

Commodore PETSCII character sets

PET ASCII, CBM ASCII

The PETSCII character sets, also known as PET ASCII or CBM ASCII, were 8-bit character sets used by Commodore computers of the 1970s and 1980s. Originally introduced with Commodore PET 2001 in 1977, PETSCII was modified and reused in several later Commodore computers.

In each version of PETSCII, there were two alternative character sets available: an upper case set (graphics mode) and a lower case set (text/business mode). The upper case set supported upper case letters along with digits and symbols. The lower case set supported both upper and lower case letters, but less symbols. The current set was selected by either the user or a program.

Originally, both character sets consisted of 127 visually unique characters. In upper case, there were 62 standard ASCII characters and 65 additional graphic characters. In lower case there were 87 ASCII and 38 graphic characters. Several of the 127 unique characters were duplicated, resulting in each set containing a total of 192 visible characters. Character order was ideal for the PET keyboard layout: holding down the SHIFT key would produce the character whose PETSCII value was base character + 128. Later on, the sets were adjusted a bit, ending with 123 unique characters (61 ASCII, 62 graphical) in upper case and 125 ones (87 ASCII + 38 graphical) in lower case for Commodore 64.

In addition to the visible characters, the sets also supported a number of invisible control characters. Support for these control codes varied from device to device. Control characters were used for special keys, cursor movement, editing, color selection and the like. If typed between quotes "...", control characters became visible in program listings. There they appeared in reverse field (see the Sym column in the character charts).

At least four different versions of PETSCII have existed, not counting any regional modifications.

- 1) The 1977 version defaulted to upper case letters. In business mode, lower case letters were available with SHIFT.
- 2) Business mode soon changed. Upper and lower case were swapped. Lower case could now be typed without SHIFT.
- 3) VIC-20 replaced the backslash (\) by the pound (£). Area hex 60-7F now duplicated different characters than before. Most characters were still similar to PET, but they all appeared stretched on VIC-20.
- 4) With Commodore 64, the characters became thicker in order to look better on TV. 1-pixel lines were converted to 2-pixel lines. This caused 4 pairs of line drawing characters, which used to be 1 pixel off each other, to become similar.

If we consider visible characters only, the 1977 version of PETSCII was downwards compatible with ASCII-1963, which was the initial (and long forgotten) version of the ASCII standard. Control characters differed, though. Because of this, PETSCII has never been compatible with any version of ASCII. Thus, the names PET ASCII and CBM ASCII are rather misleading.

Even though PETSCII is not fully compatible with either ASCII or Unicode, the following charts list matching characters in these standard character sets where available.

PETSCII was used in main memory, keyboard input, storage and printing. A completely different representation for the same characters was used for screen memory. For this purpose Commodore computers used screen display codes. These codes could be "poked" to screen RAM area instead of using PETSCII. As with PETSCII, poke codes too came in upper and lower case sets, which meant each Commodore computer used a total of 4 non-standard character encodings.

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PETSCII (Commodore 64) — Character sets 1 & 2

C64, C16, C128

	00					10					20	30	40	50	60	70	80					90					A0	B0	C0	D0	duplicate area					
	Sym	C64	C16	C128 40c	C128 80c	Sym	C64	C16	C128 40c	C128 80c							Sym	C64	C16	C128 40c	C128 80c	Sym	C64	C16	C128 40c	C128 80c										
-0											SPACE																BLACK	SHIFT+SPC								
-1							CURSOR DOWN				!	1	A a	Q q								ORANGE	DK PUR				CURSOR UP									
-2					UL ON		REVERSE ON				"	2	B b	R r								FSH ON	UL OFF				REVERSE OFF									
-3		STOP					HOME				#	3	C c	S s								RUN					CLEAR									
-4							DEL				\$	4	D d	T t								FSH OFF					INST									
-5		WHITE									%	5	E e	U u								F1					BROWN	DK YEL								
-6											&	6	F f	V v								F3					PINK	YEL GRN	PINK							
-7					BELL						'	7	G g	W w								F5					DK GRN	PINK	DK GRN	DK CYN						
-8		LOCK CASE					TAB SET/ CLEAR				<	8	H h	X x								F7					MED GRN	BL GRN	MEDIUM GRAY							
-9		UNLOCK CASE	TAB)	9	I i	Y y								F2					LGT GRN	LGT BLU	LIGHT GREEN							
-A					LINE FEED						*	:	J j	Z z								F4					LGT BLU	DK BLU	LIGHT BLUE							
-B					UNLOCK CASE		ESC				+	;	K k	[F6					LGT GRN	LGT GRN	LIGHT GRAY							
-C					LOCK CASE		RED				,	<	L l	£								F8	HLP	F8			PURPLE									
-D		RETURN					CURSOR RIGHT				-	=	M m	_								SHIFT+RETURN					CURSOR LEFT									
-E		LOWER CASE					GREEN				.	>	N n	†								UPPER CASE					YELLOW									
-F					FSH ON		BLUE				/	?	O o	←								FSH OFF					CYAN									

PETSCII (Commodore 64) — Character set 1

C64, C16, C128 — Upper case (graphics mode)

	00					10					20	30	40	50	60	70	80					90					A0	B0	C0	D0	duplicate area						
	Sym	C64	C16	C128 40c	C128 80c	Sym	C64	C16	C128 40c	C128 80c							Sym	C64	C16	C128 40c	C128 80c	Sym	C64	C16	C128 40c	C128 80c											
-0											SPACE																BLACK	SHIFT+SPC									
-1							CURSOR DOWN				!	1	A	Q				ORANGE	DK PUR								CURSOR UP										
-2					UL ON		REVERSE ON				"	2	B	R				FSH ON	UL OFF								REVERSE OFF										
-3		STOP					HOME				#	3	C	S				RUN									CLEAR										
-4							DEL				\$	4	D	T				FSH OFF									INST										
-5		WHITE									%	5	E	U				F1								BROWN	DK YEL										
-6											&	6	F	V				F3	PINK	YEL GRN	PINK																
-7					BELL						'	7	G	W				F5	DK GRN	PINK	DK GRN	DK CYN															
-8		LOCK CASE					TAB SET/ CLEAR				(	8	H	X				F7	MED GRN	BL GRN	MEDIUM GRAY															
-9		UNLOCK CASE	TAB								)	9	I	Y				F2	LGT GRN	LGT BLU	LIGHT GREEN												
-A					LINE FEED						*	:	J	Z				F4	LGT BLU	DK BLU	LIGHT BLUE																
-B					UNLOCK CASE		ESC				+	;	K	[				F6	LGT GRN	LGT GRN	LIGHT GRAY												
-C					LOCK CASE		RED				,	<	L	\				F8 HLP	F8							PURPLE											
-D		RETURN					CURSOR RIGHT				=	=	M	^				SHIFT+RETURN								CURSOR LEFT											
-E		LOWER CASE					GREEN				.	>	N	_				UPPER CASE									YELLOW										
-F					FSH ON		BLUE				/	?	O	`								FSH OFF					CYAN										

Character images from C64. Sym=Symbol for control inside quotes.

