ᠰᠡ᠋᠋᠋᠋ ᠬᠤᠠᠩᠭᠢᠶᠠᠷᠠᠭᠠᠭᠤ,
aika taSan holonggo oci,          ᠠᠶᠢᠭᠠ ᠲᠠᠰᠠᠨ ᠬᠣᠯᠤᠭᠭᠠ ᠣᠴᠢ,
Sajin-be eiterere hUlha kai.      ᠰᠠᠵᠢᠨ-ᠪᠡ ᠡᠢᠲᠡᠷᠡᠷᠡ ᠬᠤᠯᠬᠠ ᠬᠠᠢ.
\end{manchu}
```

`vmanchu` The `vmanchu` environment can be invoked with `\begin{vmanchu}[⟨mode⟩]{⟨height⟩}`
and is ended with `\end{vmanchu}` and is intended for passages of Manchu text
typeset top to bottom, left to right. It takes one optional argument, `⟨mode⟩`, and
one mandatory argument `⟨height⟩`. The `⟨height⟩` specifies the height of the section
of vertical Manchu. Example:

```
\begin{vmanchu}{8em}
mini sefu lama-i hUbilgan aika   ᠮᠢᠨᠢ ᠰᠡ᠋᠋᠋᠋ᠰᠡ᠋ ᠯᠠᠮᠠ-ᠢ ᠬᠤᠪᠢᠯᠭᠠᠨ ᠠᠶᠢᠭᠠ
unenggingge oci, tacibure-be     ᠤᠨᠡᠩᠭᠭᠢᠭᠭᠡ ᠣᠴᠢ, ᠲᠠᠴᠢᠪᠦᠷᠡ-ᠪᠡ
baiburakU, fucihi abka karmatame ᠪᠠᠶᠢᠪᠦᠷᠠᠭᠤ, ᠋ᠹᠤᠴᠢᠬᠢ ᠠᠪᠬᠠ ᠬᠠᠷᠠᠮᠠᠲᠠᠮᠡ
ainaha seme hUwanggiyarakU,      ᠠᠢᠨᠠᠬᠠ ᠰᠡ᠋᠋᠋᠋ ᠬᠤᠠᠩᠭᠢᠶᠠᠷᠠᠭᠠᠭᠤ,
aika taSan holonggo oci,          ᠠᠶᠢᠭᠠ ᠲᠠᠰᠠᠨ ᠬᠣᠯᠤᠭᠭᠠ ᠣᠴᠢ,
Sajin-be eiterere hUlha kai.      ᠰᠠᠵᠢᠨ-ᠪᠡ ᠡᠢᠲᠡᠷᠡᠷᠡ ᠬᠤᠯᠬᠠ ᠬᠠᠢ.
\end{vmanchu}
```

3 Mapping tables

The mapping tables are generated with a Perl script copied from the ArabXeTeX package, which was then adapted to fit the transliteration schemes for Manchu.

³胡增益 主編：《新滿漢大詞典》，新疆人民出版社出版發行。ISBN 7-228-02404-4

It relies on teckit by SIL.

4 Implementation

```

1 \NeedsTeXFormat{LaTeX2e}[2005/12/01]
2 \ProvidesPackage{manchuxetex}
3 [2016/02/01 v0.5 ArabXeTeX-like interface for Manchu]

modes The different modes are defined and manchu is selected as default.

4 \DeclareOption{manchu}{\def\mx@mode{manchu}}
5 \DeclareOption{trans}{\def\mx@mode{trans}}
6 \DeclareOption{utf}{\def\mx@mode{utf}}
7 \DeclareOption*{%
8   \PackageWarning{manchuxetex}{Unknown option `\'CurrentOption'}%
9 }
10 \ExecuteOptions{manchu}
11 \ProcessOptions
12 \def\mx@mode@manchu{manchu}
13 \def\mx@mode@trans{trans}
14 \def\mx@mode@utf{utf}

Define new if: Check if mode is defined.

15 \newif\ifmx@mode@defined
16 \def\mx@ismode@defined#1{%
17   \ifcsname mx@mode@#1\endcsname%
18     \mx@mode@definedtrue%
19   \else
20     \mx@mode@definedfalse%
21   \fi}
22 \def\mx@lang{manchu}

font If \manchufont has not been defined by the user, Mongolian Baiti will be loaded
with the correct OpenType tags for fontspec.

23 \RequirePackage{fontspec}
24 \AtBeginDocument{
25   \ifdefined\manchufont
26     \relax
27   \else
28     \PackageWarning{manchuxetex}{%
29       `\'string\manchufont' is not defined!^^J%
30       I will try to load Mongolian Baiti}%
31     \newfontfamily\manchufont[
32       Script=Mongolian,%
33       Language=Manchu,%
34       Scale=MatchUppercase%
35     ]{Mongolian Baiti}%
36   \fi%
37 }%
```

transliteration Commands for changing the transliteration scheme and style, default is Möllendorff (mdf). `\utf@fontfeature` sets the correct OTF options if one uses the $\langle mode \rangle$ manchu and inputs UTF encoded Manchu letters.

