



APPENDIX F

: USER'S MANUAL

1. General Description

3HVISION'S Camera module for notebook. 1.3MP is a 1.3 Mega-Pixel, USB 2.0 high-speed camera module designed high quality Colorful videos and still images, for instant visual communication applications on a notebook platform.

The camera module is a sensor on board module designed for notebook application where low power consumption and small size are of utmost importance. It combines the CMOS sensor and platform for high quality camera products.

SN9C233B is a USB 2.0 compatible PC camera controller. The built-in extreme low-power transceiver provides the superior compatibility with various USB host and the best quality for image applications. It is fully compliant with USB video Class. With the integrated sensor Interface an color processing engine, it can support most VGA and SXGA CMOS SOC sensors.

2. Specification.

Item		Specification
전체사항	전원 전압	5V
	동작 전압	VDDA & VDDD: 3.3V, VDDIO: 2.8V
	Feature	YUV 8 Bit Digital Data 출력 Supports UVC, LED Indicator Color: Red High Speed USB2.0 Interface AE(Auto Exposure), AWB(Auto White Balance) Color Correction, Hue, Edge Enhancement
	OS	Microsoft Window XP 32Bit SP2, XP 64Bit Viata: 32Bit, 64Bit, Win7 32Bit/64Bit, Linux
	해상도	근거리(1m): 중앙 600本 이상, 주변 400本 이상 1280 X 1024(1.3M)
	동작 온도범위	-20℃ ~ +60℃
	보존 온도범위	-40℃ ~ +75℃
	Dimension(LxWxH mm)	60x9x4.0(렌즈 보호TAPE 미적용)
IMAGE SENSOR	Image Format	85K6AFX13(SAMSUNG LSI), 1/8", 1.3M, COB TYPE
	Effective Resolution	1280(H) * 1024(V)
	Active Pixel Size	1284(H) * 1028(V)
	Pixel Size	1.75um
	Shutter type	Electronic rolling shutter
	Package Dimension	4560um * 4560um
	Max Framerate	15fps@ SXGA, 30fps@VGA
	Max. pixel Clock Frequency	56MHz
	Color filter	RGB Bayer pattern
	ADC accuracy	10 bit
	Operating Temperature	-20℃ to +60℃
	Operating Voltage	VDDIO: 1.8V/2.8V
LENS & HOLDER	Image Sensor Size	Φ2.9
	Focal Length	2.28mm
	F No	F2.8
	Focus Area	300mm ~ ∞
	Total Length from Image Plane(TTL)	3.0mm
	Flange Back Length	0.95mm
	Relative illumination	52.7%(Φ2.9)
	Angular Field of View(V/H/D)	41.3°/53.7°/64.3°
	M.T.F.(0.7 Field)	42.8% 160 lp/mm
	TV Distortion	0.0%(Φ2.9)
	Lens Construction	3 Elements
	Barrel Mount Diameter	M5 X 0.35P

FCC Notice

Class B digital device

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause (harmful) interference, and (2) this device must accept any interference received, including interference that may cause undesired operation (of the device).

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.