

DASHER[™] TP1 Terminal Printers

Operator's Manual

Foreword

This manual is a guide to running your DASHER. TP1 terminal printer. We tell you how to use the various controls, how to change the ribbon and load the paper, and how to clean the terminal. In the back we have provided a glossary in case some of the terms we use are unfamiliar to you.

If you need information about programming, interfacing, or installing your DASHER ™ TP1, please refer to the DASHER ™ TP1 Terminal Printers User's Manual, No. 014-000084 and the DASHER ™ TP1 Terminal Printers Technical Manual, No. 015-000051.

Notice

Data General Corporation (DGC) has prepared this manual as a rudimentary guide for those who may be required to work with, or operate, only the specific DGC equipment described herein. This manual is not intended to support complex equipment-maintenance procedures and does not provide detailed descriptions of hardware operation and/or programming techniques.

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DASHER™TP1 Model 6040/6042

Model 6041/6043

Introduction

Your DASHER™ TP1 terminal printer is either:

- A 6040/6042 keyboard-send-receive (KSR) model with a keyboard for entering and sending information and a printer for receiving and recording information; or,
- A 6041/6043 receive-only (RO) model with only a printer for receiving and recording information.

The speed at which your terminal operates depends both on the particular model you have and the speed selected for your applications. Models 6040 KSR and 6041 RO operate at either 30 or 60 characters per second, while models 6042 KSR and 6043 RO operate at either 10, 15, or 30 characters per second.

All DASHER TP1 printers feature:

- A 5 x 7 dot matrix character format. Up to 132 characters per line can be printed.
- One of six international fonts: American, British, French, German, Japanese, Swedish. In any font, three ASCII printing sets are selectable by jumpers: the 64-character upper case set, the 95-character upper/lower case set, and the 124-character extended set.
- The ability to accommodate forms containing up to six parts.
- A switch-selectable view mode which moves the printhead away from the last character printed when printing stops.

Your DASHER TP1 may also have the following options:

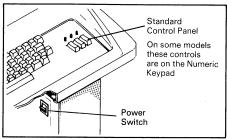
- An automatic form feed which moves the paper to the top of the next form.
- A numeric keypad for KSR models. This keypad contains the digits 0 through 9 plus a decimal point in a calculator-style arrangement.
- A free-standing paper holder for stacking hardcopy output.

Operating Your Printer Operator Controls

Introduction

Operating your DASHER TP1 is easy. To get it ready to use all you have to do is power it up, make sure it has paper, and switch it online. When the ribbon gets worn, you'll need to change it. If you have a keyboard-send-receive terminal, you'll need to know how the keyboard works. This section tells you how to do each of these things.

Main Controls



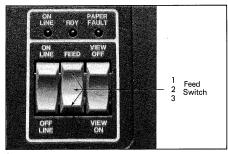
Control Locations

The Power Switch is located on the inner side of the pedestal and operates as follows:

UP/ON - The power is turned on, the fan runs, and the RDY (Ready) light glows. The printhead returns to the beginning of the line.

DOWN/OFF - The power, fan, and RDY (Ready) light are turned off.

If your terminal is a KSR model, the main operator controls are located either on a **Standard Control Panel** or **Numeric Keypad.** If your terminal is an RO model, these controls are on the standard control panel. The functions of these controls are described on the next page.



Standard Control Panel

RDY - When lit, your terminal is operating normally.

ON LINE - When lit, your terminal is connected to the computer or communications system.

PAPER FAULT - When lit, your terminal is out of paper. If your terminal has the Form Feed option, this light also glows if there is a line count error.

ON/OFF LINE - Two-position toggle switch. In the ON LINE position, your terminal is connected to the computer or communications system. In the OFF position, your terminal is disconnected from the system.

VIEW OFF/VIEW ON - Two-position toggle switch. In the ON position, the View Print feature is activated. In the OFF position, this feature is disabled.

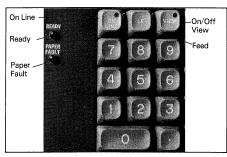
FEED - A three-position switch for controlling paper feed.

Position 1: single line feed.
Position 2: no line feed.

Position 3: continuous line feed.

NOTE - If your terminal has the form feed

NOTE - If your terminal has the form feed option, position 3 advances the paper to the top of the next form.



