

luwa-ul Package Documentation

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Version 1.0.1 (2025/10/26)

目次

1 設置 (Installation) 3

2 注意 (Caution) 3

3 提供されるコマンド (Commands) 3

3.1 \underLineKK 3

3.2 \overLineKK 4

3.3 \nijyusen, \keshinijyusen 5

3.4 \thinHighLight, \thickHighLight 6

3.5 \snamift 7

3.6 \stength, \sdashgth 8

3.7 \LineNumbering 9

4 ライセンス (License) 10

5 Version History 10

6 Source Code 10

1 設置 (Installation)

インストール方法は、適切な箇所に `luwa-ul.sty` を配置し、`\usepackage{luwa-ul}` と書き込むだけで完了です。オプションはありません。(Place `luwa-ul.sty` in a directory where LaTeX can find it.)

依存性についてです。(Dependencies:)

- `luacolor`, `xcolor`
- `lua-ul`
- `calc`, `tikz`

を内部的に仕様しています。(This package uses them internally.)

2 注意 (Caution)

このパッケージはその実装の上で Lua 言語を仕様しているので、LuaLaTeX の上でのみ仕様できるパッケージとなっています。(This package internally uses Lua, so it can be compiled only by LuaLaTeX.)

3 提供されるコマンド (Commands)

提供されるコマンドは以下の通りです。要望に応じて追加されることもあります。(The provided commands are as follows. I would add some more commands upon requests.)

- `\underLineKK`, `\overLineKK`
- `\niyusen`, `\keshiniyusen`
- `\thinHighLight`, `\thickHighLight`
- `\stength`, `\sdashgth`, `\snamift`
- `\LineNumbering`

3.1 `\underLineKK`

このコマンドは、`lua-ul` パッケージによって提供される `\underLine` コマンドに対し、

- 縦書き時のずれの解消
- ルビがあった際の挙動の変化

の2点において調整を施したものとなっています。

(This command is basically made out of `\underLine` command, which is provided by `lua-ul` package. I added some adjustments on it in order to

- eliminate the misalignment in vertical writing mode.
- change its behavior when the argument includes phonetic guides.

)

使い方は以下のようになります。(You can use it as follows:)

Input

```

1 \underlineKK[color=色, bottom=下線最下部の位置のずれ, height=下線の太さ (bottom
  の位置からの距離で計算)]{引数}
2
3 \underlineKK[color=red]{ああああああああ}
4 \underlineKK[bottom=.1em]{ああああああああ}
5
6 \parbox<t>[c][6cm][c]{3cm}{%
7   \underlineKK{ああ\ruby{あ}{あ}ああああ}
8 }
```

Output

横書き：

ああああ^aああああああああああああああああ

縦書き：

| | | |
|---|---|---|
| あ | あ | |
| あ | あ | |
| あ | あ | あ |
| あ | あ | |
| | あ | |
| | あ | |
| | あ | |
| | あ | |
| | あ | |
| | あ | |

a あ

3.2 \overLineKK

このコマンドは\underLineKK を使用しても作成が可能ですが、ショートカットとして用意しておきました。このコマンドは縦書き環境においては通常の\underLineKK につけてあったルビ補正を抜いています。(This command can also be created using \underlineKK, but it has been provided as a shortcut. In a vertical writing environment, this command omits the ruby adjustment that was included in the standard \underlineKK.)

Input

```

1 \overLineKK[color=色]{引数}
2
3 \overLineKK[color=red]{ああああああああ}
4
5 \parbox<t>[c][6cm][c]{3cm}{%
6   \overLineKK{ああ\ruby{あ}{あ}ああああ}
7 }

```

Output

横書き：
ああああああああ

縦書き：

あ
あ
あ^あ
あ
あ
あ
あ

3.3 \nijyusen, \keshinijyusen

これらのコマンドは`\underLineKK` を入れ子にすることでも作成が可能ですが、`keshinijyusen` に関してはルビの有無による補正をなくしてあります。(These commands can also be created by nesting `\underLineKK`, but for `keshinijyusen`, the adjustment for the presence or absence of ruby has been removed.)

