

カメラ開発のトレンドはFPGAレス&ファームウェアコーディングレス

カメラ開発の新ソリューション

思い通りのカメラシステム構築

- ・希望のカメラモジュールが使える
- ・必要な動作モード・画質を実現

タイムリーな市場投入

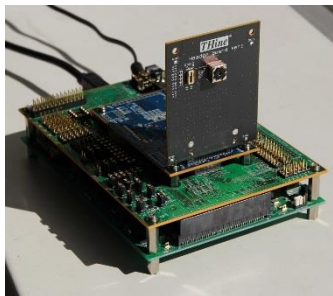
- ・GUIベースで直感的に開発
- ・カスタムファームウェア自動生成

カメラ開発の課題



ザインエレクトロニクスのご提案

CDK (Camera Development Kit)



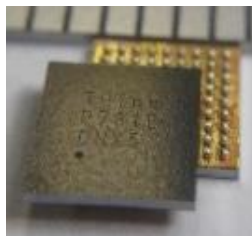
FWテンプレートを：

- ・GUIツールで『簡単カスタマイズ』
- ・評価ボードで『リアルタイムに確認』



ファームウェアコーディングからの解放

THP7312



小型

3.9mm WLCSP
8mm BGA

高画素

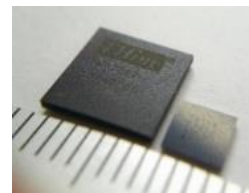
~16Mpixel

高速

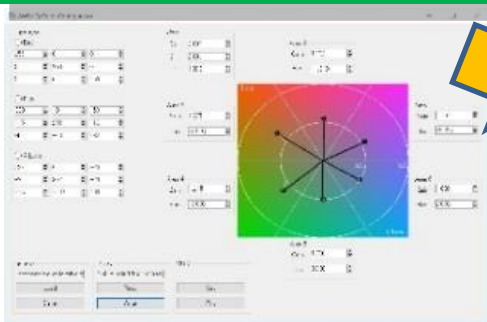
300Mpixel/sec
MIPI 1Gbps*4lane

省電力

高機能



GUIツール例

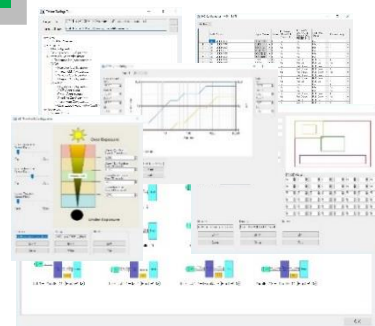


Color Configurator



Before

After



その他のツール例
(一部)



Product Overview

THP7312 is an image signal processor with well-tuned, high-speed pipelined and power saving hardware engine interfaced with variety of CMOS image sensors in digital camera modules in machine vision, consumer, medical, office automation, education and VR/AR/MR cameras.

The THP7312 controls AE, AWB and AF functions with its hard-wired circuits. You can utilize the THP7312's original noise reduction and variety of image correction functions as a means to get the top level quality of pictures and movies in your camera system.

Features

- **Sensor Correction**

- Black Level Correction
- Adaptive Correction of Defect/Dust Pixels
- Lens Shading Correction
- De-mosaic
- Support Alternate Row HDR
- Support RGB-IR

- **Adaptive Image Signal Processing**

- Noise Reduction
- Edge Enhancement
- Multi Axis Color Correction
- Gamma Correction

- **Auto Functions**

- Auto Exposure (Multi Point)
- Auto Focus (Multi Point, Continuous)
- Auto White Balance
- Auto Flicker Cancel

- Auto Strobe Light Dimmer
- Auto Scene Detection
- Auto Fog Detection

- **Others**

- Face Detection
- Movie Image Anti Shaking (EIS)
- De-fog
- Dual PLL
- JPEG
- Digital Zoom (Super Resolution)
- Resize x3 (MIPI Virtual channel)
- Horizontal Mirror
- Special Effects
Monochrome, Sepia, Reverse, etc.
- Peripheral Control
- VCM, Mechanical Shutter, Zoom Lenses
- LED Flash

Specification

Image Size / Frame Rate	16fps@16Mpixel, 20fps@13Mpixel, FHD 1080p-60fps / HD 720p-120fps
Pixel Rate	300Mpixel/sec
Package	WLCSP81 (3.937mm x 3.960mm x 0.615mm, 0.4mm pitch) BGA81 (8mm x 8mm x 1.2mm, 0.8mm pitch)
Supply Voltage	CORE 1.2V, I/O 1.8V or 2.8V selectable
Sensor Interface	MIPI(4lane)RAW12/10/8bit + MIPI(2lane)RAW12/10/8bit, 1Gbps/lane Parallel RAW12/10/8bit I2C Master (Up to 400KHz)
Host Interface	MIPI (4lane), YUV420/422, JPEG, or RAW8bit, 1Gbps/lane Parallel, YUV420/422, JPEG or RAW8bit I2C Slave (Up to 400KHz)、SPI Slave
External Interface	GPIO、SPI Master (Quad interface)

