

**LOGOSTAR PROGRAMMERS REFERENCE MANUAL**

**BASIC PROGRAMMERS REFERENCE  
MANUAL FOR LOGOSTAR**

Copyright 2002, 2003 Keywest Technology  
14563 W. 96<sup>th</sup> Terrace  
Lenexa, Kansas 66215  
800-331-2019

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After the @ character is transmitted any character in the set of 'a-z' & 'A-Z' & 0x20 will be accepted into the command parse buffer. The first character not in the above set will cause the contents of the parse buffer to be interpreted. If (numeric) arguments are required by a command they must be after a separator character and be in the set '0-9'. A space character is rejected and will have no effect on the evaluation of the argument. For example, if you sent the text string @PAGE, 1 2 ; you would place page 12 on the screen. The extra spaces, after the comma separator after the word @PAGE will be rejected and not affect the evaluation of the numerals 1 and 2. Note that all alpha only commands, i.e. those that do not have arguments, must be terminated with a non alpha character. All commands that require numeric arguments must be terminated with a non numeric or non space character. In the event that you fail to send data for a period of approximately 10 seconds while the command parser is expecting data, the parser will time out. If when timing out you were in the state where the command parser was waiting for an argument then any previously received numeric characters will be evaluated and returned to the function that needed the argument. The function does not know that the argument was received after a timeout. If you timed out during the sending of the command then certain commands will respond with a timeout error. Note also, that commands that take alpha arguments, such as @SET BMCONFIG,xy; will not wait for the terminating character to evaluate the arguments. These commands are coded to wait for and expect the permissible alpha arguments only. However, they will time out when expecting arguments. Commands such as @ECHO ON; are alpha only commands, i.e. the word ON is part of the text of the command and is NOT an argument. When you issue the command @CLIST; from a console you will see the exact text of the command that must be sent before the first terminator.

## **@BMCLEARSECT,NN;**

This command will clear an entire physical sector of the bit map flash memory.

Bit map flash memory is organized as sectors of 64k bytes each. Each sector contains information for 2 logos. Thus you will always erase 2 logos at a time.

Sector 1 erases logos 1 and 2,  
Sector 2 erases logos 3 and 4 etc.

If the sector cleared contains the logo on display, the display will blank and the LCD panel will indicate that the entry is now cleared.

## **@BMERASE;**

This command erases the entire bit map memory for all possible logos.

Any logo on display is blanked, the LCD panel indicates that the current entry is blank.

## **@BMID;**

This command will retrieve the configuration identification of the flash memory used for the bit map logos. Each manufacturer has it's own codes. The only acceptable value for this parameter is:

0123 represents a 4meg bit AMD (512kbyte) memory in 16 logo systems,  
20D5 represents a 4meg bit SGS (512kbyte) memory in 16 logo systems,

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01D6 represents an 8 Meg bit AMD (1024kbyte) memory in 32 logo systems.

Any other response is an error and bit map logos will NOT function.

## **@BMSHOW,SS,PP,NN;**

This command causes the LOGOSTAR to transmit to the host the contents of the bit map memory used for logos. You call it with the arguments:

SS= sector the memory (from 1 to 8 for 4meg, 1 to 16 for 8meg)

PP = page number to start reading from, a page is 256 bytes (from 0 to 255)

NN = number of consecutive pages of 256 bytes to read (from 1 to 256)

You will get back a display that looks like a memory dump format.

Parameter	Even PP	Odd PP	Notes
bit map data	0 thru 119	128 thru 247	PP=0 is at top of bit map
id info	124	252	first 12 characters are MS-DOS file name of original .BMP. Balance of first 128 characters is copyright and time stamp information. Next 54 bytes are the header of the bit map file. (Width in scan lines is at offset 0x92, height in pixels is at offset 0x96)
Blue palette	125	253	consists of 256 consecutive blue values. Must be combined with other colors to make RGBQUAD
Green palette	126	254	"
Red palette	127	255	"

Each line is prefixed with 6 hex characters representing SSPPNN followed by 16 bytes (in hex) of the data requested.

## **@BMTIME,NN;**

sets the time in seconds (NN) that the bitmap will remain on display after the command is issued. This command is used to test the timeout function that is normally implemented from the special events list command.

## **@GET BMCONFIG;**

This command will retrieve the configuration byte for the bit map memory.

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Two characters are returned. The first character represents the configuration of the first (Low) 4 meg of memory, the second character represents configuration of the second (High) 4 meg of memory. See the section REGISTERS IN CLOCK RAM for a table of possible return values and their meaning.

