

# FlightSense™



Low-Power Detection



Ranging & Proximity



Applications

# Low-Power Detection



- **FlightSense 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!**



# Ranging & Proximity



Android 10 Pie ready

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

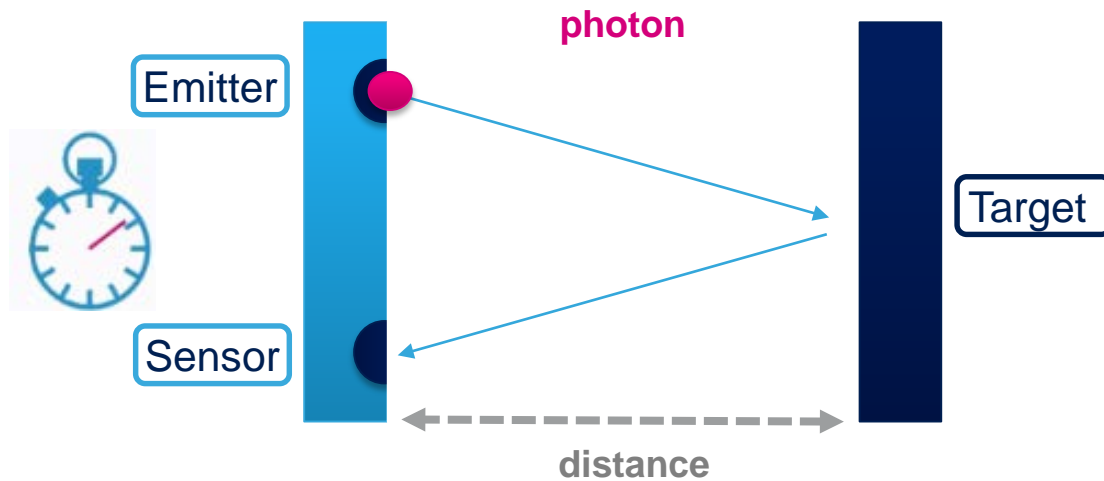
## Complete Product Range

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



# FlightSense Breakthrough Technology

## FlightSense Principle



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**



# 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





# Key Target Applications



## Presence: User Detection

Security  
Power saving



## Ranging & Proximity

True distance  
Ranging up-to 4m



## Camera AF Assist

Instant focus  
Scene understanding



## Robotics

Obstacle detection  
Proximity



# Camera AF Assist



**Instant Focus**  
Over entire range

**Region of Interest**  
Adjustable region

**Flash-power**  
Adaptive Flash



# Presence



**Immediate detection of user**  
User friendly wake-up on approach



**Security**

Fast screen -lock / un-lock when user detected



**Power saving**

Very fast power-on / off

# Robotics



**Low Power Environment Sensor**



**Perfect for Object Detection**



**Multiple Sensors Floor/Wall detection**