

Offset	Name	Description of Bits												
		31	...	10	9	8	7	6	5	4	3	2	1	0
0	status			feedback	ICMode	24 bits	24 bits	BGR	8 bits	IRQ	running	finished	Video	B/W
1	control				ICMode	24 bits	24 bits	BGR	8 bits	IEN	start	stop	Video	B/W
2	startAddress1	first address where the images will be stored.												
3	startAddress2	second address where the images will be stored.												
4	lastBufferAdd	address where the last image was stored												
5	pixel_cnt	number of stored pixels												
6	colorCorrection	correction to be applied in the image												

Figure 1: Register Map of the MT9V032 interface

Bit(s)	Name	Description
0	B/W	0 : For the color version of the sensor. 1 : For the black and white version of the sensor. Bypass all the color correction and management.
1	Video	0 : Snapthot mode. Only one image is captured. 1 : Video mode. Images continuously stored. To stop process, use stop command (bit 2 of control register).
2	finished	0 : The frame is not yet finished. 1 : The frame is finished.
3	running	0 : The module is currently not running. 1 : The module is performing the acquisition.
4	IRQ	0 : IRQ is disabled. 1 : IRQ are sent after each frame saved.
5	8 bits	0 : 10 bits color. The pixel must use 32 bits. 1 : 8 bits color. The pixel can use either 32 or 24 bits.
6	BGR	0 : The pixel ar stored in the RGB order (R is on lower byte). 1 : The pixel is stored in the BGR order (B is on the lower byte).
7	24 bits	0 : Will store 32 bits for each pixel. 1 : Will store only 24 bits of the pixel. Must be used with 8 bits per color!
8-9	ICMode	00 : InputControl is configured for the parallel version of the PCB 01 : InputControl is configured for the serial version of the PCB. Data received is 8 bits for pixel, 1 bit for FV and 1 for LV. (default mode of the sensor in LVDS mode) 01 : not used yet. Todo. Will manage the serial version of the PCB, with 10 bits for the pixel data. FV and LV are embedded. 11 : not used
10	feedback	0 : The sensore send no signal. 1a : For the serial version, 1 means the sensor is connected. 1b : For the parallel version, the LED_ON signal is on. The camera is capturing an image.

Figure 2: Status register bits

Bit(s)	Name	Description
0	B/W	0 : For the color version of the sensor. 1 : For the black and white version of the sensor. Bypass all the color correction and management.
1	Video	0 : Snapthot mode. Only one image is captured. 1 : Video mode. Images continously stored. To stop process, use stop command (bit 2 of control register).
2	stop	0 : Nothing. 1 : For video mode only. The video is stopped.
3	start	0 : Nothing. 1 : A start command is performed. The others bits are saved for the next image captured.
4	IEN	0 : No IRQ will be sent at the end of each fram. 1 : An IRQ will be sent at the end of each frame.
5	8 bits	0 : 10 bits color. The pixel must use 32 bits. 1 : 8 bits color. The pixel can use either 32 or 24 bits.
6	BGR	0 : The pixel ar stored in the RGB order (R is on lower byte). 1 : The pixel is stored in the BGR order (B is on the lower byte).
7	32/24 bits	0 : Will store 32 bits for each pixel. 1 : Will store only 24 bits of the pixel. Must be used with 8 bits per color!
8-9	ICMode	00 : InputControl is configured for the parallel version of the PCB. 01 : InputControl is configured for the serial version of the PCB. Data received is 8 bits for pixel, 1 bit for FV and 1 for LV. 01 : not used yet. Will manage the serial version of the PCB, with 10 bits for the pixel data. FV and LV are embedded. 11 : not used

Figure 3: Control register bits

Offset	Name	Description of Bits										
		31	...	29	...	20	19	..	10	9	..	0
6	colorCorrection					factor3			factor2			factor1

Figure 4: Status register's bits

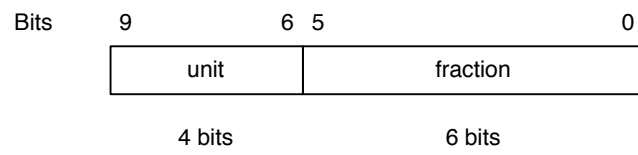


Figure 5: The fixed-point format of the factors for the chromatic adaptation.