



# The Third Evolution™



Programmable,  
**RGB**-backlit  
LCD Keyswitches

## APPLICATION NOTE

Version 1.1

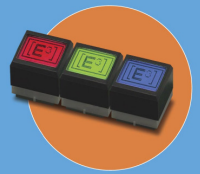
## EXTENDED COLOR COMMAND

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# Extended Color Command

## Application Note



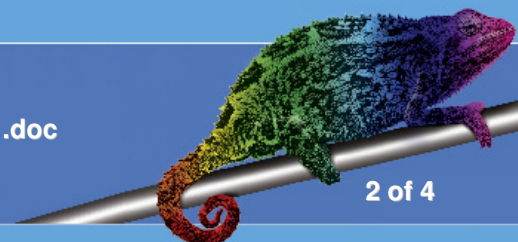
## General Description

The SA switch family includes the SA3216, SA3624 and SA6432 LCD Keyswitches with command driven serial interfaces. They integrate a graphical liquid crystal display with **RGB** backlighting in a keyswitch. The SA keys are controlled via a serial interface to the integrated *Advanced Technology*<sup>™</sup> electronics, which control the interface, display and backlighting. SA keys self-initialise without external setup commands. Data is only transmitted when a change is made to the display or background colours. Only six contact terminals are required to provide power, clock and data lines as well as switch contacts. The contact pins of the internal switch are isolated from the internal electronics.

This documents describes the “**EXTENDED COLOUR COMMAND 0x42**”. The purpose of this enhancement is it to provide customers with additional colour options and a finer color resolution.

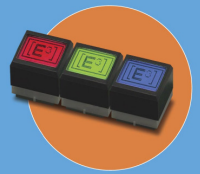
## Color Command 0x42

<b>Command</b> <i>(binary representation)</i>	<b>Command Name / Description</b>	<b>Comments</b>
01000010 (0x42)	<b>Set RGB Colour</b>	There are 3 data bytes to follow: 0D <sub>6</sub> D <sub>5</sub> D <sub>4</sub> D <sub>3</sub> D <sub>2</sub> D <sub>1</sub> D <sub>0</sub> 0D <sub>6</sub> D <sub>5</sub> D <sub>4</sub> D <sub>3</sub> D <sub>2</sub> D <sub>1</sub> D <sub>0</sub> 0D <sub>6</sub> D <sub>5</sub> D <sub>4</sub> D <sub>3</sub> D <sub>2</sub> D <sub>1</sub> D <sub>0</sub> These colours may change and should be used with caution until otherwise noted by [E <sup>3</sup> ]



# Extended Color Command

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## Command Example

### Extended Colour Command:

01000010 (0x42)

Binary	HEX	Comments
01000010	0x42	Extended Colour Command

The following example shows extended colour command for white colour:

### **0x42 0x3F 0x7F 0x7F 0x43**

0x42 initiates extended colour command

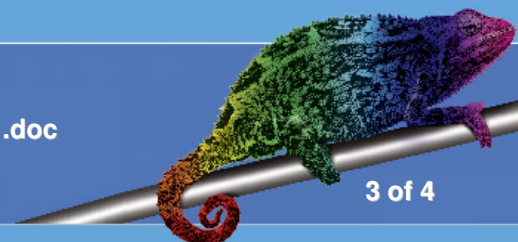
0x3F sets red LED to half brightness (valid values are 0x10 – 0x7F)

0x7F sets green LED to full brightness (valid values are 0x10 – 0x7F)

0x7F sets blue LED to full brightness (valid values are 0x10 – 0x7F)

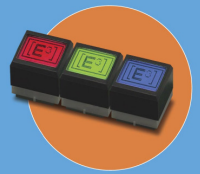
0x43 terminates command sequence

The lower 10 values on each colour brightness value should only be used for single colour applications due to restrictions in the colour calibration.

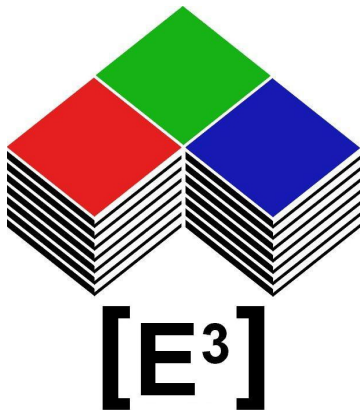


# Extended Color Command

Application Note



## Contact Information



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