



VGA Color CMOS Image Sensor Module

DATABRIEF

Features

- **Small physical size: integrated lens in a SmOP (Small Optical Package)**
- **640 x 480 VGA resolution**
- **Up to 30 frame/s VGA, 60 frame/s QVGA**
- **On-chip 10-bit ADC**
- **Automatic dark calibration**
- **2.6 V to 3.6 V power supply**
- **I²C communications**
- **Low power suspend mode**
- **4 or 5 wire nibble output**
- **Socket available separately**

Description

The VS6502 is a VGA resolution SmOP sensor module. SmOP technology combines the image sensor and fixed focus lens system in a single module. The SmOP sensor module is connected to the PCB either via a socket or flex option. The socket allows the PCB to use standard reflow soldering techniques.

The sensor outputs 10-bit raw digital image data which directly interface to a range of STMicroelectronics companion processors via 4/5 wire interface.

An I²C interface allows the processor to configure the device and control exposure and gain settings.

There are three different digital video output formats:

- **VGA mode - 640 x 480 image size**
- **Sub-sampled QVGA mode - 320 x 240 image size**
- **Window Of Interest QVGA mode - 320 x 240 pixel**

Applications

- **Miniature USB web cameras (STV0676 - STV0674)**
- **Embedded cameras (STV0676 - STV0674): Handhelds, Cell phones, Network cameras**
- **Digital stills cameras (STV0674): Minicam, miniature USB flash drive cameras**
- **Digital video cameras (STV0674)**

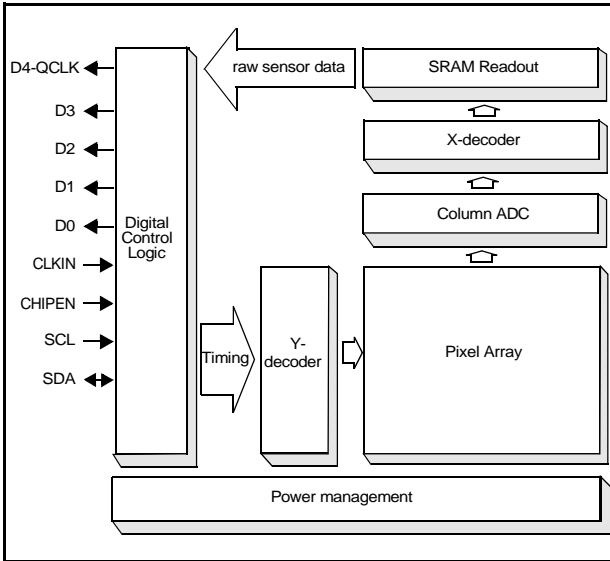
Technical Specifications

Pixel resolution	644 x 484 (VGA)
Pixel size	5.6 µm x 5.6 µm
Array size	3.6 mm x 2.7 mm
Dynamic range	> 52 dB
Analogue gain	0 to 24dB
Sensitivity (typical)	2.05 V / lux-s
Signal/Noise ratio	+ 37 dB
Supply voltage	2.6 to 3.6 V
Power consumption	Active (30 frame/s) < 30 mA Suspend (no clk) < 10 µA
Operating temperature	[-25 ; +70]°C
Package size	10.6 mm x 8.7 mm x 5.8 mm
Lens	47° HFOV, f#2.8
Package type	14 pad SmOP

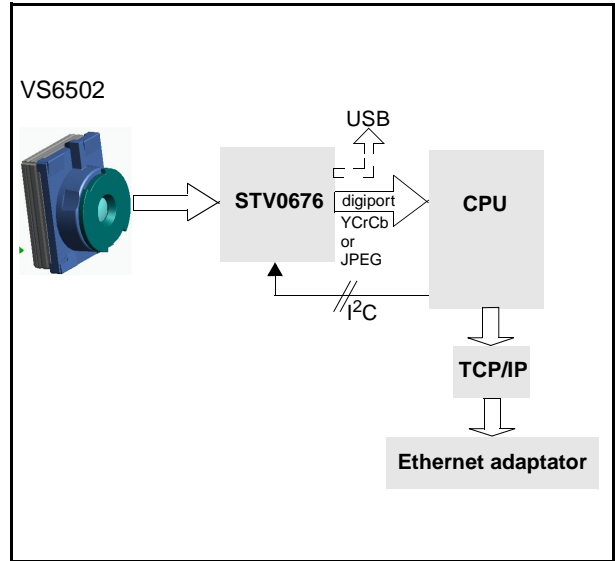
Ordering information

Ordering code	Description
VS6502V015	VS6502 sensor module
XS0015/TR	socket for sensor module

DEVICE FUNCTIONALITY



Network/Ethernet and/or USB camera

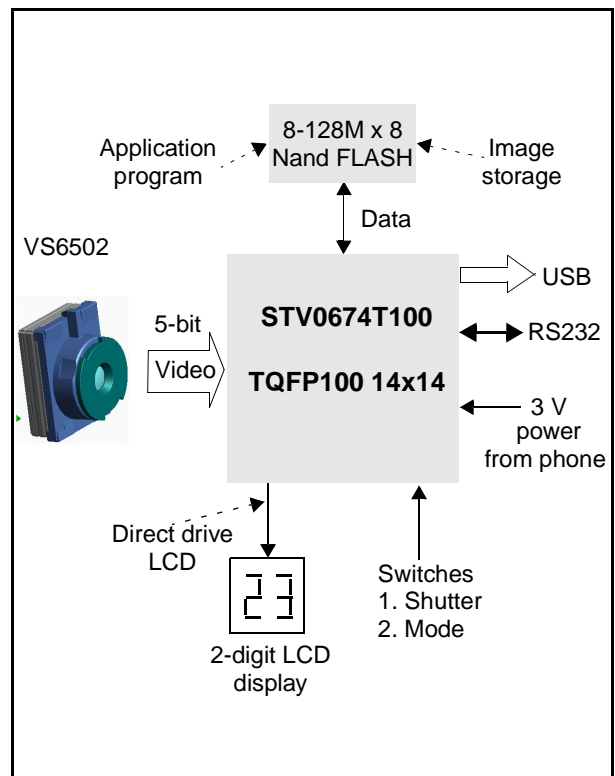


ORDERING DETAILS

VS6502V015	Sensor module only with socket option.
STV0681	Dual mode co-processor (no internal FLASH)
STV0676	PC camera co-processor
STV0674T100	Multi-mode co-processor
STV-6502S-D01	Plug-in daughtercard for VS6502
STV-674/100T-E01	EVK for STV0674
STV-681-E01	EVK for STV0681
STV-676-E01	EVK for STV0676

No 'sensor only' EVK available for the VS6502

Miniature VGA DSC solution



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