Input

```

1 \nijyusen[color=色, bottom=下線最下部の位置のずれ]{引数}
2 \keshinijyusen[color=色]{引数}
3
4 \nijyusen[color=red]{ああああああああ}
5 \keshinijyusen{ああああああああ}
6
7 \parbox<t>[c][6cm][c]{3cm}{%
8   \nijyusen[color=red]{ああ\ruby{あ}{あ}ああああ}
9   \keshinijyusen{ああ\ruby{あ}{あ}ああああ}

```

```
10 \niyyusen[color=red]{ああああああ}
11 \keshiniyyusen{ああああああ}
12 }
```

Output

横書き：

ああああああああああ~~ああああああああああ~~

縦書き：

あ あ あ あ あ あ あ あ
あ あ あ あ あ あ あ あ
あ あ あ あ あ あ あ あ

3.4 \thinHighLight, \thickHighLight


これらは蛍光ペンを引いたような出力を提供するコマンドです。ルビの有無に対する挙動が `\underlineKK` のそれとは少々異なり、単なる並行移動だけではなく線の太さ自体も追隨して動くという仕様にしています。(These are commands that provide an output resembling a highlight made with a fluorescent marker. Their behavior regarding the presence or absence of ruby differs slightly from that of `\underlineKK`, as they are designed not only to shift position but also to have the line thickness itself adjust accordingly.)

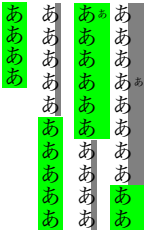
```

1 \thinHighLight[color=色]{引数}
2 \thickHighLight[color=色]{引数}
3
4 \thinHighLight{ああああああああ}
5 \thickHighLight[color=green]{ああああああああ}
6
7 \parbox<t>[c][6cm][c]{3cm}{%
8   \thinHighLight{ああ\ruby{あ}{あ}ああああ}
9   \thickHighLight[color=green]{ああ\ruby{あ}{あ}ああああ}
10  \thinHighLight{ああああああああ}
11  \thickHighLight[color=green]{ああああああああ}
12 }

```

Output

横書き：


縦書き：


3.5 \snamift

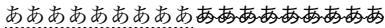
このコマンドは波線を引くコマンドを提供します。ルビに対する挙動は`\underLineKK`のそれに同じです。スターオプションありの時はフォントはそのまま、スターオプションありの場合にはゴシック体になります。(This command provides a wavy underline. Its behavior with respect to ruby is the same as that of `\underLineKK`. When the star option is specified, the font remains unchanged; when the non-star version is used, the font is switched to a Gothic typeface.)


Input

```

1 \snamift[bottom=下線最下部の位置のずれ]{引数}
2 \snamift*[bottom=下線最下部の位置のずれ]{引数}
3
4 \snamift*{ああああああああ}
5 \snamift[bottom=.3em]{ああああああああ}
6
7 \parbox<t>[c][6cm][c]{3cm}{%
8   \snamift*{あああ\ruby{あ}{あ}あああ}
9   \snamift[bottom=.3em]{ああああああああ}
10 }
```

Output

横書き：


縦書き：


3.6 \stength, \sdashgth

これらはそれぞれ、点線、破線を提供します。ルビに対する挙動は`\underlineKK`のそれに同じです。スターオプションありの時はフォントはそのまま、スターオプションありの場合にはゴシック体になります。(These commands provide dotted and dashed underlines, respectively. Their behavior toward ruby text is the same as that of `\underlineKK`. When the starred option is used, the font remains unchanged; when the non-starred option is used, the text is typeset in a Gothic typeface.)

Input

```

1 \stength[bottom=下線最下部の位置のずれ, radius=ドットの半径, distance=ドット間距離]{引数}
2 % デフォルト : radius=.1ex, distance=.4ex
3 \sdashgth[bottom=下線最下部の位置のずれ, width=破線の太さ, distance=破線間距離, length=破線の長さ]{引数}
4 % デフォルト : width=.2pt, distance=.3ex, length=.4ex
5
6 \stength*{ああああああああ}
7 \stength[radius=.05ex, distance=.3ex]{ああああああああ}
8 \sdashgth*{ああああああああ}
9 \sdashgth[length=.01ex, distance=.1ex]{ああああああああ}
10
11 \parbox<t>[c][6cm][c]{3cm}{%
12   \stength*{ああああ\ruby{あ}{あ}ああ}
13   \stength[radius=.05ex, distance=.3ex]{ああああああああ}
14   \sdashgth*{ああああ\ruby{あ}{あ}ああ}
15   \sdashgth[length=.01ex, distance=.1ex]{ああああああああ}
16 }
```


