Camera Module Product Line-up
JULY.2021(Rev.01)

双峰エンタープライズ株式会社

Soho Enterprise Ltd.

OPNOUS Dragonfly Demo Connecting to Raspi4

Soho Enterprise
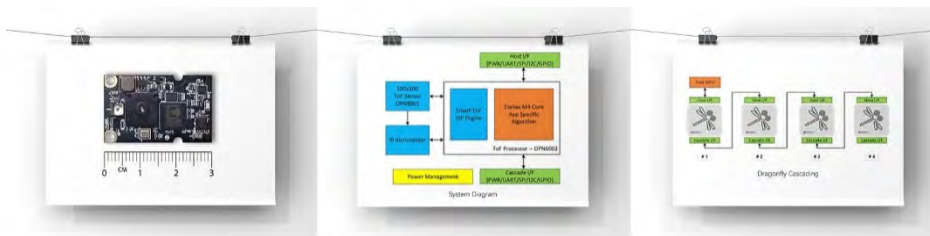
OPNOUS
SMART SENSING & AI TECHNOLOGY

Table 4 Specifications

Parameter	OPNS3030A	OPNS3031A	OPNS3033B
Sensor	OPN8001D, global shutter		
Output Resolution	Max 100 x 100, firmware configurable.		
Dimensions (L x W x H)	30.5 x 19 x 6.08 mm³		
Refreshing rate	Up to 30 FPS, firmware configurable.		
Measurement range	0.2m – 4.8m	0.2m – 2.5m	0.2m – 1.5m
FOV	40°(H) x 30°(V)	70°(H) x 60°(V)	70°(H) x 60°(V)
Emitter	850nm VCSEL	940nm VCSEL	940nm LED
Power consumption	Peak current < 500mA, Average current < 200mA.		
Interface	UART/SPI, firmware configurable.		

CONFIDENTIAL
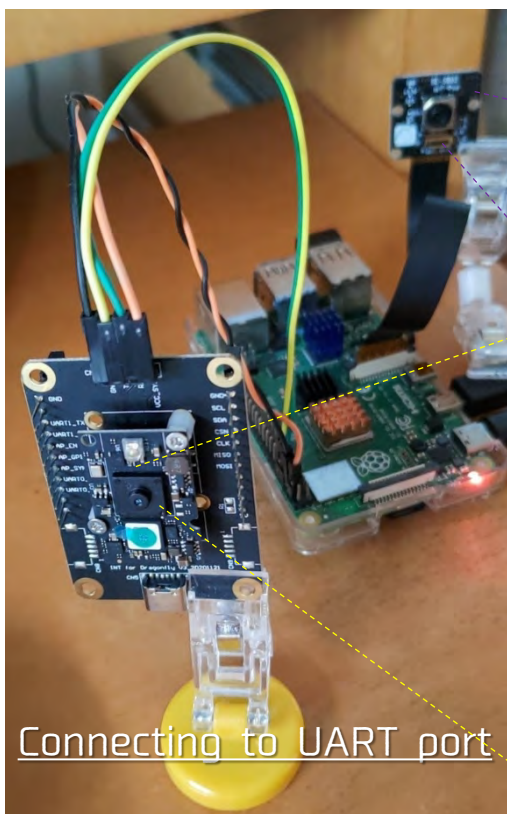
Connecting to UART port

Depth Image

RGB Image
SE258AF120
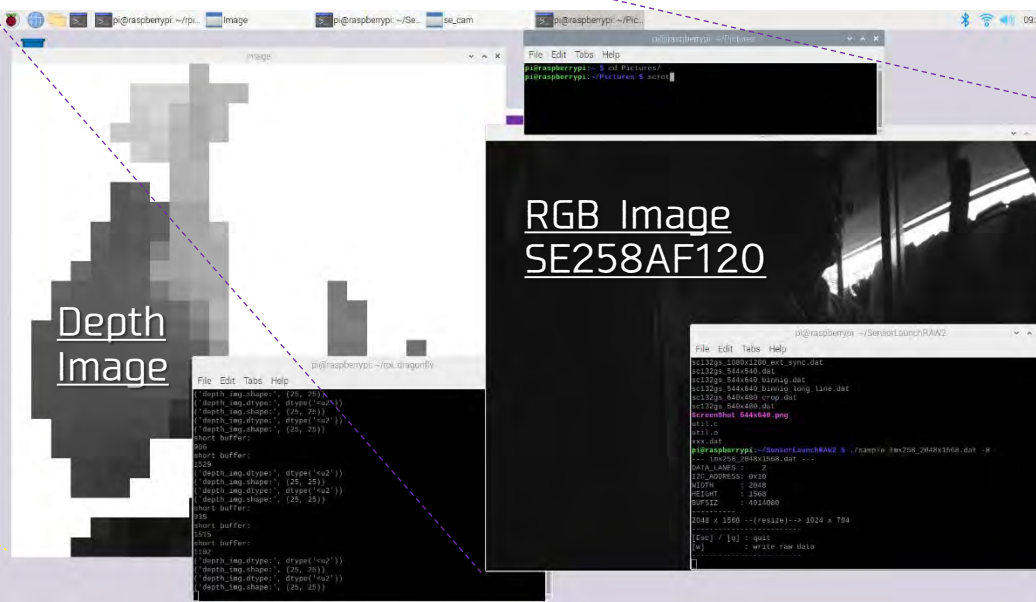
Tiny 4K camera on RaspberryPi

"SE258AF120" Lens Module of FoV(D)=120° with VCM Focus Driver

Almost the same size to IMX219 module

IMX258 is the 13Mpix 1.12um pixel Sensor from Sony. We have made the imx258.c camera driver, libcamera related files, and now we can see the image processed by ISP.
We will implement the focus driver command soon.

Many lens option including SE258PKG will be launched soon.

TOP VIEW   SIDE VIEW

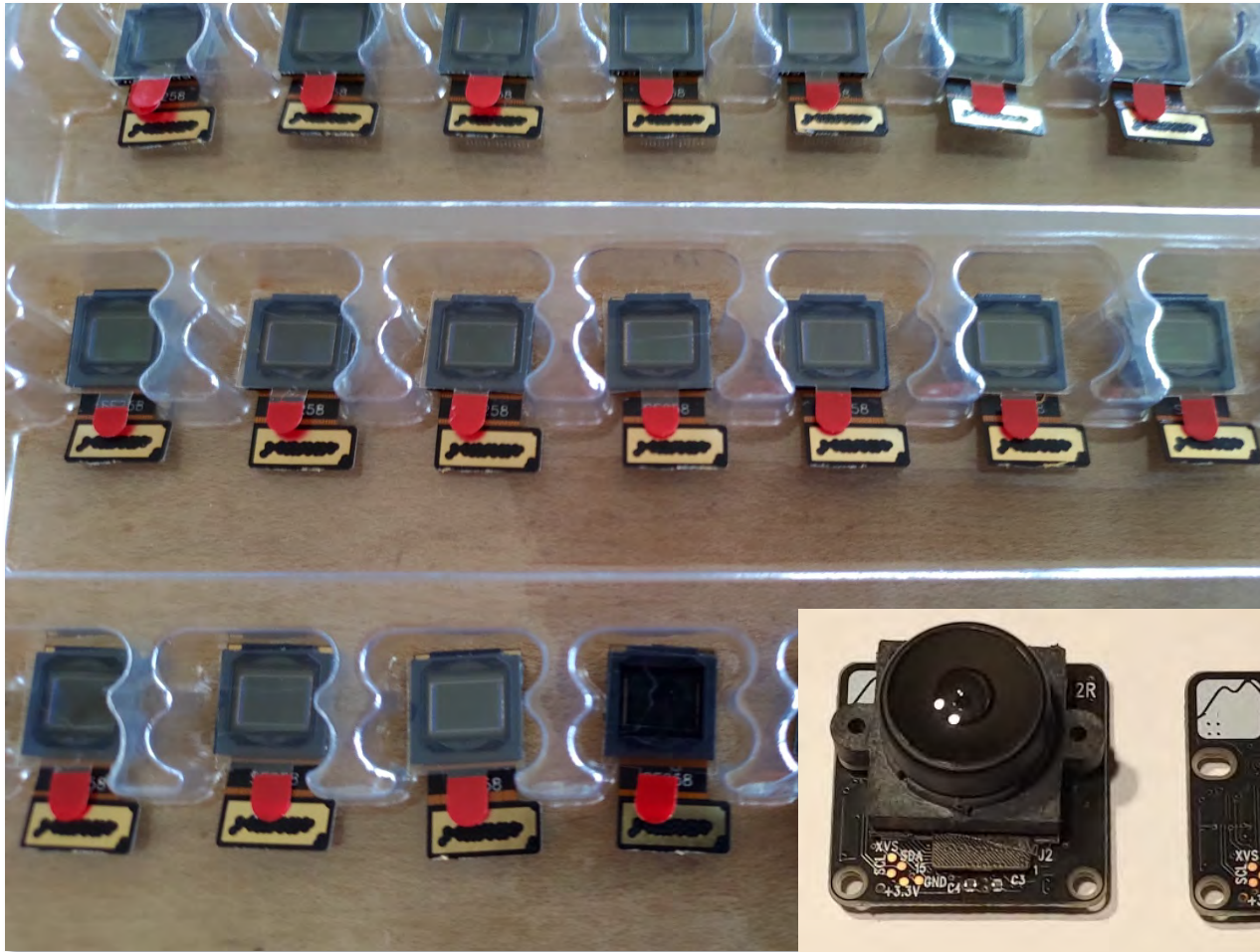SE258AF120-00-CB02

Raspberrypi4

1920x1080 Binned

120°

Full FoV Image
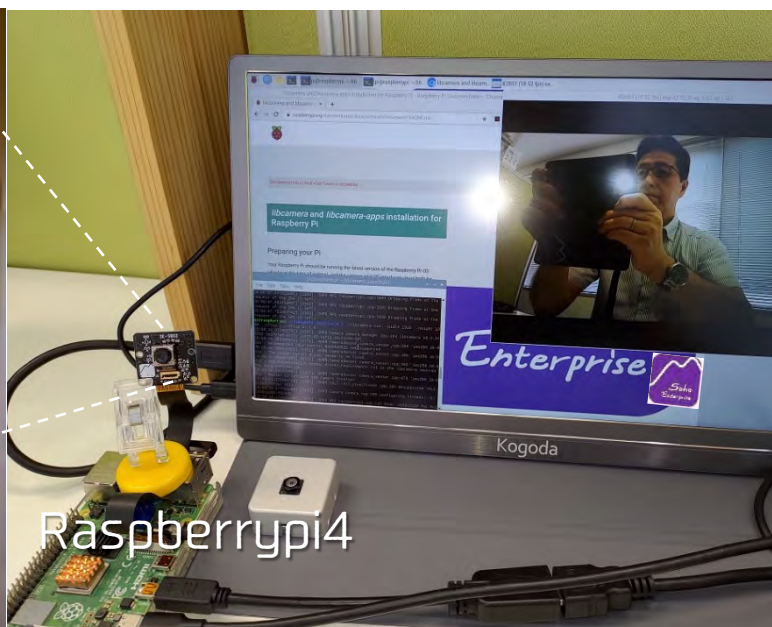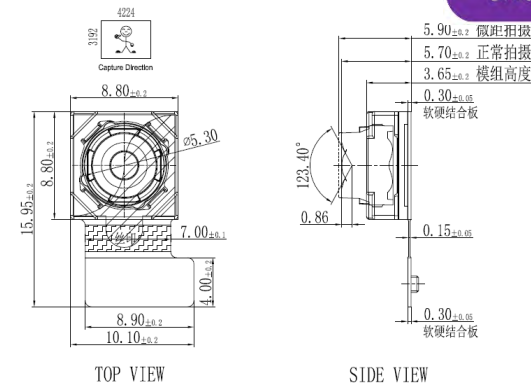
Tiny 4K camera on RaspberryPi