Numeric Keypad

READY - When lit, your terminal is operating normally.

ON LINE - Alternate action switch with indicator light. When pressed and the light glows, your terminal is connected to the computer or communications system. When pressed again and the light goes OFF, your terminal is disconnected from the system.

PAPER FAULT - When lit, your terminal is out of paper. If your terminal has the Form Feed option, this light also glows if there is a line count error.

VIEW - Alternate action switch with indicator light. In the ON position, the View Print feature is activated. In the OFF position, this feature is disabled.

LF - Paper feed control switch.

Single line feed: Press for less than 2 seconds.

Continuous line feed: Press for 2 seconds or longer.

NOTE - If your terminal has the Form Feed option, pressing this switch for 2 seconds or longer advances the paper to the top of the next form.

Keyboard

The DASHER TP1 keyboard provides a layout of keys similar to a standard office typewriter. Unlike a typewriter, it generates ASCII character codes. How your terminal responds to these codes depends on which of the three ASCII printing characters sets your terminal is using and whether it is offline or online. When your terminal is offline, it operates very much like a typewriter. However, when it is online, it may function quite differently. Online, your terminal's response to the keyboard depends on the nature of the work your computer system has been set up to handle.

Function Keys

Besides the standard typewriter keys, your keyboard also includes eleven function keys. The functions of these keys are described below. Where the online function of a key may vary from system to system, we have left several blank lines so you can write in the specific function of the key in your particular system.

ALPHA LOCK

Upper Case Alpha Lock Key - This key functions as the Shift Lock key does on a typewriter. Pressing it together with any alpha (letter) key generates the upper case character for that alpha key. This upper case function continues until you press the ALPHA LOCK key again. The indicator light on the SHIFT key glows while this function is taking place.

BRK

Break Key - Holding this key down prevents the transmission of any character codes.



Keyboard

BS

Back Space Key - Offline, this key has no effect on your terminal unless it is using the extended character set. In this case, pressing the BS key, prints the following symbol \P .

Online:	 	 	

CTRL

Control Key - Offline, this key has no effect on your terminal unless it is using the extended character set. In this case, holding this key down and then pressing another key (except the Alpha Lock, Break, Shift, and Repeat keys and the Space bar) prints the symbol of the control character associated with that key. (See Appendix A for the symbols printed.)

Online, holding this key down and then pressing another key generates the control character associated with that key. Fill in the table of Control Character Functions

(Appendix B) with the response of your terminal to the special control characters. (Your terminal probably won't respond to all these control characters.)

DEL

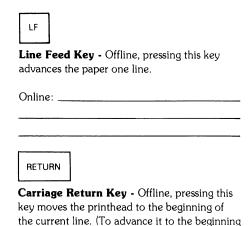
Delete Key - Offline, this key has no effect on the terminal.

Online: _	 	 	 	
	 	 erre erre erre	 	

ESC

Escape Key - Offline, this key has no effect on your terminal unless it is using the extended character set. In this case, pressing the ESC key, prints the following symbol Θ .

Online:	-



of the next line, press the LF key as well.)

Online:



Upper Case Key - This key functions as the Shift key does on a typewriter. Pressing it together with another key generates the shifted mode function for that key (Appendix A). The indicator light on this key glows while the Alpha Lock (Shift Lock) Function is taking place.

RPT

Repeat Key - Pressing this key by itself has no effect. Pressing it together with any other key or key combination causes your terminal to repeat the action of the other key until either key is released.

TAB

Tabulation Key - Offline, pressing this key has no effect on your terminal unless it is using the extended character set. In this case, pressing the TAB key prints the following symbol →.

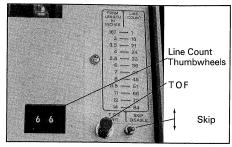
Online:	 	 	

Automatic Form Feed Option

Your terminal may have an automatic form feed option. With this option you can return the carriage to the beginning of the line and advance the paper to the top of the next form all in one operation. The form feed option can handle forms up to 16.5 inches long.

Before you can use the form feed option, you have to set the form feed controls which are located under the top cover. For the exact location of these controls, see the photograph, **Inside Your Printer**, on page 10. Set these controls as outlined in the following steps:

CAUTION - Switch the terminal OFF LINE before setting any of the form feed controls.