PETSCII (Commodore 64) — Character set 2

C64, C16, C128 — Lower case (text mode)

	00					10					20	30	40	50	60	70	80					90			A0	B0	C0	D0	duplicate area							
	Sym	C64	C16	C128 40c	C128 80c	Sym	C64	C16	C128 40c	C128 80c							Sym	C64	C16	C128 40c	C128 80c	Sym	C64	C16	C128 40c	C128 80c										
-0											SPACE															BLACK	SHIFT+SPC									
-1							CURSOR DOWN				!	1	a	q	A	Q		ORANGE	DK PUR				CURSOR UP													
-2					UL ON		REVERSE ON			"	2	b	r	B	R		FSH ON	UL OFF				REVERSE OFF														
-3		STOP					HOME			#	3	c	s	C	S		RUN						CLEAR													
-4							DEL			\$	4	d	t	D	T		FSH OFF						INST													
-5		WHITE								%	5	e	u	E	U		F1						BROWN	DK YEL												
-6										&	6	f	v	F	V		F3						PINK	YEL GRN	PINK											
-7					BELL					'	7	g	w	G	W		F5						DK GRN	PINK	DK GRN	DK CYN										
-8		LOCK CASE					TAB SET/ CLEAR			(	8	h	x	H	X		F7						MED GRN	BL GRN	MEDIUM GRAY										
-9		UNLOCK CASE	TAB							)	9	i	y	I	Y		F2						LGT GRN	LGT BLU	LIGHT GREEN									
-A			LINE FEED							*	:	j	z	J	Z		F4						LGT BLU	DK BLU	LIGHT BLUE											
-B			UNLOCK CASE				ESC			+	;	k	[	K	[		F6						LGT GRN	LGT GRN	LIGHT GRAY									
-C			LOCK CASE				RED			,	<	l	]	L	]		F8	HLP	F8				PURPLE											
-D		RETURN					CURSOR RIGHT			-	=	m	j	M	]		SHIFT+RETURN						CURSOR LEFT												
-E		LOWER CASE					GREEN			.	>	n	_	N	[		UPPER CASE						YELLOW											
-F					FSH ON		BLUE			/	?	o	`	O	[

Character images from C64. Sym=Symbol for control inside quotes.

PETSCII (Commodore VIC-20) — Character sets 1 & 2

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	duplicate area	
-0	0	16	32 SPACE	48	64	80	96	112	128	144 BLACK	160 SHIFT+SPC	176	192	208	224	240
-1	1	17 CURSOR DOWN	33 !	49 1	65 Aa	81	97	113	129	145 CURSOR UP	161	177	193	209	225	241
-2	2	18 REVERSE ON	34 " 2	50	66	82	98	114	130	146 REVERSE OFF	162	178	194	210	226	242
-3	3 STOP	19 HOME	35 # 3	51	67	83	99	115	131 RUN	147 CLEAR	163	179	195	211	227	243
-4	4	20 DEL	36 \$ 4	52	68	84	100	116	132	148 INST	164	180	196	212	228	244
-5	5 WHITE	21	37 % 5	53	69	85	101	117	133 F1	149	165	181	197	213	229	245
-6	6	22	38 & 6	54	70	86	102	118	134 F3	150	166	182	198	214	230	246
-7	7	23	39 ' 7	55	71	87	103	119	135 F5	151	167	183	199	215	231	247
-8	8 LOCK CASE	24	40 < 8	56	72	88	104	120	136 F7	152	168	184	200	216	232	248
-9	9 UNLOCK CASE	25	41 > 9	57	73	89	105	121	137 F2	153	169	185	201	217	233	249
-A	10	26	42 * : Jj Zz	58	74	90	106	122	138 F4	154	170	186	202	218	234	250
-B	11	27	43 + ; Kk C	59	75	91	107	123	139 F6	155	171	187	203	219	235	251
-C	12	28 RED	44 , < L l £	60	76	92	108	124	140 F8	156 PURPLE	172	188	204	220	236	252
-D	13 RETURN	29 CURSOR RIGHT	45 - = Mm J	61	77	93	109	125	141 SHIFT+RETURN	157 CURSOR LEFT	173	189	205	221	237	253
-E	14 LOWER CASE	30 GREEN	46 . > Nn ↑	62	78	94	110	126	142 UPPER CASE	158 YELLOW	174	190	206	222	238	254
-F	15	31 BLUE	47 / ? Oo ←	63	79	95	111	127	143	159 CYAN	175	191	207	223	239	255

duplicate area

Differences to C64: Stretched characters with narrow lines. Character pairs A5-B4, A7-AA, C0-C3, C2-DD differ from each other (also in duplicated areas).

