

# Samples of common T<sub>E</sub>X font encodings

Scott Pakin  
*scott+pkfh@pakin.org*

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The `pkfix-helper` program occasionally needs help from the user in selecting an appropriate TFM file to match a Type 3 font found in a PostScript document. This document assists with the task of identifying fonts by presenting character-by-character comparisons of all 256 character positions in a selection of common T<sub>E</sub>X fonts. The following encodings are represented:

- T<sub>E</sub>X text (e.g., *cmr10*)
- T<sub>E</sub>X math italic (e.g., *cmmi10*)
- T<sub>E</sub>X math symbols (e.g., *cmsy10*)
- L<sup>A</sup>T<sub>E</sub>X symbols (e.g., *lasy10*)
- T<sub>E</sub>X math extension (e.g., *cmex10*)
- Adobe standard encoding (e.g., *rptmr*)
- Adobe symbol encoding (e.g., *rpsyr*)
- extended T<sub>E</sub>X font encoding (e.g., *ecrm1000*)
- T<sub>E</sub>X text companion symbols (e.g., *tcrm1000*)

To use the tables that appear below, first produce “before” and “after” font sheets using `pkfix-helper`’s `--ps` and `--tex` options. (See the `pkfix-helper` documentation for details.) For each font in which the “after” characters are completely different from the “before” characters—as opposed to merely the wrong selection

of font size, weight, or slant—make a note of the font that `pkfix-helper` announced it had selected. Find the table and column in which the “before” symbol exists and the “after” symbol is associated with the font selected by `pkfix-helper`. The font associated with the “before” symbol is what should be specified in a `--force` option to `pkfix-helper`. For example, consider the observations shown in Figure 1. We find that the “after” character, “ $\eta$ ”, is associated with *cmmi10* (the same typeface used for *cmmb10* but in book weight) at character position 17. The “before” character, “ $\equiv$ ”, is also present in position 17 and is associated with *cmsy10*. Therefore, we know we need to re-run `pkfix-helper` with the `--force="Fj=cmsy10 @ 1.2X"` option to force it to associate document font *Fj* with *cmsy10* instead of *cmmb10*.

The font size may need adjusting. In the preceding example, `--force="Fj=cmsy9"` produces less mismatch for *cmmb10 @ 1.2X* than does `--force="Fj=cmsy10 @ 1.2X"` (mismatch=0.00106 vs. mismatch=4.43701). Making such a determination still requires human involvement. A suggested approach is to observe that `--force="Fj=cmsy10 @ *"` causes `pkfix-helper` to select a scaling factor of 0.92918X for a scaled font size of  $0.92918 \times 10 \text{ pt.} = 9.2918 \text{ pt.}$  Noting that *cmsy9.tfm* exists and assuming that the document source did not specify a fractional scaling of the font, we can hypothesize that unscaled *cmsy9* is the font actually utilized in the document.

pkfix-helper: Processing Fj ... done (cmmb10 @ 1.2X, mismatch=0.00073)			
--ps file:	<b>Fj:</b>	$\equiv$	
--tex file:	<b>Fj:</b>	$\eta$	

