OPN6001
IMAGE SIGNAL PROCESSOR FOR 3D TOF SENSOR

GENERAL DESCRIPTION

OPN6001 is a high performance, low power, low cost image signal processor dedicating for ToF sensor. It is embedded with a sophisticated ToF DSP to convert ToF raw data to distance and IR data. With a novel self-learning engine, it also automatically tunes illumination and sensors to get best image in different scenarios. A 200MHz ARM Cortex-M3 processor is also integrated to handle system controlling and various applications. It can support up to 2 QVGA ToF sensors simultaneously with MIPI CSI2 interface, merge different sources and transmit the data to host AP by DVP, GSI or MIPI CSI2 interface.

FEATURES

- Support up to 2 QVGA (320x240) TOF sensors
- Support up to 120 fps
- ToF data interface
  - Support up to 2 MIPI CSI2 Receiver @ 600Mbps (2 lane)
- Host data Interface
  - 8/12bit parallel interface with sync signal (DVP)
  - MIPI CSI2 TX interface, up to 3.2G bps max (4 lane)
  - 1/4 data line serial interface(GSI)
- 36-bit Readout Data
  - 14 bit Distance
  - 12 bit IR
  - 8 bit Ambient
  - 2 bit flag
- Real-time ISP for ToF Raw data processing and calibration
  - Region of Interest (ROI)
  - 3x3 Spatial Filter
  - Pixel calibration
  - Distance Non-linearity Correction
  - Temperature Compensation
  - FOV compensation
- Up to 200MHz ARM Cortex M3 MCU for user post processing
  - 128KB Embedded SRAM
  - CRC/ECC
  - JTAG debug interface
- SPI/I2C control interface
- Support boot from SPI flash / I2C EEPROM
- Smart Sensing Engine
  - Auto Exposure
  - HDR
- Sensor/Light Real time control thru I2C master
- 6~30MHz Crystal/Oscillator as clock source
- Clock out for sync operation
- Simple Power Supply
  - IO supply: 1.8V or 3.3V
  - Core supply: 1.1V
- Package BGA 121 pin (7 mm x 7 mm)

FOR MORE INFORMATION: WWW.OPNOUS.COM
SYSTEM DIAGRAM

SMART SENSING ENGINE -- AUTO EXPOSURE

~1000mm

~650mm

~500mm

~350mm

~280mm

* AE OFF

* AE ON

SMART SENSING ENGINE -- HDR

* HDR OFF

* HDR ON

CONTACT
Add: No.18, Lane 912, Bibo Road, Pudong New Area, Shanghai, 201203, P.R. China
Tel: +86 21 62351683
E-mail: contact@opnous.com