PARROT®
S.L.A.M.dunk

ALL-IN-ONE INTEGRATED KIT
FOR ADVANCED NAVIGATION APPLICATIONS

STEREO VISION
High resolution and wide angle stereo camera that compute the environment depth map which helps the drone to understand its physical surroundings

3D S.L.A.M.
Three Dimensional Simultaneous Localization and Mapping Solution
Core integrated software algorithms that leverage multiple on board sensors for real-time localization and three dimensional environment mapping with point cloud generation

EMBEDDED COMPUTER
Parrot S.L.A.M.dunk embed a NVIDIA® Tegra® K1 mobile processor

SDK
ROS Robotics Operating System based Software Development Kit designed for developers

140g
compact design with carbon fiber for a 140g, 5oz weight

Available at parrot.com
• This new device is a unique combination of hardware and software designed to help developers accelerate the development of advanced navigation applications for drones and other robotic technologies.

• Parrot S.L.A.M.dunk allows the developers and researchers to access to integrated advanced sensors optimized to deliver synchronized data with low latency through a standard framework: ROS.

• Parrot S.L.A.M.dunk has also integrated advanced software applications based on a Simultaneous Localization And Mapping algorithm. It can understand and map its surroundings and localize itself in cluttered GPS denied environments.

• Parrot S.L.A.M.dunk is a complete compact solution that allows developers to turn their drones into highly intelligent flying robots.
Accurate positioning without GPS based on integrated S.L.A.M. algorithm: Simultaneous Localization And Mapping for you to develop:

- Autonomous discovery of indoor environment
- Indoor waypoints navigation with real time trajectory planning

High resolution wide angle stereo cameras at 60 fps for:

- Depth map computation
- 3D environment reconstruction

Integrated sensors and algorithms to help you to develop a sense and avoid solution for your drone such as:

- Assisted piloting and fully automated collision avoidance
- Distance keeping from surfaces for inspection

Complete development computer based on Ubuntu 14.04: plug your keyboard and display and develop directly on Parrot S.L.A.M.dunk

- Compact design: 140g, 5oz weight
- ROS based SDK
- High processing capability: NVIDIA® Tegra® K1 mobile processor
- Multiple Sensors: stereo camera, Inertial Measurement Unit, ultrasound, magnetometer, barometer
TECHNICAL SPECIFICATIONS

CAMERAS
- Stereo video modes: 960p 30FPS
  1500x1500 60 FPS - 900x700 120 FPS
- Camera Baseline: 20cm - 8in
- Sensor: Rolling shutter
- Lens: 200° FOV, 0.2% F-theta distortion

SENSORs
- Ultrasonic: 15m - 49ft range
- IMU: 8KHz
- Barometer
- Magnetometer

ONBOARD COMPUTER
- Processor: NVIDIA® Tegra® K1 mobile processor
- RAM: 2GB DDR 3
- Memory: 16GB EMMC

SENSORS
- Ultrasonic: 15m - 49ft range
- IMU: 8KHz
- Barometer
- Magnetometer

OPERATING SYSTEM
- Based on Ubuntu 14.04
- Desktop environment: Optional

SDK
- ROS node
- Onboard development enabled

CONNECTIVITY
- USB: microUSB 2.0 OTG, USB 3.0 Host
- Display: microHDMI output
- (Wi-Fi): Through USB dongle, see list of natively supported dongles

ALGORITHM PERFORMANCE

DEPTH MAP
- Frame rate: 30fps, adjustable
- FOV: Up to 120° DFOV, adjustable
- Accuracy: 1cm @1m - 0.4in @ 3ft

LOCALIZATION
- Drift: <1%*
- Frequency: 60 Hz

*under standard conditions

SOFTWARE DEVELOPMENT KIT

ROS based SDK

Physical Sensors
- Right Camera
- Left Camera
- IMU
- Ultrasound
- Magnetometer
- Barometer

Main Native Algorithms
- Stereo Algorithm

Virtual Sensors
- Depth Map
- Position
- Occupancy Grid
- Point Cloud

Advanced Navigation Algorithms
- Obstacle Avoidance
- S.L.A.M. algorithm
- Add your own algorithm

More information available at developer.parrot.com

FITS ON VARIOUS DRONES AND ROBOTIC PLATFORMS

IN THE BOX: 1 Parrot S.L.A.M. dunk, 1 AC ADAPTER, 3 PLUGS, 1 CABLE: USB A to MICRO-USB B, 1 CABLE: MICRO-USB A to MICRO-USB B, 1 XT60 CABLE, 3 MOUNTS, 1 USER GUIDE