Figure 1: Sample observations of `pkfix-helper` output and output files

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<i>cmr10</i>	$\Gamma$	$\Delta$	$\Theta$	$\Lambda$	$\Xi$	$\Pi$	$\Sigma$	$\Upsilon$	$\Phi$	$\Psi$	$\Omega$	$\mathfrak{f}$	$\mathfrak{fi}$	$\mathfrak{fl}$	$\mathfrak{ffi}$	$\mathfrak{ffl}$
<i>cmmi10</i>	$\Gamma$	$\Delta$	$\Theta$	$\Lambda$	$\Xi$	$\Pi$	$\Sigma$	$\Upsilon$	$\Phi$	$\Psi$	$\Omega$	$\alpha$	$\beta$	$\gamma$	$\delta$	$\epsilon$
<i>cmsy10</i>	$-$	$\cdot$	$\times$	$*$	$\div$	$\diamond$	$\pm$	$\mp$	$\oplus$	$\ominus$	$\otimes$	$\oslash$	$\odot$	$\bigcirc$	$\circ$	$\bullet$
<i>lasy10</i>		$\triangleleft$	$\trianglelefteq$	$\triangleright$	$\trianglerighteq$											
<i>cmex10</i>	$($	$)$	$[$	$]$	$\lfloor$	$\rfloor$	$\lceil$	$\rceil$	$\{$	$\}$	$\langle$	$\rangle$	$ $	$\parallel$	$/$	$\backslash$
<i>rptmr</i>																
<i>rpsyr</i>	$\grave{\sim}$	$\acute{\sim}$	$\hat{\sim}$	$\tilde{\sim}$	$\ddot{\sim}$	$\sim$	$\circ$	$\smile$	$\smile$	$-$	$\cdot$	$\smile$	$\smile$	$\smile$	$\smile$	$\smile$
<i>ecrm1000</i>	$\grave{\sim}$	$\acute{\sim}$	$\hat{\sim}$	$\tilde{\sim}$	$\ddot{\sim}$	$\sim$	$\circ$	$\smile$	$\smile$	$-$	$\cdot$	$\smile$	$\smile$	$\smile$	$\smile$	$\smile$
<i>tcrm1000</i>	$\grave{\sim}$	$\acute{\sim}$	$\hat{\sim}$	$\tilde{\sim}$	$\ddot{\sim}$	$\sim$	$\circ$	$\smile$	$\smile$	$-$	$\cdot$	$\smile$	$\smile$	$\smile$	$\smile$	$\smile$

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
<i>cmr10</i>	$\mathfrak{I}$	$\mathfrak{J}$	$\mathfrak{K}$	$\mathfrak{L}$	$\mathfrak{M}$	$\mathfrak{N}$	$\mathfrak{O}$	$\mathfrak{P}$	$\mathfrak{Q}$	$\mathfrak{R}$	$\mathfrak{S}$	$\mathfrak{T}$	$\mathfrak{U}$	$\mathfrak{V}$	$\mathfrak{W}$	$\mathfrak{X}$
<i>cmmi10</i>	$\zeta$	$\eta$	$\theta$	$\iota$	$\kappa$	$\lambda$	$\mu$	$\nu$	$\xi$	$\pi$	$\rho$	$\sigma$	$\tau$	$\upsilon$	$\phi$	$\chi$
<i>cmsy10</i>	$\asymp$	$\equiv$	$\subseteq$	$\supseteq$	$\leq$	$\geq$	$\preceq$	$\succeq$	$\sim$	$\approx$	$\subset$	$\supset$	$\ll$	$\gg$	$\prec$	$\succ$
<i>lasy10</i>																
<i>cmex10</i>	$($	$)$	$($	$)$	$[$	$]$	$\lfloor$	$\rfloor$	$\lceil$	$\rceil$	$\{$	$\}$	$\langle$	$\rangle$	$/$	$\backslash$
<i>rptmr</i>																
<i>rpsyr</i>	$\text{“}$	$\text{”}$	$\text{„}$	$\text{«}$	$\text{»}$	$-$	$-$		$\circ$	$\circ$	$\mathfrak{J}$	$\mathfrak{ff}$	$\mathfrak{fi}$	$\mathfrak{fl}$	$\mathfrak{ffi}$	$\mathfrak{ffl}$
<i>ecrm1000</i>	$\text{“}$	$\text{”}$	$\text{„}$	$\text{«}$	$\text{»}$	$-$	$-$		$\circ$	$\circ$	$\mathfrak{J}$	$\mathfrak{ff}$	$\mathfrak{fi}$	$\mathfrak{fl}$	$\mathfrak{ffi}$	$\mathfrak{ffl}$
<i>tcrm1000</i>	$\text{“}$	$\text{”}$	$\text{„}$	$\text{«}$	$\text{»}$	$-$	$-$		$\leftarrow$	$\rightarrow$	$\mathfrak{J}$	$\mathfrak{ff}$	$\mathfrak{fi}$	$\mathfrak{fl}$	$\mathfrak{ffi}$	$\mathfrak{ffl}$

