C429 User Manual

Release Note:

V1.0 16th February, 2011 First release

General Description

The **C429** JPEG compression module performs as a video camera or a JPEG compressed still camera. Users can send a snapshot command from the host in order to capture a full resolution, single-frame still picture (MT9v011+VC706 sensor). The picture is then compressed by the JPEG engine (VC706) and transferred to the host. A schematic to build your own EV kit and software for the camera is also included. (This is another replacement for the C328 cameras even though the command-set is not identical to that used in the C328 cameras.)

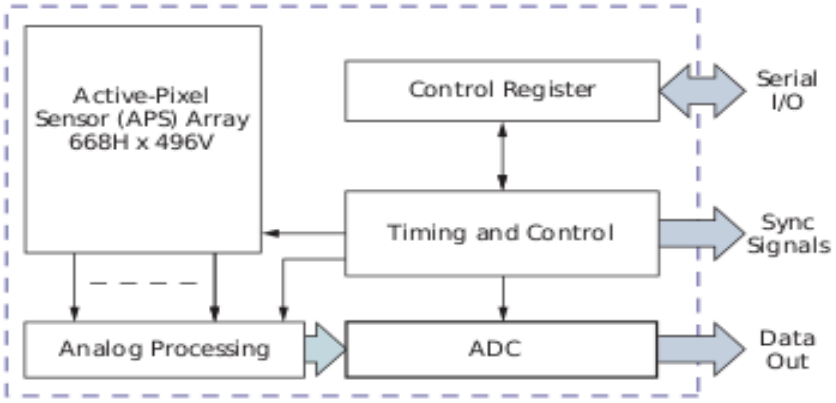


Figure 1 – Sensor Block Diagram

Applications

Car and ship control, electrical equipment, base stations,oil field equipment, industrial equipment, remote site monitoring, environmental monitoring, etc.

Features

● Serial port control , image data can be uploaded to the host computer through the serial port.

● Image color sensor , 1/4 MT9V011 CMOS +VC0706.

● Video output ,CVBS signal , Local monitoring or connect DVR.

● IR led interface,can drive 5V*200mA led light.

Parameters

● Protocol： VC0706 standard

● Output format : JPEG

● Image output size :
color,VGA(640*480)、QVGA（320*240）、QQVGA（160*120）**
**using the 1.3.2.27.DOWNSIZE_SIZE command listed in the VC0706 manual

- Video output: CVBS signal,NTSC/PAL
- Video output frame rate : 30 FPS
- SnapShot： 1/60S
- Data and control interface : RS232 (115200,N,8,1)
- Baud rate： Max 115200bps
- Image sensor： CMOS 30M pixel
- Snapshot frame rate： 60f/s
- FOV： 60°～170°,lens is optional
- Power Consumption: DC 5V±0.5V , about 80mA（not including LED）
- PCB size： 38*38mm
- Operation Temperature: -20℃ ~ +60℃。
- Stock Temperature: -45℃ ~ +75℃。

System Configuration

Camera Sensor

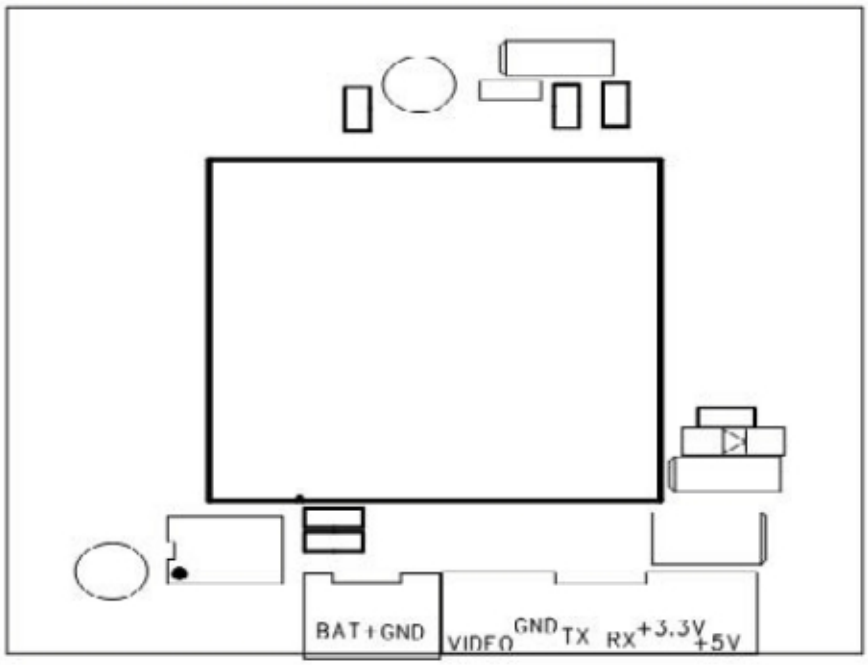
The C429 uses a 1/4 MT9V011 CMOS VGA Digital Image Sensor +VC0706.