Output

横書き：

ああああああああああああああああああああああああああああああ

縦書き：

| | | | |
|---|---|---|---|
| あ | あ | あ | あ |
| あ | あ | あ | あ |
| あ | あ | あ | あ |
| あ | あ | あ | あ |
| あ | あ | あ | あ |
| あ | あ | あ | あ |
| あ | あ | あ | あ |
| あ | あ | あ | あ |
| あ | あ | あ | あ |
| あ | あ | あ | あ |

3.7 \LineNumbering

下線に番号を振るためのコマンドです。これは私が作成した `KKsymbols` パッケージ (TeX Live に収録済み) との併用をお勧めしています。スターオプションを付与すると、縦書きの時には引数の中身が回転します¹⁾。(This command assigns numbers to underlines. It is recommended to use it together with my `KKsymbols` package (already included in TeX Live). When the starred option is given, the contents of the argument are rotated in vertical writing²⁾.)

Input

```

1 \LineNumbering{\kakko{1}}\underLineKK{あああああああ}
2
3 \parbox<t>[c][6cm][c]{3cm}{%
4   \LineNumbering{\kakko{1}}\underLineKK{あああああああ}
5   \LineNumbering*{ア}\underLineKK{あああああああ}
6 }
```

Output

横書き：

あああああああ

⁽¹⁾

縦書き：

1) 横書きの時には出力に変化はありません。
2) In horizontal writing, the output remains unchanged.


```

\else%
\def\underLine@KK@Adjust@use@height{#1}%
\fi
}

\define@key{KKUL}{bottom}{%
\underLine@KK@Adjust@bottom{#1}%
\setlength{\KKUL@bottom}{\underLine@KK@Adjust@use@bottom}%
}

\define@key{KKUL}{height}{%
\underLine@KK@Adjust@height{#1}%
\setlength{\KKUL@height}{\underLine@KK@Adjust@use@height}%
}

\define@key{KKUL}{color}{%
\def\KKUL@color{#1}%
}

% ルビが中に入っているときだけテキストを上昇させる
\newlength{\KKUL@rubyraise}
\directlua{
function RubyFlagKKUL(t)
if string.find(t, "\\ruby") or string.find(t, "\\kenten") or string.find(t, "\\送り") or
string.find(t, "\\振り") then
tex.print("1")
else
tex.print("0")
end
end
}

\NewDocumentCommand{\underLineKK}{ O{} +m }{%
% 初期化
\underLine@KK@Adjust@bottom{-.1em}%
\underLine@KK@Adjust@height{0.3pt}%
\setlength{\KKUL@bottom}{\underLine@KK@Adjust@use@bottom}%
\setlength{\KKUL@height}{\underLine@KK@Adjust@use@height}%
\def\KKUL@color{black}%
\def\underLineKK@test@contents{#2}%
\setkeys{KKUL}{#1}%
\edef\UL@rubyflag{\numexpr\directlua{RubyFlagKKUL("<luaescapestring{\unexpanded\expandafter
{\underLineKK@test@contents}}")}\relax}%
% 縦書きの場合のみ傍線オフセット設定
\ifnum\ltjgetparameter{direction}=3%
\ifnum\UL@rubyflag=1%
\setlength{\KKUL@rubyraise}{.5em}%
\else%
\setlength{\KKUL@rubyraise}{0em}%
\fi%