"SE258PKG-01" Lens-less module w/ cover glass

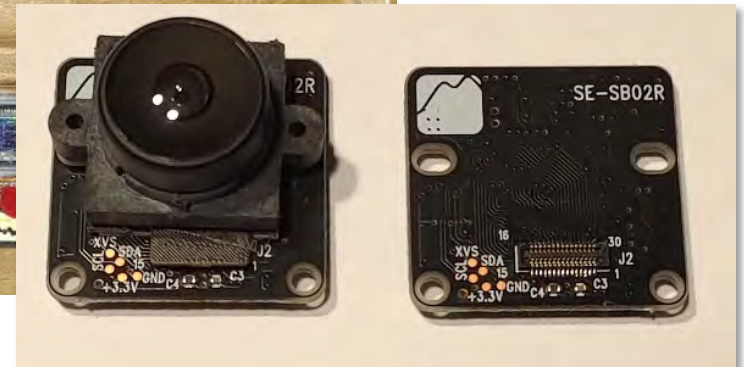
Many of M12(or other size) lens option can be attached by SE-SB02R

 1.3Mpix Global Shutter sensor module

 "SE132GSPKG-01" Lens-less module w/ cover glass

Many of M12(or other size) lens option can be attached by SE-SB02R

Full HD High Sensitivity Camera w/ Sony IMX327

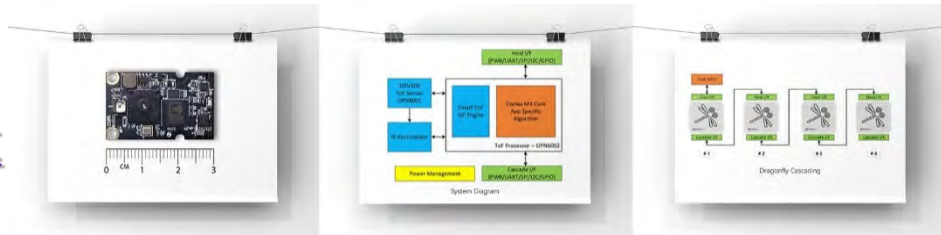# "SE327MBD" with M12 Lens.

Image developed by libcamera (Raspi4)

2021.5 New Release ③

OPNOUS Dragonfly Demo Kit
Stand alone depth solution

OPNOUS
SMART SENSING & AI TECHNOLOGY

IR wave length (nm)	850 or 940
ToF resolution	Max 100 x 100
FoV (degree, H x V)	70 x 70
Accuracy	2%, typical
Frame rate (FPS)	up to 60
Power supply (V)	5
Communication Interface	UART/I2C/SPI/GPIO
Size (mm^3)	30 x 19 x 3.98
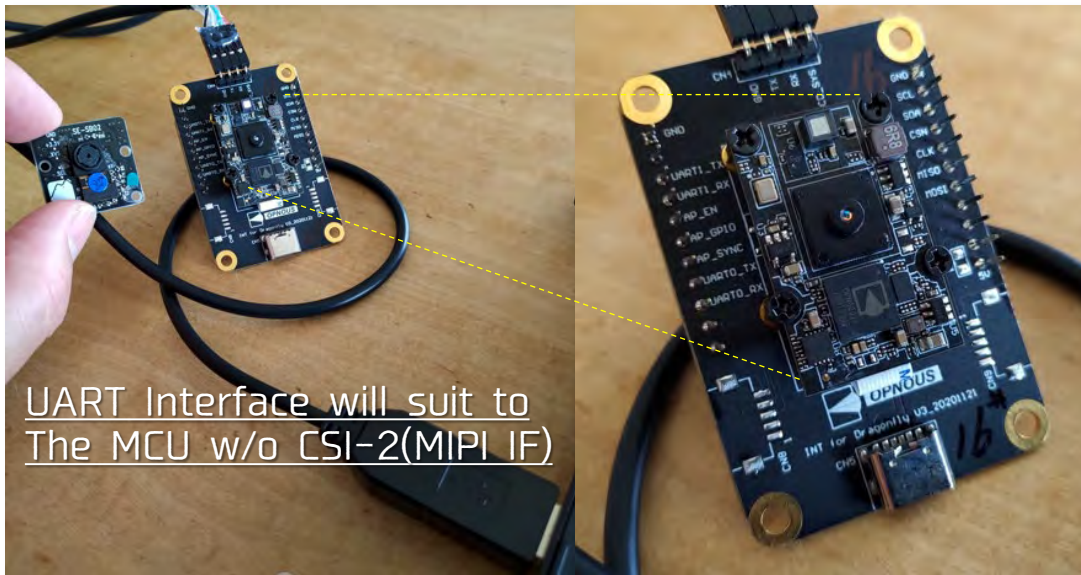
UART Interface will suit to
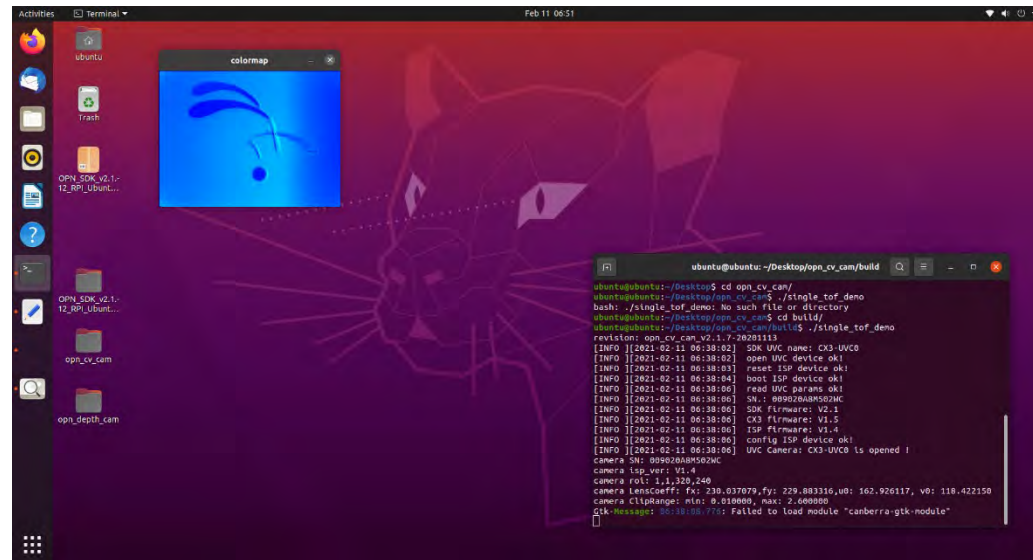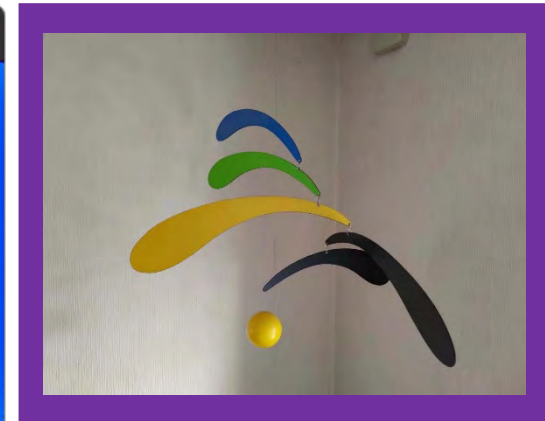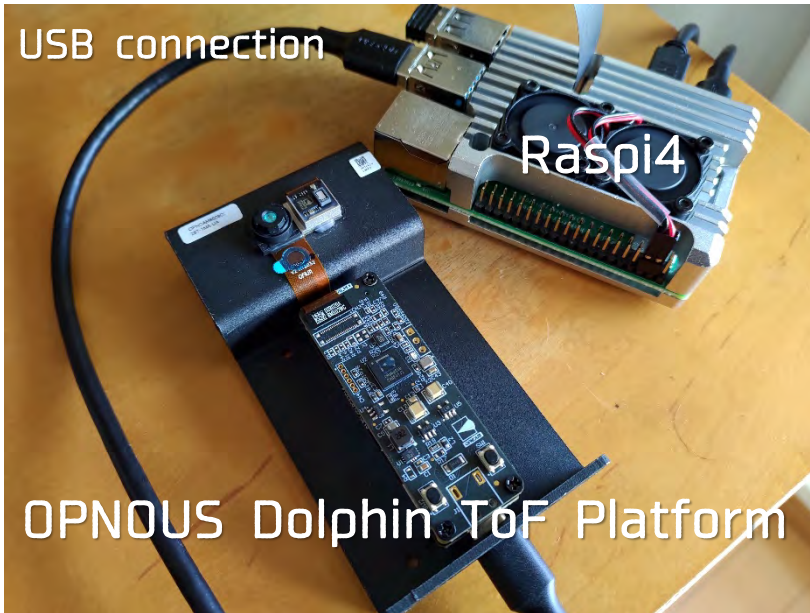The MCU w/o CSI-2(MIPI IF)
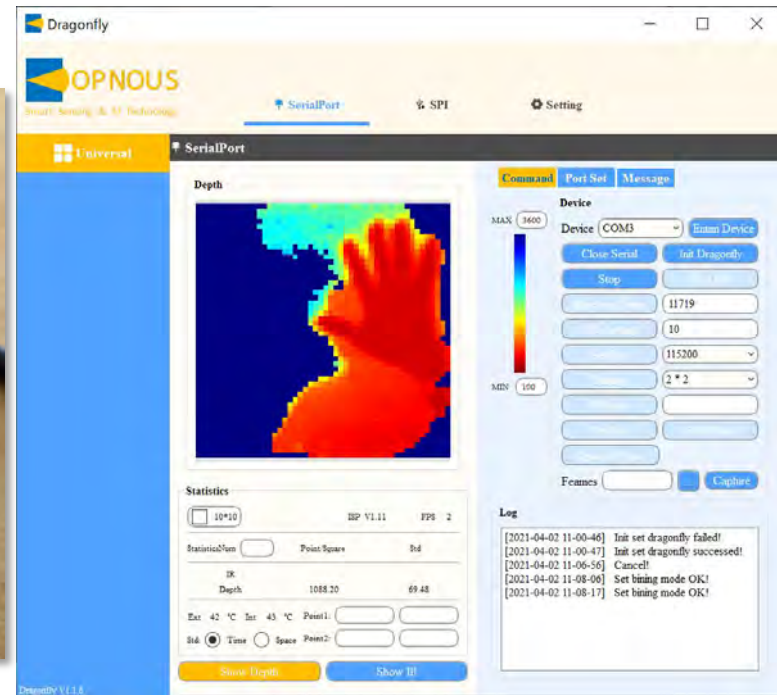
OPNOUS ToF Solution with high-speed ISP ASIC on Raspi4 Ubuntu20.04

