The newtxtt Package*

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November 23, 2026

There is a relative paucity of free serifed typewriter fonts available for use in LaTeX—courier and (extensions of) cmtt are the most common. In my opinion, cmtt and its enhancements, especially zlmtt, are a much better choice than courier in almost every circumstance, as the latter is so light and so wide that it looks poor on screen and causes endless problems with overfull boxes. (The ratio of their glyph widths is $723/525 \approx 1.38$.) This package provides an interface to another alternative—the typewriter fonts provided with txfonts, with some enhancements. They have the same widths as cmtt, but are taller, heavier, more geometric and less shapely, with very low contrast, and are more suited to match Roman fonts of height and weight approximating that of Times. This package, loaded with

```
\usepackage{newtxtt} % options can be added
```

provides access to its features, no matter what other text fonts you might be using. It should be placed after all your other text font loading packages that might contain instructions to change \ttdefault, and before loading math packages so that the math packages can make a suitable definition of \mathtt. With no options specified, as above, you'll get full functionality as a monospaced typewriter font family, with typewriter text rendered using essentially txtt, but with a five choices for the glyph 'zero'. In addition, the package provides italic (slanted) and bold versions, plus small caps in regular (medium) and bold weights, upright shape only. It is offered only in T1 (plus full TS1) encoding. The macros \ttdefault, \ttfamily, \texttt and the obsolete but convenient macro \tt may be used to access this font. The package provides, by means of options or macros, an alternate form of newtxtt with names containing a 'z', differing from it in some important ways:

- the interword spacing is no longer the same as the glyph spacing, but is variable though generally smaller—fontdimen settings have been changed to resemble those of text fonts;
- where monospaced typewriter fonts typically add an an extra space with full width at the end of a sentence, the modified 'z' version adds a considerably smaller space;
- hyphenation is not suppressed.

These features may be accessed by means of the new macros \ttzdefault, \ttzfamily, \textttz and \ttz which are in all ways analogous to their monospace cousins. (Verbatim modes will con-

*It is a pleasure to thank Jean-François Burnol who has offered very useful advice and feedback on this package. For an extensive example of its usage as body text, see the documentation of his remarkable xint package.

†As of November 20, 2026, the package maintainance moved to
https://github.com/LaTeX-Package-Repositories/msharpe/issues.
The repairs for release 1.060 were made by ChatGPT and verified by Jean-François Burnol, Detailed notes of the update are recorded in newtxtt-1060-2026-11-20.md

tinue to use the monospaced version.) The purpose of the ttz version to allow use of newtxtt for blocks of TypeWriter-like text, though not monospaced and respecting right justification. E.g.,

```
{\ttz Block of text, perhaps many lines long, will be rendered right-justified.}
```

The options you may use in loading this package are:

- scaled=.97 will load the fonts scaled to .97 times natural size. This is useful with Roman fonts having an x-height smaller than Times, for which txtt was designed.
- zerostyle selects the form of 'zero' from one of five possibilities: a, b, c, d, e, (a being the default) which result respectively in

  0 —form a, narrower than capital O;
  0 —form b, original version from txtt;
  0 —form c, slashed, narrower than capital O;
  0 —form d, dotted, narrower than capital O;
  0 —form e, narrower than capital O, more oblong.
  The option zerostyle also affects the oldstyle figures that are available in Small Caps and in Text Companion (TS1). That is, to obtain oldstyle typewriter figures, you have to use something like: \texttt{\textsc{012}}, or
  \textzerooldstyle \textoneoldstyle \texttwooldstyle.
  The result using zerostyle=e would be 012.
- nomono changes the tt macro definitions replacing them, in effect, by their ttz versions. I do not necessarily recommend this, but I find it useful when text alignment is not important, and I do not wish to change all existing \tt to \ttz. It affects verbatim modes also.
- straightquotes affects the rendering of single and double quotes in all newtxtt modes: Single left and right quotes entered in TEX source code as ` and ' normally render as curly quotes, ‘ and ’. With straightquotes, they will render as ` and ', and double quotes will render as ".
- The option ttdefault sets \familydefault to \ttdefault so the default Roman text will be rendered using newtxtt.
- The option ttzdefault works similarly, but sets Roman text to use the non-monospaced newtxttz.
- There are slanted versions of the fonts. You may use \textsl or \textit within typewriter text to activate them. E.g, \texttt{\textsl{Slanted text}} produces *Slanted text*.

