

HMS30C7080  
(0.18um, 132fBGA)

# MPEG4 Codec for Mobile Phone

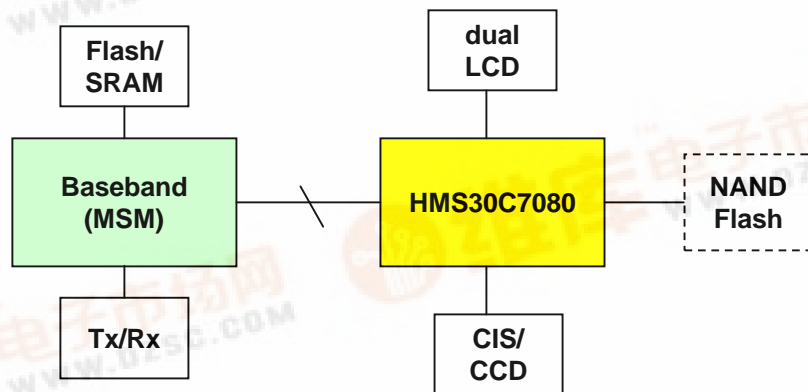
## Mobile Phone Camera Back-End Processor

### General Description

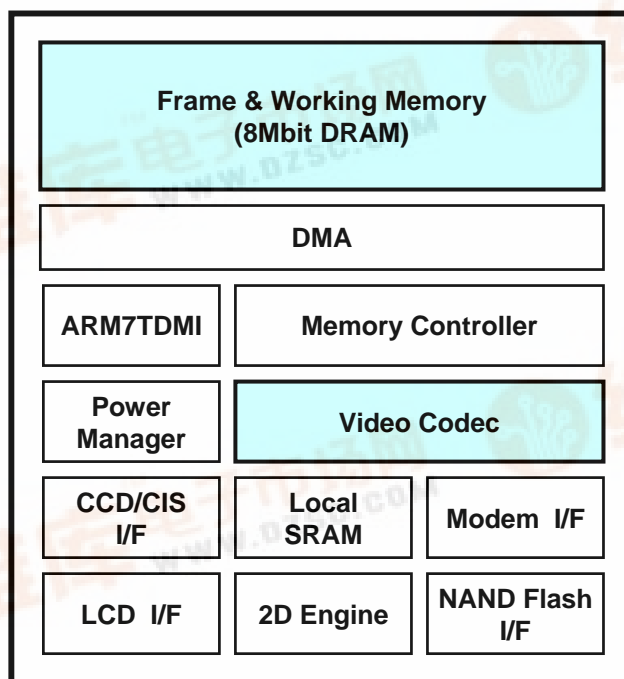
The HMS30C7080 is a integrated circuit for camera mobile phone application. The device provides an excellent solution for camera mobile phone. The device incorporates an ARM7TDMI CPU core, 8Mbit SDRAM, PLL, DMA and Video Logic for Camera and LCD control. HMS30C7080 offers a camera solution organized with Image sensor module and LCD panel.

The HMS30C7080 has MPEG4 codec, JPEG codec, 2ch LCD interface by RGB/80i modes, ITU601 camera interface, 2D graphic engine, NANA flash interface and serial audio interface. The device support programmable PLL clock and firmware programmable auto focus, zoom, etc.

### System Configuration with HMS30C7080



### Block Diagram & Feature



#### Video Codec

- JPEG Codec
- MJPEG Codec
- MPEG4 Codec

#### Interface

- CCD / CIS Input & LCD output
- Host I/F, NAND Flash I/F
- Voice Codec I/F, P-GPIO

#### Others

- 0.18um
- Clock : Programmable PLL
- Power : <50mA, <70uA
- 2D Graphic Engine
- 8Mb SDRAM Embedded
- 132pin ECSP

## MPEG4 Codec for Mobile Phone

### □ Feature

Video Codec	<ul style="list-style-type: none"> <li>• JPEG Codec : max. 5M Pixel</li> <li>• MPEG4 Codec <ul style="list-style-type: none"> <li>- Support ISO 14496-2 MPEG4 SOP @ L3</li> <li>- Real Time Video Codec : QVGA @ 30fps</li> <li>- Variable Picture Size : Programmable by 16pixel</li> <li>- Large Motion Search Range : Half-Pel Accuracy X = [-64, +64], Y= [-32, +32]</li> <li>- Bit Rate Control : VBR/CBR</li> <li>- Programmable I frame Insertion</li> <li>- Motion Detection &amp; Scene Change Detection</li> <li>- Color Format : 4:2:2 to 4:2:0 conversion</li> <li>- Alternate &amp; Zigzag scan support</li> <li>- Adaptive Decision</li> </ul> </li> </ul>
Video Procsssing & 2D Graphics	<ul style="list-style-type: none"> <li>• CCD / CIS Input <ul style="list-style-type: none"> <li>- CCIR601/656 Interface</li> <li>- 8bit YCbCr 4:2:2, 4:2:0 input</li> <li>- Scal-Down (1/2~1/16), Trimming Function</li> <li>- Pre Horizontal Low Pass Filter</li> <li>- 2-Wire Serial Interface</li> </ul> </li> <li>• 6/8/9/16/18 bit LCD Output <ul style="list-style-type: none"> <li>- 2LCD Interface : main/sub LCD, Bypass Mode</li> <li>- Generic RGB / I80 Interface</li> <li>- Arbitrary Size Zoom Function</li> <li>- upto 320x512, 30fps, MSM 16bit to LCD 18bit mapping</li> <li>- Post Filter for Image Enhancement</li> </ul> </li> <li>• 2D Graphic Engine <ul style="list-style-type: none"> <li>- 3-Plane OSD Functions with - Blending : freeze, background, text</li> <li>- Linear Zoom-in/out Function</li> <li>- Vertical/Horizontal Flip &amp; 90/180/270 Rotation</li> <li>- Supports 2D BitBlit Function</li> </ul> </li> </ul>
Others	<ul style="list-style-type: none"> <li>• ARM7TDMI for Control</li> <li>• MCU (Modem) Interface <ul style="list-style-type: none"> <li>- 16bit asynchronous interface : 6bit address &amp; 16bit data with 2KB FIFO</li> </ul> </li> <li>• Support Clock : 10MHz ~ 33MHz (Programmable PLL) <ul style="list-style-type: none"> <li>- 13.8MHz, 19.2MHz, 19.6MHz, 27MHz</li> <li>- Camera Clock Generation</li> </ul> </li> <li>• Serial / Audio Interface <ul style="list-style-type: none"> <li>- PCM Codec, AC97 and others : I<sup>2</sup>S Interface</li> <li>- MMC in SPI mode</li> </ul> </li> <li>• Design Rule : 0.18um Embedded DRAM Process <ul style="list-style-type: none"> <li>- 1.8V core &amp; 2.8V I/O tolerant</li> <li>- Run mode : max 50mW, Idle mode : max 100uA</li> <li>- Individual module enables for power saving</li> </ul> </li> <li>• NAND Flash Interface for Storage Memory : ECC mode</li> <li>• 16bit GPIO</li> <li>• 32bit Programmable 2 channel timers</li> <li>• MPEG4 File Format</li> <li>• Industrial Standard (- 40 ~ 85 )</li> <li>• 132Pin CSP (body size : 8x8mm<sup>2</sup>, ball pitch : 0.5mm)</li> </ul>