Dolphin ToF Platform is working on RaspberryPi4 (OS: Ubuntu20.04)
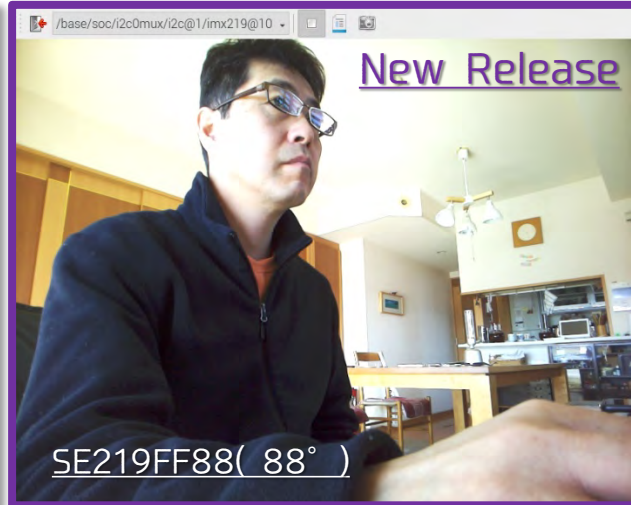On board ISP realizes "easy to launch the ToF solution" on the most popular SBC.
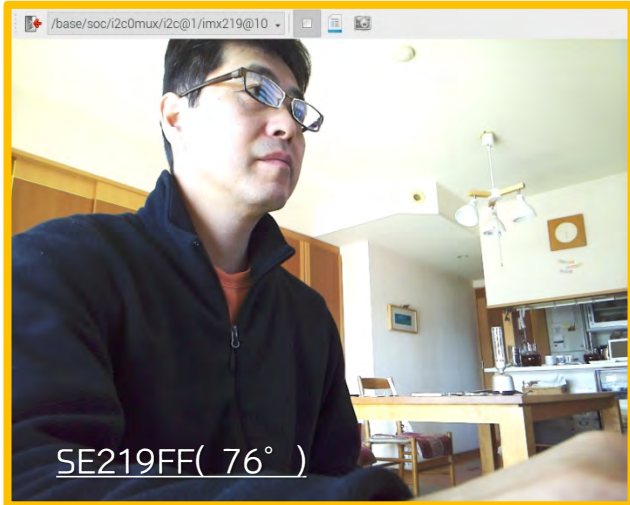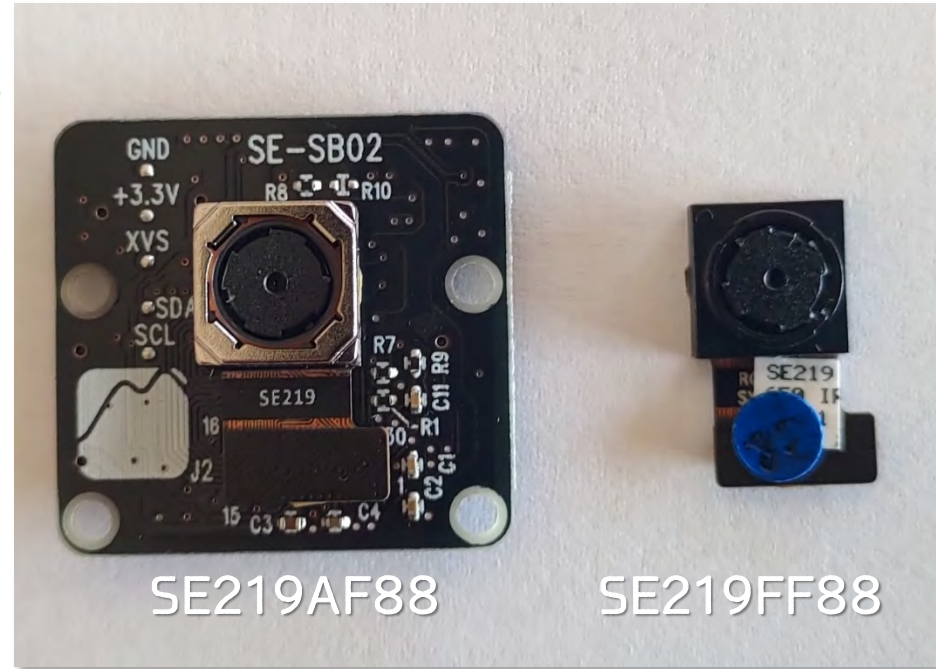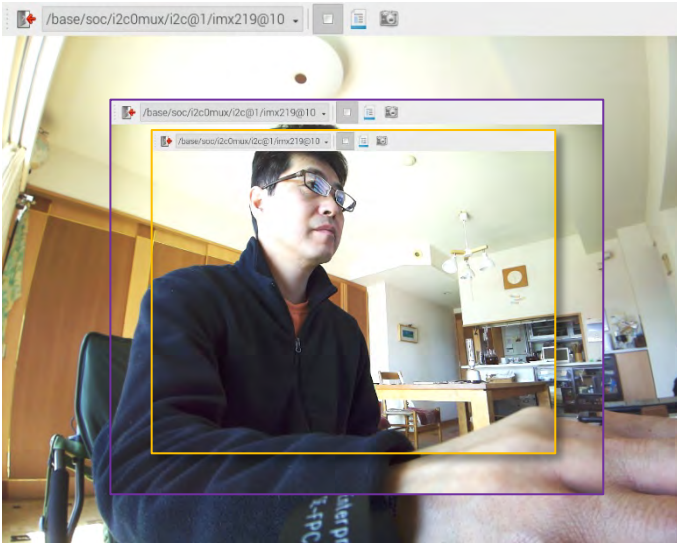
MIPI camera version is also available.

2021.2 New Release ①

SE219FF88 & SE219AF88
FoV(D)=88degree wide angle module

SE219AF88   SE219FF88

SE219FF(76°)

New Release

SE219FF88(88°)

qcam(libcamera) w/ customized .json file

SE219FFW(120°)

SE219PKG-00/01
and SE-SB02R M12 lens holder attachable camera board
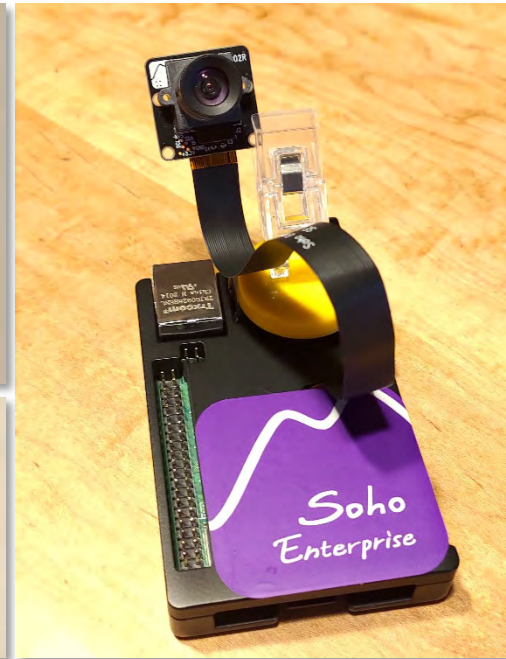
新製品予告：SE219PKG-00/01およびSE-SB02R

CMOSイメージセンサーの前面にIR CUT FILTERないし保護ガラス（NoIR)を取り付けた
センサーパッケージモジュールを企画しました。
2021年2月末からNoIRタイプのサンプル販売を予定しています。
同時に標準的なM12ホルダーを取り付け可能なセンサー基板：SE-SB02Rも発売開始します。
これにより、様々な画角のレンズの取り付けを可能にします。

SE219PKG-00 (Sample)

SE-SB02R

2.2mm x 3.2mm長穴
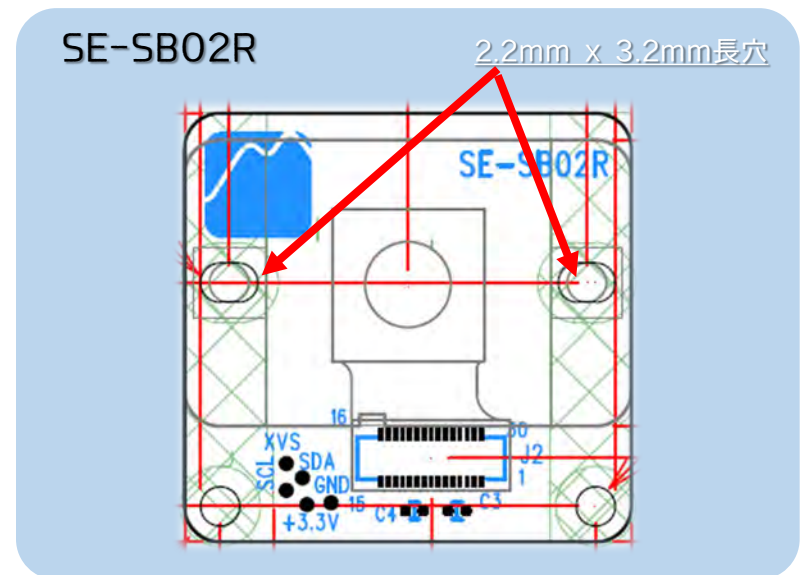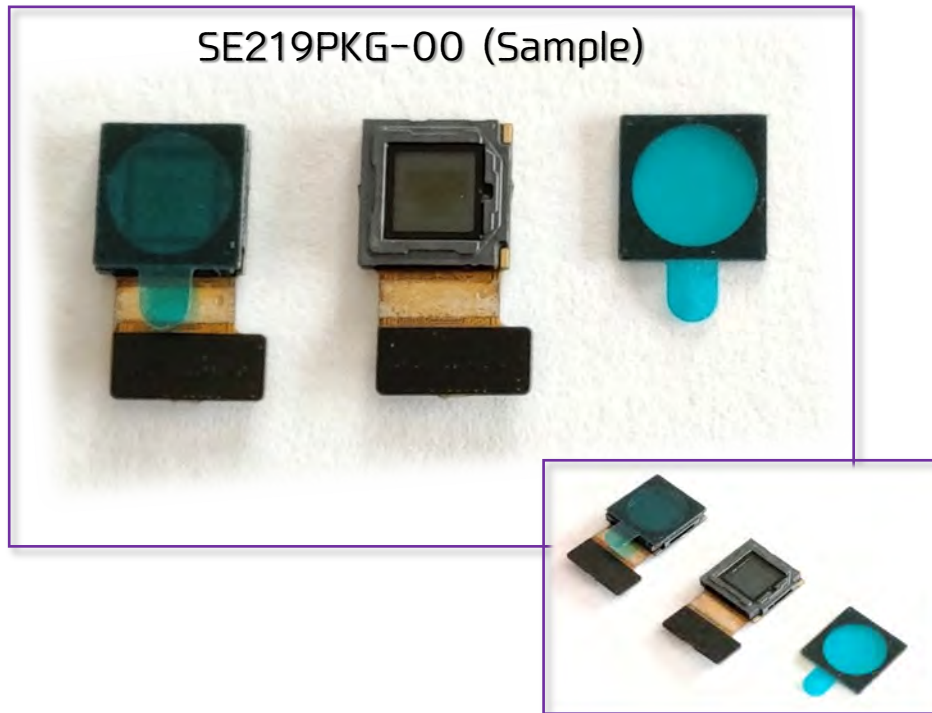
インタニヤ社の「VR 220 MOD KIT」を取り付け可能
一般的なM12ホルダーの取付穴間隔=20mmにも対応

https://products.entaniya.co.jp/ja/products/camera-module-mod-kit/raspberry-pi/

交換レンズ情報
https://products.entaniya.co.jp/ja/products/camera-module-mod-kit/raspberry-pi/rp-lens/