See also, @SET BMCONFIG,LH; @SET BMDISPLAY;

## @GETLOGO,NN;

This command will retrieve the entire bit map for the logo specified in NN. The bit map will be sent to the host in the Motorola S19 data format. Each line of the S19 data represents data that is to be stored in a memory buffer. The data transmitted first is the actual bit map information. The offset for the upper left pixel is specified as 0000. Note that this is in opposition to the Microsoft .BMP file format where the first bit map data in a file represents the lower left pixel. The data transmitted with offset 0x7C00 represents the actual header information structure of a real .BMP file. These bytes can be read and used directly to create the 0x0e byte BITMAPFILEHEADER structure and the 0x28 byte BITMAPINFOHEADER structure.

Data transmitted with offset 0x7D00 represents the blue palette.

Data transmitted with offset 0x7E00 represents the green palette.

Data transmitted with offset 0x7F00 represents the red palette.

Palette data MUST be combined into RGBQUAD structures before saving, along with header and bit map data, to make the Microsoft compatible bit map file.

Note that the data transmission for each line of bit map data will be padded to a DWORD (multiple of 4 byte) boundary.

Standard XON/XOFF communications handshaking applies.

## @LOADLOGO,NN;

This command allows the host to send a logo, in Motorola S19 format, to the LOGOSTAR. You must specify the PHYSICAL location in the logo memory. When there are full screen bit maps and logos mixed (with 8 meg memory devices) then even though you access logos in the second memory area using numbers from 1 to 16, you load them with numbers 17 thru 32. When loading a full screen bit map you use numbers 1 to 16 for first 4 meg memory. When loading ratings you must always place them in the highest 4 physical locations.

If NN is valid, then a single \* character will be transmitted to the host device.

Loading is normally preceded by a call to @BMCLEARSECT,XX;. Note that the clear sector command will erase 2 logos. NN is the logo number to write into, from 1 to the maximum available.

The S19 file is received and data is transferred into the bit map flash memory based on the header information at each line of the S19 file. The 'map' for the bit map data is as follows:

- offset 0 = left pixel of the top scan line
- offset 0x0100 = left pixel of the second scan line
- ...
- offset 0x7b00 = left pixel of the 124th scan line
- offset 0x7c00 = contains a null terminated string of up to 128 characters of logo id data
- offset 0x7c80 = actual header of the .bmp file

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offset 0x7d00 = 256 palette entries for color blue  
offset 0x7e00 = 256 palette entries for color green  
offset 0x7f00 = 256 palette entries for color red

During transmission from the host, the LOGOSTAR will send XOFF/XON handshaking information back to the host to control the data flow. After the LOGOSTAR receives an end of file sequence (S9), the LOGOSTAR will send a V back to the host.

The default position for a newly loaded logo is X=0, Y=0 i.e. upper left of screen.  
The default key value is 100 percent.

After sending the @LOADOGO,XX; command you must start transmission of your data file within the timeout period of 8 seconds. If transmission ceases to the LOGOSTAR for 8 seconds an error message will be sent to the host and further data sent would not be evaluated as data for a logo bit map.

A check sum error or time out found by the LOGOSTAR will cause an error message EM to be sent to the host, which should cause the host to stop transmission.

If the logo is not empty the error EN will be returned after the command is sent.

If the writing of new data to the flash memory times out you will get error EO. This means that the flash memory was not erased prior to loading a new logo.

## @LOGOIDLIST;

This command returns the information for all logos in the system. Information for each logo is prefixed with a letter, and a two-digit number followed by a colon and a space. If a valid logo name is not present in the name area then the logo is declared as not used. The text "Not Used" will be returned in place of the logo <filename.txt> field. *After June 10, 99 the presence of the Not Used message does not guarantee that the slot is empty. The criteria for declaring Not Used is that the first character in the name area is not an alpha-numeric (a-z, A-Z, 0-9). Prior to June 10,99 an invalid slot would typically return no logo name but gibberish for it's size and position.*

In order to ascertain that the slot is really empty you must evaluate the return message from the @Loadlogo command.

For example:

```
L04: <filename.ext> <file time stamp> <bitmap width>,<bitmap height>  
H=hhh V=vvv K=kk%  
L05: Not Used  
etc.
```

The last logo id is followed by the standard CR LF V CR LF termination.

where:

<filename.ext> is the MS-DOS file name of the original bit map file used to create the data file that was sent to the LOGOSTAR.

<file time stamp> is in the format: MM-DD-YY HH:MM which is identical to an MS-DOS directory listing time stamp.

<bitmap width> is the actual number of pixels used by the bit map (maximum 250).

<bitmap height> is the actual number of scan lines used by the bit map (maximum 120).

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**H=hhh** is the horizontal position, in pixels, of the upper left corner of the logo.  
**V=vvv** is the vertical position, in scan lines, of the upper left corner of the logo.  
**K=kk** is the soft key level in percent.