New Macros:

- \ttz switches to non-monospace typewriter mode;
  e.g., {\ttz text in ttz mode} renders as
  text in ttz mode.
- Essentially the same effect with {\ttzfamily text in ttz mode}.
- \texttttz{} renders its argument in ttz mode.

This document uses the following font settings:

```
\usepackage[osf]{XCharter} % osf in text, lining figures in math
\usepackage[T1]{fontenc}
\usepackage{textcomp}
\usepackage[zerostyle=a]{newtxtt} % TX typewriter
\usepackage[xcharter]{newtxmath}
```

If you use `microtype` and have blocks of verbatim of typewriter text, you may find it best to prevent protrusion in that mode with the command (following `\usepackage{microtype}`)

```
\UseMicrotypeSet[protrusion]{basicmath} % disable protrusion for tt fonts
```

Comparison with Latin Modern Typewriter:

```
LM Typewriter:  This is just a line to illustrate typewriter 0123456789.
TX Typewriter: This is just a line to illustrate typewriter 0123456789.
TX Typewriter:  This is just a line to illustrate typewriter 0123456789. (ttz)
```

NOTES: The first two are standard monospaced with the same spacing—the : is considered to be the end of a sentence—while the words in the third are spaced more compactly, it would hyphenate if necessary, and a much shorter extra space at the end of a "sentence".

Using the fonts without using the package: If you wish to use these fonts without making one of the them the `\ttdefault`, you may call them directly from the `fd`:

```
{\fontfamily{newtxtt}\selectfont ...} % or newtxttz
```

or, for finer control of the NFSS parameters,

```
{\usefont{T1}{newtxtt}{b}{n} ...} % or {newtxttz}{m}{sc}, etc
```

For further control, you may add in your preamble lines like the following to select the zero style (five choices, a to e) and the shape of quotes:

```
\makeatletter
\edef\newtxtt@fig{c} % one of a--e to determine the zerostyle, defaults to a
\newif\iftxtt@upq\txtt@upqtrue % same effect as option straightquotes
% remove the \txtt@upqtrue for not straightquotes, the default
\makeatother
```

Font Samples

newtxtta:
(Default for newtxtt, T1 encoded.)