SBC向け小型レンズモジュール：SE219シリーズ　画角比較

新たに対角150°の広角モジュール「SE219FF150-00」が
ラインアップに加わりました。

SE219FF・・・FoV(D)=76°

SE219FFW・・・FoV(D)=120°

SE219FF150・・・FoV(D)=150°

SE219FE160・・・FoV=160°

SE219FE・・・FoV=187°

120°

76°

150°
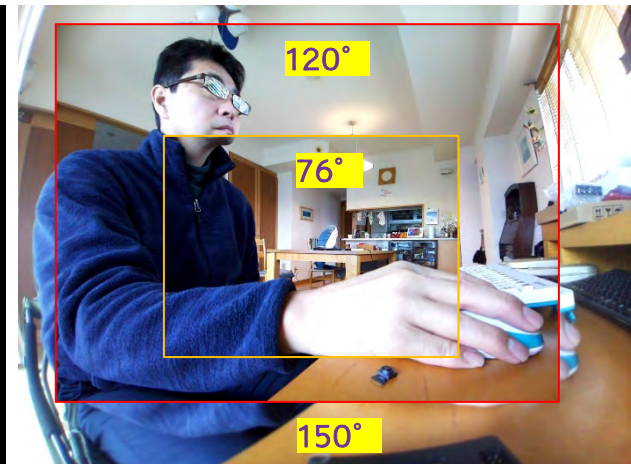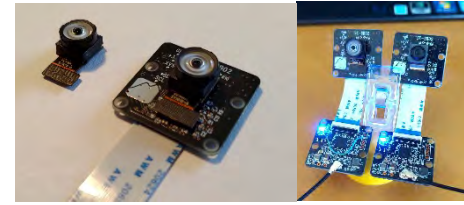
SBC向け小型レンズモジュール：SE219シリーズ
ステレオ３Ｄカメラ応用例
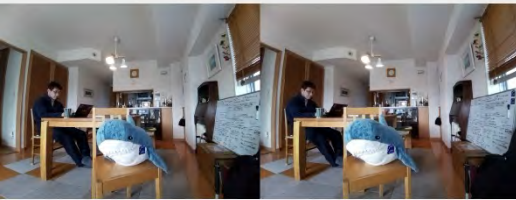
SE-CXB01-Tx/Rx FPD LINK III MIPI EXTENTION BOARD

SE-CXD01-Rx

SE-CXD01-Tx

U.FL Receptacle

U.FL Receptacle

FFC connector to Sensor Board

FFC connector to Raspi/Tinker Board

U.FL Cable

Dual Camera Connection

SE-CXB01-Rx, Dual Camera Input Port

SE-CXB01-Tx × 2

SE219FFW   SE219FF

awb   =On
color matrix =OFF
gamma   =On
sharpness   =OFF

RAW dataをRaspi4でSW現像
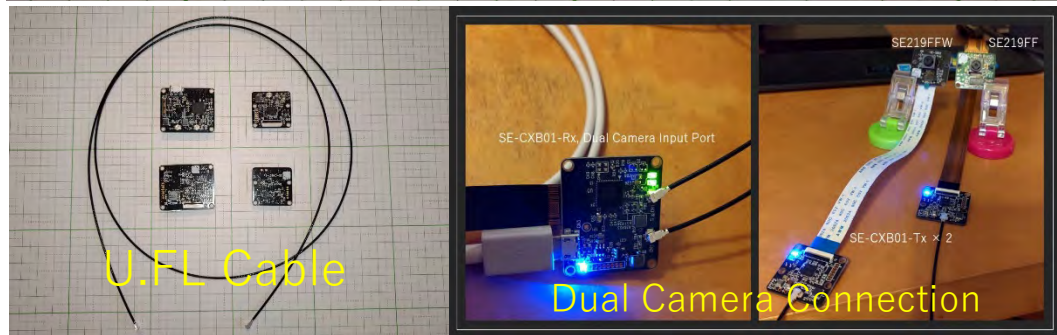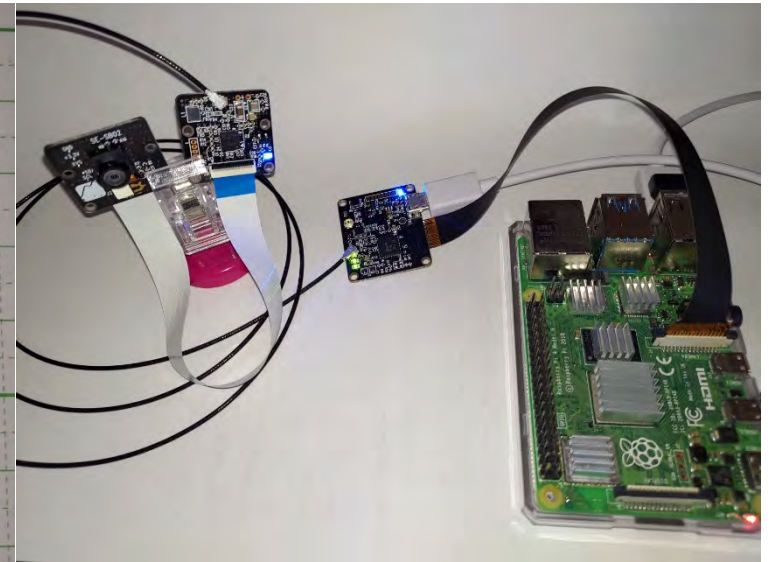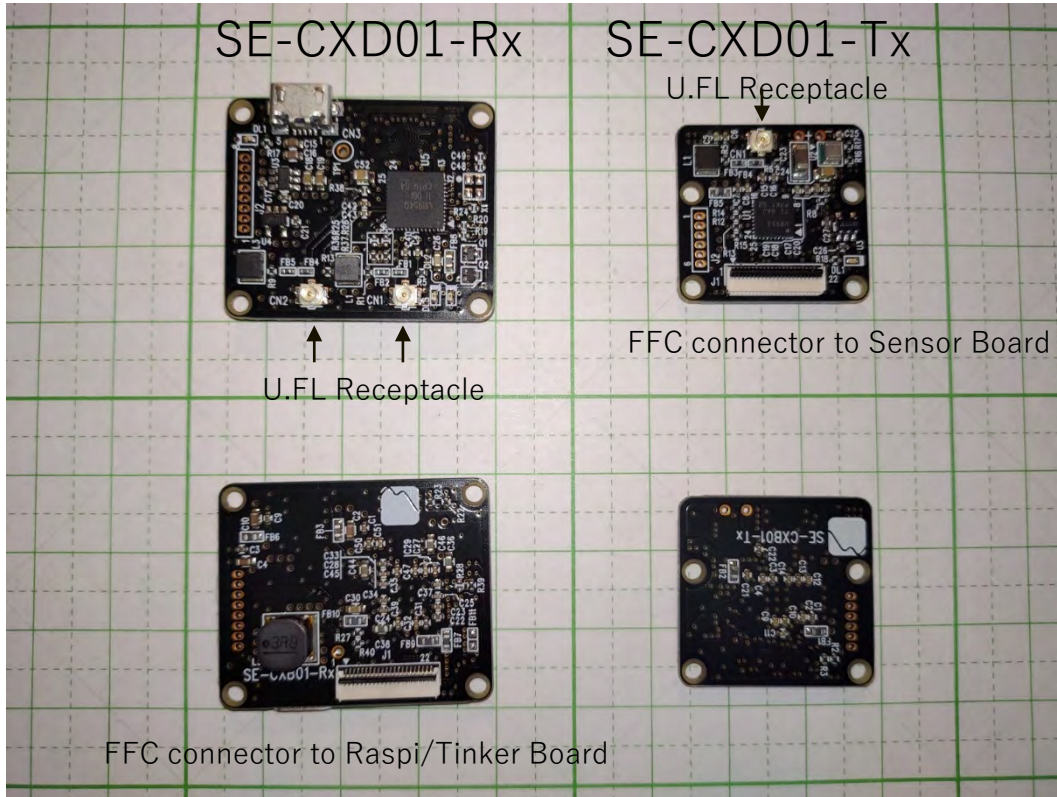
SE219FFW-00/01 and SE132GSW-01
FoV=120° 品のサンプル出荷開始