```

```

\else%
% 横書き時は補正なし
\setlength{\KKUL@rubyraise}{0em}%
\fi%
% 実際の下線
\underline[bottom=\KKUL@bottom+\KKUL@rubyraise, height=\KKUL@height, color=\KKUL@color]{#2}%
}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%lua-ulで作った\snamift%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\newlength{\snamift@bottom}\setlength{\snamift@bottom}{0ex}
\define@key{snamift}{bottom}{%
\setlength{\snamift@bottom}{#1}%
}

\newcount\snamift@id % 呼び出しカウンタ

\NewDocumentCommand{\snamift}{s 0} +m {%
% 1 : キーを先にセットして \snamift@bottom を更新
\setlength{\snamift@bottom}{0ex}%
\def\snamift@test@contents{#3}%
\setkeys{snamift}{#2}%
\edef\UL@rubyflag{\numexpr\directlua{RubyFlagKKUL("\luaescapestring{\unexpanded\expandafter
{\snamift@test@contents}}")}\relax}%
% 縦書きの場合のみ傍線オフセット設定
\ifnum\ltjgetparameter{direction}=3%
\ifnum\UL@rubyflag=1%
\addtolength{\snamift@bottom}{.5em}%
\fi%
\fi%
% 2 : IDを進める
\global\advance\snamift@id by 1\relax%
% 3 : ユニーク名で下線タイプを定義 (正しく展開されるように \expandafter と \number を使用)
\expandafter\newunderlinetype\csname beginUnderWavyS\number\snamift@id\endcsname{%
\cleaders\hbox{%
\begin{tikzpicture}[xscale=.8,baseline=\f@size/4 pt,
x=\f@size/12 pt,y=\f@size/25 pt]
\clip[yshift=\snamift@bottom] (1,\f@size/8 pt) rectangle (5,-\f@size/8 pt);
\draw[line width=\f@size/24 pt,yshift=\snamift@bottom]
(0,0) sin (1,1) cos (2,0) sin (3,-1) cos (4,0)
sin (5,1) cos (6,0);
\end{tikzpicture}%
}%
}%
\expandafter\newunderlinetype\csname beginUnderWavyState\number\snamift@id\endcsname{%
\cleaders\hbox{%
\begin{tikzpicture}[xscale=.8,baseline=\f@size/4 pt,
x=\f@size/12 pt,y=\f@size/25 pt]
\begin{scope}[yshift=\f@size/1.2 pt]

```

```

\clip[yshift=\snamift@bottom] (1,\f@size/8 pt) rectangle (5,-\f@size/8 pt);
\draw[line width=\f@size/24 pt,yshift=\snamift@bottom]
(0,0) sin (1,1) cos (2,0) sin (3,-1) cos (4,0)
sin (5,1) cos (6,0);
\end{scope}
\end{tikzpicture}%
}%
}%
% 4 : 使用 (縦横の分岐。直接 csname を呼ぶ)
\IfBooleanTF{#1}{%
\ifnum\ltjgetparameter{direction}=3 %
\csname beginUnderWavyState\number\snamift@id\endcsname{#3}%
\else%
\csname beginUnderWavyS\number\snamift@id\endcsname{#3}%
\fi%
}{%
\ifnum\ltjgetparameter{direction}=3 %
\csname beginUnderWavyState\number\snamift@id\endcsname{\textgt{#3}}%
\else%
\csname beginUnderWavyS\number\snamift@id\endcsname{\textgt{#3}}%
\fi%
}%
}%
}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%lua-ul で作ったstength, stendash%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\newlength{\stength@radius}
\newlength{\stength@distance}
\newlength{\stength@bottom}

\define@key{stength}{radius}{\setlength{\stength@radius}{#1}}
\define@key{stength}{distance}{\setlength{\stength@distance}{#1}}
\define@key{stength}{bottom}{\setlength{\stength@bottom}{#1}}

\newcount\stength@id

\NewDocumentCommand{\stength}{ s O{} +m }{%
\setlength{\stength@radius}{.1ex}%
\setlength{\stength@distance}{.4ex}%
\setlength{\stength@bottom}{0ex}%
\def\stength@test@contents{#3}%
\setkeys{stength}{#2}%
\edef\UL@rubyflag{\numexpr\directlua{RubyFlagKKUL("\luaescapestring{\unexpanded\expandafter
{\stength@test@contents}}")}\relax}%
\ifnum\ltjgetparameter{direction}=3
\ifnum\UL@rubyflag=1
\addtolength{\stength@bottom}{.5em}%
\fi
\fi%
}

