DUO Developer Kit

Specifications

Description

The DUO Developer Kit or DDK provides a complete solution for getting started with 3D vision. A highly tuned system consisting of a processing unit and sensor unit that allows for creation of portable computer vision. The DUO VPC is powered by ARM® big.LITTLE™ technology with a more...

Version

Revision 2.0

SKU

DUO-DDK-LV2

Contents

DUO Sensor

1x Compact DUO MLX Unit

1x Getting Started Card

1x USB Mini-B Cable

DUO Processor

1x ARM Processing Unit

1x Power Supply/Adapter

1x HDMI Display Cable

1x Wifi Adapter

DUO Software

1x DUO OS (16 GB Micro SD Card)

1x DUO API/SDK License

1x DUO Dense3D License

Related

DUO M

DUO MLX

DUO DDK

Sensing Unit

Model
DUO-MLX-LV1 (DUO MLX R2)

Dimensions
52.02mm x 25.40mm x 13.30mm

Frame Rates
0.1-3000+ FPS

Stereo Resolutions
Configurable Binning/Windowing:
- 56 FPS @ 752x480
- 62 FPS @ 640x480
- 123 FPS @ 640x240
- 240 FPS @ 640x120
- 93 FPS @ 320x480
- 184 FPS @ 320x240
- 360 FPS @ 320x120

Pixel Size
6.0 x 6.0μm

Shutter Speed
0.3 μsec ~ 10 sec

Baseline
30.0mm

Lens Mount
Standard M8 x P0.5

Field of View
170° Wide Angle Lens
Low Distortion < 3%

Focal Length
2.0mm - 2.1mm

Filters
850-870nm Narrow Band-Pass

Illumination
Fully Programmable LED Array
3 Independently controlled 3.4W
850nm IR LEDs 170° light cone

Illumination Control
Individual brightness sequence
programmable in 256 linear steps

Motion Sensing
Six Degree of Freedom (DoF)
Accelerometer/Gyroscope
IMU/Temperature

Color Modes
Monochrome (S/N Ratio > 54dB Linear)

Control Functions
Exposure/Shutter/Brightness

Scanning Modes
Progressive Scan/Global Shutter

Power Consumption
~2.5 Watt @ +5V DC from USB

Interfaces
480 Mbps - USB 2.0 Interface (Micro
USB)

Mounting Options
1 x 1/4"-20 UNC thread mount

Weight
12.5g

Processing Unit

Model
DUO-VPC-LV2 (DUO Vision PC)

Dimensions
103.00mm x 74.00mm x 28.00mm

Video Formats
MPEG-1/MPEG-2/MPEG-4/H.263/H.264/AVS/VC-1/RV8/RV9/RV10/VP6/VP8 Sorenson Spark/MVC 1080p@60fps (1920×1080)

Operating Systems
Linux/Custom Linux Kernel

CPUs
Samsung Exynos5422 Cortex™
Quad Core Cortex™ A15 @ 1.8Ghz
Quad Core Cortex™ A7 @ 1.4Ghz

GPU
Mali-T628 MP6 @ 600Mhz

System Memory
2 GB LPDDR3 RAM at 933MHz

System Storage
eMMC5.0 HS400 Flash Storage (Optional)

External Storage
microSD (UHS-I Card)

Output
Mini HDMI 1.4a

Communications
10/100 Ethernet
802.11 b/g/n WiFi (Adapter)

Power Consumption
~2 AMP @ +5V DC

Interfaces
4x USB 2.0 Host
1x USB 3.0 Host
1x USB 3.0 OTG
1x Audio Output
1x Micro SD Card Slot

OpenGL/OpenCL Support
OpenGL ES 3.0/2.0/1.1 and OpenCL 1.1

Weight
118g

Software

Operating Systems
DUO OS - Custom Linux Kernel
Linux, Mac OS X & Windows

Applications Included
DUO Dashboard Host

- Calibration Application
- Camera Application
- Dense3D Application

Developers
DUO Device SDK
DUO Dense3D SDK

Integration
OpenCV/Qt5/ROS

Platforms

The **DUO MLX/VPC** all support:
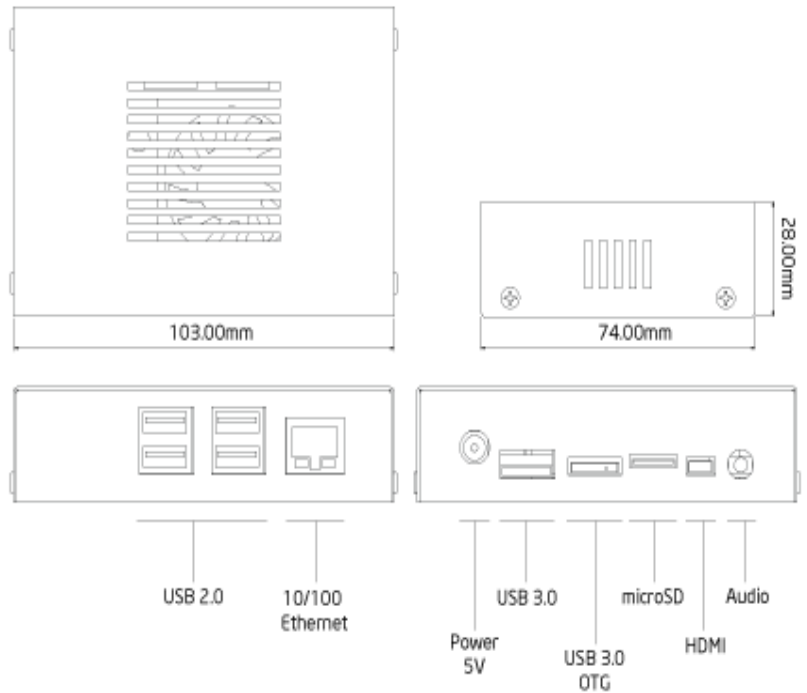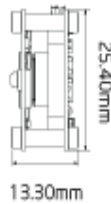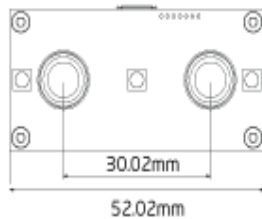32bit/64bit Linux (Ubuntu 12 or later)

The **DUO MLX** supports:
64bit Mac (OS X 10.8 or later)

The **DUO MLX** supports:
32bit/64bit Windows (7/8 or later)

Dimensions

30.02mm
52.02mm
25.40mm
13.30mm

103.00mm
28.00mm
74.00mm

USB 2.0   10/100 Ethernet

Power 5V   USB 3.0 OTG   USB 3.0   microSD   HDMI   Audio

Environment

Operating Temperature
0° to 40-50° C (32° to 104-122° F)

Storage Temperature
-20° to 45° C (-4° to 113° F)

Relative Humidity
0% to 90% non-condensing

Warranty

Product Warranty
12 Month Limited Manufacturer's Warranty.

Where to Find Details
Refer to product Installation and Operation Manual and Product's Warranty.