SE219FFW　　　　SE132GSFFW-01
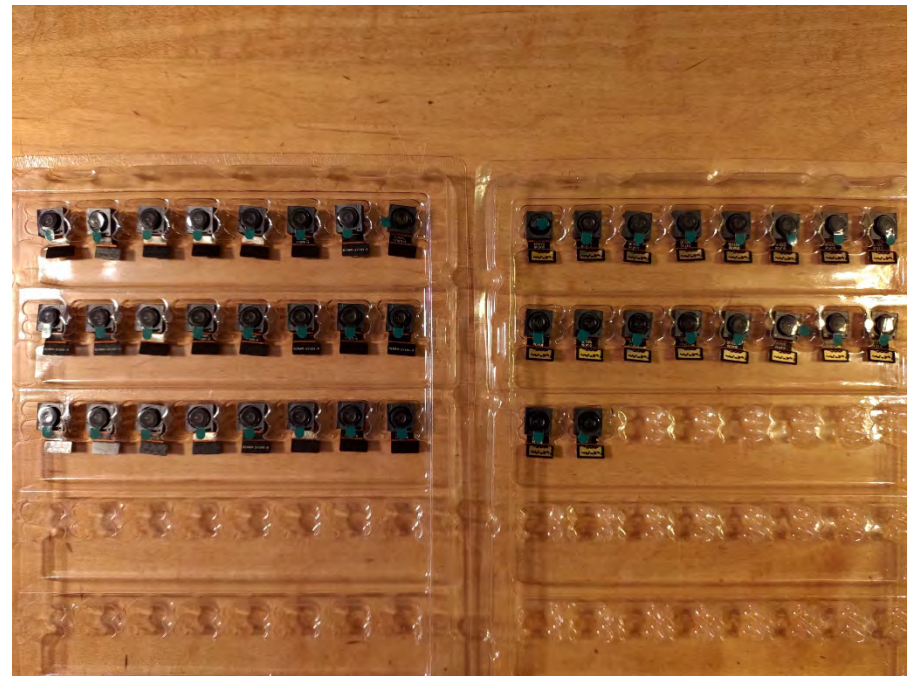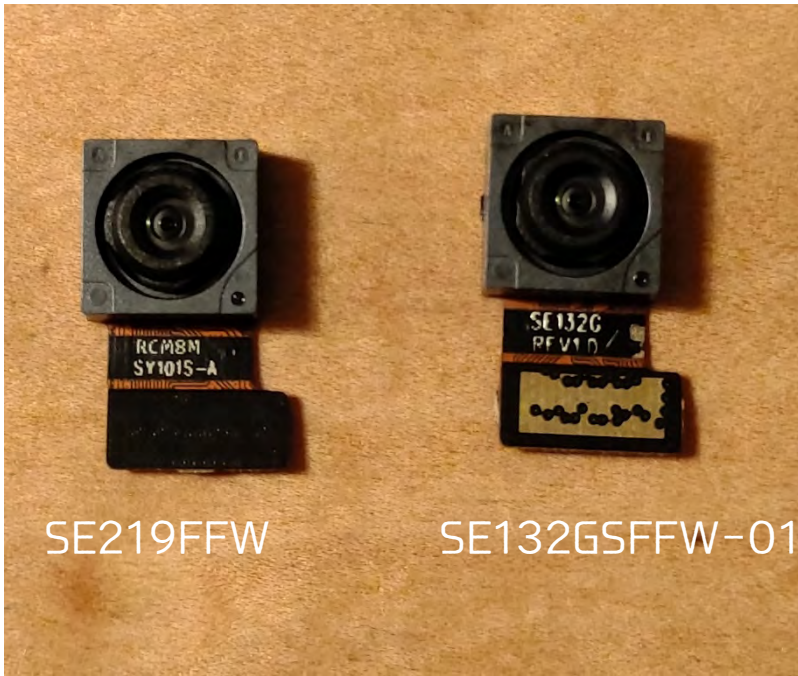
FoV(Field of View) comparison SE219FF & FE219FFW

SE219FFW　　　　SE219FF　　　　重ねて比較

Vision System向けイメージセンサーモジュール
SE219FE-00-CB (w/ IRCF), SE219FE-01-CB (w/o IRCF)

あのIMX219が(x, y)投影サイズそのままにFoV=187°の
魚眼カメラになりました。
しかも厚みは6㎜以下。狭い場所に仕込むことができます。
従来製品(対角76°)に対し圧倒的な情報量の画像取得が可能です。
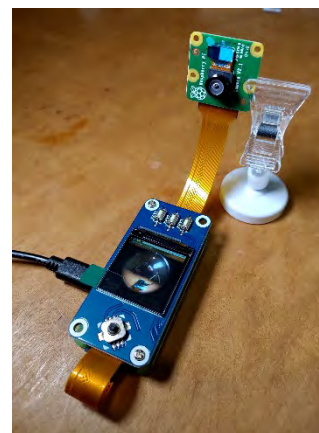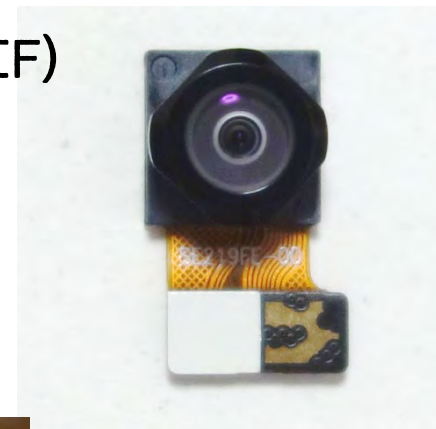
バンダイ様の人気商品
ガシャポンのザクヘッドに
ぴったり収まります。

chip1stop An Arrow Company

Physical Computing Lab by TechShare

にて販売中！

16
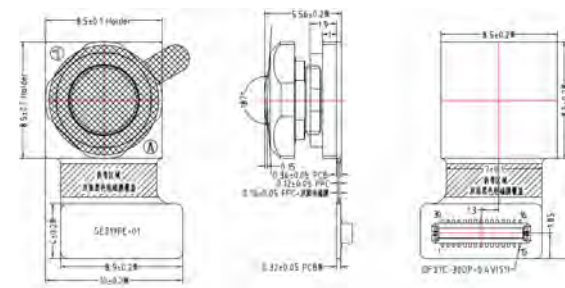
Soho Enterprise Ltd.

Fish Eye Camera Board w/ 8Mpix CIS for Single Board Computers
■SE219FE-00/01-CB

■**Ultra Wide View Angle: FoV =187˚ ±3˚**
Suitable for wide angle image recognition usage in AIoT area.

■ **Adopted the most mature image sensor for SBC.**
Sony IMX219PQH5-C

■ **Camera Driver with AE/AWB functions for "tinker board" is available.**
Processed in Embedded HW ISP, Full Size 20fps/FHD 30fps

■ **w/ IRCF(-00), w/o IRCF(-01) modules are available**

■ **Extensivity:**
FFC connector for MIPI CSI-2 4 lane connection for faster fps.

■ **Ready for use**
No need remodeling the module to get wide FoV

Board Dimension

■**Assumed application cases**
○ Look down monitoring with few blind spots
○ VR Stereo Vision
○ Wide vision for Robots, AI speaker, any others
○ Monitoring wildlife ecology, harm to agriculture
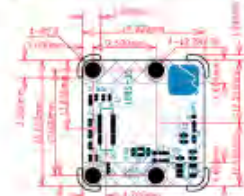○ Home-use video monitoring & recording
○ 360˚ monitoring on drones, robot cars, etc.
○ Sports camera for tennis, volleyball, badminton, etc.

Fish Eye Lens Module: SE219FE-00/01

Same (x, y) form factor & compatible pin assignment w/ the module on Raspberry Camera V2.1

Ver. 1.1.0

Key Specifications　SE219FE-00/01-CB

Image Sensor	Product Code: IMX219PQH5-C	Manufacturer	Sony Back-side illuminated CMOS image sensor
		Pixel size	1.12um x 1.12um
		Active Image Area	3280 x 2464 8Mpix
		Optical Size	Type 1/4 Diagonal 4.60mm
		Operation Temperature	-20~60℃ Function guarantee -20~60℃ Performance guarantee
		Storage Temperature	-30~80℃
Module	Lens	Configuration	Type 1/4, 6P
		FoV	187˚ ±3˚
		F No	2.10 ±5%
		Focus range	30cm ~ Infinity, Adjusted at 60cm when shipped
	Connector	30pin	Compatible w/ Raspi Camera v2.1 module
	Size	8.5mm*8.5mm*5.56mm	Lens Holder size. Same (x, y) size to Raspi module
	Weight	0.4g	
	Power Supply	Analog	2.8V ± 0.2V
		Digital	1.2V ± 0.12V
		IO	1.8V ± 0.18V
Board	Size	25mm* 24mm	Almost same size and compatible position for screw holes with RaspberryPi camera V2.1.
	Connector	1.0mm pitch 15pin	For Tinker board, RaspberryPi
		0.5mm pitch 22pin	RaspberryPiO, Raspi compute module, etc
		I/O Format	Support MIPI CSI-2 2lane and 4 lane
	Output	Maximum speed	Full size: 30fps, FHD: 60fps, 720P: 180fps (MIPI 4 lane mode)
	Power Supply	3.3V ± 0.3V	Generate Analog 2.8V by on-board LDO
			Generate Digital 1.2V by on-board DD-converter
			Generate Analog 1.8V by on-board LDO
			Generate AF 2.8V by on-board optional LDO

Why are the SE camera boards suitable for AIoT vision processing applications?

1. *Good image quality*
   The SE camera series uses a high-quality Sony image sensors of better SNR.
2. *Ready to use on tinker board and other SBCs*
   Camera drivers are ready. Easy to customize for PoC prototyping
3. *Variety of Options*
   Wide variety of options for resolution, global shutter, wide FoV lens, focus driver, etc.
4. *Low Latency, RAW image*
   Suitable for real-time autonomous control system
5. *Affordable for everyone*
   Pricing that individuals can purchase from a single item in line with the corporate philosophy of *helping to create open innovation.*

■**Further Information:**
https://soho-enterprise.com/
https://www.visionproc.org/index.php

Ver. 1.1.0

魚眼カメラ応用事例：detect_cat（アプリSW配布中。）

SBC上の実行画面

顔検出

ソース画像

検出部分の
キャプチャー画像

"ヒト" と "ネコ" の顔を検出し自動で画像取得、
パノラマ展開します。

魚眼カメラ応用事例：魚眼スポーツカム
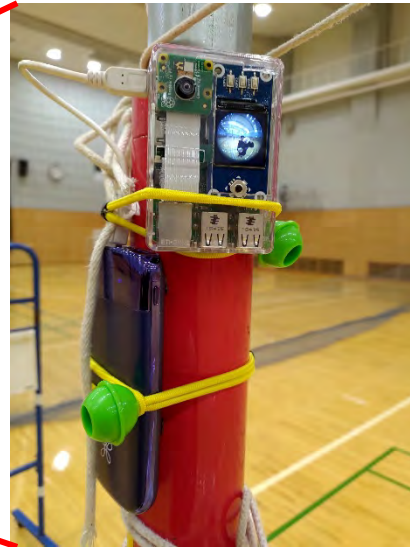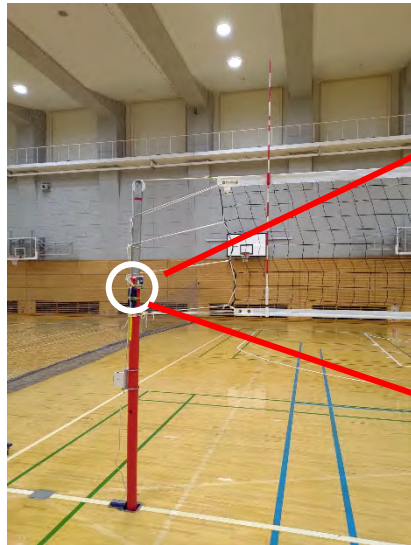
広角レンズモジュールのVision Processing適用事例