Automatic Form Feed Option

- 1 Switch the terminal OFF LINE.
- **2** Advance the paper to the line where you want the printing to start.
- $\bf 3$ Set the line count thumbwheels to the total number of lines between perforations on the form being used (6 lines = 1 inch). In the photograph these thumbwheels are set to 66, which is the line count for 11-inch paper.
- **4** Press and release the TOF INIT pushbutton to set (initialize) the line counters.

- **5** If you want to use the automatic perforation skip-over feature, set the SKIP DISABLE switch to the ENABLE position.
- 6 Switch the terminal ON LINE.

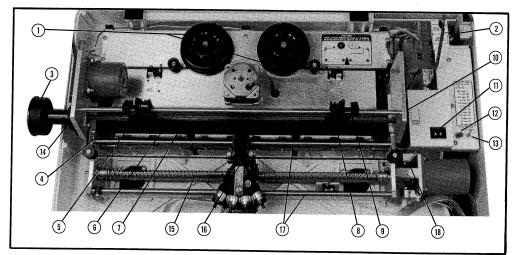
You can now use this option. To carry out a Form Feed operation, either hold the CTRL key down and then press down the L key (CTRL L) or use the FEED switch (LF switch on the numeric keypad). Each time you change the length of the form you are using, you must repeat the above procedure.

Audible Carriage-Right Tone

An audible tone warns you when you are approaching the end of the line. If your terminal does not receive a Carriage Return and Line Feed combination or Form Feed character at the end of the line, overprinting will occur.

View Print Feature

Your terminal has a view mode feature. When this feature is enabled, and printing pauses for a short time, the printhead automatically moves several spaces to the right so you can see the last character printed. If the printhead is near the end of the line when there is a pause in printing, the printhead moves to the left instead of the right. This view mode may be turned on or off by using the VIEW switch on the standard control panel or the numeric keypad.



Inside Your Printer

Form Feed

- 11) Line Count Thumbwheels
- 12 TOF INIT Pushbutton
- (13) SKIP DISABLE Switch
- 14) Form Feed Disc

Printhead/Carriage Drive

- 15) Lead Screw
- (16) Printhead
- (17) Carriage Rails
- (18) Transducers

Ribbon

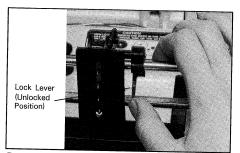
- 1 Ribbon Spools
- 2 Ribbon Advance Switch

Paper

- (3) Paper Feed Vernier Knob
- 4 Left Tractor Locking Lever
- (5) Left Tractor Gate
- 6 Tractor Support Shaft
- 7 Tractor Drive Shaft
- 8 Right Tractor Gate
- Right Tractor Locking Lever
- 10 Platen Space Lever

Loading Paper

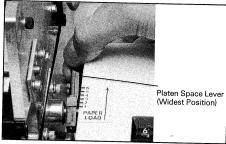
Your terminal uses standard pin-feed paper forms. These forms may have from one to six parts and may be from 4 to 15 inches wide (for details, see *Technical Specifications* in the User's Manual.) You can adjust the space between the printhead and the platen for forms of different thicknesses to ensure good print contrast. The movable right and left paper tractors allow you to adjust for different form widths.



Positioning Tractor

Load the paper as follows:

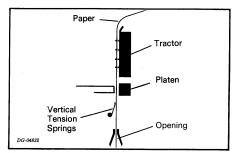
- 1 Switch your terminal OFF LINE.
- 2 Swing the top cover up until it latches.
- **3** If you want to use paper of a different width or change the position of the paper on the platen, you'll need to move one or both of the tractors. To move the tractors, loosen the levers locking them in place, move the right and left tractors to the desired positions, and retighten the locking levers.



Moving Platen Away From Printhead

- **4** Place a box of pin-feed paper under the terminal.
- **5** Move the platen space lever to the widest position to provide space for sliding the paper into place.
- **6** Swing open the tractor gates and feed the paper through the opening in the bottom of the printer, under the vertical tension springs, and onto the tractor pins (see illustration, Paper Path, page 12).

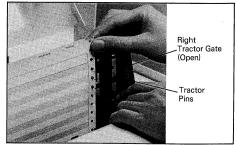
NOTE - Make sure that the paper feeds over the top and back of your terminal.