	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
<i>cmr10</i>	$\sim$	$!$	$\text{”}$	$\#$	$\$$	$\%$	$\&$	$\text{'}$	$($	$)$	$*$	$+$	$,$	$-$	$\cdot$	$/$
<i>cmmi10</i>	$\psi$	$\omega$	$\varepsilon$	$\vartheta$	$\varpi$	$\varrho$	$\varsigma$	$\varphi$	$\leftarrow$	$\leftarrow$	$\rightarrow$	$\rightarrow$	$\leftarrow$	$\rightarrow$	$\triangleright$	$\triangleleft$
<i>cmsy10</i>	$\leftarrow$	$\rightarrow$	$\uparrow$	$\downarrow$	$\leftrightarrow$	$\nearrow$	$\searrow$	$\approx$	$\Leftarrow$	$\Rightarrow$	$\Uparrow$	$\Downarrow$	$\Leftrightarrow$	$\nwarrow$	$\nearrow$	$\propto$
<i>lasy10</i>									$\leftarrow$	$\rightarrow$	$\wedge$	$\vee$				
<i>cmex10</i>	$($	$)$	$[$	$]$	$\lfloor$	$\rfloor$	$\lceil$	$\rceil$	$\{$	$\}$	$\langle$	$\rangle$	$/$	$\backslash$	$/$	$\backslash$
<i>rptmr</i>		$!$	$\text{”}$	$\#$	$\$$	$\%$	$\&$	$\text{'}$	$($	$)$	$*$	$+$	$,$	$-$	$\cdot$	$/$
<i>rpsyr</i>		$!$	$\forall$	$\#$	$\exists$	$\%$	$\&$	$\exists$	$($	$)$	$*$	$+$	$,$	$-$	$\cdot$	$/$
<i>ecrm1000</i>	$\sim$	$!$	$\text{”}$	$\#$	$\$$	$\%$	$\&$	$\text{'}$	$($	$)$	$*$	$+$	$,$	$-$	$\cdot$	$/$
<i>tcrm1000</i>	$\text{b}$	$!$	$\text{”}$	$\#$	$\$$	$\%$	$\&$	$\text{'}$	$($	$)$	$*$	$+$	$,$	$=$	$\cdot$	$/$

	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
<i>cmr10</i>	0	1	2	3	4	5	6	7	8	9	:	;	i	=	i	?
<i>cmmi10</i>	o	1	2	3	4	5	6	7	8	9	.	,	<	/	>	*
<i>cmsy10</i>	/	$\infty$	$\in$	$\ni$	$\triangle$	$\nabla$	/	,	$\forall$	$\exists$	$\neg$	$\emptyset$	$\mathbb{R}$	$\mathbb{S}$	$\top$	$\perp$
<i>lasy10</i>	$\cup$	$\boxtimes$	$\square$	$\diamond$							$\sim$	$\leadsto$	$\square$	$\square$		
<i>cmex10</i>	$($	$\backslash$	$\lceil$	$\rfloor$	$\lfloor$	$\rfloor$	$ $	$ $	$\lceil$	$\rfloor$	$\lfloor$	$\rfloor$	$\lfloor$	$\rfloor$	$'$	$ $
<i>rptmr</i>	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
<i>rpsyr</i>	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
<i>ecrm1000</i>	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
<i>tcrm1000</i>	o	1	2	3	4	5	6	7	8	9	.	,	<	=	>	?

	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
<i>cmr10</i>	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<i>cmmi10</i>	$\partial$	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>
<i>cmsy10</i>	$\aleph$	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>
<i>lasy10</i>																
<i>cmex10</i>	$\backslash$	$\int$	$\lrcorner$	$\lrcorner$	$\langle$	$\rangle$	$\sqcup$	$\sqcup$	$\mathfrak{f}$	$\mathfrak{f}$	$\odot$	$\odot$	$\oplus$	$\oplus$	$\otimes$	$\otimes$
<i>rptmr</i>	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<i>rpsyr</i>	$\cong$	A	B	X	$\Delta$	E	$\Phi$	$\Gamma$	H	I	$\vartheta$	K	$\Lambda$	M	N	O
<i>ecrm1000</i>	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<i>tcrm1000</i>														U		○