	′0	′1	′2	′3	′4	′5	′6	′7	
′00x	` 0	´ 1	ˆ 2	˜ 3	¨ 4	˝ 5	° 6	ˇ 7	″0x
′01x	˘ 8	¯ 9	˙ 10	¸ 11	˛ 12	, 13	‹ 14	› 15	
′02x	“ 16	” 17	„ 18	« 19	» 20	– 21	— 22	23	″1x
′03x	ı 24	ȷ 25	ff 26	fi 27	fl 28	ffi 29	ffl 30	ſ 31	
′04x	␣ 32	! 33	" 34	# 35	$ 36	% 37	& 38	’ 39	″2x
′05x	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47	
′06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	″3x
′07x	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63	
′10x	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71	″4x
′11x	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79	
′12x	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87	″5x
′13x	X 88	Y 89	Z 90	[91	\ 92	] 93	^ 94	_ 95	
′14x	‘ 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103	″6x
′15x	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111	
′16x	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119	″7x
′17x	x 120	y 121	z 122	{ 123	| 124	} 125	~ 126	- 127	
′20x	Ă 128	Ą 129	Ć 130	Č 131	Ď 132	Ě 133	Ę 134	Ğ 135	″8x
′21x	Ĺ 136	Ľ 137	Ł 138	Ń 139	Ň 140	Ŋ 141	Ő 142	Ŕ 143	
′22x	Ř 144	Ś 145	Š 146	Ş 147	Ť 148	Ţ 149	Ű 150	Ů 151	″9x
′23x	Ÿ 152	Ź 153	Ž 154	Ż 155	Ĳ 156	İ 157	đ 158	§ 159	
′24x	ă 160	ą 161	ć 162	č 163	ď 164	ě 165	ę 166	ğ 167	″Ax
′25x	í 168	ľ 169	ł 170	ń 171	ň 172	ŋ 173	ő 174	ŕ 175	
′26x	ř 176	ś 177	š 178	ş 179	ť 180	ţ 181	ű 182	ů 183	″Bx
′27x	ÿ 184	ź 185	ž 186	ż 187	ij 188	¡ 189	¿ 190	£ 191	
′30x	À 192	Á 193	Â 194	Ã 195	Ä 196	Å 197	Æ 198	Ç 199	″Cx
′31x	È 200	É 201	Ê 202	Ë 203	Ì 204	Í 205	Î 206	Ï 207	
′32x	Ð 208	Ñ 209	Ò 210	Ó 211	Ô 212	Õ 213	Ö 214	Œ 215	″Dx
′33x	Ø 216	Ù 217	Ú 218	Û 219	Ü 220	Ý 221	Þ 222	SS 223	
′34x	à 224	á 225	â 226	ã 227	ä 228	å 229	æ 230	ç 231	″Ex
′35x	è 232	é 233	ê 234	ë 235	ì 236	í 237	î 238	ï 239	
′36x	ð 240	ñ 241	ò 242	ó 243	ô 244	õ 245	ö 246	œ 247	″Fx
′37x	ø 248	ù 249	ú 250	û 251	ü 252	ý 253	þ 254	ß 255	
	″8	″9	″A	″B	″C	″D	″E	″F	

newtxttscb:

(Small Caps, T1 encoded with `zerostyle=b`.)

	′0	′1	′2	′3	′4	′5	′6	′7	
′00x	` 0	´ 1	ˆ 2	˜ 3	¨ 4	˝ 5	° 6	ˇ 7	″0x
′01x	˘ 8	¯ 9	˙ 10	¸ 11	˛ 12	, 13	‹ 14	› 15	
′02x	“ 16	” 17	„ 18	« 19	» 20	– 21	— 22	23	″1x
′03x	ı 24	I 25	J 26	FF 27	FI 28	FL 29	FFI 30	FFL 31	
′04x	␣ 32	! 33	" 34	# 35	$ 36	% 37	& 38	’ 39	″2x
′05x	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47	
′06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	″3x
′07x	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63	
′10x	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71	″4x
′11x	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79	
′12x	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87	″5x
′13x	X 88	Y 89	Z 90	[91	\ 92	] 93	^ 94	_ 95	
′14x	‘ 96	A 97	B 98	C 99	D 100	E 101	F 102	G 103	″6x
′15x	H 104	I 105	J 106	K 107	L 108	M 109	N 110	O 111	
′16x	P 112	Q 113	R 114	S 115	T 116	U 117	V 118	W 119	″7x
′17x	X 120	Y 121	Z 122	{ 123	| 124	} 125	~ 126	– 127	
′20x	Ă 128	Ą 129	Ć 130	Č 131	Ď 132	Ě 133	Ę 134	Ğ 135	″8x
′21x	Ĺ 136	Ľ 137	Ł 138	Ń 139	Ň 140	Ŋ 141	Ő 142	Ŕ 143	
′22x	Ř 144	Ś 145	Š 146	Ş 147	Ť 148	Ţ 149	Ű 150	Ů 151	″9x
′23x	Ÿ 152	Ź 153	Ž 154	Ż 155	Ĳ 156	İ 157	Đ 158	§ 159	
′24x	ă 160	ą 161	ć 162	č 163	ď 164	ě 165	ę 166	ğ 167	″Ax
′25x	ĺ 168	ľ 169	ł 170	ń 171	ň 172	ŋ 173	ő 174	ŕ 175	
′26x	ř 176	ś 177	š 178	ş 179	ť 180	ţ 181	ű 182	ů 183	″Bx
′27x	ÿ 184	ź 185	ž 186	ż 187	ĳ 188	¡ 189	¿ 190	£ 191	
′30x	À 192	Á 193	Â 194	Ã 195	Ä 196	Å 197	Æ 198	Ç 199	″Cx
′31x	È 200	É 201	Ê 202	Ë 203	Ì 204	Í 205	Î 206	Ï 207	
′32x	Đ 208	Ñ 209	Ò 210	Ó 211	Ô 212	Õ 213	Ö 214	Œ 215	″Dx
′33x	Ø 216	Ù 217	Ú 218	Û 219	Ü 220	Ý 221	Þ 222	SS 223	
′34x	à 224	á 225	â 226	ã 227	ä 228	å 229	æ 230	ç 231	″Ex
′35x	è 232	é 233	ê 234	ë 235	ì 236	í 237	î 238	ï 239	
′36x	đ 240	ñ 241	ò 242	ó 243	ô 244	õ 245	ö 246	œ 247	″Fx
′37x	ø 248	ù 249	ú 250	û 251	ü 252	ý 253	þ 254	ss 255	
	″8	″9	″A	″B	″C	″D	″E	″F	

