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SCROLLING MARQUEE PROTOCOL

This document outlines the serial protocol that the sign will accept. A message is in the format:

^D^Gnnn^Jxx<message>^R

Where:

^D   -   Gets the signs attention, must always be the first character.
^Gnnn -   Selects the address. "nnn" is the 3-digit address that matches
                     the address selected on the sign (serially set).
^Jnn   -   Selects the message number within the sign to save the message under.
                     NOTE: This must not be sent if using any of the ESC codes listed below.
<message>   Contains the string of characters or embedded block commands. If
                     only strings of characters are sent, they will scroll from right to left.
                     If using block commands (jump, open, wipe, up, etc) you must start it
                     with the block command, the text, and then a block end character (^B or
                     ^C). Any characters outside of the block commands will scroll. You
                     can also toggle between wide and flashing at any time by using the
                     toggle flash and toggle wide codes. To add pauses, embed the pause
                     command within a block command, or embed them directly in the
                     characters to scroll.

The following table below outlines the protocol currently. Please note that when using the "ESC" codes, do not send a message number after the sign address.

NOTE: the "^" symbol represents a control character.

CODE	KEY	USE
00	^@	Not Used
01	^A	Block Done, ends a special block code (wipe,open, etc)
02	^B	Center Done, same as ^A, but centers the special block
03	^C	Display Date at this location
04	^D	Start of any message sent to the display
05	^E	Not Used
06	^F	Not Used

07	^G	Select Sign Address, must be present.
08	^H	Not Used
09	^I	Jump Block
10	^J	Select Message, used only when setting messages
11	^K	Up Block
12	^L	Not Used
13	^M	Not Used
14	^N	Down Block
15	^O	Toggle Flash on/off
16	^P	Adds a 2-second pause
17	^Q	Not Used
18	^R	End of message, used to run the display
19	^S	Not Used
20	^T	Not Used
21	^U	Not Used
22	^V	Display time at this location
23	^W	Not Used
24	^X	Clear Message, ignored, not used
25	^Y	Not Used, use the escape commands to set scroll speed
26	^Z	Not Used
27	^[	Start Escape code (see below)
28	^\	Toggle wide characters on/off
29	^]	Blink Block
30	^^	Open Block
31	^_	Wipe Block

The following is a list of ESC codes that are used after the ESC key (code 27) is sent.

CODE(S)	DESCRIPTION
Cn	Set Flashing rate in HZ, where n is the HZ rate from 1 to 3
Ennnnnn	Set Time where nnnnnn is the time in hhmmss format, 24 hour time
Fnnnnnn	Set Date where nnnnnn is the date in mmddyy format.
Maa bb cc dd ee ff gg	Set a time event for a message. 'aa' is the slot number, from 00 to 31. 'bb' is the month of activation (99 for everyday), 'cc' is the day of activation, 'dd' is the year of activation, 'ee' is the hour of activation (99 to delete this slot), 'ff' is the minute of activation, 'gg' is the message number to activate (01 to 32)
Hn	Set Scroller speed, where n is 0 to 3, 0 being the fastest
Xaaa bb c	Set the configuration, where 'aaa' is the new sign address, 'bb' is the new width of sign in characters, 'c' is the baud rate from 0 to 7, representing 150,300,600,1200,2400,4800,9600,19200 baud.

Example:

TO SCROLL "HELLO WORLD" ON ADDRESS 001 AT MESSAGE 04, TYPE THE FOLLOWING:

<^D><^G><001><^J><04><Hello World><^R>

Setting a New Sign Address

To set a different address than the one shipped from the factory; send the following string (The message must be sent at the current sign's baud rate – 1200BPS Factory-set):

^D^Gaaa^[Xbbbccd^R

Where:

^D	is the sign attention character.
^G	is the select address character.
Aaa	is the sign's current address, in ASCII numbers (e.g. 001)
^ [	is the escape character.
X	is the "X" character, representing "change configuration"
bbb	is the new address, in ASCII numbers.
Cc	is the new width, in characters. (KEEP at the same size as your sign is factory-set to which is ____characters.)
d	is the new baud rate, an ASCII number from the list below:

        0=150 baud,
        1=300 baud,
        2=600 baud,
        3=1200 baud,
        4=2400 baud,
        5=4800 baud,
        6=9600 baud,
        7=19200 baud.

^R   is the sign run command.

Once you have changed the configuration, you will need to power cycle the unit for it to take effect.

EXAMPLE:
To change the current configuration from address 1, 1200 baud, and length of 20 characters to address 4, 9600 baud, and length of 24 characters.
<^D><^G><001><^ [><X><004><SP><24><SP><6><^R>
To set the time in the sign:
<^D><^G><001><Esc><HHMMSS^R

Where <Esc> is the escape tab in the keyboard and HHMMSS is time in hour minutes and seconds.
To activate (send) the time in the display:
<^D><^G><001><^J><01><^V><^R>