PETSCII (Commodore VIC-20) — Character set 1

Upper case (graphics mode)

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	duplicate area	
-0	0	16	32 SPACE	48	64	80 P	96	112	128	144 BLACK	160 SHIFT+SPC	176	192	208	224	240
-1	1	17 CURSOR DOWN	33 !	49 1	65 A	81	97	113	129	145 CURSOR UP	161	177	193	209	225	241
-2	2	18 REVERSE ON	34 "	50 2	66 B	82 R	98	114	130	146 REVERSE OFF	162	178	194	210	226	242
-3	3 STOP	19 HOME	35 #	51 3	67 C	83 S	99	115	131 RUN	147 CLEAR	163	179	195	211	227	243
-4	4	20 DEL	36	52 4	68 D	84 T	100	116	132	148 INST	164	180	196	212	228	244
-5	5 WHITE	21	37	53 5	69 E	85 U	101	117	133	149	165	181	197	213	229	245
-6	6	22	38 &	54 6	70 F	86 V	102	118	134 F3	150	166	182	198	214	230	246
-7	7	23	39	55 7	71 G	87 W	103	119	135 F5	151	167	183	199	215	231	247
-8	8 LOCK CASE	24	40	56 8	72 H	88 X	104	120	136 F7	152	168	184	200	216	232	248
-9	9 UNLOCK CASE	25	41	57 9	73 I	89 Y	105	121	137 F2	153	169	185	201	217	233	249
-A	10	26	42 *	58 :	74 J	90 Z	106	122	138 F4	154	170	186	202	218	234	250
-B	11	27	43 +	59 ;	75 K	91 [	107	123	139 F6	155	171	187	203	219	235	251
-C	12	28 RED	44 ,	60 <	76 L	92 £	108	124	140 F8	156 PURPLE	172	188	204	220	236	252
-D	13 RETURN	29 CURSOR RIGHT	45 -	61 =	77 M	93]	109	125	141 SHIFT+RETURN	157 CURSOR LEFT	173	189	205	221	237	253
-E	14 LOWER CASE	30 GREEN	46 .	62 >	78 N	94 ↑	110	126	142 UPPER CASE	158 YELLOW	174	190	206	222	238	254
-F	15	31 BLUE	47	63 ?	79 O	95 ←	111	127	143	159 CYAN	175	191	207	223	239	255

duplicate area

Differences to C64: Stretched characters with narrow lines. Character pairs A5-B4, A7-AA, C0-C3, C2-DD differ from each other (also in duplicated areas).

PETSCII (Commodore VIC-20) — Character set 2

Lower case (text mode)

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	duplicate area	
-0	0	16	32 SPACE	48	64	80	96	112	128	144 BLACK	160 SHIFT+SPC	176	192	208	224	240
-1	1	17 CURSOR DOWN	33 !	49 1	65 a	81 q	97 A	113 Q	129	145 CURSOR UP	161	177	193 A	209 Q	225	241
-2	2	18 REVERSE ON	34 "	50 2	66 b	82 r	98 B	114 R	130	146 REVERSE OFF	162	178	194 B	210 R	226	242
-3	3	19 STOP	35 #	51 3	67 c	83 s	99 C	115 S	131	147 RUN	163	179	195 C	211 S	227	243
-4	4	20 DEL	36 \$	52 4	68 d	84 t	100 D	116 T	132	148 INST	164	180	196 D	212 T	228	244
-5	5	21 WHITE	37 %	53 5	69 e	85 u	101 E	117 U	133	149 F1	165	181	197 E	213 U	229	245
-6	6	22	38 &	54 6	70 f	86 v	102 F	118 V	134	150 F3	166	182	198 F	214 V	230	246
-7	7	23	39 '	55 7	71 g	87 w	103 G	119 W	135	151 F5	167	183	199 G	215 W	231	247
-8	8	24 LOCK CASE	40 <	56 8	72 h	88 x	104 H	120 X	136	152 F7	168	184	200 H	216 X	232	248
-9	9	25 UNLOCK CASE	41 >	57 9	73 i	89 y	105 I	121 Y	137	153 F2	169	185	201 I	217 Y	233	249
-A	10	26	42 *	58 :	74 j	90 z	106 J	122 Z	138	154 F4	170	186	202 J	218 Z	234	250
-B	11	27	43 +	59 ;	75 k	91	107 K	123	139	155 F6	171	187	203 K	219	235	251
-C	12	28 RED	44 ,	60 <	76 l	92	108 L	124	140	156 F8	172	188	204 L	220	236	252
-D	13 RETURN	29 CURSOR RIGHT	45 -	61 =	77 m	93	109 M	125	141 SHIFT+RETURN	157 CURSOR LEFT	173	189	205 M	221	237	253
-E	14 LOWER CASE	30 GREEN	46 .	62 >	78 n	94	110 N	126	142 UPPER CASE	158 YELLOW	174	190	206 N	222	238	254
-F	15	31 BLUE	47 /	63 ?	79 o	95	111 O	127	143	159 CYAN	175	191	207 O	223	239	255

duplicate area

Differences to C64: Stretched characters with narrow lines. Character pairs A5-B4, A7-AA differ from each other (also in duplicated areas).

PETSCII (Commodore PET) — Character sets 1 & 2

Commodore PET 8032

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	duplicate area	
-0	0	16	32 SPACE	48	64	80 P p	96	112	128	144	160 SHIFT+SPC	176	192	208	224	240
-1	1	17 CURSOR DOWN	33 !	49 1	65 A a	81 Q q	97	113	129	145 CURSOR UP	161	177	193	209	225	241
-2	2	18 REVERSE ON	34 "	50 2	66 B b	82 R r	98	114	130	146 REVERSE OFF	162	178	194	210	226	242
-3	3 STOP	19 HOME	35 #	51 3	67 C c	83 S s	99	115	131	147 CLEAR	163	179	195	211	227	243
-4	4	20 DEL	36 \$	52 4	68 D d	84 T t	100	116	132	148 INST	164	180	196	212	228	244
-5	5	21 KILL LINE	37 %	53 5	69 E e	85 U u	101	117	133	149 INSERT LINE ABOVE	165	181	197	213	229	245
-6	6	22 ERASE TO RIGHT	38 &	54 6	70 F f	86 V v	102	118	134	150 ERASE TO LEFT	166	182	198	214	230	246
-7	7 BELL	23	39 /	55 7	71 G g	87 W w	103	119	135 DOUBLE BELL	151	167	183	199	215	231	247
-8	8	24	40 <	56 8	72 H h	88 X x	104	120	136	152	168	184	200	216	232	248
-9	9 TAB	25 SCROLL UP	41)	57 9	73 I i	89 Y y	105	121	137 TAB SET/CLEAR	153 SCROLL DOWN	169	185	201	217	233	249
-A	10	26	42 *	58 :	74 J j	90 Z z	106	122	138	154	170	186	202	218	234	250
-B	11	27 ESC	43 +	59 ;	75 K k	91 [	107	123	139	155	171	187	203	219	235	251
-C	12	28	44 ,	60 <	76 L l	92	108	124	140	156	172	188	204	220	236	252
-D	13 RETURN	29 CURSOR RIGHT	45 -	61 =	77 M m	93]	109	125	141 SHIFT+RETURN	157 CURSOR LEFT	173	189	205	221	237	253
-E	14 LOWER CASE	30	46 .	62 >	78 N n	94 ^	110	126	142 UPPER CASE	158	174	190	206	222	238	254
-F	15 SET WINDOW TOP	31	47 /	63 ?	79 O o	95 _	111	127	143 SET WINDOW END	159	175	191	207	223	239	255