Paper Path

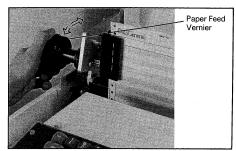
It may be necessary to reposition the right tractor (see Step 3) to line the tractor pins up with the paper feed holes. Make sure that corresponding holes on either side of the paper are aligned so the top of the paper is horizontal. Misalignment may cause the paper to jam and/or tear in the tractors.

There should be a slight horizontal tension on the paper; however, too great a tension may cause the paper to jam. To increase the horizontal tension, move the right tractor sightly to the right; to decrease the tension, move it slightly to the left.



Positioning Paper On Tractor Pins

- 7 Close the tractor doors.
- **8** Move the platen space lever to the appropriate position for the form thickness used. While the numbering of the positions corresponds approximately to the number of forms used, form thickness varies from supplier to supplier. For best results, adjust the platen lever until you get desired print contrast.
- **9** Adjust the paper to the desired vertical position using the FEED switch (LF key on the numeric pad). Make fine adjustments manually by pulling out the paper feed vernier knob and rotating it.

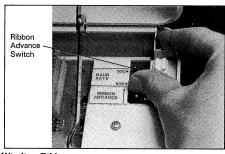


Positioning Paper Using Paper Feed Vernier Knob

- 10 If your terminal is equipped with the automatic form feed option, check the the line count thumbwheels on the form feed control panel to make sure they are set to the correct line count for the length of the form you are using. (See Automatic Form Feed Option, page 8.)
- **11** Close the top cover while feeding the paper through the large slot on the cover.
- 12 Switch the terminal ON LINE.

Changing The Ribbon

Your terminal uses commercial spool-mounted ribbon consisting of 1/2 inch wide, multi-pass, ink impregnated fabric (DGC P/N 1119-A) or mylar (DGC P/N 1119-B).



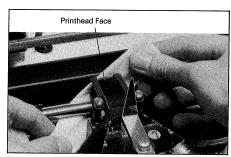
Winding Ribbon

Change the ribbon as follows:

- 1 Switch your terminal OFF LINE.
- **2** Swing the top cover up until it latches open.
- **3** Rewind the ribbon onto one spool using the Ribbon Advance toggle switch. (This step isn't required, but it prevents the ribbon from dangling between the spools.)
- **4** Move the platen away from the printhead by moving the platen space lever to the widest position.

- **5** If the top of the paper is above the tractors, swing open the tractors and remove the paper from the terminal.
- **6** Lift the ribbon spools off their spindles and remove the ribbon from its guides.
- **7** If the printhead face is dirty, wipe it with a folded lint-free tissue. Repeat with clean tissues until the face is clean. Also wipe the platen with clean tissue. Do not use any cleaning fluids.
- **8** Place the full spool of new ribbon on one of the ribbon spindles. The two pins on the spool holder should go into the holes in the spool.

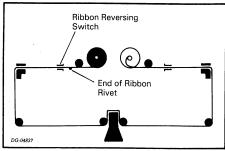
NOTE - Since your terminal only uses the top half of the ribbon, you can extend the life of your ribbon by turning the ribbon over and using the other half.



Cleaning Printhead

9 - Unwind some ribbon from the full spool, thread the ribbon through the ribbon guides and switches, and place the empty spool on the other spindle. The diagram at right shows the correct ribbon path; the ribbon must follow this path exactly. The ribbon path also appears on the terminal.

CAUTION - There is an end-of-ribbon rivet near the end of the ribbon; this rivet must be between the empty spool and the ribbon reversing switch as shown. Otherwise, the rivet will jam in the rear ribbon guide when the ribbon moves.



Ribbon Path

- **10** Apply a slight tension to the ribbon by taking up any slack with one of the spools.
- 11 If you removed the paper, reload it and check that the platen lever is in the appropriate position for the print contrast you desire.
- 12 Close the top cover.
- **13** Switch your terminal ON LINE.

Maintaining Your Printer Cleaning

Clean the printhead guide rails, the platen, and the tractor mechanism each MONTH as outlined in the steps below.

