

Protocol for Double 3-Color Sign

REV 1, 8 Aug 97

REV 2, 30 June 2005, Added Freeze command (^Z)

Display Process Control Codes:

CODE	HEX	DESCRIPTION
^D	04	Get Sign's attention, must be first character sent.
^R	12	Run display/end-of-message. Designates that host is finished communication and should start running display.
^G	07	Select address. Must be followed by 3 ascii digits. Sign will only respond when this matches the address setup on the sign.
^J	0A	Select message number to modify. Must be followed by 2 ascii digits representing the number. Only needed when changing actual messages. Message numbers correspond to the following: 01 = There is only one message, must be 01.

The sequence for modifying messages is as follows:

^D ^G aaa ^J mm <message string> ^R Where aaa is address, mm is message number.

The sequence for modifying message parameters is as follows:

^D ^G aaa <parameter string> ^R Where aaa is address.

Message Parameter Codes

These codes are used to control and set such things as sign speed, time-out period, strobe light period, and bit map codes.

CODE	HEX	DESCRIPTION
<ES>C	1B 43	Set the flash rate of flashing characters for the messages. Followed by a 1-digit ascii number from 1 to 3, representing the HZ rate.
<ES>E	1B 45	Set the time, followed by 6 ascii numbers representing the time in hhmmss format. Hours must be in 24-hour mode.
<ES>F	1B 46	Set the date, followed by 6 ascii numbers representing the date in mmddyy format.
<ES>M	1B 4D	Sets a time event. Followed by aa bb cc dd ee ff gg, which are all ascii numbers, in pairs separated by spaces. 'aa' is the slot number to change (00 to 31). 'bb' is the month to activate (99 for everyday). 'cc' is the day of activation. 'dd' is the year of activation. 'ee' is the hour of activation (24 hour mode, set to 99 for empty). 'ff' is the minute of activation. 'gg' is the message number to activate (01 to 32).
<ES>H	1B 48	Sets scroll speed for the messages. Followed by 1 ascii digit from 0 (fast) to 3 (slow).

Message Effect Codes

These codes are embedded in the message string and control all aspects of the message.

CODE	HEX	DESCRIPTION
^O	0F	Toggles flashing on and off. Can be used anywhere to flash characters and/or words.
^W	17	Sets red color. Can be used anywhere.
^E	05	Sets green color. Can be used anywhere.
^F	06	Sets yellow color. Can be used anywhere.
^P	10	Pauses display for 500ms. May be used multiple times.
^Z	1A	Freeze command. Freezes current display until new message received.
^U	15	Embeds the date into the message. Use only once for 4" messages, or 9 times in a row for 2" messages.
^V	16	Embeds the time into the message. Use only once for 4" messages, or 5 times in a row for 2" messages.
^X	18	Sets scrolling to single line, any characters after will display as a 4" high character.
^T	14	Sets scrolling to double line, each character after will alternate between top and bottom lines, and display as 2" characters.

Message Block Effect Codes:

These codes control the open, wipe, up, down, and jump blocks. Each must be terminated by the center or blkdone code. Characters in between will be displayed is the desired effect. To pause the desired effect, embed pause codes in the text to be displayed.

CODE	HEX	DESCRIPTION
^^	1E	Open code, starts message from middle of display opening outward.
^_	1F	Wipe code, starts message from left edge wiping on to right.
^K	0B	Up Code, scrolls message up on the display.
^N	0E	Down code, scrolls message down on the display.
^I	09	Jump code, starts message instantly on the display.
^H	08	Blink code, starts message from middle of display opening outward vertically.
^L	0C	Double Jump code. Characters alternate between top and bottom lines.
^M	0D	Double Up code.
^Q	11	Double Down code.
^S	13	Double Open code.
^B	02	Center code, terminates a block effect and centers the effect on the display.
^C	03	Blkdone code, terminates a block effect and left-justifies the effect on the display.

Ascii characters 32-127 will be displayed as part of the message.