duplicate area

Differences to VIC-20: Hex 5C is \ instead of £. Hex 60-7F duplicates a different area.

PETSCII (Commodore PET) — Character set 1

Commodore PET 8032 — Upper case (graphics mode)

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	duplicate area	
															E0	F0
-0	0 0	16 16	32 SPACE 32	48 48	64 64	80 80	96 96	112 112	128 128	144 144	160 SHIFT+SPC 160	176 176	192 192	208 208	224 224	240 240
-1	1 1	17 CURSOR DOWN 17	33 ! 33	49 1 49	65 A 65	81 Q 81	97 97	113 113	129 129	145 CURSOR UP 145	161 161	177 177	193 193	209 209	225 225	241 241
-2	2 2	18 REVERSE ON 18	34 " 34	50 2 50	66 B 66	82 R 82	98 98	114 114	130 130	146 REVERSE OFF 146	162 162	178 178	194 194	210 210	226 226	242 242
-3	3 3	19 HOME 19	35 # 35	51 3 51	67 C 67	83 S 83	99 99	115 115	131 131	147 CLEAR 147	163 163	179 179	195 195	211 211	227 227	243 243
-4	4 4	20 DEL 20	36 \$ 36	52 4 52	68 D 68	84 T 84	100 100	116 116	132 132	148 INST 148	164 164	180 180	196 196	212 212	228 228	244 244
-5	5 5	21 KILL LINE 21	37 % 37	53 5 53	69 E 69	85 U 85	101 101	117 117	133 133	149 INSERT LINE ABOVE 149	165 165	181 181	197 197	213 213	229 229	245 245
-6	6 6	22 ERASE TO RIGHT 22	38 & 38	54 6 54	70 F 70	86 V 86	102 102	118 118	134 134	150 ERASE TO LEFT 150	166 166	182 182	198 198	214 214	230 230	246 246
-7	7 7	23 BELL 23	39 ' 39	55 7 55	71 G 71	87 W 87	103 103	119 119	135 DOUBLE BELL 135	151 151	167 167	183 183	199 199	215 215	231 231	247 247
-8	8 8	24 24	40 (40	56 8 56	72 H 72	88 X 88	104 104	120 120	136 136	152 152	168 168	184 184	200 200	216 216	232 232	248 248
-9	9 9	25 TAB 25	41) 41	57 9 57	73 I 73	89 Y 89	105 105	121 121	137 TAB SET/CLEAR 137	153 SCROLL DOWN 153	169 169	185 185	201 201	217 217	233 233	249 249
-A	10 10	26 26	42 * 42	58 : 58	74 J 74	90 Z 90	106 106	122 122	138 138	154 154	170 170	186 186	202 202	218 218	234 234	250 250
-B	11 11	27 ESC 27	43 + 43	59 ; 59	75 K 75	91 [91	107 107	123 123	139 139	155 155	171 171	187 187	203 203	219 219	235 235	251 251
-C	12 12	28 28	44 , 44	60 < 60	76 L 76	92 92	108 108	124 124	140 140	156 156	172 172	188 188	204 204	220 220	236 236	252 252
-D	13 13	29 CURSOR RIGHT 29	45 - 45	61 = 61	77 M 77	93 J 93	109 109	125 125	141 SHIFT+RETURN 141	157 CURSOR LEFT 157	173 173	189 189	205 205	221 221	237 237	253 253
-E	14 14	30 LOWER CASE 30	46 . 46	62 > 62	78 N 78	94 ↑ 94	110 110	126 126	142 UPPER CASE 142	158 158	174 174	190 190	206 206	222 222	238 238	254 254
-F	15 15	31 SET WINDOW TOP 31	47 / 47	63 ? 63	79 O 79	95 ← 95	111 111	127 127	143 SET WINDOW END 143	159 159	175 175	191 191	207 207	223 223	239 239	255 255

duplicate area

Differences to VIC-20: Hex 5C is \ instead of £. Hex 60-7F duplicates a different area.

PETSCII (Commodore PET) — Character set 2

Commodore PET 8032 — Lower case (business mode)

