

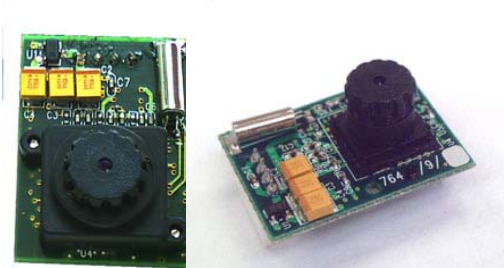
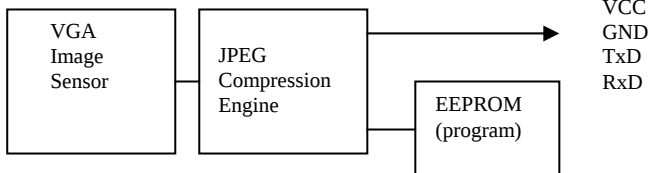
# C328R

## JPEG Camera Module W/ UART Interface

### General Description

The C328R is VGA camera module performs as 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 thru serial port.

### Block Diagram



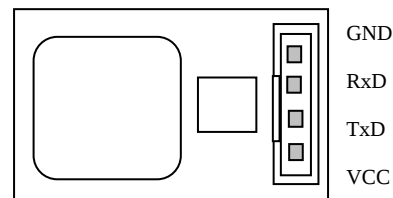
### Features

- Small in size, 20x28mm
- VGA resolution, down sample to QVGA or CIF
- 3.3V operation
- Low power consumption 60mA
- User friendly commands to control the module
- UART interface of up to 115.2Kbps
- Auto detect baud rate and make connection to the host
- Power saving mode
- Various lens options

### Pin Description

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

Connector specification: 2mm pitch, 4pin single row  
Reference part no: Suyin 190600  
Mating connector: Suyin 140600



Bottom View

### Command Summary

Detail Command control, please refer to the user's manual

|     |                  |                                                            |
|-----|------------------|------------------------------------------------------------|
| 1.  | Initial          | To configure the image size, color type                    |
| 2.  | Get Picture      | Get Picture type                                           |
| 3.  | Snapshot         | Set snap shot image type                                   |
| 4.  | Set Package Size | Set the package size to transmit data from module to Host  |
| 5.  | Set Baudrate     | Change the baud rate                                       |
| 6.  | Reset            | Reset the whole system or reset the state machine          |
| 7.  | Power Off        | To enter sleep mode                                        |
| 8.  | Data             | Set the data type and length for transmitting data to host |
| 9.  | SYNC             | Sync signal to connect between host and module             |
| 10. | ACK              | Command to indicate the communication success              |
| 11. | NAK              | Command to indicate the communication fail with error code |

## Electrical Specification

$V_{DD} = 3.3V \pm 10\%$ ,  $T_A = 0$  to  $25^\circ C$

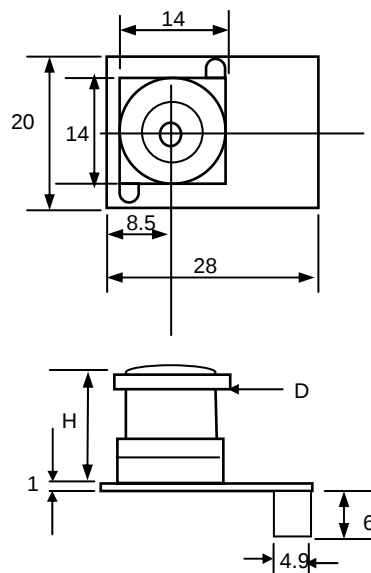
| Symbol   | Parameter                | Condition | Min | Typ | Max | Unit |
|----------|--------------------------|-----------|-----|-----|-----|------|
| $V_{DD}$ | DC supply voltage        |           | 3.0 | 3.3 | 3.6 | V    |
| $I_o$    | Normal Operation Current | Operating |     | 60  |     | mA   |
| $I_s$    | 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                  | C328R | C328RS | C328R-2225 | C328R-2820 | C328R-3620IR | C328R-3620 | C328R-6016 | C328R-6016IR |
|------------------------------|-------|--------|------------|------------|--------------|------------|------------|--------------|
| F/#                          | 2.8   | 2.8    | 2.5        | 2.0        | 2.0          | 2.0        | 1.6        | 1.6          |
| Focal length (mm)            | 4.63  | 4.63   | 2.2        | 2.8        | 3.6          | 3.6        | 6.0        | 6.0          |
| Field of View Diagonal (deg) | 41    | 41     | 109        | 81         | 50           | 50         | 43         | 43           |
| Filter Option IR-cut filter  | Yes   | Yes    | NA         | NA         | Yes          | NA         | NA         | Yes          |
| Total height from PCB H (mm) | 10    | 10     | 18         | 22         | 22           | 22         | 20         | 20           |
| Diameter of lens cap D (mm)  | 9     | 9      | 15         | 14         | 14           | 14         | 14         | 14           |

## Board Measurement

Note: except C328RS of small lens holder, all other lens holder are with 14x14 as shown below.  
Dimension of C328RS lens holder is 10x10mm



Note: In order to facilitate people for better understanding the communication with the module, we have developed an EV kit, C328-EV232, for user to run under PC Windows environment. However, this module is not designed for PC application. Such PC evaluation is only for better understanding of command control.