```

```

\global\advance\stength@id by 1\relax%
\expandafter\newunderlinetype\csname beginUnderDot\number\stength@id\endcsname{%
\leaders\hbox{%
\begin{tikzpicture}[x=0.8ex,y=.2ex,baseline=.7ex]%
\fill[mygray@luwa-ul,yshift=\stength@bottom] (0.3,0) circle (\stength@radius);
\path[use as bounding box,yshift=\stength@bottom] (0,0) rectangle (\stength@distance,0);%.8
\end{tikzpicture}%
}%
}%
\expandafter\newunderlinetype\csname beginUnderDottate\number\stength@id\endcsname{%
\leaders\hbox{%
\begin{tikzpicture}[x=0.8ex,y=.2ex,baseline=.7ex]%
\begin{scope}[yshift=\f@size/1.2 pt]
\fill[mygray@luwa-ul,yshift=\stength@bottom] (0.3,0) circle (\stength@radius);
\path[use as bounding box,yshift=\stength@bottom] (0,0) rectangle (\stength@distance,0);
\end{scope}
\end{tikzpicture}%
}%
}%
\IfBooleanTF{#1}{%
\ifnum\ltjgetparameter{direction}=3 %
\csname beginUnderDottate\number\stength@id\endcsname{#3}%
\else%
\csname beginUnderDot\number\stength@id\endcsname{#3}%
\fi%
}{%
\ifnum\ltjgetparameter{direction}=3 %
\csname beginUnderDottate\number\stength@id\endcsname{\textgt{#3}}%
\else%
\csname beginUnderDot\number\stength@id\endcsname{\textgt{#3}}%
\fi%
}%
}

\newlength{\underdash@length}
\newlength{\underdash@distance}
\newlength{\underdash@width}
\newlength{\underdash@bottom}

\define@key{underdashgth}{length}{\setlength{\underdash@length}{#1}}
\define@key{underdashgth}{distance}{\setlength{\underdash@distance}{#1}}
\define@key{underdashgth}{width}{\setlength{\underdash@width}{#1}}
\define@key{underdashgth}{bottom}{\setlength{\underdash@bottom}{#1}}

\newcount\underdash@id

\NewDocumentCommand{\sdashgth}{ s O{} +m }{%
\setlength{\underdash@length}{.4ex}%
\setlength{\underdash@distance}{.3ex}%

```

```

\setlength{\underdash@width}{.2pt}%
\setlength{\underdash@bottom}{0ex}%
\def\sdashgth@test@contents{#3}%
\setkeys{underdashgth}{#2}%
\edef\UL@rubyflag{\numexpr\directlua{RubyFlagKKUL("\luaescapestring{\unexpanded\expandafter
    {\sdashgth@test@contents}}")}\relax}%
\ifnum\ltjgetparameter{direction}=3
    \ifnum\UL@rubyflag=1
        \addtolength{\underdash@bottom}{.5em}%
    \fi
\fi%
\global\advance\underdash@id by 1\relax%
\expandafter\newunderlinetype\csname beginUnderDash\number\underdash@id\endcsname{%
    \xleaders\hbox{%
        \begin{tikzpicture}[x=0.8ex,y=.2ex,baseline=.7ex]%
            \draw[black,line width=\underdash@width,xshift=.25ex,yshift=\underdash@bottom] (0,0) --
                (\underdash@length,0);%
            \path[use as bounding box,yshift=\underdash@bottom] (0,0) rectangle (\underdash@length
                +\underdash@distance,0);%
            \end{tikzpicture}%
        }%
    }%
\expandafter\newunderlinetype\csname beginUnderDashtate\number\underdash@id\endcsname{%
    \xleaders\hbox{%
        \begin{tikzpicture}[x=0.8ex,y=.2ex,baseline=.7ex]%
            \begin{scope}[yshift=\f@size/1.2 pt]%
                \draw[black,line width=\underdash@width,xshift=.1ex,yshift=\underdash@bottom] (0,0) --
                    (\underdash@length,0);%
                \path[use as bounding box,yshift=\underdash@bottom] (0,0) rectangle (\underdash@length
                    +\underdash@distance,0);%
            \end{scope}%
            \end{tikzpicture}%
        }%
    }%
}%
\IfBooleanTF{#1}{%
    \ifnum\ltjgetparameter{direction}=3 %
        \csname beginUnderDashtate\number\underdash@id\endcsname{#3}%
    \else%
        \csname beginUnderDash\number\underdash@id\endcsname{#3}%
    \fi%
}{%
    \ifnum\ltjgetparameter{direction}=3 %
        \csname beginUnderDashtate\number\underdash@id\endcsname{\textgt{#3}}%
    \else%
        \csname beginUnderDash\number\underdash@id\endcsname{\textgt{#3}}%
    \fi%
}%
}
%
```

```

%overLine%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\define@key{overLine}{color}{%
  \def\overLineKK@color{#1}%
}

\newlength{\overLineKK@KK@Adjust}

\NewDocumentCommand{\overLineKK}{ O{} +m }{%
  \setlength{\overLineKK@KK@Adjust}{\f@size pt}%
  \def\overLineKK@color{black}%
  \def\overLineKK@test@contents{#2}%
  \setkeys{overLine}{#1}%
  \edef\UL@rubyflag{\numexpr\directlua{RubyFlagKKUL("\luaescapestring{\unexpanded\expandafter
    {\overLineKK@test@contents}}")}\relax}%
  \ifnum\ltjgetparameter{direction}=3%
    \ifnum\UL@rubyflag=1%
      \addtolength{\overLineKK@KK@Adjust}{-.6em}%
    \else%
      \addtolength{\overLineKK@KK@Adjust}{-.1em}%
    \fi%
  \else%
    \ifnum\UL@rubyflag=1%
      \addtolength{\overLineKK@KK@Adjust}{-.6em}%
    \else%
      \addtolength{\overLineKK@KK@Adjust}{-.1em}%
    \fi%
  \fi%
  \underLineKK[bottom=\overLineKK@KK@Adjust,color=\overLineKK@color]{#2}%
}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%グレーの蛍光ペン（細くて下の方だけ塗るやつ）%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\newlength{\thinHighLight@KK@Adjust}
\newlength{\thinHighLight@KK@Adjust@ruby}
\newlength{\thinHighLight@KK@Adjust@ruby@yoko}
\newcommand{\thinHighLight@KK@Adjust@tmp}{%
  \ifnum\ltjgetparameter{direction}=3%
    \setlength{\thinHighLight@KK@Adjust}{-.3\zw}%
  \else%
    \setlength{\thinHighLight@KK@Adjust}{0ex}%
  \fi
}
\DeclareDocumentCommand{\thinHighLight}{ O{color=gray} +m }{%
  \thinHighLight@KK@Adjust@tmp%
  \def\thinHighLight@test@contents{#2}%
  \setlength{\thinHighLight@KK@Adjust@ruby}{0em}%
  \setlength{\thinHighLight@KK@Adjust@ruby@yoko}{0em}%
}