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	duplicate area	
-0	0 @	16 P	32 SPACE u+0020	48 Ø u+0030	64 @ u+0040	80 P u+0070	96 ☐ u+0020	112 ☐ u+0030	128 —	144 P	160 SHIFT+SPC u+0020	176 ☐ u+250c	192 ☐ u+2500	208 P u+0050	224 ☐ u+0020	240 ☐ u+250c
-1	1 a	17 CURSOR DOWN u+0084	33 ! u+0021	49 1 u+0031	65 a u+0061	81 q u+0071	97 ☐ u+0021	113 ☐ u+0031	129 A	145 CURSOR UP u+008d	161 ☐ u+258c	177 ☐ u+2534	193 A u+0041	209 Q u+0051	225 ☐ u+258c	241 ☐ u+2534
-2	2 b	18 REVERSE ON	34 " u+0022	50 2 u+0032	66 b u+0062	82 r u+0072	98 ☐ u+0022	114 ☐ u+0032	130 B	146 REVERSE OFF	162 ☐ u+2584	178 ☐ u+252c	194 B u+0042	210 R u+0052	226 ☐ u+2584	242 ☐ u+252c
-3	3 STOP u+0003	19 HOME	35 # u+0023	51 3 u+0033	67 c u+0063	83 s u+0073	99 # u+0023	115 3 u+0033	131 C	147 CLEAR	163 ☐ u+2594	179 ☐ u+2524	195 C u+0043	211 S u+0053	227 ☐ u+2594	243 ☐ u+2524
-4	4 e	20 DEL u+0008	36 \$ u+0024	52 4 u+0034	68 d u+0064	84 t u+0074	100 ☐ u+0024	116 ☐ u+0034	132 D	148 INST	164 ☐ u+2581	180 ☐ u+258e	196 D u+0044	212 T u+0054	228 ☐ u+2581	244 ☐ u+258e
-5	5 e	21 KILL LINE	37 % u+0025	53 5 u+0035	69 e u+0065	85 u u+0075	101 ☐ u+0025	117 5 u+0035	133 E	149 INSERT LINE ABOVE	165 ☐ u+258f	181 ☐ u+258d	197 E u+0045	213 U u+0055	229 ☐ u+258f	245 ☐ u+258d
-6	6 f	22 ERASE TO RIGHT	38 & u+0026	54 6 u+0036	70 f u+0066	86 v u+0076	102 ☐ u+0026	118 6 u+0036	134 F	150 ERASE TO LEFT	166 ☐ u+2592	182 ☐	198 F u+0046	214 V u+0056	230 ☐ u+2592	246 ☐
-7	7 BELL u+0007	23 w	39 ' u+0027	55 7 u+0037	71 g u+0067	87 w u+0077	103 ☐ u+0027	119 7 u+0037	135 DOUBLE BELL	151 W	167 ☐ u+2595	183 ☐	199 G u+0047	215 W u+0057	231 ☐ u+2595	247 ☐
-8	8 h	24 x	40 (u+0028	56 8 u+0038	72 h u+0068	88 x u+0078	104 ☐ u+0028	120 8 u+0038	136 H	152 X	168 ☐ u+2583	184 ☐	200 H u+0048	216 X u+0058	232 ☐ u+2583	248 ☐
-9	9 TAB u+0009	25 SCROLL UP	41) u+0029	57 9 u+0039	73 i u+0069	89 y u+0079	105 ☐ u+0029	121 9 u+0039	137 TAB SET/CLEAR	153 SCROLL DOWN	169 ☐ u+2583	185 ☐ u+2583	201 I u+0049	217 Y u+0059	233 ☐ u+2583	249 ☐ u+2583
-A	10 j	26 z	42 * u+002a	58 : u+003a	74 j u+006a	90 z u+007a	106 ☐ u+002a	122 ☐ u+003a	138 J	154 Z	170 ☐	186 ☐ u+2713	202 J u+004a	218 Z u+005a	234 ☐	250 ☐ u+2713
-B	11 k	27 ESC u+001b	43 + u+002b	59 ; u+003b	75 k u+006b	91 [u+007b	107 ☐ u+002b	123 ☐ u+003b	139 K	155	171 ☐ u+251c	187 ☐ u+2596	203 K u+004b	219 ☐ u+253c	235 ☐ u+251c	251 ☐ u+2596
-C	12 l	28 n	44 , u+002c	60 < u+003c	76 l u+006c	92 ☐ u+005c	108 ☐ u+002c	124 ☐ u+003c	140 L	156 n	172 ☐ u+2597	188 ☐ u+259d	204 L u+004c	220 ☐	236 ☐ u+2597	252 ☐ u+259d
-D	13 RETURN	29 CURSOR RIGHT	45 - u+002d	61 = u+003d	77 m u+006d	93 J u+005d	109 ☐ u+002d	125 ☐ u+003d	141 SHIFT+RETURN	157 CURSOR LEFT	173 ☐ u+2514	189 ☐ u+2518	205 M u+004d	221 ☐ u+2502	237 ☐ u+2514	253 ☐ u+2518
-E	14 LOWER CASE u+000e	30 ↑	46 . u+002e	62 > u+003e	78 n u+006e	94 ↑ u+2191	110 ☐ u+002e	126 ☐ u+003e	142 UPPER CASE	158 n	174 ☐ u+2510	190 ☐ u+2598	206 N u+004e	222 ☐ u+2592	238 ☐ u+2510	254 ☐ u+2598
-F	15 SET WINDOW TOP	31 ←	47 / u+002f	63 ? u+003f	79 o u+006f	95 ← u+2190	111 ☐ u+002f	127 ☐ u+003f	143 SET WINDOW END	159 /	175 ☐ u+2582	191 ☐ u+259a	207 O u+004f	223 ☐ u+2592	239 ☐ u+2582	255 ☐ u+2592

duplicate area

Differences to VIC-20: Hex 5C is \ instead of £. Hex 60-7F duplicates a different area.

PETSCII (Original version) — Character sets 1 & 2

First Commodore PET 2001 (1977)

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	duplicate area	
-0	0	16	32 SPACE	48	64	80	96	112	128	144	160 SHIFT+SPC	176	192	208	224	240
-1	1	17 CURSOR DOWN	33 !	49	65	81	97 !	113	129	145 CURSOR UP	161	177	193	209	225	241
-2	2	18 REVERSE ON	34 "	50	66	82	98 "	114	130	146 REVERSE OFF	162	178	194	210	226	242
-3	3 STOP	19 HOME	35 #	51	67	83	99 #	115	131	147 CLEAR	163	179	195	211	227	243
-4	4	20 DEL	36 \$	52	68	84	100 \$	116	132	148 INST	164	180	196	212	228	244
-5	5	21	37 x	53	69	85	101 x	117	133	149	165	181	197	213	229	245
-6	6	22	38 &	54	70	86	102 &	118	134	150 X	166	182	198	214	230	246
-7	7	23	39 /	55	71	87	103 /	119	135	151	167	183	199	215	231	247
-8	8	24	40 (<	56	72	88	104 (<	120	136	152	168	184	200	216	232	248
-9	9	25	41 (>	57	73	89	105 (>	121	137	153	169	185	201	217	233	249
-A	10	26	42 *	58 (:	74	90	106 *	122 (:	138	154	170	186	202	218	234	250
-B	11	27 [	43 +	59 (;	75	91 [	107 +	123 (;	139	155	171	187	203	219	235	251
-C	12	28 \	44 (,	60 (<	76	92 \	108 (,	124 (<	140	156	172	188	204	220	236	252
-D	13	29	45 (-	61 (=	77	93	109 (-	125 (=	141	157	173	189	205	221	237	253
-E	14	30 (^	46 (.	62 (>	78	94 (^	110 (.	126 (>	142	158	174	190	206	222	238	254
-F	15	31 (_	47 (/	63 (?	79	95 (_	111 (/	127 (?	143	159	175	191	207	223	239	255

duplicate area

Business mode differs from later PET machines: A-Z and a-z appear swapped (thus, SHIFT+a = lower case a).