	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
<i>cmr10</i>	P	Q	R	S	T	U	V	W	X	Y	Z	[	“	]	^	·
<i>cmmi10</i>	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>	<i>Y</i>	<i>Z</i>	$\mathfrak{b}$	$\mathfrak{b}$	$\mathfrak{d}$	$\smile$	$\frown$
<i>cmsy10</i>	$\mathcal{P}$	$\mathcal{Q}$	$\mathcal{R}$	$\mathcal{S}$	$\mathcal{T}$	$\mathcal{U}$	$\mathcal{V}$	$\mathcal{W}$	$\mathcal{X}$	$\mathcal{Y}$	$\mathcal{Z}$	$\cup$	$\cap$	$\oplus$	$\wedge$	$\vee$
<i>lasy10</i>																
<i>cmex10</i>	$\Sigma$	$\Pi$	$\int$	$\cup$	$\cap$	$\oplus$	$\wedge$	$\vee$	$\Sigma$	$\Pi$	$\int$	$\cup$	$\cap$	$\oplus$	$\wedge$	$\vee$
<i>rptmr</i>	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
<i>rpsyr</i>	$\Pi$	$\Theta$	P	$\Sigma$	T	Y	$\varsigma$	$\Omega$	$\Xi$	$\Psi$	Z	[	[	]	$\perp$	-
<i>ecrm1000</i>	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	-
<i>tcrm1000</i>								$\Omega$				$\llbracket$	$\backslash$	$\rrbracket$	$\uparrow$	$\downarrow$

	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
<i>cmr10</i>	‘	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
<i>cmmi10</i>	$\ell$	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>
<i>cmsy10</i>	$\vdash$	$\dashv$	$\lrcorner$	$\lrcorner$	$\lrcorner$	$\lrcorner$	{	}	$\langle$	$\rangle$		$\parallel$	$\updownarrow$	$\updownarrow$	$\backslash$	$\wr$
<i>lasy10</i>																
<i>cmex10</i>	$\Pi$	$\Pi$	$\wedge$	$\wedge$	$\wedge$	$\sim$	$\sim$	$\sim$	[	]					{	}
<i>rptmr</i>	‘	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
<i>rpsyr</i>	-	$\alpha$	$\beta$	$\chi$	$\delta$	$\epsilon$	$\phi$	$\gamma$	$\eta$	$\iota$	$\varphi$	$\kappa$	$\lambda$	$\mu$	$\nu$	$\omicron$
<i>ecrm1000</i>	‘	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
<i>tcrm1000</i>	`		*	o o	+								$\text{\textcircled{e}}$	$\omega$	$\text{\textcircled{a}}$	

	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
<i>cmr10</i>	p	q	r	s	t	u	v	w	x	y	z	-	-	"	~	"
<i>cmmi10</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	$\imath$	<i>j</i>	$\wp$	$\rightarrow$	$\curvearrowright$
<i>cmsy10</i>	$\surd$	$\Pi$	$\nabla$	<i>f</i>	$\sqcup$	$\sqcap$	$\sqsubseteq$	$\sqsupseteq$	$\S$	$\dagger$	$\ddagger$	$\P$	$\clubsuit$	$\diamond$	$\heartsuit$	$\spadesuit$
<i>lasy10</i>																
<i>cmex10</i>	$\surd$	$\surd$	$\surd$	$\surd$	$\surd$		$\lrcorner$	$\parallel$	$\uparrow$	$\downarrow$	$\curvearrowleft$	$\curvearrowright$	$\curvearrowright$	$\curvearrowright$	$\Uparrow$	$\Downarrow$
<i>rptmr</i>	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
<i>rpsyr</i>	$\pi$	$\theta$	$\rho$	$\sigma$	$\tau$	$\upsilon$	$\varpi$	$\omega$	$\xi$	$\psi$	$\zeta$	{		}	~	-
<i>ecrm1000</i>	p	q	r	s	t	u	v	w	x	y	z	{		}	~	=
<i>tcrm1000</i>												{		}		