```



```

\edef\UL@rubyflag{\numexpr\directlua{RubyFlagKKUL("\luaescapestring{\unexpanded\expandafter
  {\thinHighLight@test@contents}}")}\relax}%
\ifnum\ltjgetparameter{direction}=3
  \ifnum\UL@rubyflag=1
    \setlength{\thinHighLight@KK@Adjust@ruby}{-.5em}%
  \fi
\fi
\underLineKK[#1,height=.25\underLine@KK@Adjust@tmp-\thinHighLight@KK@Adjust@ruby,bottom
=-.04\underLine@KK@Adjust@tmp+\thinHighLight@KK@Adjust+\thinHighLight@KK@Adjust@ruby
]{#2}%
}

\newlength{\thickHighLight@KK@Adjust}
\newlength{\thickHighLight@KK@Adjust@ruby}
\newlength{\thickHighLight@KK@Adjust@ruby@yoko}
\newcommand{\thickHighLight@KK@Adjust@tmp}{%
  \ifnum\ltjgetparameter{direction}=3%
    \setlength{\thickHighLight@KK@Adjust}{-1.1\zw}%
  \else%
    \setlength{\thickHighLight@KK@Adjust}{0ex}%
  \fi
}
\DeclareDocumentCommand{\thickHighLight}{O{color=gray} +m }{%
  \thickHighLight@KK@Adjust@tmp%
  \def\thickHighLight@test@contents{#2}%
  \setlength{\thickHighLight@KK@Adjust@ruby}{0em}%
  \setlength{\thickHighLight@KK@Adjust@ruby@yoko}{0em}%
  \edef\UL@rubyflag{\numexpr\directlua{RubyFlagKKUL("\luaescapestring{\unexpanded\expandafter
    {\thickHighLight@test@contents}}")}\relax}%
  \ifnum\ltjgetparameter{direction}=3
    \ifnum\UL@rubyflag=1
      \setlength{\thickHighLight@KK@Adjust@ruby}{-.5em}%
    \fi
  \else
    \ifnum\UL@rubyflag=1
      \setlength{\thickHighLight@KK@Adjust@ruby}{-.5em}%
      \setlength{\thickHighLight@KK@Adjust@ruby@yoko}{.5em}%
    \fi
  \fi
  \underLineKK[#1,height=1.15\underLine@KK@Adjust@tmp-\thickHighLight@KK@Adjust@ruby,bottom
=-.04\underLine@KK@Adjust@tmp+\thickHighLight@KK@Adjust+\thickHighLight@KK@Adjust@ruby
+\thickHighLight@KK@Adjust@ruby@yoko]{#2}%
}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%二重線%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\newlength{\nijyusen@bottom}
\newlength{\nijyusen@bottom@adjust}