認識系アプリ
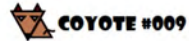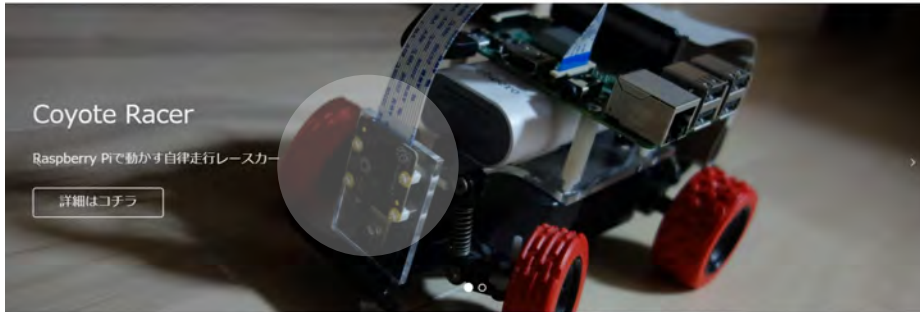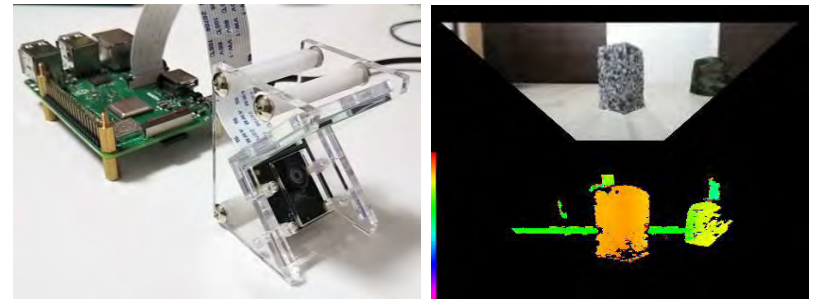
測距系アプリ

超広角応用ステレオ測距

マーク認識→MAP生成→自律走行

ラインレーザー＋単眼ステレオ測距
132°広角レーザーとの組み合わせ

CQ出版社 Interface
2020年3月号に特集記事掲載→

Vision System向けイメージセンサーモジュール
SE219AF-00-CB (w/ IRCF), SE219AF-01-CB (w/o IRCF)

想定適用例：AR/VRゴーグル用カメラ、スマートグラス、ウェアラブルカメラ

FoV=76°、待望のフォーカスドライバ内蔵のIMX219カメラモジュール
3㎝～無限遠(要調整）でフォーカス合わせが可能。
シャープなイメージのマクロ撮影において特に性能を発揮
Tinker Boardのカメラドライバーに AF機能実装検討中
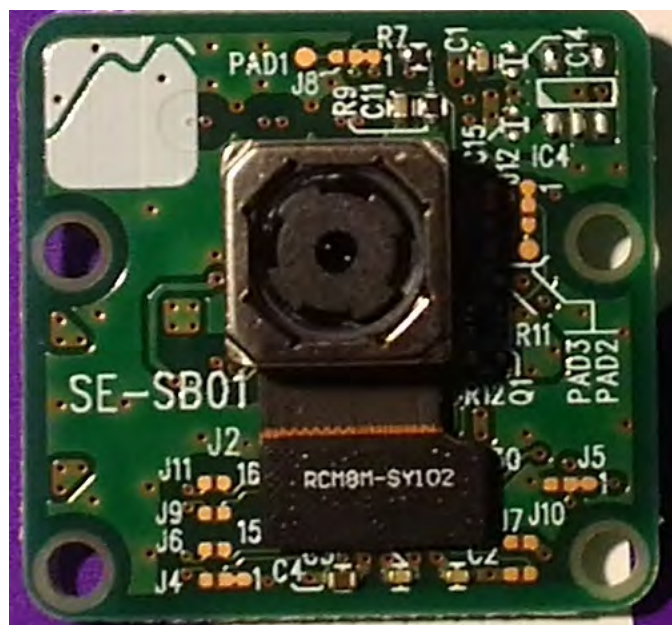
FoV=160°魚眼カメラ
SE219FE160-00-CB (w/ IRCF), SE219FE160-01-CB (w/o IRCF)

想定適用例：広角3D動画、ドアホン、見守り監視、自律移動ロボットのセンシングなど。

Vision System向けイメージセンサーモジュール第一弾
SE397GS-00/01-CB, SE397GSW-00-CB
High speed global shutter camera

画素ピッチ：3.45um (IMX219は1.12um)で高感度
すなわち高速シャッターがきれる。
動被写体を、ボケ、歪みを少なく撮影できる！
FoV=90°および180°品、
90°品はIRCF 有/無　選択可能

SE397GS-01-CB

SE397GSW-00-CB

FoV 90°　　**NoIR**

Diagonal 2.799 mm (Type 1/6.4) 0.32 Mega-Pixel (VGA) CMOS Image Sensor with Square Pixel for B/W Cameras

IMX397CLN-C

Pregius

Description

IMX397CLN-C is a diagonal 2.799 mm (Type1/6.4) 0.32 Mega-pixel CMOS active pixel type image sensor with a square pixel array. By introducing Global Shutter technology with low PLS (Parasitic Light Sensitivity), high sensitivity and low noise, motion blur is suppressed. It equips an electronic shutter with variable integration time. It operates with three power supply voltages: analog 2.8 V, digital 1.2 V and 1.8 V for input / output interface and achieves low power consumption. (Application: FA Cameras, Sensing)

Features

- ◆ CSI-2 serial data output (DPHY ver1.1 compliant)
- ◆ 2-wire serial communication circuit
- ◆ 10-bit A/D converter
- ◆ CDS / PGA (digital 24dB, analog 18dB)
- ◆ Automatic optical black clamp circuit
- ◆ Variable-speed electronic shutter (1H units)
- ◆ Independent flipping and mirroring
- ◆ Pixel binning readout and H / V sub-sampling function
- ◆ Dual sensor synchronization operation
- ◆ Trigger (Internal & External)

"強風"で回した扇風機

IMX397 Camera Lens Module
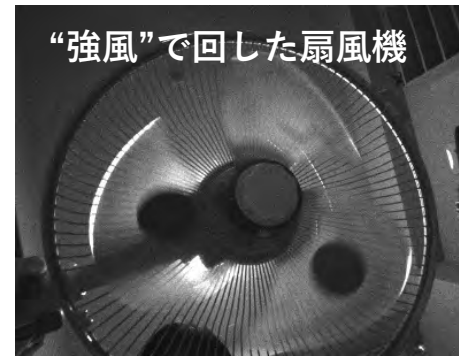
Rolling Shutter

Motion Blur

Global Shutter

https://www.teledynedalsa.com/en/learn/knowledge-center/global-shutter-imaging/

Soho Enterprise Ltd.

Global Shutter Camera Board w/ VGA CIS for Single Board Computers

■SE397GS-00/01-CB

■ **Adopted Sony Global Shutter Image Sensor**
Sony IMX397CLN-C high sensitivity GS CIS

■**Wide View Angle: FoV(D) −90°　±5°**
Suitable for wide angle image recognition usage in AIoT area

■**High Speed Operation**
Up to 240fps

■ **Camera Driver for "tinker board" is available.**
Tinker board & RaspberryPi in RAW capture mode

■ **Extensivity:**
Synchronization by XVS (GPIO)

■ **w/ IRCF(-00), w/o IRCF(-01) modules are available**

■**Ultra-Wide-Angle Option: FoV(D)−180°　(Tentative)**
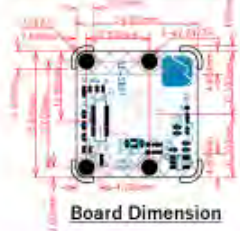
Fan in Motion

Ultra Wide Lens Option

Board Dimension

■**Assumed application cases**
○Machine vision for the object in fast motion
○Vision analysis in sports training
○Biometrics
○Measurement device to adjust the mechanical timing
○Stereo depth measurement in motion
○Motion capture for gesture control in VR game
○Motion capture for computer graphic animation

Global Shutter Camera Module
SE397GS (Tentative Spec.)
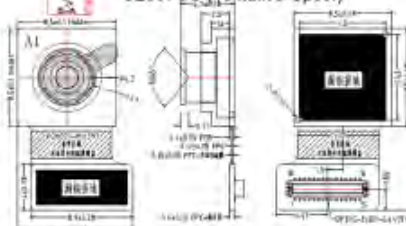
Same (x, y) form factor &
compatible pin assignment
w/ Raspberry Camera V2.1

NO	PIN NAME	NO	PIN NAME
1	INT	16	DGND
2	NC	17	NC
3	VIF 1.6V	18	NC
4	VDIG 1.2V	19	DBND
5	XCLR	20	NC
6	DGND	21	NC
7	INCK	22	DGND
8	DGND	23	DMCN
9	AGND	24	DMCP
10	VANA 2.8V	25	DGND
11	XVS	26	DCKN
12	DGND	27	DCKP
13	SLASEL	28	DGND
14	PSTROBE	29	SCL
15	DGND	30	SDA

Ver. 1.2.0

Key Specifications　SE397GS-CB

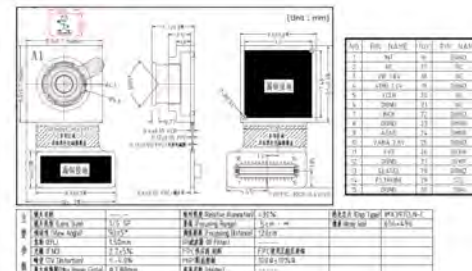|			
Image sensor	Product Code: IMX397CLN-C	Manufacturer	Sony Back-side illuminated CMOS image sensor
		Pixel size	3.45um x 3.45um
		Active Image Area	640 x 480 VGA
		Optical Size	Type 1/8.4 Diagonal 2.80mm
		Operation Temperature	-30–75℃ Function guarantee -10–60℃ Performance guarantee
		Storage Temperature	-40–80℃
Module	Lens	Lens configuration	GS: Type 1/5 5P, GSW: Type 1/4 6P
		FoV	GS: 90°　±5°　GSW: 187°　±3°　(diagonal)
		F No	GS: 2.2±5% GSW: 2.1±5%
		Focus range	5cm – Infinity. Adjusted at 120cm when shipped (GS) TBD for GSW
	Connector	30pin	Compatible w/ Raspi Camera v2.1 module
	Size	8.5mm*8.5mm *4.7mm	Lens Holder size Same (x, y) form factor to Raspi module
	Weight	0.4g	
	Power Supply	Analog	2.8V ± 0.2V
		Digital	1.2V ± 0.12V
		IO	1.8V ± 0.18V
Board	Size	25mm* 24mm	Almost same size and compatible position for screw holes with RaspberryPi camera V2.1.
	Connector	1.0mm pitch 15pin	For Tinker board, RaspberryPi
		0.5mm pitch 22pin	RaspberryPi0, Raspi compute module, etc.
	Output	I/O Format	Support MIPI CSI-2 1lane
		Maximum speed	Full size 240fps
	Power Supply	3.3V = 0.3V	Generate Analog 2.8V by on-board LDO
			Generate Digital 1.2V by on-board DD-converter
			Generate Analog 1.8V by on-board LDO
			Generate AF 2.8V by on-board optional LDO

Why are the SE camera boards suitable for AIoT vision processing applications?

1. *Good image quality*
   The SE camera series uses a high-quality Sony image sensor of better SNR.
2. *Ready to use on tinker board and other SBCs*
   Camera drivers are ready. Easy to customize for PoC prototyping.
3. *Variety of Options*
   Wide variety of options for resolution, global shutter, wide FoV lens, focus driver, etc.
4. *Low Latency, RAW image*
   Suitable for real-time autonomous control system
5. *Affordable for everyone*
   Pricing that individuals can purchase from a single item in line with the corporate philosophy of helping to create open innovation.