	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
<i>cmr10</i>																
<i>cmmi10</i>																
<i>cmsy10</i>																
<i>lasy10</i>																
<i>cmex10</i>																
<i>rptmr</i>																
<i>rpsyr</i>																
<i>ecrm1000</i>	Ä	Å	Ć	Č	Ď	Ě	Ǝ	Ǧ	Ł	Ł	Ł	Ń	Ň	Đ	Œ	Ř
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	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
<i>cmr10</i>																
<i>cmmi10</i>																
<i>cmsy10</i>																
<i>lasy10</i>																
<i>cmex10</i>																
<i>rptmr</i>																
<i>rpsyr</i>																
<i>ecrm1000</i>	Ř	Ś	Š	Ş	Ť	Ț	Ũ	Ȫ	Ÿ	Ž	Ž	Ž	IJ	İ	đ	§
<i>tcrm1000</i>	G	P	£	R	?	↓	đ	™	‰	¶	B	№	%	e	o	§ <sub>SM</sub>

	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
<i>cmr10</i>																
<i>cmmi10</i>																
<i>cmsy10</i>																
<i>lasy10</i>																
<i>cmex10</i>																
<i>rptmr</i>		ı	ç	£	/	¥	f	§	¤	'	“	«	<	>	fi	fl
<i>rpsyr</i>		Ÿ	'	≤	/	∞	f	♣	♦	♥	♠	↔	←	↑	→	↓
<i>ecrm1000</i>	ă	ȧ	ć	č	ď	ě	ƒ	ğ	ı	İ	ı	ı	ı	ı	ö	ı
<i>tcrm1000</i>	{	}	¢	£	¤	¥	ı	§	¨	©	¸	©	¬	®	®	—

	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
<i>cmr10</i>																
<i>cmmi10</i>																
<i>cmsy10</i>																
<i>lasy10</i>																
<i>cmex10</i>																
<i>rptmr</i>		—	†	‡	·		¶	•	,	„	”	»	...	‰	—	ı
<i>rpsyr</i>	°	±	”	≥	×	∞	đ	•	÷	≠	≡	≈	...		—	ı
<i>ecrm1000</i>	ř	±	š	§	ı	μ	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
<i>tcrm1000</i>	°	±	2	3	'	ı	¶	ı	ı	ı	ı	ı	ı	ı	ı	ı

	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
<i>cmr10</i>																
<i>cmmi10</i>																
<i>cmsy10</i>																
<i>lasy10</i>																
<i>cmex10</i>																
<i>rptmr</i>		`	´	^	˘	-	˘	·	¨		°	˙		˜	˙	˘
<i>rpsyr</i>	À	Á	Â	Ë	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
<i>ecrm1000</i>	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
<i>tcrm1000</i>																

	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
<i>cmr10</i>																
<i>cmmi10</i>																
<i>cmsy10</i>																
<i>lasy10</i>																
<i>cmex10</i>																
<i>rptmr</i>	—	∇	®	©	™	Π	√	·	¬	^	∨	↔	⇐	↑	⇒	↓
<i>rpsyr</i>	Ɔ	Ñ	Ò	Ó	Ô	Õ	Ö	Œ	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
<i>ecrm1000</i>	Ɔ	Ñ	Ò	Ó	Ô	Õ	Ö	Œ	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
<i>tcrm1000</i>							×									

	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
<i>cmr10</i>																
<i>cmmi10</i>																
<i>cmsy10</i>																
<i>lasy10</i>																
<i>cmex10</i>																
<i>rptmr</i>		Æ		<sup>a</sup>	™	Σ	ƒ		Ł	Ø	Œ	°				
<i>rpsyr</i>	◊	◁	®	©	™	Σ	ƒ		Ł	Ø	Œ	°		{		
<i>ecrm1000</i>	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
<i>tcrm1000</i>																

	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255
<i>cmr10</i>																
<i>cmmi10</i>																
<i>cmsy10</i>																
<i>lasy10</i>																
<i>cmex10</i>																
<i>rptmr</i>		æ	ƒ	ƒ		ı	ı		ı	ø	œ	ß		ı	ı	
<i>rpsyr</i>		›	ƒ	ƒ		ı	ı		ı	ø	œ	ß		ı	ı	
<i>ecrm1000</i>	ð	ñ	ò	ó	ô	õ	ö	œ	ø	ù	ú	û	ü	ý	þ	ß
<i>tcrm1000</i>							÷									