Materials Required:

- Phillips screw driver
- Lint-free tissues
- 91% isopropyl alcohol
- Vacuum cleaner with non-conducting nozzle

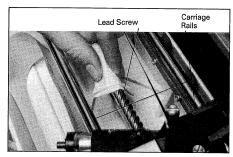
CAUTION - Do Not Lubricate ANY PARTS. Your terminal requires no lubrication, and lubricants tend to accumulate dust and dirt which will seriously degrade performance.

- **1** Switch your terminal OFF LINE, turn the power OFF, and unplug the power cord from the line supply outlet.
- 2 Lift up the top cover until it latches.



Removing Print Shield

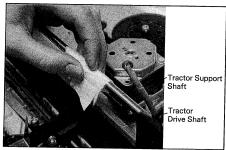
- **3** Remove the print shield by removing the four screws holding it in place.
- **4** Remove the paper from your terminal, leaving the platen lever in the widest position.
- **5** Loosen the ribbon enough to lift it off the printhead and guides to expose the platen. Refer to Changing The Ribbon, page 13.



Cleaning Leadscrew And Carriage Rails

6 - Using a lint-free tissue, wipe the lead screw and carriage rails. If necessary, dampen the tissue with isopropyl alcohol.

CAUTION - DO NOT attempt to move the printhead/carriage assembly by pushing either the printhead or the carriage assembly. You may move it by manually rotating the lead screw.



Cleaning Tractors Shafts

- **7** Wipe the tractor support shaft and drive shaft with a tissue. Clean any paper dust from the tractor assemblies.
- **8** Clean all debris and paper dust from the carriage cavity, using a vacuum cleaner with a non-conducting nozzle.

CAUTION - Take special care not to touch the slotted disc(s) and transducers while vacuuming (see the photograph, Inside Your Printer, page 10).

- **9** Thread the ribbon through its guides and onto the printhead, taking up any slack by rotating the idler spool. Be sure the ribbon follows the path outlined on the label on top of the mechanism.
- **10** Replace the paper as described in **Loading Paper**, page 11.
- 11 Replace the print shield.
- **12** Close the top cover while feeding the paper through the large slot in the cover.
- **13** Clean the outside of the terminal with a cloth dampened with a mild soap solution.

CAUTION - Do not use a cleaning solution containing alcohol or cleaning fluid, as it may damage the finish. Don't let any cleaning solution enter the keyboard, operator's control panel or carriage cavity.

14 - Plug the power cord into the line supply outlet, turn the power ON, and switch your terminal ON LINE.

NOTE - If you let a foreign object such as a paper clip or thumbtack fall into your terminal, switch it OFF LINE, turn the power OFF, unplug the power cord from the line supply outlet, and remove the object. Don't use the keyboard area as a tray for coffee cups, ash trays, food, etc.

Troubleshooting Guide

The following table describes procedures for correcting minor problems with your terminal. If these procedures do not correct the problem, call your local field service office.

CAUTION - Before attempting to adjust or examine anything on your terminal, switch it off line and turn the power off.

Problem	Possible Cause	Remedy
Terminal does not power up. (All indicator lights	Power switch is OFF.	Switch power ON.
are off.)	Power cord is not plugged into line supply outlet.	Plug it in.
	Power cord is not plugged into terminal.	Plug it in.
	No current is coming from the line supply outlet.	Check it with a device you know is working, a lamp, for example. Call an electrician.
	External fuse, F1 or F2, is blown.	See Fault Detectors, Chapter V in the User's Manual.
Terminal does not operate. (It's powered up but RDY and Paper Fault lights are off.)	Various causes.	Switch power OFF and ON.
No printing	No paper (Paper Fault light glows).	Load more paper. *
	Printhead is too far from platen.	Adjust platen space lever, *
	Incorrect baud rate.	Switch to correct baud rate. (See Tailoring, Chapter IV in the User's Manual.

^{*} See Loading Paper.