■**Further Information:**
https://soho-enterprise.com/
https://www.visionproc.org/index.php

Ver. 1.2.0

Vision System向けイメージセンサーモジュール

SE132GSFF-00/01-CB02
SE132GSFE160-00/01-CB02

中国SMARTSENS TECHNOLOGY社の最新Global Shutter Image Sensorをモジュール化しました。

最高品質の台湾TSMC社で製造される裏面照射型イメージセンサーです。
画素サイズ2.7um, 1,080x1,280=1.3Mpixel
SE219シリーズと同じ光学サイズ1/4"型で豊富なレンズバリエーションが用意できます。

・120fpsの高速撮像
・赤外領域の感度が向上
・RaspberryPiとの接続を確認済み
・FoV=120°、150度°187°等計画中
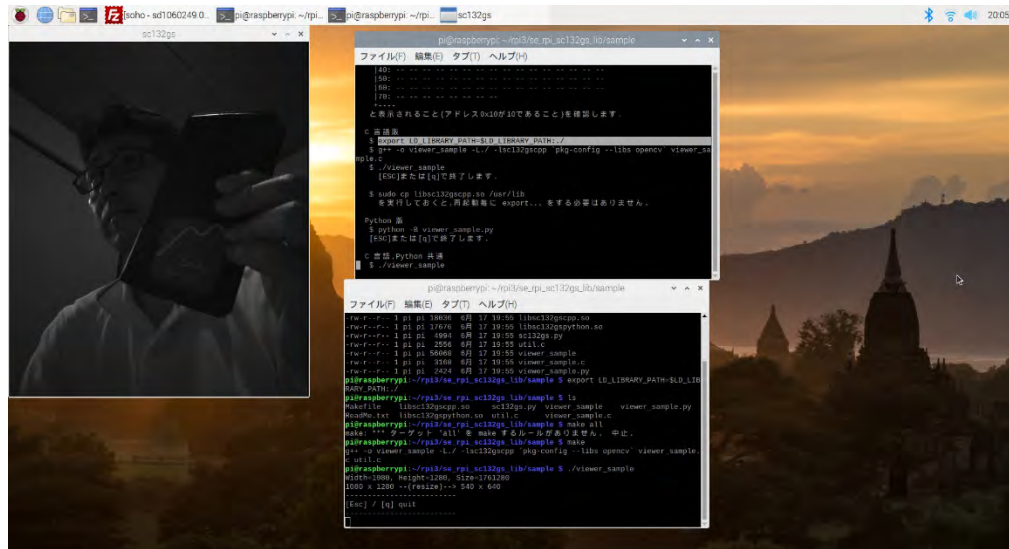

SE132GSFE160-0*-CB02
SE132GSFF-0*-CB02

Soho Enterprise Ltd.

Fish-Eye lens module w/ 1.3Mpix Global Shutter CIS for SBCs
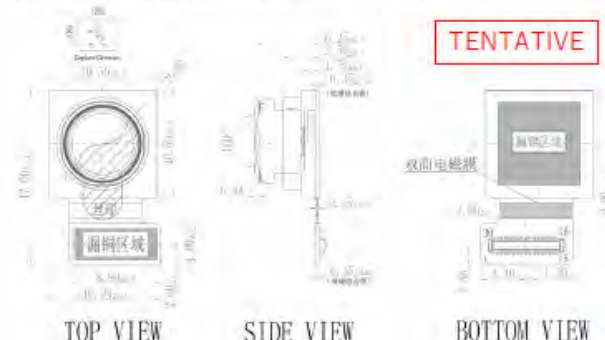### ■SE132GSFE160-00/01

■**Ultra Wide View Angle: FoV =160° ±(TBD)°**
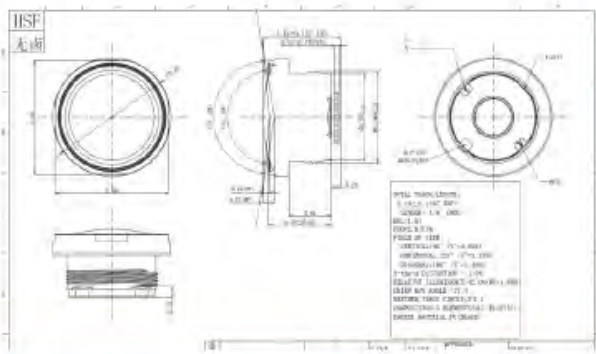Suitable for wide angle image recognition usage in AIoT area.

■ **Adopted the best in class global shutter CMOS image sensor of BSI.**
Smartsens SC132GS

■ **w/ IRCF(-00), w/o IRCF(-01) modules are available**
Customized Band Path Filters are also available

■ **Extensivity:**
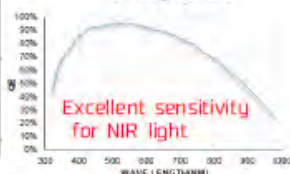MIPI CSI-2 4 lane connection for faster fps.

TENTATIVE

No.	PIN NAME	No.	PIN NAME
1	LED-STROBE	16	DGND
2	TRIGS	17	MIPI-D2N
3	DVDD1.8V	18	MIPI-D2P
4	DVDD1.2V	19	DGND
5	SENSOR-PDWN	20	MIPI-D1N
6	DGND	21	MIPI-D1P
7	MCLK	22	DGND
8	DGND	23	MIPI-D0N
9	AGND	24	MIPI-D0P
10	AVDD2.5V	25	DGND
11	TRIGL/FSYNC	26	MIPI-CLKN
12	DGND	27	MIPI-CLKP
13	MIPI-D3P	28	DGND
14	MIPI-D3N	29	SCL(1.8V)
15	DGND	30	SDA(1.8V)

TOP VIEW   SIDE VIEW   BOTTOM VIEW

Φ3.1mm
SC132GS
1/4" BSI
1080x1280

Imaging area
& Image circle

Excellent sensitivity
for NIR light

■**Assumed application cases**
○Wide vision for Robots of autonomous driving
○3D sensing with NIR structured light

Key Specifications   SE132GSFE160-00/01

Image Sensor	Product Code: SC132GS	Manufacturer	Smartsens Back-side illuminated, Global Shutter
		Pixel size	2.7um x 2.7um
		Active Image Area	1080 x 1280 1.3Mpix
		Optical Size	Type 1/4 Diagonal 4.53mm
		Operation Temperature	-40~85°C Function guarantee -20~60°C Performance guarantee
		Maximum Frame Rate	120fps
Module	Lens	Configuration	Type 1/6, 5P
		FoV	160° ±(TBD)°
		F No.	2.0±5%
		Focus range	30cm ~ Infinity, Adjusted at 60cm when shipped.(TBD)
	Connector	30pin	Compatible w/ Raspi Camera v2.1 module
	Size	10.5*10.5*6.3mm(TBD)	Lens Holder size. 8.5 * 8.5 * 6.3mm by COB
	Weight	0.4g(Tentative)	
	Power Supply	Analog	2.5V±0.1V
		Digital	1.2V±0.06V
		IO	1.8V±0.1V
Board (option)	Size	25mm* 24mm	Almost same size and compatible position for screw holes with RaspberryPi camera V2.1.
	Connector	1.0mm pitch 15pin	For Tinker board, RaspberryPi
		0.5mm pitch 22pin	RaspberryPi0, Raspi compute module, etc.
	Output	I/O Format	Support MIPI CSI-2 2lane and 4 lane
		Maximum speed	Full size: 120fps (MIPI 4 lane mode)
	Power Supply	3.3V±0.3V	Generate Analog 2.8V by on-board LDO
			Generate Digital 1.2V by on-board DD-converter.
			Generate Analog 1.8V by on-board LDO
			Generate AF 2.8V by on-board optional LDO

Why are the SE camera boards suitable for AIoT vision processing applications?

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   Wide variety of options for resolution, global shutter, wide FoV lens, focus driver, etc.
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   Suitable for real-time autonomous control system
5. *Affordable for everyone*
   Pricing that individuals can purchase from a single item in line with the corporate philosophy of *helping to create open innovation*.
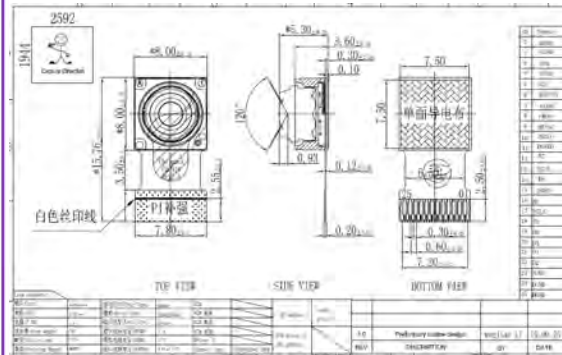
■**Further Information:**
https://soho-enterprise.com/
https://www.visionproc.org/index.php

汎用カメラモジュールシリーズ
SEI012FF-D, SEI012FFW-D

ISP内蔵型5Mpixイメージセンサーを使ったレンズモジュール。
DVPインターフェースタイプから順次発売予定

Start Sample Delivery

SEI012FF-00-D　SEI012FFW-00-D

FoV(diagonal)=76°　FoV(diagonal)=120°　Back Side

魚眼タイプ：SEI012FE-D（FoV=160° and/or 187°）
AFタイプ：SEI012AF-D(76°), SEI012AFW-D(120°)
ラインアップに追加していきます。

SE-SB02基板に接続可能なMIPI IFバージョンも開発受注可能

イメージセンサ	
センサタイプ	1/4型 CMOSイメージセンサ
有効画画素数	511万画素
記録画素数	504万画素
カメラ制御	
ISO感度	ISO 40～800
シーンセレクション	12パターン
露出制御	自動、シャッター優先、ISO感度優先、長時間AEモード
測光モード	マルチパターン、中央重点、画面全体平均、スポット
露出補正	±2EV、1/3EVステップ
シャッタースピード	1/8 s（長時間AEモード）～1/42000 s
ホワイトバランス設定	オートホワイトバランス、太陽光、曇天、蛍光灯、ランプ
フォーカス制御	オート、シングルAF、連続AF、マニュアル
画像フォーマット	
出力画像フォーマット	JPEG（4:2:2）、Y/Cb/Cr、YUV、RGB、RAW、JPEG+YUV（サムネイル）
静止画データレート	5M pixel 15 frame/s JPEG output
動画データレート	SVGA 30 frame/s YCbCr output
HDビデオ出力	1080p（1920×1030 30 frame/s）、720p（1208×720 60 frame/s）JPEG output、JPEG+YCbCr output

