

Crystal Image through  
Imaging Innovation

**PIXELPLUS**



*Preliminary*  
***Brief Spec***

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***FHD HDR ISP for Automotive Camera***  
***With HD Analog Transmitter***

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**PI6008K**

**Rev 0.25**

**Last Update : 21. May. 2019**

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## 1. General Description

### 1.1. Product Overview

The PI6008K is a high performance and low power HDR ISP for automotive application. It supports up to 2.0M SDR or HDR CMOS Image Sensor with parallel or MIPI interface. It enhances HDR images with local tone map and provides excellent low light image with advanced noise reduction filter. It supports output interface with parallel or MIPI interface and HD analog video with embedded video DAC.

### 1.2. Features

- ◆ **CIS Input**
  - ✓ MIPI or Parallel Input
    - *Up to 1920x1080p@60Hz*
    - *MIPI CSI-2 RAW 10/12/14/16/20 Bits*
    - *MIPI CSI-2 1/2/4 Lane @ 600Mbps*
    - *Parallel 10/12 Bits with H/V Sync*
- ◆ **Video Output**
  - ✓ High Quality Free Down Scaling Engine
    - *1080p/960p to 960p/720p*
    - *1080p/960p/720p to SD (NTSC/PAL)*
  - ✓ MIPI or Parallel Output
    - *Selectable between scaler in and scaler out*
    - *Up to 1920x1080p@60Hz*
    - *MIPI CSI-2 RAW 10/12 Bits, YUV 16 Bits*
    - *MIPI CSI-2 1/2/4 Lane @ 450Mbps*
    - *Parallel 10/12/16 Bits with H/V/F Sync*
  - ✓ Analog HD Output
    - *Selectable between scaler in and scaler out*
    - *Up to 1920x1080p @30fps*
    - *Video DAC with 10 Bits*
    - *Bi-directional UTC*
- ◆ **Image Signal Processing**
  - ✓ HDR Tone-map
  - ✓ BLC, LSC, DPC

- ✓ 2D Noise Reduction
- ✓ De-mosaic
- ✓ Color / Gamma Correction
- ✓ De-color, Edge Enhancement
- ✓ Contrast & Brightness Control
- ✓ Hue & Saturation Control
- ✓ BW Mode
- ✓ Auto Flicker detection
- ✓ AE/AWB Static Engine
- ◆ **Graphic Overlay**
  - ✓ 1-BMP (RLE) Layer
    - 4 Area (none-overlap)
    - Parking Guide Line
  - ✓ 1 Font Layer
    - Font Width 16, 24 supported
  - ✓ Private Zone Mask
    - Programmable 8-zones
    - Minimum 8x8 pixels
- ◆ **External Interface**
  - ✓ UART 1 Ch
  - ✓ Timer 4 Ch
  - ✓ WDT 1 Ch
  - ✓ Single / Dual SPI
  - ✓ I2C Serial Interface
  - ✓ Interrupt Controller
  - ✓ GPIOs
  - ✓ DMA
- ◆ **Low Power Consumption**
  - ✓ TBD mW (Parallel In/Output), TBD mW (MIPI In/Output)
- ◆ **Package**
  - ✓ 68 QFN

**1.3. Ordering Information**

Table 1. Device Option

Product	Package Type	Target Application
PI6008K	68 QFN	Consumer

**1.4. Block Diagram**

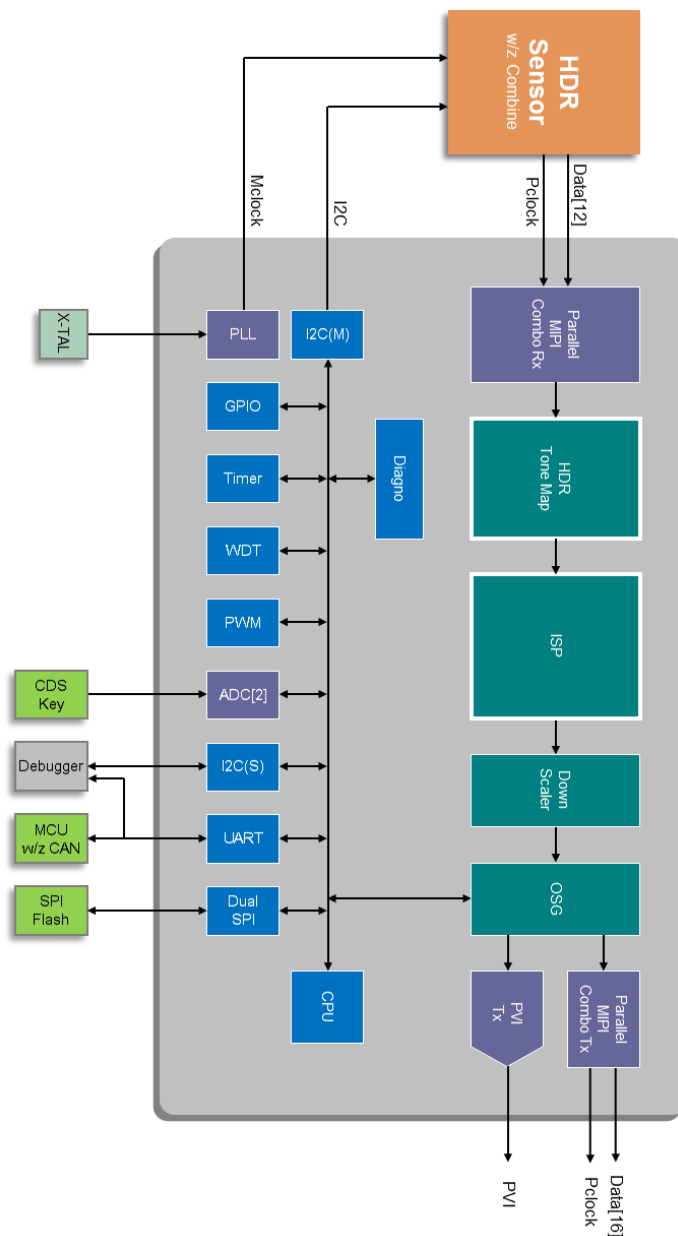


Fig 1. Functional Block Diagram