Processor

VC0706 is a high performance camera processor with enhanced image processing functions. This SOC chip has a CMOS sensor interface and digital video input interface that can capture the video stream from the sensor or from external TV decoder.

The VC0706 features a hard wired JPEG codec with support of up to 30FPS encoding or decoding with VGA resolution. It can compress the captured video stream to M-JPEG stream and output through the SPI/UART interface.

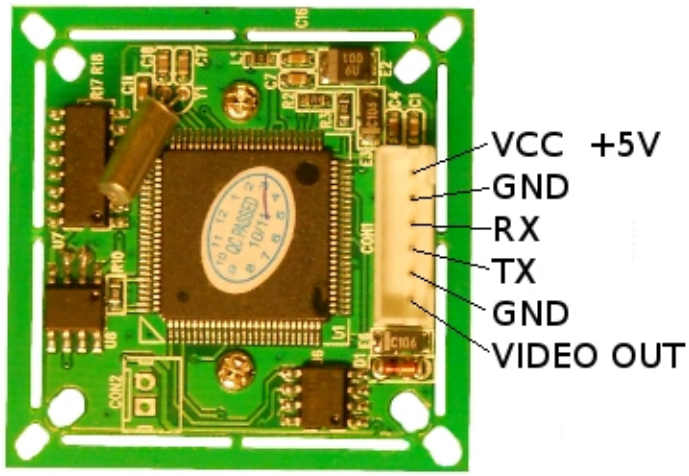
Board Layout



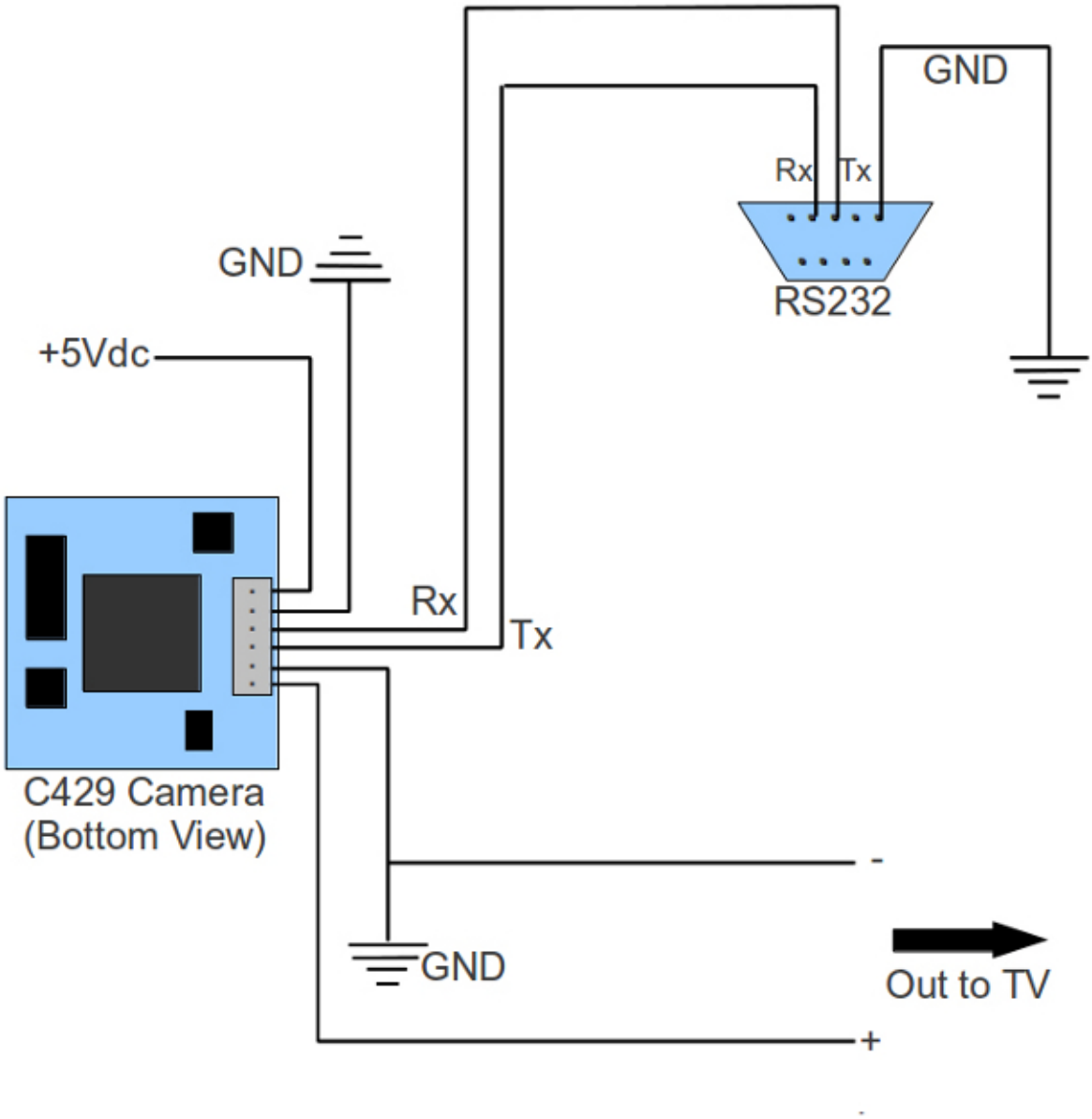
Serial Interface

Connecting the Device to RS232

Pin-outs:



C429 JPEG Camera Module Test Jig (EV Board)



Serial Communication

Return Data

56 43 30 37 30 33 20 31 2E 30 30 0D 0A 43 74 72 6C 20 69 6E 66 72 20 65 78 69 73 74
0D 0A 55 73 65 72 2D 64 65 66 69 6E 65 64 20 73 65 6E 73 6F 72 0D 0A 36 32 35 0D 0A
49 6E 69 74 20 65 6E 64 0D 0A