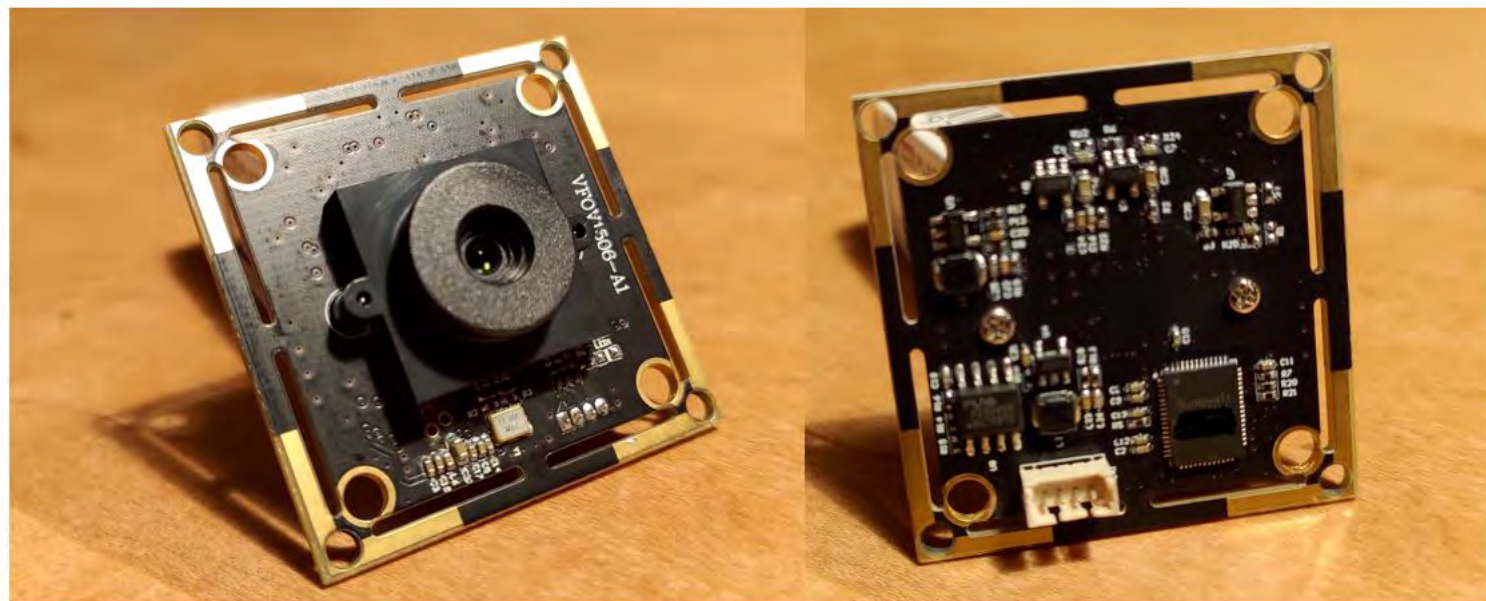# 1Mpix UVCカメラ（M12レンズタイプ）

SE9732USB
Omnivision社製イメージセンサーOV9732を採用
1/4"型、3.0um画素、1,280x720の高感度汎用UVCカメラ基板です。
カスタム光学フィルタの取り付け応談
M12マウントで様々なレンズと組み合わせが可能です。

小型モジュール化を検討中。（FoV=76°、120°、150°、160° 魚眼）

OPNOUS Full Product

OPN8001/8008/8018
3D TOF SENSORS

GENERAL DESCRIPTION

OPN7007/7018
VCSEL DIODE DRIVER IC

GENERAL DESCRIPTION

The OPN7007 is a smart VCSEL laser diode driver with high performance and high efficiency, which is optimized for Time of Flight (ToF) camera application. It is embedded with configurable current limit function to output specific peak current for illumination. A 12-bits ADC is also integrated for eye protection and temperature monitoring. The OPN7007 supports I²C interface configuration.


OPN6001
3D TIME-OF-FLIGHT (TOF) IMAGING CONTROLLER

FUNCTIONAL DESCRIPTION


OPNE8008B
QVGA TIME-OF-FLIGHT SENSOR EVALUATION KIT

FUNCTIONAL DESCRIPTION

The OPNE8008B is our Evaluation Kit for the QVGA OPN8008D Time-of-Flight (ToF) Sensor. This Evaluation Kit is fully assembled and tested camera system designed for the evaluation of the OPN8008D QVGA ToF Sensor, which provides all necessary hardware to operate OPN8008D, including both the camera lens and illumination. It can be directly connected to a PC for real-time visualization and recording of depth map data, while allowing direct access to many configuration settings. The system is fully controllable by an intuitive GUI on a PC.

OPNM8508B/M8808B/M8818A/M8608B
3D TOF IMAGING MODULES
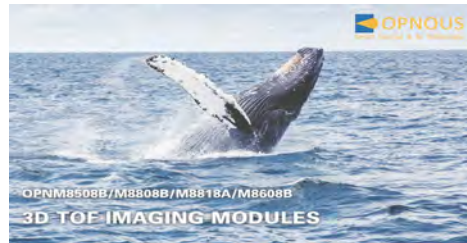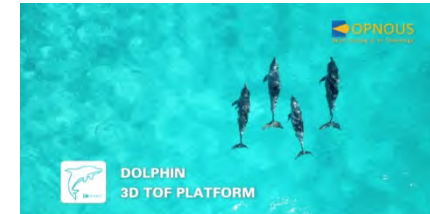
GENERAL DESCRIPTION

Opnous provides a series of Time-of-Flight (ToF) imaging modules fitting for a broad range of 3D sensing applications. These 3D sensing modules are realized upon 850 nm and 940 nm NIR wave length with an industry leading accuracy. The power consumption achieves the lowest power level in the industry, which benefit many portable and energy saving applications.

HAWK
3D TOF PLATFORM
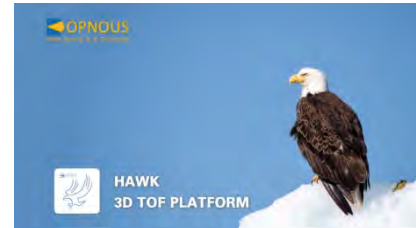
GENERAL DESCRIPTION

Hawk 3D ToF platform consists of OPNOUS ToF sensor OPN8008, VCSEL driver OPN7007 and ToF ISP OPN6001. It has built-in high performance, low power consumption ToF signal processing features -- auto-exposure(AE), high dynamic range(HDR), spatial and temporal de-noise and multi-device interference immunity. Hawk 3D ToF platform provides an easy-to-integrate ToF 3D vision solution for mid and long range applications .

Hawk 3D ToF platform can connect to host computer via USB 3.0 UVC protocol. Its SDK supports Windows and Ubuntu on x86 architecture.

DOLPHIN
3D TOF PLATFORM

GENERAL DESCRIPTION

Dolphin 3D ToF platform consists of OPNOUS ToF camera module and ToF ISP chip OPN6001. Dolphin has built-in high performance, low power consumption ToF signal processing features -- auto-exposure(AE), high dynamic range(HDR), spatial and temporal de-noise and multi-device interference immunity.

Dolphin 3D ToF platform can connect to embedded application processor via MIPI interface or to computer via USB 3.0 UVC protocol. Dolphin SDK supports Windows and Ubuntu on x86 architecture and embedded Linux on embedded ARM processors.

Dolphin 3D ToF platform provides an easy-to-integrate ToF 3D vision soluion for 3D applications within 5-meter range, such as facial recognition, machine vision, SLAM, 3D re-construction, AR/VR, etc.
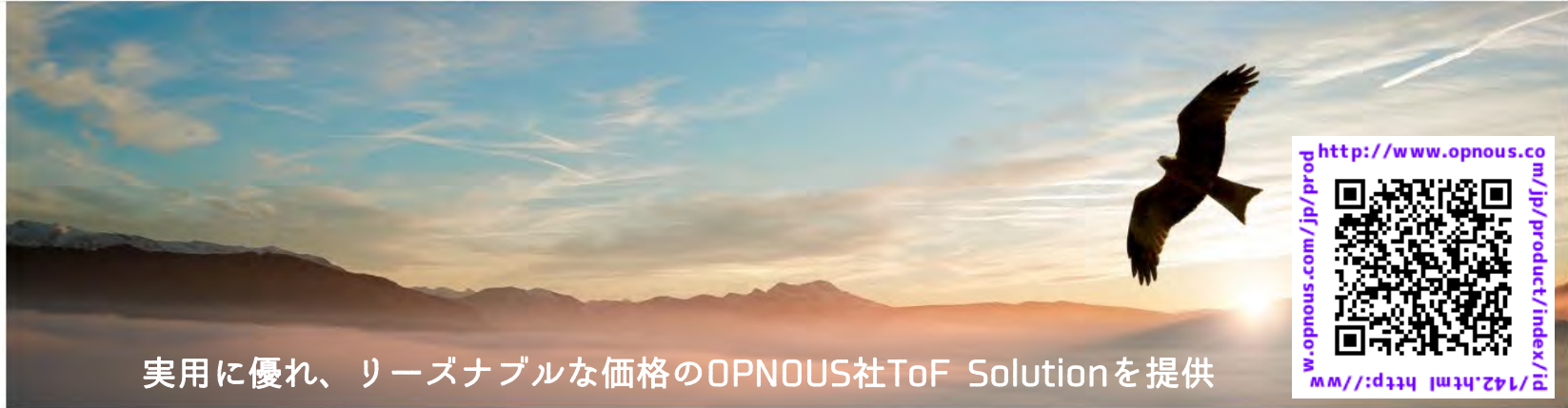
OPNOUS ToF Camera

実用に優れ、リーズナブルな価格のOPNOUS社ToF Solutionを提供

http://www.opnous.com/jp/product/index/id/142.html
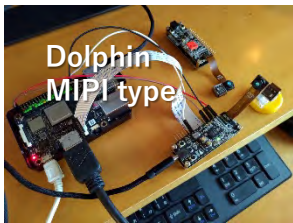
ToFシステムプラットフォーム

現在の位置です： トップページ ＞ 製品 ＞ ToFシステムプラットフォーム

Hawk   Dolphin

**Dolphin
MIPI type**

Part NO	Category	Resolution	FoV	Range	IR Filter	Interface
OPNCAM8508C/197-1MA-UA	Dolphin	320x240	72x55	1m/2m	940nm	USB 3.0
OPNCAM8506A/58C-1MA-UA	Dolphin	320x40	110x10	5m	850nm	USB3.0
OPNCAM8508C/197-1MA	Dolphin	320x240	72x55	1m/2m	940nm	MIPI
OPNCAM8506A/58C-1MA	Dolphin	320x40	110x10	5m	850nm	MIPI
OPNCAM8008A/58B-1MA-UA	Hawk	320*240	86x68	5m	850nm	USB 3.0
OPNCAM8008A/59B-1MA-UA	Hawk	320x240	86x68	5m	940nm	USB 3.0
OPNCAM8008A/58B-1MA-UA	Hawk	320x240	110x90	5m	850nm	USB 3.0
OPNCAM8008A/59B-1MA-UA	Hawk	320x240	110x90	5m	940nm	USB 3.0
OPNCAM8008A/A92-1MA-UA	Hawk	320x240	24x18	10m	940nm	USB 3.0

Software

http://www.opnous.com/jp