```

```

\define@key{niyyusen}{color}{\def\niyyusen@KK@color{#1}}
\define@key{niyyusen}{bottom}{\setlength{\niyyusen@bottom}{#1}}

\NewDocumentCommand\niyyusen{ 0{} +m }{%
  \def\niyyusen@KK@color{black}%
  \setlength{\niyyusen@bottom}{0ex}%
  \setkeys{niyyusen}{#1}%
  \ifnum\ltjgetparameter{direction}=3%
    \setlength{\niyyusen@bottom@adjust}{-\niyyusen@bottom}%
  \else%
    \setlength{\niyyusen@bottom@adjust}{\niyyusen@bottom}%
  \fi%
  \underLineKK[bottom=-.1\underLine@KK@Adjust@tmp+\niyyusen@bottom,color=\niyyusen@KK@color]{\underLineKK[bottom=\niyyusen@bottom@adjust,color=\niyyusen@KK@color]{#2}}%
}

\newlength{\keshiniyyusen@KK@Adjust}
\newcommand{\keshiniyyusen@KK@Adjust@tmp}{%
  \ifnum\ltjgetparameter{direction}=3%
    \setlength{\keshiniyyusen@KK@Adjust}{0ex}%
  \else%
    \setlength{\keshiniyyusen@KK@Adjust}{.15ex}%
  \fi
}

\define@key{keshiniyyusen}{color}{\def\keshiniyyusen@KK@color{#1}}
\NewDocumentCommand\keshiniyyusen{ 0{} +m }{%
  \def\keshiniyyusen@KK@color{color=black}%
  \def\keshiniyyusen@test@contents{#2}%
  \setkeys{keshiniyyusen}{#1}%
  \keshiniyyusen@KK@Adjust@tmp%
  \edef\UL@rubyflag{\numexpr\directlua{RubyFlagKKUL("\luaescapestring{\unexpanded\expandafter{\keshiniyyusen@test@contents}}")}\relax}%
  % 縦書きの場合のみ傍線オフセット設定
  \ifnum\ltjgetparameter{direction}=3
    \ifnum\UL@rubyflag=1
      \addtolength{\keshiniyyusen@KK@Adjust}{.5em}%
    \fi
  \fi
  \underLineKK[bottom=.57\underLine@KK@Adjust@tmp-\keshiniyyusen@KK@Adjust,#1]{\underLineKK[bottom=.47\underLine@KK@Adjust@tmp-\keshiniyyusen@KK@Adjust,#1]{#2}}
}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%下線の前に番号を振る%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\newcommand{\linenumbering@luwa}[1]{\raisebox{-1ex}{\scalebox{.6}{#1}}}

\newdimen\overtline@f@size

```

```

\NewDocumentCommand{\tlinenumbering@luwa}{s m}{%
  \setlength{\overtline@f@size}{\f@size pt}%
  \raisebox{.6\overtline@f@size}{\IfBooleanTF{#1}{\tikz[baseline=(char.base)]{\node[inner sep
    =0pt, anchor=center, scale=.6] (char) {#2};}}{\tikz[baseline=(char.base)]{\node[inner
    sep=0pt, anchor=center, scale=.6, rotate=90] (char) {#2};}}%
}}\hskip.15ex}

\NewDocumentCommand{\LineNumbering}{s m 0{0ex}}{% 縦横両対応
  \ifnum\ltjgetparameter{direction}=3%
    \IfBooleanTF{#1}{\raisebox{#3}{\tlinenumbering@luwa*{#2}}}{\raisebox{#3}{\tlinenumbering@luwa{#2}}}%
  \else
    \raisebox{#3}{\linenumbering@luwa{#2}}%
  \fi
}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\endinput

```