newtcxtte:

(Text companion ts1 with oldstyle figures, zero styled in more oblong shape.)

	′0	′1	′2	′3	′4	′5	′6	′7	
′00x	` 0	´ 1	ˆ 2	˜ 3	¨ 4	˝ 5	° 6	ˇ 7	″0x
′01x	˘ 8	¯ 9	˙ 10	¸ 11	˛ 12	' 13	– 14	15	
′02x	16	17	" 18	19	20	— 21	— 22	23	″1x
′03x	← 24	→ 25	‿ 26	‿ 27	‿ 28	‿ 29	30	31	
′04x	ƀ 32	33	34	35	$ 36	37	38	' 39	″2x
′05x	40	41	* 42	43	, 44	= 45	. 46	/ 47	
′06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	″3x
′07x	8 56	9 57	58	59	〈 60	- 61	〉 62	63	
′10x	64	65	66	67	68	69	70	71	″4x
′11x	72	73	74	75	76	ʊ 77	78	0 79	
′12x	80	81	82	83	84	85	86	Ω 87	″5x
′13x	88	89	90	⟦ 91	92	⟧ 93	↑ 94	↓ 95	
′14x	` 96	97	★ 98	◌̸ 99	† 100	101	102	103	″6x
′15x	104	105	106	107	◌͟ 108	◌͠ 109	♪ 110	111	
′16x	112	113	114	115	116	117	118	119	″7x
′17x	120	121	122	123	124	125	~ 126	= 127	
′20x	◌̆ 128	◌̌ 129	◌̋ 130	◌̀ 131	† 132	‡ 133	‖ 134	‰ 135	″8x
′21x	• 136	℃ 137	$ 138	¢ 139	£ 140	₡ 141	₩ 142	₦ 143	
′22x	₲ 144	₱ 145	£ 146	₹ 147	? 148	¿ 149	đ 150	™ 151	″9x
′23x	‰ 152	¶ 153	฿ 154	№ 155	℅ 156	e 157	° 158	℠ 159	
′24x	{ 160	} 161	¢ 162	£ 163	¤ 164	¥ 165	¦ 166	§ 167	″Ax
′25x	¨ 168	© 169	ª 170	ⓒ 171	¬ 172	℗ 173	® 174	¯ 175	
′26x	° 176	± 177	² 178	³ 179	´ 180	µ 181	¶ 182	· 183	″Bx
′27x	※ 184	¹ 185	º 186	√ 187	¼ 188	½ 189	¾ 190	€ 191	
′32x	208	209	210	211	212	213	× 214	215	″Dx
′33x	216	217	218	219	220	221	222	223	
′36x	240	241	242	243	244	245	÷ 246	247	″Fx
′37x	248	249	250	251	252	253	254	255	
	″8	″9	″A	″B	″C	″D	″E	″F	