FlightSense™

Low Power Detection

Ranging & Proximity

Applications

Low-Power Detection

- **F**light**Sense allows low-power detection**
  - All-in-one solution
  - Immune to color, texture, and material
  - Detection to distances of 120cm
  - Down to 175uW at 1Hz
  - → **Unlocking battery-operated, high-performance applications!**

Complete Product Range

- **VL6180X**   100fps, up to 40cm prox & ALS   `Mass Production`
- **VL53L0X**   50fps, up to 200cm   `Mass Production`
- **VL53L1X**   50fps, up to 400cm   `Mass Production`
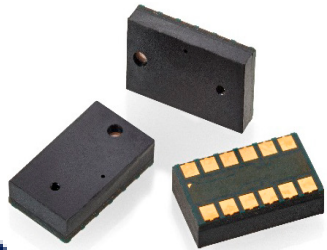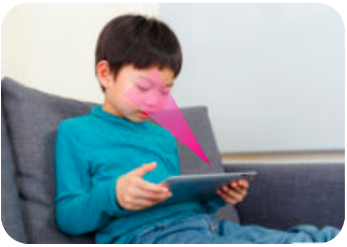
Ranging & Proximity

- **F**l**ight**Sense **enables outstanding performance**
  - Full range of products up to 400cm !
  - Works behind many types of cover-glass materials
  - Performance proven even for challenging industrial design
  - → **Unlocking multiple applications & use-cases !**

Complete Product Range

- **VL6180X**   100fps, up to 40cm prox & ALS   Mass Production
- **VL53L0X**   30fps, up to 200cm   Mass Production
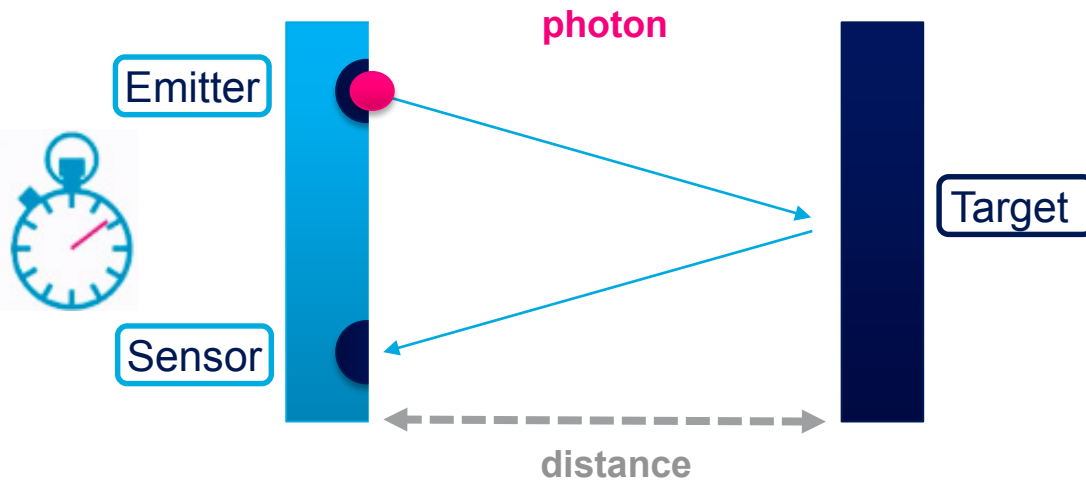- **VL53L1X**   60fps, up to 400cm   Mass Production

Android 7 Nougat ready

F**light**Sense Breakthrough Technology

F**light**Sense Principle

photon

Emitter

Sensor

Target

distance

Measured distance	=	Photon travel time / 2	x	Speed of light

Fully Integrated Time of Flight Module

True distance measurement
Independent of target size, color & reflectance
Very fast (few ms)
Low power

Measurement at the speed of light ! 1cm round-trip in 67ps

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FlightSense Highlights

ST is World Wide #1 Time-of-Flight supplier

Over 5 years of proven track record in manufacturing
\>> 450M products shipped
\> 300% AAGR

FlightSense Laser AF camera assist in >85 phones

Endless applications on the market: Robots, Drones, Smart-home sensors, Faucets, Toys…

New Generation Ready: Unique Direct ToF features

…and a complete roadmap under development

Light-Speed Shots with Laser Auto-Focus

Key Target Applications

Presence: User Detection
Security
Power saving

Ranging & Proximity
True distance
Ranging up-to 4m

Camera AF Assist
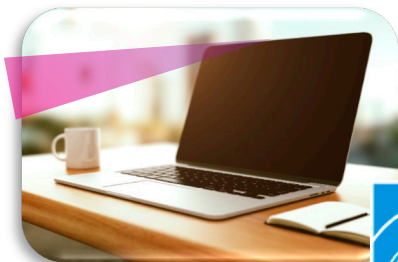Instant focus
Scene understanding

Immediate detection of user
Accurate distance measurement

Security
Fast screen -lock / un-lock when user detected

Power saving
Very fast power-on / off

Camera Assist

- **Autofocus Camera Assist (front or rear camera)**
  - Instant Focus over entire camera focal range
  - Fast & Robust solution for low light & low contrast
  - Adjustable Region of Interest
- **New innovative use cases**
  - Dual-camera depth-map assist
  - Flash-power adaptation versus distance to object

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- **VL53L1X**   50fps, up-to 400cm   Mass Production

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