Signals:

Name	Data	Name	Data
Reset	56 00 26 00	Return	76 00 26 00
Snap	56 00 36 01 00	Return	76 00 36 00 00
Readlength	56 00 34 01 00	Return	76 00 34 00 04 00 00 B4 DC
Stop Snap	56 00 36 01 01	Return	76 00 36 00 00

Settings and Adjustments:

Adjust Image Size:

Size	**320 x 480**	**640 x 480**
Command	56 00 31 05 04 01 00 19 11	56 00 31 05 04 01 00 19 00

Both items should return: 76 00 31 00 00

Compression Ratio:
To change the compression ratio: 56 00 31 05 01 01 12 04 XX Return: 76 00 31 00 00
Normal value for "XX" is 36.

Entering Power Save Mode:
Enter Power Save: 56 00 3E 03 00 01 01 Return: 76 00 3E 00 00
Quit Power Save: 56 00 3E 03 00 01 00 Return: 76 00 3E 00 00

Modify the Port Rate:
Change Baud Rate: 56 00 24 03 01 XX_1 XX_2 Return: 76 00 24 00 00

XX_1	**XX_2**	**Rate**
AE	C8	9600
56	E4	19200
2A	F2	38400
1C	4C	57600
0D	A6	115200

IR LED: (optional)
Open IR LED: AA No Return
Close IR LED: BB