The format of the information returned by the @LOGOIDLIST; command is controlled by the current memory configuration, see @GET BMCONFIG;. If the configuration is FL then the list would start with an F01: to describe the name of the full screen bit map, and then continue with L01: thru L16:

If the configuration is FF then you would get two return items, F01: and F02:

Note that the data for the full screen images is obtained from the 16<sup>th</sup> slot used by that image. E.g. data for F01 is obtained from physical slot 16, data for F02 is obtained from physical slot 32.

## **@LOGOPARM,NN,XX,YY,KK;**

This command is used to set all logo parameters for the logo specified as NN.  
XX specifies the x position in pixels, range of 0 thru 640  
YY specifies the Y position in scan lines, range of 0 thru 480,  
KK specifies the key value in percentage (100% = hard key)

If the logo NN is currently on display, it is updated to the newly specified parameters.

This command returns a V after completion or an EE error code if any invalid parameters are specified. If invalid parameters are specified the command is ignored.

## **@MCMLOGOSOFT,NNN;**

This command sets the soft key percentage for the currently selected logo. NNN can range from 0 to 100. Whenever that logo is retrieved onto the screen this value of soft key will be used.

(MCMLoSoft)

## **@MCMLOGOX,NN;**

This command sets the horizontal position of the upper left corner of the currently selected logo on the screen. The value NN is in the range of 0 to 640. The actual screen resolution to perform X positioning is 32 pixels. For example, any value entered in the range of 32 thru 63 will place the logo in the same screen position.

(MCMLoXPos)

## **@MCMLOGOY,NN;**

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This command sets the vertical position of the top most scan line of the currently selected logo on the screen. The value NN is in the range of 0 to 480. The actual screen resolution to perform Y positioning is 16 scan lines. For example, any value entered in the range of 32 thru 47 will place the logo in the same screen position.

## **@SET BMCONFIG,LH;**

This command will set the configuration byte for the bit map memory.

Two characters are required. The first character represents the configuration of the first (Low) 4 meg of memory, the second character represents configuration of the second (High) 4 meg of memory. See the section REGISTERS IN CLOCK RAM for a table of possible values and their meaning.

In order to determine the bit map memory capabilities of a unit you must issue the @BMID command.

This command will return a timeout error if parameters are not supplied within the timeout time, or a bad logo error (if there is no bit map memory present).

Supplying an illegal parameter will result in the configuration being set to no memory available for that bank. You must always specify both parameters even if only the lower bank is provided.

See also @GET BMCONFIG; @BMID;

## **@SET BMDISPLAY,fn;**

This command will set the display to show the selected format (f) bit map display number (n). The allowable parameters for the 'f' parameter are those shown in the section REGISTERS IN CLOCK RAM. Supplying an illegal 'f' value results in a bad parameter error. The allowable values for parameter 'n' are dependent on what data has been stored in the system. In all cases, the setting stored with the @SET BMCONFIG,lh; command is used to determine if this command is acceptable. It is the user's responsibility to set the configuration of the bit map memory before making any calls to display bit map data.

If parameters are not supplied within the timeout time you will get a timeout error.

See the table in LOGOSTAR MEMORY ORGANIZATION section.

## **@WHICHLOGO;**

This command will retrieve the number and type of the bit map item currently being used by the system. The response is a letter [F|R|L|E] and a number representing the type and number of the item followed by a CR-LF. If the bit map item found is invalid, then a bad logo (EN) error is returned. The item number will normally be 2 digits (with leading zero) or 3 digits.

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## SERIAL PORT CABLE CONNECTIONS

There are two serial input configurations. RS232 is the standard configuration, available on the connector SERIAL-1 and SERIAL-2. Optionally an RS485 multidrop, 4 wire interface can be provided on the connector SERIAL-1. Both RS232 and RS485 are NOT available at the same time. The desired setup must be specified at the time of order.

For RS232 connections:

To connect a LogoSTAR or other unit supplied with a serial port connector to a PC with a 9 pin serial port connector use the following cable:

DB9P	DB9S (pc)
2	3 (TXD from PC)
3	2 (RXD to PC)
5	5 (GND)
	+-- 7 (CTS to PC)
	+-- 8 (RTS from PC)
	+-- 6 (DSR)
	+-- 1 (DCD)
	+-- 4 (DTR)

To connect to a PC with a 25 pin serial port connector use the following cable:

DB9P	DB25S (pc)
2	2 (TXD from PC)
3	3 (RXD to PC)
5	7 (GND)
	+-- 5 (CTS to PC)
	+-- 4 (RTS from PC)
	+-- 6 (DSR)
	+-- 8 (DCD)
	+-- 20 (DTR)