```

38 \def\mx@trans@style{\itshape}%
39 \newcommand{\SetTranslitStyle}[1]{\def\mx@trans@style{#1}}
40 \newcommand{\SetTranslitConvention}[1]{\def\mx@trans@convention{#1}}
41 \def\mx@trans@convention{mdf}
42 \def\utf@fontfeature{\addfontfeature{Script=Mongolian,Language=Manchu,}}

```

manchu The manchu environment takes one optional argument: $\langle mode \rangle$.

```

43 \newenvironment{manchu}[1][\mx@mode]%

```

Save the given $\langle mode \rangle$ in the temporary variable `\@tempa` and check whether $\langle mode \rangle$ is defined.

```

44 {\edef\@tempa{#1}}%
45 \def\mx@lang{manchu}%
46 \mx@ismode@defined{\@tempa}%
47 \ifmx@mode@defined%

```

If it is **trans**, use the preset transliteration convention.

```

48   \ifx\@tempa\mx@mode@trans%
49     \par\mx@trans@style%
50     \addfontfeature{Mapping=manchuxetex-trans-\mx@trans@convention}%

```

If it is **utf**, switch to `\manchufont` and use the `\utf@fontfeatures`.

```

51   \else
52     \ifx\@tempa\mx@mode@utf%
53       \par\manchufont\utf@fontfeature%

```

If it is neither, switch to `\manchufont` and use the given $\langle mode \rangle$.

```

54   \else
55     \par\manchufont%
56     \addfontfeature{Mapping=manchuxetex-\@tempa}%
57   \fi\fi

```

If $\langle mode \rangle$ is not defined, print a warning and default to the default $\langle mode \rangle$.

```

58 \else
59   \PackageWarning{manchuxetex}{%
60     Mode '\@tempa' not defined, defaulting to '\mx@mode'%
61   }%
62   \par\manchufont%
63   \addfontfeature{Mapping=manchuxetex-\mx@mode}%
64 \fi}
65 {}%

```

vmanchu Define a box for later use.

```

66 \newsavebox{\verticalmanchubox}

```

There are two parameters, the first (optional) defaults to `\mx@mode`, the second is mandatory.

```

67 \newenvironment{vmanchu}[2][\mx@mode]%

```

The content needs to be saved in a box because `\rotatebox` cannot be split into the *before* and *after* parts of the `\newenvironment` because it would lead to unbalanced curly braces.

```
68    {% Before
69        \begin{lrbox}{\verticalmanchubox}%
```

As we will be in a `\rotatebox{-90}`, successive lines need to be stacked upwards instead of downwards to yield top-to-bottom, left-to-right columns as are standard in written Manchu.

```
70        \XeTeXupwardsmode1%
```

This parameter, normally defining the $\langle width \rangle$ of a `\minipage`, will now define the $\langle height \rangle$ of the `vmanchu` section, as it will also be rotated -90 degrees.

```
71        \begin{minipage}{#2}%
```

Because there is no hyphenation in Manchu, we need to set `\raggedright` to avoid possible very large inter-word spaces.

```
72            \raggedright%
73            \begin{manchu}[#1]
74    }%
75    {%
76        \end{manchu}
77        \end{minipage}%
78        \XeTeXupwardsmode0
79        \end{lrbox}{
80            \rotatebox{-90}{
81                \usebox{\verticalmanchubox}%
82            }% End "\rotatebox"
83        }% End "\end{lrbox}"
84    }% End "after"
```

`\textmanchu` The `\textmanchu` command takes two arguments, the first is optional and defines the $\langle mode \rangle$, the second is mandatory and is the actual Manchu text. Its alias is `\textmnc`.

```
85 \newcommand\textmanchu{\bgroup\text@manchu}
86 \let\textmnc\textmanchu
87 \newcommand\text@manchu[2][\mx@mode]{%
```

Save the given $\langle mode \rangle$ in the temporary variable `\@tempa` and check whether $\langle mode \rangle$ is defined.

```
88     \edef\@tempa{#1}%
89     \def\mx@lang{manchu}%
90     \mx@ismode@defined{\@tempa}%
91     \ifmx@mode@defined%
```

If it is **trans**, use the set transliteration convention.

```
92         \ifx\@tempa\mx@mode@trans%
93             {\mx@trans@style%
94             \addfontfeature{%
95                 Mapping=manchuxetex-trans-\mx@trans@convention%
```

```

96         }%
97         \scantokens{#2\noexpand}%
98         }%

If it is utf, switch to \manchufont and use the \utf@fontfeatures.
99         \else
100         \ifx\@tempa\mx@mode@utf%
101             {\manchufont%
102             \utf@fontfeature%
103             \scantokens{#2\noexpand}}%

If it is neither, switch to \manchufont and use the given  $\langle mode \rangle$ .
104         \else
105             {\manchufont%
106             \addfontfeature{Mapping=manchuxetex-\@tempa}%
107             \scantokens{#2\noexpand}}%
108         \fi\fi

If  $\langle mode \rangle$  is not defined, print a warning and default to the default  $\langle mode \rangle$ .
109     \else
110     \PackageWarning{manchuxetex}{%
111         Mode '\@tempa' not defined, defaulting to '\mx@mode'%
112     }%
113     {\manchufont%
114     \addfontfeature{Mapping=manchuxetex-\mx@mode}%
115     \scantokens{#2\noexpand}%
116     }%
117     \fi\egroup}

```