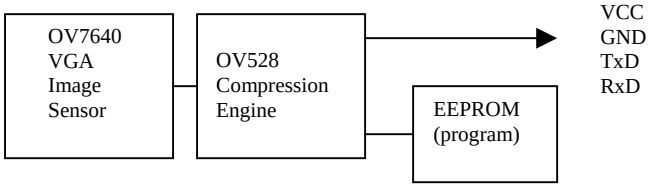
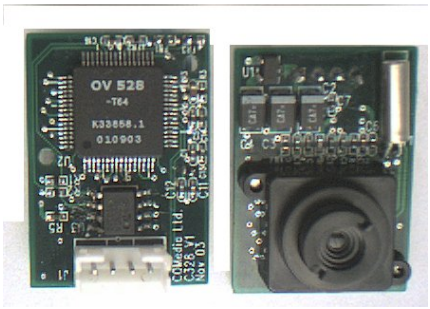
C328-7640
JPEG Compression
VGA Camera Module

General Description

The C328 JPEG compression module performs as a video camera or a JPEG compressed still camera and can be attached to a wireless or PDA host. Users can send out a snapshot command from the host in order to capture a full resolution single-frame still picture. The picture is then compressed by the JPEG engine and transferred to the host.

Block Diagram





Features

- Low-cost, & low-powered solution for high resolution image capture
- Built-in down-sampling, clamping and windowing circuits for VGA/CIF/SIF/QCIF/160x128/80x64 image resolutions
- RS-232: 115.2K bps for transferring JPEG still pictures or 160x128 preview @8bpp with 0.75~6 fps
- JPEG CODEC for different resolutions
- Built-in color conversion circuits for 4 gray/16 gray/256 gray/12-bit RGB/16-bit RGB preview images
- Auto detect baud rate and make connection to the host

System Configuration

Camera Sensors

The C328 uses OmniVision OV7640/8 VGA CameraChips with an 8-bit YCbCr interface.

OV528 Serial Bridge

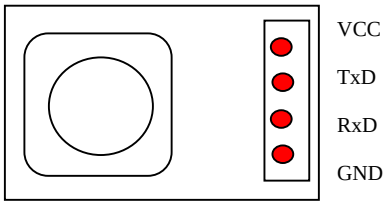
The OV528 Serial Bridge is a controller chip that can transfer image data from CameraChips to external device. The OV528 takes 8-bit YCbCr 422 progressive video data from an OV7640 CameraChip. The camera interface synchronizes with input video data and performs down-sampling, clamping and windowing functions with desired resolution, as well as color conversion that is requested by the user through serial bus host commands.
The JPEG CODEC with variable quality settings can achieve higher compression ratio & better image quality for various image resolutions.

Program Memory

A serial type program memory is built-in for C328, which provides user-friendly commands to interface external control units.

Pin Description

Pin	Description
VCC	Power 3.3VDC
TxD	Data Transmit (3.3V)
RxD	Data Receive (3.3V)
GND	Power Ground



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Electrical Specification

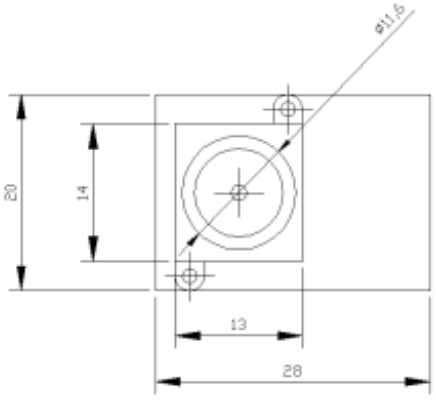
V_{DD} = 3.3V+10%, TA = 0 to 25°C

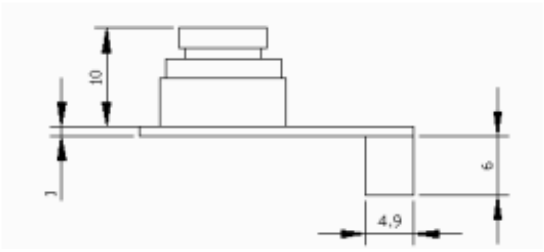
Symbol	Parameter	Condition	Min	Typ	Max	Unit
V_{DD}	DC supply voltage		3.0	3.3	3.6	V
Io	Normal Operation Current	Operating		60		mA
Is	Suspend Current	Suspend		100		uA
V_{IH}	High level input voltage	TTL	2.0			V
V_{IL}	Low level input voltage	TTL			0.8	V

Lens Specification

Description	Parameter
Imager Format	1/4"
F/#	2.8
Focal length (mm)	4.63
Field of View Diagonal (deg)	57
Horizontal (deg)	42
Vertical (deg)	16.5
Distortion	-3.3%
Relative Illumination	67%
Filter Option IR-cut filter	included

Board Measurement





Rev 2
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