Troubleshooting Guide (Cont'd)

Problem	Possible Cause	Remedy
Light print	Ribbon is worn.	Reverse or replace ribbon. (See Changing The Ribbon, page 13).
在在中国的国际国际的特别的	Printhead is too far from platen.	Adjust platen space lever. *
Dark or smudgy print	Printhead is too close to platen.	Adjust platen space lever. *
Paper is not advancing.	Paper is improperly loaded or is snagged on the box.	Reload it, checking paper path. *
Paper is tearing.	Printhead is too close to platen, causing too much pressure on paper.	Adjust platen space lever. *
	Corresponding holes on each side of the paper are not aligned on the tractors. (Top of paper is not horizontal).	Realign paper on tractors. *
	Horizontal pressure on paper is too great,	Move right tractor slightly to the left. *
Lines of printing are bunching.	Horizontal pressure on paper is too great.	Move right tractor slightly to the left. *
Paper is not automatically advancing to top of next form.	The line count thumbwheels are set to the wrong line count for the length of form.	Advance the paper to the top of the next form, reset thumbwheels and press and release the TOF INIT pushbutton. (See Automatic Form Feed Option, page 8).

^{*} See Loading Paper.

Appendix A

ASCII Character Sets and Fonts

ASCII Character Sets

7-Bit Octal	Mnemonic	Symbol Pri	nted or Termi	inal Action	Transmit by Pressing Key(s)		
Code	(Meaning)	124-Set	95-Set	64-Set	Keyboard	Numeric Keypad	
000	NUL				CTRL O		
001	SOH				CTRL A		
002	STX				CTRL B		
003	ETX				CTRL C		
004	EOT	7			CTRL D		
005	ENQ				CTRLE		
006	ACK				CTRL F		
007	BEL	Audit	ole tone sound	S	CTRL G		
010	BS	5			CTRL HOBSOSHIFT BSOCTRL BS		
011	HT)			CTRL I●TAB●SHIFT TAB●CTRL TAB		
012	LF		dvances one l	ine	CTRL J●LF●SHIFT LF●CTRL LF		
013	VT	Ψ			CTRL K		
014	FF *	Ψ			CTRL L		
015	CR	Printhead r	noves to colur	nn one	CTRL M RETURN SHIFT RETURN CTRL RETURN		
016	SO	8	142.5		CTRL N		
017	SI	0			CTRL O		
020	DLE				CTRL P		
021	DC1	0			CTRL O		
022	DC2	Ф	100		CTRL R		
023	DC3	9			CTRLS		
024	DC4	Ð			CTRL T		
025	NAK	J			CTRL U		

^{*} On terminals with the Form Feed Option, this code advances the paper to the top of the next form.

7-Bit Octal	Mnemonic				Transmit by Pressing Key(s):	
Code	(meaning)	124-Set 95-Set 64-		64-Set	Keyboard	Numeric Keypad
026	SYN	Л			CTRLV	
027	ETB	+	Market Land	5.120.000.000	CTRLW	
030	CAN	X			CTRLX	
031	EM	X + ?		100000000000000000000000000000000000000	CTRL Y	
032	SUB	5			CTRL Z	
033	ESC	Θ			CTRL [●ESC●SHIFT ESC●CTRL ESC	
034	FS	Ð		200	CTRL\	
035	GS	60		100000000000000000000000000000000000000	CTRL }	
036	RS	8		5.00	CTRL'	
037	US	<u> </u>			CTRL -	
040	SP		lank Space		Space Bar	
041	Exclamation Mark	23.33			SHIFT I	
042	Quotation Marks	"	11	· ·	SHIFT "	
043	Number Sign	#	#	#	SHIFT #	
044	Dollar Sign	# \$	\$	\$	SHIFT \$	
045	Percent	%	%	%	SHIFT %	
046	Ampersand	&	&	&	SHIFT &	
047	Apostrophe			1000	'●CTRL'	
050	Opening Parenthesis	(122	((SHIFT (
051	Closing Parenthesis))	(1)	SHIFT)	
052	Asterisk	*	*	*	SHIFT*	
053	Plus	+	+	+	SHIFT +	
054	Comma				,●CTRL,	
055	Hyphen (Minus)	12110		2111		
056	Period (Decimal Point)		and the second s		.●CTRL.	
057	Slash	/	1	7	/●CTRL/	
060	Zero	0	o	o l	0	0

