General Description

The PTC08 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.

Features

- Small in size, 32x32mm
- QVGA resolution, up sample to VGA
- Low power consumption, 5V operation
- UART interface support up to 115200 bps, (default 38400bps)
- Built-in JPEG CODEC
- Built in lens, optional
- User friendly command

Pin Description

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX</td>
<td>Data Transmit (RS232 level)</td>
</tr>
<tr>
<td>RX</td>
<td>Data Receive (RS232 level)</td>
</tr>
<tr>
<td>GND</td>
<td>Power Ground</td>
</tr>
<tr>
<td>VCC</td>
<td>Power 5 VDC</td>
</tr>
</tbody>
</table>

Default, the TX and RX are RS232 level „but if you want it work as TTL level, we can get it as follow:
Electrical Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min</th>
<th>TVp</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC supply voltage</td>
<td>3.3</td>
<td>5.0</td>
<td>6.0</td>
<td>V</td>
</tr>
<tr>
<td>Operation Current</td>
<td>60</td>
<td>70</td>
<td>85</td>
<td>mA</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>-20</td>
<td>20</td>
<td>85</td>
<td>℃</td>
</tr>
</tbody>
</table>

DSP and Lens Specification
PTC08  Serial Camera Module Specification

<table>
<thead>
<tr>
<th>Description</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSP</td>
<td>VC0706</td>
</tr>
<tr>
<td>Sensor</td>
<td>MT9V011</td>
</tr>
<tr>
<td>Imager Format</td>
<td>1/4”</td>
</tr>
<tr>
<td>F/#</td>
<td>2.0</td>
</tr>
<tr>
<td>Focal length (mm)</td>
<td>3.6mm</td>
</tr>
<tr>
<td>Field of View Diagonal (deg)</td>
<td>64</td>
</tr>
<tr>
<td>Distortion</td>
<td>0.38%</td>
</tr>
<tr>
<td>Relative Illumination</td>
<td>&gt;53%</td>
</tr>
<tr>
<td>Filter Option IR-cut filter</td>
<td>included</td>
</tr>
</tbody>
</table>

**Mechanical Specification**  (unit: mm)

![Mechanical Drawing]

**Command Protocol**  (hex format data)

1. **RESET**: 56 00 26 00  **RETURN**: 76 00 26 00

2. **CAPTURE A IMAGE**:  

   ![Command Illustration]

Guangzhou Putal Communication Technology Co., Ltd  supports@putal.com.cn  http://www.putal.com.cn
CAPTURE A IMAGE COMMAND

CAPTURE ONE
(56 00 36 01 00 )

ACK
( 76 00 36 00 00 )

CAPTURE TWO
(56 00 36 01 01 )

ACK
( 76 00 36 00 00 )

3  READ IMAGE DATA LENGTH:

READ FIRST IMAGE DATA LENGTH

READ FIRST LENGTH
(56 00 34 01 00 )

ACK
( 76 00 34 00 04 00 00 XX YY )

XX  YY  -------  image length,  XX--- high byte,  YY--- low byte

READ SECOND IMAGE DATA LENGTH

READ SECOND LENGTH
(56 00 34 01 01 )

ACK
( 76 00 34 00 04 00 00 XX YY )

XX  YY  -------  image length,  XX--- high byte,  YY--- low byte

4  READ IMAGE DATA:

READ FIRST IMAGE DATA

READ FIRST IMAGE DATA
(56 00 32 0C 00 0D 00 00 XX XX 00 00 YY YY 00 FF)

ACK
(76 00 32 00 00 FF D8 ****** FF D9 76 00 32 00 00 )

READ SECOND IMAGE DATA
00 00 XX XX
---- start address (the address must be times of 8, for example 00 00 )
00 00 YY YY ----the length of image data (high byte, low byte)

Notice: JPEG IMAGE DATA must be FF D8 in first, and FF D9 in end.

5  STOP CAPTURE:  56 00 36 01 03  RETURN:  76 00 36 00 00

ACK (76 00 36 00 00)

6  SETTING IMAGE COMPRESSIBILITY:  56 00 31 05 01 01 12 04  XX

RETURN:  76 00 31 00 00

XX ----default value: 36  (range: 00 ----FF)

ACK (76 00 31 00 00)

7  SETTING IMAGE RESOLUTION:  (default: 320 * 240)

56 00 31 05 04 01 00 19 11  (320*240)  RETURN:  76 00 31 00 00

56 00 31 05 04 01 00 19 00  (640*480)

56 00 31 05 04 01 00 19 22  (160*120)
8  **BAND RATE:** (default: 38400 bps)

<table>
<thead>
<tr>
<th>XX</th>
<th>YY</th>
<th>BAND RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE</td>
<td>C8</td>
<td>9600</td>
</tr>
<tr>
<td>56</td>
<td>E4</td>
<td>19200</td>
</tr>
<tr>
<td>2A</td>
<td>F2</td>
<td>38400</td>
</tr>
<tr>
<td>1C</td>
<td>4C</td>
<td>57600</td>
</tr>
<tr>
<td>0D</td>
<td>A6</td>
<td>115200</td>
</tr>
</tbody>
</table>

9  **PTC08 initial operation process**

(1) power on  
(2) delay 2.5s  
(3) set image resolution command (optional)  
(4) set image compressibility command (optional)  
(5) reset command (when run optional step 3)

Notice: Please choose the corresponding photo process

**PTC08 get a image operation process**

(1) stop capture command 56 00 36 01 02  
(2) capture a image command 56 00 36 01 00  
(3) read image data length command 56 00 34 01 00  
(4) read image data command 56 00 32 0C 00 0D 00 00 XX XX 00 00 YY YY 00 FF

**PTC08 capture two image operation process**

(1) power on and delay 2.5s  
(2) capture two image command 56 00 36 01 01  
(3) stop capture command 56 00 36 01 02  

Each performs a stop capture command will snap a photo, execution will capture
two 2 times.

For example, performs once it will snap a first photo while performs second, it will capture the second photo.

Notice: If perform 3 times will overwrite the first photo and perform fourth will overwrite a second photo. It is two times a cycle overwrite.

(4) read first image data length command 56 00 34 01 00  
(5) read first image data command 56 00 32 0C 00 0D 00 00 XX XX 00 00 YY YY 00 FF  
(6) read second image data length command 56 00 34 01 01  
(7) read second image data command 56 00 32 0C 01 0D 00 00 XX XX 00 00 YY YY 00 FF