Adaptive Message Display Protocol

To program the Adaptive message displays, there is a specific protocol to follow which allows the message to be displayed using colours and effects. The following table shows the protocol with each section explained and is concluded with an example piece of code.

Code	Function
01 (h)	<SOH> Arbitrary command to start the message
5A (h)	Set command to precede the address
"01"	Address of the message display
02 (h)	<STX> Arbitrary command
"AA"	Set up the type of message (Generally always use "AA")
1B (h)	Mode select
-- (h)	Display position – Choose from the following: **20H Middle Line** — Text centered vertically. **22H Top Line** — Text begins on the top line of the sign and the sign will use all its lines minus 1 in order to display the text. For example, a 6-line sign will allow a maximum of 5 lines (6 minus 1) for the Top Position. The Top/Bottom Line break will remain fixed until the next Middle or Fill position is Specified. **26H Bottom Line** — The starting position of the Bottom Line(s) immediately follows the last line of the Top Line. For example, a 6-line sign with 3 lines of text associated with the Top Line would start the Bottom Line text on the 4th line of the sign. **30H Fill** — The sign will fill all available lines, centering the lines vertically. **31H Left** — Text begins on the left side of the sign and the sign will use all its lines minus 1 in order to display the text (Alpha 3.0 protocol only). **32H Right** — Text begins on the left side of the sign and the sign will use all its lines minus 1 in order to display the text (Alpha 3.0 protocol only).
-- (h)	Standard effects – Choose from the table below.
-- (h)	Special effects – Choose from the table below. (Requires the standard effect to be 6EH)
1C (h)	Colour command
3- (h)	Select the colour from the following: (31H) = Red (32H) = Green (33H) = Amber (34H) = Dim red (35H) = Dim green (36H) = Brown (37H) = Orange (38H) = Yellow (39H) = Rainbow 1 (41H) = Rainbow 2 (42H) = Color mix (43H) = Auto-color
"-----"	The message text between the quotes
"4"	<EOT> End of message command

Mode name	ASCII code	Hex code	Description
ROTATE	"a"	61H	Message travels right to left.
HOLD	"b"	62H	Message remains stationary.
FLASH	"c"	63H	Message remains stationary and flashes.
reserved	"d"	64H	
ROLL UP	"e"	65H	Previous message is pushed up by a new message.
ROLL DOWN	"f"	66H	Previous message is pushed down by a new message.
ROLL LEFT	"g"	67H	Previous message is pushed left by a new message.
ROLL RIGHT	"h"	68H	Previous message is pushed right by a new message.
WIPE UP	"i"	69H	New message is wiped over the previous message from bottom to top.
WIPE DOWN	"j"	6AH	New message is wiped over the previous message from top to bottom.
WIPE LEFT	"k"	6BH	New message is wiped over the previous message from right to left.
WIPE RIGHT	"l"	6CH	New message is wiped over the previous message from left to right.
SCROLL	"m"	6DH	New message line pushes the bottom line to the top line if 2-line sign.
AUTOMODE	"o"	6FH	Various Modes are called upon to display the message automatically.
ROLL IN	"p"	70H	Previous message is pushed toward the center of the display by the new message.
ROLL OUT	"q"	71H	Previous message is pushed outward from the center by the new message.
WIPE IN	"r"	72H	New message is wiped over the previous message in an inward motion.
WIPE OUT	"s"	73H	New message is wiped over the previous message in an outward motion.
COMPRESSED ROTATE	"t"	74H	Message travels right to left. Characters are approximately one half their normal width. (Only available on certain sign models.)
EXPLODE	"u"	75H	Message flies apart from the center (Alpha 3.0 protocol).
CLOCK	"v"	76H	Wipe in a clockwise direction (Alpha 3.0 protocol).
SPECIAL	"n"	6EH	This is followed by a Special Specifier ASCII character which defines one of the Special Modes. See "Special Modes" on page 88.

Mode name	ASCII code	Hex code	Description (animations do NOT work on AlphaEclipse 3600 signs)	Will Mode appear on this length AlphaEclipse?	
				64 column	> 80 columns
TWINKLE	"0"	30H	Message will twinkle on the sign.	Yes	Yes
SPARKLE	"1"	31H	New message will sparkle over the current message.	Yes	Yes
SNOW	"2"	32H	Message will "snow" onto the display.	Yes	Yes
INTERLOCK	"3"	33H	New message will interlock over the current message in alternating rows of dots from each end.	Yes	Yes
SWITCH	"4"	34H	Alternating characters "switch" off the sign up and down. New message "switches" on in a similar manner.	Yes	Yes
SLIDE or CYCLE COLORS[1]	"5"	35H	New message slides onto the sign one character at a time from right to left.	Yes[2]	Yes[2]
SPRAY	"6"	36H	New message sprays across and onto the sign from right to left.	Yes	Yes
STARBURST	"7"	37H	"Starbursts" explode the new message onto the sign (animation).	Yes	Yes
WELCOME	"8"	38H	The word "Welcome" is written in script across the sign (animation).	No	Yes
SLOT MACHINE	"9"	39H	Slot machine symbols appear randomly across the sign (animation).	No	Yes
NEWS FLASH[1]	":"	3AH	News flash animation	—	—
TRUMPET ANIMATION[1]	";"	3BH	Trumpet animation	—	—
CYCLE COLORS	"C"	43H	Color changes from one color to another.	Yes[3]	Yes[3]

[1] only available on Betabrite model 1036 signs
[2] SLIDE will appear, but COLOR CYCLE will only work on AlphaEclipse 3600 signs
[3] COLOR CYCLE will only work on AlphaEclipse 3600 signs

Example Code

This piece of code displays the words Good Day with the text flashing like an explosion. It is taken from Microsoft Visual Basic code where &H specifies a hex value and “” or Chr() specifies an ASCII value.

Mscomm1.output = Chr(&H1) & Chr(&H5A) & "01" & Chr(&H2) & "AA" & Chr(&H1B) & Chr(&H30) & Chr(&H6E) & Chr(&H37) & Chr(&H1C) & Chr(&H33) & "Good Day" & Chr(4)