[•] Separates key combinations

7-Bit Octal			Transmit by Pressi	ng Key(s):		
Code	(Meaning)	124-Set	95-Set	64-Set	Keyboard	Numeric Keypad
061	One	1	1	ĺ	1 ● CTRL 1	1
062	Two	2 3	2	2 3	2●CTRL 2	2
063	Three	3	3	3	3●CTRL 3	3
064	Four	4	4	4	4●CTRL 4	4
065	Five	5	5	5	5●CTRL 5	5
066	Six	6	6	6	6●CTRL 6	6
067	Seven	7	7	7	7●CTRL 7	7
070	Eight	8	8	8	8●CTRL8	8
071	Nine	9	9	9	9●CTRL 9	9
072	Colon	:	1	:	SHIFT:	
073	Semicolon		;	;	;●CTRL;	
074	Less Than	<	<	<	SHIFT <	
075	Equals	=	=	=		
076	Greater Than	>	>		SHIFT >	
077	Question Mark	7	?	> ?	SHIFT ?	
100	Commercial At	@	@	@	SHIFT @	
101	Α	A	Α	A	SHIFT A	A SECTION OF THE PROPERTY OF
102	В	В	В	В	SHIFT B	
103	C	C	С	B C	SHIFT C	
104	D	D	D	D	SHIFT D	
105	E	E	E	. D	SHIFT E	
106	F	F	F	F	SHIFT F	
107	G	G	G	G	SHIFT G	
110	Н	Н	Н	Н	SHIFT H	
111		1 1	1	1	SHIFTI	
112	J	J	J	J	SHIFT J	
113	K	K	К	К	SHIFT K	

[•] Separates key combinations

7-Bit Octal Code	Mnemonic	Symbol Pr	inted or Tern	ninal Action	Transmit by Pressing Key(s):		
	(Meaning)	124-Set	95-Set	64-Set	Keyboard	Numeric Keypad	
114	L	L	L	L	SHIFT L		
115	M	M	М	l M	SHIFT M		
116	N ·	N	N	N I	SHIFT N		
117	0	0	l o	1 0 1	SHIFT O		
120	P	P	Р	P	SHIFT P		
121	Q	1 a	a	a	SHIFT Q		
122	R	l R	R	R	SHIFT R		
123	S	S	S	s	SHIFTS		
124	T	S T	Ť	T	SHIFT T		
125	U	U	Ü	lùl	SHIFT U		
126	V	l v	V	lvl	SHIFT V		
127	W	W	Ŵ	l w l	SHIFT W		
130	X	x	X	×			
131	Υ	Î	Ŷ	Ŷ	SHIFT X		
132	Z		Z	Z	SHIFT Y		
133	Opening Bracket	Z [ſ	<u>4</u>	SHIFT Z		
134	Back Slash	1 1	1	1			
135	Closing Bracket	ì	1	\ \ \	2000		
136	Circumflex	1 1	1		SHIFT]		
137	Underline		۸	^	SHIFT A		
140	Accent Grave		$\overline{}$	<u> </u> @	SHIFT		
141	a						
142	b	a b	a	A	A		
143			b	В	В		
144	c d	C	C	c	C		
145		d	d	D	D		
146	e	e	е	E	E		
140		f	f	F	F .		

7-Bit Octal	Mnemonic Symbol Printed or Terminal Action		Transmit by Pressing Key(s):			
Code	(Meaning)	124-Set	95-Set	64-Set	Keyboard	Numeric Keypad
147	g h	g	g	G	G	- Tarana Tacypac
150	h	h	ň	н	. H	
151	1					
152			400	j		
153	k	k	k	l k	K	
154	1.01		1			
155	m	1 m 1	m	l M	M	
156	n	n	n	N I	N	
157	0		0	0 1	0	
160	p	р	р	P	P	
161	q	q	q	a	ā	
162	r	r	r	R	R	
163	S	s	S	S	n 6	
164	t	+	+	T	S T	
165	u	l ù l	u	Ü		
166	V	l v l	V	V	Ü	
167	W	1 i 1	w	w	V	
170	X	×	×	X	W	
171	Ý	Î Î	î î	\$	X	
172	Z	1 Y	y		Ţ	
173	Opening Brace	1 1	2	Z	Z	
174	Double Bars			,	<u></u>	
175	Closing Brace			,	SHIFT	
176	Tilde	~			SHIFT	
177	DEL		~	^	SHIFT~	
	CLL				DEL●SHIFT DEL●CTRL DEL	

[•]Separates key combinations

International Fonts

Following table shows the special symbols printed for each international font and the U.S. symbols which they replace.