PETSCII (Original version) — Character set 1

First Commodore PET 2001 (1977) — Upper case (graphics mode)

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	<i>duplicate area</i>	
															E0	F0
-0	0 	16 	32 SPACE <small>u+0020</small>	48 	64 	80 P <small>u+0050</small>	96 	112 	128 	144 	160 SHIFT+SPC <small>u+0020</small>	176 	192 	208 	224 	240
-1	1 	17 CURSOR DOWN <small>u+0084</small>	33 ! <small>u+0021</small>	49 1 <small>u+0031</small>	65 A <small>u+0041</small>	81 Q <small>u+0051</small>	97 ! <small>u+0021</small>	113 1 <small>u+0031</small>	129 	145 CURSOR UP <small>u+008d</small>	161 	177 	193 	209 	225 	241
-2	2 	18 REVERSE ON <small>u+0022</small>	34 " <small>u+0022</small>	50 2 <small>u+0032</small>	66 B <small>u+0042</small>	82 R <small>u+0052</small>	98 " <small>u+0022</small>	114 2 <small>u+0032</small>	130 	146 REVERSE OFF <small>u+0022</small>	162 	178 	194 	210 	226 	242
-3	3 	19 HOME <small>u+0003</small>	35 # <small>u+0023</small>	51 3 <small>u+0033</small>	67 C <small>u+0043</small>	83 S <small>u+0053</small>	99 # <small>u+0023</small>	115 3 <small>u+0033</small>	131 	147 CLEAR <small>u+0023</small>	163 	179 	195 	211 	227 	243
-4	4 	20 DEL <small>u+0008</small>	36 \$ <small>u+0024</small>	52 4 <small>u+0034</small>	68 D <small>u+0044</small>	84 T <small>u+0054</small>	100 \$ <small>u+0024</small>	116 4 <small>u+0034</small>	132 	148 INST <small>u+0024</small>	164 	180 	196 	212 	228 	244
-5	5 	21 	37 % <small>u+0025</small>	53 5 <small>u+0035</small>	69 E <small>u+0045</small>	85 U <small>u+0055</small>	101 % <small>u+0025</small>	117 5 <small>u+0035</small>	133 	149 	165 	181 	197 	213 	229 	245
-6	6 	22 	38 & <small>u+0026</small>	54 6 <small>u+0036</small>	70 F <small>u+0046</small>	86 V <small>u+0056</small>	102 & <small>u+0026</small>	118 6 <small>u+0036</small>	134 	150 	166 	182 	198 	214 	230 	246
-7	7 	23 	39 ' <small>u+0027</small>	55 7 <small>u+0037</small>	71 G <small>u+0047</small>	87 W <small>u+0057</small>	103 ' <small>u+0027</small>	119 7 <small>u+0037</small>	135 	151 	167 	183 	199 	215 	231 	247
-8	8 	24 	40 (<small>u+0028</small>	56 8 <small>u+0038</small>	72 H <small>u+0048</small>	88 X <small>u+0058</small>	104 (<small>u+0028</small>	120 8 <small>u+0038</small>	136 	152 	168 	184 	200 	216 	232 	248
-9	9 	25 	41) <small>u+0029</small>	57 9 <small>u+0039</small>	73 I <small>u+0049</small>	89 Y <small>u+0059</small>	105) <small>u+0029</small>	121 9 <small>u+0039</small>	137 	153 	169 	185 	201 	217 	233 	249
-A	10 	26 	42 * <small>u+002a</small>	58 : <small>u+003a</small>	74 J <small>u+004a</small>	90 Z <small>u+005a</small>	106 * <small>u+002a</small>	122 : <small>u+003a</small>	138 	154 	170 	186 	202 	218 	234 	250
-B	11 	27 	43 + <small>u+002b</small>	59 ; <small>u+003b</small>	75 K <small>u+004b</small>	91 G <small>u+005b</small>	107 + <small>u+002b</small>	123 ; <small>u+003b</small>	139 	155 	171 	187 	203 	219 	235 	251
-C	12 	28 	44 , <small>u+002c</small>	60 < <small>u+003c</small>	76 L <small>u+004c</small>	92 /, <small>u+005c</small>	108 , <small>u+002c</small>	124 < <small>u+003c</small>	140 	156 	172 	188 	204 	220 	236 	252
-D	13 RETURN	29 CURSOR RIGHT	45 - <small>u+002d</small>	61 = <small>u+003d</small>	77 M <small>u+004d</small>	93 J <small>u+005d</small>	109 - <small>u+002d</small>	125 = <small>u+003d</small>	141 SHIFT+RETURN	157 CURSOR LEFT	173 	189 	205 	221 	237 	253
-E	14 	30 	46 . <small>u+002e</small>	62 > <small>u+003e</small>	78 N <small>u+004e</small>	94 ↑ <small>u+005e</small>	110 . <small>u+002e</small>	126 > <small>u+003e</small>	142 	158 	174 	190 	206 	222 	238 	254
-F	15 	31 	47 / <small>u+002f</small>	63 ? <small>u+003f</small>	79 O <small>u+004f</small>	95 ← <small>u+005f</small>	111 / <small>u+002f</small>	127 ? <small>u+003f</small>	143 	159 	175 	191 	207 	223 	239 	255

Graphics mode is the same as in later PET machines.

