

1.4 Communication Protocol

If you do not use one of the software packages provided by TBS, you should refer to the communication protocol. It will help to set the size and position of the printed characters, increment numbers or letter when printing several cassettes or slides, communicate with the printer etc.

The communication protocol for *SHUR/Mark*[®] is 9600 baud, 8 data bits and odd parity. Data is described by a text string in ASCII characters, using escape sequences as positional commands.

\$ Used as a label header character, resetting the input and output streams and positioning the stylus at the top left corner of the reference area.

Used as the “escape” character to avoid conflict with whatever system is being used to generate the ASCII text string. #\$ and ## allow the inclusion of these control characters in the reference specification.

The “control code” follows the “#” character:

#n Selects the current font to font “n” where n is currently in the range 1-4 with 1 representing the largest, 4 the smallest characters. The selected font remains in effect until another font selection is sent or the printer is reset. Further characters on the same line will be aligned at the top edge of the character position. Check the print capacity on the cassettes and slides in chapter 1.1 Introduction.

#N Indicates a new line, positioning the stylus at the top left-hand corner of the next line down on the cassette or slide. The next character is positioned as far to the left as possible while avoiding the space occupied and larger font characters already printed. This calculation takes no account of any “#Unn” or “#Dnn” commands.

#I Increments the rightmost character in the proceeding “label text.” If the character was “9” it is made “0”; if it was “Z” it is made “A”. In either of these cases, the next preceding character is also incremented until the beginning of the line is reached.

#Gnn Initiates writing of nn labels, with increments defined by the “#I” and “#Jn” commands. The command can also be issued alone (“\$#Gnn”), initiating a sequence of “nn” copies of the previous label, while continuing numbering by “#I” and/or “#Jnn” commands.

#Dnn	Positions the stylus down by nn x 0.1 mm, where “nn” is in the range of 00-99.
#Unn	Positions the stylus up by nn x 0.1 mm.
#Lnn	Positions the stylus left by nn x 0.1 mm.
#Rnn	Positions the stylus right by nn x 0.1 mm.
#Jn	Increments the n-th character to the left in the proceeding “label text”. The increment follows the same rules as for the “#I” command, except that in the lower case the next character to the right is incremented.
#C	Cancels any “Gnn” sequence of labels, after completion of the current label. This command must be issued without any other commands or text.
#Hn	Selects hopper “n” as the current hopper. The setting remains in effect until another hopper selection is sent or the printer is reset.
#W	Instructs the printer to wait before printing the sent “label text”.
#S	Instructs the printer to return a report on the current printer status. This action does not affect the memory of the current or last written label, but does destroy any pending label received.
#Ka	Simulates key action as from the front panel of the <i>SHUR/Mark</i> ® instrument.

The acceptable values for “a” are as follows:

- E - eject current cassette or slide (not applicable if the unit is in the ejected position)
- L - load cassette or slide (only applicable if the unit is in the ejected position)
- C - select color mode for dual or 6-position colors
- N - select normal mode for single color operation
- R - reset *SHUR/Mark*® as if powered off and on
- P - Reserved “control code” for future implementation.

If the character following the “#” character is not recognized as a valid “control _code”, the “#” is ignored and the character is assumed to be the beginning of the “label text”. This feature enables the “\$” and “#” characters to be printed.

The “label text” may be made from the following characters:

Character Entered	Character Printed
Letters a~z	Uppercase letters A~Z
Letters A~Z	Letters A~Z
Numbers 0~9	Numbers 0~9
#	#
*	*
((
))
.	.
/	/
+	+
-	-
&	
,	Ä
[∇
‘	>
]	<
;	O
ASCII 142, 132	Ä
ASCII 143, 134	Å
ASCII 146, 145	Æ
ASCII 153, 148	Ö
ASCII 154, 129	Ü