United States	#	\$	@	[\]	٨	\	{		}	~
French	£		à	٥	G	£			é	ù	è	
German	Ĺ		5	 A	ö	ü			a	ö	u	B
Japanese					¥					1		
Swedish		其	Ė	.: A	ö	À	Ü	·e	:	ö	a	ü
United Kingdom	£						↑			1		_

Appendix B

Control Character Functions

Standard ASCII Mnemonic (Meaning)	Keys	Function For Your Terminal
NUL (null)	CTRL 0	
SOH (Start of Heading)	CTRL A	
STX (Start of Text)	CTRL B	
ETX (End of Text)	CTRL C	
EOT (End of Transmission)	CTRL D	
ENQ (Enquiry)	CTRL E	
ACK (Acknowledge)	CTRL F	
BEL (Bell)	CTRL G	

Standard ASCII Mnemonic (Meaning)	Keys	Function For Your Terminal
BS (Back Space)	CTRL H CTRL BS	
HT (Horizontal Tab)	CTRL I CTRL TAB	
LF (Line Feed)	CTRL J CTRL LF	
VT (Vertical Tab)	CTRL K	
FF (Form Feed)	CTRLL	
CR (Carriage Return)	CTRL M CTRL RETURN	
SO (Shift-Out)	CTRL N	
SI (Shift-In)	CTRL O	

Control Character Functions (Cont'd)

	(00111 4)				
Standard ASCII Mnemonic (Meaning)	Keys	Function For Your Terminal			
DLE (Data Link Escape)	CTRL P				
DC1 (Device Control 1)	CTRL Q				
DC2 (Device Control 2)	CTRL R				
DC3 (Device Control 3)	CTRL S				
DC4 (Device Control 4)	CTRL T				
NAK (Negative Acknowledge)	CTRL U				
SYN (Synchronous)	CTRL V				
ETB (End of Transmission Block)	CTRL W				
CAN (Cancel)	CTRL X				

Standard ASCII Mnemonic (Meaning)	Keys	Function For Your Terminal		
EM (End of Medium)	CTRLY			
SUB (Substitute)	CTRL Z			
ESC (Escape)	CTRL [CTRL ESC			
FS (Field Separator)	CTRL			
GS (Group Separator)	CTRL }			
RS (Record Separator)	CTRL'			
US (Unit Separator)	CTRL -			
DEL (Delete)	CTRL DEL			

Glossary

ASCII - American Standard Code for Information Interchange, one of the standard codes used to translate ALPHANUMERIC and control characters into BINARY numbers (the LANGUAGE of all computers). The ASCII code assigns a unique binary number to each letter, digit, punctuation mark, or other symbol used.

Alphanumeric - Refers to a CHARACTER SET containing alphabetic and numeric symbols as well as other symbols such as punctuation marks.

Baud Rate - The number of information BITS which can be transmitted serially each second over a communication line.

Binary - Referring to the system of numerical notation which has a RADIX of 2.

Binary Digit - One of the two symbols (0 or 1) in the BINARY numbering system. Since computers process all information by means of electronic signals (on/off, high/low), binary digits lend themselves ideally to representing this information. A binary digit is often referred to as a BIT.

Bit - See BINARY DIGIT.

Character - A digit, letter, or other symbol, usually requiring 6 to 8 bits of storage.

Character Code - A combination of BITS which represents a particular CHARACTER in a CHARACTER SET.

Data - A general expression for all the numbers, symbols, letters, and facts which can be processed or produced by a computer.

Device - A unit which provides the computer system with outside communication, service, or storage, e.g., card punch, disc drive, paper tape reader, video display, line printer, etc.

Dot Matrix - Refers to a method of forming characters using a block of dots. When individual dots within the block are printed or displayed in a certain pattern, a character is formed. For example, the letter R is formed within a 5x7 dot matrix (5 dots wide by 7 dots high) as follows:

Octal - Referring to the system of numerical notation which has a RADIX of 8.

Offline - The operating mode of a DEVICE when it is not part of a computer system.

Online - The operating mode of a DEVICE when it is part of a computer system.

Radix - The radix or base of a numbering system is the number of different digits which can occur in each position in the numbering system.

Terminal - A DEVICE through which DATA enters or leaves a computer system, e.g., a video display, a hard-copy printer, a line printer, etc.