PETSCII (Original version) — Character set 2

First Commodore PET 2001 (1977) — Lower case (business mode)

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	duplicate area	
-0	0 @	16 P	32 SPACE <small>u+0020</small>	48 Ø	64 @	80 P	96 □	112 Ø	128 ■	144 P	160 SHIFT+SPC <small>u+0020</small>	176 □	192 ■	208 P	224 □	240 P
-1	1 A	17 Q CURSOR DOWN <small>u+0084</small>	33 !	49 1	65 A	81 Q	97 !	113 1	129 A	145 Q CURSOR UP <small>u+008d</small>	161 □	177 ■	193 P	209 Q	225 □	241 ■
-2	2 B	18 R REVERSE ON	34 "	50 2	66 B	82 R	98 "	114 2	130 B	146 R REVERSE OFF	162 □	178 ■	194 P	210 R	226 □	242 ■
-3	3 C STOP <small>u+0003</small>	19 S HOME	35 #	51 3	67 C	83 S	99 #	115 3	131 C	147 S CLEAR	163 □	179 ■	195 P	211 S	227 □	243 ■
-4	4 D	20 T DEL <small>u+0008</small>	36 \$	52 4	68 D	84 T	100 \$	116 4	132 D	148 T INST	164 □	180 ■	196 P	212 T	228 □	244 ■
-5	5 E	21 U	37 %	53 5	69 E	85 U	101 %	117 5	133 E	149 U	165 □	181 ■	197 P	213 U	229 □	245 ■
-6	6 F	22 V	38 &	54 6	70 F	86 V	102 &	118 6	134 f	150 U	166 ■	182 □	198 P	214 V	230 ■	246 □
-7	7 G	23 W	39 '	55 7	71 G	87 W	103 '	119 7	135 g	151 W	167 □	183 ■	199 P	215 W	231 □	247 ■
-8	8 H	24 X	40 <	56 8	72 H	88 X	104 <	120 8	136 h	152 X	168 ■	184 □	200 P	216 X	232 ■	248 □
-9	9 I	25 Y	41)	57 9	73 I	89 Y	105)	121 9	137 i	153 Y	169 ■	185 □	201 P	217 Y	233 ■	249 □
-A	10 J	26 Z	42 *	58 :	74 J	90 Z	106 *	122 :	138 j	154 Z	170 □	186 ■	202 P	218 Z	234 □	250 ■
-B	11 K	27 [	43 +	59 ;	75 K	91 [	107 +	123 ;	139 k	155 +	171 ■	187 □	203 P	219 [	235 ■	251 □
-C	12 L	28 \	44 ,	60 <	76 L	92 \	108 ,	124 <	140 l	156 \	172 □	188 ■	204 P	220 \	236 □	252 ■
-D	13 RETURN	29] CURSOR RIGHT	45 -	61 =	77 M	93]	109 -	125 =	141 SHIFT+RETURN	157] CURSOR LEFT	173 □	189 ■	205 P	221]	237 □	253 ■
-E	14 N	30 ^	46 .	62 >	78 N	94 ^	110 .	126 >	142 n	158 ^	174 □	190 ■	206 P	222 ^	238 □	254 ■
-F	15 O	31 _	47 /	63 ?	79 O	95 _	111 /	127 ?	143 o	159 _	175 □	191 ■	207 P	223 _	239 □	255 ■

duplicate area

Business mode differs from later PET machines: A-Z and a-z appear swapped (thus, SHIFT+a = lower case a).

Commodore 64 screen display codes — POKE character sets 1 & 2

Character codes in screen memory

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
-0	⁰ e	¹⁶ P p	³² SPACE	⁴⁸ 0	⁶⁴	⁸⁰	⁹⁶ SHIFT+SPC	¹¹²	¹²⁸	¹⁴⁴ P P	¹⁶⁰	¹⁷⁶	¹⁹²	²⁰⁸	²²⁴	²⁴⁰
-1	¹ A a	¹⁷ Q q	³³ !	⁴⁹ 1	⁶⁵	⁸¹	⁹⁷	¹¹³	¹²⁹ A a	¹⁴⁵ Q q	¹⁶¹	¹⁷⁷	¹⁹³	²⁰⁹	²²⁵	²⁴¹
-2	² B b	¹⁸ R r	³⁴ "	⁵⁰ 2	⁶⁶	⁸²	⁹⁸	¹¹⁴	¹³⁰ B b	¹⁴⁶ R r	¹⁶²	¹⁷⁸	¹⁹⁴	²¹⁰	²²⁶	²⁴²
-3	³ C c	¹⁹ S s	³⁵ #	⁵¹ 3	⁶⁷	⁸³	⁹⁹	¹¹⁵	¹³¹ C c	¹⁴⁷ S s	¹⁶³	¹⁷⁹	¹⁹⁵	²¹¹	²²⁷	²⁴³
-4	⁴ D d	²⁰ T t	³⁶ \$	⁵² 4	⁶⁸	⁸⁴	¹⁰⁰	¹¹⁶	¹³² D d	¹⁴⁸ T t	¹⁶⁴	¹⁸⁰	¹⁹⁶	²¹²	²²⁸	²⁴⁴
-5	⁵ E e	²¹ U u	³⁷ %	⁵³ 5	⁶⁹	⁸⁵	¹⁰¹	¹¹⁷	¹³³ E e	¹⁴⁹ U u	¹⁶⁵	¹⁸¹	¹⁹⁷	²¹³	²²⁹	²⁴⁵
-6	⁶ F f	²² V v	³⁸ &	⁵⁴ 6	⁷⁰	⁸⁶	¹⁰²	¹¹⁸	¹³⁴ F f	¹⁵⁰ V v	¹⁶⁶	¹⁸²	¹⁹⁸	²¹⁴	²³⁰	²⁴⁶
-7	⁷ G g	²³ W w	³⁹ '	⁵⁵ 7	⁷¹	⁸⁷	¹⁰³	¹¹⁹	¹³⁵ G g	¹⁵¹ W w	¹⁶⁷	¹⁸³	¹⁹⁹	²¹⁵	²³¹	²⁴⁷
-8	⁸ H h	²⁴ X x	⁴⁰ (	⁵⁶ 8	⁷²	⁸⁸	¹⁰⁴	¹²⁰	¹³⁶ H h	¹⁵² X x	¹⁶⁸	¹⁸⁴	²⁰⁰	²¹⁶	²³²	²⁴⁸
-9	⁹ I i	²⁵ Y y	⁴¹)	⁵⁷ 9	⁷³	⁸⁹	¹⁰⁵	¹²¹	¹³⁷ I i	¹⁵³ Y y	¹⁶⁹	¹⁸⁵	²⁰¹	²¹⁷	²³³	²⁴⁹
-A	¹⁰ J j	²⁶ Z z	⁴² *	⁵⁸ :	⁷⁴	⁹⁰	¹⁰⁶	¹²²	¹³⁸ J j	¹⁵⁴ Z z	¹⁷⁰	¹⁸⁶	²⁰²	²¹⁸	²³⁴	²⁵⁰
-B	¹¹ K k	²⁷ [	⁴³ +	⁵⁹ ;	⁷⁵	⁹¹	¹⁰⁷	¹²³	¹³⁹ K k	¹⁵⁵ [	¹⁷¹	¹⁸⁷	²⁰³	²¹⁹	²³⁵	²⁵¹
-C	¹² L l	²⁸ £	⁴⁴ ,	⁶⁰ <	⁷⁶	⁹²	¹⁰⁸	¹²⁴	¹⁴⁰ L l	¹⁵⁶ £	¹⁷²	¹⁸⁸	²⁰⁴	²²⁰	²³⁶	²⁵²
-D	¹³ M m	²⁹]	⁴⁵ -	⁶¹ =	⁷⁷	⁹³	¹⁰⁹	¹²⁵	¹⁴¹ M m	¹⁵⁷]	¹⁷³	¹⁸⁹	²⁰⁵	²²¹	²³⁷	²⁵³
-E	¹⁴ N n	³⁰ †	⁴⁶ .	⁶² >	⁷⁸	⁹⁴	¹¹⁰	¹²⁶	¹⁴² N n	¹⁵⁸ †	¹⁷⁴	¹⁹⁰	²⁰⁶	²²²	²³⁸	²⁵⁴
-F	¹⁵ O o	³¹ ‡	⁴⁷ /	⁶³ ?	⁷⁹	⁹⁵	¹¹¹	¹²⁷	¹⁴³ O o	¹⁵⁹ ‡	¹⁷⁵	¹⁹¹	²⁰⁷	²²³	²³⁹	²⁵⁵

Thick vs. narrow characters

C64 vs. PET 8032 — POKE character sets 1 & 2

	00	10	20	30	40	50	60	70	00	10	20	30	40	50	60	70
-0																
-1																
-2																
-3																
-4																
-5																
-6																
-7																
-8																
-9																
-A																
-B																
-C																
-D																
-E																
-F																

Commodore 64 and later used thick characters. PET and VIC-20 used narrow characters. Characters marked with red became duplicates when the characters were made thicker for C64.

Commodore PETSCII control characters

(monitor and keyboard)

Control characters C0/C1

BELL	BEL (07)	Produce bell tone.
ESC	ESC (1B)	Escape.
FSH ON		Output following characters in flashing mode.
FSH OFF		Terminate flashing mode.
LOCK CASE		Disable SHIFT + C= keypress. User cannot change character set.
LOWER CASE	SO (0E)	Switch character set to lower case (text/business mode).
REVERSE ON		Output following characters in reverse field mode.
REVERSE OFF		Terminate reverse field mode.
TAB SET/CLEAR	HTS (88)	Set horizontal tab position. Clear position if it exists already.
UL ON		Output following characters in underlined mode.
UL OFF		Terminate underlined mode.
UNLOCK CASE		Enable SHIFT + C= to change character set.
UPPER CASE	SI (0F)	Switch character set to upper case (graphics mode).

Cursor and editing controls

CLEAR		Clear screen and move cursor to home position (top left). Similar to Ctrl+L on some systems. Closest ASCII equivalent is FF (0C).
CURSOR DOWN	IND (84)	Move cursor to next line, keeping the same column.
CURSOR LEFT		Move cursor one position to left.
CURSOR RIGHT		Move cursor one position to right.
CURSOR UP	RI (8D)	Move cursor to previous line, keeping the same column.
DEL	BS (08)	Delete character on the left.
HOME		Move cursor to home position (top left) of the display.
INST		Insert a space at current position.
LINE FEED	LF (0A)	Move cursor to next row, keeping the same column.
RETURN		Carriage return and line feed. This is the newline character. Closest ASCII equivalent is CR+LF. *)
SHIFT+RETURN		Carriage return and line feed. Do not execute current line. *)
TAB	HT (09)	Move cursor horizontally to next tab position.

C0/C1: Respective standard control code in ASCII/Unicode.

*) Pressing RETURN executes current line, SHIFT+RETURN discards it. Both move cursor to start of next line. Line ending convention is RETURN alone, no LF.

Printer control characters differ from these codes.

PET specific control characters

ERASE TO LEFT	Erase all from start of line to current position. Don't move cursor.
ERASE TO RIGHT	Erase all from current position to end of line. Don't move cursor.
INSERT LINE ABOVE	Insert empty line before current line. Move remaining lines down.
KILL LINE	Delete current line. Move remaining lines up.
SCROLL DOWN	Scroll all lines down by one line.
SCROLL UP	Scroll all lines up by one line.
SET WINDOW END	Set viewport bottom-right coordinate to current position.
SET WINDOW TOP	Set viewport top-left coordinate to current position.

Keyboard codes

F1..F8	Keycodes for function keys F1 to F8.
HLP	Keycode for HELP key (on F7 key on keyboard).
RUN	Keycode for RUN key (SHIFT+RUN/STOP). Pressing RUN causes the loading and running of a program.
SHIFT+SPC	Keycode for SHIFT+SPACE. The character is visually similar to a regular space. (Not really a non-breaking space without word wrapping functionality.)
STOP	Keycode for STOP key. Pressing STOP ends the current program. Similar to Ctrl+C on other systems.

Color codes

DK BLU	Dark blue
DK CYN	Dark cyan
DK PUR	Dark purple
DK YEL	Dark yellow
BL GRN	Blue green
YEL GRN	Yellow green
DK GRY	Dark gray (gray 1)
MED GRY	Medium gray (gray 2)
LGT GRY	Light gray (gray 3)

Other colors appear by their name.